ASHCROFT®

INDUSTRIAL INSTRUMENT ORDERING HANDBOOK

CONTENTS

PRODUCT TYPE

MODEL TYPE/NUMBERS

How To Use Your Ashcroft Ordering Handbook

If you are uncertain which product is best suited to your application first refer to the Product Quick Guides on pages 11 through 46. The Quick Guides provide a brief overview of product specifications and some common applications. You can then refer to the page number noted on the bottom of each column for more information. The Quick Guides and the corresponding product pages are colored coded for easy

2089, 2086, 2084, 2074, 2174, 2274, D1005P
A4A, 1082, 1084, 2084, 2086, 2089, ATE-100, ST-2A, 1305D, 1327D, 1327CM, PT, AVC-1000
1259, 1279, 1377, 1379, 2462, 1288
X1009, 1008S, 1009, 1109, 1010, 1017, 1220, 1020S, 1038, 1339, 1125, 1125A, 1127, 1128, 1130, 1131, 1132, 1133, 1134, 5503, 5509, 1150H, 1122, 1187, 1188, 1189, 1490, 1495, 2074, 2174, 2274
X1032, 1032, 1036, 1037

1X1005, X2001, 005, 1005P, 1005S, D1005PS, 1001T, 1005PXUL, 1005MXRG, 1008A/AL, 3005, 3005P, 1000, 2071A, 1007XOR, 1001TXOR, 1005PXOR, 23DDG, 40DDG, 50DDG, 12DDG, 15DDG, MFX

100, 200, 300, 400,402, 500, 310, 315, 320, 330, 311/312, 740/747,702/703, T205
1115A, 111P5
80, 85, 86

Xmitr™ X1009
Xmitr™ X1005, X2001
T2
G2
A2
KM10
K1, K2, K8
KX
KS
XLdp, IXLdp, RXLdp, DXLdp, CXLdp
2269
2279
4080, 4480

FT, EI, CI, EL, Case Dimensions, 600B
600A-01, 600A-02, 600A-03, 600A-04, 600H-45
2400E, 2410E

A-Series Miniature Watertight Brass Body, Stainless Steel Miniature Watertight or Explosion Proof
B-Series Type 400 Watertight Enclosure, Type 700 Explosion Proof
F-Series Anodized Aluminum, Compact, Explosion Proof
G-Series Watertight, 316 Stainless Steel Enclosure
H-Series Hydraulic, Watertight Enclosure
L-Series Watertight Enclosure
N-Series Type 700 Explosion Proof, Watertight or Explosion Proof Type 400 Watertight with Pressure Indications
P-Series Watertight Enclosure or Explosion Proof Enclosure, Dual Chamber

INTRODUCTION

The Ashcroft® Ordering Handbook is a guide for ordering Ashcroft pressure, temperature and control instruments, accessories and options. Each product is represented with a description of its general characteristics. For each major product there are selection tables for the important variables that must be considered when selecting an instrument.

Each product line description contains an example of a simple ordering code that will make it easier for you to order Ashcroft products.

Ashcroft Gold Service℠

Ashcroft Gold Service℠ guarantees shipment of specific Ashcroft instruments in five working days or less. Those products are identified throughout this catalog by a Gold Service Seal. This unique service allows Ashcroft Inc. to deliver the Ashcroft product you need, when you need it. For recent additions to the Ashcroft Gold Service Program, contact Customer Service.

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Ashcroft®
Digigauge® pressure gauge
Digitest® pressure gauge
Duradrive™ pressure gauge
Duragauge® *PLUS!* pressure gauge
Duragauge® pressure gauge
Duralife® pressure gauge
Duralife® *PLUS!* pressure gauge
Duratemp® thermometer
Duratran® pressure transmitter
Duratran® *PLUS!* pressure transmitter
Duratube™ system
Easy Zero™ adjustment
Everyangle™ connection
FlutterGuard™ option
Gauge Saver® throttling device
Heise®
Maxitest® gauge
Maxivision® dial
MicroSpan™ adjustment
MiniGauge® pressure gauge
Monobridge™ sensor
PLUS!™ Performance option
Power*Flex*™ movement
Quick-Select™ calibrator
Si-Glas™ sensor
SpoolCal™ actuator
True Zero™ indication
Weksler®
Willy®
Xmitr™ transmitter gauge

Ashcroft Inc. Service Marks

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Ashcroft ActionLine℠
Ashcroft Gold Service℠
Gold Service℠
Heise ActionLine℠
Heise Gold Service℠

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Halocarbon®
Hastelloy
Hirschmann®
Inconel®
Iso-Ring®
Iso-Spool®
Kalrez®
Kynar®
Micro-Bean®
Monel®
Neoprene®
Nicrobraze®
Noryl®
Syltherm®
Teflon®
Tri-Clamp®
Ultrafil®
VCO®
VCR®
Viton®

Product Information

For additional information about our products contact:

Ashcroft Inc.
Customer Service Dept.
250 East Main Street
Stratford, CT 06614-5145
Phone (203) 385-0217
Fax (203) 385-0602

ISO 9000 Certification

The company-wide commitment to world class quality standards at Ashcroft Inc. has been recognized by the International Standardization Organization ISO 9000 system audit procedure. All Ashcroft Inc. instrument operations worldwide have received ISO 9001 or ISO 9002 certification for their procedures. These worldwide manufacturing operations have made the ISO Standard their guideline for doing business.

With world-class quality systems in place at all operations, customers can be assured that their buying decisions can be made every day with a higher level of supplier confidence.

For additional information call the Ashcroft® ActionLine℠ at 1-800-328-8258 or visit our web site at: ***www.ashcroft.com***

ASHCROFT®

Features Found Only In Ashcroft® Gauges

PowerFlex™

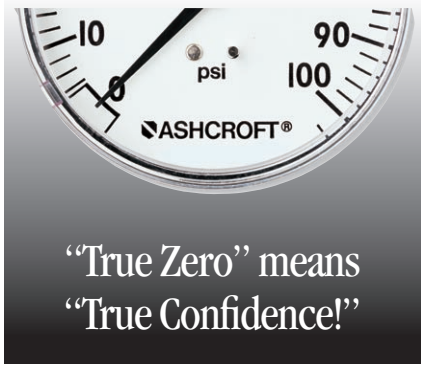
Unlike ordinary gauge movements, which may not stand up to rough handling and demanding applications, the patented Power*Flex* movement has the power to perform under pressure. Independent lab testing has shown that the Power*Flex* movement is more shock resistant than conventional movement gauges. In addition its superior vibration and pulsation resistance translates to another big benefit: a longer-lasting gauge, hence less replacement costs.

CONVENTIONAL MOVEMENT

ASHCROFT POWER*FLEX* MOVEMENT

True Zero™

Not "Almost Zero," "Nearly Zero," or "Around Zero"



Just because a gauge reads zero, it doesn't mean there isn't any pressure on it. For example, a damaged conventional gauge might read zero, even in a pressurized system. The dial pin won't allow the pointer to fall below zero. With True Zero, there's no dial pin. So when a gauge with True Zero reads zero, that's just what there is – zero pressure. This gives you big benefits, including increased safety, reduced manufacturing and replacement costs.

FlutterGuard™

Regular gauges on high vibration/pulsation applications have a lot of pointer flutter. So much, in fact, that sometimes it's hard to get an accurate reading. And all that extraneous motion puts excessive wear on gauge internals. So what's the answer? Ashcroft gauges with FlutterGuard. FlutterGuard provides smooth, steady pointer motion that makes our gauges easy to read and longer lasting. You benefit from a performance similar to a liquid-filled gauge, without the worry of potential leakage. And no fill reduces weight and shipping costs. That's why we say, with FlutterGuard,

"No fill, no flutter . . .
no foolin' "

The Problem…

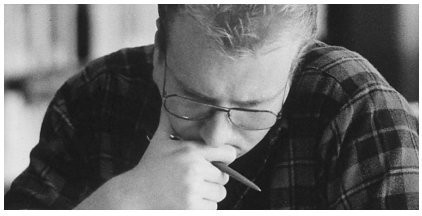
Until recently, applications where heavy vibration and pulsation were present required the use of either a conventional dry gauge with a hard to read pointer and a limited life costly liquid-filled gauge and all the head-aches that come with them.

The Solution…

A new, exclusive, breakthrough technology developed for Ashcroft pressure instruments providing virtually liquid-filled performance in a dry gauge, the Ashcroft® ***PLUS!™*** **Performance** option.

How'd They Do That?…

The Patented Ashcroft® ***PLUS!™*** Performance option utilizes a unique cartridge to surround the pinion with an engineered dampening agent to dynamically dampen the pointer and movement, thereby providing a dry gauge which acts liquid-filled.



Benefits vs Liquid-filled…

- Dampens vibration and pulsation without the headaches of liquid-filled gauges.
- No liquid – no leaks!
- Easier to read…no fill lines!
- Easier to recalibrate
- Wider temperature range vs glycerin-fill
- Eliminates costly specialty fluids.

Benefits vs. Dry Gauges…

- Dampens vibration and pulsation
- Steady pointer – Easier to read!
- 100% longer life
- Reduce purchases by 50%!

Improved Plant Safety…

Safety is a critical issue and the ***PLUS!™*** **Performance** can improve the safety of your plant. Industry surveys indicate that 20% to 30% of customer's gauges are misapplied and prematurely fail due to pulsation and vibration. If a bourdon tube fails due to excessive pulsation, the process media will escape causing possible environmental damage, process contamination and more importantly, possible injury, fire or explosion. ***PLUS!™*** **Performance** improves safety and saves money by allowing facilities to standardize on a convenient dry ***PLUS!™*** gauge that performs virtually like a liquid-filled gauge. This saves 20% to 30% annually by reducing misapplied gauges, as well as reducing the risk of spills, injury and damage to their facility.

ASHCROFT®

PLUS!™ Performance Option

Too Good to be True?

We have an impressive array of awards that will make you a believer. If you want the only true liquid gauge alternative on the market today, order your next gauge with the Ashcroft ***PLUS!™*** Performance option. You'll never feel the same about liquid-filled gauges again!

Any Questions?

A. Are PLUS!™ Performance gauges "new" gauges?

A. No. We simply enhanced the industry leading Ashcroft products you've grown to trust with a fluid clutch dampener. The mechanical system is unchanged.

Q. Does PLUS!™ Performance affect accuracy?

A. No. The only difference is that the response time is similar to liquid-filled gauges.

Q. Can these gauges be oxygen cleaned?

A. Yes. Our process cleans the system to meet AMSE B40.1, Level IV.

Q. What temperature range is possible?

A. –40°F to 300°F, –40°C to 149°C

Q. Can I use PLUS!™ Performance instead of Halocarbon fill?

A. Yes!

Q. Can this be used in paint applications or others requiring no silicone?

A. The standard ***PLUS!™*** Performance cannot be used in silicone-free applications. However, ***PLUS!™*** is available in a silicone-free version. Order as XNS for silicone-free.

Q. Does the throttle plug do all the work?

A. No. Throttle plugs are designed only to fight pulsation. Vibration requires either a liquid-filled gauge or ***PLUS!™*** Performance.

Q. Does our competition have anything similar?

A. No. Some competitors use a liquidless gauge with poor results prior to 1993. Their design utilized a dashpot which caused premature failures versus even dry gauges. Some competitors have recently commercialized this dashpot design. Gauges with ***PLUS!™*** Performance utilize a completely different approach overcoming their design problem.

Q. Will this gauge last forever?

A. No gauge will last forever under conditions of severe pulsation and vibration. The ***PLUS!™*** Performance gauges simply last significantly longer than traditional dry gauges with the benefits outlined above. *There are a few applications, chiefly severe high frequency pulsation, where a liquid-filled gauge or a remote mounted gauge is necessary. With a few exceptions,* Beta site customers have found the performance to rival liquid-filled gauges in life expectancy without any of the headaches of liquid-filled gauges.

Q. How Do I Order?

A. The product variation "XLL" designates ***PLUS!™*** Performance in all Duragauge,® Duralife,® 1008S and 1082 model pressure gauges and Duratran® transmitters.

ASHCROFT® PRODUCT QUICK GUIDES

DIGITAL GAUGES

TEST INSTRUMENTS, TEST GAUGES & EQUIPMENT

PROCESS GAUGES

STAINLESS STEEL CASE & INDUSTRIAL GAUGES

SANITARY GAUGES

ASHCROFT® PRODUCT QUICK GUIDES

COMMERCIAL GAUGES

DIAPHRAGM SEALS

TRANSDUCERS & TRANSMITTERS

THERMOMETERS

PRESSURE & TEMPERATURE SWITCHES

ASHCROFT®

Quick Guide
Digital Gauges

TYPES 2089, 2086, 2084 PRECISION DIGITAL TEST GAUGE

ACCURACY
±0.05%, 0.10% or 0.25% of span

CASE SIZE
3″

CASE MATERIAL
300 Series stainless steel, electropolished

WETTED MATERIALS
316 stainless steel connection

SOCKET SIZE
1/4 NPT JIS, DIN, SAE,
(others on application)

CONNECTION
Lower (6 o'clock)

RANGES
Vac., 5 psi thru 7000 psi including compound and absolute

POWER SOURCE
Three AAA alkaline batteries

BATTERY LIFE
> 1000 hrs.

OPERATING TEMPERATURE
Temperature corrected from 0/150°F (–18/63°C)

STORAGE TEMPERATURE
–40/180°F (–40/82°C)

AGENCY APPROVALS
CE, EN 50082-1 (1997), FM, CSA

Refer to page no. 49

With total error band accuracy including temperature from 0/150°F (–18 to 63°C) applications include metrology labs, gas distribution and transmission and analog test gauge users.

TYPES 2074, 2174, 2274 INDUSTRIAL DIGITAL GAUGE

ACCURACY:
±0.25% of span

CASE SIZE
3,″ 4 1/2″

CASE MATERIAL
(3″) 300 series stainless steel
(4 1/2″) fiberglass reinforced thermoplastic
(4 1/2″) black painted aluminum

WETTED MATERIALS
17-4 PH stainless steel sensor;
316 stainless steel socket

SOCKET SIZE
1/4 NPT, 1/2 NPT (4 1/2″ case only)

CONNECTION
Lower (6 o'clock)

RANGES
Vac. and 15 psi thru 20,000 psi including compound

POWER SOURCE
Battery
(3″) Two AA alkaline batteries
(4 1/2″) Two C alkaline batteries
Loop powered 4-20mA
Line powered, (12-36 Vdc, 1 amp)

BATTERY LIFE
(3″) >1000 hrs.
(4 1/2″) >3600 hrs.

OPERATING TEMPERATURE
14/140°F (–10/60°C)

STORAGE TEMPERATURE
–4/158°F (–20/70°C)

AGENCY APPROVALS
CE, EN 50082-1 (1997), FM, CSA, CENELEC-ATEX 100

Refer to page no. 50

Available with optional (1) or (2) SPDT switches and 4-20mA output, this gauge is ideal for many industrial applications. This product eliminates the need for unnecessary piping, switches and transducers.

TYPE D1005PS GENERAL PURPOSE DIGITAL GAUGE

*Protective Boot Optional

ACCURACY
±0.5% of span

CASE SIZE
2 1/2″

CASE MATERIAL
Noryl®

WETTED MATERIALS
17-4 PH stainless steel sensor;
316 stainless steel socket

SOCKET SIZE
1/4 NPT

CONNECTION
Lower (6 o'clock)

RANGES
Vac. thru 19,999, including compound

POWER SOURCE
Two AAA alkaline batteries

BATTERY LIFE
1000 hrs.

OPERATING TEMPERATURE
14/140°F (–10/60°C)

STORAGE TEMPERATURE
–4/158°F (–20/70°C)

AGENCY APPROVALS
CE, EN 61326 (1998)
CE, EN 61326 Annex A (heavy industrial)

Refer to page no. 51

This product is an excellent choice for a wide variety of pressure measurement applications. When compared to mechanical gauges the D1005PS offers overall enhanced value.

ASHCROFT®

Quick Guide
Test Instruments

1084, 3″ TEST GAUGE

ACCURACY
ASME B 40.1 Grade 2A (±0.5% of span)

DIAL SIZE
3″

CASE MATERIAL
300 series polished stainless steel

MATERIAL
316 stainless steel

SENSING ELEMENT
Bourdon tube

CONNECTION
1/4 NPT lower only

RANGES
Vac. to 1000 psi

Refer to page no. 57

Ideal for use when a quality analog pocket test gauge is required.

1082, 4½,″ 6,″ 8½″ TEST GAUGE

ACCURACY
ASME B 40.1 Grade 3A (±0.25% of span)

DIAL SIZE
4½,″ 6,″ 8½″

CASE MATERIAL
Aluminum, phenolic, polypropylene

WETTED MATERIAL
Bronze/brass, Monel

SENSING ELEMENT
Bourdon tube

CONNECTION
1/4 NPT (standard) and
1/2 NPT lower or back (optional)

RANGES
Vac. to 10,000 psi

Refer to page no. 56

1/4% full scale accuracy for test and laboratory applications.

TYPES 2089, 2086, 2084 PRECISION DIGITAL TEST GAUGES

ACCURACY
±0.05%, 0.10% or 0.25% of span

CASE SIZE
3″

CASE MATERIAL
300 Series stainless steel, electropolished

WETTED MATERIALS
316 stainless steel connection

SOCKET SIZE
1/4 NPT JIS, DIN, SAE
(others on application)

CONNECTION
Lower (6 o'clock), 3 and 9 o'clock

RANGES
Vac., 5 psi thru 7000 psi including compound and absolute

POWER SOURCE
Three AAA alkaline batteries

BATTERY LIFE
> 1000 hrs.

OPERATING TEMPERATURE
Temperature corrected from 0/150°F (–18/63°C)

STORAGE TEMPERATURE
–40/180°F (–40/82°C)

AGENCY APPROVALS
CE, EN 50082-1 (1997), FM, CSA

Refer to page no. 58

Superior accuracy for test and laboratory applications.

TYPE ATE-100 LCD DIGITAL CALIBRATOR

LOOK FOR THIS AGENCY MARK ON OUR PRODUCTS

PRESSURE MEASUREMENT ACCURACY
±0.025, 0.05 and 0.1% of span

PRESSURE RANGES
0/0.25 in.H_2O through 0/10,000 psi

PRESSURE TYPES
Gauge, compound, vacuum, absolute and differential

TEMPERATURE COMPENSATION
20-120°F

TEMPERATURE MEASUREMENT
Supports most common RTD-type temperature probes and thermocouples

DIMENSIONS
7.88 in. (L) x 4.24 in. (W) x 3.25 in. (H)

WEIGHT
Max. 2.2 lbs. w/2 pressure modules installed

CASE MATERIAL
High impact ABS

SENSOR MODULE CAPACITY
2 bays for Ashcroft AQS "Quick Select®" sensor modules

DISPLAY
2 line LCD, 0.037 in. height per line. Can display simultaneous readings from 2 modules

ELECTRICAL CONNECTION
Miniature recessed banana jacks (one set of test leads provided with each ATE-100)

UPDATE RATE
130 ms (nominal) with one sensor installed

RESOLUTION
±0.002% of span, 60,000 count (max)

DAMPING (Measurement Averaging)
Programmable averaging from zero through 16 consecutive readings

SERIAL INTERFACE
Type: RS-232 up to 9600 baud

Refer to page nos. 59 and 60

Field or laboratory precision pressure standard for calibrating or setting other instruments and devices. Also used for high accuracy temperature or pressure measurement in critical processes.

ASHCROFT®

Quick Guide
Test Instruments

ST-2A LCD DIGITAL INDICATOR

PRESSURE MEASUREMENT ACCURACY
±0.025, 0.05 and 0.1% of span

PRESSURE RANGES
0/0.25 in.H_2O through 0/10,000 psi

PRESSURE TYPES
Gauge, compound, vacuum, absolute and differential

TEMPERATURE COMPENSATION
20-120°F

TEMPERATURE MEASUREMENT
Supports most common RTD-type temperature probes and thermocouples

DIMENSIONS
10.9 in. (L) x 6.74 in. (W) x 4.0 in. (H)

PANEL CUTOUT
6.56 in. x 3.53 in.

WEIGHT
Max. 4.08 lbs. w/2 pressure modules installed

CASE MATERIAL
High impact ABS

SENSOR MODULE CAPACITY
2 bays for Ashcroft AQS "Quick Select®" sensor modules

DISPLAY
2 line LCD, 0.037 in. height per line. Can display simultaneous readings from 2 modules.

ELECTRICAL CONNECTION
Standard banana jacks

OPERATING TEMPERATURE RANGE
32° to 120°F

UPDATE RATE
130 ms (nominal) with one sensor installed

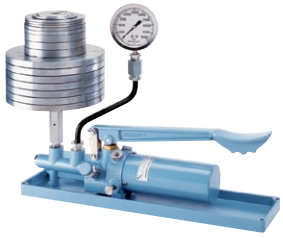
RESOLUTION
±0.002% of span, 60,000 counts (max)

ELECTRICAL MEASUREMENTS
0-50 mA or 0-30 Vdc

Refer to page nos. 61 and 62

Laboratory precision pressure standard for calibrating or setting other instruments and devices. Also used for high accuracy temperature or pressure measurement in critical processes.

TYPE 1305D DEADWEIGHT TESTER



ACCURACY
±0.1% of reading

OPERATING PRESSURE
15 psi to 10,000 psi (100 kPa to 70,000 kPa)

OPERATING MEDIA
1305D: SAE 20 weight automotive or machine oil

1305DH
Phosphate-based or glycol fluids

O-RING MATERIAL
1305D: Buna-N (D series)

1305DH
Ethylene Propylene (DH Series)

PISTON AND CYLINDER MATERIAL
Stainless steel

WEIGHT MATERIAL
Non-magnetic die cast zinc

RESERVOIR VOLUME
Approximately 1.5 pints (0.7 liter)

Special "CD-5" Certification package available (see Price Sheet TE/PS-1)

Refer to page no. 63

Primary deadweight pressure standard and hydraulic pressure source for calibration of other pressure instruments.

TYPE 1327D, 1327CM GAUGE COMPARATOR

OPERATING PRESSURE
0-10,000 psi (maximum) (0-70,000 kPa)

OPERATING MEDIA
Std.: SAE 20 weight automotive or machine oil
Opt.: Phosphate-based or glycol fluids
Distilled water for oxygen service

O-RING MATERIAL
Standard: Buna N (D Series)
Optional: Ethylene Propylene (DH Series)

RESERVOIR VOLUME
Approximately 1.5 pints (0.7 liter)

SPECIFICATIONS TYPE 1327DG

ACCURACY
±0.25% F.S.

GAUGE TYPE
Ashcroft 4½ inch Type 1082 gauges with temperature compensation

Special "CD-4" Certification package available (see Price Sheet TE/PS-1)

SPECIFICATIONS TYPE 1327CM

ACCURACY
±0.1% F.S.

GAUGE TYPE
Ashcroft 6-inch Type A4A with temperature compensation

TEMPERATURE COMPENSATION
–25°F to +125°F (will maintain ±0.1% F.S. accuracy)

Refer to page no. 64

Uses either 0.25% or 0.1% "master gauges" and hydraulic pressure source for calibration of other pressure instruments.

MODEL PT, DUAL DISPLAY LCD DIGITAL INDICATOR

PRESSURE MEASUREMENT ACCURACY
±0.025, 0.05 and 0.1% of span

PRESSURE RANGES
0/0.25 in.H_2O through 0/10,000 psi

PRESSURE TYPES
Gauge, compound, vacuum, absolute and differential

TEMPERATURE MEASUREMENT
Supports most common RTD-type temperature probes

DIMENSIONS
7.72 in. (L) x 6 in. (W) x 2.95 in. (H)

PANEL CUTOUT
5.4 in. x 2.68 in.

WEIGHT
Depending on configuration
Max. <4 lbs. w/2 sensors and battery pack

CASE MATERIAL
High impact ABS

SENSOR CAPACITY
2 bays for Ashcroft PPT sensors

DISPLAY
5 digit, 2 line LCD, 0.038 in. height per line. Can display simultaneous readings from 2 modules.

OUTPUT
Full function RS-232

OPTIONS
Backlit Display; Built-in NiCad Rechargeable Batteries; Handle; Panel Mounting Brackets

OPERATING TEMPERATURE RANGE
32° to 120°F

TEMPERATURE COMPENSATION
20-120°F

UPDATE RATE
130 ms (nominal) with one sensor installed

RESOLUTION
±0.002% of span, 60,000 counts (max)

Refer to page nos. 65 and 66

Laboratory precision pressure standard for calibrating or setting other instruments and devices. Also used for high accuracy temperature or pressure measurement in critical processes.

TYPE AVC-1000 & 3000 VOLUME CONTROLLER

TYPE
AVC-1000 / AVC-3000

RANGE (psi)
vacuum-1000 / vacuum-3000

RESOLUTION (psi)
0.00025 / 0.0005

VOLUME CHANGE (cubic inches)
3.5 / 2.5

MECHANICAL ROTATION (turns)
31 / 61

PROOF PRESSURE (psi)
2000 / 6000

BURST PRESSURE (psi)
6000 min / 12,000 min

OPERATING TEMPERATURE RANGE
20-120°F / 20-120°F

OPERATING MEDIA
Clean, dry noncorrosive gas such as compressed air or nitrogen

CONSTRUCTION
Aluminum body, stainless steel, brass Teflon, Delrin and Buna N

Refer to page no. 67

Added to any pneumatic calibration system, the VC works as a “fine tune” device to achieve specific test points not easily attained with the use of a regulator alone. Used in the calibration of any pneumatic pressure instrument up to 3000 psi.

TYPE A4A PRECISION DIAL PRESSURE GAUGE

ACCURACY
±0.10% of span – ASME B40.1, Grade 4A

CASE
Cast aluminum solid front

DIAL SIZE
6G, 8½″, 12″ & 16″

POINTER TRAVEL
350° (15-30,000 psi)
300° (40,000-50,000 psi)
270° (60,000-100,000 psi)

BOURDON TUBE
Bleeder tipped

RANGES
Gauge, compound, vacuum & absolute
0-15-0/100,000 psi

Refer to page no. 55

ASHCROFT®

Quick Guide
Process Gauges

1279 DURAGAUGE® PRESSURE GAUGE

ACCURACY
ASME B 40.1 Grade 2A (±0.5% of span)

DIAL SIZE
4½″

CASE MATERIAL
Phenolic

WETTED MATERIAL
316 stainless steel, bronze/brass, Monel

SENSING ELEMENT
Bourdon tube

CONNECTION
½ NPT (standard) lower or back
¼ NPT (optional)

RANGES
Vacuum, 15 to 30,000 psi, compound

Refer to page no. 72

Usage requiring ½% full scale accuracy in chemical, petrochemical, refinery, oil production, other process, power and`general industry.

1377 DURAGAUGE® PRESSURE GAUGE

ACCURACY
ASME B 40.1 Grade 2A (±0.5% of span)

DIAL SIZE
4½″, 6″, 8½″

CASE MATERIAL
Phenolic, aluminum, polypropylene

WETTED MATERIAL
316 stainless steel, bronze/brass, Monel

SENSING ELEMENT
Bourdon tube

CONNECTION
½ NPT (standard) lower or back
¼ NPT (optional)

RANGES
Vacuum, 15 to 30,000 psi, compound

Refer to page nos. 73 and 77

Usage requiring ½% full scale accuracy in chemical, petrochemical, refinery, oil production, other process, power and`general industry.

1379 DURAGAUGE® PRESSURE GAUGE

ACCURACY
ASME B 40.1 Grade 2A (±0.5% of span)

DIAL SIZE
4½″, 6″, 8½″

CASE MATERIAL
Phenolic, aluminum, polypropylene

WETTED MATERIAL
316 stainless steel, bronze/brass, Monel, Inconel

SENSING ELEMENT
Bourdon tube

CONNECTION
½ NPT (standard) lower or back
¼ NPT (optional)
¼″ HP connection over 30,000 psi

RANGES
Vacuum, 15 to 100,000 psi, compound

Refer to page no. 74

Usage requiring ½% full scale accuracy in chemical, petrochemical, refinery, oil production, other process, power and`general industry.

2462 DURAGAUGE® PRESSURE GAUGE

ACCURACY
ASME B 40.1 Grade 2A (±0.5% of span)

DIAL SIZE
6″

CASE MATERIAL
Polypropylene

WETTED MATERIAL
316 stainless steel, bronze/brass, steel, Monel

SENSING ELEMENT
Bourdon tube

CONNECTION
½ NPT (standard) lower or back
¼ NPT (optional)

RANGES
Vacuum, 15 to 30,000 psi, compound

Refer to page nos. 75 and 77

Usage requiring ½% full scale accuracy in chemical, petrochemical, refinery, oil production, other process, power and`general industry.

1259 PROCESS PRESSURE GAUGE	1288 DURADRIVE® PRESSURE GAUGE	2279 DURATRAN® PRESSURE TRANSMITTER	
			
ACCURACY ASME B 40.1 Grade 2A (±0.5% of span)	**ACCURACY** ASME B 40.1 Grade 2A (±0.5% of span)	**ACCURACY** ±0.5%	
DIAL SIZE 4½˝	**DIAL SIZE** 4½˝	**DIAL SIZE** 4½˝ analog	
CASE MATERIAL Polypropylene	**CASE MATERIAL** Phenolic	**CASE MATERIAL** Phenolic	
WETTED MATERIAL 316 stainless steel, Monel	**WETTED MATERIAL** 316 stainless steel, Inconel	**WETTED MATERIAL** 316 stainless steel, Monel	
SENSING ELEMENT Bourdon tube	**SENSING ELEMENT** Helical coil	**SENSING ELEMENT** Bourdon tube	
CONNECTION ½ NPT (standard) lower ¼ NPT (optional)	**CONNECTION** ½ NPT (standard) lower ¼ NPT (optional) lower	**CONNECTION – NPT** ½ NPT (standard) lower	
RANGES Vacuum, 15 to 20,000 psi, compound	**RANGES** Vacuum, 45 to10,000 psi	**RANGES** Vacuum and compound, 12 to 20,000 psi	
		ELECTRONIC OUTPUT • ±.5% accuracy • 4-20mA • FM Class I, Div. 2 • Zero/span adjust	
Refer to page no. 76	Refer to page no. 78	Refer to page no. 184	
Usage requiring ½% full scale accuracy in chemical, petrochemical, refinery, oil production, other process, power and general industry.	Superior performance on severe pulsation and vibration applications.	Two instruments in one! Provides local indication and 4-20mA signal for many industrial applications.	

ASHCROFT®

Quick Guide Stainless Steel Case & Industrial Gauges

1008S 40 & 50 mm PRESSURE GAUGE

ACCURACY
ASME B 40.1 Grade B (±3-2-3% of span)

DIAL SIZE
40mm, 50mm

CASE MATERIAL
Stainless steel

WETTED MATERIAL
316 stainless steel

SENSING ELEMENT
Bourdon tube

CONNECTION
1/8 NPT lower or back
1/4 NPT lower or back

RANGES
Vac. to 15,000 psi

Refer to page no. 82

Applications include industrial compressors, firefighting equipment, measurement/ control, metal working and hydraulic equipment. Especially suited for pneumatic controllers and transmitters.

1008S 63 & 100mm PRESSURE GAUGE

ACCURACY
ASME B 40.1 Grade B (±3-2-3% of span)

DIAL SIZE
63mm, 100mm

CASE MATERIAL
Stainless steel

WETTED MATERIAL
316 stainless steel

SENSING ELEMENT
Bourdon tube

CONNECTION
1/8 NPT lower or back
1/4 NPT lower or back
1/2 NPT lower (100mm)
JIS, DIN, BSP

RANGES
Vac. to 15,000 psi

Refer to page no. 83

Applications include industrial compressors, firefighting equipment, measurement/ control, metal working and hydraulic equipment.

1009 2½″ & 3½″ DURALIFE® PRESSURE GAUGE

ACCURACY
ASME B 40.1 Grade 1A (±1% of span)

DIAL SIZE
2½″, 3½″

CASE MATERIAL
Stainless steel

TUBE MATERIAL
Stainless steel

SENSING ELEMENT
Bourdon tube

CONNECTION
1/8 NPT lower or back
1/4 NPT lower or back
1/2 NPT lower (3½″)
JIS, DIN, BSP

RANGES
Vac. to 15,000 psi

Refer to page no. 84

For use on fluid power equipment in oil and gas production, construction, mining, machine tools, logging, pulp and paper, general industrial applications.

X1009 2½″ & 3½″ XMITR™ TRANSMITTER GAUGE

ACCURACY
Electrical output is 1% BFSL including non-linearity, hysteresis and non-repeatability. Gauge is ASME B40.1 Grade 1A 1%

DIAL SIZE
2½″, 3½″

CASE MATERIAL/INGRESS PROTECTION
Stainless steel
IP50 (std.), IP65(XJL)

WETTED MATERIAL
316L stainless steel

SENSING ELEMENT
Bourdon tube with patented transducer technology

CONNECTION
1/8 and 1/4 NPT, G 1/4 lower

RANGES
Compound to 15,000 psi

Refer to page no. 85

2 Instruments in 1. Breakthrough functionality and value. Stainless steel case, 4-20mA and voltage outputs, cable or Hirschmann conn. CE heavy industrial.

ASHCROFT®

Quick Guide Stainless Steel Case & Industrial Gauges

1009 4½″ & 6″ STAINLESS STEEL CASE

ACCURACY
ASME B 40.1 Grade 1A (±1% of span)

DIAL SIZE
4½″, 6″

CASE MATERIAL
Stainless Steel

TUBE MATERIAL
Bronze, 316 stainless steel, Monel

SENSING ELEMENT
Bourdon tube

CONNECTION
¼ NPT lower or back
½ NPT lower or back

RANGES
Vac. to 30,000 psi

Refer to page no. 87

Stainless steel case Type 1009 applications include boilers, compressors, water blasting equipment, pharmaceutical and food processing equipment.

1109 4½″ GENERAL SERVICE GAUGE

ACCURACY
ASME B 40.1 Grade 1A (±1% of span)

DIAL SIZE
4½″

CASE MATERIAL
Stainless Steel

TUBE MATERIAL
SD – 316 stainless steel
WD – Inconel

SENSING ELEMENT
Bourdon tube

CONNECTION
SD – ½ NPT lower, ¼ NPT lower (optional)
WD – ¼ NPT lower high pressure

RANGES
SD – Vac. to 1500 psi / 2000-20,000 psi
WD – 50,000-100,000 psi

Refer to page no. 88

Stainless steel case Type 1109 applications include water jet or water blasting equipment, offshore platform, etc.

1009, 1010, 1017, 1220 HYDRAULIC GAUGES

ACCURACY
ASME B 40.1 Grade 1A (±1% of span)

DIAL SIZE
1009 – 4½″, 6″
1010 – 4½″, 6″, 8½″, 12″
1017 – 4½″, 6″
1220 – 4½″, 6″, 8½″

CASE MATERIAL
Stainless steel, aluminum, phenolic

TUBE MATERIAL
Bronze, 316 stainless steel, Monel

SENSING ELEMENT
Bourdon tube

CONNECTION
¼ NPT lower or back
½ NPT lower or back

RANGES
Vac. to 30,000 psi

Refer to page no. 89

Uniquely designed for rigorous hydraulic services.

1009, 1010, 1017, 1220 RECEIVER GAUGES

ACCURACY
ASME B 40.1 Grade 1A (±1% of span)

DIAL SIZE
1009 – 4½″, 6″
1010 – 4½″, 6″, 8½″, 12″
1017 – 4½″, 6″
1220 – 4½″, 6″, 8½″

CASE MATERIAL
Stainless steel, aluminum, phenolic

TUBE MATERIAL
Bronze, 316 stainless steel, Monel

SENSING ELEMENT
Bourdon tube

CONNECTION
¼ NPT lower or back
½ NPT lower or back

RANGES
3/15 and 3/27 psi

Refer to page no. 90

For monitoring pneumatic systems requiring percentage or square root readings.

ASHCROFT®

Quick Guide Stainless Steel Case & Industrial Gauges

1009, 1010, 1017, 1220 REFRIGERATION GAUGE

ACCURACY
ASME B 40.1 Grade 1A (±1% of span)

DIAL SIZE
1009 – 4½,″ 6″
1010 – 4½,″ 6,″ 8½,″ 12″
1017 – 4½,″ 6″
1220 – 4½,″ 6,″ 8½″

CASE MATERIAL
Stainless steel, aluminum, phenolic

TUBE MATERIAL
Bronze, stainless steel

SENSING ELEMENT
Bourdon tube

CONNECTION[1]
¼ NPT lower or back
½ NPT lower or back

RANGES
30 in.Hg Vac/150 psi, 30 in.Hg Vac/300 psi

[1] 1017 back connect only

Refer to page no. 91

For use on refrigeration equipment utilizing ammonia, freon or other refrigerants.

1010 4½,″ 6,″ 8½,″ 12″ GENERAL SERVICE GAUGE

ACCURACY
ASME B 40.1 Grade 1A (±1% of span)

DIAL SIZE
4½,″ 6,″ 8½,″ 12″

CASE MATERIAL
Stainless steel, aluminum, phenolic

TUBE MATERIAL
Bronze, stainless steel, Monel

SENSING ELEMENT
Bourdon tube

CONNECTION
¼ NPT lower or back
½ NPT lower or back

RANGES
Vac. to 30,000 psi

Refer to page no. 92

General industrial applications requiring larger dials. Applications include oil monitoring, repair and compressors, etc.

1017 4½,″ 6″ GENERAL SERVICE GAUGE

ACCURACY
ASME B 40.1 Grade 1A (±1% of span)

DIAL SIZE
4½,″ 6″

CASE MATERIAL
Stainless steel, aluminum, phenolic

TUBE MATERIAL
Bronze, stainless steel, Monel

SENSING ELEMENT
Bourdon tube

CONNECTION
¼ NPT back
½ NPT back

RANGES
Vac. to 30,000 psi

Refer to page no. 93

General industrial applications, large dials for easier readings. used on pumps, air or oil monitoring, etc.

1220 4½,″ 6,″ 8½″ GENERAL SERVICE GAUGE

ACCURACY
ASME B 40.1 Grade 1A (±1% of span)

DIAL SIZE
4½,″ 6,″ 8½″

CASE MATERIAL
Stainless steel, aluminum, phenolic

TUBE MATERIAL
Bronze, stainless steel, Monel

SENSING ELEMENT
Bourdon tube

CONNECTION
¼ NPT lower or back
½ NPT lower or back

RANGES
Vac. to 30,000 psi

Refer to page no. 94

General industrial applications, large dials for easier readings. used on pumps, air or oil monitoring, etc.

ASHCROFT®

Quick Guide Stainless Steel Case & Industrial Gauges

1020S 4½″ XMAS TREE GAUGE

ACCURACY
ASME B 40.1 Grade 1A (±1% of span)

DIAL SIZE
4½″

CASE MATERIAL
Stainless steel

TUBE MATERIAL
316 stainless steel

SENSING ELEMENT
Bourdon tube

CONNECTION
Lower

RANGES
1000/20,000 psi – ½ NPT, ¼ NPT

Refer to page no. 95

Uniquely designed to meet rugged oil field applications.

1038, 1339 3½,″ 4½,″ DUPLEX GAUGE

ACCURACY
ASME B 40.1 Grade A (±2-1-2% of span)

DIAL SIZE
3½,″ 4½″

CASE MATERIAL
Aluminum, cast iron

TUBE MATERIAL
Bronze

SENSING ELEMENT
Bourdon tube

CONNECTION
Lower/back

RANGES
1038A – 3½,″ 4½″ – ¼ NPT 30/1000 psi
1339A – 4½″ – ¼ NPT 30/1000 psi
Back conn. only

Refer to page no. 96

Uniquely designed to indicate two related pressures on the same dial.

1125, 1125A 4½,″ DIFFERENTIAL GAUGE

ACCURACY
ASME B 40.1 Grade A (±2-1-2% of span)

DIAL SIZE
4½,″ 6″

CASE MATERIAL
Aluminum

TUBE MATERIAL
Bronze

SENSING ELEMENT
Bourdon tube

CONNECTION
Lower/back

RANGES
1125 – 4½,″ 6″[1] – ¼ NPT 20/1000 psi
1125A – 4½,″ 6″[1] – ¼ NPT 10/0/10 psi-500/0/500 psi

[1] Lower connect only

Refer to page no. 97

Application include fills, monitors, flow, leak and level measurements.

1127, 1128 4½,″ 6″ DIFFERENTIAL GAUGES

ACCURACY
ASME B 40.1 Grade A (±2-1-2% of span)

DIAL SIZE
4½,″ 6″

CASE MATERIAL
Aluminum

TUBE MATERIAL
316 stainless steel

SENSING ELEMENT
Bourdon tube

CONNECTION
Lower

RANGES
1127 – 4½,″ 6″ – ¼ NPT 10/1000 psi
1128 – 4½,″ 6″ – ¼ NPT 10/0/00 psi-400/0/400 psi

Refer to page no. 98

Application include fills, monitors, flow, leak and level measurements.

ASHCROFT®

Quick Guide Stainless Steel Case & Industrial Gauges

1130 2˝, 2½˝, 3½˝, 4, 4½˝, 6 DIFFERENTIAL GAUGE

EXPLOSION PROOF SWITCHES AVAILABLE

ACCURACY
±2% ascending

DIAL SIZE
2˝, 2½˝, 3½˝, 4˝, 4½˝, 6˝

CASE MATERIAL
Stainless steel

BODY MATERIAL
Aluminum, brass, stainless steel

SENSING ELEMENT
Piston

CONNECTION
In-line, lower, back

RANGES
0-5 psid to 150 psid

Refer to page no. 99

Applications include filter monitoring, flow, leak and level measurement. High pressure, high differential with migration.

1131 2˝, 2½˝, 3½˝, 4, 4½˝, 6 DIFFERENTIAL GAUGE

EXPLOSION PROOF SWITCHES AVAILABLE

ACCURACY
±2% ascending

DIAL SIZE
2½˝, 3½˝, 4˝, 4½˝, 6˝

CASE MATERIAL
Stainless steel

BODY MATERIAL
Aluminum, brass, stainless steel

SENSING ELEMENT
Rolling diaphragm

CONNECTION
In-line, lower, back

RANGES
0-5 psid to 100 psid

Refer to page no. 100

Applications include filter monitoring, flow, leak and level measurement. High pressure, high differential, no migration.

1132 2½˝, 3½˝, 4, 4½˝, 6 DIFFERENTIAL GAUGE

EXPLOSION PROOF SWITCHES AVAILABLE

ACCURACY
±2% ascending

DIAL SIZE
2½˝, 3½˝, 4˝, 4½˝, 6˝

CASE MATERIAL
Stainless steel

BODY MATERIAL
Aluminum, brass, stainless steel

SENSING ELEMENT
Convoluted diaphragm

CONNECTION
In-line, lower, back

RANGES
0-1 psid to 60 psid
(including inches of water ranges)

Refer to page no. 101

Applications include filter monitoring, flow, leak and level measurement. High pressure, high differential, no migration.

1133 3½˝, 4, 4½˝, 6 DIFFERENTIAL GAUGES

ACCURACY
±2% ascending

DIAL SIZE
3½˝, 4˝, 4½˝, 6˝

CASE MATERIAL
Stainless steel

BODY MATERIAL
Aluminum, stainless steel

SENSING ELEMENT
Convoluted diaphragm

CONNECTION
In-line, lower, back

RANGES
0-1 IWD to 25 IWD

Refer to page no. 102

Applications include filter monitoring, flow, leak and level measurement. High pressure, high differential, no migration.

ASHCROFT®

Quick Guide Stainless Steel Case & Industrial Gauges

1134 4½˝ DIFFERENTIAL GAUGE	5503 100mm &160mm DIFFERENTIAL GAUGE	5509 100mm &160mm DIFFERENTIAL GAUGE	1150H 4½˝ REID VAPOR GAUGE
			
ACCURACY ±2% ascending	**ACCURACY** ±1.6% of span	**ACCURACY** ±2.5% of span	**ACCURACY** ASME B 40.1 Grade 2A (±0.5% of span)
DIAL SIZE 4½˝	**DIAL SIZE** 100mm, 160mm	**DIAL SIZE** 100mm, 160mm	**DIAL SIZE** 4½˝
CASE MATERIAL Stainless steel	**CASE MATERIAL** Stainless steel	**CASE MATERIAL** Stainless steel	**CASE MATERIAL** Aluminum
BODY MATERIAL Glass filled nylon	**SENSING MATERIAL** 316 stainless steel	**SENSING MATERIAL** 316 stainless steel	**TUBE MATERIAL** 316 stainless steel
SENSING ELEMENT Convoluted diaphragm	**SENSING ELEMENT** Diaphragm	**SENSING ELEMENT** Diaphragm	**SENSING ELEMENT** Bourdon tube
CONNECTION Dual (In-line or back)	**CONNECTION** Lower	**CONNECTION** Lower	**CONNECTION** ¼ NPT lower
RANGES 0-0.6 IWD to 60 IWD	**RANGES** 0-16 IWD to 400 psid	**RANGES** 0-10 IWD to 400 psid	**RANGES** 15/600 psi
Refer to page no. 103	Refer to page no. 104	Refer to page no. 105	Refer to page no. 106
Applications include fume hoods, air handlers, filter monitoring, flow and level. Inches of water with no migration.	Applications include filter monitoring, flow, leak and level measurement requiring high recovery, all stainless steel.	Applications include filter monitoring, flow, leak and level measurement requiring high recovery, all stainless steel.	Uniquely designed for testing petroleum products with the Reid vapor process.

ASHCROFT®

Quick Guide Stainless Steel Case & Industrial Gauges

1122, 2½″ GAUGE

ACCURACY
ASME B 40.1 Grade A (±2-1-2% of span)

DIAL SIZE
2½″

CASE MATERIAL
Stainless steel

TUBE MATERIAL
Stainless steel

SENSING ELEMENT
Bourdon tube

CONNECTION
¼ NPT lower

RANGES
15/1000 psi

Refer to page no. 106

Applications include compressors, pumps and turbines.

1187, 1188, 1189 LP BELLOWS GAUGES

ACCURACY
ASME B 40.1 Grade A (±2-1-2% of span)

DIAL SIZE
1187[1] – 4½″
1188 – 4½″
1189[2] – 4½,″ 6″

CASE MATERIAL
Aluminum, phenolic

TUBE MATERIAL
Brass, 316 stainless steel, Monel

SENSING ELEMENT
Bellows

CONNECTION
1187 – ¼, ½ NPT back
1188 – ¼, ½ NPT lower or back
1189 – ¼, ½ NPT lower

RANGES
10 in.H_2O to 10 psi including vacuum and compound

[1] Back connect only
[2] Lower connect only

Refer to page no. 107

Low pressure monitoring for general indignant applications on air, liquids or gases.

1490, 2½,″ 3½″ LP DIAPHRAGM GAUGE

ACCURACY
ASME B 40.1 Grade A (±2-1-2% of span)

DIAL SIZE
2½,″ 3½″

CASE MATERIAL
Polysulfone

WETTED MATERIAL
Copper, Brass, Polysulfone, RTV, Silicone

SENSING ELEMENT
Diaphragm

CONNECTION
⅛ NPT lower or back
¼ NPT lower or back
Hose barb

RANGES
0/10 in.H_2O to 0/15 psi including vacuum and compound

Refer to page no. 108

Low pressure monitoring of gases including ovens, burners or material applications.

1495, 2½,″ 3½″ LP RECEIVER GAUGE

ACCURACY
ASME B 40.1 Grade A (±2-1-2% of span)

DIAL SIZE
2½,″ 3½″

CASE MATERIAL
Polysulfone

WETTED MATERIAL
Copper, Brass, Polysulfone, RTV, Silicone

SENSING ELEMENT
Diaphragm

CONNECTION
⅛ NPT lower or back
¼ NPT lower or back
Hose barb

RANGES
0-100%, 0-10 sq rt
0/10 sq rt /0-100 linear

Refer to page no. 109

Low pressure monitoring of pneumatic or air handling systems requiring printout or square root readings.

ASHCROFT®

Quick Guide
Stainless Steel Case & Industrial Gauges

TYPES 2074, 2174, 2274 INDUSTRIAL DIGITAL GAUGE

ACCURACY:
±0.25% of span

CASE SIZE
3,″ 4½″

CASE MATERIAL
(3″) 300 series stainless steel
(4½″) fiberglass reinforced thermoplastic
(4½″) black painted aluminum

WETTED MATERIALS
17-4 PH stainless steel sensor;
316 stainless steel socket

SOCKET SIZE
¼ NPT, ½ NPT (4½″ case only)
(others on application)

CONNECTION
Lower (6 o'clock), 3, 9 and 12 o'clock

RANGES
Vac.,15 to 20,000 psi including compound

POWER SOURCE
Battery
(3″) Two AA alkaline batteries
(4½″) Two C alkaline batteries
Loop powered 4-20mA
Line powered, (12-36 Vdc, 1 amp)

BATTERY LIFE
(3″) >1000 hrs.
(4½″) >3600 hrs.

OPERATING TEMPERATURE
14/140°F (–10/60°C)

STORAGE TEMPERATURE
–4/158°F (–20/70°C)

AGENCY APPROVALS
CE, EN 50082-1 (1997), FM, CSA, CENELEC-ATEX 100

Refer to page no. 50

Available with optional (1) or (2) SPDT switches and 4-20mA output, this gauge is ideal for many industrial applications. This product eliminates the need for unnecessary instrument T's, when switches and/or 40-20mA output is a requirement.

ASHCROFT®

Quick Guide
Sanitary Gauges

X1032 XMITR™ SANITARY TRANSMITTER GAUGE

ACCURACY
Electrical output is 1% BFSL including non-linearity, hysteresis and non-repeatability. Gauge is ASME B40.1. 1.5 F.S. 100 psi and above, 2% below 100 psi

DIAL SIZE
2½″, 3½″

CASE MATERIAL/INGRESS PROTECTION
Stainless steel, IP50 (std.). Option IP65 (XLJ)

WETTED PARTS
Electro polished 12 to 20 RA surface finish 316L stainless steel

SENSING ELEMENT
Bourdon tube with patented transducer technology

MOUNTING CONNECTION
Lower (1½″ and 2″ Tri-Clover)

RANGES
Compound to 1000 psi

Clean-in-place	(CIP)
Steam-in-place	(SIP)
3A sanitary standard	(3A)

Refer to page no. 113

Sanitary pharmaceutical, biotech or food applications requiring Tri-Clover type fittings and highly polished stainless steel surfaces.

TYPE 1032 FRACTIONAL SANITARY GAUGE

ACCURACY
±3% upscale accuracy; up to ±5% downscale accuracy

DIAL SIZE
2″

CASE & RING MATERIAL
300 series stainless steel

TUBE & SOCKET MATERIAL
316 stainless steel

WETTED PARTS
Electropolished 12 to 20RA surface finish (stainless steel)

MOUNTING CONNECTION
Lower (¾″ Tri-Clover)

RANGES
30# thru 600#, including compound

Refer to page no. 116

Sanitary pharmaceutical, biotech or food applications requiring a compact ¾ Tri-Clover fitting with highly polished stainless steel surfaces.

TYPE 1032 SANITARY GAUGE

ACCURACY
2½″, 3½″, 4½″ – ±1.5% F.S. for pressure ranges 100 psi and above. ±2.0% F.S. for vacuum, compound and ranges below 100 psi

DIAL SIZE
2½″, 3½″, 4½″

CASE & RING MATERIAL
300 series stainless steel

TUBE & SOCKET MATERIAL
316 stainless steel

WETTED PARTS
Electropolished 12 to 20 RA surface finish (stainless steel)

MOUNTING CONNECTION
Lower, back (1½″ or 2″ Tri-Clover)

RANGES
15# thru 1000#, including compound and vacuum

Refer to page no. 114

Sanitary pharmaceutical, biotech or food applications requiring Tri-Clover type fittings and highly polished stainless steel surfaces.

TYPE 1036 SANITARY GAUGE with TYPE 1037 SANITARY INSTRUMENT FITTING

Clamp not provided. User installed.

ACCURACY
±1.5% F.S. for pressure ranges 100 psi and above. ±2.0% F.S. for vacuum, compound and ranges below 100 psi

DIAL SIZE
3½″

CASE & RING MATERIAL
300 series stainless steel

TUBE & SOCKET MATERIAL
316 stainless steel

WETTED PARTS
Electropolished 12 to 20 RA surface finish (stainless steel)

MOUNTING CONNECTION
Lower, back (1½″ Tri-Clover)

RANGES
15# thru 1000#, including compound and vacuum

TYPE 1037 INSTRUMENT FITTING

CONSTRUCTION
316 L stainless steel

WETTED PARTS
Electropolished 12 to 20RA surface finish

MOUNTING CONNECTION
(1½″ thru 2″ Tri-Clover)

HEAT NUMBER
Stamped on fitting

Refer to page no. 115

Sanitary pharmaceutical, biotech or food applications requiring Tri-Clover type fittings with zero deadleg and highly polished stainless steel surfaces.

ASHCROFT®

Quick Guide
Commercial Gauges

TYPE D1005PS GENERAL PURPOSE DIGITAL GAUGE

*Protective Boot Optional

ACCURACY
±0.5% of span

CASE SIZE
2½″

CASE MATERIAL
Noryl®

WETTED MATERIALS
17-4 PH stainless steel sensor;
316 stainless steel socket

SOCKET SIZE
¼ NPT

CONNECTION
Lower (6 o'clock), 3, 9 and 12 o'clock

RANGES
Vac. thru 19,999, including compound

POWER SOURCE
Two AAA alkaline batteries

BATTERY LIFE
1000 hrs.

OPERATING TEMPERATURE
14/140°F (–10/60°C)

STORAGE TEMPERATURE
–4/158°F (–20/70°C)

AGENCY APPROVALS
CE, EN 61326 (1998)
CE, EN 61326 Annex A (heavy industrial)

Refer to page no. 125

This product is an excellent choice for a wide variety of pressure measurement applications. When compared to mechanical gauges the D1005PS offers overall enhanced value.

TYPE X1005, TYPE X2001 XMITR™ TRANSMITTER GAUGE

LOOK FOR THESE AGENCY MARKS ON OUR PRODUCTS

ACCURACY
Electrical output is 1% BFSL including non-linearity, hysteresis and non-repeatability. Gauge is ASME B40.1 Grade B (±3-2-3% of span)

DIAL SIZE
Type X1005 2″
Type X2001 2½″, 3½″

CASE MATERIAL/INGRESS PROTECTION
Stainless steel
Type 1005, IP54
Type 2001, IP43 standard, IP54 (XLJ)

WETTED MATERIAL
Bronze/brass

SENSING ELEMENT
Bourdon tube with patented transducer technology

CONNECTION
⅛ and ¼ NPT, G ¼ lower

RANGES
Vac. to 5000 psi

Refer to page no. 121

2 Instruments in 1. Breakthrough functionality and value. Stainess steel case, 4-20mA and voltage outputs, cable or Hirschmann conn. CE heavy industrial.

TYPE 1005P/1005/1005S

ACCURACY
ASME B 40.1 Grade B (±3-2-3% of span)

DIAL SIZE
1½″, 2″, 2½″, 3½″
(4½″ available with steel case/ring and glass window, Type 1000)

CASE MATERIAL
1005P – ABS, black
1005 – Black painted steel
1005S – Stainless steel (1½″ & 2″ only)
Optional, color other than black, vent hole

WETTED MATERIAL
Bronze/brass. *Optional sockets, nickel plated, Teflon taped, top or side connections, throttle plugs*

SENSING ELEMENT
Bourdon tube; Ashcroft patented Power*Flex*™ movement

CONNECTION
⅛ and ¼ NPT back and lower. (1½″ not available in ¼ NPT back; 2½″ and 3½″ 1005P available in ⅛ and ¼NPT lower only; 4½″ Type 1000 available in ¼ NPT lower only)

RANGES
Vac.-6000 psi and compound

Refer to page no. 122-124

Applications include compressors, filter regulators, medical equipment, automotive diagnostic, beverage dispensing, industrial machinery and a variety of other applications.

TYPE 1001T PANEL GAUGE

ACCURACY
ASME B 40.1 Grade B (±3-2-3% of span)

DIAL SIZE
1½″, 2″, 2½″, 3½″

CASE MATERIAL
Black painted steel

WETTED MATERIAL
Bronze/brass.

SENSING ELEMENT
Bourdon tube; Ashcroft patented Power*Flex*™ movement

CONNECTION
⅛ NPT back, ¼ NPT back

RANGES
Vac.-6000 psi and compound

Refer to page no. 126

Applications include instrument panels, air-conditioning equipment, air and gas compressors, machine tools and a variety of other applications.

ASHCROFT®

Quick Guide
Commercial Gauges

TYPE 1008A/AL GENERAL SERVICE GAUGE

ACCURACY
ASME B 40.1 Grade B (±3-2-3% of span)

DIAL SIZE
63mm (2½˝), 100mm (4˝)

CASE & RING MATERIAL
304 stainless steel, dry, liquid filled or field fillable

WETTED MATERIAL
Bronze/brass

SENSING ELEMENT
Bourdon tube; Ashcroft patented Power*Flex*™ movement

CONNECTION
¼ NPT lower and back
Optional, metric and SAE connection

RANGES
Vac.-15,000 psi and compound

Refer to page no. 130

Applications include hydraulic systems, machine tools, pressure washers/sprayers and a variety of other applications.

TYPE 3005/3005P HYDRAULIC GAUGE

ACCURACY
ASME B 40.1 Grade B (±3-2-3% of span)

DIAL SIZE
63mm (2½˝)

CASE MATERIAL
3005 – 304 stainless steel, dry, liquid filled or field fillable
3005P – Black ABS dry or glycerine filled

WETTED MATERIAL
Bronze/brass

SENSING ELEMENT
Bourdon tube; Ashcroft patented Power*Flex*™ movement

CONNECTION
3005 – ¼ NPT lower and back
3005P – ¼ NPT lower
Optional, metric and SAE connection

RANGES
Vac.-15,000 psi and compound

Refer to page no. 131

Applications include hydraulic systems, machine tools, pressure washers/sprayers, compressors, irrigation equiptment and a variety of other applications.

TYPE 1005M, XRG AGRICULTURAL AMMONIA

ACCURACY
ASME B 40.1 Grade B (±3-2-3% of span)

DIAL SIZE
2½˝

CASE MATERIAL
Black painted steel
Optional, stainless clad aluminum (Type 1005SM)

WETTED MATERIAL
316 stainless steel/steel

SENSING ELEMENT
Bourdon tube; Ashcroft patented Power*Flex*™ movement

CONNECTION
¼ NPT lower
Optional, 0.020"orifice stainless steel throttle plug

RANGES
0/60 psi, 0/150 psi, 0/400 psi

Refer to page no. 128

This product was designed to withstand rugged agricultural applications. Features include stainless tube and socket, in addition to glass window, necessary for anhydrous ammonia applications.

TYPE 1005M, XR5 REFRIGERANT AMMONIA

ACCURACY
ASME B 40.1 Grade B (±3-2-3% of span)

DIAL SIZE
2½˝,3½˝

CASE MATERIAL
Black painted steel
Optional, ABS (Type 1005PM); stainless clad aluminum (Type 1005SM)

WETTED MATERIAL
316 stainless steel/steel

SENSING ELEMENT
Bourdon tube; Ashcroft patented Power*Flex*™ movement

CONNECTION
¼ NPT lower

RANGES
30 in.Hg Vac/0/150 psi,
30 in.Hg Vac/0/300 psi
with equivalent ammonia temperature scales

Refer to page no. 129

This product was designed to meet the requirements of refrigerant ammonia applications. Features include enhanced leak integrity plus dual scale (psi/temp) dial necessary for these applications.

ASHCROFT®

Quick Guide Commercial Gauges

TYPE 1005P, XUL SPRINKLER SERVICE GAUGE

LOOK FOR THESE AGENCY MARKS ON OUR PRODUCTS

UL LISTED FM

ACCURACY
ASME B 40.1 Grade B (±3-2-3% of span)

DIAL SIZE
3½″

CASE MATERIAL
ABS/polycarbonate blend

WETTED MATERIAL
Bronze/brass

SENSING ELEMENT
Bourdon tube; Ashcroft patented Power*Flex*™ movement

CONNECTION
¼ NPT lower

RANGES
0-300 psi (water), 0-80 psi retard to 250 psi (air)

Refer to page no. 127

These gauges are UL-393 listed, UL of Canada listed and FM approved for fire protection sprinkler service for either water or air systems.

TYPE 1007P, XOR REFRIGERATION MANIFOLD

ACCURACY
±1% at zero, ±2% three fourths of scale, ±5% last fourth of scale

DIAL SIZE
2½″

CASE MATERIAL
ABS, red (high pressure)
ABS, blue (low pressure)
Optional, black, ABS

WETTED MATERIAL
Bronze/brass

SENSING ELEMENT
Bourdon tube; Ashcroft patented Power*Flex*™ movement with Flutter Guard™

CONNECTION
⅛ NPT lower

RANGES
Vac/0/120 psi retard to 250 psi, 0/500 psi
Vac/0/500 psi retard to 800 psi, 0/800 psi
Optional, alternate refrigerant ranges

Note: for panel mount refrigeration gauges (recovery, recycling) see Type 1001T options

Refer to page no. 133

Typical applications include checking or servicing refrigerant levels in automotive, residential or industrial air-conditioning units; refrigerant recovery and reclamation units; refrigerant transport systems and large scale air-conditioning and chilling equipment.

TYPE 2071 CONTRACTOR GAUGE

ACCURACY
ASME B 40.1 Grade A (±2-1-2% of span)

DIAL SIZE
4½″

CASE & RING MATERIAL
Aluminum with back-flange case, painted black; chrome plated ring

WETTED MATERIAL Bronze/brass soldered, siphon required for steam service

SENSING ELEMENT
Bourdon tube; Ashcroft patented Power*Flex*™ movement

CONNECTION
¼ NPT lower
Optional, throttle plugs

RANGES
Vac-600 psi and compound

Refer to page no. 132

These gauges are designed to meet the needs of heating, ventilating, plumbing and air-conditioning contractors.

TYPE 40DDG/50DDG DIRECT DRIVE GAUGE

ACCURACY
ASME B 40.1 Grade B (±3-2-3% of span)

DIAL SIZE
40mm (1½″) or 50mm (2″)

CASE MATERIAL
ABS polycarbonate blend, black

WETTED MATERIAL
Beryllium copper coil, silicone dampened
Integral ABS polycarbonate blend socket
Optional, ⅛ NPT or ¼ NPT brass, throttle plug

SENSING ELEMENT
Spiral wound Bourdon tube

CONNECTION
40mm – ⅛ NPT back
50mm – ⅛ NPT or ¼ NPT back

RANGES
0-60 psi (180° arc);
0-100 psi, 0-160 psi, 0-200 psi, 0-300 psi, 0-400 psi (235° arc)
For optimum gauge life, select a gauge with a full scale pressure range of approximately twice the maximum excursion pressure

Consult factory for high cycle life applications

Refer to page no. 135

Typical applications include filter regulator lubricators, portable compressors, air tanks, industrial machinery and a variety of other applications. Excellent shock resistance.

ASHCROFT®

Quick Guide
Commercial Gauges

TYPE 23DDG MINIGAUGE™ PRESSURE GAUGE

ACCURACY
±5% of span

DIAL SIZE
23mm (0.906˝)

CASE MATERIAL
ABS blend, black

WETTED MATERIAL
Beryllium copper tube/brass socket

SENSING ELEMENT
Spiral wound Bourdon tube

CONNECTION
⅛ NPT back with 15mm (9/16˝) wrench flats.
Optional, throttle plugs, PT ⅛˝ (JIS) and R ⅛˝ (BSPT) threads

RANGES
60 psi-100 psi (180° dial arc)
160 psi-300 psi (235° dial arc)

Refer to page no. 134

These gauges are perfect for a multitude of applications where a 1½˝ conventional size gauge is too large, such as mini-FRL's, pneumatic stack valves, air compressors and accessories.

TYPE 12DDG/15DDG DIRECT DRIVE GAUGE

ACCURACY
Standard: ±2% at setpoint
(setpoint is normally 50% of range)
UL listed: ±3.5% of span of middle three-fifths of scale

DIAL SIZE
1¼˝, 1½˝

CASE MATERIAL
Stainless steel, sealed

WETTED MATERIAL
Beryllium copper tube/brass socket

SENSING ELEMENT
Spiral wound Bourdon tube
Optional, silicone dampened tube, silicone-filled tube

CONNECTION
⅛ NPT back, safety plug in 1500 psi-4000 psi ranges. *Optional, ¼ NPT back, throttle plugs*

RANGES
0/60 psi, 0/100 psi, 0/160 psi, 0/200 psi, 0/300 psi, 0/700 psi,
0/1,200 psi, 0/1,500 psi 0/2,000 psi, 0/3,000 psi, 0/4,000 psi

Refer to page no. 136

Applications include pumps, air compressors, portable tire inflators, portable oxygen equipment, self-contained breathing apparatus, portable industrial gas cylinders and a variety of other applications.

TYPE MFX FIRE EXTINGUISHER GAUGE

ACCURACY
Conforms to applicable UL specs*

DIAL SIZE
1¼˝, 1½˝

CASE MATERIAL
Stainless steel, sealed

WETTED MATERIAL
Beryllium copper/brass

SENSING ELEMENT
Spiral wound Bourdon tube
Optional, silicone-filled tube
Spiral tube, beryllium copper

CONNECTION
⅛ NPT back
Optional, special socket configurations

RANGES
Maximum scale pressure from 200 psi to 1200 psi

*UL 299
UL 626
UL 1058
UL 1093

Refer to page no. 137

These products are designed for use on portable fire extinguishers and systems.

ASHCROFT®

Quick Guide
Diaphragm Seals/
Instrument Isolators

Specification Matrix

Ashcroft Diaphragm Seals & Pressure Instrument Isolators

• = AVAILABLE





Process Connection Type			Threaded	Threaded w/Flushing Connection	Raised Face Flange	Raised Face Flange w/Flushing Connection	In-line Threaded
Model No.	Code		100/200/300[1]	101/201/301[1]	102/202/302[1]	103/203/303[1]	104/204/304[1]
Process Connection Size (NPT)	Female	Male					
¼	25	02	•	•			•
½	50	04	•	•	•	•	•
¾	75	06	•	•	•	•	•
1	10	08	•	•	•	•	
1½	15				•	•	
2	20				•	•	
3	30				•	•	
4	40						
6	60						
8	80						
Diaphragm Materials							
316L stainless steel	S		100 & 200	101 & 201	102 & 202	103 & 203	104 & 204
304L stainless steel	C		100 & 200	101 & 201	102 & 202	103 & 203	104 & 204
Monel 400	P		100 & 200	101 & 201	102 & 202	103 & 203	104 & 204
Nickel	N		100 & 200	101 & 201	102 & 202	103 & 203	104 & 204
Carpenter 20	D		100 & 200	101 & 201	102 & 202	103 & 203	104 & 204
Tantalum	U		100 & 200	101 & 201	102 & 202	103 & 203	104 & 204
Hastelloy B	G		100 & 200	101 & 201	102 & 202	103 & 203	104 & 204
Hastelloy C 22	J		100 & 200	101 & 201	102 & 202	103 & 203	104 & 204
Hastelloy C 276	H		100 & 200	101 & 201	102 & 202	103 & 203	104 & 204
Teflon	T		200 & 300	201 & 301	202	203	204 & 304
Viton	Y		200 & 300	201 & 301	202	203	204 & 304
Kalrez	K		200 & 300	201 & 301	302	303	304
Titanium	TI		200	201	202	203	204
Halar Coated Monel	PH		100	101	102	103	104
Bottom Housing Materials							
Steel	B		•	•	•	•	•
304L stainless steel	CL		•	•	•	•	•
316L stainless steel	SL		•	•	•	•	•
Hastelloy B	G		•	•	•	•	•
Hastelloy C 22	J		•	•	•	•	•
Hastelloy C 276	H		•	•	•	•	•
Carpenter 20	D		•	•	•	•	•
Monel 400	M		•	•	•	•	•
Inconel 600	W		•	•	•	•	•
Nickel	N		•	•	•	•	•
PVC	V		(Socket Weld or ¼-½ NPT)		1, 1½		
Tantalum Clad SS	SU				•		
Halar® Coated Monel	SH				•		
Teflon	T				1, 1½, 2		
Kynar	KY		Only¼ or ½ NPT		1, 1½, 2		
Titanium	TI		•	•	•	•	•
Pressure Ratings							
500 psi			Viton or Kalrez diaph. only	Viton or Kalrez diaph. only			Viton or Kalrez diaph. only
2500 psi			Metal & Teflon® diaph.	•			Metal & Teflon® diaph.
5000 psi	HP		100 & 200 metal				
7500 psi							
15000 psi	HP						
Flange Class							
150, 300, 600, 900 or 1500					Kalrez, Teflon, Viton, Kynar 150 only	Kalrez, Teflon, Viton, Kynar 150 only	
Instrument Connection Size							
¼	02T		•	•	•	•	•
½	04T		•	•	•	•	•
Filling Fluid							
Glycerin	CG		•	•	•	•	•
Silicone (direct to 10´ capillary)	CK		•	•	•	•	•
Silicone (over 10´ capillary)	EJ		•	•	•	•	•
Halocarbon	CF		•	•	•	•	•
Syltherm	HA		•	•	•	•	•

Refer to page nos. 148/149/150 160/161/162

[1] Type 300 series not available with metallic dia-

ASHCROFT®

Quick Guide
Diaphragm Seals/
Instrument Isolators

Specification Matrix

Ashcroft Diaphragm Seals &
Pressure Instrument Isolators

• = AVAILABLE





Process Connection Type			Saddle	In-line Flanged	In-line Socket Weld	In-line Butt Weld	Male/Female Threaded Mini (*Flushing Conn.)	
Model No.	Code		105/205	106/206	107/207	108	310/315*	
Process Connection Size (NPT)	**Female**	**Male**					**Female**	**Male**
¼	25	02			•	•	•	•
½	50	04		•	•	•	•	•
¾	75	06		•	•	•		•
1	10	08		•	•	•		•
1½	15			•	•	•		
2	20			•	•	•		
3	30		3″	•				
4	40		4″ and larger					
6	60			•				
8	80			•				
Diaphragm Materials								
316L stainless steel	S		•	•	•	•	•	
304L stainless steel	C		•	•	•	•		
Monel 400	P		•	•	•	•	•	
Nickel	N		•	•	•	•		
Carpenter 20	D		•	•	•	•		
Tantalum	U		•	•	•	•	•	
Hastelloy B	G		•	•	•	•		
Hastelloy C 22	J		•	•	•	•		
Hastelloy C 276	H		•	•	•	•	•	
Teflon	T		205	206	207	208		
Viton	Y		205	206	207	208		
Kalrez	K		205	206	207	208		
Titanium	TI		205	206	207	208		
Halar Coated Monel	PH		105	106	107	108		
Bottom Housing Materials								
Steel	B		•	•	•	•		
304L stainless steel	CL		•	•	•	•		
316L stainless steel	SL		•	•	•	•	•	
Hastelloy B	G		•	•	•	•	•	
Hastelloy C 22	J		•	•	•	•		
Hastelloy C 276	H		•	•	•	•	•	
Carpenter 20	D		•	•	•	•		
Monel 400	M		•	•	•	•	•	
Inconel 600	W		•	•	•	•		
Nickel	N		•	•	•	•		
PVC	V							
Tantalum Clad SS	SU							
Halar® Coated Monel	SH							
Teflon	T							
Kynar	KY							
Titanium	TI		•		•	•		
Pressure Ratings								
500 psi			Viton or Kalrez diaph. only		Viton or Kalrez diaph. only	Viton or Kalrez diaph. only		
2500 psi			Metal & Teflon® diaph.		Metal & Teflon® diaph.			
5000 psi	HP							
7500 psi								
15000 psi	HP							
Flange Class								
150, 300, 600, 900 or 1500				150 & 300				
Instrument Connection Size								
¼	02T		•	•	•	•	•	
½	04T		•	•	•	•	•	
Filling Fluid								
Glycerin	CG		•	•	•	•	•	
Silicone (direct to 10′ capillary)	CK		•	•	•	•	•	
Silicone (over 10′ capillary)	EJ		•	•	•	•	•	
Halocarbon	CF		•	•	•	•	•	
Syltherm	HA		•	•	•	•	•	

Refer to page nos. 148/149/150 — 160/161/162 — 151

ASHCROFT®

Quick Guide
Diaphragm Seals/
Instrument Isolators

Specification Matrix

Ashcroft Diaphragm Seals &
Pressure Instrument Isolators

• = AVAILABLE





Process Connection Type			Female & Male Threaded		Female Threaded (w/Flushing Conn.)	Quick Connect	1˝ Male Flush Mini	Threaded (*Flushing Conn.)
Model No.	Code		311		312	320/321	330	400/401*
Process Connection Size (NPT)	Female	Male	Female	Male				
¼	25	02	•	•	•	•		•
½	50	04	•	•	•	•		•
¾	75	06		•	•			•
1	10	08		•	•		•	•
1½	15					•		
2	20					•		
3	30							
4	40							
6	60							
8	80							
Diaphragm Materials								
316L stainless steel	S		•		•	•	•	•
304L stainless steel	C							
Monel 400	P							•
Nickel	N							
Carpenter 20	D							
Tantalum	U		•		•			•
Hastelloy B	G							•
Hastelloy C 22	J							•
Hastelloy C 276	H		•		•			•
Teflon	T							
Viton	Y							
Kalrez	K							
Titanium	TI							•
Halar Coated Monel	PH							
Bottom Housing Materials								
Steel	B							
304L stainless steel	CL							
316L stainless steel	SL		•		•	•	•	•
Hastelloy B	G							
Hastelloy C 22	J							•
Hastelloy C 276	H		•		•			•
Carpenter 20	D							
Monel 400	M							•
Inconel 600	W							
Nickel	N							
PVC	V							
Tantalum Clad SS	SU							
Halar® Coated Monel	SH							
Teflon	T							
Kynar	KY							
Titanium	TI							
Pressure Ratings								
500 psi								
2500 psi			1000		1000	•		
5000 psi	HP							
7500 psi								4400
15000 psi	HP							9000
Flange Class								
150, 300, 600, 900 or 1500								
Instrument Connection Size								
¼	02T		•		•	•	•	•
½	04T		•		•	2˝ only	•	•
Filling Fluid								
Glycerin	CG		•		•	•	•	•
Silicone (direct to 10˝ capillary)	CK		•		•	•	•	•
Silicone (over 10˝ capillary)	EJ		•		•	•	•	•
Halocarbon	CF		•		•	•	•	•
Syltherm	HA		•		•	•	•	•
	Refer to page nos.		155		155	152	154	153

ASHCROFT®

Quick Guide Diaphragm Seals/ Instrument Isolators

Specification Matrix

Ashcroft Diaphragm Seals & Pressure Instrument Isolators

• = AVAILABLE





Process Connection Type			Raised Face Flange (*Flushing Conn.)	Threaded (*Flushing Conn.)	Low Pressure Flanged (*w/Flushing Conn.)	Low Pressure Threaded (*w/Flushing Conn.)	Isolation Ring	
Model No.	Code		402/403*	500/501*	702/703*	740/741*	80/81/85/86	
Process Connection Size (NPT)	**Female**	**Male**					**Pipe Size**	
¼	25	02				•	1.0″	14.0″
½	50	04	•	•	•	•	1.5″	16.0″
¾	75	06	•	•	•	•	2.0″	18.0″
1	10	08	•	•	•	•	3.0″	20.0″
1½	15		•		•		4.0″	
2	20		•		•		5.0″	
3	30		•		•		6.0″	
4	40						8.0″	
6	60						10.0″	
8	80						12.0″	
Diaphragm Materials							**Liner Materials / Code**	
316L stainless steel	S		•	•	•	•	Buna N (E)	
304L stainless steel	C						Teflon (T)	
Monel 400	P		•	•	•	•	Viton (Y)	
Nickel	N						Nordell EPDM (EP)	
Carpenter 20	D						White Neoprene (CR)	
Tantalum	U		•	•	•	•	Natural Rubber (NP)	
Hastelloy B	G			•	•	•		
Hastelloy C 22	J		•	•				
Hastelloy C 276	H		•	•	•	•		
Teflon	T							
Viton	Y							
Kalrez	K							
Titanium	TI			•	•	•		
Halar Coated Monel	PH							
Bottom Housing Materials							**Ass'y Flanges / Code**	
Steel	B			•		•	Carbon Steel (B)	
304L stainless steel	CL						316 SS (S)	
316L stainless steel	SL		•	•	•	•	CPVC (CP)	
Hastelloy B	G				•	•	Teflon Enveloped (CT)	
Hastelloy C 22	J		•	•			Polypropylene (PP)	
Hastelloy C 276	H		•	•	•	•		
Carpenter 20	D				•	•		
Monel 400	M		•	•	•	•		
Inconel 600	W							
Nickel	N							
PVC	V							
Tantalum Clad SS	SU							
Halar® Coated Monel	SH							
Teflon	T							
Kynar	KY							
Titanium	TI			•	•	•		
Pressure Ratings							**Instrument Conn / Code**	
500 psi				•	750	750	1/4 NPT (02T)	
2500 psi							1/2 NPT (0 4T)	
5000 psi	HP							
7500 psi								
15000 psi	HP							
Flange Class								
150, 300, 600, 900 or 1500			•		150-600			
Instrument Connection Size								
¼	02T		•	•	•	•		
½	04T		•	•	•	•		
Filling Fluid								
Glycerin	CG		•	•	•	•	•	
Silicone (direct to 10′ capillary)	CK		•	•	•	•	•	
Silicone (over 10′ capillary)	EJ		•	•	•	•	•	
Halocarbon	CF		•	•	•	•	•	
Syltherm	HA		•	•	•	•	•	
	Refer to page nos.		143	143	152	152	159	

ASHCROFT®

Quick Guide Transducers & Transmitters

TYPE X1005, TYPE X2001 XMITR™ TRANSMITTER GAUGE

Reference Condition: 20°C (68°F)

Accuracy: Electrical output is 1% BFSL including non-linearity, hystereous and non-repeatability.
Gauge is ASME B 40.1 Grade B (±3-2-3% of span)
Gauges available with 1% or 3-2-3% accuracy

Temperature/Environmental Effects:
Storage: –40 to 105°C (–40 to 221°F)
Operating: –40 to 105°C (–40 to 221°F)
Compensated: –20 to 85°C (–4 to 185°F)
Thermal effect: 3%/100°C (1.4%/100°F) typical (zero and fullscale combined)
Humidity: 0 to 95% relative humidity, non-condensing, no effect.
CE Heavy Industrial

Wetted Materials: Bronze/brass or SS

Output: 4-20mA, 1-5Vdc, .5-4.5Vdc ratio-metric

Ingress Protection/Enclosure:
Stainless steel case (2˝, 2.5˝, 3.5˝)
Type X1005, IP54
Type X2001, IP43 std, IP54 (XLJ) IP

Functional Specifications:
Type X1005 compound to 5000 psi.
Type X2001 compound to 5000 psi.
Proof: 0 to 200 psi = 150% full scale
300 to 5000 psi = 120%
Burst: 0 to 200 psi = 10x burst
300 to 5000 psi = 3x burst
Vibration: 5g's 50 to 2000 Hz
Shock: 100 g-force per IEC770
Response Time: Less than 10 ms
CE heavy industrial

Refer to page no. 168

2 Instruments in 1. Breakthrough functionality and value. Stainess steel case, 4-20mA and voltage outputs, cable or Hirschmann conn. CE heavy industrial. Per EN61326, Per 1998 ANNEX A

TYPE X1009 XMITR™ ALL SS TRANSMITTER GAUGE

Reference Condition: 20°C (68°F)

Accuracy: Electrical output is 1% BFSL including non-linearity, hystereous and non-repeatability.
Gauge is ASME B 40.1 Grade B (±3-2-3% of span)
Gauges available with 1% or 3-2-3% accuracy

Temperature/Environmental Effects:
Storage: –40 to 105°C (–40 to 221°F)
Operating: –40 to 105°C (–40 to 221°F)
Compensated: –20 to 85°C (–4 to 185°F)
Thermal effect: 3%/100°C (1.4%/100°F) typical (zero and fullscale combined)
Humidity: 0 to 95% relative humidity, non-condensing, no effect.
CE Heavy Industrial

Wetted Materials: Bronze/brass or SS

Output: 4-20mA, 1-5Vdc, .5-4.5Vdc ratio-metric

Ingress Protection/Enclosure:
Stainless steel case (2˝, 2.5˝, 3.5˝)
Type X1009, IP65 (XLJ)

Functional Specifications:
Type X1009 compound to 15,000 psi.
Proof: 0 to 200 psi = 150% full scale
300 to 5000 psi = 120%
Burst: 0 to 200 psi = 10x burst
300 to 5000 psi = 3x burst
Vibration: 5g's 50 to 2000 Hz
Shock: 100 g-force per IEC770
Response Time: Less than 10 ms
CE heavy industrial

Refer to page no. 167

2 Instruments in 1. Breakthrough functionality and value. Stainess steel case, 4-20mA and voltage outputs, cable or Hirschmann conn. CE heavy industrial. Per EN61326, Per 1998 ANNEX A

T2 HIGH PERFORMANCE PRESSURE TRANSDUCER

Reference Condition: 21°C (72°F)

Accuracy: Includes non-linearity, hysteresis, non-repeatability – BFSL method: ±0.25% of Span

Temperature/Environmental Effects:
Compensated, Operating, Storage:
–40 to 125°C (–40 to 257°F)
Total Error Band combined effects of temperature, non-linearity (Terminal Point Method), hysteresis, non-repeatability, zero offset and span setting errors –
±1% Span: through –20/85°C (–4/185°F)
±1.5% Span: through –40/–20°C and (–40/–4°F) and 85/125°C (185/257°F).
Humidity: 0 to 100% relative humidity, no effect

Stability: ≤0.25% Span/yr

Durability: Tested to 50 million cycles

Wetted Material(s): 17-4PH SS diaphragm, 316 SS process connection

Output: 4-20mA, 0-5Vdc, 0-10Vdc, 1-5Vdc, 1-6Vdc, 0.5-4.5Vdc (ratiometric)

Ingress Protection/Enclosure:
NEMA 4X, IP65

Functional Specifications:
Pressure Ranges (F.S.): 30 to 20,000 psi g, compound to 300 psi g
Overpressure: (Varies w/pressure range)
Proof: up to 3 x F.S.
Burst: up to 10 x F.S.
Vibration: Random (20g) over temperature range –40 to 125°C, (–40 to 257°F), exceeds typical MIL STD requirements
Shock: 100 g, 6 ms
Drop Test: No effect 1 meter drop on concrete
Response Time: <1ms
Approvals: CE compliance per EN 61326: 1997 +A1:1997 +A2:2001 Annex A (Heavy Industrial)

Refer to page no. 169

A robust pressure transducer designed for industrial applications featuring Ashcroft's proven polysilicon thin film pressure sensing element. Voltage and current outputs, a variety of pressure ports and electrical terminations to international standards with excellent accuracy and performance over –40 to 125°C, (–40 to 257°F)

TYPE G2 OEM PRESSURE TRANSDUCER

Reference Condition: 21°C (72°F)

Accuracy: Total Error Band combined effects of temperature, non-linearity (Terminal Point Method), hysteresis, non-repeatability, zero offset and span setting errors –
±1% Span: through –20/85°C (–4/185°F)
±1.5% Span: through –40/–20°C and (–40/–4°F) and 85/125°C (185/257°F).

Temperature/Environmental Effects:
See accuracy, previous, for details
Compensated, Operating, Storage:
–40 to 125°C (–40 to 257°F)
Humidity: 0 to 100% relative humidity, no effect

Stability: ≤0.25% Span/yr

Durability: Tested to 50 million cycles

Wetted Material(s): 17-4PH SS diaphragm, 316 SS process connection

Output: 4-20mA, 0-5Vdc, 0-10Vdc, 1-5Vdc, 1-6Vdc, 0.5-4.5Vdc (ratiometric)

Ingress Protection/Enclosure:
NEMA 4X, IP65 and IP67

Functional Specifications:
Pressure Ranges (F.S.): 30 to 20,000 psi g, compound to 300 psi g
Overpressure: (Varies w/pressure range)
Proof: up to 3 x F.S.
Burst: up to 10 x F.S.
Vibration: Random (20g) over temperature range –40 to 125°C, (–40 to 257°F), exceeds typical MIL STD requirements
Shock: 100 g, 6 ms
Drop Test: No effect 1 meter drop on concrete
Response Time: <1ms
Approvals: CE compliance per EN 61326: 1997 +A1:1997 +A2:2001 Annex A (Heavy Industrial)

Refer to page no. 170

An economical transducer designed for the high volume OEM. Excellent accuracy and performance over –40/125°C temperature range. IP67 ingress rating and 100V/m EMC immunity.

ASHCROFT®

Quick Guide Transducers & Transmitters

A2 HEAVY INDUSTRIAL AND EXPLOSION PROOF TRANSMITTERS

Reference Condition: 20°C (68°F)

Accuracy: Includes non-linearity (Terminal Point Method), hysteresis, non-repeatability, zero offset and span setting errors –
Three accuracy classes based upon sensor Span: ±0.25% ±0.5%, ±1.0%

Temperature/Environmental Effects:
Storage: –40 to 125°C(–40 to 257°F)
Operating: –40 to 125°C(–40 to 257°F)
Compensated:–20 to 85°C(–25 to 185°F)
Temperature Effects:
Available 1% to 2% of span over –20 to +85°C (–4 to +185°F)
Humidity: 0 to 100% relative humidity, no effect, with welded enclosure

Stability:
≤0.1% Span/yr 316L SS construction
≤0.5% Span/yr 17-4 PH construction

Durability: Greater than 10 million cycles

Wetted Material(s): 17-4PH SS w/316L SS housing or all 316L SS

Output: 4-20mA, 0-5Vdc, 0-10Vdc, 1-5Vdc, 1-6Vdc, 0.5-4.5Vdc (ratiometric)

Ingress Protection/Enclosure:
Available IP65, IP67, NEMA 4X, 6, 7, 9

Functional Specifications:
Pressure Ranges (F.S.): 15 to 7500 psi absolute, 5 to 10,000 psi g, compound to 100 psi g
Overpressure: (Varies w/pressure range)
Proof: up to 2 x F.S.
Burst: up to 4 x F.S.
Vibration: Random 10 g RMS, 20-2000 Hz; Sweep 50-2000 Hz, 5 g peak
Shock: 100 g peak, 11 ms
Drop Test: No effect 1 meter drop on concrete
Response Time: <2ms

Approvals:
CE Mark (standard):
EN 61326: 1997 +A1: 1998 Annex A
Heavy Industrial Immunity (Annex A, Table A.1)
Light Industrial/Residential Emission (Table 4)
Explosion Proof – UL:
Explosion Proof:
Class I, Div. 1 & 2, Groups A, B, C and D
Class II, Div. 1 & 2, Groups E, F and G
Explosion Proof – ATEX:
CE Ex II 2 GD
Ex d IIC T4
Ex nC IIC T4
Intrinsically Safe – FM/CSA:
Class I, Div. 1
Intrinsically Safe, Non-Incendive – FM/CSA:
Class I, Div. 2

Refer to page no. 171

A highly configurable transmitter designed for hazardous location and heavy industrial applications. High performance accuracy and thermal capability over –40/125°C (–40/257°F) with additional option of zero and span pots.

KM10 HIGH VOLUME OEM PRESSURE TRANSDUCER

Reference Condition: 20°C (68°F)

Accuracy: Includes non-linearity (Terminal Point Method), hysteresis, non-repeatability, zero offset and span setting errors –
±0.5% Span, 100 psig F.S. and above
±1.0% Span, 75 psig F.S. and below

Temperature/Environmental Effects:
Storage: –40 to 120°C (–40 to 250°F)
Operating: –40 to 120°C (–40 to 250°F)
Compensated: –30 to 120°C (–25 to 250°F)
Thermal Coefficients:
–30 to 120°C (–25 to 250°F)
Zero 0.01%F.S./°C (±0.0055%F.S./°F)
Span 0.01%F.S./°C (±0.0055%F.S./°F)
Humidity: 0 to 100% relative humidity, no effect

Stability: ±0.25% Span/yr

Interchangeability: <0.5% Span.

Durability: Tested to 50 million cycles

Wetted Material(s): 17-4PH SS diaphragm, 316 SS process connection

Output: 1-5Vdc, 1-6Vdc, 0.5-4.5Vdc (ratiometric)

Ingress Protection/Enclosure: IP67

Functional Specifications:
Pressure Ranges (F.S.): 15 to 7500 psi g/s, compound to 300 psi g

Overpressure (F.S.):	Proof	Burst
≤ 3000 psig	2 x F.S.	5 x F.S.
5000 psig	1.5 x F.S.	5 x F.S.
7500 tpsig	1.2 x F.S.	5 x F.S.

Vibration: Random to 1 KHz
Shock: 50 g, 11 ms
Drop Test: No effect 1 meter drop on concrete
Response Time: <1ms
Approvals: CE compliance per EN 61326: 1997 Annex A 1998(A1)
Warm-up Time: <25 ms

Refer to page no. 172

An economical transducer designed for the high volume OEM. Voltage outputs, a variety of pressure ports and electrical terminations to international standards with excellent accuracy and performance over –30 to 120°C (–25 to 250°F). IP67 ingress rating and 100V/m EMC immunity.

K1/K2 SERIES INDUSTRIAL TRANSDUCER

Reference Condition: 20°C (68°F)

Accuracy: Includes non-linearity (Terminal Point Method), hysteresis, non-repeatability, zero offset and span setting errors –
Two accuracy classes based upon sensor Span: ±0.5%, ±1.0%

Temperature/Environmental Effects:
Storage: –54 to 120°C(–65 to 250°F)
Operating: –28 to 82°C (–20 to 180°F)
Compensated: –28 to 71°C (–20 to 160°F)
Thermal Coefficients (20°C/68°F Ref.):

Accuracy Class (Span)	Zero/Span (%F.S./°F)
0.5%	±0.028
1.0%	±0.04

Humidity: 0 to 95% relative humidity, non-condensing, no effect

Stability: ±0.50% Span/yr

Durability: 100,000,000 cycles

Wetted Material(s): 17-4PH SS diaphragm, 316 SS process connection

Output:
K1: 4-20mA, 1,5Vdc, 1-6Vdc, 1-11Vdc
K2: 2, 3, 10, 20 mV/V

Ingress Protection/Enclosure:
NEMA 1, NEMA 4X

Functional Specifications:
Pressure Ranges (F.S.): 15 to 20,000 psi g, compound to 60 psi g

Overpressure (F.S.):	Proof	Burst
≤ 2000 psig	2 x F.S.	8 x F.S.
3000 to 5000 psig	1.5 x F.S.	3 x F.S.
7500 to 20,000 psig	1.2 x F.S.	1.5 x F.S.

Vibration: 0-2000 Hz at 20 g in any axis
Shock: 100 g, 20 ms
Response Time: <5ms

Hazardous Area Approvals: Available FM Intrinsically Safe and Nonincendive, and UL Intrinsically Safe – consult factory

Refer to page nos. 173-174

A versatile and proven industrial transducer with an extensive installed base. Wide range of pressure fittings and electrical terminations along with FM & UL hazardous area approvals.

ASHCROFT®

Quick Guide Transducers & Transmitters

K8 SERIES TRANSDUCER w/mV SIGNAL

Reference Condition: 20°C (68°F)

Accuracy: Includes non-linearity (Terminal Point Method), hysteresis, non-repeatability, zero offset and span setting errors –
Two accuracy classes based upon sensor Span: ±0.5%, ±1.0%

Temperature/Environmental Effects:
Storage: –54 to 120°C (–65 to 250°F)
Operating: –28 to 82°C (–20 to 180°F)
Compensated: –28 to 82°C (–20 to 180°F)
Thermal Coefficients (20°C/68°F Ref.):

Accuracy Class (Span)	Zero/Span (%F.S./°F)
0.5%	±0.028
1.0%	±0.04

Humidity: 0 to 95% relative humidity, non-condensing, no effect

Stability: ±0.50% Span/yr

Durability: 100,000,000 cycles

Wetted Material(s): 17-4PH SS diaphragm, 316 SS process connection

Output: Varies from 6-18 mV/V at F.S. ratiometric

Ingress Protection/Enclosure: NEMA 4X

Functional Specifications:
Pressure Ranges (F.S.): 45 to 20,000 psi g

Overpressure (F.S.):	Proof	Burst
≤ 2000 psig	2 x F.S.	2 x F.S.
3000 to 5000 psig	1.5 x F.S.	3 x F.S.
7500 to 20,000 psig	1.2 x F.S.	1.5 x F.S.

Vibration: 0-2000 Hz at 20 g in any axis
Shock: 100 g, 20 ms shock in any direction

Refer to page no. 175

A pressure transducer for applications that can incorporate an unconditioned mV/V output and require the proven benefits of the polysilicon thin film pressure sensing element. A broad range of pressure fittings allow the user design flexibility in packaging.

KX/KS SERIES SANITARY TRANSDUCERS

Reference Condition: 20°C (68°F)

Accuracy: Includes non-linearity (Terminal Point Method), hysteresis, non-repeatability, zero offset and span setting errors – ±1.0% Span

Temperature/Environmental Effects:
Storage: –54 to 120°C (–65 to 250°F)
Operating: –28 to 82°C (–20 to 180°F)
Compensated:
KS –0 to 50°C (–30 to 130°F)
KX –28 to 71°C (–20 to 160°F)
Thermal Coefficients (20°C/68°F Ref.), (%F.S./°F):
Zero ±0.04
Span ±0.04
Humidity: 0 to 95% relative humidity, non-condensing, no effect

Stability: ±0.50% Span/yr

Wetted Material(s):
KS: 316L SS diaphragm and process connection
KX: 316Ti SS diaphragm and 316 SS process connection

Fill Fluids:
KS: USP grade 99.5% glycerine fill
KX: Silicone

Output:
KS: 4-20mA, 1,5Vdc, 1-6Vdc; 2, 3, 10, 20 mV/V ratiometric
KX: 4-20mA, 1,5Vdc, 1-6Vdc

Ingress Protection/Enclosure: NEMA 4X

Functional Specifications:
Pressure Ranges (F.S.):
KS: 30 to 1000 psi g, compound to 100 psig
Kx: 100 to 5000 psi gi g

Overpressure (F.S.):	Proof	Burst
≤ 2000 psig	2 x F.S.	8 x F.S.
3000 to 5000 psig	1.5 x F.S.	3 x F.S.

Vibration: 0-400 Hz at 20 g in any axis
Shock: 20 g, 20 ms in any axis

Refer to page no. 177

For use in sanitary, waste-water, food processing and pharmaceutical applications. The KS Series features a 316L stainless steel electropolished TriClamp style diaphragm while the KX Series featuress several options designed for harsh applications – flush mounted diaphagm, PMC adapter or weldnuts. The polysilicon thin film pressure sensing element offers proven performance and stability.

DIN/PANEL/WALL MOUNT CXLdp SERIES

LOOK FOR THESE AGENCY MARKS ON OUR PRODUCTS

PRESSURE RANGES (Inches W.C.)
Unidirectional: 0/0.10 to 0/25 I.W.C.
Bidirectional: ±0.10 to ±15 I.W.C.

ACCURACY CLASS F.S. 0.8% 0.4%

TEMPERATURE LIMITS
Storage: –40 to 180°F
Operating: 0 to 160°F
Compensated: –35 to 130°F

OVERPRESSURE
Proof Pressure: 15 psi
Burst Pressure: 25 psi

OUTPUT SIGNAL
4-20mA, (12-36Vdc),
0-5, 0/10Vdc (24Vac)

ENCLOSURE
NEMA 1

MATERIALS
ABS (UL94-5V4)

PRESSURE CONNECTIONS
¼ Brass Barb
⅛ NPT Female

MEDIA
Clean, dry and non-corrosive gas

MOUNTING
DIN rail or panel mount

NOT FOR USE ON LIQUIDS

Refer to page no. 178

DIN MOUNT DXLdp SERIES

LOOK FOR THESE AGENCY MARKS ON OUR PRODUCTS

PRESSURE RANGES (Inches W.C.)
Unidirectional: 0/0.10 to 0/50 I.W.C.
Bidirectional: ±0.05 to ±25 I.W.C.

ACCURACY CLASS F.S.	0.25%	0.50%
Non-lin (Term.Pt.)	±0.20	±0.40
(B.S.F.L.)	±0.15	±0.30
Hysteresis	±0.02	±0.02
Non-Repeatability	±0.03	±0.05

TEMPERATURE LIMITS
Storage: –40 to 180°F
Operating: –20 to 160°F
Compensated: –35 to 135°F

OVERPRESSURE
Proof Pressure: 15 psi
Burst Pressure: 25 psi
Max. static (line) pressure: 25 psi

OUTPUT SIGNAL
4-20mA, 1-5Vdc, 1-6Vdc, 0-5, 0/10Vdc

ENCLOSURE
NEMA 1

MATERIALS
Glass-filled Polycarbonate (UL94-V-1)

PRESSURE CONNECTIONS
⅛ NPTF Brass

MEDIA
Clean, dry and non-corrosive gas (consult factory for use on other media)

MOUNTING
DIN rail mount:
EN50022
EN50035
EN50045

NOT FOR USE ON LIQUIDS

Refer to page no. 179

Designed for ease of installation and system calibration, the DXLdp is ideal for pharmaceutical plants and other installations where large numbers of air flow and dp measurements are being monitored.

ASHCROFT®

Quick Guide Transducers & Transmitters

REDUCED SIZE RXLdp SERIES

PRESSURE RANGES (Inches W.C.)
Unidirectional: 0/0.10 to 0/50 I.W.C.
Bidirectional: ±0.05 to ±25 I.W.C.

ACCURACY CLASS F.S.	1%
Non-lin (Term.Pt.)	±0.80
(B.S.F.L.)	±0.60
Hysteresis	±0.05
Non-Repeatability	±0.10

TEMPERATURE LIMITS

Storage:	–40 to 180°F
Operating:	0 to 160°F
Compensated:	+40 to 125°F

OVERPRESSURE

Proof Pressure:	15 psi
Burst Pressure:	25 psi
Max. static (line) pressure:	25 psi

OUTPUT SIGNAL
4-20mA, 1-5Vdc, 1-6Vdc, 0-5, 0/10Vdc

ENCLOSURE
NEMA 1

MATERIALS
Case is Stainless Steel
Cover is Polycarbonate

PROCESS CONNECTIONS
¼″ Barbed Stainless Steel
⅛″ Barbed Stainless Steel
⅛ NPTF Stainless Steel

MEDIA
Clean, dry and non-corrosive gas (consult factory for use on other media)

NOT FOR USE ON LIQUIDS

Refer to page no. 180

A compact transmitter for comfort control and other HVAC applications.

HIGH PERFORMANCE XLdp SERIES

PRESSURE RANGES (Inches W.C.)
Unidirectional: 0/0.10 to 0/50 I.W.C.
Bidirectional: ±0.05 to ±25 I.W.C.

ACCURACY CLASS F.S.	0.25%	0.50%
Non-lin (Term.Pt.)	±0.20	±0.40
(B.S.F.L.)	±0.15	±0.30
Hysteresis	±0.02	±0.02
Non-Repeatability	±0.03	±0.05

TEMPERATURE LIMITS

Storage:	–40 to 180°F
Operating:	–20 to 160°F
Compensated:	+35 to 135°F

OVERPRESSURE

Proof Pressure:	15 psi
Burst Pressure:	25 psi
Max. static (line) pressure:	25 psi

OUTPUT SIGNAL
4-20mA, 1-5Vdc, 1-6Vdc

ENCLOSURE
NEMA 2

MATERIAL
300 Series Stainless Steel

PROCESS CONNECTIONS
¼″ Barbed Stainless Steel
⅛″ Barbed Stainless Steel
¼ NPTF Stainless Steel

MEDIA
Clean, dry and non-corrosive gas (consult factory for use on other media)

NOT FOR USE ON LIQUIDS

Refer to page no. 181

High performance dp transmitter with proven reliability and stability. Excellent for air handling applications including fume hood control and room pressurization.

INDUSTRIAL IXLdp SERIES

PRESSURE RANGES (Inches W.C.)
Unidirectional: 0/0.10 to 0/200 I.W.C.
Bidirectional: ±0.05 to ±100 I.W.C.

ACCURACY CLASS F.S.	0.25%	0.50%
Non-lin (Term.Pt.)	±0.20	±0.40
(B.S.F.L.)	±0.15	±0.30
Hysteresis	±0.02	±0.02
Non-Repeatability	±0.03	±0.05

TEMPERATURE LIMITS

Storage:	–40 to 210°F
Operating:	–20 to 185°F
Compensated:	0 to 160°F

OVERPRESSURE

Proof Pressure:	20 psi
Burst Pressure:	50 psi
Maxi. static (line) pressure:	100 psi

APPROVALS
FM-IS

OUTPUT SIGNAL
4-20mA, 1-5Vdc, 1-6Vdc, ±5Vdc, ±2.5Vdc

ENCLOSURE
NEMA 4X

MATERIAL
300 Series Cast Stainless Steel

PROCESS CONNECTIONS
¼ NPTF St. St.

MEDIA
Clean, dry and non-corrosive gas (consult factory for use on other media)

NOT FOR USE ON LIQUIDS

Refer to page no. 182

A rugged low pressure transmitter in cast 300 series stainless steel enclosure. A good choice for dp monitoring in pollution control, combustion control, and other applications where precision sensing is needed in a tough environment.

2279 DURATRAN PRESSURE TRANSMITTER

ACCURACY
±0.5%

DIAL SIZE
4½″ analog

CASE MATERIAL
Phenolic

WETTED MATERIAL
316 stainless steel, Monel

SENSING ELEMENT
Bourdon tube

CONNECTION – NPT
½ NPT (standard) lower

RANGES
Vacuum and compound, 12 to 20,000 psi

Refer to page no. 183

Two instruments in one! Provides local indication and 4-20mA signal for many industrial applications.

ASHCROFT®

Quick Guide Temperature Instruments

FT POCKET TEST COMMERCIAL THERMOMETERS

ACCURACY
ASME B 40.3 Grade A (±1% of span)

DIAL SIZE
1″

STEM/BULB DESIGN
Rigid stem 0.142″ dia.

RECALIBRATOR
External

SEALING DESIGN
Hermetically sealed

DAMPENING
Silicone-dampened bimetal coil

CONNECTION LOCATION
Rear

CONNECTION SIZES (NPT)
Plain

STEM LENGTH
5″

RANGES
–80°F to 550°F
–30°C to 300°C

CASE/RING MATERIAL
Stainless steel (no ring)

CASE/BULB MATERIAL
Stainless steel

WINDOW
Polycarbonate

Refer to page no. 193

Applications include sample testing of food vats, cooking or air duct temperature use. Compact and portable.

EI, CI & EL INDUSTRIAL BIMETAL THERMOMETERS

ACCURACY
ASME B 40.3 Grade A (±1% of span)

DIAL SIZE
EI, CI 2,″ 3,″ 5″ (EL 3,″ 5″)

STEM/BULB DESIGN
Rigid stem 0.250″ dia.

RECALIBRATOR
(EI, EL external), (CI none)

SEALING DESIGN
Hermetically sealed; EL liquid filled

DAMPENING
Silicone-dampened bimetal coil;
EL liquid filled

CONNECTION LOCATION
EI rear, lower, Everyangle™ mount
CI rear, lower
EL rear, Everyangle mount

CONNECTION SIZES (NPT)
Plain
1/4 (2″ sizes only)
1/2 and 1/2 union (3,″ 5″ sizes only)

STEM LENGTH
2 1/2″-60″

RANGES
–80°F to 1000°F, –50°C to 500°C
EL –40°F to 550°F, –20°C to 300°C

CASE/RING MATERIAL
Stainless steel

CASE/BULB MATERIAL
Stainless steel

WINDOW
EI, CI glass (EL Polycarbonate)

Refer to page nos. 190-192

General industrial temperature applications including gases, liquids, and other processes. All stainless steel construction.

600A & 600B DURATEMP® THERMOMETERS

ACCURACY
ASME B 40.3 Grade A (±1% of span)

DIAL SIZE
600A – 4 1/2″, 6″
600B – 4 1/2″

STEM/BULB DESIGN
Rigid stem 0.375″ dia. (600B)
Bendable 0.375″ dia. (600A)

RECALIBRATOR
Adjustable pointer

SEALING DESIGN
Weatherproof

DAMPENING
Silicone-encapsulated helical bourdon tube

CONNECTION LOCATION
600A – rear, lower
600B – Everyangle

CONNECTION SIZES (NPT)
1/2″ union

STEM LENGTH
6″-36″ – 600B

CAPILLARY LENGTH
5′-80′ – 600A

RANGES
–320°F to 1200°F
–200°C to 650°C

CASE/RING MATERIAL
Stainless steel, aluminum, phenol

CASE/BULB MATERIAL
Stainless steel

CAPILLARY MATERIAL
600A– 300 Series stainless steel

WINDOW
Glass

Refer to page nos. 195, 200-204

Rugged applications including gases, liquids and other processes. Wide temperature ranges including remote monitoring.

2400E & 2410E DIGITAL THERMOMETERS

RESOLUTION
1°

UPDATE TIME
3 readings per second

CASE SIZE
2.030″ dia. x 1.39″

CASE
ABS and acrylic

VIBRATION
50 to 200 Hz @ 2.5g no effect

RANGE
–40°F to 199°F,
0°F to 250°F, –40°C to 120°C

AMBIENT TEMP. LIMIT
–30°F to 160°F (–34°C to 71°C)

ZERO & SPAN
±10% of operating range through two single-turn potentiometers located on the back of the thermometer's module

POWER
110 Vac input – 6 Vdc regulated output (220 Vac or 24 Vac optional)

HUMIDITY LIMITS
Up to 100% RH @ 140°F max.

APPROVALS
UL recognized (File: E103515),
NSF C-2, CSA (File: Natl/C, LR 76285-2)

SENSOR
Laser trimmed 2000 ohm RTD
0.250″ dia. x 2.54″ long 300 series stainless steel with 8′ wire cable

WEIGHT
Display – 35g (0.08lb)
Power Supply – 211g (0.5lb)

Refer to page no. 205

Applications include freezers, coolers and food storage equipment where remote monitoring and solid state digital readout is preferred.

ASHCROFT®

Quick Guide Pressure and Temperature Switches

SINGLE SETPOINT WATERTIGHT ENCLOSURES

B-SERIES

FEATURES

Enclosure:
Watertight epoxy-coated aluminum NEMA 4, 4X, IP66

Switch Function:
Single setpoint, fixed deadband, SPDT (or)
Single setpoint, fixed deadband, (2) SPDT (DPDT action)

Wetted Materials:
Stainless steel and Buna,*Teflon® or Viton® (or)
All-welded stainless steel (or)
All-welded Monel

Ranges:
Pressure: vac. thru 3000 psi
Temperature: –40°F thru 750°F
Differential Pressure: 30 in.H_2O diff. thru 600 psid

U.L. and CSA LISTED

*Registered trademark of E. I. DuPont

LOOK FOR THIS AGENCY MARK ON OUR PRODUCTS

IN A RUSH? ASK FOR ASHCROFT GOLD SERVICE

Refer to page nos. 221-221

General purpose switches for most industrial and process applications. Models are available for steam and fuel pressure-limit controls on boilers and burners. Ideal for compressors, turbines, filters, blowers, etc.

SINGLE SETPOINT EXPLOSION PROOF ENCLOSURES

B-SERIES

FEATURES

Enclosure:
Explosion proof, NEMA 7/9, IP66

Switch Function:
Single setpoint, fixed deadband, SPDT (or)
Single setpoint, fixed deadband, (2) SPDT (DPDT action)

Wetted Materials:
Stainless steel, Buna, Teflon® or Viton® (or)
All-welded stainless steel (or)
All-welded Monel

Ranges:
Pressure: vac. thru 3000 psi
Temperature: –40°F thru 750°F
Differential Pressure: 30 in.H_2O diff. thru 600 psid

U.L. or CSA LISTED, ATEX models for Hazardous locations now available.

LOOK FOR THIS AGENCY MARK ON OUR PRODUCTS

IN A RUSH? ASK FOR ASHCROFT GOLD SERVICE

Refer to page nos. 223-224

Ashcroft 700 series has been developed for most applications found in process plants U.L. or CSA LISTED.
All models have similar performance characteristics to the popular Ashcroft B400 Series switch line, which has been used throughout the world's plants and mills for over 25 years. They feature rugged, reliable diaphragm-sealed piston actuators, snap-acting contacts and all-popular wetted materials and process connections. Optional hermetically sealed contacts, Monel or fire-safe actuators and scores of options allow you to choose a model for any application.

DUAL SETPOINT WATERTIGHT ENCLOSURES

L-SERIES

FEATURES

Enclosure:
Watertight epoxy-coated aluminum NEMA 4, 4X, IP66

Switch Function:
Single setpoint, fixed deadband, SPDT contacts (or)
Single setpoint, fixed deadband,(2) SPDT contacts (DPDT action) (or)
Single setpoint, adjustable deadband, SPDT contacts (or)
Dual setpoint, fixed deadband, (2) SPDT contacts, (DPDT action)

Wetted Materials:
Stainless steel and Buna, Teflon® or Viton® (or)
All-welded stainless steel (or)
All-welded Monel

Ranges:
Pressure: vac. thru 3000 psi
Temperature: –40°F thru 750°F
Differential Pressure: 30 in.H_2O diff. thru 400 psid

U.L. and CSA LISTED

LOOK FOR THIS AGENCY MARK ON OUR PRODUCTS

IN A RUSH? ASK FOR ASHCROFT GOLD SERVICE

Refer to page nos. 229-230

Easy-to-use L-Series switches are specifically suited for the OEM seeking more features in a snap-acting switch. Single or dual setpoints and fixed or adjustable deadband models with many wetted materials and electrical ratings are offered. This snap-acting switch also replaces older mercury models and is cost effective.
L-Series switches are ideal for blowers, generators, scrubbers, precipitators, compressors and turbines.

DUAL SETPOINT EXPLOSION PROOF ENCLOSURES

P-SERIES

FEATURES

Enclosure:
Watertight epoxy-coated aluminum NEMA 4X/explosion-proof NEMA 7/9, IP66

Switch Function:
Single setpoint, fixed deadband, SPDT contacts (or)
Single setpoint, fixed deadband (2) SPDT contacts (DPDT action) (or)
Single setpoint, adjustable deadband, SPDT contacts (or)
Dual setpoint, fixed deadband (2) SPDT contacts, (DPDT action)

Wetted Materials:
Stainless steel and Buna,Teflon® or Viton® (or)
All-welded stainless steel (or)
All-welded Monel

Ranges:
Pressure: vac. thru 3000 psi
Temperature: –40°F thru 750°F
Differential Pressure: 30 in.H_2O diff. thru 400 psid

U.L. or CSA LISTED

LOOK FOR THIS AGENCY MARK ON OUR PRODUCTS

IN A RUSH? ASK FOR ASHCROFT GOLD SERVICE

Refer to page nos. 233-234

More varieties and more features are available in the highly reliable P-Series switch which is especially suited for process and refinery applications. Dual chamber design allows setpoint changes to be made safely, even with power connected. Features include NEMA 4X/NEMA 7/9 enclosure, with single or dual setpoints, fixed or adjustable deadbands, with many wetted materials and electrical ratings. Optional, all-welded stainless steel or Monel actuators are ideal for applications requiring NACE or fire-safe conformance. Optional UL listed, hermetically sealed switch contacts improve safety and reliability.

ASHCROFT®

Quick Guide Pressure and Temperature Switches

WATERTIGHT STAINLESS STEEL ENCLOSURES

G-SERIES

FEATURES

Enclosure:
Watertight 316 stainless steel NEMA 4, 4X, IP65

Switch Function:
Single setpoint, fixed deadband, SPDT contacts (or)
Single setpoint, fixed deadband (2) SPDT contacts (DPDT action) (or)
Single setpoint, adjustable deadband, SPDT contacts (or)
Dual setpoint, fixed deadband (2) SPDT contacts (DPDT action)

Wetted Materials:
Stainless steel and Buna, Teflon® or Viton® (or)
All-welded stainless steel (or)
All-welded Monel

Ranges:
Pressure: vac. thru 3000 psi
Temperature: –40°F thru 750°F
Differential Pressure: 30 in.H_2O diff. thru 400 psid

U.L. and CSA LISTED

CE
LOOK FOR THIS AGENCY MARK ON OUR PRODUCTS

IN A RUSH? ASK FOR ASHCROFT GOLD SERVICE

Refer to page nos. 226-227

The stainless steel enclosure offers greater corrosion protection for this high-performance switch in breweries, dairies, chemical and petrochemical plants, off-shore rigs and pulp and paper mills. Our standard diaphragm-sealed piston actuators and a variety of wetted materials are available in these pressure, temperature and differential pressure switches.

COMPACT EXPLOSION PROOF PRESSURE

F-SERIES

FEATURES

Enclosure (Body):
Explosion-proof, anodized aluminum NEMA 7/9, IP66

Switch Function:
Single setpoint, field-adjustable fixed deadband, SPDT contacts (or)
Single setpoint, field-adjustable fixed deadband, (2) SPDT contacts (DPDT action)

Wetted Materials:
316 stainless steel pressure connection and choice of:
Buna N, Teflon® or Viton® diaphragm and O-ring (or)
All-welded 316 stainless steel diaphragm

Ranges:
Pressure: vac. thru 4000 psi

U.L. and CSA LISTED

CE
LOOK FOR THIS AGENCY MARK ON OUR PRODUCTS

IN A RUSH? ASK FOR ASHCROFT GOLD SERVICE

Refer to page no. 225

Compact size facilitates mounting in panels and other installations where space is a premium.

Standard hermetically sealed switch element and sealed conduit connection eliminate the possibility of condensation entering the enclosure from the conduit. Standard $^1/_2$ NPTF pressure connection makes retrofit on existing installations quick and easy.

MINIATURE PRESSURE SWITCHES

A-SERIES

FEATURES

Enclosure:
NEMA 4X watertight or NEMA 7/9 explosion proof, IP66

Switch Function:
Single setpoint, fixed deadband, factory set SPDT contacts (or)
Single setpoint, fixed deadband, field-adjustable SPDT contacts

Wetted Material:
Brass
(Buna N, Viton® or Teflon® actuator)
Stainless steel

Ranges:
Vac thru 2000 psi.

U.L. and CSA LISTED

IN A RUSH? ASK FOR ASHCROFT GOLD SERVICE

Refer to page nos. 219-220

You should consider Ashcroft A-Series pressure switches for use on heavy vehicles, engines and compressors, electronics processing and medical equipment, food and beverage processing equipment, garbage compactors, machine tools, or any equipment where space is a consideration. This series is especially suitable for OEM configuration.

ELECTRONIC PRESSURE SWITCHES

N-SERIES

FEATURES

Enclosure:
NEMA 4X watertight or NEMA 7/9 explosion proof, IP66

Switch Function:
Single setpoint with adjustable deadband

Wetted Material:
Stainless steel

Ranges:
60 thru 20,000 psi. Deadbands as low as 0.1% of range.

NEW…optional process and setpoint indication and 4-20mA transmitter ouput now available.

IN A RUSH? ASK FOR ASHCROFT GOLD SERVICE

Refer to page nos. 231-232

The Ashcroft N-Series electronic pressure switch combines the popular K-Series polysilicon thin film pressure transducer sensor and rugged, epoxy-coated enclosures. The result is a highly reliable pressure switch that is ideal for high cycle, high pressure, or difficult deadband applications.

Typical applications include: machine tools, injection molding machines, presses, pumps, hydraulic systems, turbines, and compressors.

ASHCROFT®

Quick Guide Pressure and Temperature Switches

STANDARD DIFFERENTIAL PRESSURE SWITCH ACTUATOR

Small size and high overpressure capability make our differential pressure switch ideal for most process and industrial applications. Minimum static working pressures of 500 psi allow use on the most difficult filter applications.

We use a unique combination of diaphragm-sealed piston actuators to get our high static pressure performance in 12 ranges.

For inches of water ranges, we use a large diaphragm for sensitivity which results in lower, more conventional working pressure. Consult the factory for application assistance on differential pressure switch selection.

Refer to page nos. 221-222

ATEX APPROVAL FOR HAZARDOUS LOCATONS

ATEX is a European designation that deals with standards for equipment and protective systems intended for use in potentially explosive atmospheres. This approval is required for switches intended for use in hazardous locations, especially important to OEMs who export to Europe and contractors specifying or purchasing products for European applications.

XCN option adds special features to Ashcroft 700-Series switch enclosures that meet the requirements for the highest levels of security and danger, such as:

- Special locking device requiring an Allen wrench to remove cover
- Special vents that blow out should the diaphragm rupture, thus preventing pressure build-up in the enclosure
- Special conduit plug requiring an Allen wrench for removal
- Available on pressure, temperature and d/p models
- Meets explosion class EEx d IIC T6

LOOK FOR THIS AGENCY MARK ON OUR PRODUCTS

Refer to page nos. 223-224

U.L. LISTED STEAM LIMIT CONTROL

The Ashcroft steam-limit control switch is designed for use on boilers equipped with electrically operated burners. The limit control is an adjustable pressure-operated switch set to stop burner operation when the recommended safe boiler working pressure is exceeded.

We recommend a stainless steel diaphragm for steam service. A pigtail siphon should also be used to reduce the possibility of high temperature affecting switch performance. This listing is available for setpoints up to 300 psi.

Refer to page nos. 221-222

U.L. LISTED PRESSURE LIMIT CONTROL

The Ashcroft medium-pressure gas and oil limit control switch is designed for use with air, LP gas, natural gas, #1 and #2 fuel oil and #6 oil preheated to 240˚F. This limit control is an adjustable pressure-operated switch with a secondary chamber to prevent fuel from entering the switch enclosure in the unlikely event that the diaphragm develops a leak. The control shuts down a fuel pump in high or low pressure conditions.

Refer to page nos. 221-222

DIGITAL GAUGES

ASME B 40.1 Grade 2A (±0.5% of span)

ASHCROFT®

Precision Digital Test Gauge
Types 2089, 2086 and 2084

- *Unmatched accuracy of ±.05% total error band*
  - *Temperature corrected from 0/150°F*
- *Breakthrough readability and portability*
  - *5 digit LCD display*
  - *Largest display height of .66˝ …larger than competitors 4½˝ gauges*
- *Rugged portable design*
  - *Weatherproof NEMA IV, IP65 case*
  - *CE, FM, CSA*
  - *Stainless steel case-to-socket weld for strength*
  - *Stainless steel cover protects keypad*
- *Global/highly configurable*
  - *Nine options including 12 units of measure, 7 languages and password protected calibration and disable function*
- *Safety features include*
  - *Pressure range on keypad to reduce accidental overpressure*
  - *Proof pressure 2 x gauge range*
  - *Meets ASME B40.7*
- *% of reading bar graph scale*

LOOK FOR THESE AGENCY MARKS ON OUR PRODUCTS

PRODUCT SPECIFICATIONS	
Type:	2089 (±0.05% of span accuracy), 2086 (±0.10% of span accuracy), 2084 (±0.25% of span accuracy)
Accuracy:	±0.05%, 0.10% or 0.25% of span, Terminal Point, Total Error Band (TEB) Including Hysteresis, Linearity, Repeatablilty and Temperature (0/150°F)
Case Size:	3˝
Case Material:	300 Series Stainless Steel
Case Finish:	Electropolished
Case Rating:	Weatherproof, IP65, NEMA 4
Wetted Parts:	316 Stainless Steel
Socket Size:	¼ NPT
Connection:	Lower – 3 and 9 o'clock
Ranges:	Vac. thru 7000 psi (see engineering units below for other units of measurement)
Operating Temp.:	0/150°F (–18/65°C)
Storage Temp.:	–40/180°F (–40/82°C)
Temp. Corrected:	Yes
DISPLAY	
Type:	LCD
Display Digits:	5, 99999 display counts
Character Height:	.66˝
Backlite:	Off by default
Bar Graph:	Yes
Battery Life:	>1000 hrs. (3 AAA alkaline batteries)
Agency Approvals:	CE EN 50082-1 (1997), FM, CSA and (Cenelec)
KEYPAD FUNCTIONS	
On/Off:	Manually turns unit on and off (auto off options in configuration menu (CONFIG))
Backlite:	Manually turns backlite on and off (auto off options in configuration menu (CONFIG))
Min/Max:	Stores min. and max. values when displayed
Zero/Clear:	Zeros display or clears min. and max. values when displayed
Enter:	Selects items in configuration menu (CONFIG)
Configuration Mode (CONFIG):	Allows scrolling through configuration menus to select available options
Engineering Units:	psi, in.Hg, in.H_2O(*), ftSW, bar, mbar, kPa, MPa, mmHg, cmH_2O, mmH_2O, kg/cm^2
Update Rate:	Four Options: 10x/sec, 5x/sec, 2x/sec, 1x/sec
Auto Off:	Five Options: Never, 2 min., 5 min., 15 min., 30 min.
Dampening:	Five Options: None, average 2, 4, 6, 8 readings
Language:	Seven Languages: English, Spanish, French, Italian, German, Portuguese, Dutch
Backlite:	Five Options: On/off, 10 sec., 30 sec., 1 min., 5 min.
Calibrate:	Zero and Span (password protected)
Contrast:	Seven available options
Disable:	Allows for "lock-out" of CONFIG options
Calibration Chart:	10 point individual calibration chart, standard for Type 2089, others optional
Standard Features:	300 Series SS Protective Cover, Protective Carrying Pouch

(*) Allows choice of reference temperatures 4°C, 20°C or 60°C

psi	Cmpnd. (psi)	kPa	bar/ kg/cm²	Cmpnd. (bar)
vac.	15 & vac.	25	1	–1 to 0
5	30 & vac.	40	1.6	–1 to 1
10	60 & vac.	60	2.5	–1 to 2
15	100 & vac.	100	4	–1 to 30
30		160	6	–1 to 30
60		250(1)	10	
100		400	16	
160		600	25	
200		1000	40	
300			60	
500			100	
600			160	
800			250	
1000			400	
1500			500	
2000				
2500				
3000				
5000				
7000				

mmH_2O	MPa	mbar/ cmH_2O	Absolute (psia)
3000	1	250	15
5000	1.6	300	25
10,000	2.5	400	50
	6	500	
	10	600	
	40	1000	
		1600	
		2000	
		2500	
		4000	
		5000	
		6000	
		10,000	

TO ORDER THIS DIGITAL TEST GAUGE:

Select: 30 2089 SD 02L 100#

1. Dial Size: 3˝
2. Type: 2089
3. Wetted parts: 316 SS
4. Connections: ¼ NPT Lower
5. Range: 100 psi

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Digital Industrial Gauge
Types 2074, 2174 and 2274

- *A Multi-Functional Digital Gauge with Optional:*
  - *4/20mA Output*
  - *(1) or (2) SPDT Switches*
- *±.25% of Span Terminal Point Accuracy (.13% BFSL)*
- *IP 65 Weatherproof Case*
- *Three Case Options: Stainless Steel, Fiberglass Reinforced Thermoplastic or Aluminum*
- *Extra Large Display*
- *Intrinsically Safe, Class I, Div. 1 (pending)*

- *Easy-to-Use Menu Options: (all password protected)*
  - *Five Backlite Display Options*
  - *Twelve Engineering Units*
  - *Menu Configure Feature*
  - *Update Rate*
  - *Dampen Rate*
  - *Auto-Off*

PRODUCT SPECIFICATIONS

Type:	2074 (battery) 2174 (loop) 4-20mA 2274 (line)
Accuracy:	±.25% of span, terminal point
Case Size:	3″, 4½″
Case Material:	3″ stainless steel, 4½″ fiberglass reinforced thermoplastic or black epoxy coated aluminum
Case Encl. Rating:	Weatherproof, IP65
Wetted Materials:	17-4 stainless steel (sensor), 316 stainless steel (socket)
Socket Size:	¼ or ½ NPT, JIS, DIN, SAE, (½ NPT only with 4½″ case, others on application)
Socket Location:	Lower, 3, 9 and 12 o'clock
Ranges:	15 psi/Vac. thru 20,000 psi (see engineering units below for other units)
Operating Temp.:	14/140°F (10/60°C)
Temp. Error:	(Zero & Span) .04%/°F (<.02%°F Typical)
Storage Temp.:	–4/158° (–20°/70°F)
DISPLAY	
Type:	LCD
Display Digits:	Five (5)
Character Height:	3″ case: .60″, 4½″ case: .88″
Backlite:	Optional
Bar Graph:	Yes
Battery Life:	3″ >1000 hrs., 4½″ >3600 hrs.
Agency Approvals:	CE, FM (Intrinsically Safe Class I, Div 1) CSA and CENELEC (pending)
KEYPAD FUNCTIONS	
On/Off:	Manually turns unit on and off (auto off options in menu)
Zero/Clear:	Zeros display or clears min. and max. values when displayed
Min/Max ▼ (down) Arrow Key:	Stores min & max values, arrow key allows for scrolling thru menu items
Menu Key:	Provides access to menu options
Backlite ▲ (up) Arrow Key: (Backlite optional)	Manually turns backlite on and off (auto off options in menu), arrow key allows for five menu options. ▲ (up) arrow key allows for scrolling thru menu options
Enter:	Selects items in the menu
MENU MODE	
Engineering Units:	10 units of measurement are available; psi, In. H_2O (with three temp. options: 20°C, 60°F, 4°C*), Ft. H_2O, mPa, mBar, kPa, kg/cm2, Bar, inHg and mmHg

Configuration Mode:	Allows for changes to default settings of gauge
(Config):	Including zero disable feaure
Bar Graph (Graph):	Allows for adjustment of bargraph and 4-20 (optional feature)
Auto Off (Off):	Allows for changes to auto off of gauge, five options: Never, 2 min., 5 min., 15 min., 30 min.
Update Rate (Update):	Four options: 100 ms, 200 ms, 500 ms, 1 sec
Dampening (Damp):	Six options: None, average, 2, 4, 6, 8 times per 100ms
Backlite:	Five options: Never, 10 sec., 30 sec., 1 min., 5 min.
Field Recalibration:	Allows for recalibration of zero, mid-scale and span (password protected)

OPTIONS

Description	Code	Case Size
Case Options		
Aluminum Case (black epoxy coated) (Glass reinforced thermoplastic case standard)	AY	4½″ only
Electropolished Case (Brushed SS case standard)	EC	3″ only

Switch Options		
(1) SPDT Switch (12-36Vdc)	U1	3″, 4½″
(2) SPDT Switch (12-36Vdc)	U2	3″, 4½″
Line Power with 4-20mA output (Line power (Type 2274) required for switching options.) (Terminal blocks standard with 4½″ case.) (3″ shielded cable standard)	AO	3″, 4½″
Wiring Options		
(3″ shielded cable standard) (Terminal blocks standard with 4½″ case.)	EN	4½″
Keypad Options		
Backlite	BL	3″, 4½″
Miscellaneous Options		
Battery Backup (Battery standard with Type 2074) (Available with Types 2174 & 2274)	BK	3″, 4½″
Weatherproof ABS Gauge Carrying Case	S7	3″ only
Protective Rubber Boot (black)	B1	3″ only
Protective Rubber Boot (orange)	B2	3″ only
Protective Front Cover	PP	3″ only

DIGITAL INDUSTRIAL GAUGE RANGES:

psi	in.Hg (vacuum)	Comp. (psi)	mmHg (pressure)	in.Hg (pressure)	in. H_2O	mBar	ft. H_2O	mPa	kPa	Bar/ KSC
15	30	15#&Vac	800	30	400	1000	60	1	100	1
30		30#&Vac	1000	60	800	1500	160	1.6	160	1.6
60		60#&Vac	2000	100	1000	2000	200	2.5	250	2.5
100		100#&Vac	3000	160		2500	300	4	400	4
160			5000	200		4000	400	6	600	6
200			10,000	300		5000	600	10	1000	10
300				400		6000	1000	16	1600	16
600				600		10,000		25	2500	25
800				800		15,000		40	4000	40
1000						20,000		60	6000	60
1500								100	10,000	100
2000								140	16,000	160
3000									25,000	250
5000									40,000	400
8000									60,000	600
10,000									100,000	1000
15,000									140,000	1400
20,000										

TO ORDER THIS DIGITAL INDUSTRIAL GAUGE:

Select: **30** **2074** **SD** **XXX*** **100#**

1. Dial Size: 3″
2. Type: 2074
3. Wetted parts: 316 SS
4. Connections: ¼ NPT Lower
5. Range: 100 psi

*See options chart

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

General Purpose Digital Gauge Type D1005PS, ±½% of Span Terminal Point Accuracy

- *Enhanced value versus mechanical gauges*
- *No-nonsense accuracy – ±0.5% full scale accuracy*
- *Easy-to-read – 4½ digit display with ½″ character size, optional backlite display feature to enhance visibility*
- *Versatile – 9 engineering units and stainless steel sensor suitable for a variety of applications*
- *Standard features – max.-pressure indication; ranges from vacuum to 19,999 psi, including compound*
- *Competitively priced and can be customized for OEM applications*

The Ashcroft® Type D1005PS offers 0.5% of span accuracy, while the stainless steel sensor and socket make this product suitable not only for dry air applications but for other media as well.

This product offers selectable units of measure so rather than purchasing one gauge for each unit of measure required, the solution is one gauge for multiple units of measure.

The D1005PS is standard with many features not offered, or offered only as options, on competitor's digital gauge products, such as peak hold and 4½ digit display. When compared to mechanical gauges the D1005PS

*Shown with Optional Protective Boot

PRODUCT SPECIFICATIONS

Type no.:	D1005PS
Accuracy:	±0.5% of span
Case Size:	2½″
Case Material:	Noryl®
Wetted Parts:	17-4 PH stainless steel sensor; 316 stainless steel socket
Socket Size:	¼ NPT
Connection:	Lower
Ranges:	Vac. thru 19,999 psi (see engineering units below for other units of measurement)
Battery:	Two AAA alkaline batteries; approximately 1000 hours battery life

Overpressure:

	Vac. 0/1000	0/3000-0/5000	0/19,999
Proof:	200%	150%	120%
Burst:	800%	300%	150%

Cycle Life:	10^8 cycles 20/80% F.S. with negligible performance loss
Vibration:	Less than ±0.1% F.S. effect for 0/2000 Hz at 20 g's in any axis
Shock:	Less than ±0.05% F.S. effect for 100 g's, 20msec shock in any axis
Operating Temp.:	–10°C to 60°C (14°F to 140°F)
Storage Temp.:	–20°C to 70°C (-4°F to 158°F) (maximum temperature shift is .028% per °F from –20°F to 180°F starting at 68°F. For vacuum and 30 psi ranges the maximum temperature shift is .04%)
Update Rate:	100ms
Agency Approvals:	CE EN 61326 (1998); CE EN 61326 Annex A (heavy industrial)
Packaging:	Individual carton
Opt'l. Features:	±0.25% of span accuracy; backlite; 3, 9, 12 o'clock connections; Alternate socket configurations – upon application; Customized keypad; Protective boot; Bulk packaging

DISPLAY

Type:	LCD
Display Digits:	4½

Display Resolution:

Full Scale Numerical Value	Display Resolution
>=-15>0	–XX.000
>0 <2	X.0000
>=2 <20	XX.000
>=20 <200	XXX.00
>=200 <2000	XXXX.0
>=2000 <19,999	XXXXX

Character Height:	0.5″
Backlight:	OFF by default
Battery:	Four-level battery indication

KEYPAD FUNCTIONS

On/Off:	Manually turns unit on and off (four options: never, 5 min., 10 min., 20 min.)
Backlite (optional):	Manually turns backlite on and off (four programmable auto on/off options)
Maximum (Peak Hold):	Displays max. value when activated
Zero/Clear:	Zeros display or clears max. value when activated
Engineering Units:	psi, in.Hg, cmHg, mmHg, kPa, MPa, bar, kg/cm², ftH₂O
Field Calibration:	Zero and span

STANDARD RANGES

Vacuum					
in.Hg	**kPa**	**cmHg**	**Bar**	**kg/cm²**	**mmHg**
–30/0	–100/0	–76/0	–1/0	–1/0	–760/0
Compound					
in.Hg/psi	**kPa**	**mPa**	**Bar**	**kg/cm²**	**ft H_2O**
–30/30	–100/200	–	–1/2	–1/2	–35/70
–30/60	–100/400	–	–1/2	–1/2	–35/140
–30/100	–100/700	–	–1/2	–1/2	–35/230
–30/150	–100/1050	–	–1/11	–1/11	–35/350
–30/300	–100/2100	–	–1/21	–1/21	–35/700
Pressure					
psi	**kPa**	**mPa**	**Bar**	**kg/cm²**	**ft H_2O**
0/30	0/200	–	0/2	0/2	0/70
0/60	0/400	–	0/4	0/4	0/140
0/100	0/700	–	0/7	0/7	0/230
0/200	0/1400	–	0/14	0/14	0/460
0/300	0/2100	–	0/21	0/21	0/700
0/500	0/3500	–	0/35	0/35	–
0/1000	0/7000	–	0/70	0/70	–
0/1500	–	0/10	0/105	0/105	–
0/2000	–	0/14	0/140	0/140	–
0/3000	–	0/21	0/210	0/210	–
0/5000	–	0/35	0/350	0/350	–
0/10,000	–	0/70	0/700	0/700	–
0/15,000	–	0/100	0/1000	0/1000	–
0/19,999	–	0/140	0/1400	0/1400	–

TO ORDER THIS TYPE D1005PS GAUGE:

Select: **25** **D1005PS** **02L** **100#**

1. Dial Size: 2½″
2. Case Type Number: D1005PS
3. Wetted Parts: Stainless Steel
4. Connection: ¼ NPT lower
5. Range: 0/100 psi

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

TEST GAUGES & EQUIPMENT

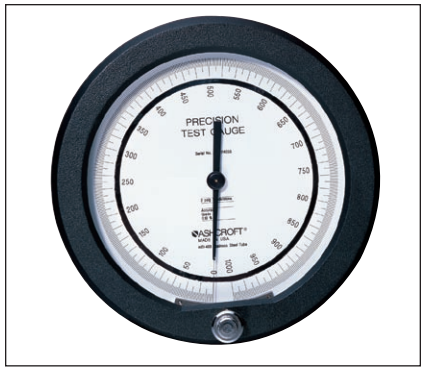
ASME B 40.1 Grade 3A (±0.25% of span)
ASME B 40.1 Grade 2A (±0.5% of span)
ASME B 40.1 Grade 4A (±0.1% of span)

ASHCROFT®

Ashcroft Precision Dial Pressure Gauge Type A4A

- ***±0.1% F.S. accuracy – ASME B40.1, Grade 4A***
- ***Ranges from 15-100,000 psi***
- ***Solid front protective case***
- ***High and low pressure limit stops***
- ***Mirror band dial to eliminate parallax reading error***
- ***Optional temperature compensation maintains 0.1% accuracy from –25 to +125°F***

The Ashcroft precision pressure gauge yields consistent, reliable accuracy through the use of state-of-the-art precision machining and the world's most refined Bourdon tube technology. This elimiantes the need for a power source and precludes the associated problems such as susceptibility to electronic line noise, power outage or potential fire hazard. In addition, this mechanical instrument is simple to operate, easy to troubleshoot, and can be readily flushed or purged to remove foreign matter or trapped gas. Accurate and reliable, the Ashcroft A4A sets a new standard for precision test gauges.



STANDARD FEATURES & SPECIFICATIONS

Total Accuracy
±0.1% F.S. Includes Certificate of NIST traceability

Repeatability
±0.02% F.S.

Hysteresis
±0.1% F.S.

Dial
White, high resolution with mirror band

Pointer
Knife edge pointer to eliminate parallax errors

Bourdon Tube
Bleeder tipped for easy flushing or purging

Case
Cast aluminum solid front
Blowout rear cover
Integral panel mounting flange

Ranges
Available in Gauge, Compound, Vacuum and Absolute (requires manual barometric compensation)

A4A

Pointer Travel
350° (15-30,000 psi)
300° (40,000-50,000 psi)
270° (60,000-100,000 psi)

Ranges
0/15-0/100,000 psi

Dial Sizes
6˝, 8½˝, 12˝ & 16˝

INLETS AND BOURDON TUBES (STANDARD VS. OPTIONS)

STANDARD	OPTIONAL
Inlet Location	
Back Fittings	**Bottom or Back Fittings**
• ¼ NPT female fitting (ranges up to and including 10,000 psi)	• ¼ NPT female fitting (standard with back location)
• 9/16-18 UNF-2B high pressure for ¼˝ O.D. high pressure tubing (ranges over 10,000 psi)	• ¼ NPT male
	• ⅛ NPT male or female
	• 9/16-18 UNF-2B high pressure for ¼˝ O.D. high pressure tubing
	• MS33656-4 male (7/16-20, 37° flare for ¼˝ flare tubing)
	• AND10050-4/MS33649-4 female (7/16-20, 37° flare for ¼˝ flare tubing)
Material and Range	
• Beryllium copper (through 40 psi)	• Beryllium copper (50-5000 psi)
• 403 SS (50 psi and above)	• 403 SS (below 50 psi)

OPTIONAL FEATURES (PROVIDED ONLY WHEN SPECIFIED)

- Custom scales/units of measure
- Thermal compensation (maintains 0.1% accuracy from –25 to +125°F)
- Slotted link (protects movement during sudden pressure release)
- Wall mounting brackets
- Peak load indicator
- Dual scale dial

psi

STANDARD BOURDON TUBE MATERIAL**	STANDARD RANGE psi
BERYLLIUM COPPER	0-15
	0-20
	0-25
	0-30
	0-40
403 STAINLESS STEEL	0-50
	0-60
	0-75
	0-100
	0-150
	0-200
	0-250
	0-300
	0-400
	0-500
	0-600
	0-750
	0-1000
	0-1500
	0-2000
	0-2500
	0-3000
	0-4000
	0-5000
	0-6000
	0-7500
	0-10,000
	0-15,000
	0-20,000
	0-25,000
	0-30,000
	0-40,000
	0-50,000
	0-60,000*
	0-75,000*
	0-100,000*

*Available in 8½˝, 12˝, 16˝. Dial face diameters only.
**For optional Bourdon Tube Materials consult factory.

INCHES MERCURY

STANDARD BOURDON TUBE MATERIAL**	STANDARD RANGE INCHES MERCURY
BERYLLIUM COPPER	0-30
	0-40
	0-50
	0-60
	0-75
403 STAINLESS STEEL	0-100
	0-125
	0-150
	0-200
	0-250
	0-300
	0-400
	0-500
	0-600
	0-750
	0-1000

VACUUM

BERYLLIUM COPPER	–30 to 0

COMPOUND

	VACUUM-PRESSURE
BERYLLIUM COPPER	15 in.Hg - 15 in.Hg
	30 in.Hg - 30 in.Hg
	30 in.Hg - 60 in.Hg
403 STAINLESS STEEL	30 in.Hg - 100 in.Hg
	30 in.Hg - 150 in.Hg
BERYLLIUM COPPER	30 in.Hg - 15 psi
	30 in.Hg - 30 psi
403 STAINLESS STEEL	30 in.Hg - 60 psi
	30 in.Hg - 100 psi
	30 in.Hg - 150 psi
	30 in.Hg - 300 psi

INCHES WATER

BERYLLIUM COPPER	0-450
	0-500
	0-600
	0-750
	0-800
	0-1000

MILLIMETERS MERCURY

STANDARD BOURDON TUBE MATERIAL**	STANDARD RANGE MILLIMETERS MERCURY		
BERYLLIUM COPPER	0-760		
	0-1000		
	0-1250		
	0-1500		
	0-2000		
403 STAINLESS STEEL	0-2500		
	0-3000		
	0-4000		
	0-5000		
	bar kg/cm² kp/cm²	kPa	MPa
BERYLLIUM COPPER	0-1	0-100	–
	0-1.6	0-160	–
	0-2	0-200	–
	0-2.5	0-250	–
	0-3	0-300	–
	0-4	0-400	–
	0-5	0-500	–
	0-6	0-600	–
	0-7.5	0-750	–
	0-10	0-1000	0-1
	0-12	0-1200	0-1.5
	0-16	0-1600	0-1.6
	0-20	0-2000	0-2
	0-25	0-2600	0-2.5
	0-30	0-3000	0-3
	0-40	0-4000	0-4
	0-50	0-5000	0-5
	0-60	0-6000	0-6
	0-75	0-7500	0-7.5
	0-100	0-10,000	0-10
	0-125	–	0-12.5
	0-160	–	0-16
	0-200	–	0-20
	0-250	–	0-25
	0-400	–	0-40
	0-500	–	0-50
	0-600	–	0-60
	0-750	–	0-75
	0-1000	–	0-100
	0-1250	–	0-125
	0-1600	–	0-160
	0-2500	–	0-250
	0-4000	*–	0-400
	0-6000	*–	0-600
	0-7000	*–	0-700
VACUUM			
BERYLLIUM COPPER	–1 to 0	–100 to 0	–

*Available in 8½˝, 12˝, 16˝. Dial face diameters only.

ASHCROFT®

Test Gauge
Type 1082, ASME B 40.1
Grade 3A (±0.25% of span)

- *Temperature-compensated movement that significantly reduces temperature error*
- *MicroSpan™ adjustment for ease in span calibration*
- *Hydraulically staked movement with Teflon-coated gears and bearings improves stability*
- *Externally adjustable dial on standard model*
- *White aluminum dial, black numbers with polished mirror band*
- *High and low pressure movement stops are standard*

The standard Ashcroft® test gauge case style features a solid-front aluminum case with a hinged ring.

The dial has a polished mirror band for pointer reflection to prevent parallax error and is available in 4½″, 6″ and 8½″ dial sizes in both lower and back connection. Pointer is a balanced-friction adjustable design with red knife edge tip for easy reading. The standard test gauge is competitively priced and available from stock for most ranges, tube materials and case sizes.

STANDARD RANGES

Pressure psi	kg/cm² - bar	kPa
0/15	0/1	0/100
0/30	0/1.6	0/160
0/60	0/2.5	0/250
0/100	0/4	0/400
0/150	0/6	0/600
0/200	0/10	0/1000
0/300	0/16	0/1600
0/400	0/25	0/2500
0/600	0/40	0/4000
0/800	0/60	0/6000
0/1000	0/100	0/10,000
0/1500	0/160	0/16,000
0/2000	0/250	0/25,000
0/3000	0/400	0/40,000
0/5000	0/600	0/60,000
0/10,000		
Vacuum		
30 in.Hg/0	–1/0	–100/0
Compound		
30 in.Hg/15 psi	–1/1.5	–100/150
30 in.Hg/30 psi	–1/3	–100/300
30 in.Hg/60 psi	–1/5	–100/500
30 in.Hg/100 psi	–1/9	–100/900
30 in.Hg/150 psi		
30 in.Hg/200 psi		
30 in.Hg/300 psi		
30 in.Hg/400 psi		

BOURDON SYSTEM SELECTION

Ordering Code	Bourdon Tube & Tip Material(1) (all joints TIG welded except "A")	Socket Material	Tube Type	Range Selection Limits (psi)	NPT Conn.
A	Phosphor Bronze Tube-Brass Tip, Silver Brazed	Brass	C-Tube	vac/400 psi	¼, ½
P	K Monel	Monel 400	(2)	vac/10,000 psi	¼, ½

(1) For selection of the correct bourdon system material, see the media application table on page 253.
(2) vac through 1500 psi–C-Tube
2000 through 10,000 psi–Helical
See page 181 for optional test gauge carrying case and handle.

TO ORDER THIS 1082 TEST GAUGE:

Select: **45** **1082** **PS** **02L** **2000#**

1. Dial size–4½″, 6″, 8½″
2. Case type–1082
3. Bourdon system selection ordering code
4. Connection size–¼ (02)
5. Connection location–Lower (L), Back (B)
6. Standard pressure range–2000 psi

(★) "S" denotes solid-front case design

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Pocket Test Gauge
Type 1084, ASME B 40.1
Grade 2A (±0.5% of span)

- *Available in a 3˝ dial size*
- *Stainless steel movement with Teflon-coated bearings and pinion gear*
- *Black, adjustable pointer with red-painted knife-edge tip*
- *Stainless steel construction*
- *Zero-adjustable white aluminum dial with polished mirror band*
- *¼ NPT lower connection only*

With an accuracy of ±0.5%, Grade 2A, plus rugged stainless steel construction, the Ashcroft® Type 1084 more than exceeds the requirements for on-the-spot inspections. To improve accuracy, stability and socket thread life, the Bourdon tube and socket assembly is made of type 316 stainless steel with all-welded construction; this system is standard for all ranges.

To make reading easier and faster, each unit is provided with a new, highly readable dial. Reading error caused by parallax is eliminated by aligning the knife-edge tip pointer with its reflection in the mirror band on the dial. Also available is a stainless steel cover that fits securely over the window and protects the gauge from damage while being carried in a tool box or pocket. An attractive, cushioned Nylon fabric pouch with carrying strap is offered as standard equipment.

STANDARD RANGES

Pressure psi	kg/cm² - bar	kPa
0/15	0/1	0/100
0/30	0/2	0/200
0/60	0/3	0/300
0/100	0/4	0/400
0/150	0/7	0/700
0/200	0/11	0/1100
0/300	0/14	0/1400
0/400	0/20	0/2000
0/600	0/28	0/2800
0/1000	0/40	0/4000
	0/70	0/7000
Vacuum		
30 in.Hg/0	–1/0	–100/0
Compound		
30 in.Hg/15 psi	–1/1	–100/100
30 in.Hg/30 psi	–1/3	–100/300
30 in.Hg/60 psi	–1/6	–100/600
30 in.Hg/100 psi	–1/10	–100/1000
30 in.Hg/150 psi		
30 in.Hg/300 psi		

BOURDON SYSTEM SELECTION

Ordering Code	Bourdon Tube & Tip Material[1] (all joints TIG welded)	Socket Material	Tube Type	Range Selection Limits (psi)	NPT Conn.
S	316 stainless steel	316 stainless steel	C-Tube	vac/1000 psi	¼

TO ORDER THIS 1084 POCKET TEST GAUGE:

Select: **30** **1084** **S** **02L** **0/1000#**

1. Dial size–3˝
2. Case type–1084
3. Bourdon system selection ordering code
4. Connection size–¼ (02)
5. Connection location–Lower (L)
6. Standard pressure range–1000 psi

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Precision Digital Test Gauge
Types 2089, 2086 and 2084

- *Unmatched accuracy of ±.05% total error band*
  - *Temperature corrected from 0/150°F*
- *Breakthrough readability and portability*
  - *5 digit LCD display*
  - *Largest display height of .66˝ ...larger than competitors 4½˝ gauges*
- *Rugged portable design*
  - *Weatherproof NEMA IV, IP65 case*
  - *CE, FM, CSA and (Cenelec-ATEX 100 approval pending)*
  - *Stainless steel case-to-socket weld for strength*
  - *Stainless steel cover protects keypad*
- *Global/highly configurable*
  - *Nine options including 12 units of measure, 7 languages and password protected calibration and disable function*
- *Safety features include*
  - *Pressure range on keypad to reduce accidental overpressure*
  - *Proof pressure 2 x gauge range*
  - *Meets ASME B40.7*
- *% of reading bar graph*

LOOK FOR THESE AGENCY MARKS ON OUR PRODUCTS

PRODUCT SPECIFICATIONS

Type:	2089 (0.05% F.S. accuracy), 2086 (0.10% F.S. accuracy), 2084 (0.25% F.S. accuracy)
Accuracy:	0.05%, 0.10% or 0.25% all Full Scale, Terminal Point, Total Error Band (TEB) Including Hysteresis, Linearity, Repeatablity and Temperature (0/150°F)
Case Size:	3˝
Case Material:	300 Series Stainless Steel
Case Finish:	Electropolished
Case Rating:	Weatherproof, IP65, NEMA 4
Wetted Parts:	316 Stainless Steel
Inlet Fittings:	¼ NPT Male, JIS, DIN, SAE, (others on application)
Connection:	Lower – 6 o'clock standard, 3 and 9 o'clock optional
Ranges:	Vac. thru 7000 psi (see engineering units below for other units of measurement)
Units:	psi **=#** bar=**BR** kPa=**KP** mPa=**MP** inHg=**IM** inH_2O=**IW** mmH_2O=**MMW** cmH_2O=**CMW** millibar=**MB** kg/cm^2=**KSC**
Operating Temp.:	0/150°F (–18/65°C)
Storage Temp.:	–40/180°F (–40/82°C)
Temp. Corrected:	Yes
DISPLAY	
Type:	LCD
Display Digits:	5, 99999 display counts
Character Height:	.66˝
Backlite:	Off by default
Bar Graph:	Yes
Battery Life:	>1000 hrs. (3 AAA alkaline batteries)
Agency Approvals:	CE EN 50082-1 (1997), FM, CSA and (Cenelec)
KEYPAD FUNCTIONS	
On/Off:	Manually turns unit on and off (auto off options in configuration menu
Backlite:	Manually turns backlite on and off (auto off options in configuration menu)
Min/Max:	Stores min. and max. values when displayed
Zero/Clear:	Zeros display or clears min. and max. values when displayed
Enter:	Selects items in configuration menu
Configuration Mode:	Allows scrolling through configura tion menus to select available options
Engineering Units:	psi,˝Hg, ˝H_2O*, ftSW, Bar, mBar, kPa, mPa, mmHg, cmH_2O, mmH_2O, kg/cm^2 (*Allows choice of reference temperatures 4°C, 20°C or 60°F)
Update Rate:	Four Selections: 10x/sec, 5x/sec, 2x/sec, 1x/sec
Auto Off:	Five Options: Never, 2 min., 5 min., 15 min., 30 min.
Dampening:	Five Selections: None, average 2, 4, 6, 8 readings
Language:	Seven Languages: English, Spanish, French, Italian, German, Portuguese, Dutch
Backlite:	Five Selections: On/off, 10 sec., 30 sec., 1 min., 5 min.
Calibrate:	Zero and Span (password protected)
Contrast:	Seven available options
Disable:	Locks in current configuration settings.
Calibration Chart:	10 point individual calibration chart, standard for Type 3089, others optional
Standard Features:	300 Series SS Protective Cover, Protective Carrying Pouch
Optional Features:	Flange for Panel Mounting = **FF,** Metal Tag Wired to Case = **NH,** Paper Tag Wired to Case = **NN,** Protective Rubber Boot = **B1,** Certificate of Conformance = **C1,** Calibration Certificate (2084 & 2086 only. Standard w/2089) = **C4,** Weatherproof ABS Carrying Case = **S7,** Clean for Gaseous Oxygen Service = **6B,** Clean for Liquid Oxygen Service = **6D**

psi Gauge	psi Compound	psi Absolute	bar/kb/cm^2 Gauge	bar Compound
vac.	15 & vac.	25	1	–1 to 0
5	30 & vac.	40	1.6	–1 to 1
10	60 & vac.	60	2.5	–1 to 2
15	100 & vac.	100	4	–1 to 30
30		160	6	–1 to 30
60		250(1)	10	
100		400	16	
160		600	25	
200		1000	40	
300			60	
500			100	
600			160	
800			250	
1000			400	
1500			500	
2000				
2500				
3000				
5000				
7000				

mmH_2O Gauge	mPa Gauge	mBar/cmH_2O Gauge	kPa Gauge
3000	1	250	25
5000	1.6	300	40
10,000	2.5	400	60
	6	500	100
	10	600	160
	40	1000	250
		1600	400
		2000	600
		2500	1000
		4000	
		5000	
		6000	
		10,000	

TO ORDER THIS DIGITAL TEST GAUGE:

Select: **Example:** **30** **2089** **SD** **02L** **100#** **B1, 6B**

1. Dial Size: 3˝ = **30**
2. Model: **2084, 2086, 2089**
3. Case: 316 SS = **SD**
4. Connections: ¼ NPT Male Lower = **02L**
5. Range Value: (see range chart)
   Unit of Measurement: (see "Units" list)
6. Options: (see "Optional Features" list)

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Handheld LCD Digital Calibrator Type ATE-100 Pressure, Temperature, Voltage and Current Measurement

- ***Interchangeable pressure and temperature modules***
- ***Pressure measurement accuracies of ±0.025,0.05 and 0.10%, or .06/.07%***
- ***Pressure ranges from 0.25 in.H_2O to 10000 psi***
- ***Supports most standard RTD probes and thermocouples***
- ***Min/max, tare, flow, leak, programmable damping, percent function, trip detect, all standard***
- ***High static DP measurement capability***
- ***Optional:***
  FM Approval for Class I, Div. 1, Groups A, B, C & D hazardous areas
  Datalogging, Hi/low alarm relays

The Ashcroft® ATE-100 is a calibration system with a vast array of capabilities. These capabilities extend far beyond those of precision pressure measurement. The base unit contains a wide variety of application-specific firmware as well as the ability to measure both current and voltage inputs. In addition, this unit has the ability to interface the system with a computer, data acquisition system or dumb terminal via the standard

PRODUCT SPECIFICATIONS

BASE UNIT PHYSICAL SPECIFICATIONS

Dimensions
7.88 in. (L) x 4.24 in. (W) x 3.25 in. (H)

Weight
Max. 2.2 lbs. w/2 pressure modules installed

Case Material
High impact ABS

Sensor Module Capacity
2 bays for Ashcroft AQS "Quick Select®" sensor modules

Display
2 line LCD, 0.037 in. height per line. Can display simultaneous readings from 2 modules

Electrical Connection
Miniature recessed banana jacks (one set of test leads provided with each ATE-100)

BASE UNIT OPERATING SPECIFICATIONS

Operating Temperature Range
Standard: 32° to 120°F
Optional: –4 to 120°F

Storage Temperature
–4° to 158°F

Update Rate
130 ms (nominal) with one sensor installed

Resolution
±0.002% of span, 60,000 count (max)

Warm-Up
5 minutes for rated accuracy

Damping (Measurement Averaging)
Programmable averaging from zero through 16 consecutive readings

Electrical Measurements
0-50 mA or 0-30 Vdc

Input (volts)	Accuracy
0/10 Vdc	±0.025% FS
0/30 Vdc	±0.10% FS
0/20mA	±0.03% FS
0/50mA	±0.05% FS

Auto Ranging 10/30 Vdc and 20/50mA

Temperature Effect; Electrical Measurement
±.001% of Span per °F over compensated range

Serial Interface
Type: RS-232
Baud Rate: 300, 1200, 2400 or 9600 selectable

Field Calibration
Both Quick Select pressure modules and base unit electronics can be calibrated in the field via prompted keypad commands

Options
Datalogging with Hi-Lo Relay Feature – Datalogging manually or automatically stores up to 715 measured values for upload to PC. Includes upload utility software. Hi-Lo relay feature allows programming of setpoints for activation of alarms or control valves. (Hi-Lo not available with FM approval.)
Enhanced LCD – For –4 to 120°F operating range
FM Approval – Class 1, Div. 1, Groups A,B,C & D (Not available with CE Mark)
CE Mark – EMI/RFI immunity rating (not available with FM approval)

Power Requirements
Standard: (2) 9Vdc Alkaline Batteries (provides up to 30 hours operation per set)
Optional: 110 or 220 Vac transformer to power calibrator from line power

Certification
N.I.S.T. Traceable certification document provided for base display unit and sensor modules

PRESSURE SENSOR MODULE SPECIFICATIONS

AQS-1

Pressure Types
Gauge, differential & compound

Available Ranges
(See Chart)

Available Accuracies
±0.06 (0/2-0/200 in. H_2O), ±0.07 (0/0.25-0/1 in. H_2O) or 0.1% of Span

Compensated Temperature Range
20°F to 120°F

Temperature Effect
±.004% of Span per °F over compensated range (from reference temperature range of 70° ±3°)

Repeatability
±0.01% of span (range 0/1 in. H_2O or higher)
±0.02% of span (ranges below 0/1 in. H_2O)

Sensitivity
±0.002% of span (typical)

Media Compatibility
Clean, dry, non-conductive, non-corrosive gas

Under/Overpressure Capability
–15 to 50 psi

Maximum Static (line) Pressure
100 psi

Process Connection
Standard: 1/8 NPT female
Optional: G 1/8 British standard

Other Options
FM Approved (for use with FM approved base unit)
CE Mark (for use with CE Mark rated base unit)

AQS-2

Pressure Types
Gauge, absolute, compound & vacuum

Available Ranges
(See Chart)

Available Accuracies
±0.025, 0.05 or 0.1 % of Span (±0.025 & 0.05% not available on 0/10,000 psi range)

Compensated Temperature Range
20°F to 120°F

Temperature Effect
Standard: ±.004% of Span per °F over the compensated range (from reference temperature range of 70° ±3°)
Optional: No additional error due to temperature over the compensated range

Repeatability
±0.01% of span

Sensitivity
±0.002% of span (typical)

ASHCROFT®

Handheld LCD Digital Calibrator Type ATE-100, Pressure, Temperature, Voltage and Current Measurement

Media Compatibility
0/5-0/10,000 psi ranges: Any medium compatible with 316 stainless steel isolation.
Optional: Cleaned for Oxygen Service (0/5-0/10,000 psi ranges only)

Overpressure Capability
200% for ranges up to 1000 psi
150% for ranges over 1000 psi

Process Connection
Standard: 1/8 NPT female
Optional: 1/8 NPT female with flush port (ranges 10 psi and over)
G 1/8 British standard
G 1/8 British standard with flush port (ranges 10 psi and over)
Welded VCR fitting with standard finish

Other Options
FM Approved (for use with FM approved base unit)
CE Mark (for use with CE Mark rated base unit)

TEMPERATURE INTERFACE MODULES

AQS-RT Series (RTD)

AQS-RT1 and AQS-RT2 interface modules allow the ATE-100 to measure temperature with an RTD

AQS-RT1: Accommodates Pt100, Ni120, Cu120 and other common 2, 3 or 4 wire probes with resistance outputs of 400 ohms or less.
AQS-RT2: Accommodates Pt1000 and other common 2, 3 or 4 wire probes with resistance outputs of 4000 ohms or less.

Selectable Units of Measure
°C, °F, °K, °R and ohms

Model ATE-100 with AQS-RT1 and RTD Probe installed

Input Receptacle
Accepts TA4F type RTD connector

RTD Probes Available
Pt-100 probes, 6˝ or 12˝ length, with or without handle. DIN Class A accuracy. Includes mating TA4F connector. Consult factory for details and availability.

Options
FM approved (for use with FM approved base unit)
(CE) not available

AQS-TC1 (Thermocouple)

The AQS-TC1 interface module allows the ATE-100 to measure temperature with a thermocouple

Compatibility
Programmed to provide direct temperature read-out from types J, K, T, E, R, S, B & N thermocouples or direct millivolt readout from any thermocouple.

Reference Junction
Automatic internal or manual external

Resolution
Automatic or manually selectable, up to .01°

Units of Measure
Selectable; °C, °F, °K, °R and millivolts

Receptacle
Accepts "miniature thermocouple connector", Omega® type SMP

Options
FM approved (for use with FM approved base unit)
(CE) not available

Model ATE-100 with AQS "Quick Select" Modules

ACCESSORIES

110Vac/60 Hz ac Adapter
220Vac/50 Hz ac Adapter
Contoured protective case
Soft carrying case
Hard carrying case
External 24vdc Loop Power Supply – to power transducers and pressure switch test circuit
SM-1 Voltage Adapter – allows ATE-100 to be used to check "live" pressure switches

STANDARD RANGES

AQS-2 psi (gauge and absolute pressure)	AQS-1 in.H_2O (gauge/ differential pressure)	Other Engineering Units**
5	0.25*	psi
10	0.5*	in.H_2O
15	1.0*	in.Hg
20	2.0*	ftSW
25	3.0*	bar
30	5.0*	mbar
50	10*	kPa
60	15*	MPa
100	25*	mmHg
150	50*	cmH_2O
200	100*	mmH_2O
250	150*	kg/cm^2
300	200*	User Selectable
500		
600		
1000		
1500		
2000		
2500		
3000		
5000		
6000		
7500		
10,000		
vacuum		
5		
10		
15		
compound		
±5	±0.125*	
±10	±0.25*	
±15	±0.5*	
–15/+30	±1.0*	
–15/+60	±1.5*	
	±2.5*	
	±5.0*	
	±7.5*	
	±12.5*	
	±25*	
	±50*	
	±75*	
	±100*	

* Non-isolated, for clean dry gas only

**Note: Engineering units identified above are accessible through the unit select feature. However, readout will default to the primary unit of measure on start-up. Sensor modules scaled in primary units other than in. H_2O (AQS-1) or psi (AQS-2) are also available. Consult factory.

TO ORDER

Base Display Unit
1) Specify Model: ATE-100
2) Specify Options: (Datalogging, Enhanced LCD, FM Approval, CE Mark)

Sensor Modules
3) Type (AQS-1 or AQS-2)
4) Pressure Range and Unit of Measure (see range chart)
5) Pressure Type (see specifications)
6) Accuracy (see specifications)
7) Specify Options
   a) "zero temperature error over compensated range" (AQS-2 only)
   b) Optional fitting (see specifications)
   c) Clean for Oxygen Service (AQS-2, 0/5-1/10,000 psi only)
   d) FM approval or CE Mark

Temperature Interface Module
8) Type (AQS-RT1, AQS-RT2 or AQS-TC1)
   a) Specify FM approval if required
9) RTD Probe Type (when required. Consult factory for probe P/N)

Accessories
10) Specify required accessories

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

MADE IN U.S.A.

ASHCROFT®

LCD Digital Indicator, Type ST-2A Pressure, Temperature, Voltage and Current Measurement

Standard Features

- *Dual display – simultaneous measurement and display of pressure, temperature, voltage or current in any combination*
- *Accuracy ratings of ±0.1%, ±0.05% and ±0.025 of span (pressure)*
- *Pressure ranges from 0.25 inches of water to 10,000 psi*
- *Interchangeable pressure and temperature modules*
- *Multiple engineering units – 12*
- *High static DP measurement capability*
- *Temperature measurement with most common RTDs and thermocouples*
- *Programmable damping*
- *Tare capability*
- *Display hold*
- *RS232 two way communications*
- *Standard NIST traceable certificate of calibration*

Optional Features

- *24 Vdc power supply*
- *Data logging – Automatic, manual and delayed actuation*
- *Data logging*
- *Relays – hi/lo programmable configurations – N/O and N/C*
- *Battery power – 5 AA NiCads with built-in charger*

The ST-2A is the perfect bench companion product to the Ashcroft® ATE-100 field handheld calibrator. This bench top (or panel mounting) package shares the same pressure and temperature modules and interfaces with the same software package as the Ashcroft ATE-100. An intuitive, menu-driven user interface puts all of the ST-2A's power at the simple press of a key. It uses the AQS (Ashcroft Quick-Select™) modular sensor system to provide the ultimate in measurement flexibility.

PRODUCT SPECIFICATIONS

PHYSICAL SPECIFICATIONS

Dimensions
10.9 in. (L) x 6.74 in. (W) x 4.0 in. (H)

Panel Cutout
6.56 in. x 3.53 in.

Weight
Max. 4.08 lbs. w/2 pressure modules installed

Case Material
High impact ABS

Sensor Module Capacity
2 bays for Ashcroft AQS "Quick Select®" sensor modules

Display
2 line LCD, 0.037 in. height per line. Can display simultaneous readings from 2 modules.

Electrical Connection
Standard banana jacks

BASE UNIT OPERATING SPECIFICATIONS

Operating Temperature Range
32° to 120°F

Storage Temperature
–4° to 158°F

Update Rate
130 ms (nominal) with one sensor installed

Resolution
±0.002% of span, 60,000 counts (max)

Warm-Up
5 minutes for rated accuracy

Electrical Measurements
0-50 mA or 0-30 Vdc

Options
Datalogging with Hi-Lo Relay Feature – Datalogging manually or automatically stores up to 643 measured values for upload to PC. Includes upload utility software. Hi-Lo relay feature allows programming of setpoints for activation of alarms or control valves.
Backlit Display
Built-in NiCad Rechargeable Battery Pack
Built-in 24Vdc Loop Power Supply
Handle
Panel Mounting Brackets

Power Requirements
Standard: ac adapter provided for 110Vac/60 Hz
Available: ac adapter provided for 220Vac/50 Hz
ac adapter provided for 100Vac/60 Hz
Optional: Built-in rechargeable NiCad Battery Pack*
*(Life: 20 hours nominal without backlit LCD, 2 hours nominal with backlit LCD. Activating RS232 results in approximately 30% reduction in battery life.)

Certification
N.I.S.T. Traceable certification document provided for base display unit and sensor modules

PRESSURE SENSOR MODULE SPECIFICATIONS

AQS-1

Pressure Types
Gauge, differential & compound

Available Ranges
(See Chart)

Available Accuracies
±0.06 (0/2-0/200 in. H_2O), ±0.07 (0/0.25-0/1 in. H_2O) or 0.1% of Span

Compensated Temperature Range
20°F to 120°F

Temperature Effect
±.004% of Span per °F over compensated range (from reference temperature range of 70° ±3°)

Repeatability
±0.01% of span (range 0/1 in. H_2O or higher)
±0.02% of span (ranges below 0/1 in. H_2O)

Sensitivity
±0.002% of span (typical)

Media Compatibility
Clean, dry, non-conductive, non-corrosive gas

Under/Overpressure Capability
–15 to 50 psi

Maximum Static (line) Pressure
100 psi

Process Connection
Standard: 1/8 NPT female
Optional: G 1/8 British standard

AQS-2

Pressure Types
Gauge, absolute, compound and vacuum

Available Ranges
(See Chart)

Available Accuracies
±0.025, 0.05 or 0.1 % of Span (±0.025 & 0.05% not available on 0/10,000 psi range)

Compensated Temperature Range
20°F to 120°F

Temperature Effect
Standard: ±.004% of Span per °F over the compensated range (from reference temperature range of 70° ±3°)
Optional: No additional error due to temperature over the compensated range

Repeatability
±0.01% of span

Sensitivity
±0.002% of span (typical)

Media Compatibility
0/5 -0/10,000 psi ranges: Any medium compatible with 316 SS isolation.

Consult factory for guidance in product selection
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MADE IN U.S.A.

ASHCROFT®

LCD Digital Indicator, Type ST-2A Pressure, Temperature, Voltage and Current Measurement

Optional: Cleaned for Oxygen Service (0/10-0/10,000 psi ranges only)

Overpressure Capability
200% for ranges up to 1000 psi
150% for ranges over 1000 psi

Process Connection
Standard: 1/8 NPT female
Optional: 1/8 NPT female with flush port (ranges 10 psi and over)
G 1/8 British standard
G 1/8 British standard with flush port (ranges 10 psi and over)
Welded VCR fitting with standard finish

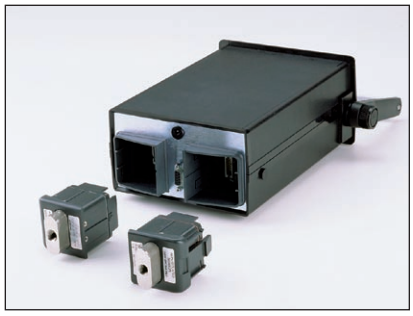
TEMPERATURE INTERFACE MODULES

AQS-RT1 and AQS-RT2 interface modules allow the ST-2A to measure temperature with an RTD:

AQS-RT1: Accommodates Pt100, Ni120, Cu120 and other common 2, 3 or 4 wire probes with resistance outputs of 400 ohms or less.
AQS-RT2: Accommodates Pt1000 and other common 2, 3 or 4 wire probes with resistance outputs of 4000 ohms or less.

Selectable Units of Measure
°C, °F, °K, °R and ohms

Input Receptacle
Accepts TA4F type RTD connector



RTD Probes Available
Pt-100 probes, 6˝ or 12˝ length, with or without handle. DIN Class A accuracy. Includes mating TA4F connector. Consult factory for details and availability.

The AQS-TC1 interface module allows the ST-2A to measure temperature with a thermocouple:

AQS-TC1

Compatibility
Programmed to provide direct temperature readout from types J, K, T, E, R, S, B & N thermocouples or direct millivolt readout from any thermocouple.

Reference Junction
Automatic internal or manual external

Resolution
Automatic or manually selectable, up to .01°

Units of Measure
Selectable; °C, °F, °K, °R and millivolts

Receptacle
Accepts "miniature thermocouple connector", Omega® type SMP

ACCESSORIES

110Vac/60 Hz ac Adapter
220Vac/50 Hz ac Adapter

STANDARD RANGES

AQS-2 psi (gauge and absolute pressure)	AQS-1 in.H_2O (gauge/ differential pressure)	Other Engineering Units**
5		
10	0.25*	psi
15	0.5*	in.H_2O
30	1.0*	in.Hg
50	2.0*	ftSW
60	3.0*	bar
100	5.0*	mbar
150	10*	kPa
200	15*	MPa
250	25*	mmHg
300	50*	cmH_2O
500	100*	mmH_2O
600	150*	kg/cm^2
1000	200*	User Selectable
1500		
2000		
2500		
3000		
5000		
6000		
7500		
10,000		
vacuum		
5		
10		
15		
compound		
±5	±0.125*	
±10	±0.25*	
±15	±0.5*	
–15/+30	±1.0*	
–15/+60	±1.5*	
	±2.5*	
	±5.0*	
	±7.5*	
	±12.5*	
	±25*	
	±50*	
	±75*	
	±100*	

**Note: Engineering units identified above are accessible through the unit select feature. However, readout will default to the primary unit of measure on start-up. Sensor modules scaled in primary units other than in. H_2O (AQS-1) or psi (AQS-2) are also available. Consult factory.

* Non-isolated, for clean dry gas only

TO ORDER

Base Unit
1) Specify Model: ST-2A
2) Specify Power Requirements: 110, 220 or 100Vac
3) Specify Options: (Datalogging, Backlit Display, etc.)

Sensor Modules
4) Type (AQS-1 or AQS-2)
5) Pressure Range and Unit of Measure (see range chart)
6) Pressure Type (see specifications)
7) Accuracy (see specifications)
8) Specify Options
   a) "zero temperature error over compensated range" (AQS-2 only)
   b) Optional fitting (see specifications)
   c) Clean for Oxygen Service (AQS-2, 0/5-1/10,000 psi only)

Temperature Interface Module
9) Type (AQS-RT1, AQS-RT2 or AQS-TC1)
10) RTD Probe Type (when required. Consult factory for probe P/N)

Accessories
11) Specify required accessories

ASHCROFT®

Deadweight Tester Type 1305D, Accuracy (±0.1% of reading)

Ashcroft® Type 1305D deadweight testers provide an easy means of precisely generating pressure to an accuracy of 0.1% of reading. Ashcroft 1305D units are available for operating ranges up to 10,000 psi. They are ideal for use in calibrating, setting, testing and repairing pressure measurement and control devices. Each 1305D unit is traceable to the National Institute of Standards and Technology, assuring instrument accuracy.

These pressure systems are designed to be field portable. A single carrying case holds the pressure generation pump as well as all the necessary tools and accessories. A second box contains the weights used for pressure generation (10,000 psi units require two boxes of weights). Ashcroft deadweight testers qualify as primary standards for pressure calibration.

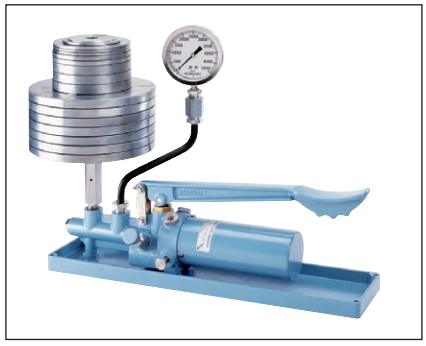
The pump is a two-stage hydraulic pressure generator. A built-in shuttle valve allows for rapid pressure increase at low pressures. The rate of increase per pump cycle can be reduced at higher pressures to minimize resistance. This is accomplished by simply repositioning the two-position shuttle valve. With the shuttle valve in the high-pressure position, increasing pressure even when near the 10,000 psi upper limit can be accomplished quickly and easily. Final, precise adjustment is accomplished through the use of an integral vernier-adjustment knob.

The 1305D is provided with two-piston cylinder assemblies. A low-pressure piston for pressure ranges from 15 to 2000 psi and a high-pressure unit for pressures from 75 to 10,000 psi. The high-pressure piston has an area of 1/80th of a square inch while the low pressure piston has an area of 1/16th of a square inch. Weights are provided for pressure increments of 5, 10, 20, 25, 40, 50, 100, 200 and 500 psi (depending on piston in use). Ashcroft 1305D testers can be used anywhere within their operational range without any change in accuracy. The same weights are used with both piston and cylinder assemblies.

Ashcroft 1305 units are available for psi ranges. Each unit comes complete with a hand jack set (for removal of pointers on gauges being calibrated), spare O-rings and all tools, accessories and fittings required for normal use.

1305D STANDARD PRESSURE RANGES

	Piston Assembly Pressure Range		Piston Value		Number of Weights by Value					Net Weight	
psi Type	Low	High	Low	High	L-5 H-25	L-10 H-50	L-20 H-100	L-40 H-200	L-100 H-500	lb	kg
1305D-10	15/200	75/1000	5	25	1	3	2	3	-	60	27
1305D-20	15/400	75/2000	5	25	1	3	2	3	2	70	32
1305D-30	15/600	75/3000	5	25	1	3	2	3	4	85	39
1305D-50	15/1000	75/5000	5	25	1	3	2	3	8	105	48
1305D-100	15/2000	75/10,000	5	25	1	3	2	3	18	175	80



- *Accuracy: 0.1% of reading*
- *Operating Pressure: 15 psi to 10,000 psi*
- *Operating Media: 1305D: SAE 20 weight automotive or machine oil*

  1305DH: Phosphate-based or glycol fluids
- *O-ring Material: 1305D: Buna-N (D series)*
- *1305DH: Ethylene Propylene (DH Series)*
- *Piston and Cylinder Material: Stainless steel*
- *Weight Material: Non-magnetic die cast zinc*
- *Reservoir Volume: Approximately 1.5 pints (0.7 liter)*
- *Special "CD-5" Certification package available (see Price Sheet TE/PS-1)*

ASHCROFT®

Pressure Gauge Comparator
Type 1327D, Accuracy (±0.25%)
Type1327CM, Accuracy (±0.1%)

Ashcroft® Types 1327D and 1327CM are designed to be field-portable pressure generation and test systems. A single carrying case holds the pump used to generate pressure as well as the gauges selected as the test standard.

Both units include an Ashcroft two-stage hydraulic pressure pump. A built-in shuttle valve allows for rapid pressure increase at low pressures. The rate of increase per pump cycle can be reduced at higher pressures in order to minimize resistance. This is accomplished by simply repositioning the two-position shuttle valve. With the shuttle valve in the high-pressure position, increasing pressure even when near 10,000 psi can be accomplished quickly and easily. Final adjustment is accomplished through the use of an integral vernier-adjustment knob.

Type 1327CM

The Ashcroft Type 1327CM is a precision gauge comparator which is provided with 6-inch Ashcroft ±0.1% F.S. accuracy Type A4A gauges. The gauges provided include temperature compensation which maintains the ±0.1% F.S. accuracy over an operating range of –25°F to +125°F. Available ranges include 30, 100, 500, 1000, 5000 and 10,000 psi.

Type 1327D

The Ashcroft 1327D is available with between one and four Ashcroft gauges covering the operating range of 0 through 10,000 psi. Metric range models are also available.

The 1327DG is provided with 4½˝ Ashcroft Type 1082 test gauges. These gauges provide an accuracy of ±0.25% F.S. The Ashcroft test gauges include temperature compensation and have a maximum thermal error of 0.005% F.S. per degree F.

Ashcroft Types 1327CM and 1327D are ideally suited for use as in-field pressure standards. Both come with temperature-compensated gauges, further enhancing their field worthiness. A single carrying case holds everything needed to take full advantage of the capabilities of the test set. psi and metric ranges are available for either system. Both systems are traceable to NIST with the 1327CM provided with calibration certificates for each gauge selected.

1327D STANDARD PRESSURE RANGES

Unit of Measure	Type	Gauge Range(s) Included				Net Weight	
						lb	kg
psig	1327DG-2	0/150	—	—	—	36	16
	1327DG-6	0/150	0/600	—	—	38	17
	1327DG-50	0/150	0/600	0/5000	—	40	18
	1327DG-100	0/150	0/600	0/5000	0/10000	42	19
kg/cm²	1327DMG-10	0/10	—	—	—	36	16
	1327DMG-40	0/10	0/40	—	—	38	17
	1327DMG-250	0/10	0/40	0/250	—	40	18
	1327DMG-600	0/10	0/40	0/250	0/600	42	19
bar	1327DBG-10	0/10	—	—	—	36	16
	1327DBG-40	0/10	0/40	—	—	38	17
	1327DBG-250	0/10	0/40	0/250	—	40	18
	1327DBG-600	0/10	0/40	0/250	0/600	42	19
kPa	1327DAG-1000	0/1000	—	—	—	36	16
	1327DAG-4000	0/1000	0/4000	—	—	38	17
	1327DAG-25000	0/1000	0/4000	0/25000	—	40	18
	1327DAG-60000	0/1000	0/4000	0/25000	0/60000	42	19

For hydraulic fluid service (phosphate base and glycols) specify 1327DH, DMGH, DBGH or DAGH.
For oxygen service (distilled water) specify 1327DGO, DMGO, DBGO or DAGO.

- *Operating Pressure: 0-10,000 psi (maximum) (0-70,000 kPa)*
- *Operating Media:*
  Standard:
  SAE 20 weight automotive or machine oil
  Optional:
  Phosphate-based or glycol fluids
  Distilled water for oxygen service
- *O-ring Material:*
  Standard: Buna N (D Series)
  Optional: Ethylene Propylene (DH Series)
- *Reservoir Volume: Approximately 1.5 pints (0.7 liter)*

SPECIFICATIONS TYPE 1327DG

- *Accuracy: ±0.25% F.S.*
- *Gauge Type: Ashcroft 4½ inch Type 1082 gauges with temperature compensation*
- *Special "CD-4" Certification package available (see Price Sheet TE/PS-1)*

SPECIFICATIONS TYPE 1327CM

- *Accuracy: ±0.1% F.S.*
- *Gauge Type: Ashcroft 6-inch Type A4A with temperature compensation*
- *Temperature Compensation: –25°F to +125°F (will maintain ±0.1% F.S. accuracy)*

ASHCROFT®

Pressure Tester
Model PT, Dual Display
LCD Digital Pressure Indicator

STANDARD FEATURES

- *Push-button zero adjust*
- *Max/min memory*
- *Selectable engineering units*
- *Variable damping*
- *Tare*
- *Port select*
- *Push-to-print*
- *RS232 I/O*
- *High static DP capability*

OPTIONAL FEATURES

- *Backlit display*
- *Rechargeable battery pack*

The Ashcroft® PT indicator is an extremely versatile pressure measurement and test instrument. It can simultaneously display the output of two pressure sensors, two RTD's or one of each. It offers 12 standard user selectable engineering units and one custom value. Other dedi-cated front panel buttons make it easy to set zero, check max/min values, adjust measurement damping, select either or both ports for standard display, additive or differential display, print the display and configure the RS232 output. All front panel features are accessible via the RS232 port for remote configuration or

PRODUCT SPECIFICATIONS

PHYSICAL SPECIFICATIONS

Dimensions
7.72 in. (L) x 6 in. (W) x 2.95 in. (H)

Panel Cutout
5.4 in. x 2.68 in.

Weight
Depending on configuration
Max. <4 lbs. w/2 sensors and battery pack

Case Material
High impact ABS

Sensor Capacity
2 bays for Ashcroft PPT sensors

Display
2 line LCD, 0.038 in. height per line. Can display simultaneous readings from 2 modules.

Options
Backlit Display
Built-in NiCad Rechargeable Battery Pack
Handle
Panel Mounting Brackets

OPERATING SPECIFICATIONS

Operating Temperature Range
32° to 120°F

Storage Temperature
–4° to 158°F

Update Rate
130 ms (nominal) with one sensor installed

Resolution
±0.002% of span, 60,000 counts (max)

Power Requirements
Standard: ac adapter provided for 110Vac/60 Hz
Available: ac adapter provided for 220Vac/50 Hz
ac adapter provided for 100Vac/60 Hz
Optional: Built-in rechargeable NiCad Battery Pack*

*(Life: 25 hours nominal without backlit LCD, 5 hours nominal with backlit LCD. Activating RS232 results in approximately 30% reduction in battery life.)

Certification
N.I.S.T. Traceable certification document provided for base display unit and sensor modules

PRESSURE SENSOR SPECIFICATIONS

PPT-1

Pressure Types
Gauge, differential and compound

Available Ranges
(See Chart)

Available Accuracies
±0.06 (0/2-0/200 in. H_2O), ±0.07 (0/0.25-0/1 in. H_2O) or 0.1% of Span

Compensated Temperature Range
20°F to 120°F

Temperature Effect
±.004% of Span per °F over compensated range (from reference temperature range of 70° ±3°)

Repeatability
±0.01% of span (range 0/1 in. H_2O or higher)
±0.02% of span (ranges below 0/1 in. H_2O)

Sensitivity
±0.002% of span (typical)

Media Compatibility
Clean, dry, non-conductive, non-corrosive gas

Under/Overpressure Capability
–15 to 50 psi

Maximum Static (line) Pressure
100 psi

Process Connection
Standard: 1/8 NPT female
Optional: G 1/8 British standard

PPT-2

Pressure Types
Gauge, absolute, compound and vacuum

Available Ranges
(See Chart)

Available Accuracies
±0.025, 0.05 or 0.1 % of Span (±0.025 & 0.05% not available on 0/10,000 psi range)

Compensated Temperature Range
20°F to 120°F

Temperature Effect
Standard: ±.004% of Span per °F over the compensated range (from reference temperature range of 70° ±3°)
Optional: No additional error due to temperature over the compensated range

Repeatability
±0.01% of span

Sensitivity
±0.002% of span (typical)

Media Compatibility
0/5-0/10,000 psi ranges: Any medium compatible with 316 SS isolation.
Optional: Cleaned for Oxygen Service

Overpressure Capability
200% for ranges up to 1000 psi
150% for ranges over 1000 psi

Process Connection
Standard: 1/8 NPT female
Optional: 1/8 NPT female with flush port (ranges 5 psi and over)
G 1/8 British standard
G 1/8 British standard with flush port (ranges 5 psi and over)
Welded VCR fitting with standard finish

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

MADE IN U.S.A.

ASHCROFT®

Pressure Tester
Model PT, Dual Display
LCD Digital Pressure Indicator

RTD INTERFACE ASSEMBLY

PPT-RT1: Accommodates Pt100, Ni120, Cu120 and other common 2, 3 or 4 wire probes with resistance outputs of 400 ohms or less.
PPT-RT2: Accommodates Pt1000 and other common 2, 3 or 4 wire probes with resistance outputs of 4000 ohms or less.

Input Receptacle
Accepts TA4F type RTD connector

RTD Probes Available
Pt-100 probes, 6″ or 12″ length, with or without handle. DIN Class A accuracy. Includes mating TA4F connector. Consult factory for details and availability.

Rear view of Model PT with 2 pressure sensors installed

STANDARD RANGES

PPT-2 psi (gauge and absolute pressure)	PPT-1 in.H_2O (gauge/ differential pressure)	Other Engineering Units**
5	0.25*	psi
10	0.5*	in.H_2O
15	1.0*	in.Hg
30	2.0*	ftSW
50	3.0*	bar
60	5.0*	mbar
100	10*	kPa
150	15*	MPa
200	25*	mmHg
250	50*	cmH_2O
300	100*	mmH_2O
500	150*	kg/cm^2
600	200*	User Selectable
1000		
1500		
2000		
2500		
3000		
5000		
6000		
7500		
10,000		
vacuum		
5		
10		
15		
compound		
±5	±0.125*	
±10	±0.25*	
±15	±0.5*	
–15/+30	±1.0*	
–15/+60	±1.5*	
	±2.5*	
	±5.0*	
	±7.5*	
	±12.5*	
	±25*	
	±50*	
	±75*	
	±100*	

**Note: Engineering units identified above are accessible through the unit select feature. However, readout will default to the primary unit of measure on start-up. Sensor modules scaled in primary units other than in. H_2O (PPT-1) or psi (PPT-2) are also available. Consult factory.

* Non-isolated, for clean dry gas only

TO ORDER

Base Display Unit
1) Specify Model: PT
2) Specify Power Requirements: 110, 220 or 100Vac
3) Specify Options: (Backlit, NiCad Battery Pack, Handle, Panel Mounting Brackets)

Sensors
(Base Display Unit can hold a total of 1 or 2 pressure sensors or RTD interface assemblies simultaneously. Sensors and interface assemblies will be installed into the base display unit at the factory.)

4) Type (PPT-1 or PPT-2)
5) Pressure Range and Unit of Measure (see range chart)
6) Pressure Type (see specifications)
7) Accuracy (see specifications)
8) Specify Options
   a) "zero temperature error over compensated range" (PPT-2 only)
   b) Optional fitting (see specifications)
   c) Clean for Oxygen Service (PPT-2, 0/5-1/10,000 psi only)

RTD Interface Assembly
9) Type (PPT-RT1 or PPT-RT2)
10) Probe Type (when required. Consult factory for probe P/N)

ASHCROFT®

Volume Controller
Type AVC-1000 & 3000

Ashcroft® precision-pressure volume controllers provide a quick-and-easy method for precisely setting a pressure in a closed pneumatic system. They are ideal for use with Ashcroft test gauges for the calibration of other pressure-measurement and control devices.

The AVC unit consists of a volume chamber with an internal piston assembly. The piston seals across the diameter of the chamber. Once the AVC unit is connected to a pneumatic system, the volume of the chamber becomes part of the volume of the system. The pressure-adjust knob at the front of the unit repositions the piston within the chamber through interaction with a precision-machined lead screw. Piston movement within the chamber increases or decreases the volume of the system, depending on the direction of movement. In a closed system where gas cannot leak out upon compression or be drawn in upon expansion, this volume change results in a change in the internal pressure. Increasing the volume by moving the piston toward the front of the AVC unit will decrease the pressure. Conversely, decreasing the volume by moving the piston to-ward the rear of the unit will increase the pressure. The pressure change generated by a given amount of piston travel is proportional to the change in volume as compared to the total system volume.

AVC units are available for pressures up to 3000 psi. The AVC-1000 can be used to set pressures from vacuum through 1000 psi while the AVC-3000 can be used for pressures from vacuum through 3000 psi.

An integral balance valve provides a means for equalizing pressure on both sides of the piston prior to making the final adjustments when setting the pressure. This minimizes the resistance encountered when repositioning the piston and assures ease of pressure setting, even at 3000 psi. The balance valve also serves as a pressure-relief valve, assuring that the differential pressure across the piston does not reach unsafe levels.

AVC units can also be used without a compressed air source for the generation of moderate levels of positive pressure and vacuum. The high resolution of the AVC, combined with the ability to generate pressure and vacuum, make it an ideal tool for low-pressure (below 1 psi) calibration and test as well as higher pressure calibration and test activities.

GENERAL SPECIFICATIONS

Type	AVC-1000	AVC-3000
Range (psi)	vacuum-1000	vacuum-3000
Resolution (psi)	0.00025	0.0005
Volume Change (cubic inches)	3.5	2.5
Mechanical Rotation (turns)	31	61
Proof Pressure (psi)	2000	6000
Burst Pressure (psi)	6000 min	12,000 min
Operating Temperature Range	20-120°F	20-120°F
Operating Media	Clean, dry noncorrosive gas such as compressed air or nitrogen	
Construction	Aluminum body, stainless steel, brass Teflon, Delrin and Buna N	

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
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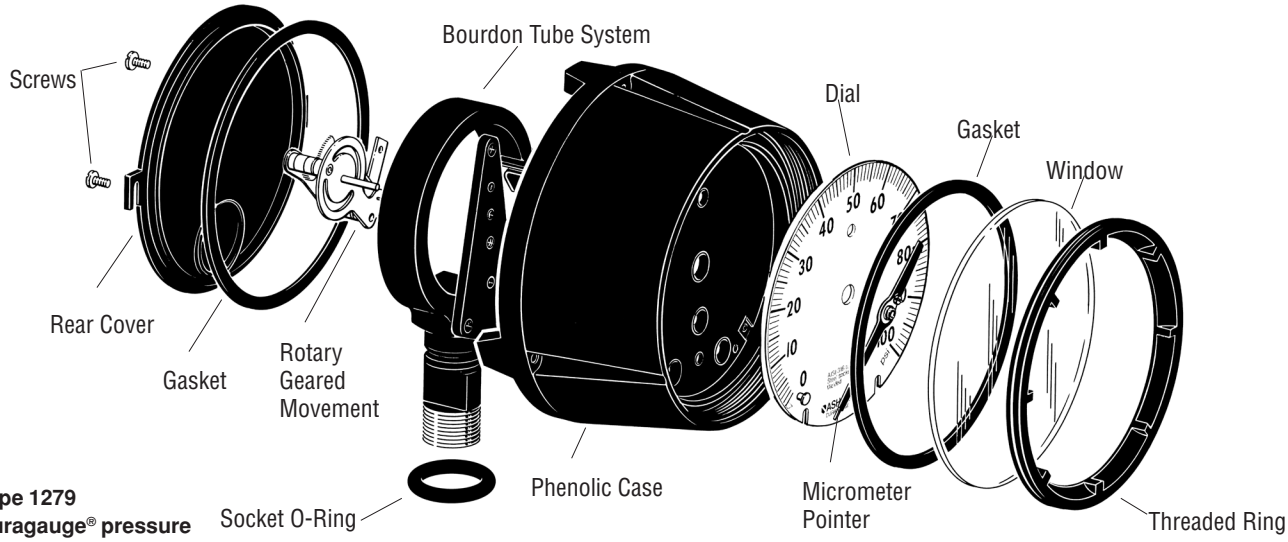
PROCESS GAUGES

ASHCROFT®

Product Selection Information
Consult ASME B40.1 for guidance in gauge selection



Type 1279 Duragauge® pressure gauge shown

WARNING: Pressure gauges should be selected by considering media and ambient operating conditions to prevent misapplication. Improper application can be detrimental to the gauge, causing failure and possible personal injury or property damage. The information contained in this catalog is offered as a guide to assist in making the proper selection of a pressure gauge. For additional information contact the factory.

Pressure Ranges: Select a gauge with a full-scale pressure range of approximately twice the normal operating pressure. The maximum operating pressure should not exceed 75% of the full-scale range. Failure to select a gauge within these criteria may ultimately result in fatigue failure of the Bourdon tube.

Operating Conditions: The operating conditions to which a gauge will be subjected must be considered. If the gauge will be subjected to severe vibrations or pressure pulsation, liquid-filling the gauge or the *PLUS!™* option may be necessary to obtain normal product life. Other than discoloration of the dial and hardening of the gasketing that may occur as ambient temperatures exceed 150°F, non liquid-filled Type 1279 (phenolic case), 1377 and 1379 (aluminum case) Duragauge® gauges with standard glass windows, can withstand continuous operating temperatures up to 250°F. Liquid-filled gauges can withstand 200°F but glycerin fill and acrylic window will tend to yellow. Accuracy will be affected by approximately 1.5% per 100°F. Gauges with welded joints will withstand 750°F (450°F with silver brazed joints) for short times without rupture, although other parts of the gauge will be destroyed and calibration will be lost. Proper selection of the Bourdon system material is dependent on the process fluid to which the system will be subjected. If the correct material is not available, the use of a diaphragm seal may be necessary to protect the system from the process fluid. Liquid-filled gauges are recommended for the discharge side of positive displacement pumps.

Cases: Many styles and different materials are offered. Two types are available, open and solid front. Solid front cases have a solid wall between the Bourdon tube and the window. Open-front cases have the dial between the Bourdon tube and the window.

Rings: The ring, which retains the window, is threaded, bayonet (cam), friction, snap-on or hinged, depending upon case type.

Pressure Elements: Available in a wide variety of materials, including: brass, phosphor bronze, alloy steel, 316 stainless steel, Monel and Inconel. Proper selection of the Bourdon system or bellows material depends upon the process fluid to which the system will be subjected. If the correct material is not available, the use of a diaphragm seal may be necessary to protect the system from the process fluid. If the gauge is subject to severe vibration or pressure pulsation, a liquid-filled gauge is recommended.

Duragauge® *PLUS!™* Pressure Gauge: An exclusive, new, optional feature provides virtually liquid-filled performance in a dry gauge. The *PLUS!™* Performance feature is a patented design incorporated into the industry-standard Ashcroft pressure gauge. *PLUS!™* is available in any Duragauge® gauge case style material or range. Historically, pulsation and vibration have reduced gauge life and made gauges difficult to read. Customers have had no alternative to liquid-filled gauges to solve vibration and pulsation problems, until now!

Movements: Movements are designed and materials of construction selected to reduce friction and extend wear life. For example, commercial gauges have the unique Power*Flex™* brass movement with polyester segment, whereas the stainless steel movement of the Duragauge® gauge is a rotary-geared design with Teflon-coated wear parts. Other movements are stainless steel with bronze pinion and segment or bronze bushed.

Dials: Dials are uniformly graduated and have highly legible black markings. White-coated or brushed aluminum backgrounds are available.

Windows: The standard is glass or plastic depending on the type of the gauge. Options are laminated safety glass, nonglare glass or plastic, depending on the type of gauge.

Pointers: Duragauge® pressure gauges have micrometer adjustable pointers which can be repositioned without removal. Type 1009 gauges have adjustable pointers. Many other gauges are supplied with nonadjustable pointers which can be reset by removing the ring, and removing and resetting the pointer. Adjustable pointers are available as an option on these gauges.

ASHCROFT®

Duragauge® Pressure Gauge
Type 1279, ASME B 40.1
Grade 2A (±0.5% of span)

- *4½″ full-size Bourdon tube*
- *Patented Duratube™ with as-welded-tube construction controls stress for longer life*
- *"Round Cap Tip" construction lowers stresses for longer life*
- *Easily adjustable, self-locking micrometer pointer*
- *Burn-resistant phenol turret case*
- *Exclusive Teflon coated 400 series stainless steel rotary movement for longer life*
- *PLUS!™ Performance Option:*
  - *See pages 6-7 for details*
  - *Order as option XLL*
- *Epoxy-coated system for superior corrosion resistance*

Type 1279 Duragauge® pressure gauge is offered in 4½″ phenolic case for superior chemical and heat resistance. Solid-front case design with blow-out back for safety. Dry, liquid-filled, hermetically sealed, weatherproof or ***PLUS!™*** options available. Field convertible to liquid-fill with conversion kit (detailed on page 247). All case styles provide full temperature compensation.

BOURDON SYSTEM SELECTION

Ordering Code	Bourdon Tube & Tip Material(1) (all joints TIG welded except "A")	Socket Material	Tube Type	Range Selection Limits (psi)	NPT Conn.(2)
A	Phosphor Bronze Tube-Brass Tip, Silver Brazed	Brass	C-Tube	12/1000	¼, ½
R	316L stainless steel	1019 steel	C-Tube	12/1500	¼,½
			Helical	2000/20,000	¼,½
S	316L stainless steel	316L stainless steel	C-Tube	12/1500	¼,½
			Helical	2000/20,000	¼,½
P(3)	K Monel	Monel 400	C-Tube	15/1500	¼,½
			Helical	2000/30,000	¼,½(4)

(1) For selection of the correct Bourdon system material, see the media application table on page 253.
(2) Other connections available on application.
(3) Use for applications where NACE standard MR-01-75 is specified.
(4) 30,000 psi range supplied with ¼ high pressure connection, ½ NPT optional.

STANDARD RANGES

Pressure psi	Compound psi
0/15	30 in.Hg/15 psi
0/30	30 in.Hg/30 psi
0/60	30 in.Hg/60 psi
0/100	30 in.Hg/100 psi
0/160	30 in.Hg/150 psi
0/200	30 in.Hg/300 psi
0/300	
0/400	**Vacuum**
0/600	30/0 in.Hg
0/800	34/0 ftH₂O
0/1000	
0/1500	
0/2000	
0/3000	
0/5000	
0/10,000	**NOTE:**
0/20,000	**Equivalent standard kg/cm², and kPa metric ranges are available.**
0/30,000	

TO ORDER THIS 1279 DURAGAUGE:

Select: 45 1279 SS* 04L XXX 2000#

1. Dial size–4½″
2. Case type–1279
   Ring–threaded reinforced polypropylene
3. Bourdon system selection ordering code
4. Connection–¼ NPT (02), ½ NPT (04), Lower (L), Back (B)
5. Optional features–see page 249
6. Standard pressure range
7. Accessories–see pages 243-248

(*) "S" denotes solid front case design

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

MADE IN U.S.A.

ASHCROFT®

Duragauge® Pressure Gauge
Type 1377, ASME B 40.1
Grade 2A (±0.5% of span)

- *4½″ full-size Bourdon tube*
- *Patented Duratube™ with as-welded-tube construction controls stress for longer life*
- *"Round Cap Tip" construction lowers stresses for longer life*
- *Easily adjustable, self-locking micrometer pointer*
- *Exclusive Teflon coated 400 series stainless steel rotary movement for longer life*
- *PLUS!™ Performance Option:*
  - *Liquid-filled performance in a dry gauge*
  - *Fights vibration and pulsations without liquid-filled headaches*
  - *Order as option XLL*
- *Epoxy-coated system for superior corrosion resistance*

Type 1377 Duragauge® pressure gauge is offered in 4½″, 6″ and 8½″ dial sizes.

Designed for flush mounting, this solid-front gauge is ideal for panel board applications. Its black epoxy coating and its tough aluminum weatherproof case easily allow application in a variety of climatic conditions.

BOURDON SYSTEM SELECTION

Ordering Code	Bourdon Tube & Tip Material(1) (all joints TIG welded except "A")	Socket Material	Tube Type	Range Selection Limits (psi)	NPT Conn.(2)
A	Phosphor Bronze Tube-Brass Tip, Silver Brazed	Brass	C-Tube	12/1000	¼, ½
R(4)	316L stainless steel	1019 steel	C-Tube	12/1500	¼, ½
			Helical	2000/20,000	¼, ½
S	316L stainless steel	316 stainless steel	C-Tube	12/1500	¼, ½
			Helical	2000/20,000	¼, ½
P(3)	K Monel	Monel 400	C-Tube	15/1500	¼, ½
			Helical	2000/30,000	¼, ½(5)

(1) For selection of the correct Bourdon system material, see the media application table on page 253.
(2) Other connections available on application.
(3) Use for applications where NACE standard MR-01-75 is specified.
(4) "R" Bourdon system not available in 8½″ dial size.
(5) 30,000 psi range supplied with ¼ high pressure connection, ½ NPT optional.

STANDARD RANGES

Pressure psi	Compound psi
0/15	30 in.Hg/15 psi
0/30	30 in.Hg/30 psi
0/60	30 in.Hg/60 psi
0/100	30 in.Hg/100 psi
0/160	30 in.Hg/150 psi
0/200	30 in.Hg/300 psi
0/300	
0/400	**Vacuum**
0/600	30/0 in.Hg
0/800	34/0 ftH$_2$O
0/1000	
0/1500	
0/2000	
0/3000	
0/5000	
0/10,000	**NOTE:**
0/20,000	**Equivalent standard kg/cm², and kPa metric ranges are available.**
0/30,000	

TO ORDER THIS 1377 DURAGAUGE:

Select: 45 | 1377 | AS* | 04B | XXX | 2000#

1. Dial size–4½″
2. Case type–1377
   Ring–steel, black enamel finish
3. Bourdon system selection ordering code
4. Connection–¼ NPT (02), ½ NPT (04), Lower (L), Back (B)
5. Optional features–see page 249
6. Standard pressure range
7. Accessories–see pages 243-248

(*) "S" denotes solid front case design

Consult factory for guidance in product selection
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visit our web site at www.ashcroft.com

MADE IN U.S.A.

ASHCROFT®

Duragauge® Pressure Gauge
Type 1379, ASME B 40.1
Grade 2A (±0.5% of span)

- *4½″ full-size Bourdon tube*
- *Patented Duratube™ with as-welded-tube construction controls stress for longer life*
- *"Round Cap Tip" construction lowers stresses for longer life*
- *Easily adjustable, self-locking micrometer pointer*
- *Exclusive Teflon coated 400 series stainless steel rotary movement for longer life*
- *PLUS!™ Performance Option:*
  - *Liquid-filled performance in a dry gauge*
  - *Fights vibration and pulsations without liquid-filled headaches*
  - *Order as option XLL*
- *Epoxy-coated system for superior corrosion resistance*

Type 1379 Duragauge® pressure gauge is offered in 4½″, 6″ and 8½″ dials sizes.

This rugged, solid-front aluminum case gauge is tops in its field. It is available as a weatherproof hermetically sealed or liquid-filled version in 4½″ and 6″ sizes in pressures to 30,000 psi. Like the 1279, it can be easily field converted from the weatherproof version to either the sealed or liquid-filled version using an optional kit. Ranges 50,000, 80,000 and 100,000 psi are available in 6″ hermetically sealed and liquid-filled cases. All size cases are coated with black epoxy which will withstand most environmental conditions.

BOURDON SYSTEM SELECTION

Ordering Code	Bourdon Tube & Tip Material(1) (all joints TIG welded except "A")	Socket Material	Tube Type	Range Selection Limits (psi)	NPT Conn.(2)
A	Phosphor Bronze Tube-Brass Tip, Silver Brazed	Brass	C-Tube	12/1000	¼, ½
R	316L stainless steel	1019 steel	C-Tube	12/1500	¼, ½
			Helical	2000/20,000	¼, ½
S	316L stainless steel	316 stainless steel	C-Tube	12/1500	¼, ½
			Helical	2000/20,000	¼, ½
P(4)	K Monel	Monel 400	C-Tube	15/1500	¼, ½
			Helical	2000/30,000	¼, ½(5)
WW	Inconel 718	316 stainless steel	Helical	50/80/100,000(3)(6)	¼ high press.

(1) For selection of the correct Bourdon system material, see the media application table on page 253.
(2) Other connections available on application.
(3) 50,000-100,000 psi available in 6″ 1379 lower and back connection only.
(4) Use for applications where NACE standard MR-01-75 is specified.
(5) 30,000 psi offered with ¼ high pressure connection, ½ NPT optional.
(6) Offered hermetically sealed as standard. Liquid fillable optional.

STANDARD RANGES

Pressure psi	Compound psi
0/15	30 in.Hg/15 psi
0/30	30 in.Hg/30 psi
0/60	30 in.Hg/60 psi
0/100	30 in.Hg/100 psi
0/160	30 in.Hg/150 psi
0/200	30 in.Hg/300 psi
0/300	
0/400	**Vacuum**
0/600	30/0 in.Hg
0/800	34/0 ftH$_2$O
0/1000	
0/1500	
0/2000	
0/3000	
0/5000	
0/10,000	
0/20,000	
0/30,000	
0/50,000	
0/80,000	
0/100,000	

NOTE:
Equivalent standard kg/cm², and kPa metric ranges are available.

TO ORDER THIS 1379 DURAGAUGE:

Select:	45	1379	SS*	04L	XXX	100#

1. Dial size–4½″, 6″, or 8½″
2. Case type–1379
   Ring–threaded reinforced polypropylene
3. Bourdon system selection ordering code
4. Connection–¼ NPT (02), ½ NPT (04), Lower (L), Back (B)
5. Optional features–see page 249
6. Standard pressure range
7. Accessories–see pages 243-248

(*) "S" denotes solid front case design

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MADE IN U.S.A.

ASHCROFT®

Duragauge® Pressure Gauge
Type 2462, ASME B 40.1
Grade 2A (±0.5% of span)

- *4½″ full-size Bourdon tube*
- *Patented Duratube™ with as-welded-tube construction controls stress for longer life*
- *"Round Cap Tip" construction lowers stresses for longer life*
- *Easily adjustable, self-locking micrometer pointer*
- *Exclusive Teflon coated 400 series stainless steel rotary movement for longer life*
- *PLUS!™ Performance Option:*
  - *Liquid-filled performance in a dry gauge*
  - *Fights vibration and pulsations without liquid-filled headaches*
  - *Order as option XLL*
- *Epoxy-coated system for superior corrosion resistance*

This solid-front gauge is designed for greater readability by using a large 6″ dial and a durable 4½″ system. Viewed from the front, it appears to be a 6″ gauge. Its glass-filled polypropylene case is highly impact resistant and holds up well in most environments. This general-purpose gauge offers truly functional styling and economy. The result is a gauge that will fit most applications at a price that represents outstanding value.

BOURDON SYSTEM SELECTION

Ordering Code	Bourdon Tube & Tip Material(1) (all joints TIG welded except "A")	Socket Material	Tube Type	Range Selection Limits (psi)	NPT Conn.(2)
A	Phosphor Bronze Tube-Brass Tip, Silver Brazed	Brass	C-Tube	12/1000	¼, ½
R	316L stainless steel	1019 steel	C-Tube	12/1500	¼, ½
			Helical	2000/20,000	¼, ½
S	316L stainless steel	316 stainless steel	C-Tube	12/1500	¼, ½
			Helical	2000/20,000	¼, ½
P(3)	K Monel	Monel 400	C-Tube	15/1500	¼, ½
			Helical	2000/30,000	¼, ½(4)

(1) For selection of the correct Bourdon system material, see the media application table on page 253.
(2) Other connections available on application.
(3) Use for applications where NACE standard MR-01-75 is specified.
(4) 30,000 psi range supplied with ¼ high pressure connection, ½ NPT optional.

STANDARD RANGES

Pressure psi	Compound psi
0/15	30 in.Hg/15 psi
0/30	30 in.Hg/30 psi
0/60	30 in.Hg/60 psi
0/100	30 in.Hg/100 psi
0/160	30 in.Hg/150 psi
0/200	30 in.Hg/300 psi
0/300	
0/400	**Vacuum**
0/600	30/0 in.Hg
0/800	34/0 ftH₂O
0/1000	
0/1500	
0/2000	
0/3000	
0/5000	**NOTE:**
0/10,000	**Equivalent standard kg/cm², and kPa metric ranges are available.**
0/20,000	
0/30,000	

TO ORDER THIS 2462 DURAGAUGE:

Select:	45	2462	RS*	04L	XXX	1000#
1. Dial size–4½″						
2. Case type–2462 Ring–threaded reinforced polypropylene						
3. Bourdon system selection ordering code						
4. Connection–¼ NPT (02), ½ NPT (04), Lower (L), Back (B)						
5. Optional features–see page 249						
6. Standard pressure range						
7. Accessories–see pages 243-248						

(*) "S" denotes solid front case design

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

MADE IN U.S.A.

ASHCROFT®

Process Pressure Gauge Type 1259, ASME B 40.1 Grade 2A (±0.5% of span)

- *Solid front safety case*
- *Accuracy complies with ASME B 40.1 Grade 2A (±0.5% of span)*
- *As-welded Bourdon Tube for safety and longer life*
- *Easily adjustable, self-locking micrometer pointer*
- *Adjustable movement*
- *Ranges: vac to 20,000 psi*
- *Date coded socket to ensure pedigree*
- *Wetted part material printed on dial*

The Type 1259 process gauge is offered with an as-welded Bourdon tube to ensure safety and a longer life than competitive gauges. Meeting ASME B40.1, the Type 1259 process gauge has been engineered to meet marketplace requirements.

BOURDON SYSTEM SELECTION

Ordering Code	Bourdon Tube & Tip Material[1] (all joints TIG welded except "A")	Socket Material	Tube Type	Range Selection Limits (psi)	NPT Conn.[2]
S	316L stainless steel	316 stainless steel	C-Tube	12/1500	¼, ½
			Helical	2000/20,000	¼, ½
P[3]	Monel	Monel	C-Tube	12/1000	¼, ½
			Helical	1500/20,000	¼, ½

(1) For selection of the correct Bourdon system material, see the media application table on page 253.
(2) Other connections available on application.
(3) Use for applications where NACE standard MR-01-75 is specified.

STANDARD RANGES

Pressure psi	Compound psi
0/15	30 in.Hg/15 psi
0/30	30 in.Hg/30 psi
0/60	30 in.Hg/60 psi
0/100	30 in.Hg/100 psi
0/160	30 in.Hg/150 psi
0/200	30 in.Hg/300 psi
0/300	
0/400	**Vacuum**
0/600	30/0 in.Hg
0/800	34/0 ftH$_2$O
0/1000	
0/1500	
0/2000	
0/3000	**NOTE:**
0/5000	**Equivalent standard kg/cm², and kPa metric ranges are available.**
0/10,000	
0/20,000	

TO ORDER THIS 1259 PROCESS GAUGE:

Select: **45** **1259** **SD** **04L** **XXX** **1000#**

1. Dial size–4½″
2. Case type–1259
   Ring–threaded reinforced polypropylene
3. Bourdon system selection ordering code
4. Connection–¼ NPT (02), ½ NPT (04), Lower (L), Back (B)
5. Optional features–see page 249
6. Standard pressure range
7. Accessories–see pages 243-248

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

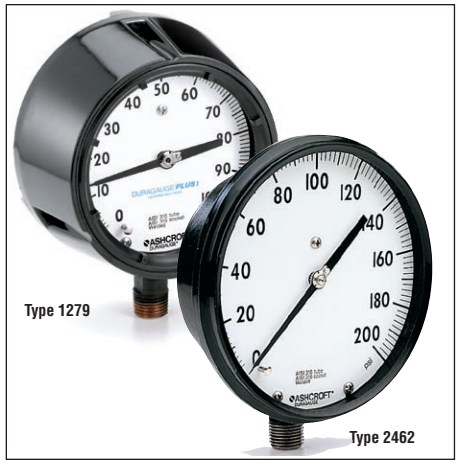
ASHCROFT®

Receiver Gauge Types 1279, 1379, 1377 & 2462, ASME B 40.1 Grade 2A (±0.5% of span)

- *4½″ full-size Bourdon tube*
- *Patented Duratube™ with as-welded-tube construction controls stress for longer life*
- *"Round Cap Tip" construction lowers stresses for longer life*
- *Easily adjustable, self-locking micrometer pointer*
- *Exclusive Teflon coated 400 series stainless steel rotary movement for longer life*
- *PLUS!™ Performance Option:*
  - *Liquid-filled performance in a dry gauge*
  - *Fights vibration and pulsations without liquid-filled headaches*
  - *Order as option XLL*
- *Epoxy-coated system for superior corrosion resistance*

Ashcroft® receiver gauges are used in conjuction with pneumatic transmitters to indicate pressure, temperature, flow or other process parameters that can be transmitted by proportional variations in air pressure.

Available in standard transmitter-output air pressure ranges of 3-15 and 3-27 psi.



GAUGE TYPE NUMBER	DIAL SIZES	CASE/RING MATERIAL	SYSTEM ASSEMBLY	RANGE psi	POINTER	MOVEMENT	NPT CONN.	ACCURACY
1279AS-XPR	4½	**Case** Phenolic, black **Ring** Polypropylene, threaded, black	Phosphor bronze Bourdon tube, brass socket; (316 stainless steel optional)	3-15 and 3-27	Black, micrometer adjustable	Rotary geared, stainless steel, Teflon® coated pinion gear and segment shaft	½ (¼ Opt)	ASME B 40.1 Grade 2A (±0.5% of span)
1377AS-XPR	4½, 6, 8½	**Case** Aluminum, black epoxy **Ring** Hinged, steel, black						
1379AS-XPR	4½, 6, 8½	**Case** Aluminum, black epoxy **Ring** Threaded polypropylene 4½, 6 Hinged, steel, black 8½						
2462AS-XPR	6	**Case** Polypropylene, black **Ring** Polypropylene, bayonet lock, black						

GAUGE TYPE NUMBER	DIAL SIZES	CONNECTION LOCATION	MOUNTING TYPE	MOUNTING METHOD	MOUNTING METHOD CODE
1279AS-XPR	4½	Lower/Back	Stem/Surface	—	—
		Back	Flush	1278M Ring	—
1377AS-XPR	4½, 6, 8½	Back	Flush	—	—
		Lower/Back	Stem/Surface	—	—
1379AS-XPR	4½, 6, 8½	Back	Flush	4½ & 6, 1278M Ring – 8½, Wide Ring std.	—
		Lower/Back	Stem	—	—
2462AS-XPR	6	Lower/Back	Surface	Surface mounting ring	XBF
		Back	Flush	Flush mounting bracket	XBQ

TO ORDER THESE TYPES 1279/1379/1377/2462 RECEIVER GAUGES:

Select:	45	1279	AS	04	L	XPR	3-15 psi
1. Dial size							
2. Case type							
3. Tube & socket material							
4. Connection size, ¼ (02), or ¼ (04)							
5. Connection location, (L–Lower), (B–Back)							
6. Optional features (XPR always appears in code for receiver gauge)							
7. Range of transmitted signal (also specify the scale to be shown on the dial face)							

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

MADE IN U.S.A.

ASHCROFT®

Duradrive™ Process Gauge
Type 1288, ASME B 40.1
Grade 2A (±0.5% of span)

- *Available in a 4½″ dial size*
- *Direct drive, helical wound pressure sensing element*
- *Superior performance on severe pulsation and vibration applications*
- *Burn and chemical resistant phenolic turret case*
- *External zero adjustable dial*
- *Five-year warranty*

The Ashcroft® Duradrive™ process gauge features an Inconel X-750 helical wound bourdon tube in a solid front weatherproof phenolic turret case.

The dial has an external zero adjust feature and is available in a 4½″ dial size in lower connection only.

Molded threads at the front of the case provide axial sealing with the use of a threaded glass-filled polypropylene ring.

IN A RUSH? ASK FOR ASHCROFT GOLD SERVICE

BOURDON SYSTEM SELECTION

Ordering Code	Bourdon Tube & Tip Material	Socket Material	Tube Type	Range Selection Limits (psi)	NPT Conn.(1)
WD	Inconel X-750	316 stainless steel	Helical	45 psi/vac to 10,000	¼, ½

(1) Standard connection is ½ NPT; ¼ NPT is optional.

STANDARD RANGES

Pressure psi	Compound psi
0/60	30 in.Hg/45 psi
0/100	
0/160	
0/200	
0/300	
0/600	
0/1000	
0/2000	
0/3000	
0/6000	
0/10,000	

10 piece minimum applies.

TO ORDER THIS 1288 DURADRIVE GAUGE:

Select: **45** **1288** **WD** **04L** **100#**

1. Dial size–4½″
2. Case type–1288
3. Bourdon system selection ordering code
4. Connection– ½ NPT (04), Lower (L)
5. Standard pressure range

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

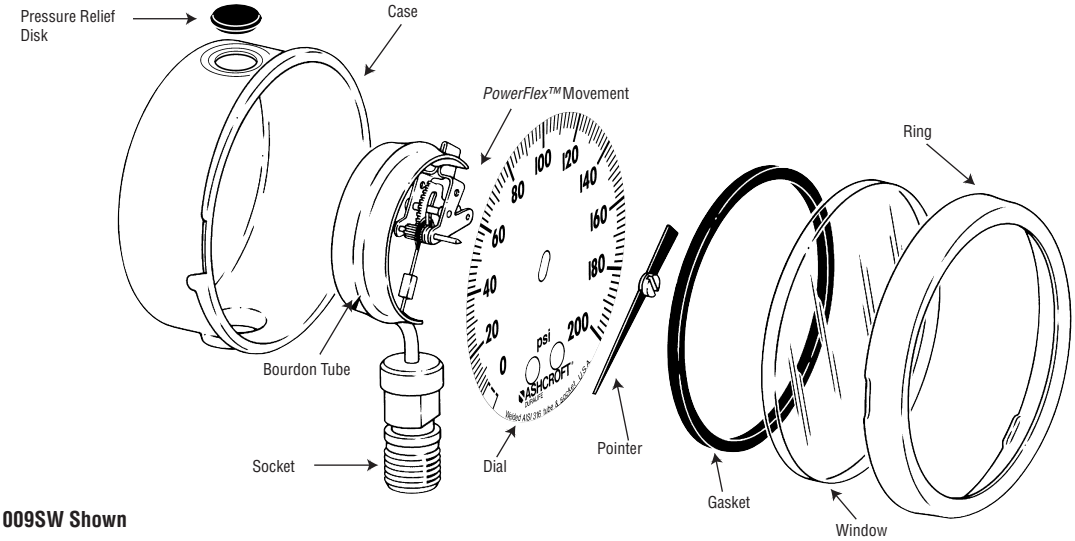
MADE IN U.S.A.

STAINLESS STEEL CASE GAUGES & INDUSTRIAL GAUGES

ASME B 40.1 Grade 1A (±1.0% of span)
ASME B 40.1 Grade 2A (±0.5% of span)
ASME B 40.1 Grade A (±2-1-2% of span)
ASME B 40.1 Grade B (±3-2-3% of span)

ASHCROFT®

Product Selection Information
Stainless Steel Case Pressure Gauges



2½″ 1009SW Shown

Consult ASME B40.1 for guidance in gauge selection

WARNING: To prevent misapplication, pressure gauges should be selected considering media and ambient operating conditions. Improper application can be detrimental to the gauge, causing failure and possible personal injury or property damage. The information contained in this catalog is offered as a guide to assist in making the proper selection of a pressure gauge. Additional information is available from Ashroft Inc. or www.ashcroft.com.

Pressure Ranges:
As recommended by ASME B40.1, select a gauge with a full scale pressure range of approximately twice the normal operating pressure. The maximum operating pressure should not exceed approximately 75% of the full scale range. Failure to select a gauge range within these criteria may ultimately result in fatigue failure of the Bourdon tube.

Operating Conditions:
The operating conditions to which a gauge will be subjected must be considered. If the gauge will be subjected to severe vibration or pressure pulsation, liquid filling the gauge will be necessary to obtain normal product life.

Other than discoloration of the dial and hardening of the gasketing that may occur as ambient temperatures exceed 150°F, stainless steel gauges (that are not liquid filled) can withstand continuous ambient temperatures as high as 250°F. Liquid-filled gauges can withstand ambient temperatures up to 200°F. Accuracy will be affected by approximately 1.5% per 100°F.

Gauges with welded joints will withstand 750°F (450°F with silver brazed joints) for short times without rupture, although other parts of the gauge will be destroyed and calibration will be lost.

Proper selection of the Bourdon system material is dependent on the process fluid to which the system will be subjected. If the correct material is not available, the use of a diaphragm seal may be necessary to protect the system from the process fluid. Liquid filled gauges with throttle plugs are recommended for the discharge side of positive displacement pumps.

Pressure Elements:
Available in a wide variety of materials, including: phosphor bronze, alloy steel, 316 stainless steel and K Monel.

Cases:
Ashcroft® stainless steel case gauges have 304 stainless steel cases. The 2½″, 3½″, 100mm 1009 and the 63mm and 100mm 1008 are field convertible. These gauges can be converted to hermetically sealed, weatherproof or liquid filled by changing the fill plug and adding a throttle plug. The 40mm and 50mm 1008 gauges can be furnished from the factory hermetically sealed, weatherproof or liquid fillable. Specify the XLJ variation. With the exception of 40mm and 50mm 1008 gauges, all dry stainless steel gauges come standard with a vented pressure relief disc.These gauges with the vented plug are not weatherproof or hermetically sealed. If a weatherproof or hermetically sealed gauge is required, specify the XLJ variation and your gauge will be shipped with a solid nonventing plug.

Rings:
The ring, which retains the window, is push-in, crimped or bayonet (cam) depending on the type number.

Movements:
Movements are designed and materials of construction selected to reduce friction and extend wear life.

Dials:
Dials are uniformly graduated and have highly legible black markings. All 1009 gauges, with the exception of 1009 XMG, have a brushed aluminum dial with black markings. Type 1008 gauges have a white dial with black markings.

Windows:
Depending on the size and type, Ashcroft® stainless steel case gauges are available with polycarbonate, acrylic, shatterproof glass or glass windows.

Pointers:
Depending on the type, Ashcroft® stainless steel gauges are available with adjustable or fixed pointers.

ASHCROFT®

Stainless Steel-Case Gauges
Type 1008, ASME B 40.1
Grade B (±3-2-3% of span)

- *40mm and 50mm sizes*
- *All-stainless steel construction*
- *Dry or liquid-filled versions*
- *Lower or back connect*
- *Glass window standard*
- *Front flange or U-clamp available for flush mounting*

Ashcroft® **40mm and 50mm** all stainless steel pressure gauges help to complete our full-line product offering of stainless steel gauges with dial sizes from 40mm to 100mm. These smaller size gauges are used whenever space limitations and atmospheric and process corrosion exist.

STANDARD RANGES

Pressure Ranges – Single Scale

psi	kg/cm²	kPa
0/15	0-1	0-100
0/30	0-2	0-200
0/60	0-2.5	0-250
0/100	0-4	0-400
0/160	0-6	0-600
0/200	0-10	0-1000
0/300	0-16	0-2000
0/400	0-25	0-2500
0/600	0-40	0-4000
0/800	0-60	0-6000
0/1000	0-100	0-10,000
0/1500	0-160	0-20,000
0/2000	0-250	0-25,000
0/3000		
0/5000		

Compound Ranges – Single Scale

psi	kg/cm²	kPa
30 in.Hg/15 psi	–1/0/1	–100/0/100
30 in.Hg/30 psi	–1/0/3	–100/0/300
30 in.Hg/60 psi	–1/0/5	–100/0/500
30 in.Hg/100 psi	–1/0/9	–100/0/900
30 in.Hg/150 psi	–1/0/15	–100/0/1500
30 in.Hg/300 psi	–1/0/25	–100/0/2500

Vacuum Ranges – Single Scale

psi	kg/cm²	
30/0 in.Hg	–1/0	

SPECIFICATIONS

Dial size:	40mm (1½″) and 50mm (2″)
Accuracy:	ASME B 40.1 Grade B (±3-2-3% of span)
Optional:	ASME B 40.1 Grade 1A (±1% of span)
Case:	304 stainless steel with 304 stainless steel polished ring
Bourdon Tube and Socket:	316 stainless steel
Movement:	Stainless steel
Standard connections:	⅛ NPT standard for 40mm, ¼ NPT standard for 50mm
Dial:	Aluminum, white background with black markings. Pressure range: Vac. through 15,000 psi including compound
Pointer:	Aluminum
Window:	Glass

TO ORDER THIS 1008 PRESSURE GAUGE:

Select: **40** **1008** **S** **(L)** **01L** **1000#**

1. Dial size–40mm or 50mm
2. Case type–1008
3. Tube and socket material
4. Liquid filled (glycerin), leave blank if dry
5. Connection size–⅛ (01), ¼ (02)
6. Connection location–Lower (L), Back (B)
7. Standard pressure range–1000 psi

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Stainless Steel-Case Gauge
Type 1008S, ASME B 40.1
Grade B (±3-2-3% of span)

- *Patented PowerFlex™ movement isolates movement from shock and vibration for longer life*
- *All stainless, all-welded construction for long life*
- *New PLUS!™ Performance Option:*
  - *Liquid-filled performance in a dry gauge (option XLL)*
  - *Fights vibration and pulsations without liquid-fill headaches*
- *True Zero™ pointer indication – no stop pin to mask false zero reading – ensures safety and process control*

Available in **63mm and 100mm dials sizes,** 1008S pressure gauges are field liquid fillable and field convertible for panel mounting. ASME Grade B, 3-2-3% accuracy is standard. The gauge is available dry, liquid-filled weatherproof or hermetically sealed and *now* with *PLUS!™* performance option.

STANDARD RANGES

Single-Scale Dial	Dual-Scale Dial	
psi	**psi Inner Arc**	**kPa Outer Arc**
0/15	0/15	0/100
0/30	0/30	0/200
0/60	0/60	0/400
0/100	0/100	0/700
0/160	0/160	0/1100
0/200	0/200	0/1400
0/300	0/300	0/2000
0/400	0/400	0/2800
0/600	0/600	0/4000
Vacuum in.Hg	**in.Hg**	**Vacuum**
30/0	30/0	–100/0
Comp. in.Hg/psi	**in.Hg/psi**	**kPa**
30/15	30/15	–100/100
30/30	30/30	–100/200
30/60	30/60	–100/400
30/100	30/100	–100/700
30/150	30/150	–100/1000
30/300	30/300	–100/2000
psi	**psi Inner Arc**	**kPa Outer Arc**
0/1000	0/1000	0/7000
0/1500	0/1500	0/10,000
0/2000	0/2000	0/14,000
0/3000	0/3000	0/20,000
0/5000	0/5000	0/34,000
0/6000	0/6000	0/40,000
0/7500	0/7500	0/50,000
0/10,000	0/10,000	0/70,000
0/15,000	0/15,000	0/100,000

DUAL-SCALE AMMONIA RANGES

Compound in Hg/psi	°F Outer Arc
Vac/150	–40/84°F
Vac/300	–40/125°F

BOURDON SYSTEM SELECTION(1)

Ordering Code	Bourdon Tube & Tip Material(1)	Socket Material	Tube Type	Range Selection Limits (psi)	NPT Conn.(3)
S	316 stainless steel	316 stainless steel	C-Tube	Vac/800	¼ , ½ & ⅛(2)
S	316 stainless steel	316 stainless steel	Helical	1000/15,000	¼ , ½ & ⅛(2)

(1) For selection of the correct Bourdon system material, see the media application table on page 253.
(2) ½ NPT available 100mm lower only.
(3) ¼" JIS, BSP or DIN threads available.

TO ORDER THIS 1008 PRESSURE GAUGE:

Select:	63	1008	S	(L)	02L	XXX	1000#

1. Dial size–63mm or 100mm
2. Case type–1008
3. Tube and socket material
4. Liquid filled (glycerin), leave blank if dry
5. Connection size–⅛ (01), ¼ (02), ½ (04)
6. Connection location–Lower (L), Back (B)
7. Optional Features–see page 249
8. Standard pressure range–1000 psi

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Duralife® Pressure Gauge
Type 1009, ASME B 40.1
Grade 1A (±1% of span)

DESIGNED FOR SAFETY AND LONGER LIFE

- *5-year limited warranty*
- *Patented PowerFlex™ movement isolates movement from shock and vibration for longer life*
- *All stainless, all-welded construction for long life*
- *ASME Grade 1A, 1% accuracy full scale*
- *True Zero™ pointer indication – no stop pin to mask false zero reading – ensures safety and process control*

- *New PLUS!™ Performance Option:*
  - *Liquid-filled performance in a dry gauge*
  - *Fights vibration and pulsations without liquid-fill headaches*
  - *Order as option XLL*

OTHER FEATURES:

Available in 2½″ and 3½″ dial sizes, Duralife® pressure gauges are liquid fillable and field convertible for panel mounting. Both zero and span adjustments are standard.

The gauge is available dry, liquid-filled weatherproof or hermetically sealed and *now* with *PLUS!™* performance option. A five year limited warranty is standard with the Type 1009 Duralife® gauge.

The following Table is *not* for conversion purposes.

STANDARD RANGES [3][4][5]

Pressure psi	kg/cm² - bar	kPa
0/15	0/1	0/100
0/30	0/1.6	0/160
0/60	0/2.5	0/250
0/100	0/4	0/400
0/160	0/6	0/600
0/200	0/10	0/1000
0/300	0/16	0/1600
0/400	0/25	0/2500
0/600	0/40	0/4000
0/800	0/60	0/6000
0/1000	0/100	0/10,000
0/1500	0/160	0/16,000
0/2000	0/250	0/25,000
0/3000	0/400	0/40,000
0/4000	0/600	0/60,000
0/5000	0/1000	0/100,000
0/6000		
0/7500		
0/10,000		
0/15,000		
Vacuum		
30 in./0 in.Hg	–1/0	–100/0
Compound		
30 in.Hg/15 psi	–1/0/1.5	–100/0/150
30 in.Hg /30 psi	–1/0/3	–100/0/300
30 in.Hg /60 psi	–1/0/5	–100/0/500
30 in.Hg /100 psi	–1/0/9	–100/0/900
30 in.Hg /150 psi	–1/0/15	–100/0/1500
30 in.Hg /300 psi	–1/0/24	–100/0/2400

BOURDON SYSTEM SELECTION[1]

Ordering Code	Bourdon Tube & Tip Material[1]	Socket Material	Tube Type	Range Selection Limits (psi)	NPT Conn.[6]
AW	316 stainless steel	Bronze	C-Tube	Vac/600	¼
AW	316 stainless steel	Bronze	Helical	1000	¼
SW	316 stainless steel	316 stainless steel	C-Tube	Vac/600	¼ & ½[2]
SW	316 stainless steel	316 stainless steel	Helical	800/15,000	¼ & ½[2]

(1) For selection of the correct Bourdon system material, see the media application table on page 253.
(2) ½ NPT available 3½″ lower SW system only.
(3) Type 1009 gauges may be ordered with metric single-scale dial: kPa,bar or kg/cm².
(4) Dual-scale dials will be supplied with standard metric inner scale and equivalent psi outer scale or with standard psi inner scale and equivalent metric outer scale–please specify.
(5) Special logos and scales available upon request.
(6) ¼″ JIS, BSP or DIN threads available on SW systems.

TO ORDER THIS 1009 DURALIFE PRESSURE GAUGE:

Select:	35	1009	SW	(L)	02L	XXX	1000#

1. Dial size–2½″, 3½″
2. Case type–1009
3. Tube and socket material
4. Liquid filled (glycerin), leave blank if dry
5. Connection size–⅛ (01), ¼ (02) ½ (04)
6. Connection location–Lower (L), Back (B)
7. Optional Features–see page 249
8. Standard pressure range–1000 psi

Accessories: see pages 243-248

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

PATENTED

Xmitr™ Transmitter Gauge
All Stainless Steel
Type X1009 2½˝, 3½˝

TRANSMITTER SPECIFICATIONS

Output (Supply):
4-20mA 2 wire (12 to 30 Vdc Supply)
1-5 Vdc 3 wire Regulated (10 to 24 Vdc Supply)
0.5-4.5 Vdc 3 wire Ratio-metric (5 Vdc ±5% Supply)

Ranges: 15 to 15,000 psi (see table 3)

Performance:(1)
±1% FSO from best fit straight line (includes non-linearity, hysteresis, and non-repeatability)

Temperature:

Storage:	–40 to 221°F	(–40 to 105°C)(5)
Operating:	–40 to 221°F	(–40 to 105°C)(5)
Compensated:	–4 to 185°F	(–20 to 85°C)
Thermal effect:	1.4% per 100°F, 3%/100°C typical (zero & full scale combined)	

CE Conformity:
Meets CE heavy industrial Per EN 61326: 1998 Annex A

Enclosure: Stainless steel case IP50 (std), IP65 (XLJ)(2)

Media: Liquid, gas or vapor

Wetted Materials: 316L Stainless Steel

Electrical Protection:
Reverse polarity 75 Vdc, Over-voltage 60 Vdc continuous, and short-circuit protection.(3)

Shock: 100g-force per IEC770.

Vibration: 5g's 50 to 2000Hz.

Humidity: 95% non-condensing

Proof Pressure:
0 to 600 psi = 125% of full scale
1,000 to 15,000 psi = 110%

Burst Pressure:
0 to 1,500 psi = 10x burst
2,000 to 6,000 psi = 3x
10,000 to 15,000 psi = 1.8x

Response Time: Less than 10 ms (electronics)

Wake-up Time: 1 ms

Insulation: 1 meg ohm at 200 Vdc

Electrical Connection:
2´ shielded cable
Mini-Hirschmann series G

Process Connection: Lower

Process Connection:
⅛ NPT, ¼ NPT, G ¼

GAUGE SPECIFICATIONS

Dial Size: 2½˝, 3½˝

Gauge Accuracy: 1% full-scale Grade 1A

Window: Polycarbonate

Gauge Movement:
Patented PowerFlex™ movement

Features

- A transducer and gauge in one instrument (2 in 1)
- A 1% performance industrial transducer
- Quality 316L SS media compatibility
- Voltage and 4-20mA outputs
- Robust CE heavy industrial
- Ranges compound to 15,000 psi
- Vibration dampening via patented *PLUS!* Performance™

OPTIONS (Table 1)

Throttle plugs: (not provided with LJ)

(TU): .013˝ SS Throttle Plug

(TS): Helical Throttle Plug

IP65 (LJ): Provides hard case plug for IP65/NEMA4 weather protection (not liquid fillable).

(LL): Patented *PLUS!* Performance provides vibration dampening in a dry case.

(SG): Safety Glass

ELECTRICAL CONNECTORS (Table 2)

Shielded Cable	CODE
2´ shielded cable	FL
Mini-Hirschmann G Series	
No Mating Connection	HM
With Mate (with 1 meter cable)	M2
With Mate (no cable)	M1
With Mate (with 3 meter cable)	M3

Table 4

Output	Code	Wiring
4-20 mA	4	Red = Supply + Black = Supply –
1-5 Vdc	1	Red = Supply + Black = Supply – (Signal Ref.) White = Signal
.5-4.5 Vdc Ratiometric	R	

PRESSURE RANGES (Table 3)

psi	kg/cm²(4)	bar(4)	kPa(4)	mPa(4)
0/15	1	1	100	0.1
0/30	1.6	1.6	160	0.2
0/60	2.5	2.5	250	0.3
0/100	4	4	400	0.4
0/160	6	6	600	0.6
0/200	10	10	1,000	1
0/300	16	16	1,600	1.6
0/400	25	25	2,500	2.5
0/600	40	40	4,000	4
0/1000	60	60	6,000	6
0/2000	100	100	10,000	10
0/3000	160	160	16,000	16
0/5000	250	250	25,000	25
0/7500	400	400	40,000	40
0/10,000	600	600	60,000	60
0/15,000	1000	1000	100,000	100
COMPOUND RANGES				
30IMV&15	–1, .6	–1, .6	–100, 60	–.1, .1
30IMV&30	–1, 1.5	–1, 1.5	–100, 150	–.1, .2
30IMV&60	–1, 3	–1, 3	–100, 300	–.1, .3
30IMV&100	–1, 5	–1, 5	–100, 500	–.1, .5
30IMV&150	–1, 9	–1, 9	–100, 900	–.1, .9
30IMV&300	–1, 24	–1, 24	–100, 2400	–.1, 2.4

(1) 1% BFSL from 10% to 90% full scale, 1.5% from 0% to 10% and 90% to 100% full scale

(2) Not Liquid Fillable

(3) For ratio-metric output, reverse polarity 20 Vdc and over-voltage of 25 Vdc continuous.

(4) 10 piece minimum per line item.

(5) Cable rated to 105°C. Other connectors to 90°C.

HOW TO ORDER

25	X	1009	SD	02L	4	FL	X(LJ)	100 psi

1. Dial Size 2.5˝
2. Patented Xmitr Transmitter Gauge
3. Case Number: 1009 (Table 5)
4. Socket Material: 316L SS
5. Connection Size/Location: ¼ NPT Lower
6. Output: 4-20mA ouput (Table 4)
7. Connector: 2´ Shielded Cable (Table 2)
8. Select Option(s): IP65 (Table 1)
9. Range: 100 psi (Table 3)

Table 5

Dial Size	Code	Type
2.5˝	25	1009
3.5˝	35	1009

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Digital Industrial Gauge Types 2074, 2174 and 2274 ASME B 40.1 Grade 3A (±0.25% of span)

- *A Multi-Functional Digital Gauge with Optional:*
  - *4/20mA Output*
  - *(1) or (2) SPDT Switches*
- *±.25% of Span Terminal Point Accuracy (.13% BFSL)*
- *IP 65 Weatherproof Case*
- *Three Case Options: Stainless Steel, Fiberglass Reinforced Thermoplastic or Aluminum*
- *Extra Large Display*
- *Intrinsically Safe, Class I, Div. 1, pending*
- *Easy-to-Use Menu Options: (all password protected)*
  - *Five Backlite Display Options*
  - *Twelve Engineering Units*
  - *Menu Configure Feature*
  - *Update Rate*
  - *Dampen Rate*
  - *Auto-Off*

PRODUCT SPECIFICATIONS

Type:	2074 (battery) 2174 (loop), 2274 (line)
Accuracy:	±.25% of span, terminal point
Case Size:	3″, 4½″
Case Material:	3″SS, 4½″ fiberglass reinforced thermoplastic or black epoxy coated aluminum
Case Encl. Rating:	Weatherproof, IP65
Wetted Materials:	17-4 SS (sensor), 316SS (socket)
Socket Size:	¼ or ½ NPT, JIS, DIN, SAE, (½ NPT only with 4½″ case, others on application)
Socket Location:	Lower, 3, 9 and 12 o'clock
Ranges:	Vac. thru 20,000 psi (see engineering units below for other units)
Operating Temp.:	14/140°F (10/60°C)
Temp. Error:	(Zero & Span) .04%/°F (<.02%°F Typical)
Storage Temp.:	–4/158° (–20°/70°F)
DISPLAY	
Type:	LCD
Display Digits:	Five (5)
Character Height:	3″ case: .60″, 4½″ case: .88″
Backlite:	Optional
Bar Graph:	Yes
Battery Life:	3″ >1000 hrs., 4½″ >3600 hrs.
Agency Approvals:	CE, FM (Intrinsically Safe Class I, Div 1), CSA and CENELEC (all pending)

KEYPAD FUNCTIONS

On/Off:	Manually turns unit on and off (auto off options in menu)
Zero/Clear:	Zeros display or clears min. and max. values when displayed
Min/Max ▼ (down) Arrow Key:	Stores min and max values, arrow key allows for scrolling thru menu items
Menu Key:	Provides access to menu options
Backlite ▲ (up) Arrow Key: (Backlite optional)	Manually turns backlite on and off (auto off options in menu), arrow key allows for five menu options. ▲ (up) arrow key allows for scrolling thru menu options
Enter:	Selects items in the menu

MENU MODE

Engineering Units:	10 units of measurement are available; psi, In. H_2O (with three temp. options: 20°C, 60°F, 4°C*), Ft. H_2O, mPa, mBar, kPa, kg/cm2, Bar, inHg and mmHg
Configuration Mode:	Allows for changes to default settings of gauge
(Config):	Including zero disable feaure
Bar Graph (Graph):	Allows for adjustment of bargraph and 4-20 (optional feature)
Auto Off (Off):	Allows for changes to auto off of gauge, five options: Never, 2 min., 5 min., 15 min., 30 min.
Update Rate (Update):	Four options: 100 ms, 200 ms, 500 ms, 1 sec
Dampening (Damp):	Six options: None, average, 2, 4, 6, 8 times per 100ms
Backlite:	Five options: Never, 10 sec., 30 sec., 1 min., 5 min.
Field Recalibration:	Allows for recalibration of zero, midscale and span (password protected)

OPTIONS

Description	Code	Case Size
Case Options		
Aluminum Case (black epoxy coated) (Glass reinforced thermoplastic case standard)	AY	4½″ only
Electropolished Case (Brushed SS case standard)	EC	3″ only
Switch Options		
(1) SPDT Switch (12-36Vdc)	U1	3″, 4 ½″
(2) SPDT Switch (12-36Vdc)	U2	3″, 4 ½″
Line Power with 4-20mA output (Line power (Type 2274) required for switching options.) (Terminal blocks standard with 4 ½″ case.) (Shielded cable standard with 3″ case.)	AO	3″, 4 ½″
Wiring Options		
Shielded cable (Terminal blocks standard with 4½″ case.) Shielded cable standard with 3″ case.	EN	4 ½″
Keypad Options		
Backlite	BL	3″, 4 ½″
Miscellaneous Options		
Battery Backup (Battery standard with Type 2074) (Available with Types 2174 & 2274)	BK	3″, 4 ½″
Weatherproof ABS Gauge Carrying Case	S7	3″ only
Protective Rubber Boot (black)	B1	3″ only
Protective Rubber Boot (orange)	B2	3″ only
Protective Front Cover	PP	3″ only

TO ORDER THIS DIGITAL INDUSTRIAL GAUGE:

Select:	30	2074	SD	XXX*	100#
1. Dial Size: 3″					
2. Type: 2074					
3. Wetted parts: 316 SS					
4. Connections: ¼ NPT Lower					
5. Range: 100 psi					

*See options chart

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

General Service Gauge
Type 1009, ASME B 40.1
Grade 1A (±1% of span)

- *4½˝ and 6˝ stainless steel gauges*
- *Dry and liquid-filled versions*
- *Micrometer adjustable pointer*
- *Variety of Bourdon tube materials*
- *ASME Grade 1A, ±1% of span accuracy*
- *New PLUS!™ Performance Option:*
  - *Liquid-filled performance in a dry gauge*
  - *Fights vibration and pulsations without liquid-fill headaches*
  - *Order as option XLL*

The 4½˝ and 6˝ Ashcroft® Type 1009 gauges are suitable where ambient corrosion is a major concern. Its stainless steel case and ring offer good appearance and excellent resistance to chemical, weather and corrosion attack. This 1009 has many optional features that allow a user to develop a basic or special product specification. The 1009 is part of the extensive line of Ashcroft stainless steel pressure gauges.

The gauge is available dry, liquid-filled weatherproof or hermetically sealed and *now* with *PLUS!™* performance option.

The following Table is *not* for conversion purposes.

STANDARD RANGES (4)

Pressure psi	kg/cm² - bar	kPa
0/15	0/1	0/100
0/30	0/1.6	0/160
0/60	0/2.5	0/250
0/100	0/4	0/400
0/160	0/6	0/600
0/200	0/10	0/1000
0/300	0/16	0/1600
0/400	0/25	0/2500
0/600	0/40	0/4000
0/800	0/60	0/6000
0/1000	0/100	0/10,000
0/1500	0/160	0/16,000
0/2000	0/250	0/25,000
0/3000	0/400	0/40,000
0/4000	0/600	0/60,000
0/5000	0/1000	0/100,000
0/6000	0/1600	0/160,000
0/7500		
0/10,000		
0/15,000		
0/20,000		
0/30,000		
Vacuum		
30 in. /0 in.Hg	–1/0	–100/0
Compound		
30 in.Hg/15 psi	–1/0/1.5	–100/0/150
30 in.Hg /30 psi	–1/0/3	–100/0/300
30 in.Hg /60 psi	–1/0/5	–100/0/500
30 in.Hg/100 psi	–1/0/9	–100/0/900
30 in.Hg /150 psi	–1/0/15	–100/0/1500
30 in.Hg/300 psi	–1/0/24	–100/0/2400

BOURDON SYSTEM SELECTION(1)

Ordering Code	Bourdon Tube & Tip Material(1) (all joints TIG welded except "A")	Socket Material	Tube Type	Range Selection Limits (psi)	NPT Conn.(2)
A	Phosphor Bronze Brass Tip, Silver Brazed	Brass	C-Tube	12/1000	¼
S	316 stainless steel	316 stainless steel	C-Tube	12/1500	¼
			Helical	2000/20,000	½
P(3)(5)	K Monel	Monel 400	C-Tube	15/1500	¼
			Helical	2000/30,000	½

(1) For selection of the correct Bourdon system material, see the media application table on page 253.
(2) Optional connections available: ½ NPT where ¼ NPT is standard, ¼ NPT where ½ NPT is standard.
(3) Use for applications where NACE Standard MR-01-75 is specified.
(4) Single-scale and dual-scale ranges available .
(5) 6˝ dial not available with monel or steel systems.

TO ORDER THIS 1009 DURALIFE PRESSURE GAUGE:

Select:	45	1009	S	02L	XXX	1000#

1. Dial size–4½˝, 6˝
2. Case type–1009
3. Tube and socket material
4. Connection size–¼ (02), ½ (04)
5. Connection location–Lower (L), Back (B)
6. Optional features–see page 249
7. Standard pressure range–1000 psi

Accessories–see pages 243-248

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

General Service Gauge
Type 1109, ASME B 40.1
Grade 1A (±1% of span)
Solid Front

- *Solid front case design with full blowout back*
- *Temperature compensated case*
- *4½″ dial size*
- *ASME B40.1 Grade 1A, (±1% of span) accuracy*
- *300 Series SS case and ring*
- *Ranges from vacuum through 100,000 psi*
- *New PLUS!™ Performance Option:*
  - *Liquid-filled performance in a dry gauge*
  - *Fights vibration and pulsations without liquid-fill headaches*
  - *Order as option XLL*

The Type 1109 Ashcroft® solid front stainless steel case offers many features not available elsewhere. With a true 4½″ dial size, a fully temperature compensated case and blowout back for safety, the Type 1109 offers superior readability compared to the competitive 100mm case gauges. The Type 1109 has been designed to meet the needs of both the offshore platform market and also the waterblaster or waterjet markets.

For offshore platforms the Type 1109 is available dry, liquid-filled(3) or with the revolutionary *PLUS!™* performance option. The rugged design of the Type 1109 with ranges to 100,000 psi, is well suited to meet the needs of the waterblaster or waterjet market. With the *PLUS!™* performance standard on ranges above 30,000 psi this gauge offers superior readability and eliminates the headaches often associated with liquid-filled gauges.

STANDARD RANGES

Pressure psi	Compound psi
0/15	30 in.Hg/15 psi
0/30	30 in.Hg /30 psi
0/60	30 in.Hg /60 psi
0/100	30 in.Hg /100 psi
0/160	30 in.Hg /150 psi
0/200	30 in.Hg /300 psi
0/300	
0/400	
0/600	
0/800	
0/1000	
0/1500	
0/2000	
0/3000	
0/5000	
0/10,000	
0/20,000	
0/30,000	
0/50,000	
0/80,000	
0/100,000	

NOTE:
Equivalent standard kg/cm², and kPa metric ranges are available.

BOURDON SYSTEM SELECTION(1)

Ordering Code	Bourdon Tube & Tip Material(1)	Socket Material	Tube Type	Range Selection Limits (psi)	NPT Conn.
SD	316 stainless steel	Stainless steel	C-Tube	Vac/1500	½(2)
	316 stainless steel	Stainless steel	Helical	2k-20k	½(2)
WD	Inconel 718	316 stainless steel	Helical	50k-100k	¼ high pressure

(1) For selection of the correct Bourdon system material, see the media application table on page 253.
(2) ¼ NPT optional.
(3) Liquid fill available on ranges 20,000 psi and below.

TO ORDER THIS 1009 DURALIFE PRESSURE GAUGE:

Select: 45 1109 SD 04L XXX 0/100#

1. Dial size–4½″
2. Case type–1109
3. Bourdon system selection ordering code
4. Connection–¼ (02), ½ (04), ¼ high pressure (09), Lower (L)
5. Optional Features–see page 249
6. Standard pressure range
7. Accessories–see pages 243-248

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Hydraulic Gauges, Types 1009, 1010, 1017 & 1220, ASME B 40.1 Grade 1A (±1% of span)

- *4½″ through 12″ dials available*
- *Stainless steel, aluminum and phenolic case materials*
- *Wide range of types to combine specifics and price*
- *Slotted link and throttle screw standard*

The Ashcroft® line of pressure gauges offers a product that is uniquely designed for rigorous hydraulic services.

Hydraulic gauges are supplied with a slotted link movement to avoid gear wear. All models are supplied with throttle devices as standard.

Type 1009

SPECIFICATIONS

Gauge Type Number	Dial Size(1) (Inches)	Connection Location	Mounting	Method
1009-XS4TS	4½, 6, 8½, 12	Lower/Back	Stem, Surface, Flush	–
1010-XS4TS		Lower/Back	Stem, Surface	–
1017-XS4TS		Lower/Back	Flush	Back Flange, Flush Mounting Ring
1220-XS4TS		Lower/Back	Stem	

(1) Not all dial sizes available in all case types.
Type 1009 – 4½″, 6″; Type 1010 – 4½″-12″;
Type 1017 – 4½″, 6″; Type 1220 – 4½″-8½″

STANDARD psi RANGES(4)

Range psi	Figure Interval	Minor Graduation
0/1000	100	10
0/1500	200	20
0/2000	200	20
0/3000	500	50
0/5000	1000	50
0/6000	1000	100
0/7500	1000	100
0/10,000	1000	100
0/15,000	2000	200
0/20,000	2000	200

Note: Dual-scale dials showing psi and tons on ram are available on application

BOURDON SYSTEM SELECTION

Dial Size (Inches)	Order Code	Bourdon Tube & Tip Material(1) (all joints TIG welded except "A")(1)	Socket Material	Tube Type	Range Selection Limits (psi)	NPT Conn.(2)
4½″, 6″, 8½″	A	Phosphor Bronze Tube-Brass Tip, Silver Brazed	Brass	C-Tube	12/1000	¼
4½″, 6″, 8½″, 12″	S	316 stainless steel	316 stainless steel	C-Tube	12/1500	¼
				Helical	2000/20,000	½
4½″, 12″	P(3)	K Monel	Monel 400	C-Tube	15/1500	¼
				Helical	2000/30,000	½

(1) For selection of the correct Bourdon system material, see the media application table on page 253.
(2) Optional connections available: ½ NPT where ¼ NPT is standard, ¼ NPT where ½ NPT is standard.
(3) Use for applications where NACE standard MR-01-75 is specified.
(4) Single-scale and dual-scale ranges available.

STANDARD METRIC RANGES(4)

Range		Dial Graduations	
kg/cm² kilograms per sq. cm.	bar	Figure Interval	Minor Graduation
0/60	0/60	5	1
0/100	0/100	10	1
0/160	0/160	20	2
0/250	0/250	50	5
0/400	0/400	50	5
0/600	0/600	50	10
0/1000	0/1000	100	10
0/1600	0/1600	200	20

Range	Dial Graduation		Outer scale when dual range specified psi
kPa (kilopascal)	Figure Interval	Minor Graduation	
0/6000	500	100	0/850
0/10,000	1000	100	0/1400
0/16,000	2000	200	0/2200
0/25,000	5000	500	0/3500
0/40,000	5000	500	0/5500
0/60,000	5000	1000	0/8500
0/100,000	10,000	1000	0/14,000
0/160,000	20,000	2000	0/22,000

HOW TO ORDER THESE HYDRAULIC GAUGES:

Select: 45 1009 S 02L XS4TS 1000#

1. Dial size– 4½″, 6″
2. Case code: 1010
3. Tube and socket material, (see chart above)
4. Connection size–¼ (02), ½ (04)
5. Connection location–Lower (L), Back (B)
6. Options–see page 249
7. Standard pressure range–1000 psi

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Receiver Gauges, Types 1009, 1010, 1017 & 1220, ASME B 40.1 Grade 1A (±1% of span)

- *4½″ through 12″*
- *Many case styles to choose from*
- *Panel mount, stem mount and wall mount*
- *Bronze systems standard(1)*
- *Open-front case style*
- *3-15 psi input with optional 3-27 psi input*

(1) Stainless Steel (S); Monel (P) optional

Ashcroft® receiver gauges are used in conjunction with pneumatic transmitters to indicate pressure, temperature, flow or other process parameters that can be transmitted by proportional variations in air pressure.

Type 1009

IN A RUSH? ASK FOR ASHCROFT GOLD SERVICE

SPECIFICATIONS

Gauge Type Number	Dial Sizes(1)	Case/ring Material	System Assembly	Pressure Range-psi	Pointer	Movement	Npt Conn.	Accuracy
1009A-XPR 1010A-XPR 1017A-XPR 1220A-XPR	4½″-12″	**Case** Aluminum, black epoxy with Steel slip, black epoxy, stainless steel, phenolic, depending on case type	Phosphor bronze Bourdon tube brass socket, silver brazed	3/15 and 3/27	Black, adjustable	Rotary geared, stainless steel pinion and segment shaft	¼	ASME B 40.1 Grade1A (±1% of span)

(1) Not all dial sizes available in all case types.
Type 1009 – 4½″, 6″; Type 1010 – 4½″-12″;
Type 1017 – 4½″, 6″; Type 1220 – 4½″-8½″

Gauge Type Number	Dial Size(1) (Inches)	Connection Location	Mounting	Method
1009-XPR	4½, 6, 8½, 12	Lower/Back	Stem, Surface, Flush	–
1010-XPR		Lower/Back	Stem, Surface	–
1017-XPR		Lower/Back	Flush	Back Flange, Flush Mounting Ring
1220-XPR		Lower/Back	Stem	

(1) Not all dial sizes available in all case types.
Type 1009 – 4½″, 6″; Type 1010 – 4½″-12″;
Type 1017 – 4½″, 6″; Type 1220 – 4½″-8½″

STANDARD RANGES(1)

0-10 sq rt/0-100 linear dual-scale
0-10 square root
0-100 linear

(1) Other ranges on request.

TO ORDER THESE RECEIVER GAUGES:

Select: 45 1009 A 02 L XPR 3-15#

1. Dial size
2. Case type
3. Tube and socket material
4. Connection size, ¼ (02), ½ (04)
5. Connection location, (L-Lower), (B-Back)
6. Optional features (XPR always appears in code for receiver gauge)
7. Range of transmitted signal (also specify the scale to be shown on the dial face)

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Refrigeration & Ammonia Gauges
Types 1009/1010/1017/1220
ASME B 40.1 Grade 1A
(±1% of span)

- *4½″ through 12″ dials*
- *Stainless steel, phenolic and aluminum case materials*
- *Dual-scale dials with pressure and temperature indication*
- *Wide range of refrigerant scales, including refrigerant 134A and ammonia*

Ashcroft® refrigeration and ammonia gauges are used to display pressure and temperature when measuring various sealed refrigeration systems. This dual-scale dial gauge has an inner pressure scale with black numerals and an outer temperature scale with red numerals. A selection of models exists to meet specification and price parameters.

Type 1010

IN A RUSH? ASK FOR ASHCROFT GOLD SERVICE

CASE STYLES

Gauge[1] Type Number	Refrigerant	Dial Size (inches)	Case & Ring Material Finish	Bourdon Tube & Tip Material	Socket Material	Range	Pointer	Movement	NPT Connection
1009, 1010, 1017, 1220 -XR1	R-11	4½″, 12″	Case: Aluminum Black Epoxy Coated Stainless Steel or Phenolic, depending on Case Type	Phosphor Bronze Tip: Brass (all joints silver brazed)	Brass	30 in.HgVac/ 150 psi or 30 in.HgVac/ 300 psi	Black adjustable	Stainless Steel with Teflon coated pinion and segment shaft, rotary geared	¼ (½ optional)
-XR2	R-12								
-XR3	R-22								
-XR4	R-502								
-XR6	R-114								
-XR7	R-500								
-XR8	R-134A								
-XR9	R-123								
XR5	Ammonia	4½″, 12″	Case: Aluminum Black Epoxy Coated Stainless Steel or Phenolic, depending on Case Type	316 stainless steel (all joints TIG welded)	316 stainless steel	30 in.HgVac/ 150 psi or 30 in.HgVac/ 300 psi	Black adjustable	Stainless Steel with Teflon coated pinion and segment shaft, rotary geared	¼ (½ optional)

(1) Not all dial sizes available in all case types.
Type 1009 – 4½″, 6″; Type 1010 – 4½″-12″;
Type 1017 – 4½″, 6″; Type 1220 – 4½″-8½″

STANDARD METRIC RANGES

RANGE		DIAL GRADUATIONS		RANGE	DIAL GRADUATIONS	
kg/cm²	bar	Figure Interval	Minor Graduation	kPa (kilopascal)	Figure Interval	Minor Graduation
–1/9	–1/9	1	0.1	–100/900	100	10
–1/24	–1/24	2	0.2	–100/2400	500	20

STANDARD RANGES

Range	Figure Interval		Minor Graduation	
	Inches Mercury	psi	Inches Mercury	psi
30″HgVac/150 psi	10	25	2	5
30″HgVac/300 psi	30	25	5	5

SPECIFICATIONS

Gauge Type Number	Dial Size[1] (Inches)	Connection Location	Mounting	Method
1009	4½, 6, 8½, 12	Lower/Back	Stem	—
1010		Lower	Surface	Back Flange
1017		Back	Surface or Flush	Back Flange, Flush Mounting Ring
1220				

(1) Not all dial sizes available in all case types.
Type 1009 – 4½″, 6″; Type 1010 – 4½″-12″;
Type 1017 – 4½″, 6″; Type 1220 – 4½″-8½″

TO ORDER THESE REFRIGERATION GAUGES:

Select: **45** **1010** **A** **02L** **XR5** **30 in.Hg Vac/150#**

1. Dial size–4½″, 6″
2. Case Type–1010
3. Tube and socket material–A, S
4. Connection size–¼ (02), ½ (04)
5. Connection location–Lower (L), Back (B)
6. Optional features including refrigerant (see page 249)
7. Standard pressure range–30″HgVac/150 psi

Accessories–see pages 243-248

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

General Service Gauge
Type 1010, ASME B 40.1
Grade 1A (±1% of span)

- *4½˝, 6˝, 8½˝ and 12˝ dial sizes*
- *Solid-front case style, black epoxy-painted aluminum case*
- *Slip-fit steel ring, black epoxy-painted*
- *Back flange for wall mounting*

The Ashcroft® Type 1010 gauge is the most economical of the general service industrial gauges having 1% accuracy. The 1010 also is the only Ashcroft gauge available in sizes up to 12˝ in diameter.

The following Table is *not* for conversion purposes.

STANDARD RANGES[4]

Pressure psi	kg/cm² - bar	kPa
0/15	0/1	0/100
0/30	0/1.6	0/160
0/60	0/2.5	0/250
0/100	0/4	0/400
0/160	0/6	0/600
0/200	0/10	0/1000
0/300	0/16	0/1600
0/400	0/25	0/2500
0/600	0/40	0/4000
0/800	0/60	0/6000
0/1000	0/100	0/10,000
0/1500	0/160	0/16,000
0/2000	0/250	0/25,000
0/3000	0/400	0/40,000
0/4000	0/600	0/60,000
0/5000	0/1000	0/100,000
0/6000	0/1600	0/160,000
0/7500		
0/10,000		
0/15,000		
0/20,000		
0/30,000		
Vacuum		
30 in./0 in.Hg	–1/0	–100/0
Compound		
30 in.Hg/15 psi	–1/0/1.5	–100/0/150
30 in.Hg /30 psi	–1/0/3	–100/0/300
30 in.Hg /60 psi	–1/0/5	–100/0/500
30 in.Hg/100 psi	–1/0/9	–100/0/900
30 in.Hg /150 psi	–1/0/15	–100/0/1500
30 in.Hg/300 psi	–1/0/24	–100/0/2400

BOURDON SYSTEM SELECTION[5]

Dial Size (inches)	Order Code	Bourdon Tube & Tip Material[1] (all joints TIG welded except "A")	Socket Material	Tube Type	Range Selection Limits (psi)	NPT Conn.[2]
4½˝, 6˝ 8½˝	A	Phosphor Bronze Brass Tip, Silver Brazed	Brass	C-Tube	12/1000	¼
4½˝, 6˝ 8½˝, 12˝	S	316 stainless steel	316 stainless steel	C-Tube	12/1500	¼
				Helical	2000/20,000	½
4½˝, 12˝	P[3]	K Monel	Monel 400	C-Tube	15/1500	¼
				Helical	2000/30,000	½

(1) For selection of the correct Bourdon system material, see the media application table on page 253.
(2) Optional connections available: ½ NPT where ¼ NPT is standard, ¼ NPT where ½ NPT is standard.
(3) Use for applications where NACE Standard MR-01-75 is specified.
(4) Single-scale and dual-scale ranges available .

TO ORDER THIS 1010 PRESSURE GAUGE:

Select: 45 1010 A 02L XXX 1000#

1. Dial size–4½˝, thru 12˝
2. Case type–1010
3. Tube and socket material
4. Connection size–¼ (02), ½ (04)
5. Connection location–Lower (L), Back (B)
6. Optional features–see page 249
7. Standard pressure range –1000 psi

Accessories–see pages 243-248

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

General Service Gauge
Type 1017, ASME B 40.1
Grade 1A (±1% of span)

- *Available in 4½˝ and 6˝ dial sizes*
- *Solid-front case style, black epoxy-painted aluminum case*
- *Hinged-steel black enamel texture finish panel ring*

The Ashcroft® Type 1017 gauge is the most economical of the general service gauges when flush panel-mounting is required.

IN A RUSH? ASK FOR ASHCROFT GOLD SERVICE

The following Table is *not* for conversion purposes.

STANDARD RANGES[4]

Pressure psi	kg/cm² - bar	kPa
0/15	0/1	0/100
0/30		
0/60	0/1.6	0/160
0/100	0/2.5	0/250
0/160	0/4	0/400
0/200		
0/300	0/6	0/600
0/400	0/10	0/1000
0/600	0/16	0/1600
0/800		
0/1000	0/25	0/2500
0/1500	0/40	0/4000
0/2000	0/60	0/6000
0/3000	0/100	0/10,000
0/4000		
0/5000	0/160	0/16,000
0/6000	0/250	0/25,000
0/7500	0/400	0/40,000
0/10,000		
0/15,000	0/600	0/60,000
0/20,000	0/1000	0/100,000
Vacuum		
30 in./0 in.Hg	–1/0	–100/0
Compound		
30 in.Hg/15 psi	–1/0/1.5	–100/0/150
30 in.Hg /30 psi	–1/0/3	–100/0/300
30 in.Hg /60 psi	–1/0/5	–100/0/500
30 in.Hg/100 psi	–1/0/9	–100/0/900
30 in.Hg /150 psi	–1/0/15	–100/0/1500
30 in.Hg/300 psi	–1/0/24	–100/0/2400

BOURDON SYSTEM SELECTION[5]

Ordering Code Conn.[2]	Bourdon Tube & Tip Material[1] (all joints TIG welded except "A")	Socket Material	Tube	Range Selection Type	NPT Conn.[2]
A	Phosphor Bronze Brass Tip, Silver Brazed	Brass	C-Tube	12/1000	¼
S	316 stainless steel	316 stainless steel	C-Tube	12/1500	¼
			Helical	2000/20,000	½
P[3][5]	K Monel	Monel 400	C-Tube	15/1500	¼
			Helical	2000/30,000	½

(1) For selection of the correct Bourdon system material, see the media application table on page 253.
(2) Optional connections available: ½ NPT where ¼ NPT is standard, ¼ NPT where ½ NPT is standard.
(3) Use for applications where NACE Standard MR-01-75 is specified.
(4) Single-scale and dual-scale ranges available.
(5) 6˝ dial not available with monel system.

TO ORDER THIS 1017 PRESSURE GAUGE:

Select:	45	1017	A	02B	XXX	1000#
1. Dial size–4½˝, 6˝						
2. Case type–1017						
3. Tube and socket material						
4. Connection size–¼ (02), ½ (04)						
5. Connection location–Back (B) only						
6. Optional features–see page 249						
7. Standard pressure range –1000 psi						
Accessories–see pages 243-248						

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

General Service Gauge
Type 1220, ASME B 40.1
Grade 1A (±1% of span)

- *Available in 4½˝, 6˝ and 8½˝ dial sizes*
- *Solid-front style, black phenolic case with stainless steel snap ring*
- *Lower or back connect*
- *Flush mounted by using 1278 mounting-ring option*

The Ashcroft® Type 1220 is a versatile general service gauge. The phenolic case resists many corrosive environments and is available in three dial sizes. Lower and back connections allow the gauge to be used for many installations.

IN A RUSH? ASK FOR ASHCROFT GOLD SERVICE

The following Table is *not* for conversion purposes.

STANDARD RANGES[4]

Pressure psi	kg/cm² - bar	kPa
0/15	0/1	0/100
0/30	0/1.6	0/160
0/60	0/2.5	0/250
0/100	0/4	0/400
0/160	0/6	0/600
0/200	0/10	0/1000
0/300	0/16	0/1600
0/400	0/25	0/2500
0/600	0/40	0/4000
0/800	0/60	0/6000
0/1000	0/100	0/10,000
0/1500	0/160	0/16,000
0/2000	0/250	0/25,000
0/3000	0/400	0/40,000
0/4000	0/600	0/60,000
0/5000	0/1000	0/100,000
0/6000		
0/7500		
0/10,000		
0/15,000		
0/20,000		
Vacuum		
30 in./0 in.Hg	–1/0	–100/0
Compound		
30 in.Hg/15 psi	–1/0/1.5	–100/0/150
30 in.Hg /30 psi	–1/0/3	–100/0/300
30 in.Hg /60 psi	–1/0/5	–100/0/500
30 in.Hg/100 psi	–1/0/9	–100/0/900
30 in.Hg /150 psi	–1/0/15	–100/0/1500
30 in.Hg/300 psi	–1/0/24	–100/0/2400

BOURDON SYSTEM SELECTION[5]

Ordering Code Conn.[2]	Bourdon Tube & Tip Material[1] (all joints TIG welded except "A")	Socket Material	Tube	Range Selection Type	NPT Conn.[2]
A	Phosphor Bronze Brass Tip, Silver Brazed	Brass	C-Tube	12/1000	¼
S	316 stainless steel	316 stainless steel	C-Tube	12/1500	¼
			Helical	2000/20,000	½
P[3][5]	K Monel	Monel 400	C-Tube	15/1500	¼
			Helical	2000/30,000	½

(1) For selection of the correct Bourdon system material, see the media application table on page 253.
(2) Optional connections available: ½ NPT where ¼ NPT is standard, ¼ NPT where ½ NPT is standard.
(3) Use for applications where NACE Standard MR-01-75 is specified.
(4) Single-scale and dual-scale ranges available.
(5) 6˝ and 8½˝ dial not available with Monel system.

TO ORDER THIS 1220 PRESSURE GAUGE:

Select: 45 1220 A 02L XXX 1000#

1. Dial size–4½˝, 6˝ and 8½˝
2. Case type–1220
3. Tube and socket material
4. Connection size–¼ (02), ½ (04)
5. Connection location–Lower (L), Back (B)
6. Optional features–see page 249
7. Standard pressure range–1000 psi

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Christmas Tree Gauges
Type 1020S, ASME B 40.1
Grade 1A (±1% of span)

- *Available in 4½˝ dial size*
- *All-stainless steel case and ring*
- *316 stainless steel Bourdon tube*
- *Micrometer-adjustable pointer*

Ashcroft® Type 1020S Christmas Tree gauges are designed to the specific needs of oil fields where rugged construction and minimal maintenance is important.

STANDARD RANGES

Type 1020S

Pressure (psi)

Range	Figure Interval	Minor Graduation
0/1000	100	10
0/2000	200	20
0/3000	300	50
0/5000	500	50
0/10,000	1000	100
0/20,000	2000	200

CASE TYPE

Gauge Type Number	Dial Size (inches)	Case & Ring Material Finish	Bourdon Tube & Tip Material	Socket Material	Pressure Range (psi)	Pointer	Movement	NPT Connection
XMAS TREE 1020S	4½	Case: Stainless Steel Ring: Bayonet Lock Stainless Steel Both polished	316 Stainless Steel (all joints TIG welded)	316 Stainless Steel	1000/20,000	Micrometer Adjustable	Stainless Steel Teflon coated pinion and sector shaft, rotary geared	½ ¼ optional

STANDARD METRIC RANGES

Type	RANGE kg/cm²	RANGE bar	DIAL GRADUATIONS Figure Interval	DIAL GRADUATIONS Minor Graduation	RANGE kPa (kilopascal)	DIAL GRADUATIONS Figure Interval	DIAL GRADUATIONS Minor Graduation	Outer Range When Dual Range Specified psi
1020S	Pressure							
	0/60	0/60	5	1	0/6000	500	100	0/850
	0/100	0/100	10	1	0/10,000	1000	100	0/1400
	0/160	0/160	20	2	0/16,000	2000	200	0/2200
	0/250	0/250	50	5	0/25,000	5000	500	0/3500
	0/400	0/400	50	5	0/40,000	5000	500	0/5500
	0/600	0/600	50	10	0/60,000	5000	1000	0/8500
	0/1000	0/1000	100	10	0/100,000	10,000	1000	0/14,000
	0/1600	0/1600	200	20	0/160,000	20,000	2000	0/22,000

TO ORDER THIS TYPE 1020R CHRISTMAS TREE GAUGE:

Select: **45** **1020** **S** **04L** **XXX** **1000#**

1. Dial size–4½˝
2. Case type–1020
3. Tube and socket material–see charts above
4. Connection size–¼ (02), ½ (04)
5. Connection location–Lower (L) only
6. Optional features–see page 249
7. Standard pressure range–1000 psi

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Duplex Gauges
Type 1038, 1339
ASME B 40.1
Grade A (±2-1-2% of span)

- *3½″ and 4½″ dial sizes*
- *Bronze Bourdon tube and brass sockets*
- *Two independant systems and movements*
- *Nonadjustable red and black pointers*

The Ashcroft® Type 1038 duplex gauge is used to display two separate input pressures on the same gauge for comparison purposes.

STANDARD RANGES

Type 1038/1339

Pressure (psi)

Range	Figure Interval	Minor Graduation
0/30	5	0.5
0/60	5	1
0/100	10	1
0/160	20	2
0/200	20	2
0/300	30	5
0/600	50	10
0/800	100	10
0/1000	100	10

Type 1038/1339 Compound

Range	Figure Interval		Minor Graduation	
	Inches Mercury	psi	Inches Mercury	psi
30 in.Hg/15 psi	5	3	1	0.5
30 in.Hg/30 psi	10	5	1	0.5
30 in.Hg/60 psi	10	10	1	1
30 in.Hg/100 psi	10	10	1	1
30 in.Hg/150 psi	10	20	2	2
30 in.Hg/300 psi	30	25	5	5

CASE TYPE

Gauge Type Number	Dial Size (inches)	Case & Ring Material Finish	Bourdon Tube & Tip Material	Socket Material	Pressure Range (psi)	Pointer	Movement	NPT Conn.
DUPLEX 1038A	3½, 4½	Case: 3½″, 4½″ aluminum Ring: Threaded aluminum All black epoxy coated	Phosphor Bronze Tip: Brass (all joints silver brazed, soldered below 100 psi)	Brass	30/1000	Non Adjustable Black and Red	Bronze-bushed	¼
DUPLEX 1339A	4½	Case: Aluminum Ring: Hinged Aluminum All black epoxy coated	Phosphor Bronze Tip: Brass (all joints silver brazed soldered below 100 psi)	Brass	30/1000	Non Adjustable Black and Red	Bronze-bushed	¼ Back Conn. only

CASE TYPE

RANGE		DIAL GRADUATIONS		RANGE	DIAL GRADUATIONS		Outer Range When Dual Range Specified psi
kg/cm²	bar	Figure Interval	Minor Graduation	kPa (kilopascal)	Figure Interval	Minor Graduation	
Pressure							
0/2.5	0/2.5	0.5	0.05	0/250	50	5	0/35
0/4	0/4	0.5	0.05	0/400	50	5	0/55
0/6	0/6	0.5	0.05	0/400	50	5	0/85
0/10	0/10	1	0.1	0/1000	100	10	0/140
0/16	0/16	2	0.2	0/1600	200	20	0/220
0/25	0/25	5	0.5	0/2500	500	50	0/350
0/40	0/40	5	0.5	0/4000	500	50	0/550
0/60	0/60	5	1	0/6000	500	100	0/850
Compound							
–1/1.5	–1/0/1.5	0.5	0.05	–100/150	50	5	30˝Hg/20
–1/3	–1/0/3	0.5	0.05	–100/300	50	5	30˝Hg/40
–1/5	–1/0/5	0.5	0.1	–100/500	50	10	30˝Hg/70
–1/9	–1/0/9	1	0.1	–100/900	100	10	30˝Hg/125
–1/15	–1/0/15	1	0.1	–100/1500	200	20	30˝Hg/215
–1/24	–1/0/24	2	0.2	–100/2400	500	20	30˝Hg/340

TO ORDER THIS 1038, 1339 DUPLEX GAUGES:

Select: 45 1038 A 02L XXX 1000#

1. Dial size–3½″ and 4½″
2. Case type–1038, 1339
3. Tube and socket material
4. Connection size–¼ (02)
5. Connection location–Lower (L), Back (B)
6. Optional features–see page 249
7. Standard pressure range–1000 psi

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Differential Pressure Gauges
Types 1125, 1125A
ASME B 40.1
Grade A (±2-1-2% of span)

- *4½″ and 6″ dial sizes*
- *Aluminum cases*
- *Bronze Bourdon tube and socket*
- *Ranges through 1000 psi*
- *Micrometer-adjustable pointer*
- *Available with electric contacts*
- *Static pressures from 30-1500 psi depending on the range of gauge*
- *Pointer indicator with zero at seven or twelve o'clock position*
- *Built-in back case flange for easy wall mounting*

The Ashcroft® differential pressure gauge is an economical way to display the difference of two separate inputs on one dial indicator. The case style is similar to other Ashcroft gauges, making panel gauge consistency possible. This product is supplied with bronze Bourdon tube and socket.

STANDARD RANGES

Type 1125 (210° dial arc)

Pressure (psi)

Range	Figure Interval	Minor Graduation	Static Pressure Limits*
0/20	5	0.2	30
0/30	5	0.5	60
0/60	10	1	120
0/100	10	1	200
0/160	20	2	300
0/200	20	2	300
0/300	50	5	450
0/400	50	5	600
0/600	100	10	900
0/800	100	10	1200
0/1000	100	10	1500

*Maximum pressure that can be admitted into Bourdon tubes.

Type 1125A (210° dial arc) Zero centered dial

Pressure (psi)

Range	Figure Interval	Minor Graduation	Static Pressure Limits*
10/10	2	0.2	30
15/15	5	0.5	60
30/30	10	1	120
50/50	10	1	200
80/80	20	2	300
100/100	20	2	300
150/150	50	5	450
200/200	50	5	600
300/300	100	10	900
400/400	100	10	1200
500/500	100	10	1500

*Maximum pressure that can be admitted into Bourdon tubes.

CASE TYPE

Gauge Type Number	Dial Size (inches)	Case & Ring Material Finish	Bourdon Tube & Tip Material	Socket Material	Pressure Range (psi)	Pointer	Movement	NPT Connection
DIFFERENTIAL 1125 1125A	4½, 6(1)	Case: Aluminum Ring: Threaded aluminum All black epoxy coated	Phosphor Bronze Tip: Brass (all joints silver brazed)	Bronze	1125: 20/1000 1125A 10/0/10 500/0/500	Micrometer Adjustable	Bronze-bushed Overload & Vacuum Stops-Std.	¼

1125A dial indicates zero at 12:00

(1) 6″ lower connect only.

METRIC RANGES

	PRESSURE RANGE		DIAL GRADUATIONS		RANGE	DIAL GRADUATIONS		Outer Range When Dual Range Specified
	kg/cm²	bar	Figure Interval	Minor Graduation	kPa (kilopascal)	Figure Interval	Minor Graduation	psi
Type 1125	0/1.4	0/1.4	0.2	0.02	0/140	20	2	0/20
	0/2	0/2	0.5	0.05	0/200	50	5	0/28
	0/4	0/4	0.5	0.05	0/400	50	5	0/55
	0/7	0/7	0.5	0.1	0/400	50	10	0/100
	0/11	0/11	2	0.2	0/1100	200	20	0/160
	0/14	0/14	2	0.2	0/1400	200	20	0/200
	0/20	0/20	5	0.5	0/2000	250	50	0/300
	0/28	0/28	5	0.5	0/2800	500	50	0/400
	0/40	0/40	5	0.5	0/4000	500	50	0/600
	0/56	0/56	10	1	0/5600	1000	100	0/800
	0/70	0/70	10	1	0/7000	1000	100	0/1000
Type 1125A	0.7/0.7	0.7/0.7	0.2	0.02	70/70	20	2	10/10
	1/1	1/1	0.5	0.05	100/100	50	5	14/14
	2/2	2/2	0.5	0.05	200/200	50	5	28/28
	3.5/3.5	3.5/3.5	0.5	0.1	350/350	50	10	50/50
	5.5/5.5	5.5/5.5	2	0.2	550/550	200	20	80/80
	7/7	7/7	2	0.2	700/700	200	20	100/100
	10/10	10/10	5	0.5	1000/1000	250	50	150/150
	14/14	14/14	5	0.5	1400/1400	500	50	200/200
	20/20	20/20	5	0.5	2000/2000	500	50	400/400
	28/28	28/28	10	1	2800/2800	1000	100	400/400
	35/35	35/35	10	1	3500/3500	1000	100	500/500

TO ORDER THESE 1125, 1125A DIFFERENTIAL GAUGES:

Select: 45 1125 02L XXX 1000#

1. Dial size–4½″, 6″
2. Case type–1125, 1125A
3. Connection size–¼ (02)
4. Connection location–Lower (L), Back (B)
5. Optional features–see page 249
6. Standard pressure range–1000 psi

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

MADE IN U.S.A.

ASHCROFT®

Differential Pressure Gauges
Types 1127, 1128
ASME B 40.1
Grade A (±2-1-2% of span)

- *316 stainless steel wetted parts*
- *4½″ or 6″ dial sizes*
- *Ranges from 10 psi-1000 psi*
- *Static pressures from 45 psi-1200 psi depending on the range of the gauge*
- *Pointer indicator with zero at seven (1127) or twelve o'clock position (1128)*
- *Built-in back case flange for easy wall mounting*

When the process is corrosive to gauges with bronze/brass wetted parts an alternative was to isolate the gauge from the process with capillary and isolators or diaphragm seals. Now, when the process is compatible with 316 stainless steel, the user can select Types 1127 or 1128 differential pressure gauges with 4½″ or 6″ dials.

STANDARD RANGES

Type 1127 (270° dial arc)

Pressure Range (psi)	Figure Interval	Minor Graduation	Static Pressure Limits*
0/10	5	0.2	45
0/20	5	0.2	45
0/30	5	0.5	45
0/60	10	1	90
0/100	10	1	130
0/160	20	2	208
0/200	20	2	260
0/300	50	5	390
0/400	50	5	520
0/600	100	10	780
0/800	100	10	1040
0/1000	100	10	1200

*Maximum pressure that can be admitted into Bourdon tubes.

Type 1128 (270° dial arc) Zero centered dial

Pressure Range (psi)	Figure Interval	Minor Graduation	Static Pressure Limits*
10/0/10	2	0.5	45
15/0/15	3	0.2	45
30/0/30	5	1	90
50/0/50	10	1	130
100/0/100	20	2	260
200/0/200	50	5	520
300/0/300	100	10	780
400/0/400	100	10	1040

*Maximum pressure that can be admitted into Bourdon tubes.

METRIC RANGES

Type 1127 (270° dial arc)

PRESSURE RANGE		DIAL GRADUATIONS	
kg/cm²	bar	Figure Interval	Minor Graduation
0/1	0/1	0.2	0.02
0/2	0/2	0.5	0.05
0/4	0/4	0.5	0.05
0/7	0/7	0.5	0.05
0/11	0/11	2	0.2
0/14	0/14	2	0.2
0/21	0/21	5	0.5
0/28	0/28	5	0.5
0/42	0/42	5	0.5
0/56	0/56	10	1
0/70	0/70	10	1

Type 1128 (210° dial arc) Zero centered dial

PRESSURE RANGE		DIAL GRADUATIONS	
kg/cm²	bar	Figure Interval	Minor Graduation
1/0/1	1/0/1	0.5	0.05
2/0/2	2/0/2	0.1	0.01
3.5/0/3.5	3.5/0/3.5	0.5	0.1
5.5/0/5.5	5.5/0/5.5	2	0.2
7/0/7	7/0/7	2	0.2
10.5/0/10.5	10.5/0/10.5	5	0.5
14/0/14	14/0/14	5	0.5
21/0/21	21/0/21	5	0.5
28/0/28	28/0/28	10	1
35/0/35	35/0/35	10	1

CASE TYPE

Gauge Type Number	Dial Size (inches)	Case & Ring Material Finish	Bourdon Tube & Tip Material	Socket Material	Pressure Range (psi)	Pointer	Movement	NPT Connection
DIFFERENTIAL 1127 1128	4½, 6	Case: Aluminum Ring: Threaded aluminum All black epoxy coated	316 stainless steel	316 stainless steel	10/1000	Adjustable	Bronze-brushed Overload & Vacuum Stops-Std.	¼

TO ORDER THESE 1127, 1128 DIFFERENTIAL PRESSURE GAUGES:

Select: 45 | 1127 | SD | 02L | XXX | 100#

1. Dial size–4½″, 6″ — 45
2. Case type–1127, 1128 — 1127
3. Tube and socket material–(SD) Stainless — SD
4. Connection size–¼ (02) — 02L
5. Connection location–Lower (L)
6. Optional features–see page 249 — XXX
7. Standard pressure range–1000 psi — 100#

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

MADE IN U.S.A.

ASHCROFT®

Differential Pressure Gauges
Type 1130
±2% Ascending Accuracy

- *Piston actuator*
- *Stainless steel case*
- *Ranges from 5 psid-150 psid*
- *Static pressures up to 6000 psi[5]*
- *Aluminum[4], brass or stainless steel bodies[1]*
- *Buna-N O-rings (others available)*
- *Superior magnets for smoother pointer motion*
- *Standard or explosion-proof reed switches available*
- *5-year warranty*

The Type 1130 uses a piston design where small migration of the process media is permissible.[2] It is recommended for high differential and high static pressures, up to 6000 psi. Body materials are available in Aluminum, Brass and Stainless Steel, with Buna, Viton or EPDM seals.[3]

(1), (2) Not for use with incompatible media.
(3) Other wetted parts include stainless steel, Teflon and ceramic.
(4) Not to be used with water or corrosive applications.
(5) Static pressure over 3000 psi in SS only.

SPECIFICATIONS	Type 1130
Accuracy (Ascending)	±2%
Migration	Minor
Range Limits	0-5 psid to 150 psid
Maximum Static Pressure	3000 psi (6000 psi for SS)
Actuator	Piston
Case Material	Stainless Steel
Dial Size	2″ (20), 2½″ (25), 3½″ (35), 4″ (40), 4½″ (45), 6″ (60)
Maximum Process Temperature	175°F / 80°C
Body Materials	Aluminum (F), Brass (A), Stainless Steel (S)
O-Rings	Buna-N
Connection Size (Female)	¼ NPT (25)
Connection Location	In-Line (S), Lower (L), Back (B)
Window	Glass
Warranty	Five Years
OPTIONS	
Switches[1,2] NEMA-4	Available
Front Flange (XFF)	Available
Viton O-Rings (XVD)	Available
EPDM O-Rings (XEM)	Available
Glycerin Fill (L)	Standard Fill Option
Silicone Fill (XGV)	Available
Plastic Window (XPD)	Available
Explosion Proof (XEK)	Available[3]

(1) Applicable to Switches
(XV1) 1 SPST with DIN Plug (XV5) 1 SPDT with DIN Plug
(XV2) 1 SPST with Terminal Strip (XV6) 1 SPDT with Terminal Strip
(XV3) 2 SPST with DIN Plug (XV7) 2 SPDT with DIN Plug
(XV4) 2 SPST with Terminal Strip (XV8) 2 SPDT with Terminal Strip

(2) Ajustable from 40-100% of range

(3) Specify lower or back connection for gauge (not available in-line) and switch type (terminal strip) XV2, XV4, XV6, XV8

RATINGS FOR BOTH STANDARD & EXPLOSION PROOF SWITCHES:

SPST SWITCH

Specifications:
Contact Rating
10 VA ac (rms) or dc (max)
Switching Current
0.5 Amp ac (rms) or dc (max)
Switch Voltage
150 Vac/Vdc (max)

SPDT SWITCH

Specifications:
Contact Rating
5 VA ac (rms) or dc (max)
Switching Current
0.25 Amp ac (rms) or dc (max)
Switch Voltage
175 Vac/Vdc (max)

EXPLOSION-PROOF SWITCH INFORMATION:

Switches and electrical connections are mounted in an explosion-proof enclosure with UL, CSA, Cenelec and FM approval. The enclosure meets Class 1, Groups B, C, D, Class 2 Groups E, F, G, Class 3, NEMA 7 & 9 and IP 66. Two ¾″ electrical conduit connections.

STANDARD RANGES – Type 1130

psi		0-5	0-8	0-10	0-15	0-20	0-25	0-30	
kPa	0-25		0-50	0-75	0-100		0-160	0-200	0-250
kg/cm²-bar	0-0.25		0-0.5	0-0.75	0-1		0-1.6	0-2	0-2.5

psi	0-40	0-50	0-60		0-80		0-100		150
kPa	0-300		0-400	0-500		0-600	0-700	0-900	0-1000
kg/cm²-bar	0-3		0-4	0-5		0-6	0-7	0-9	0-10

TO ORDER THIS 1130 DIFFERENTIAL PRESSURE GAUGES:

Select: **25** **1130** **FD** **25S** **XXX** **30#**

1. Dial size–2″, 2½″, 3½″, 4″, 4½″, 6″
2. Case type–1130
3. Body material
4. Connection size–⅛ NPTF (RQ), ¼ NPTF (25)
5. Connection location–In-line (S), Lower (L), Back (B)
6. Optional features–see above
7. Standard pressure range

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Differential Pressure Gauges
Type 1131
±2% Ascending Accuracy

- *Rolling diaphragm actuator*
- *Stainless steel case*
- *Ranges from 5 psid-100 psid*
- *Static pressures up to 3000 psi*
- *Aluminum(3), brass or stainless steel bodies(1)*
- *Buna-N O-rings (others available)*
- *Superior magnets for smoother power motion*
- *Standard or explosion-proof reed switches available*
- *5-year warranty*

The Type 1131 is utilized for applications where migration of the process media is not permissible. The Type 1131 uses a rolling diaphragm design to separate the high and low-pressure ports to isolate the media and can see up to 3000 psi static pressures. Body materials are available in Aluminum, Brass and Stainless Steel, with Buna, Viton or EPDM seals.(2)

(1) Not for use with incompatable media.
(2) Other wetted parts include stainless steel, Teflon and ceramic.
(3) Not to be used with water or corrosive applications.

SPECIFICATIONS	Type 1131
Accuracy (Ascending)	±2%
Migration	Zero
Range Limits	0-5 psid to 100 psid
Maximum Static Pressure	3000 psi (all)
Actuator	Rolling Diaphragm
Case Material	Stainless Steel
Dial Size	2½″ (25), 3½″ (35), 4″ (40), 4½″ (45), 6″ (60)
Maximum Process Temperature	175°F / 80°C
Body Materials	Aluminum (F), Brass (A), Stainless Steel (S)
Diaphragm/O-Rings	Buna-N
Connection Size (Female)	¼ NPT (25)
Connection Location	In-Line (S), Lower (L) Back (B)
Window	Glass
Warranty	Five Years
OPTIONS	
Switches(1,2) NEMA-4	Available
Front Flange (XFF)	Available
Viton Seals/O-Rings (XVD)	Available
EPDM Seals/O-Rings (XEM)	Available
Glycerin Fill (L)	Standard Fill Option
Silicone Fill (XGV)	Available
Plastic Window (XPD)	Available
Explosion Proof (XEK)	Available(3)

(1) Applicable to Switches
(XV1) 1 SPST with DIN Plug (XV5) 1 SPDT with DIN Plug
(XV2) 1 SPST with Terminal Strip (XV6) 1 SPDT with Terminal Strip
(XV3) 2 SPST with DIN Plug (XV7) 2 SPDT with DIN Plug
(XV4) 2 SPST with Terminal Strip (XV8) 2 SPDT with Terminal Strip

(2) Ajustable from 40-100% of range

(3) Specify lower or back connection for gauge (not available in-line) and switch type (terminal strip) XV2, XV4, XV6, XV8

RATINGS FOR BOTH STANDARD & EXPLOSION PROOF SWITCHES:

SPST SWITCH

Specifications:
Contact Rating
10 VA ac (rms) or dc (max)
Switching Current
0.5 Amp ac (rms) or dc (max)
Switch Voltage
150 Vac/Vdc (max)

SPDT SWITCH

Specifications:
Contact Rating
5 VA ac (rms) or dc (max)
Switching Current
0.25 Amp ac (rms) or dc (max)
Switch Voltage
175 Vac/Vdc (max)

EXPLOSION-PROOF SWITCH INFORMATION:

Switches and electrical connections are mounted in an explosion-proof enclosure with UL, CSA, Cenelec and FM approval. The enclosure meets Class 1, Groups B, C, D, Class 2 Groups E, F, G, Class 3, NEMA 7 & 9 and IP 66. Two ¾″ electrical conduit connections.

STANDARD RANGES – Type 1131

psi		0-5	0-7	0-10	0-15	0-25	0-30		0-40	0-60	0-100
kPa	0-25		0-50	0-75	0-100		0-200	0-250		0-400	0-700
kg/cm²-bar	0-0.25		0-0.5	0-0.75	0-1		0-2	0-2.5		0-4	0-7

TO ORDER THIS 1131 DIFFERENTIAL PRESSURE GAUGES:

Select:	25	1131	FD	25S	XXX	30#
1. Dial size– 2½,″ 3½,″ 4,″ 4½,″ 6″						
2. Case type–1131						
3. Body material						
4. Connection size–⅛ NPTF (RQ), ¼ NPTF (25)						
5. Connection location–In-line (S), Lower (L), Back (B)						
6. Optional features–see above						
7. Standard pressure range						

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

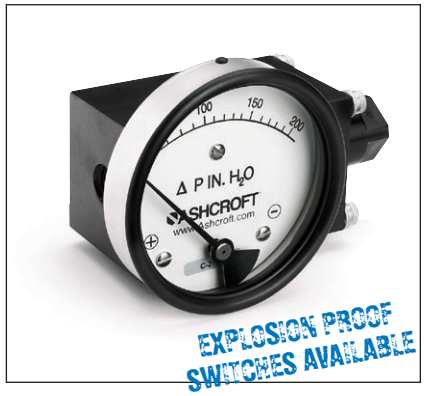
ASHCROFT®

Differential Pressure Gauges
Type 1132
±2% Ascending Accuracy

- *Small convoluted diaphragm actuator*
- *Stainless steel case*
- *Ranges from 1 psid-60 psid*
- *Static pressures up to 1500 psi*
- *Aluminum(3), brass or stainless steel bodies(1)*
- *Buna-N seals (others available)*
- *Superior magnets for smoother power motion*
- *Standard or explosion-proof reed switches available*
- *5-year warranty*

The Type 1132 uses a convoluted-diaphragm design with no migration of the process media. It is recommended for lower differential and high static pressures, up to 1500 psi. Body materials are available in Aluminum, Brass and Stainless Steel, with Buna, Viton or EPDM seals.(2)

(1) Not for use with incompatible media.
(2) Other wetted parts include stainless steel, Teflon and ceramic.
(3) Not to be used with water or corrosive applications.



SPECIFICATIONS	Type 1132
Accuracy (Ascending)	±2%
Migration	Zero
Range Limits	0-1 psid to 60 psid
Maximum Static Pressure	1500 psi (all)
Actuator	Convoluted Diaphragm
Case Material	Stainless Steel
Dial Size	2½˝ (25), 3½˝ (35), 4˝ (40), 4½˝ (45), 6˝ (60)
Maximum Process Temperature	175°F / 80°C
Body Materials	Aluminum (F), Brass (A), Stainless Steel (S)
Seals	Buna-N
Connection Size (Female)	¼ NPT (25)
Connection Location	In-Line (S), Lower (L) Back (B)
Window	Glass
Warranty	Five Years
OPTIONS	
Switches(1,2) NEMA-4	Available
Front Flange (XFF)	Available
Viton Seals/O-Rings (XVD)	Available
EPDM Seals/O-Rings (XEM)	Available
Glycerin Fill (L)	Standard Fill Option
Silicone Fill (XGV)	Available
Plastic Window (XPD)	Available
Explosion Proof (XEK)	Available(3)

(1) Applicable to Switches
(XV1) 1 SPST with DIN Plug (XV5) 1 SPDT with DIN Plug
(XV2) 1 SPST with Terminal Strip (XV6) 1 SPDT with Terminal Strip
(XV3) 2 SPST with DIN Plug (XV7) 2 SPDT with DIN Plug
(XV4) 2 SPST with Terminal Strip (XV8) 2 SPDT with Terminal Strip

(2) Ajustable from 40-100% of range

(3) Specify lower or back connection for gauge (not available in-line) and switch type (terminal strip) XV2, XV4, XV6, XV8

RATINGS FOR BOTH STANDARD & EXPLOSION PROOF SWITCHES:

SPST SWITCH

Specifications:
Contact Rating
10 VA ac (rms) or dc (max)
Switching Current
0.5 Amp ac (rms) or dc (max)
Switch Voltage
150 Vac/Vdc (max)

SPDT SWITCH

Specifications:
Contact Rating
5 VA ac (rms) or dc (max)
Switching Current
0.25 Amp ac (rms) or dc (max)
Switch Voltage
175 Vac/Vdc (max)

EXPLOSION-PROOF SWITCH INFORMATION:

Switches and electrical connections are mounted in an explosion-proof enclosure with UL, CSA, Cenelec and FM approval. The enclosure meets Class 1, Groups B, C, D, Class 2 Groups E, F, G, Class 3, NEMA 7 & 9 and IP 66. Two ¾˝ electrical conduit connections.

STANDARD RANGES – Type 1132

psi	0-1		0-5	0-8		0-15	0-20	0-25	0-30		0-40	0-50	0-60
in.H₂O	0-25	0-100		0-200		0-400	0-500						
kPa		0-25		0-50	0-75	0-100		0-160	0-200	0-250	0-300		0-400
kg/cm²-bar	0-0.075	0-0.25		0-0.5	0-0.75	0-1		0-1.6	0-2	0-2.5	0-3		0-4
mbar	0-75	0-250											

TO ORDER THIS 1132 DIFFERENTIAL PRESSURE GAUGES:

Select: **25** **1132** **FD** **25S** **XXX** **30#**

1. Dial size– 2½˝, 3½˝, 4˝, 4½˝, 6˝
2. Case type–1132
3. Body material
4. Connection size–⅛ NPTF (RQ), ¼ NPTF (25)
5. Connection location–In-line (S), Lower (L), Back (B)
6. Optional features–see above
7. Standard pressure range

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Differential Pressure Gauges
Type 1133
±2% Ascending Accuracy

- *Large convoluted diaphragm actuator*
- *Stainless steel case*
- *Ranges from 1 IWD-25 IWD*
- *Static pressures up to 500 psi*
- *Aluminum(3), stainless steel bodies(3)*
- *Buna-N seals (others available)*
- *Superior magnets for smoother power motion*
- *Standard switches available*
- *5-year warranty*

The Type 1133 uses a convoluted-diaphragm to sense low inches of water differentials while ensuring no migration of the process media. Maximum static pressures for ranges of 5 IWD and below is 45 psi and 500 psi for all other ranges. Body materials are only available in Aluminum, with Buna, Viton or EPDM seals.(2)

(1) Not for use with incompatible media.
(2) Other wetted parts include stainless steel, Teflon and ceramic.
(3) Not to be used with water or corrosive applications.

SPECIFICATIONS	Type 1133
Accuracy (Ascending)	±2%
Migration	Zero
Range Limits	0-1 IWD to 25 IWD
Maximum Static Pressure	500 psi (all)
Actuator	Convoluted Diaphragm
Case Material	Stainless Steel
Dial Size	3½″ (35), 4″ (40), 4½″ (45), 6″ (60)
Maximum Process Temperature	175°F / 80°C
Body Materials	Aluminum (F), Stainless Steel (S)
Diaphragm	Buna-N
Connection Size (Female)	¼ NPT (25)
Connection Location	In-Line (S), Lower (L), Back (B)
Window	Glass
Warranty	Five Years
OPTIONS	
Switches(1,2) NEMA-4	Available
Front Flange (XFF)	Available
Viton/Diaphragm (XVD)	Available
EPDM/Diaphragm (XEM)	Available
Glycerin Fill (L)	N/A
Silicone Fill (XGV)	N/A
Plastic Window (XPD)	Available
Explosion Proof (XEK)	N/A

(1) Applicable to Switches
(XV1) 1 SPST with DIN Plug
(XV2) 1 SPST with Terminal Strip
(XV3) 2 SPST with DIN Plug
(XV4) 2 SPST with Terminal Strip
(XV5) 1 SPDT with DIN Plug
(XV6) 1 SPDT with Terminal Strip
(XV7) 2 SPDT with DIN Plug
(XV8) 2 SPDT with Terminal Strip

(2) Ajustable from 40-100% of range

RATINGS FOR STANDARD SWITCHES:

SPST SWITCH

Specifications:
Contact Rating
10 VA ac (rms) or dc (max)
Switching Current
0.5 Amp ac (rms) or dc (max)
Switch Voltage
150 Vac/Vdc (max)

SPDT SWITCH

Specifications:
Contact Rating
5 VA ac (rms) or dc (max)
Switching Current
0.25 Amp ac (rms) or dc (max)
Switch Voltage
175 Vac/Vdc (max)

STANDARD RANGES – Type 1133

in.H_2O	0-1	0-2	0-5	0-10	0-25
mmH_2O	0-25	0-50	0-125	0-250	0-600

TO ORDER THIS 1133 DIFFERENTIAL PRESSURE GAUGES:

Select:	35	1133	FD	25S	XXX	10IWD
1. Dial size–3½″, 4″, 4½″, 6″						
2. Case type–1133						
3. Body material						
4. Connection size–⅛ NPTF (RQ), ¼ NPTF (25)						
5. Connection location–In-line (S), Lower (L), Back (B)						
6. Optional features–see above						
7. Standard pressure range						

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Differential Pressure Gauges
Type 1134
±2% Ascending Accuracy

- *Convoluted diaphragm actuator*
- *Stainless steel case*
- *Ranges from 0.6 IWD-60 IWD*
- *Static pressures up to 35 psi*
- *Glass filled nylon body(1)*
- *Buna-N seals (others available)*
- *Superior magnets for smoother power motion*
- *Low cost reed switches available*
- *5-year warranty*
- *Flush mounting accessories standard*

The Type 1134 uses a convoluted-diaphragm design with no migration of the process media. It is recommended for low differential inches of water ranges. Body material is glass filled nylon with Buna or silicone.(2)

(1) Not for use with incompatible media.
(2) Other wetted parts include stainless steel, aluminum, Teflon and ceramic.

SPECIFICATIONS	Type 1134
Dial Size	4½″ (114mm)
Accuracy (Ascending)	2%(3)
Range Limits	0-0.6 IWD to 60 IWD
Maximum Static Pressure	35 psi
Case Material	Stainless Steel
Body Material	Glass Filled Nylon
Diaphragm Actuator Material	Buna-N
O-Ring Material	Buna-N
Connection Size (Female)	⅛ NPT
Connection Location	Dual In-Line and Back (User chooses)
Window	Glass
Max. Process Temperature	140°F/60°C
Warranty	Five Years
OPTIONS	
Switches(1)(2) (NEMA-4)	Available
(XPD) Plastic Window	Available
(XBF) Surface Mount	Available
(XTM) Pipe Mounting Bracket	Available

(1) Applicable to switches (NEMA- 4)
(XV1) 1 SPST with DIN plug
(XV3) 2 SPST with DIN plug
(XV5) 1 SPDT with DIN plug
(2) Adjustable from 40-80% of range
(3) 3% for 0-0.6 IWD

STANDARD RANGES		
Pressure – Single Scale (in.H_2O)		
Range*	Minor Grad.	First Grad.
0/0.6	.02	0.10
0/1	.02	.12
0/2	.04	.20
0/3	.10	.30
0/4	.10	.40
0/5	.10	.50
0/6	.20	.60
0/8	.20	.80
0/10	.25	1.0
0/15	.30	1.5
0/20	.50	2.0
0/25	.50	2.5
0/30	.60	3.0
0/40	.80	4.0
0/50	1.0	5.0
0/60	1.0	5.0

*Metric, dual or special ranges on application.

STANDARD ACCESSORIES
Two brass 3⁄16″ hose barb tube adapters
Flush mounting kit
Two plugs for sealing connections not in use

RATINGS FOR STANDARD SWITCHES	
SPST SWITCH SPECIFICATIONS	
Contact Rating:	10 VA ac (rms) or dc (max)
Switch Current:	0.5 Amp ac (rms) or dc (max)
Switch Voltage:	150 Vac/Vdc (max)
SPDT SWITCH SPECIFICATIONS	
Contact Rating:	5 VA ac (rms) or dc (max)
Switch Current:	0.25 Amp ac (rms) or dc (max)
Switch Voltage:	175 Vac/Vdc (max)

TO ORDER THIS 1134 DIFFERENTIAL PRESSURE GAUGES:

Select:	45	1134	ED	RQM	XXX	1 IWD
1. Dial size– 4½″						
2. Case type–1134						
3. Body material (Glass filled Nylon)						
4. Connection size–⅛ NPTF (RQ)						
5. Connection location–Dual In-line and, Back (M)						
6. Optional features–see above						
7. Standard pressure range						

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Type 5503
Differential Pressure Gauge

- *±1.6% full scale accuracy*
- *Stainless steel case*
- *316 stainless steel wetted parts*
- *1450 psi static pressure standard with optional static pressure to 3625 psi*
- *External zero adjust*
- *Optional liquid-filled case*
- *4˝ (100mm) or 6˝ (160mm) dial sizes*
- *One sided load permitted*
- *Optional ATEX approval*

The Ashcroft® Type 5503 differential pressure gauge is available with ranges from 16 I.W.D. to 400 psi with optional static pressure to 3625 psi. Optional wetted parts includes Hastelloy C & Monel. Typical applications include use with liquified gas for nitrogen, helium, argon and carbon dioxide.

PRODUCT SPECIFICATIONS

GENERAL DIFFERENTIAL PRESSURE MEASUREMENT SPECIFICATIONS

Accuracy
±1.6% full scale

Dial Size
4˝ (100mm) or 6˝ (160mm)

Case and Ring
304 SS safety design case with bayonet ring (316 stainless steel case and ring optional)

Dial
White painted aluminum

Pointer
Black painted aluminum with external adjust feature standard (to 25% of range)

Window
Shatterproof glass

Diaphragm Material
316 stainless steel for ranges 15 psi and above. High strength cobalt alloy (Duratherm 600) for ranges of 10 psi and below

Housing Material
316 stainless steel with a Viton O-ring

Socket Material
316 stainless steel

Socket Connection
1/4 NPT or 1/2 NPT lower Flange for direct mounted valves

Range
0-16 IWD (inches of water differential) to 400 psid

Static Pressure
1450 psi standard with optional static pressure to 3625 psid

Mounting
Stem, wall or pipe

Options

	Code
Glycerin fill	(L)
Silicone fill	(XGV)
Weatherproof/Hermetically sealed case	(XLJ)
Wall mounting bracket	(XFW)
Pipe mounting bracket	(XTM)
3-way manifold	(X43)
Hastelloy C diaphragm w/316 stainless steel housing(1,2)	(HS)
Monel diaphragm w/316 stainless steel housing(2)	(PS)
Hastelloy C diaphragm and housing(1,2)	(HH)
See page 247 for selection and ordering code	
Electric warning contacts 1/2% full scale accuracy (unidirectional upscale)	(XAJ)
Static pressure to 3625 psi	(XSP)
Polycarbonate window	(XPD)

(1) For ranges 5 psid and above.
(2) Goes in 3 and 4 spot below for coding.
Viton® is a registered trademark of DuPont Co.

STANDARD RANGES*

psid	mbar	bar	I.W.D.
3	40	0.6	16
5	60	1.0	30
10	100	1.6	60
15	160	2.5	100
30	250	4	200
60	400	6	
100		10	
160		16	
200		25	
300			
400			

*Other ranges on application

TO ORDER THIS MODEL 5503 DIFFERENTIAL PRESSURE GAUGE:

10	5503	S	S	02L	XXX	0/100 psid

Select:

1. Dial size – 100mm, 160mm
2. Type
3. 316 SS diaphragm
4. 316 SS housing and socket
5. Connection size and location
6. Optional features
7. Pressure range

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Type 5509
Differential Pressure Gauges

- *±2.5% full scale accuracy*
- *Stainless steel case*
- *316 stainless steel wetted parts*
- *Inches of water differential ranges with 145 psi static pressure*
- *External zero adjust*
- *Available with open or solid front case styles*
- *Optional liquid-filled case*
- *4˝ (100mm) or 6˝ (160mm) dial sizes*

The Ashcroft® Type 5509 differential pressure gauge comes standard with 316SS wetted parts. This rugged gauge features an external zero adjust feature standard. Static pressure up to 360 psi.

PRODUCT SPECIFICATIONS

GENERAL DIFFERENTIAL PRESSURE MEASUREMENT SPECIFICATIONS

Accuracy
±2.5% full scale

Dial Size
4˝ (100mm) or 6˝ (160mm)

Case and Ring
304 stainless steel open front case with a bayonet ring (solid front optional)

Dial
White painted aluminum with black markings

Pointer
Black painted aluminum with external adjust feature standard (to 25% of range)

Window
Shatterproof glass

Diaphragm Material
316 stainless steel for ranges 15 psi and above. High strength cobalt alloy (Duratherm 600) for ranges below 15 psi

Housing Material
316 stainless steel with a Viton O-ring

Socket Connection
$^1/_4$ NPT or $^1/_2$ NPT lower

Range
0-10 IWD (inches of water differential) to 400 psid

Static Pressure
From 10 IWD to 3 psi – static pressure 145 psi
5 psi and above – static pressure 360 psi

Mounting
Stem, wall or pipe

Options

	Code
Glycerin fill	(L)
Silicone fill	(XGV)
Weatherproof/Hermetically sealed case	(XLJ)
Wall mounting bracket	(XFW)
Pipe mounting bracket	(XTM)
3-way manifold(1)	(X43)
Electric warning contacts See page 247 for selection and ordering code	
Polycarbonate window	(XPD)
Solid front	(S)

(1) Requires additional piping (not supplied).
Viton® is a registered trademark of DuPont Co.

STANDARD RANGES*

psid	mBar	bar	I.W.D.
3	40	0.6	10
5	60	1.0	30
10	100	1.6	60
15	160	2.5	100
30	250	4	200
60	400	6	
100		10	
160		16	
200		25	
300			
400			

*Other ranges on application

TO ORDER THIS MODEL 5509 DIFFERENTIAL PRESSURE GAUGE:

10	5509	S		02L	XXX	0/100 psid

Select:

1. Dial size – 100mm, 160mm
2. Type
3. 316 SS diaphragm, housing and socket
4. For solid front option add (S), otherwise leave blank
5. Connection size and location
6. Optional features
7. Pressure range

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Special Application Gauges
Type 1150H, ASME B 40.1 Grade 2A (±0.5% of span)
Type 1122, ASME B 40.1 Grade A (±2-1-2% of span)

1150H Reid Vapor Test Gauge

- *Accuracy ASME B 40.1 Grade 2A (±0.5% of span)*
- *Dial size 4½" only*
- *White dial and black pointer*

The Ashcroft® Type 1150H is a specialized pressure gauge used by the petroleum industry to measure vapor pressures of various petroleum products.

1122KE/KF

- *Accuracy ASME B 40.1 Grade A (±2-1-2% of span)*
- *Dial size 2½˝ only*

The Ashcroft® Type 1122 is a specialized product used for some pump, turbine and compressor applications.

SPECIFICATIONS

Gauge Type Number	Dial Size (Inches)	Case & Ring Material Finish	Bourdon Tube & Tip Material (all joints welded)	Socket Material	Pressure Range (psi)	Pointer	Movement	NPT Conn.
Reid Vapor Test 1150H	4½	Case: Aluminum Ring: Threaded Aluminum black epoxy coated	Phosphor Bronze Tip: Brass (All joints silver brazed)	Brass	15/600	Micrometer Adjustable	Stainless steel Teflon coated, pinion and sector shaft, rotary geared	¼
1122KE(1) 1122KF	2½	Case: Stainless steel Ring: Bayonet Lock, St.St. Both polished	Phosphor Bronze Tip: Brass (All joints silver brazed)	Brass	15/1000	Non adjustable	Stainless steel	¼

TYPE 1150H

Range kg/cm² kilograms per sq. cm.	Range bar	Dial Graduations Major Interval	Dial Graduations Minor Graduation
0/1	0/1	0.1	0.01
0/1.6	1.6	0.2	0.02
0/2.5	2.5	0.5	0.05
0/4	0/4	0.5	0.05
0/6	0/6	0.5	0.1
0/10	0/10	1	0.1
0/16	0/16	2	0.2
0/25	0/25	5	0.5
0/40	0/40	5	0.5

Range kPa (kilopascal)	Dial Graduations Major Interval	Dial Graduations Minor Graduation
0/100	10	1
0/160	20	2
0/250	50	5
0/400	50	5
0/600	50	10
0/1000	100	10
0/1600	200	20
0/2500	500	50
0/4000	500	50

(1) The 1122KE is stem mounted.
The 1122KF is surface mounted with a back flange.

TYPE 1122

Range kg/cm² kilograms per sq. cm.	Range bar	Dial Graduations Major Interval	Dial Graduations Minor Graduation
0/1	0/1	0.1	0.01
0/1.6	0/1.6	0.2	0.02
0/2.5	0/2.5	0.5	0.05
0/4	0/4	0.5	0.05
0/6	0/6	0.5	0.1
0/10	0/10	1	0.1
0/16	0/16	2	0.2
0/25	0/25	5	0.5
0/40	0/40	5	0.5
0/60	0/60	5	1
Compound			
–1/0/1.5	-1/0/1.5	.5	.05
–1/0/3	-1/0/3	.5	.05
–1/0/5	-1/0/5	.5	.1

Range kPa (kilopascal)	Dial Graduations Major Interval	Dial Graduations Minor Graduation	Dial Graduations Dual-Scale psi
0/100	10	1	0/14
0/160	20	2	0/22
0/250	50	5	0/35
0/400	50	5	0/55
0/600	50	10	0/85
0/1000	100	10	0/140
0/1600	200	20	0/220
0/2500	500	50	0/350
0/4000	500	50	0/550
0/6000	500	100	0/850
Compound			
–100/0/300	50	5	30˝Hg/40
–100/0/500	50	50	30˝Hg/70

STANDARD RANGES

Range psi	Major Interval	Minor Graduation
Type 1150H		
0/15	1	0.1
0/30	2	0.2
0/45	3	0.2
0/60	4	0.25
0/100	5	0.5
0/200	10	1
0/250	10	1
0/300	10	2
0/600	20	2
Type 1122 (60° dial arc except 15psi-45°)		
0/15	5	1
0/30	10	2
0/60	15	5
0/100	20	10
0/160	40	10
0/200	50	10
0/300	100	25
0/400	100	25
0/600	150	50
0/1000	250	50

TO ORDER THESE 1150H & 1122 GAUGES:

Select: 45 | 1150 | H | 02L | XXX | 600#

1. Dial size–2½˝, 4½˝ — 45
2. Type — 1150
3. Tube and socket material–see chart above — H
4. Connection size–¼ (02) — 02L
5. Connection location–Lower (L) only — 02L
6. Optional features–see page 249 — XXX
7. Standard pressure range 600 psi — 600#

Accessories–see pages 243-248

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Low Pressure Bellows Gauge
Type 1187, 1188 & 1189
ASME B 40.1 Grade A
(±2-1-2% of span)

- *Available in 4½″ and 6″ dial sizes*
- *Bellows-actuated mechanism*
- *Three bellows materials*
- *Easily adjustable micrometer pointer*
- *Phenolic (1188) or aluminum (1187, 1189) cases*
- *All-stainless steel movements*

Ashcroft® bellows gauges are used for measuring low pressures from 10″ H_2O to 10 psi pressure as well as vacuum and compound ranges. Coupled with their sensitivity, these gauges have a rugged design for process and industrial applications.

IN A RUSH? ASK FOR ASHCROFT GOLD SERVICE

PRESSURE RANGES[4]

STANDARD			METRIC	
Single Scale Dial Compound	Dual Scale Dial Pressure		Single Scale Dial Pressure	Dual Scale Dial Pressure
(Vac/Press) in.H_2O	Inner in.H_2O	Outer oz/in^2	mmH_2O	Outer Scale in.H_2O
–5/5	0/10	0/6	0/250	0/10
–10/10	0/15	0/9	0/400	0/16
–30/10	0/20	0/12	0/600	0/24
–20/20	0/30	0/18	0/1000	0/40
–40/20	0/40	0/24	0/1600	0/60
–10/30	0/60	0/35	0/2500	0/100
–30/30	0/80	0/45	0/4000	0/160
–70/30	0/100	0/57	0/6000	0/240
–20/40	0/150	0/90		
–50/50			**Vacuum**	**Vacuum**
in.Hg/psi	**psi**	**in.Hg**	–250/0	–10/0
–5/3	0/5	0/10	–400/0	–16/0
–2/5	0/8	0/16	–600/0	–24/0
–5/5	0/10	0/20	–1000/0	–40/0
–10/5			–1600/0	–60/0
	Vacuum		–2500/0	–100/0
	in.H_2O	**mmHg**	–4000/0	–160/0
	10/0	18/0	–6000/0	–240/0
	15/0	28/0	**Compound**	**Compound**
	20/0	37/0	–125/125	–5/5
	30/0	56/0	–200/200	–8/8
	40/0	75/0	–300/300	–12/12
	60/0	110/0	–500/500	–20/20
	80/0	150/0	–800/800	–30/30
	100/0	180/0	–1250/1250	–50/50
	150/0	270/0	–2000/2000	–80/80
	in.Hg	**ftH$_2$0**	–3000/3000	–120/120
	10/0	11/0		
	15/0	17/0		
	20/0	23/0		

CASE SELECTION

Dial Size[1]	Case Type	Case Material	Ring Style	Mounting
4½″	1187	Aluminum, black epoxy coated	Hinged steel, black crinkle enamel	Flush — back only
4½″	1188	Phenolic, black	Threaded polypropylene ring	Stem — lower or back Surface — lower or back Flush— back, order 1278M mounting ring, specify X56
4½″, 6″	1189	Aluminum, black epoxy coated	Threaded polypropylene ring	Stem — lower Surface — lower

BELLOWS SYSTEM/RANGE SELECTION[3]

Order Code	Bellows & Socket Material	Pressure Range	Vacuum Range	Compound Range	NPT Conn.	Available Case Size and Type
A	Brass	10 in.H_2O to 10 psi	10 in.H_2O to 20 in.Hg	5 in.H_2O vac. & 5 in. 5 in.H_2O vac. & 10 in. Hg vac. & 5 psi	¼, ½	4½″–1187 4½″–1188 4½″, 6″–1189[5]
S	316 SS	10 in.H_2O to 10 psi	10″H_2O to 20 in.Hg	5 in.H_2O vac. & 5 in. 5 in.H_2O vac. & 10 in. Hg vac. & 5 psi	¼, ½	4½″–1187 4½″–1188 4½″, 6″–1189[5]
P Meets NACE MR01-75	Monel	10 in.H_2O to 10 psi	10″H_2O to 20 in.Hg	5 in.H_2O vac. & 5 in. 5 in.H_2O vac. & 10 in. Hg vac. & 5 psi	¼, ½	4½″–1187 4½″–1188 4½″, 6″–1189[5]

(3) For selection of the correct bellows system material, see the media application table on page 253 or the Corrosion Guide.
(4) Others ranges available: Consult factory.
(5) Lower connect only.

TO ORDER THIS 1188, 1187 OR 1189 PRESSURE GAUGE:

Select: **45** **1188** **AS*** **02L** **XXX** **10 IW**

1. Dial size–4½″ & 6″ — 45
2. Case type–1188, 1187, 1189 — 1188
3. Bellows and socket material — AS*
4. Connection size – ¼″ (02), ½″ (04) — 02L
5. Connection location – Lower (L), Back (B) — 02L
6. Optional features – see page 249 — XXX
7. Standard pressure range –10 in.H_2O — 10 IW

Accessories – see pages 243-248

(*) Denotes solid-front case design.

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Low Pressure Diaphragm Gauge
Series 1490, ASME B 40.1
Grade A (±2-1-2% of span)

- *2½˝ and 3½˝ dial size*
- *Glass-filled polysulfone case material, won't rust or dent*
- *Beryllium copper diaphragm*
- *Brass socket*
- *Wetted materials of beryllium copper, brass, polysulfone and RTV silicone*
- *Exclusive autoclavable feature*

The Ashcroft® Type 1490 low pressure diaphragm gauge is designed to measure pressure from 10 in.H_2O to 15 psi, both positive and negative pressures. This gauge uses a very sensitive diaphragm capsule to measure low pressure and vacuum. The gauge is specifically designed for use whenever the pressure medium is a gas that is not corrosive to beryllium copper, brass, polysulfone and RTV silicone. The polysufone case is suitable for intermittent or continuous service on natural gas provided a .013˝ throttle plug is installed in the socket. Typical applications are, but not limited to, vacuum pumps, gas leak detectors, air compressors, air filters, gas burners, gas measurement, vacuum ovens, suction regulators and respirators.

SELECTION TABLE

DIAL SIZE		TYPE		WETTED MATERIAL		CONN. SIZE & TYPE		CONNECTION LOCATION		RANGES		OPTIONAL FEATURES	
Code	Desc.	Code	Description	Code	Description	Code	Description	Code	Description	Code	Description	Code	Description
25 35	2½˝ 3½˝	1490	Low Pressure Diaphragm Gauge	A	Beryllium Copper Brass Polysulfone RTV Silicone	01 02 HD HE HF HG HH	⅛ NPT ¼ NPT ⅛˝ I.D.Tubing Hose Barb(2,3) 3/16˝ I.D.Tubing Hose Barb(2,3) ¼˝ I.D.Tubing Hose Barb(2,3) ¼˝ O.D. Polytube Hose Barb(2,3) 10-32-2B Female Thread(2,3,5)	L B T D E	Lower Center Back Top 3 O'Clock 9 O'Clock	10 IW	0 to 10 in.H_2O See Chart for Entire List of Ranges	XAK XAN XDA XNH XNN XTU(1,3) XTS(5) XUC(2) XZY	Autoclavable(4) 1% Opt. Accuracy Dial Marking Stain. Steel Tag Paper Tag Throttle Plug Throttle Screw U-clamp FlutterGuard™

(1) A throttle plug must be installed in the socket whenever the gauge is used for intermittent or continuous service on natural gas.
(2) U-clamp furnished when hose barb or female thread is specified. **EXAMPLES: 25 1490A 02L 10 IW XNH**
(3) Throttle plug not available with hose barb or female thread connections.
(4) Autoclavacable at 275° for 30 minutes up to 5 times. Polysulfone window will be supplied.
(5) .020 throttle screw available with HH connection only.

STANDARD RANGES

Pressure	Figure Intervals	Minor Graduation
0/10 in.H_2O	1	0.1
0/15 in.H_2O	5	0.2
0/30 in.H_2O	5	0.5
0/60 in.H_2O	10	1
0/100 in.H_2O	10	1
0/160 in.H_2O	20	2
0/200 in.H_2O	20	2
0/300 in.H_2O	50	5
0/10 oz./in.²	1	0.1
0/15 oz./in.²	5	0.2
0/30 oz./in.²	5	0.5
0/60 oz./in.²	10	1
0/100 oz./in.²	10	1
0/160 oz./in.²	20	2
0/250 oz./in.²	50	5
0/3 psi	0.5	0.05
0/5 psi	1	0.1
0/10 psi	1	0.1
0/15 psi	5	0.2

STANDARD RANGES (Cont.)

Vacuum	Figure Intervals	Minor Graduation
15/0 in.H_2O	5	0.2
30/0 in.H_2O	5	0.5
60/0 in.H_2O	10	1
100/0 in.H_2O	10	1
200/0 in.H_2O	20	2
15/0 oz./in.²	5	0.2
30/0 oz./in.²	5	0.5
60/0 oz./in.²	10	1
100/0 oz./in.²	10	1
Compound		
–30/30 in.H_2O	10	1
–30/30 in.oz./in.²	10	1
–10/10 in.H_2O	2	0.2
Dual Scale		

Range		Graduations			
		Inner Scale		Outer Scale	
Inner Scale	Outer Scale	Figure Intervals	Minor Grad.	Figure Intervals	Minor Grad.
0/9 oz./in.²	0/15 in.H_2O	1	0.2	5	0.2
0/20 oz./in.²	0/35 in.H_2O	5	0.5	5	0.5
0/35 oz./in.²	0/60 in.H_2O	5	0.5	10	1
0/60 oz./in.²	0/100 in.H_2O	10	1	10	1

Other ranges available on request. Consult factory.

STANDARD METRIC RANGES

Pressure	Figure Intervals	Minor Graduation
0/60 cm. H_2O	10	1
0/2.5 kPa	0.5	0.05
0/4 kPa	1	0.1
0/10 kPa	1	0.1
0/16 kPa	2	0.2
0/25 kPa	5	0.5
0/40 kPa	10	1
0/100 kPa	10	1
Vacuum		
2.5/0 kPa	0.5	0.05
4/0 kPa	1	0.1
10/0 kPa	1	0.1
16/0 kPa	2	0.2
25/0 kPa	5	0.5
40/0 kPa	10	1
100/0 kPa	10	1
Compound		
–10/60 cm H_2O	10	1
–10/80 cm H_2O	10	1
–20/40 cm H_2O	10	1
–10/100 cm H_2O	10	1
–10/120 cm H_2O	20	2

TO ORDER THESE LOW PRESSURE DIAPHRAGM GAUGES:

Select: 25 1490 A 02L XXX 10 IW

1. Dial size – 2½ (25), 3½ (35)
2. Case type
3. Wetted material
4. Connection size – ¼ (02), ⅛ (01)
5. Connection location – Lower (L), Back (B)
6. Optional features – see page 249
7. Standard pressure range – 10 in.H_2O

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Diaphragm Receiver Gauges
Type 1495, ASME B 40.1
Grade A (±2-1-2% of span)

- ***Sensitive diaphragm element results in smooth pointer motion***
- ***One-piece polycarbonate window is easy to remove***
- ***Re-zero screw allows easy pointer adjustment***
- ***Slotted U-clamp for panel mounting makes installation easy***

The Ashcroft® Type 1495 receiver gauge uses a diaphragm capsule as its sensing element rather than a Bourdon tube. The sensitivity of the diaphragm promotes smooth pointer motion that makes minor pressure changes easy to read.

The Type 1495 receiver gauge is the ideal product where the standard ASME B 40.1 Grade A (±2-1-2% of span) accuracy or the optional ASME B 40.1 Grade 1A (±1% of span) accuracy and smaller dial sizes are specified. The long pointer, smooth-operating sensing element, easily removable window and re-zero adjustment screw make specification and installation of this receiver gauge quick and easy. The polysufone case is suitable for intermittent or continuous service on natural gas provided a .013˝ throttle plug is installed in the socket.

SPECIFICATIONS

Dial Size		Gauge Type		Wetted Material		Connection Size & Type		Connection Location	
Code	Desc.	Code	Description	Code	Description	Code	Description	Code	Description
25	2½˝	1495	Diaphragm Receiver Gauge	A	Beryllium Copper Brass Polysulfone RTV Silicone	01	⅛ NPT	L	Lower
35	3½˝					02	¼ NPT	B	Center Back
						HD	⅛˝ I.D. Tubing Hose Barb(2,3)	T	Top
						HE	3/16˝ I.D. Tubing Hose Barb(2,3)	D	3 O'Clock
						HF	¼˝ I.D. Tubing Hose Barb(2,3)	E	9 O'Clock
						HG	¼˝ O.D. Polytube Hose Barb(2,3)		
						HH	10-32-2B Female Thread(2,3,4)		

(1) A throttle plug must be installed in the socket whenever the gauge is used for intermittent or continuous service on natural gas.
(2) U-clamp furnished when hose barb or female thread is specified.
(3) Throttle plug not available with hose barb or female thread connections.
(4) .020 throttle screw available on HH connection only.

RANGES

Pressure	Figure Intervals	Minor Graduations
0-100%	10	1
0-10 sq rt	1	0.1
0-10 sq rt/0-100 Linear(4)		

(4) This dial is standard and will be supplied unless otherwise ordered. Figure/minor intervals same as single case.

SPECIFICATIONS

Dial Size: 2½˝ and 3½˝

Case Material: Glass-filled polysulfone

Sensing Element: Beryllium copper diaphragm

Wetted Materials: Beryllium copper, brass, polysulfone and RTV silicone

OPTIONS

Code	Description
XAK	Autoclavable at 275°F for 30 minutes. The unit can be autoclaved five times. Polysulfone window will be supplied.
XAN	1% optional accuracy
XDA	Dial marking
XNH	Stainless steel tag
XNN	Paper tag
XTU(1,3)	Throttle plug
XTS(4)	Throttle screw
XUC(2)	U-clamp
XZY	Flutterguard™

TO ORDER THIS TYPE 1495 RECEIVER GAUGE:

Select: 35 — 1495A — 02 — B — XUC — 3-15 psi — Range

1. Dial size – 3½˝
2. Case type – 1495 and wetted material
3. Connection size – ¼ (02), ⅛ (01)
4. Connection location – Lower (L), Back (B)
5. Variation for U-clamp
6. Basic model code for 3-15# signal
7. Actual dial range required; i.e, 0-100%, 0-10 sq rt, etc.

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

SANITARY PRESSURE GAUGES

ASHCROFT®

PATENTED

Xmitr™ Transmitter Gauge
Sanitary Type X1032 2½˝, 3½˝

TRANSMITTER SPECIFICATIONS

Output (Supply):
4-20mA 2 wire (12 to 30 Vdc Supply)
1-5 Vdc 3 wire Regulated (10 to 24 Vdc Supply)
0.5-4.5 Vdc 3 wire Ratio-metric (5 Vdc ±5% Supply)

Ranges: 15 to 1000 psi (see table 3)

Performance:(1)
±1% FSO from best fit straight line (includes non-linearity, hysteresis, and non-repeatability)

Temperature:

Storage:	–40 to 221°F	(–40 to 105°C)(5)
Operating:	–40 to 221°F	(–40 to 105°C)(5)
Compensated:	–4 to 185°F	(–20 to 85°C)

Thermal effect: 1.4% per 100°F, 3%/100°C typical (zero & full scale combined) In addition, .05 psi/°C

CE Conformity: Meets CE heavy industrial Per EN 61326: 1998 Annex A

Enclosure:
Electro-polished SS case IP50 (std), IP65 (XLJ)(2)

Media: Liquid, gas or vapor

Wetted Materials:
Electro-polished 316L SS (12-20 RA finish)

Electrical Protection:
Reverse polarity 75 Vdc, Over-voltage 60 Vdc continuous, and short-circuit protection.(3)

Shock: 100g-force per IEC770.

Vibration: 5g's 50 to 2000Hz.

Humidity: 95% non-condensing

Proof Pressure:
0 to 600 psi = 125% of full scale
1,000 psi = 110%

Burst Pressure:
0 to 1000 psi = 10x burst

Response Time: Less than 10 ms (electronics)

Wake-up Time: 1 ms

Insulation: 1 meg ohm at 200 Vdc

Electrical Connection:
2´ shielded cable (Standard)

Process Connection: Lower

Process Connection: 1½˝ and 2˝ sanitary Tri-Clamp®

GAUGE SPECIFICATIONS

Dial Size: 2½˝, 3½˝

Dial: White with black markings including 3A insignia

Agency Compliance: 3A compliance to standard 74-02 titled – "3A Sanitary Standard for Liquid Pressure and Level Sensing Devices"

System Filling: Pharmacuetical/food quality USP grade glycerin (99.5% pure). Optional: food grade silicone.

Features

- A transducer and gauge in one instrument (2 in 1)
- A 1% performance sanitary transducer
- Electro polished 316L st. st. media compatibility
- Clean-in-place (CIP) Steam-in-place (SIP)
- Meets 3A sanitary standard & robust CE heavy industrial
- Voltage and 4-20mA outputs
- Ranges compound to 1000 psi
- Vibration dampening *PLUS!*™ Performance
- Save time, money, space

Gauge Accuracy:
1.5% full-scale on ranges 100psi and above.
2% full-scale on ranges below 100psi.

Window: Polycarbonate

Gauge Movement: Patented PowerFlex™ movement

OPTIONS (Table 1)

IP65 (LJ): Provides hard case plug for IP65/NEMA4 weather protection (not liquid fillable).

(LL): Patented PLUS! performance provides vibration dampening in a dry case.

(SG): Safety Glass

ELECTRICAL CONNECTORS (Table 2)

Shielded Cable	CODE
2´ shielded cable	FL
Mini-Hirschmann G Series	
No Mating Connection	HM
With Mate (with 1 meter cable)	M2
With Mate (no cable)	M1
With Mate (with 3 meter cable)	M3

PRESSURE RANGES (Table 3)

psi	kg/cm² (4)	bar (4)	kPa (4)	mPa (4)
0/15	1	1	100	0.1
0/30	1.6	1.6	160	0.2
0/60	2.5	2.5	250	0.3
0/100	4	4	400	0.4
0/160	6	6	600	0.6
0/200	10	10	1,000	1
0/300	16	16	1,600	1.6
0/400	25	25	2,500	2.5
0/600	40	40	4,000	4
0/1000	60	60	6,000	6
COMPOUND RANGES				
30IMV&15	–1, .6	–1, .6	–100, 60	–.1, .1
30IMV&30	–1, 1.5	–1, 1.5	–100, 150	–.1, .2
30IMV&60	–1, 3	–1, 3	–100, 300	–.1, .3
30IMV&100	–1, 5	–1, 5	–100, 500	–.1, .5
30IMV&150	–1, 9	–1, 9	–100, 900	–.1, .9
30IMV&300	–1, 24	–1, 24	–100, 2400	–.1, 2.4

(1) 1% BFSL from 10% to 90% full scale, 1.5% from 0% to 10% and 90% to 100% full scale.
(2) Not Liquid Fillable
(3) For ratio-metric output, reverse polarity 20 Vdc and over-voltage of 25 Vdc continuous.
(4) 10 piece minimum per line item.
(5) Cable rated to 105°C. Higher rated cable upon application.

HOW TO ORDER

25	X	1032	SD	15L	4	FL	X(LJ)	100 psi

1. Dial Size 2.5˝
2. Patented Xmitr Transmitter Gauge
3. Case Number: 1032 (Table 5)
4. Socket Material: 316L SS
5. Connection Tri-Clamp: 1½˝ (15L), 2˝ (20L)
6. Output: 4-20mA ouput (Table 4)
7. Connector: 2´ Shielded Cable (Table 2)
8. Select Option(s): IP65 (Table 1)
9. Range: 100 psi (Table 3)

Table 4

Output	Code	Wiring
4-20 mA	4	Red = Supply + Black = Supply –
1-5 Vdc	1	Red = Supply + Black = Supply – (Signal Ref.) White = Signal
.5-4.5 Vdc Ratiometric	R	

Table 5

Dial Size	Code	Type
2.5˝	25	1032
3.5˝	35	1032

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Sanitary Gauges Type 1032, Accuracy (±1.5%-2.0% of span)

DESIGNED FOR SAFETY AND LONGER LIFE

- ***Patented PowerFlex™ movement isolates movement from shock and vibration for longer life***
- ***All stainless, all-welded construction for long life***
- ***New PLUS!™ Performance Option:***
  - ***Liquid-filled performance in a dry gauge***
  - ***Fights vibration and pulsations without liquid-fill headaches***
  - ***Autoclavable to 300°F (149°C)(1)***
  - ***Order as option XLL***
- ***True Zero™ pointer indication – no stop pin to mask false zero reading – ensures safety and process control***

(1) 2½″, 3½″ requires optional polysulfone window XPS.

OTHER FEATURES:

Available in 2½″, 3½″ and 4½″ dial sizes, 1032 sanitary pressure gauges can be autoclaved/sterilized and cleaned or steamed in place (CIP, SIP). These gauges have been designed specifically to meet the needs of the sanitary marketplace.

They are available dry, liquid-filled or hermetically sealed to allow for washdowns and also available with the *PLUS!™* performance option.

PRODUCT SPECIFICATIONS

Dial Sizes: 2½″, 3½″ and 4½″(1)

Process Connection: 1½″ and 2″ Tri-Clamp* lower and back(2)

Diaphragm Material and Surface Finish: Electropolished 316L stainless steel 12-20RA (Micro-inch)

Case and Ring: 300 series polished stainless steel

Accuracy: ±1.5% of span for pressure ranges 100 psi thru 1000 psi. ±2.0% of span for vacuum, compound and pressure ranges below 100 psi

Pointer: Adjustable (external zero adjust on 3½″ dial size)

Windows: 2½″, 3½″–Polycarbonate standard
4½″–Glass standard

Dial: White with black markings including 3A insignia

Agency Compliance: 3A compliance to standard 74-02 titled – "3A Sanitary Standard for Liquid Pressure and Level sensing Devices"

System Filling: Pharmacuetical/food quality USP grade glycerin (99.5% pure)
Optional: Food grade silicone

Optional System Fillings: Consult factory

Case Fillings: The standard sanitary gauge is dry Optional fills include:
- Glycerin USP Grade 99.5% pure)
- Food grade silicone

Optional Windows: Safety glass and polysulfon (2½″ and 3½″)

Autoclave or Sterilize: Temperature limit of 300°F (149°C). We recommend a polysulfone window for autoclave/sterilization. Specify the XPS variation.

Notes:

(1) 4½″ available with lower-connect 2″ Tri-Clamp only.

(2) For other connections, consult the factory.

- Dual scales, metric ranges and false reading dials are available on request.

Special dials with colors, logos, etc., available upon request.

STANDARD RANGES(1)

Pressure psi	Compound Vacuum/psi
0/15	30 in.Hg/0 psi
0/30	30 in.Hg/15 psi
0/60	30 in.Hg/30 psi
0/100	30 in.Hg/60 psi
0/160	30 in.Hg/100 psi
0/200	30 in.Hg/150 psi
0/300	30 in.Hg/300 psi
0/400	
0/600	
0/1000(2)	

(1) Nonstandard ranges available standard including units in bar, kg/cm² and kPa.
(2) Consult Tri-Clover, Inc. for appropriate clamps on 1000 psi range.

TO ORDER THIS 1032 SANITARY GAUGE:

Select: 35 1032S L 15L 100#

1. Dial size–2½″, 3½″ & 4½″
2. Case type–1032
3. Liquid-filled case, if required otherwise eliminate
4. Process connection Tri-Clamp size–1½″ (15), 2″ (20)
5. Connection location–Lower (L), Back (B)
6. Standard pressure range

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

In-Line Sanitary Gauges Type 1036 with Type 1037 Sanitary Instrument Fitting

TYPE 1036 SANITARY GAUGE

- *All-welded stainless steel Bourdon tube*
- *Field liquid-fillable gauge case*
- *True Zero™ pointer indication*
- *PowerFlex™ movement for extended life*
- *Easy Zero™ external pointer adjustment standard*
- *Retrofits Anderson Instrument CPM design*
- *New PLUS!™ Performance Option:*
  - *Liquid-filled performance in a dry gauge*
  - *Fights vibration and pulsations without liquid-fill headaches*
  - *Order as option XLL*

TYPE 1037 INSTRUMENT FITTING

- *Tubing O.D. size from ½″ thru 2″*
- *316L SS*
- *Electropolished 12-20RA (Micro-inch) internal surface finish*
- *Heat number stamped on each fitting*

Ashcroft® Type 1036 in-line sanitary pressure gauge and Type 1037 sanitary instrument fitting virtually eliminate process deadleg. The design of the Type 1036 sanitary gauge and instrument fitting allows for the diaphragm of the gauge to be positioned at the gauge instrument fitting, eliminating the pocket or deadleg that may cause contamination.

The Type 1036 sanitary gauge and Type 1037instrument fitting utilize a 1½″Tri-Clover-type mating connection. This feature offers flexibility to use the Ashcroft Type 1036 with the Type 1037 instrument fitting on sanitary instrument fitting for tube sizes from ½″ thru 2″.

PRODUCT SPECIFICATIONS

Dial Size: 3½″

Accuracy: ±1.5% of span for pressure ranges 100 psi thru 1000 psi. ±2.0% of span for vacuum, compound and pressure ranges below 100 psi

Case and Ring: 300 series stainless steel

Ring Type: Bayonet

Bourdon Tube and Socket: 316L stainless steel

Diaphragm Material and Surface Finish: 316L SS Electropolished 12-20RA (Micro-inch)

Diaphragm O-Ring: Buna-N(1)

Connection: Lower

System Fill: USP food grade glycerin

Windows: Polycarbonate

Pointer: Black-painted aluminum with external zero adjust (Easy Zero™)

Dial: White with black markings including 3A insignia

Movement: 300 series stainless steel

Agency Approvals: 3A compliance to sanitary standard 74-02

Ranges: 15# thru 1000#, including compound and vacuum

Clean or Steam in Place (CIP or SIP): Temperature limit of 300°F (149°C)

Autoclave or sterilize: Temperature limit of 300°F (149°C)

We recommend a polysulfone window for autoclave/sterilization. Specify the XPS variation.

ASHCROFT® TYPE 1037 INSTRUMENT FITTING

Feature	*Code*
316L SS construction	Standard
Wetted parts electropolished to 12-20RA (Micro-inch)	Standard
Heat number stamped on fitting	Standard
Sizes:	
½″ Tri-Clamp connection	50
¾″ Tri-Clamp connection	75
1″ Tri-Clamp connection	10
1½″Tri-Clamp connection	15
2″ Tri-Clamp connection	20

To Ensure Cleanliness

Prior to reinstalling the Type 1036 into the Type 1037 instrument fitting, we recommend replacing the O-ring (P/N 185A106-75)

STANDARD RANGES(1)

Pressure psi	Compound Vacuum/psi
0/15	30 in.Hg/0 psi
0/30	30 in.Hg/15 psi
0/60	30 in.Hg/30 psi
0/100	30 in.Hg/60 psi
0/160	30 in.Hg/100 psi
0/200	30 in.Hg/150 psi
0/300	30 in.Hg/300 psi
0/400	
0/600	
0/1000(2)	

(1) Nonstandard ranges available standard including units in bar, kg/cm² and kPa.
(2) Consult Tri-Clover, Inc. for appropriate clamps on 1000 psi range.

TO ORDER THIS 1036 SANITARY GAUGE:

Select:	35	1036	SD	15L	XXX	100#
1. Dial size–3½″						
2. Family–1036						
3. System material/fill–SS/dry						
4. Connection size/location–1.5″ seal/lower						
5. X variations						
6. Range						

HOW TO ORDER FITTING:

75 – 1037

50 – ½″ Tri-Clamp connection
75 – ¾″ Tri-Clamp connection
10 – 1″ Tri-Clamp connection
15 – 1½″ Tri-Clamp connection
20 – 2″ Tri-Clamp connection

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Fractional Sanitary Pressure Gauge, Type 1032 Accuracy (±2.0% of span)

- *For use with ¾″ Tri-Clamp connections*
- *2″ gauge size suitable for limited-space applications*
- *316L stainless steel process wetted parts*
- *Self-draining case designed for washdowns*
- *Small diaphragm to minimize process deadleg*
- *Autoclavable*
- *Unit can be steamed or cleaned-in-place (SIP or CIP)*

The Ashcroft® Type 1032 fractional sanitary gauge is designed for applications in the food, pharmaceutical, and biotechnical industries where small size and sanitary conditions are a priority.

This compact 2″ gauge features all-stainless steel construction, temperature-vented case, built-in pressure damping and a self-draining case to facilitate washdowns. The Type 1032 can also be cleaned or steamed in place. Available in a wide variety of pressure ranges from 30 psi, including compound.

PRODUCT SPECIFICATIONS

Size:	2″ (50mm)
Process Connection:	¾″ Tri-Clamp, lower connection
Diaphragm & Housing:	316 stainless steel electropolished 12-20Ra (micro-inch)
Accuracy:	Upscale accuracy ±2% of span to ±3% of span depending on range. Downscale accuracy up to 5%
Pointer:	Nonadjustable
Window:	Glass standard
Dial:	White with black markings
Accuracy:	2″ (50mm)
System Filling:	Pharmaceutical/food quality USP grade glycerin (99.5% pure)

Notes:

- Dual-scale, metric ranges and special dials with logos are available on request
- The Type 1032 sanitary gauge can be produced in many other pressure ranges
- The Ashcroft sanitary gauge can be recalibrated at the factory
- Tri-Clamp is a registered trademark of Tri-Clover, Inc.
- Gasket material and clamp torque tightness may effect gauge accuracy. The Ashcroft Type 1032 fractional sanitary pressure gauge is calibrated at the factory using a Buna gasket. The Tri-Clamp type of clamp is tightened to 25 inch pounds during calibration as recommended by the clamp manufacturer. Specify gasket material if other than Buna when ordering the Ashcroft 1032 fractional pressure gauge.

STANDARD RANGES[1]

Pressure psi	Compound Vacuum/psi
0/30	30 in.Hg/30 psi
0/60	30 in.Hg/45 psi
0/100	30 in.Hg/60 psi
0/160	30 in.Hg/100 psi
0/200	30 in.Hg/150 psi
0/300	30 in.Hg/300 psi
0/400	
0/600	

TO ORDER THIS 1032 SANITARY GAUGE:

Select: 20 1032 S 75L 100#

1. Dial size–2″
2. Case type–1032
3. Diaphragm–316L stainless steel
4. Process connection Tri-Clamp size–¾″ (75)
5. Connection location–Lower (L)
6. Pressure range

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Options for Process, Stainless Steel, Test and Industrial Pressure Gauges

CODE	DESCRIPTION	PRESSURE GAUGE TYPE							
			STAINLESS STEEL CASE				INDUSTRIAL GAUGE		
	PLUS! Performance	DURAGAUGES	1009 (2½", 3½")	1009 (4½", 6")	1008S	TEST GAUGES	GENERAL SERVICE	SPECIAL SERVICE	1490/1495 SERIES
XLL	***PLUS!*™ Performance**	●	●		●				
XBF	Wall mounting bracket			●					
XFW	Back flange		●						
XFF	Front flange		●	●	●				
XUC	U-clamp		●	●				●	●
XLJ	Dry liquid-fillable gauge		●	●	●				
XOS	Overload stop	●	STD	●	STD(1)	STD	●	●	
XVS	Underload stop	●	STD	●	STD(1)	STD	●	●	
XTS	Throttle screw	●		●		●	●	●	
XTU	Throttle plug		●		●				●
XS4	Slotted link movement (decrease)	●		●			●	●	
XRJ	Slotted link (increase)	●		●			●	●	
XAP	Adjustable pointer		●	●			●	●	
XMP	Micrometer pointer	STD	●	STD			STD	●	
XSH	Red set hand stationary	●	●	●			●	●	
XEO	Red set hand adjustable	●	●	●		●	●	●	
XEP	Maximum pointer	●		●		●	●	●	
XEQ	Minimum pointer	●		●		●	●	●	
XPD	Plastic window	●	STD	●	STD(1)	●	●	●	STD
XSG	Safety glass	●	●	●		●	●	●	
XMG	Metric version gauge		●		●				
XDA	Dial marking	●	●	●	●	●	●	●	●
XNN	Paper tag	●	●	●	●	●	●	●	●
XNH	Stainless steel tag	●	●	●	●	●	●	●	●
XAB	Absolute pressure	●		●			●		
XAJ	½% optional accuracy	STD		●			●	●	
XAN	1% optional accuracy		STD	STD			STD		●
XRA	Retard scale	●		●			●		
XWN	White dial	STD	●	●	STD	STD	●	●	STD
XBD	Black dial	●	●	●	●	●	●	●	●
X6B	Oxygen-cleaned gauges (gaseous)	●	●	●	●	●	●	●	
XTB	Tip bleed	●				●			
XED	High and low electric contacts	●							
XEE	Double high-electric contacts	●							
XEF	Double low-electric contacts	●							
XEG	Electric contacts off at low or high and in-between	●							
XGV	Silicone-filled gauge	●	●	●	●				
XGX	Halocarbon-filled gauge	●	●	●	●				
XCH	Carrying handle					●			
XC4	Calibration Chart	●	●	●	●	●	●	●	●

NOTES:
The options listed above are only a partial listing. For other options on these or other pressure instruments please call the factory for availability.
(1) Available on 40mm and 50mm.

COMMERCIAL GAUGES

(Generally ASME B 40.1 Grade B (±3-2-3% of span), accuracy , review section for exceptions)

ASHCROFT®

PATENTED

Xmitr™ Transmitter Gauge
Type X1005 2˝
Type X2001 2½˝, 3½˝

TRANSMITTER SPECIFICATIONS

Output (Supply):
4-20mA 2 wire (12 to 30 Vdc Supply)
1-5 Vdc 3 wire Regulated (10 to 24 Vdc Supply)
0.5-4.5 Vdc 3 wire Ratio-metric (5 Vdc ±5% Supply)

Ranges: Vacuum to 5,000 psi (see table 3)

Performance:(1)
±1% FSO from best fit straight line (includes non-linearity, hysteresis, and non-repeatability)

Temperature:

Storage:	–40 to 221°F	(–40 to 105°C)(5)
Operating:	–40 to 221°F	(–40 to 105°C)(5)
Compensated:	–4 to 185°F	(–20 to 85°C)

Thermal effect: 1.4% per 100°F, 3%/100°C typical (zero & full scale combined)

CE Conformity:
Meets CE heavy industrial per EN61326: 1998 Annex A

Enclosure: Stainless steel case
Type 1005: IP54
Type 2001: IP43 (std), IP54 (XLJ)(2)

Media: Liquid, gas or vapor

Wetted Materials: Bronze/brass

Electrical Protection:
Reverse polarity 75 Vdc, Over-voltage 60 Vdc continuous, and short-circuit protection.(3)

Shock: 100g-force per IEC770.

Vibration: 5g's 50 to 2000Hz.

Humidity: 95% non-condensing

Proof Pressure:
0 to 200 psi = 150% of full scale
300 to 5,000 psi = 120%

Burst Pressure:
0 to 200 psi = 10x burst
300 to 5,000 psi = 3x

Response Time: Less than 10 ms (electronics)

Wake-up Time: 1 ms

Insulation: 1 meg ohm at 200 Vdc
Electrical Connection:
2´ shielded cable
Mini-Hirschmann series G

Process Connection: Lower

Process Connection:
⅛ NPT, ¼ NPT, G ¼

GAUGE SPECIFICATIONS

Dial Size: Type 1005 – 2˝, Type 2001 2½˝, 3½˝

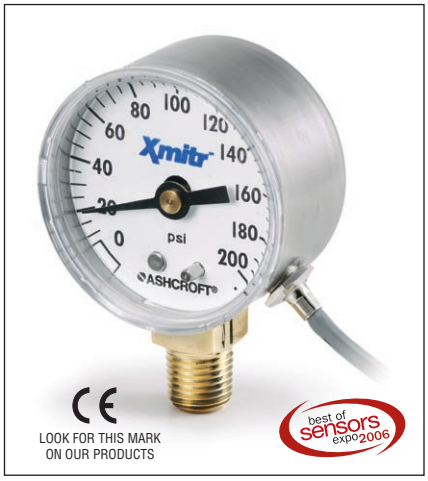
Gauge Accuracy: 3/2/3% full-scale Grade B (1% electric output)

Window: Polycarbonate

Case: Stainless Steel

Gauge Movement:
Patented PowerFlex™ movement

Features
- A transducer and gauge in one instrument (2 in 1)
- A 1% performance general purpose transducer
- Custom OEM configurations
- Voltage and 4-20mA outputs
- Robust CE heavy industrial
- Ranges vac. to 5000 psi
- Vibration dampening via exclusive FlutterGuard™
- Save time, money, space



OPTIONS (Table 1)

Throttle plugs: (not provided with LJ)
(T5): .013˝ (standard on 1000 psi and above)
(T7): .020˝
(T4): .007˝ (for clean gas)
IP54 (LJ): For Type X2001. Not fillable. Type X2001 is standard with no O-ring as IP43.
(SF): FlutterGuard™ vibration dampening

ELECTRICAL CONNECTORS (Table 2)

Shielded Cable	CODE
2´ shielded cable	FL
Mini-Hirschmann G Series	
No Mating Connection	HM
With Mate (with 1 meter cable)	M2
With Mate (no cable)	M1
With Mate (with 3 meter cable)	M3

Table 4

Output	Code	Wiring
4-20 mA	4	Red = Supply + Black = Supply –
1-5 Vdc	1	Red = Supply + Black = Supply – (Signal Ref.) White = Signal
.5-4.5 Vdc Ratiometric	R	

PRESSURE RANGES(6) (Table 3)

psi	kg/cm² (4)	bar (4)	kPa (4)	mPa (4)
0/30	2	2	200	0.2
0/60	4	4	400	0.4
0/100	7	7	700	0.7
0/160	10	10	1,000	1
0/200	14	14	1,500	1.5
0/300	21	21	2,000	2
0/400	28	28	3,000	3
0/600	42	42	4,000	4
0/1000(6)	70	70	7,000	7
0/2000(6)	140	140	15,000	15
0/3000(6)	210	210	20,000	20
0/5000(6)	350	350	35,000	35
COMPOUND RANGES				
30/0/IMV(6)	–1, 0	–1, 0	–100, 0	–.1, 0
30IMV&15	–1, 1	–1, 1	–100, 100	–.1, .1
30IMV&30	–1, 2	–1, 2	–100, 200	–.1, .2
30IMV&60	–1, 4	–1, 4	–100, 400	–.1, .4
30IMV&100	–1, 7	–1, 7	–100, 700	–.1, .7
30IMV&150	–1, 10	–1, 10	–100, 1000	–.1, 1.0
30IMV&300	–1, 20	–1, 20	–100, 2000	–.1, 2.0
30IMV&400	–1, 27	–1, 27	–100, 2700	–.1, 2.7
30IMV&600	–1, 39	–1, 39	–100, 3900	–.1, 3.9

(1) 1% BFSL from 10% to 90% full scale, 1.5% from 0% to 10% and 90% to 100% full scale
(2) Type 2001 provides case to socket O-ring to seal case for IP54 (not fillable). Other IP ratings upon request.
(3) For ratio-metric output, reverse polarity 20 Vdc and over-voltage of 25 Vdc continuous.
(4) 10 piece minimum per line item.
(5) Cable rated to 105°C. Other connectors to 90°C.
(6) Vacuum and ranges above 600 psig contact factory for availability.

Table 5

Dial Size	Code	Type
2˝	**20**	1005
2.5˝	**25**	2001
3.5˝	**35**	2001

HOW TO ORDER

25	X	2001	HD	02L	4	FL	X(LJ)	100 psi

1. Dial Size 2.5˝
2. Patented Xmitr Transmitter Gauge
3. Case Number: 2001 (Table 5)
4. Socket Material: Brass
5. Connection Size/Location: ¼ NPT Lower
6. Output: 4-20mA ouput (Table 4)
7. Connector: 2´ Shielded Cable (Table 2)
8. Select Option(s): IP54 (Table 1)
9. Range: 100 psi (Table 3)

ASHCROFT®

Commercial Pressure Gauge
Type 1005, ASME B 40.1
Grade B (±3-2-3% of span)

- ***Case material is black-painted steel***
- ***These gauges have a heat-resistant push-in polycarbonate window***
- ***Dial faces match other Ashcroft® commercial gauges for easy readability***
- ***Patented PowerFlex™ movement with polyester segment***
- ***True Zero™ indication, a unique safety feature***

Ashcroft® Type 1005 gauges are available in 1½″ through 3½″ dial sizes. The full-view polycarbonate push-in window allows for better dial visibility. These gauges are commonly used on compressors, filter regulators, water pumps, beverage-dispensing equipment, paint sprayers and a variety of other applications.

Ashcroft Type 1005 gauges have the patented Power*Flex* movement with polyester segment for increased resistance to rough usage, for a more durable, longer-lasting gauge.

True Zero indication reduces the potential risk of installing a damaged gauge on your equipment.

FlutterGuard™ can be added to Type 1005 gauges to eliminate pointer flutter and extend gauge life.

GAUGE SPECIFICATIONS

Type no.:	1005
Accuracy:	ASME B 40.1 Grade B (±3-2-3% of span)
Size:	1½″, 2″, 2½″, 3½″
Case:	Black-painted steel
Ring:	None
Window:	Polycarbonate push-in
Dial:	Black figures on white background
Pointer:	Black, aluminum
Bourdon tube:	"C" shaped bronze (Vac.-600 psi and compound) Helical bronze (1000-6000 psi)
Movement:	Patented Power*Flex* with polyester segment
Socket:	Brass
Restrictor:	0.013″ orifice throttle plug in gauges 1000 psi and above
Connection:	⅛ NPT lower, ⅛ NPT back ¼ NPT lower, ¼ NPT back (1½″ back connection available in ⅛ NPT only)
Ranges:	Vac.-6000 psi and compound (1000-6000 psi available in 2″ and 2½″ lower and back connection, ¼ NPT only. 1½″ available in vac.-300 psi only)
Operating temperature:	–40°F to 150°F
Note:	4½″ gauges are available as Type 1000 with black friction-fit ring and glass window. Refer to Bulletin CG-10/21

GAUGE OPTIONS

	Factory variation code in ( )
Case:	Case color other than black Vent hole (VH)
Pointer:	Adjustable (AP)
Socket:	Nickel plated brass (NP) Nonstandard length or thread Throttle plugs, 0.007″, 0.013″, 0.020″, 0.063″ orifices Teflon taped threads (TC)
Others:	Bulk packaging (ZO) Customized dials Nonstandard ranges and special calibration on application UL 404 and UL 252A listing for compressed gas service for 2″ gauges FlutterGuard (SF) Top or side connection: (02D= right side) (02E= left side) (02T= top connection) Receiver ranges: 3/15 psi, 0/10 square root, 0/100% (PR) Clean for oxygen service

TO ORDER THIS TYPE 1005 GAUGE:

Select:	20	W	1005	H	01L	X(AP)	100#
1. Dial Size: 2″							
2. Patented Power*Flex*™ Movement							
3. Case Type Number: 1005							
4. Socket Material: Brass							
5. Connection Size/Location: ⅛ NPT lower							
6. Option: Adjustable Pointer							
7. Range: 100 psi							

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Commercial Pressure Gauge Type 1005P, ASME B 40.1 Grade B (±3-2-3% of span)

- *Case material is ABS*
- *Heat-resistant polycarbonate window*
- *Excellent for applications where corrosion or impact resistance is a necessity*
- *Patented PowerFlex™ movement with polyester segment*
- *True Zero™ indication, a unique safety feature*

The Ashcroft® Type 1005P case is made of ABS (Acrylonitrile Butadiene Styrene), which is ideal for rugged applications and harsh environmental conditions. The 1005P gauge has a full-view polycarbonate window for better dial visibility. For applications requiring a high degree of corrosion resistance (where a more expensive stainless steel case is specified), the Type 1005P gauge is ideal.

The Power*Flex* movement in these gauges offers superior shock, vibration and pulsation resistance.

True Zero indication reduces the potential risk of installing a damaged gauge on your equipment.

FlutterGuard™ can be added to

Type 1005P gauges to eliminate pointer flutter and extend gauge life.

GAUGE SPECIFICATIONS

Type no.:	1005P
Accuracy:	ASME B 40.1 Grade B (±3-2-3% of span)
Size:	1½″, 2″, 2½″, 3½″
Case:	ABS
Ring:	None
Window:	Polycarbonate snap-in
Dial:	Black figures on white background
Pointer:	Black, aluminum
Bourdon tube:	"C" shaped bronze (vac.-600 psi and compound) Helical bronze (1000-6000 psi)
Movement:	Patented Power*Flex* with polyester segment
Socket:	Brass
Restrictor:	0.013″ orifice throttle plug in gauges 1000 psi and above
Connection:	**1½″ Gauges** ⅛ NPT lower and back ¼ NPT lower **2″ Gauges** ⅛ NPT lower and back ¼ NPT lower and back **2½″ and 3½″ Gauges** ⅛ NPT lower ¼ NPT lower
Ranges:	Vac.-6000 psi and compound (1000-6000 psi available in 2″ lower and back, and 2½″ lower connection, ¼ NPT only. 1½″ available in vac.-300 psi only)
Operating temperature:	–40°F to 150°F

GAUGE OPTIONS

	Factory variation code in ( )
Case:	Case color other than black Vent hole (VH)
Pointer:	Adjustable (AP)
Socket:	Nonstandard length or thread Throttle plugs, 0.007″, 0.013″, 0.020″, 0.063″ orifices Nickel plated brass (NP) Teflon taped threads (TC)
Others:	Bulk packaging (ZO) Customized dials FlutterGuard (SF) Clean for oxygen service Nonstandard ranges and special calibration on application Top or side connection: (02D= right side) (02E= left side) (02T= top connection) Receiver ranges: 3/15 psi, 0/10 square root, 0/100% (PR) UL 404 and UL 252A listing for compressed gas service for 2″ gauges

TO ORDER THIS TYPE 1005P GAUGE:

Select:	20	W	1005	P	H	01B	X(AP)	100#

1. Dial Size: 2″
2. Patented Power*Flex*™ Movement
3. Case Type Number: 1005
4. Case Material: ABS
5. Socket: Brass
6. Connection Size/Location: ⅛ NPT back
7. Option: Adjustable Pointer
8. Range: 100 psi

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Commercial Pressure Gauge Type 1005S, ASME B 40.1 Grade B (±3-2-3% of span)

- *Case material is stainless steel*
- *These gauges have a heat-resistant push-in polycarbonate window*
- *Dial faces match other Ashcroft commercial gauges for easy readability*
- *Patented PowerFlex™ movement with polyester segment*
- *True Zero™ indication, a unique safety feature*

Ashcroft® Type 1005S gauges are available in 1½″ and 2″ dial sizes. The full-view polycarbonate push-in window allows for better dial visibility. For added resistance to harsh environmental conditions, the 1005S dial material is aluminum.

Ashcroft Type 1005S gauges use the patented Power*Flex* movement with polyester segment, which increases the ability to resist rough usage, thereby helping to lengthen the life of the gauge.

True Zero indication reduces the potential risk of installing a damaged gauge on your equipment.

FlutterGuard™ is available to eliminate pointer flutter and extend gauge life.

GAUGE SPECIFICATIONS

Type no.:	1005S
Accuracy:	ASME B 40.1 Grade B (±3-2-3% of span)
Size:	1½″, 2″
Case:	Stainless steel
Ring:	None
Window:	Polycarbonate push-in
Dial:	Black figures on white background, aluminum
Pointer:	Black, aluminum
Bourdon tube:	"C" shaped bronze (Vac.-600 psi and compound) Helical bronze (1000-6000 psi)
Movement:	Patented Power*Flex* with polyester segment
Socket:	Brass
Restrictor:	0.013″ orifice throttle plug in gauges 1000 psi and above
Connection:	⅛ NPT lower, ⅛ NPT back ¼ NPT lower, ¼ NPT back (1½″ back connection available in ⅛ NPT only)
Ranges:	Vac.-6000 psi and compound (1½″ available in vac.-300 psi only)
Operating temperature:	–40°F to 150°F

GAUGE OPTIONS

	Factory variation code in ( )
Case:	Vent hole (VH)
Pointer:	Adjustable (AP)
Socket:	Nickel plated brass (NP) Nonstandard length or thread Throttle plugs, 0.007″, 0.013″, 0.020″, 0.063″ orifices Teflon taped threads (TC)
Others:	Bulk packaging (ZO) Customized dials FlutterGuard (SF) Nonstandard ranges and special calibration on application Top or side connection: (02D = right side) (02E = left side) (02T = top connection) Receiver ranges: 3/15 psi, 0/10 square root, 0/100% (PR) Clean for oxygen service

TO ORDER THIS TYPE 1005S GAUGE:

Select:	20	W	1005	S	H	01L	X(AP)	100#
1. Dial Size: 2″								
2. Patented Power*Flex*™ Movement								
3. Case Type Number: 1005								
4. Case Material: Stainless Steel								
5. Socket: Brass								
6. Connection Size/Location: ⅛ NPT lower								
7. Option: Adjustable Pointer								
8. Range: 100 psi								

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

General Purpose Digital Gauge Type D1005PS, ±½% of Span Terminal Point Accuracy

- *Enhanced value versus mechanical gauges*
- *No-nonsense accuracy – ±0.5% full scale accuracy*
- *Easy-to-read – 4½ digit display with ½″ character size, optional backlite display feature to enhance visibility*
- *Versatile – 9 engineering units and stainless steel sensor suitable for a variety of applications*
- *Standard features – max.-pressure indication; ranges from vacuum to 19,999 psi, including compound*
- *Competitively priced and can be customized for OEM applications*

The Ashcroft® Type D1005PS offers 0.5% of span accuracy, while the stainless steel sensor and socket make this product suitable not only for dry air applications but for other media as well.

This product offers selectable units of measure so rather than purchasing one gauge for each unit of measure required, the solution is one gauge for multiple units of measure.

The D1005PS is standard with many features not offered, or offered only as options, on competitor's digital gauge products, such as peak hold and 4½ digit display. When compared to mechanical gauges the D1005PS offers overall enhanced value.

*Protective Boot Optional

PRODUCT SPECIFICATIONS

Type no.:	D1005PS
Accuracy:	±0.5% of span
Case Size:	2½″
Case Material:	Noryl®
Wetted Parts:	17-4 PH stainless steel sensor; 316 stainless steel socket
Socket Size:	¼ NPT
Connection:	Lower
Ranges:	Vac. thru 19,999 psi (see standard ranges for other units of measurement)
Battery:	Two AAA alkaline batteries; approximately 1000 hours battery life
Overpressure:	Vac. 0/1000: Proof: 200%, Burst: 800%; 0/3000-0/5000: Proof: 150%, Burst: 300%; 0/19,999: Proof: 120%, Burst: 150%
Cycle Life:	10^8 cycles 20/80% F.S. with negligible performance loss
Vibration:	Less than ±0.1% F.S. effect for 0/2000 Hz at 20 g's in any axis
Shock:	Less than ±0.05% F.S. effect for 100 g's, 20msec shock in any axis
Operating Temp.:	–10°C to 60°C (14°F to 140°F)
Storage Temp.:	–20°C to 70°C (-4°F to 158°F) (maximum temperature shift is .028% per °F from –20°F to 180°F starting at 68°F. For vacuum and 30 psi ranges the maximum temperature shift is .04%)
Update Rate:	100ms
Agency Approvals:	CE EN 61326 (1998); CE EN 61326 Annex A (heavy industrial)
Packaging:	Individual carton
Opt'l. Features:	±0.25% of span accuracy; backlite; 3, 9, 12 o'clock connections; Alternate socket configurations – upon application; Customized keypad; Protective boot; Bulk packaging

DISPLAY

Type:	LCD
Display Digits:	½

Display Resolution:	Full Scale Numerical Value	Display Resolution
	>=-15>0	–XX.000
	>0 <2	X.0000
	>=2 <20	XX.000
	>=20 <200	XXX.00
	>=200 <2000	XXXX.0
	>=2000 <19,999	XXXXX

Character Height:	0.5″
Backlight:	OFF by default
Battery:	Four-level battery indication

KEYPAD FUNCTIONS

On/Off:	Manually turns unit on and off (four options: never, 5, 10 and 20 min.)
Backlite (optional):	Manually turns backlite on and off (four programmable auto on/off options)
Maximum (Peak Hold):	Displays max. value when activated
Zero/Clear:	Zeros display or clears max. value when activated
Engineering Units:	psi, in.Hg, cmHg, mmHg, kPa, MPa, bar, kg/cm², ftH₂O
Field Calibration:	Zero and span

STANDARD RANGES

Vacuum					
in.Hg	**kPa**	**cmHg**	**Bar**	**kg/cm²**	**mmHg**
–30/0	–100/0	–76/0	–1/0	–1/0	–760/0
Compound					
in.Hg/psi	**kPa**	**mPa**	**Bar**	**kg/cm²**	**ft H_2O**
–30/30	–100/200	–	–1/2	–1/2	–35/70
–30/60	–100/400	–	–1/2	–1/2	–35/140
–30/100	–100/700	–	–1/2	–1/2	–35/230
–30/150	–100/1050	–	–1/11	–1/11	–35/350
–30/300	–100/2100	–	–1/21	–1/21	–35/700
Pressure					
psi	**kPa**	**mPa**	**Bar**	**kg/cm²**	**ft H_2O**
0/30	0/200	–	0/2	0/2	0/70
0/60	0/400	–	0/4	0/4	0/140
0/100	0/700	–	0/7	0/7	0/230
0/200	0/1400	–	0/14	0/14	0/460
0/300	0/2100	–	0/21	0/21	0/700
0/500	0/3500	–	0/35	0/35	–
0/1000	0/7000	–	0/70	0/70	–
0/1500	–	0/10	0/105	0/105	–
0/2000	–	0/14	0/140	0/140	–
0/3000	–	0/21	0/210	0/210	–
0/5000	–	0/35	0/350	0/350	–
0/10,000	–	0/70	0/700	0/700	–
0/15,000	–	0/100	0/1000	0/1000	–
0/19,999	–	0/140	0/1400	0/1400	–

TO ORDER THIS TYPE D1005PS GAUGE:

Select: **25** **D1005PS** **02L** **100#**

1. Dial Size: 2½″
2. Case Type Number: D1005PS
3. Wetted Parts: Stainless Steel
4. Connection: ¼ NPT lower
5. Range: 0/100 psi

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Commercial Panel Gauge
Type 1001T, ASME B 40.1
Grade B (±3-2-3% of span)

- ***Available in 1½˝, 2˝, 2½˝ and 3½˝ dial sizes***
- ***Standard panel-mounting with U-clamp design — front flange mounting available for 2˝ and 2½˝ gauges***
- ***Attractively designed ¼ turn polycarbonate window for better visibility and easy removal***
- ***Patented PowerFlex™ movement with polyester segment***
- ***True Zero™ indication, a unique safety feature***

Ashcroft® panel gauges offer attractive design, excellent readability, and a variety of dial sizes with a broad pressure range selection. The ¼ turn heat-resistant polycarbonate window is available with a hot-stamped mirror band to simulate chrome to further enhance your equipment. The patented Power*Flex*™ movement with polyester segment offers superior resistance to shock, vibration and pulsation.

True Zero™ indication, a standard feature on these gauges, reduces the potential risk of installing a damaged gauge on your equipment.

FlutterGuard™ is available to eliminate pointer flutter and extend gauge life.

GAUGE SPECIFICATIONS

Type no.:	1001T
Accuracy:	ASME B 40.1 Grade B (±3-2-3% of span)
Size:	1½˝, 2˝, 2½˝, 3½˝
Case:	Black-painted steel
Mounting:	U-clamp (UC)
Ring:	None
Window:	¼ turn threaded polycarbonate
Dial:	Black figures on white background
Pointer:	Black, aluminum
Bourdon tube:	"C" shaped bronze (Vac.-600 psi and compound) Helical bronze (1000-6000 psi)
Movement:	Patented Power*Flex* with polyester segment
Socket:	Brass
Restrictor:	0.013 orifice throttle plug in gauges 1000 psi and above
Connection:	⅛ NPT Back, ¼ NPT Back
Ranges:	Vac.-6000 psi and compound (1½˝ available in vac.-300 psi only)
Operating temperature:	–40°F to 150°F

GAUGE OPTIONS

	Factory variation code in ( )
Case:	Vent hole (VH)
Mounting:	Front flange (FF) (available in 2˝ and 2½˝ only)
Window:	Simulated chrome trim (KL)
Pointer:	Adjustable (AP)
Socket:	Nonstandard length or thread Throttle plugs, 0.007˝, 0.013˝, 0.020˝, 0.063˝ orifices Teflon taped threads (TC)
Others:	Bulk packaging (ZO) Customized dials FlutterGuard (SF) Nonstandard ranges and special calibration on application Receiver ranges: 3-15 psi, 0-10 square root, 0-100% (PR) Clean for oxygen service

TO ORDER THIS TYPE 1001T GAUGE:

Select:	20	W	1001	T	H	02B	X(UC)	100#
1. Dial Size: 2˝								
2. Patented Power*Flex*™ Movement								
3. Case Type Number: 1001								
4. ¼ Turn window								
5. Socket Material: Brass								
6. Connection Size/Location: ¼ NPT Back								
7. Mounting: U-clamp								
8. Range: 100 psi								

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

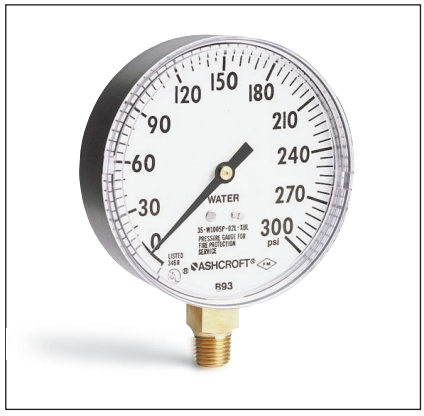
ASHCROFT®

Fire Protection, Sprinkler Service Gauge Type 1005P, XUL ASME B 40.1 Grade B (±3-2-3% of span)

- ***Underwriters Laboratory listed and Factory Mutual approved***
- ***Corrosion-resistant ABS case***
- ***Heat-resistant polycarbonate push-in window***
- ***Patented PowerFlex™ movement with polyester segment***
- ***True Zero™ indication, a unique safety feature***

Ashcroft® fire protection sprinkler gauges are Underwriters Laboratory listed and Factory Mutual approved for fire protection sprinkler service. The case material on Type 1005P, XUL gauges is ABS. The 0-300 psi pressure range is used on "wet" systems where water is available to the sprinkler heads. The 0-80 retard to 250 psi pressure range is used on dry systems where the lines are filled with air pressure until system activation.

The patented Power*Flex*™ movement with polyester segment is designed to provide unequalled shock and vibration resistance resulting in superior performance and extended gauge life.



True Zero™ indication, a standard feature on these gauges, reduces the potential risk of installing a damaged gauge on your equipment.

GAUGE SPECIFICATIONS

Type no.:	1005P, XUL
Accuracy:	ASME B 40.1 Grade B (±3-2-3% of span)
Size:	3½″
Case:	ABS (Polycarbonate blend)
Ring:	None
Window:	Polycarbonate, push-in
Dial:	Black figures on white background
Pointer:	Black, aluminum
Bourdon tube:	"C" shaped bronze
Movement:	Patented Power*Flex* with polyester segment
Socket:	Brass
Restrictor:	None
Operating temperature:	–40°F to 150°F
Connection:	¼ NPT lower
Ranges:	0-300 psi (water) 0-80 retard to 250 psi (air) UL 393 Listed, UL of Canada Listed and FM approved. Equivalent (single or dual scale) metric scales are available

GAUGE OPTIONS

Customized dials

Other UL listed ranges on application

NOTES

UL LISTED

FM

LOOK FOR THESE AGENCY MARKS ON OUR PRODUCTS

TO ORDER THIS TYPE 1005P, XUL GAUGE:

Select:	35	W	1005	P	H	02L	XUL	300#

1. Dial Size: 3½″
2. Patented Power*Flex*™ Movement
3. Case Type Number: 1005
4. Case Type Material: ABS
5. Socket Material: Brass
6. Connection Size/Location: ¼ NPT lower
7. UL listed, FM approved
8. Range: 300 psi

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

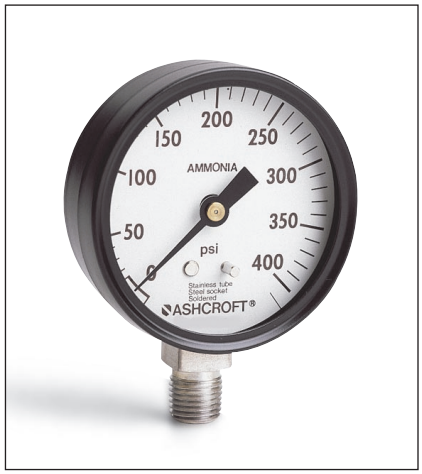
ASHCROFT®

Agricultural Ammonia Gauge
Type 1005M, XRG
ASME B 40.1 Grade B
(±3-2-3% of span)

- ***Available in black-painted steel or stainless clad-aluminum case***
- ***Steel socket, stainless steel bourdon tube***
- ***Soldered tube-to-socket, and tube-to-tip joints***
- ***Patented PowerFlex™ stainless steel movement with polyester segment***
- ***True Zero™ indication, a unique safety feature***

The Ashcroft® Type 1005M, XRG agricultural ammonia gauge is designed to withstand rugged agricultural applications. The patented Power*Flex*™ movement and state-of-the-art manufacturing processes provide superior gauge performance and extended gauge life. Gauges are tested to ensure leak integrity to 2.8 x 10^{-4} cc per second of gas at rated pressure. The glass window eliminates the fogging that occurs when plastic windows are exposed to ammonia.

True Zero™ indication reduces the potential risk of installing a damaged gauge on your equipment.



GAUGE SPECIFICATIONS

Type no.:	1005M, XRG
Accuracy:	ASME B 40.1 Grade B (±3-2-3% of span)
Size:	2½˝
Case:	Black painted steel
Ring:	Black painted steel
Window:	Glass
Dial:	Black figures on white background
Pointer:	Black, aluminum
Bourdon tube:	"C" shaped 316 stainless steel
Movement:	Patented Power*Flex* stainless steel movement with polyester segment
Socket:	Steel
Restrictor:	None
Connection:	¼ NPT lower
Construction:	Soldered tube/socket and tube/tip joints
Ranges:	0/60 psi, 0/150 psi, 0/400 psi
Operating temperature:	–40°F to 150°F

GAUGE OPTIONS

Case/Ring:	Stainless clad aluminum (Type 1005M, XSC)
Window:	Push-in polycarbonate (exclude XRG or XSC from product code)
Socket:	Throttle plug, stainless steel, 0.020˝ orifice
Others:	Bulk packaging (ZO) Special calibration on application Customized dials FlutterGuard™

TO ORDER THIS TYPE 1005M, XRG GAUGE:

Select:	25	W	1005	M	02L	XRG	400#
1. Dial Size: 2½˝							
2. Patented Power*Flex*™ Movement							
3. Case Type Number: 1005							
4. Socket Material: Steel							
5. Connection Size/Location: ¼ NPT lower							
6. Glass window and retaining ring							
7. Range: 400 psi							

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Refrigerant Ammonia Gauge
Type 1005M, XR5
ASME B 40.1 Grade B
(±3-2-3% of span)

- ***Available in black-painted steel or stainless clad-aluminum case***
- ***Steel socket, stainless steel bourdon tube***
- ***Soldered tube-to-socket, and tube-to-tip joints***
- ***Patented PowerFlex™ stainless steel movement with polyester segment***

The Ashcroft® Type 1005M Refrigerant Ammonia Gauge is ideally suited for refrigeration applications. The patented Power*Flex*™ movement and state-of-the-art manufacturing processes provide superior gauge performance and extended gauge life. A mass spectrometer leak test ensures leak integrity to 1 x 10^{-4} cc per second of helium at rated pressure.

FlutterGuard™ is available to eliminate pointer flutter and extend gauge life.

GAUGE SPECIFICATIONS

Type no.:	1005M, XR5
Accuracy:	ASME B 40.1 Grade B (±3-2-3% of span)
Size:	2½˝, 3½˝
Case:	Black-painted steel
Ring:	None
Window:	Polycarbonate push-in
Dial:	White background, black pressure scale, red temperature scale
Pointer:	Black, aluminum
Bourdon tube:	"C" shaped 316 stainless steel
Movement:	Patented Power*Flex* stainless steel with polyester segment
Socket:	Steel
Restrictor:	0.020˝ orifice throttle plug, stainless steel
Connection:	¼ NPT lower
Construction:	Soldered tube/socket and tube/tip joints
Ranges:	30 in.Hg vac./150 psi, 30 in.Hg vac./300 psi with equivalent ammonia temperature scales
Operating temperature:	–40°F to 150°F

GAUGE OPTIONS

Case/Ring:	ABS (Type 1005PM) Stainless clad aluminum (Type 1005SM)
Window:	Glass/plastic with black ring Glass/plastic with stainless clad aluminum ring
Others:	Bulk packaging (ZO) Special calibration on application Customized dials FlutterGuard

TO ORDER THIS TYPE 1005M, XR5 GAUGE:

Select:	**25**	**W**	**1005**	**M**	**02L**	**XR5**	**150#/V**

1. Dial Size: 2½˝
2. Patented Power*Flex*™ Movement
3. Case Type Number: 1005
4. Socket Material: Steel
5. Connection Size/Location: ¼ NPT lower
6. Service: Refrigerant, ammonia
7. Range: 30˝Hg vac./0/150 psi

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Stainless Steel Case Gauge Type 1008A/AL, 63mm and 100mm ASME B 40.1 Grade B (±3-2-3% of span)

- *63mm (2½˝) and 100mm (4˝) case sizes*
- *Soldered brass socket and bronze tube design*
- *Corrosion-resistant stainless steel case/ring*
- *Dry, field-fillable or liquid-filled versions*
- *Patented PowerFlex™ movement*
- *True Zero™ indication, a unique safety feature*
- *Two-year warranty on liquid-filled gauges*

Ashcroft® Type 1008A gauges are synonymous with durability, flexibility and exceptional quality. The Type 1008A gauge enclosure is sealed to provide maximum protection in adverse environmental conditions. Both 63mm and 100mm Type 1008A gauges are available dry, field-fillable, glycerin filled or silicone filled. Accessory kits are available for panel mount-ing, front flange mounting or retrofit mounting back connection gauges. The patented Power*Flex*™ movement provides a higher level of shock, vibration and pulsation resistance than conventional movement gauges.

The True Zero™ feature helps to assure a quality process and reduces manufacturing and inspection costs.

FlutterGuard™ is available for dry gauges to eliminate pointer flutter and extend gauge life.

GAUGE SPECIFICATIONS

Type no.:	1008A/AL
Accuracy:	ASME B 40.1 Grade B (±3-2-3% of span)
Size:	63mm (2½˝), 100mm (4˝)
Case:	304 stainless steel, dry (1008A), or liquid filled (1008AL)
Fill Fluid:	Glycerin
Ring:	304 stainless steel, crimped
Window:	Polycarbonate
Dial:	Black figures on white background, aluminum
Pointer:	Black, aluminum
Bourdon Tube:	"C" shaped bronze (vac.-600 psi and compound) Helical bronze (1000 psi-6000 psi) Helical stainless steel (10,000 psi-15,000 psi)
Movement:	Patented Power*Flex* with polyester segment
Socket:	Brass, with O-ring case seal
Restrictor:	Brass throttle plug, 0.013˝ orifice in all ranges (except vacuum and 15# psi ranges)
Connection:	¼ NPT lower and back
Ranges:	Vac. thru 15,000 psi and compound. Equivalent metric ranges available
Operating Temperature:	Dry gauge: –40°F to 150°F Glycerine filled: 20°F to 150°F

GAUGE OPTIONS

Case:	Sealed case, field-fillable (LJ) Silicone filled (GV)
Mounting Hardware:	U-clamp (UC), front flange (FF), retrofit flange (RF)
Socket:	Throttle plugs, 0.007˝, 0.020˝, 0.063˝
Connections:	JIS, DIN, metric, SAE and other connections on application
Others:	Customized dials Nonstandard ranges FlutterGuard (SF) Special calibration on application Clean for oxygen service – dry gauges only

TO ORDER THIS TYPE 1008A/AL GAUGE:

Select:	63	1008	A	L	02B	XUC	1000#
1. Dial Size: 63mm or 100mm							
2. Case Type: 1008							
3. Socket Material: Brass							
4. Liquid Filled (Glycerin), leave blank if dry							
5. Connection Size: ¼ NPT							
6. Connection Location: Lower (L), Back (B)							
7. Optional Features: XUC = Panel Mounting Kit							
8. Range: 1000 psi							

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Commercial Hydraulic Gauges Type 3005, 3005P, ASME B 40.1 Grade B (±3-2-3% of span)

- *304 stainless steel case liquid-filled, dry or field-fillable (Type 3005)*
- *ABS case, liquid-filled, dry or field-fillable (Type 3005P)*
- *Patented PowerFlex™ movement with polyester segment*
- *Pressure ranges from vacuum to 15,000 psi and compound*
- *Two-year warranty on liquid-filled gauges*
- *True Zero™ indication, a unique safety feature*

Ashcroft® Type 3005 gauges provide superior performance in applications where vibration, pulsation, mechanical shock and pressure spikes are common factors thus making them the ideal choice for hydraulic applications.

These gauges offer a feature only available in Ashcroft gauges – the patented Power*Flex*™ movement with polyester segment. This unique movement was designed to provide superior performance in stressful applications, resulting in extended gauge life.

True Zero™ indication, a standard feature on these gauges, reduces the potential risk of installing a damaged gauge on your equipment.

Type 3005 shown

FlutterGuard™ is available for dry gauges to eliminate pointer flutter and extend gauge life.

GAUGE SPECIFICATIONS

Type no.:	3005, 3005P
Accuracy:	ASME B 40.1 Grade B (±3-2-3% of span)
Size:	63mm (2½˝)
Case:	
3005:	304 stainless steel, dry or liquid filled
3005P:	Black ABS, dry or liquid filled
Fill fluid:	Glycerin
Ring:	None
Window:	Polycarbonate with O-ring seal
Dial:	Black figures on white background, aluminum
Pointer:	Black, aluminum
Bourdon tube:	"C" shaped bronze (Vac.-600 psi and compound) Helical bronze (1000-6000 psi) Helical stainless steel (10,000-15,000 psi)
Movement:	Patented Power*Flex* with polyester segment
Socket:	Brass, O-ring case seal
Restrictor:	0.013˝ orifice brass throttle plug in all ranges except vacuum and 15 psi
Connection:	
3005:	¼ NPT lower and back
3005P:	¼ NPT lower only
Ranges:	Vac.-15,000 psi and compound, equivalent metric scales available.
Operating temperature:	Dry gauge: –40°F to 150°F Glycerin filled: 20°F to 150°F

GAUGE OPTIONS

	Factory variation code in ( )
Case:	Sealed case, fillable (XLJ)
Mounting hardware:	U-clamp (UC), Front Flange (FF), Retrofit Flange (RF), back connection only
Socket:	Throttle plugs, 0.007˝, 0.013˝, 0.020˝, 0.063˝ orifices
Connections:	JIS, DIN, SAE and others available on application
Others:	Customized dials Nonstandard ranges FlutterGuard (SF) Special calibration on application Clean for oxygen service – dry gauges only

TO ORDER THIS TYPE 3005/3005P GAUGE:

Select:	63	W	3005	H	L	02L	1000#
1. Dial Size: 2½"							
2. Patented Power*Flex*™ Movement							
3. Case Type Number: 3005 is SS, 3005P is ABS							
4. Socket Material: Brass							
5. Liquid Filled Case:							
6. Connection Size/Location: ¼ NPT lower							
7. Range: 1000 psi							

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

4½˝ Gauges
Type 1000, ASME B 40.1 Grade B (±3-2-3% of span)
Type 2071A, ASME B 40.1 Grade A (±2-1-2% of span)

- ***Type 2071A contractor gauge offers aluminum-back flange case (black), with attractive chrome-plated steel ring***
- ***Type 1000 gauge offers black steel case with black ring and acrylic window***
- ***Adjustable pointer is standard on contractor gauges***
- ***Patented PowerFlex™ movement with polyester segment***
- ***True Zero™ indication, a unique safety feature***

Ashcroft® Type 1000 gauges have a black steel case and ring with an acrylic window. These gauges are appropriate for general industrial applications and can be customized to complement your equipment.

Ashcroft contractor gauges (Type 2071A) are lightweight, highly sensitive and accurate. These gauges are designed to meet the needs of HVAC and plumbing contractors, and are tested against strict industry specifications. The aluminum case provides corrosion resistance.

The patented Power*Flex*™ movement, in both Types 1000 and 2071A, provides the shock resistance needed for rough treatment.

True Zero™ indication reduces the potential risk of installing a damaged gauge on your equipment.

FlutterGuard™ is available to eliminate pointer flutter and extend gauge life.

Type 2071A Contractor gauge shown

GAUGE SPECIFICATIONS	TYPE 1000	TYPE 2071A
Size:	4½˝	4½˝
Accuracy:	ASME B 40.1, Grade B (±3-2-3% of span)	ASME B 40.1, Grade A (±2-1-2% of span)
Case:	Black-painted steel	Aluminum with back flange, painted black.
Ring:	Black-painted steel, friction fit	Chrome-plated steel, friction fit
Window:	Acrylic	Glass
Dial:	Black figures on white background	Black figures on white background
Pointer:	Black, aluminum	Adjustable, black, aluminum
Bourdon tube:	Bronze, soldered	Bronze, soldered (siphon required for steam service)
Movement:	Patented Power*Flex* with polyester segment	Patented Power*Flex* with polyester segment
Socket:	Brass	Brass
Connection:	¼ NPT lower	¼ NPT lower
Ranges:	Vacuum through 600 psi and compound	Vacuum through 600 psi and compound
Operating temperature:	–40°F to 150°F	–40°F to 150°F
Options:	Case color other than black Glass window (XRE) Chrome ring (13) FlutterGuard (SF) Adjustable pointer (AP) Nickel-plated socket (NP) Customized dials Throttle plugs: 0.007˝, 0.013˝, 0.020˝, 0.063˝ orifices Special calibration on application	Case color other than black Plastic window (PD) Nickel-plated socket (NP) FlutterGuard (SF) Black steel ring Customized dials Throttle plugs: 0.007˝, 0.013˝, 0.020˝, 0.063˝ orifices Special calibration on application

TO ORDER THIS TYPE 1000/2071A GAUGE:

Select:	45	W	2071A	02L	300#
1. Dial Size: 4½˝					
2. Patented Power*Flex*™ Movement					
3. Case Type Number: 2071A					
4. Connection Size/Location: ¼ NPT lower					
5. Range: 300 psi					

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Refrigeration Gauge
Type 1007P, XOR (see below)
Type 1001T, XOR
Type 1005, XOR

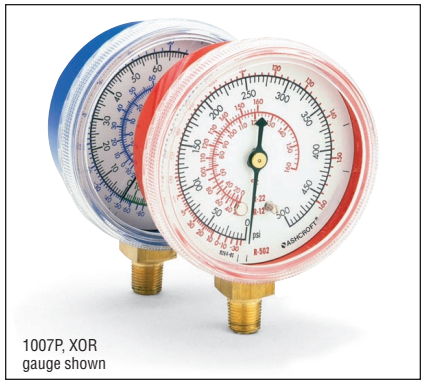
- ***Standard dials offer four refrigerant scales (R12, R22, R502, 134A)***
- ***FlutterGuard™ eliminates pointer flutter***
- ***Patented PowerFlex™ movement with polyester segment***

Ashcroft® Types 1001T, XOR 1007P, XOR and 1005, XOR are designed to meet the unique requirements of the HVAC, automotive and refrigeration industries.

Ashcroft Type 1001T, XOR gauges are designed for refrigerant recovery and recycling units. All gauges for this service are tested for leaks as small as 2.8 x 10^{-4} cc per second to ensure superior integrity. Optional connections eliminate potential leaks at threaded joints and also eliminate customer cost for extra fittings.

Ashcroft Type 1007P, XOR gauges are designed for installation on refrigeration manifolds used in testing automotive, industrial and residential air-conditioning units. The ABS case offers rugged durability and corrosion resistance.

Ashcroft Type 1005, XOR gauges are 80mm in diameter for better dial visibility. These gauges have color-coded steel cases and internally threaded polycarbonate windows.



1007P, XOR gauge shown

FlutterGuard,™ a standard feature in these gauges, eliminates pointer flutter and extends gauge life.

GAUGE SPECIFICATIONS	TYPE 1001T, XOR	TYPE 1007P, XOR	TYPE 1005, XOR
Size:	2½″, 3½″	2½″	80mm
Accuracy:	1% at zero, 2% three fourths of scale, 5% last fourth of scale	1% at zero, 2% three fourths of scale, 5% last fourth of scale	1% at zero, 2% three fourths of scale, 5% last fourth of scale
Case:	Black steel with studs and U-clamp for panel mounting	Red ABS - high pressure Blue ABS - low pressure	Steel, painted blue (low pressure) Steel, painted red (high pressure)
Ring:	None	None	None
Window:	¼ turn polycarbonate, threaded	Polycarbonate, threaded	Internally threaded polycarbonate
Dial:	Refrigerant scales R12, R22, R502, R134A, 410A	Refrigerant scales R12, R22, R502, R134A, 410A	Refrigerant scales R12, R22, R502, R134A, 410A
Pointer:	Black, aluminum	Black, aluminum	Black, aluminum
Bourdon tube:	Bronze	Bronze	Bronze
Movement:	Patented Power*Flex* with polyester segment and FlutterGuard; slotted span screw for minor span adjustments	Patented Power*Flex* with polyester segment and FlutterGuard; slotted span screw for minor span adjustments	Patented Power*Flex* with polyester segment and FlutterGuard; slotted span screw for minor span adjustments
Socket:	Brass	Brass	Brass
Restrictor:	0.013″ orifice throttle plug	0.020″ orifice throttle plug	0.020″ orifice throttle plug
Connection:	⅛ NPT back, ¼ NPT back	⅛ NPT lower	⅛ NPT lower
Ranges:	30 in.Hg vac./0/120 psi retard to 250 psi; 0-500 psi; 30 in.Hg vac./0/350 psi retard to 500 psi; 0-800 psi	30 in.Hg vac./0/120 psi retard to 250 psi; 0-500 psi; 30 in.Hg vac./0/350 psi retard to 500 psi; 0-800 psi	30 in.Hg vac./0/120 psi retard to 250 psi; 0-500 psi; 30 in.Hg vac./0/350 psi retard to 500 psi; 0-800 psi
Operating temp.:	–40°F to 150°F	–40°F to 150°F	–40°F to 150°F
Options:	Nonstandard ranges Alternate refrigerant ranges SAE Flare, solder bib and ferrule connections, Customized dials	Nonstandard ranges Alternate refrigerant ranges Case color Customized dials	Nonstandard ranges Alternate refrigerant ranges Retard to 350 psi, Customized dials Bulk packaging, Black case

TO ORDER THIS TYPE 1001T, XOR / 1007P, XOR/ 1005, XOR GAUGE:

Select:	25	W	1007	P	H	01L	X(OR)	140#/V

1. Dial Size: 2½″
2. Patented Power*Flex*™ Movement
3. Case Type Number: 1007
4. Case material: ABS
5. Socket Material: Brass
6. Connection Size/Location: ⅛ NPT lower
7. Refrigeration Application
8. Range: 30″Hg vac./0/120 psi retard to 250 psi

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

MiniGauge®
Type 23DDG (±5% full scale)

- *Compact size – 23mm (.906˝) diameter*
- *ABS case with acrylic window ultrasonically welded to case*
- *Wrench flats on socket for easy installation*
- *Available in 60-300 psi*
- *Direct Drive technology for excellant shock resistance*

The Ashcroft® MiniGauge® pressure gauge is de-signed for those applications where space is a limiting factor. Taking into consideration the small size of the MiniGauge (23mm), the dial face was designed for maximum readability. This product is offered in 1/8 NPT back connection with 15mm (9/16˝) wrench flats for easy installation.

The versatile Ashcroft MiniGauge surpasses the demands of durability in two important ways: first, by using direct-drive reading, the spiral tube transmits motion directly to the pointer – no gears or movement parts to wear out; and second, the case material is an ABS blend that is both enduring and attractive.

The Ashcroft MiniGauge is perfect for a multitude of applications where a 1 1/2˝ conventional size gauge is too large.

GAUGE SPECIFICATIONS

Type no.: 23DDG
Accuracy: ±5% of span
Size: 23mm (.906˝)
Case: Black ABS blend
Ring: None
Window: Polycarbonate, ultrasonically welded to case
Dial: Black figures on white background, aluminum
Pointer: Brass, painted black
Bourdon tube: Beryllium copper, spiral; soft soldered to socket
Movement: None (direct-drive reading)
Socket: Brass with 15mm (9/16˝) wrench flats
Connection: 1/8 NPT back

Ranges:

Range (psi)	Dial Arc	
	180°	235°
0/60	*	
0/100	*	
0/160		*
0/200		*
0/300		*

Repeatability: Better than 1%
Operating temperature: –40°F to 150°F
Packaging: Bulk pack; individually sealed 2 mil polybags

Note: Consult factory for high cycle-life applications

GAUGE OPTIONS

Socket: Throttle plugs; 10/32˝ threads; PT 1/8 (JIS) and R 1/8 (BSPT) threads
Dial: Customized
Dampening: Silicone-dampened coil for vibration applications

TO ORDER THIS TYPE 23DDG GAUGE:

Select: **23** **DDG** **01B** **60#**

1. Gauge Size: 23mm (.906˝ or 29/32˝)
2. Case Type: Direct Drive Gauge
3. Connection Size/Location: 1/8 NPT back
4. Range: 0/60 psi

ASHCROFT®

Direct Drive Gauge
Type 40DDG, 50DDG
ASME B40.1
Grade B (±3-2-3% of span)

- *ASME Grade B (±3-2-3) accuracy*
- *Excellent shock and corrosion resistance*
- *No gears to jam*
- *ABS case for lightweight gauge*
- *Smoother pointer rotation*
- *Cost effective*

Chalk up another Ashcroft® first. For the first time ever, ASME B40.1, Grade B accuracy (±3-2-3) is available in a commercial grade direct drive gauge . . . only in Ashcroft direct drive gauges!

Ashcroft direct drive gauge technology provides excellent shock resistance. Testing has shown these gauges to be four times more shock resistant than conventional fixed movement gauges! Direct drive gauges have no gears to jam or wear out. The net result is a gauge that arrives at your facility to specified calibration parameters and stays that way throughout the service life of the gauge.

Ashcroft direct drive gauges are lightweight, attractive and durable, plus the sealed construction makes this product appropriate for many harsh environmental conditions. This winning combination of features is only available in Ashcroft direct drive gauges.

GAUGE SPECIFICATIONS

Type no.:	DDG
Accuracy:	ASME B 40.1 Grade B (±3-2-3% of span)
Size:	40mm (1½˝) or 50mm (2˝)
Case:	ABS/polycarbonate blend, black
Ring:	None
Window:	Polycarbonate, ultrasonically welded to case
Dial:	Plastic, black figures on white background
Pointer:	Brass, painted black
Bourdon tube:	Beryllium copper coil, silicone dampened
Movement:	None (direct reading)
Socket:	Integral plastic
Restrictor:	None
Connection:	⅛ NPT back connection (40mm & 50mm) ¼ NPT back connection (50mm only)
Ranges:	0/60 (180° arc), 0/100, 0/160, 0/200, 0/300 and 0/400 psi (235° arc)
Operating temperature:	–40°F to 150°F

GAUGE OPTIONS

Socket:	Brass socket (⅛ NPT or ¼ NPT)
Others:	• Custom dials • Throttle plugs • Special connections, on application • Red or white pointers • Bulk pack in returnable PVC trays

TO ORDER THIS TYPE 40 DDG/50 DDG GAUGE:

Select: **40** **DDG** **01B** **P** **100#**

1. Gauge Size: 40mm
2. Case Type: Direct Drive Gauge
3. Connection Size/Location: ⅛ NPT back
4. Socket Material: Plastic (P), Brass (H)
5. Range: 0/100 psi

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Direct Drive Gauge
Type 12DDG, 15DDG
Accuracy (±2% at setpoint)

- ***Sealed stainless steel case provides a weatherproof, dustproof corrosion-resistant gauge***
- ***Spiral tube transmits motion directly to the pointer— no gears or bearings to wear out***
- ***High impact-resistant polycarbonate window***
- ***UL 404 listed for compressed gas (including oxygen) for 1500 psi, 2000 psi, 3000 psi and 4000 psi***

Ashcroft® DDG, direct drive gauges are constructed for strenuous use under severe environmental conditions and can withstand excessive levels of shock and vibration—an excellent choice for outdoor applications. Optional features to enhance the performance of these gauges are silicone-damped tubes for excessive vibration applications and silicone-filled tubes for corrosion protection.

GAUGE SPECIFICATIONS

Type no.: 12DDG, 15DDG

Accuracy: Standard ±2% at setpoint (setpoint is normally 50% of range; other setpoints upon application). UL listed –3.5% of span in middle three-fifths of scale.

Size: 1¼″- 12DDG
1½″- 15DDG

Case: Stainless steel, sealed

Ring: None

Window: High impact-resistant polycarbonate

Dial: Black figures on white background

Pointer: Black, integral with bourdon tube

Bourdon tube: Beryllium copper, spiral; soft soldered to socket

Movement: None (direct reading)

Socket: Brass

Available Ranges (psi)	Dial Arc			
	165°	180°	200°	235°
0/60		•		
0/100*				•
0/160				•
0/200				•
0/300				•
0/700			•	
0/1200		•		
0/1500	•			
0/2000	•			
0/3000	•			
0/4000	•			

*12 MST available in 180° arc.

Restrictor: Safety plug-in 1500-4000 psi ranges

Connection: ⅛ NPT back, standard

Repeatability: Better than 1%

Operating Temperature: -40°F – 150°F

Note: Consult factory for high cycle-life applications

GAUGE OPTIONS

Socket: ¼ NPT; throttle plugs, 0.007″, 0.013″, 0.020″, 0.063″ orifice

Others: Customized dials
Metric and dual ranges available
Silicone-damped spiral tube for vibration service
Silicone-filled spiral tube for corrosion protection
UL listed for compressed gas (including oxygen); 1500 psi, 2000 psi, 3000 psi, 4000 psi

TO ORDER THIS TYPE DDG GAUGE:

Select: **15** **DDG** **01B** **100#**

1. Dial Size: 1½″
2. Case Type: DDG
3. Connection Size/Location: ⅛ NPT back = 01B
4. Range: 100 psi

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Fire Extinguisher Gauge
Type MFX – Accuracy
Conforms to Applicable UL Specs*

- ***Sealed stainless steel case provides a weatherproof, dustproof corrosion-resistant gauge***
- ***High impact-resistant polycarbonate window***
- ***Meets applicable UL specifications****
- ***Mass spectrometer leak tested***

Ashcroft® fire extinguisher gauges are mass spectrometer leak tested, thereby ensuring the critical leak integrity needed to prevent loss of extinguishing agent. These high-quality gauges are constructed with a corrosion-resistant stainless steel case and high impact-resistant polycarbonate window. Dial faces can be customized to meet customer requirements. The spiral tube technology used in these gauges offers the necessary accuracy without the complication of gearing, linkages and bearings that are present in a conventional movement gauge.

GAUGE SPECIFICATIONS

Type no.:	12MFX, 15MFX
Accuracy:	Conforms to applicable UL specs*
Size:	1¼″ – 12MFX 1½″ – 15MFX
Case:	Stainless steel, sealed
Ring:	None
Window:	High impact-resistant polycarbonate
Dial:	Conforms to applicable UL specs*
Pointer:	Integral with Bourdon tube, brass painted yellow
Bourdon tube:	Beryllium copper, spiral
Movement:	None (direct reading)
Socket:	Brass
Restrictor:	None
Connection:	⅛ NPT back, standard
Ranges:	Maximum pressure scale from 200 psi to 1200 psi

*Applicable UL Specs: UL 299, UL 626, UL 1058, UL 1093

GAUGE OPTIONS

Socket:	¼ NPT; throttle plugs, 0.007″, 0.013″, 0.020″, 0.063″ orifice
Others:	Customized dials
	Silicone-filled spiral tube for corrosion protection
	Special socket configurations

TO ORDER THIS TYPE MFX GAUGE:

Select:	12	MFX	01B	400	C195	P
1. Dial Size: 1¼″						
2. Case Type: MFX						
3. Connection Size/Location: ⅛ NPT Back						
4. Range: 400 psi						
5. Charge Pressure						
6. Extinguishing Agent: Dry Chemical (P), Halon 1301 (F), Halon 1211 (H), Water (W), Alternative (A)						

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

DIAPHRAGM SEALS AND ISOLATORS

(Per ASME B40.2 add 0.5% to the accuracy of an attached instrument. The exceptions are T-310/311/312/330 seals which add 1.0%)

Introduction

A diaphragm seal is a device which is attached to the inlet connection of a pressure instrument to isolate its measuring element from the process media. The space between the diaphragm and the instrument's pressure sensing element is solidly filled with a suitable liquid. Displacement of the liquid fill in the pressure element, through movement of the diaphragm, transmits process pressure changes directly to a gauge, transmitter, switch or any other pressure instrument. When diaphragm seals are used with pressure gauges, an additional 0.5% tolerance must be added to the gauge accuracy because of the diaphragm spring rate.

Used in a variety of process applications where corrosives, slurries, or viscous fluids may be encountered, the diaphragm seal affords protection to the instrument where:

- The process fluid being measured would normally clog the pressure element.
- Pressure element materials capable of withstanding corrosive effects of certain fluids are not available.
- The process fluid might freeze due to changes in ambient temperatures and damage the element.

All Ashcroft® diaphragm seals, with the exception of Type 310 mini-seals, are continuous duty. Should the pressure instrument fail or be removed accidentally, the diaphragm will seat against a matching surface, preventing damage to the diaphragm or leakage of the process fluid.

When selecting a diaphragm seal, consider the following:

Seal Mounting

- Threaded – the diaphragm seal connects directly to the process by means of a female NPT thread.
- Flanged – the diaphragm seal is attached to the process by means of a flange as specified in ASME B16.5
- In-line Welded – various types of welded -in diaphragm seals for flow-thru applications.

Diaphragm Types

- Capsule – threaded-in capsule design enables the diaphragm to be removed and/or replaced.
- Welded– the diaphragm is welded directly to the top housing.
- Bonded – Teflon® or Viton® diaphragm bonded directly to the top housing.
- Clamped – metal, Viton®, Teflon®, or Kalrez® diaphragm materials are clamped between the top and bottom housing.

Top Housing

Ashcroft diaphragm seals (with the exception of Types 310, 320, 400, 500 & 700 series) are normally furnished with a nickel/chrome plated carbon steel top housing. As an option, Ashcroft offers 316 stainless steel. Types 310, 320, 400, 500 & 700 series come standard with a 316L stainless steel top housing. A standard fill/bleed connection allows the seal and instrument to be evacuated and filled.

Lower Housing

Lower housings are available in a variety of materials to fit your application needs. Selection of the lower housing material is important since it is in direct contact with the process media.

Diaphragm Materials

The diaphragm is in direct contact with the process, and selecting the proper diaphragm is important.

Clamping Rings

Standard is black epoxy painted carbon steel. 316 stainless steel is an available option.

Upper Flange Rings

ASME B16.5 nickel/chrome plated carbon steel flanged rings are standard. 316 stainless steel is optional

Selection Information

Warning:

All seal components should be selected considering process and ambient operating conditions to prevent misapplication. Improper application could result in failure and possible injury or property damage.

Top Housing:

The top housing includes a connection for the pressure instrument and may support the upper surface of the diaphragm. Since this component is not in contact with the process fluid, it is commonly made of steel. However, if the external atmosphere contains corrosive elements, other materials like 316 SS, may be required.

Diaphragm:

The diaphragm separates the bottom housing from the fill fluid. The diaphragm material must be compatible with the process fluid. Because of its thin cross-section, special attention must be given to diaphragm material selection. Operating temperatures must not exceed the limit for the material used. A metal diaphragm is not recommended for low pressure ranges, such as inches of water or equivalent. For such applications, use a Viton diaphragm bonded or clamped to the top housing (Type 200 and 300 seal) or a Kalrez diaphragm clamped to the top housing (Type 300 seal).

Bottom Housing:

The bottom housing material is in direct contact with the process fluid and must therefore be compatible with the process fluid.

Fill Fluids:

The fill fluid must be capable of withstanding operating process temperature. Glycerin or silicone can combine with strong oxidizing agents such as oxygen, chlorine, nitric acid and hydrogen peroxide causing fires or violent reactions. Seal assemblies intended for such applications should be filled with an inert fluid such as Halocarbon. Seals intended for use with oxygen must be manufactured completely free of oil.

Pressure Rating:

The maximum allowable pressure for the seal selected must not be exceeded. Flange seals are generally limited to the maximum rating of the flange itself. Plastic bottom housings will not withstand the same pressures as metal equivalents. Maximum allowable pressures for all materials decrease as temperatures increase.

Note: Maximum vacuum indication may not exceed 25" Hg. Consult Customer Service in Stratford, CT if higher vacuum indication is required.

Accuracy/Temperature Errors:

The addition of a liquid filled diaphragm seal to an instrument will degrade its accuracy by 0.5% (maximum). In addition, changes in ambient temperatures will introduce temperature errors because of the expansion/contraction of the fill.

Leaks:

The entire filled portion of the system must be absolutely leak tight, since any loss of fill will result in significant errors.

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Selection Information
Ashcroft Diaphragm Seals & Pressure Instrument Isolators

CAPSULE TYPE 100	WELDED OR BONDED TYPE 200	CLAMPED TYPE 300	THREADED – ALL WELDED TYPE 400
			
A metal diaphragm capsule is threaded into a nickel/chrome plated carbon steel top housing. 316 stainless steel is an optional top housing material. The capsule construction assures positive sealing at all surfaces, preventing any leakage of the filling fluid from the system. The capsule design allows for the top housing and pressure instrument to be removed without losing the fill fluid. A Viton O-ring, compatible with all standard fill fluids, and a Teflon back-up ring provide a seal between the diaphragm capsule and the top housing. Since the diaphragm capsule is completely sealed upon being threaded into the top housing, tension of the clamping bolts has no effect on the sealing ability of the filled system. The diaphragm capsule can be replaced without replacing the entire top housing. The top housing and diaphragm capsule are interchangeable with all Ashcroft bottom housings.	A metal diaphragm capsule is welded to the top housing, which is then clamped to a bottom housing, providing a double, positive seal. The welded design allows for the top housing and pressure instrument to be removed without losing the fill fluid. The top housing and welded diaphragm are interchangeable with all standard Ashcroft bottom housings. For applications where the pressure range is less than 15 psi, or the vacuum range is less than 30˝Hg, a Viton diaphragm seal is recommended. The Type 200 bonded Viton, Kalrez or Teflon diaphragm seal is similar in construction to the Type 300 clamped Viton, Kalrez or Teflon diaphragm seal. The Viton or Teflon diaphragm in the Type 200 seal is permanently bonded to the top housing, allowing the top housing and instrument to be removed without losing the fill fluid. Viton can be used with low pressure instruments such as Ashcroft (inches of water) bellows-type gauges and Ashcroft pressure switches.	An elastomeric, or Teflon diaphragm is clamped securely between the top and bottom housings by clamp rings, assuring a positive seal. The top housing is contoured to match the diaphragm, minimizing distortion of the diaphragm should the pressure instrument be removed. The Type 300 series diaphragm seal is available with either a threaded or flanged process connection. A Viton or Kalrez diaphragm enables the Type 300 seal to be used on ranges below 15 psi and vacuum less than 30˝Hg. The top housing and diaphragm are interchangeable with all standard Ashcroft bottom housings. A virgin TFE Teflon diaphragm is also available. Features include toughness, flexibility and fatigue resistance for superior service life. A Teflon diaphragm offers maximum corrosion resistance to most acids, caustics, alkalies, ketones, hydrocarbons and alcohols. Viton or Kalrez can be used with low pressure instruments such as Ashcroft bellows type gauges and Ashcroft pressure switches.	The Ashcroft Type 400 welded diaphragm seal is recommended for use in controlling fugitive emissions and where clamped joints are not acceptable. Available with ¼, ½, ¾ and 1 NPT connections with a standard pressure rating of 4400 psi. A 9000 psi pressure rating is achieved with high-pressure rings. Optional socket weld or butt weld process connections are available. Type 401 has a flushing connection for easy cleaning. The 400 series all welded design is available with either a 316L stainless steel, Hastelloy C or Monel lower housing. Available diaphragms include 316L stainless steel, Hastelloy C, Monel or Tantalum. A 316L stainless steel top housing is standard with all lower housing materials except Monel (where a Monel top housing is supplied).

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Selection Information
Ashcroft Diaphragm Seals & Pressure Instrument Isolators

FLANGED – ALL WELDED TYPE 402

With flange classes of 150 thru 1500, the 402 series all welded diaphragm seal is available with a standard raised-face flange. Flat-faced or ring joint flanges are available as options. Diaphragm materials include 316L stainless steel, Hastelloy C, Monel and Tantalum. A 316L stainless steel top housing is standard with all lower housing materials except Monel (where a Monel, Tantalum or Titanium top housing is supplied). Available with 316L stainless steel, Hastelloy C, or Monel lower housings.

THREADED – ALL WELDED TYPE 500

The Ashcroft 500 series all welded diaphragm seal is recommended for use on applications to control fugitive emissions and where clamped joints are not acceptable. Maximum pressure rating is 500 psi. Similar in construction to the 400 series all welded seal, the 500 series is available with a 316L stainless steel, Hastelloy C or Monel lower housing. A 316L stainless steel top housing is standard with all lower housing materials except Monel or Titanium. A choice of 316L stainless steel, Hastelloy C, Monel or Tantalum diaphragms, is available. Type 501 has a flushing connection for cleaning.

MINI-SEAL TYPE 310

The compact size of the Ashcroft 310 mini-seal allows it to fit into space-restricted areas and is designed to protect transducers, mini-switches, and 3½″ or smaller dial size pressure gauges from corrosion, plugging or freeze- up. All welded metal construction prevents leakage of process media. It is rated for 2500 psi at 100°F and has a 316L stainless steel top housing standard. Lower housing materials include 316L stainless steel or Hastelloy C. Diaphragm materials include 316L stainless, Hastelloy C or Tantalum. ⅛ NPT-1″ NPT process connection sizes are available. Instrument connection is ¼ NPT only.

QUICK CONNECT TYPE 320

Available in 1½″ or 2″ process connection sizes, the quick-connect diaphragm seal is designed especially for those applications that require ease of dismantling and re-assembly. Typical applications include the pharmaceutical, dairy, food processing, biotechnology, and filtration markets. Also included are breweries, distilleries, wineries and citrus juice production plants. Standard features include a 316L stainless steel diaphragm welded to a 316L stainless steel top housing, a fill/bleed connection, and a top housing and pressure instrument removable from the process. The 320 quick-connect seal is compatible with Triclover Triclamp® and Cherry Burrell S line® connections. For applications required to meet 3A sanitary standard 37-01, consult Customer Service.

Diaphragm material pressure and temperature limits

Diaphragm material	Maximum Pressure (psi)	Temp. limit
Teflon	2,500	–40/400°F
Viton	500	–40/350°F
Kalrez	500	30/212°F
Metal diaphragms ❷		

Bottom housing material pressure and temperature limits

Bottom housing material	Maximum Pressure (psi)	Temp. limit
Teflon	270	130°F
Kynar	200	180°F
PVC:❸		
Flanged	75	100°F
Halar coated stainless steel		–40/300°F
All other metal lower housings		❷

Determined by pressure rating or flange class.

❷ Restricted to temperature range of fill material.

❸ A ½ NPT (maximum) threaded bottom housing is available. Socket weld connection is standard.

Diaphragm seal displacement

Type	Material	Maximum Displacement Cubic inches	Cubic centimeters
100, 200	Metal	0.07	1.14
200, 300	Teflon	0.14	2.23
200, 300	Viton	0.5	8
300	Kalrez	0.5	8
310	Metal	0.025	0.41
311, 312	Metal	0.032	0.52
320 (1½″ process)	Metal	0.025	0.41
320 (2″ process)	Metal	0.07	1.14
330	Metal	0.018	0.41
400	Metal	0.07	1.14
500	Metal	0.07	1.14
702/703	Metal	0.43	7
740/741	Metal	0.43	7

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Specification Matrix

Ashcroft Diaphragm Seals & Pressure Instrument Isolators

• = AVAILABLE





Process Connection Type			Threaded	Threaded w/Flushing Connection	Raised Face Flange	Raised Face Flange w/Flushing Connection	In-line Threaded
Model No.	Code		100/200/300[1]	101/201/301[1]	102/202/302[1]	103/203/303[1]	104/204/304[1]
Process Connection Size (NPT)	Female	Male					
¼	25	02	•	•			•
½	50	04	•	•	•	•	•
¾	75	06	•	•	•	•	•
1	10	08	•	•	•	•	
1½	15				•	•	
2	20				•	•	
3	30				•	•	
4	40						
6	60						
8	80						
Diaphragm Materials							
316L stainless steel	S		100 & 200	101 & 201	102 & 202	103 & 203	104 & 204
304L stainless steel	C		100 & 200	101 & 201	102 & 202	103 & 203	104 & 204
Monel 400	P		100 & 200	101 & 201	102 & 202	103 & 203	104 & 204
Nickel	N		100 & 200	101 & 201	102 & 202	103 & 203	104 & 204
Carpenter 20	D		100 & 200	101 & 201	102 & 202	103 & 203	104 & 204
Tantalum	U		100 & 200	101 & 201	102 & 202	103 & 203	104 & 204
Hastelloy B	G		100 & 200	101 & 201	102 & 202	103 & 203	104 & 204
Hastelloy C 22	J		100 & 200	101 & 201	102 & 202	103 & 203	104 & 204
Hastelloy C 276	H		100 & 200	101 & 201	102 & 202	103 & 203	104 & 204
Teflon	T		200 & 300	201 & 301	202	203	204 & 304
Viton	Y		200 & 300	201 & 301	202	203	204 & 304
Kalrez	K		200 & 300	201 & 301	302	303	304
Titanium	TI		200	201	202	203	204
Halar Coated Monel	PH		100	101	102	103	104
Bottom Housing Materials							
Steel	B		•	•	•	•	•
304L stainless steel	CL		•	•	•	•	•
316L stainless steel	SL		•	•	•	•	•
Hastelloy B	G		•	•	•	•	•
Hastelloy C 22	J		•	•	•	•	•
Hastelloy C 276	H		•	•	•	•	•
Carpenter 20	D		•	•	•	•	•
Monel 400	M		•	•	•	•	•
Inconel 800	W		•	•	•	•	•
Nickel	N		•	•	•	•	•
PVC	V		(Socket Weld or ¼-½ NPT)		1, 1½		
Tantalum Clad SS	SU				•		
Halar® Coated SS	SH				•		
Teflon	T				1, 1½, 2		
Kynar	KY		Only¼ or ½ NPT		1, 1½, 2		
Titanium	TI		•	•	•	•	•
Pressure Ratings							
500 psi			Viton or Kalrez diaph. only	Viton or Kalrez diaph. only			Viton or Kalrez diaph. only
2500 psi			Metal & Teflon® diaph.	•			Metal & Teflon® diaph.
5000 psi	HP		100 & 200 metal				
7500 psi							
15000 psi	HP						
Flange Class							
150, 300, 600, 900 or 1500					Kalrez, Teflon, Viton, Kynar 150 only	Kalrez, Teflon, Viton, Kynar 150 only	
Instrument Connection Size							
¼	02T		•	•	•	•	•
½	04T		•	•	•	•	•
Filling Fluid							
Glycerin	CG		•	•	•	•	•
Silicone (direct to 10´ capillary)	CK		•	•	•	•	•
Silicone (over 10´ capillary)	EJ		•	•	•	•	•
Halocarbon	CF		•	•	•	•	•
Syltherm	HA		•	•	•	•	•

Refer to page nos. 148/149/150 160/161/162

[1] Type 300 series not available with metallic diaphragms

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Specification Matrix

Ashcroft Diaphragm Seals & Pressure Instrument Isolators

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Process Connection Type			Saddle	In-line Flanged	In-line Socket Weld	In-line Butt Weld	Male/Female Threaded Mini (*Flushing Conn.)	
Model No.	Code		105/205	106/206	107/207	108	310/315*	
Process Connection Size (NPT)	**Female**	**Male**					**Female**	**Male**
¼	25	02			•	•	•	•
½	50	04		•	•	•	•	•
¾	75	06		•	•	•		•
1	10	08		•	•	•		•
1½	15			•	•	•		
2	20			•	•	•		
3	30		3″	•				
4	40		4″ and larger					
6	60			•				
8	80			•				
Diaphragm Materials								
316L stainless steel	S		•	•	•	•	•	
304L stainless steel	C		•	•	•	•		
Monel 400	P		•	•	•	•	•	
Nickel	N		•	•	•	•		
Carpenter 20	D		•	•	•	•		
Tantalum	U		•	•	•	•	•	
Hastelloy B	G		•	•	•	•		
Hastelloy C 22	J		•	•	•	•		
Hastelloy C 276	H		•	•	•	•	•	
Teflon	T		205	206	207	208		
Viton	Y		205	206	207	208		
Kalrez	K		205	206	207	208		
Titanium	TI		205	206	207	208		
Halar Coated Monel	PH		105	106	107	108		
Bottom Housing Materials								
Steel	B		•	•	•	•		
304L stainless steel	CL		•	•	•	•		
316L stainless steel	SL		•	•	•	•	•	
Hastelloy B	G		•	•	•	•	•	
Hastelloy C 22	J		•	•	•	•		
Hastelloy C 276	H		•	•	•	•	•	
Carpenter 20	D		•	•	•	•		
Monel 400	M		•	•	•	•	•	
Inconel 800	W		•	•	•	•		
Nickel	N		•	•	•	•		
PVC	V							
Tantalum Clad SS	SU							
Halar® Coated SS	SH							
Teflon	T							
Kynar	KY							
Titanium	TI		•		•	•		
Pressure Ratings								
500 psi			Viton or Kalrez diaph. only		Viton or Kalrez diaph. only	Viton or Kalrez diaph. only		
2500 psi			Metal & Teflon® diaph.		Metal & Teflon® diaph.			
5000 psi	HP							
7500 psi								
15000 psi	HP							
Flange Class								
150, 300, 600, 900 or 1500				150 & 300				
Instrument Connection Size								
¼	02T		•	•	•	•	•	
½	04T		•	•	•	•	•	
Filling Fluid								
Glycerin	CG		•	•	•	•	•	
Silicone (direct to 10′ capillary)	CK		•	•	•	•	•	
Silicone (over 10′ capillary)	EJ		•	•	•	•	•	
Halocarbon	CF		•	•	•	•	•	
Syltherm	HA		•	•	•	•	•	
	Refer to page nos.		148/149/150	160/161/162			151	

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Specification Matrix

Ashcroft Diaphragm Seals & Pressure Instrument Isolators

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Process Connection Type			Female & Male Threaded		Female Threaded (w/Flushing Conn.)	Quick Connect	1″ Male Flush Mini	Threaded (*Flushing Conn.)
Model No.	Code		311		312	320/321	330	400/401*
Process Connection Size (NPT)	Female	Male	Female	Male				
¼	25	02	•	•	•	•		•
½	50	04	•	•	•	•		•
¾	75	06	•	•	•			•
1	10	08	•	•	•		•	•
1½	15					•		
2	20					•		
3	30							
4	40							
6	60							
8	80							
Diaphragm Materials								
316L stainless steel	S		•		•	•	•	•
304L stainless steel	C							
Monel 400	P							•
Nickel	N							
Carpenter 20	D							
Tantalum	U		•		•			•
Hastelloy B	G							•
Hastelloy C 22	J							•
Hastelloy C 276	H		•		•			•
Teflon	T							
Viton	Y							
Kalrez	K							
Titanium	TI							•
Halar Coated Monel	PH							
Bottom Housing Materials								
Steel	B							
304L stainless steel	CL							
316L stainless steel	SL		•		•	•	•	•
Hastelloy B	G							
Hastelloy C 22	J							•
Hastelloy C 276	H		•		•			•
Carpenter 20	D							
Monel 400	M							•
Inconel 600	W							
Nickel	N							
PVC	V							
Tantalum Clad SS	SU							
Halar® Coated SS	SH							
Teflon	T							
Kynar	KY							
Titanium	TI							
Pressure Ratings								
500 psi								
2500 psi			1000		1000	•		
5000 psi	HP							
7500 psi								4400
15000 psi	HP							9000
Flange Class								
150, 300, 600, 900 or 1500								
Instrument Connection Size								
¼	02T		•		•	•	•	•
½	04T		•		•	2″ only	•	•
Filling Fluid								
Glycerin	CG		•		•	•	•	•
Silicone (direct to 10′ capillary)	CK		•		•	•	•	•
Silicone (over 10′ capillary)	EJ		•		•	•	•	•
Halocarbon	CF		•		•	•	•	•
Syltherm	HA		•		•	•	•	•
	Refer to page nos.		155		155	152	154	153

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ASHCROFT®

Specification Matrix

Ashcroft Diaphragm Seals & Pressure Instrument Isolators

• = AVAILABLE





Process Connection Type			Raised Face Flange (*Flushing Conn.)	Threaded (*Flushing Conn.)	Low Pressure Flanged (*w/Flushing Conn.)	Low Pressure Threaded (*w/Flushing Conn.)	Isolation Ring
Model No.	Code		402/403*	500/501*	702/703*	740/741*	80/81/85/86
Process Connection Size (NPT)	**Female**	**Male**					**Pipe Size**
¼	25	02				•	1.0″ 14.0″
½	50	04	•	•	•	•	1.5″ 16.0″
¾	75	06	•	•	•	•	2.0″ 18.0″
1	10	08	•	•	•	•	3.0″ 20.0″
1½	15		•		•		4.0″
2	20		•		•		5.0″
3	30		•		•		6.0″
4	40						8.0″
6	60						10.0″
8	80						12.0″
Diaphragm Materials							**Liner Materials / Code**
316L stainless steel	S		•	•	•	•	Buna N (E)
304L stainless steel	C						Teflon (T)
Monel 400	P		•	•	•	•	Viton (Y)
Nickel	N						Nordell EPDM (EP)
Carpenter 20	D						White Neoprene (CR)
Tantalum	U		•	•	•	•	Natural Rubber (NP)
Hastelloy B	G			•	•	•	
Hastelloy C 22	J		•	•			
Hastelloy C 276	H		•	•	•	•	
Teflon	T						
Viton	Y						
Kalrez	K						
Titanium	TI			•	•	•	
Halar Coated Monel	PH						
Bottom Housing Materials							**Ass'y Flanges / Code**
Steel	B			•		•	Carbon Steel (B)
304L stainless steel	CL						316 SS (S)
316L stainless steel	SL		•	•	•	•	CPVC (CP)
Hastelloy B	G				•	•	Teflon Enveloped (CT)
Hastelloy C 22	J		•	•			Polypropylene (PP)
Hastelloy C 276	H		•	•	•	•	
Carpenter 20	D				•	•	
Monel 400	M		•	•	•	•	
Inconel 600	W						
Nickel	N						
PVC	V						
Tantalum Clad SS	SU						
Halar® Coated Monel	SH						
Teflon	T						
Kynar	KY						
Titanium	TI			•	•	•	
Pressure Ratings							**Instrument Conn / Code**
500 psi				•	750	750	1/4 NPT (02T)
2500 psi							1/2 NPT (0 4T)
5000 psi	HP						
7500 psi							
15000 psi	HP						
Flange Class							
150, 300, 600, 900 or 1500			•		150-600		
Instrument Connection Size							
¼	02T		•	•	•	•	
½	04T		•	•	•	•	
Filling Fluid							
Glycerin	CG		•	•	•	•	•
Silicone (direct to 10′ capillary)	CK		•	•	•	•	•
Silicone (over 10′ capillary)	EJ		•	•	•	•	•
Halocarbon	CF		•	•	•	•	•
Syltherm	HA		•	•	•	•	•
	Refer to page nos.		143	143	152	152	159

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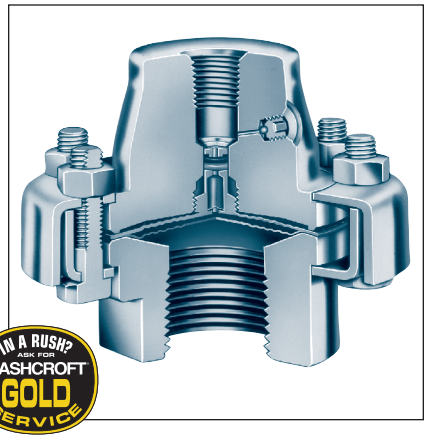
ASHCROFT®

Diaphragm Seal
Type 100, Capsule

The comprehensive line of Ashcroft® diaphragm seals will meet a wide variety of application or installation requirements. Over 30,000 variations are possible with the types, connections and materials available.

- The top housing and diaphragm capsule are interchangeable with all Ashcroft bottom housings.
- A fill/bleed connection is standard, which permits filling the seal and instrument simultaneously after evacuation and allows the fill to flow into the completed unit.
- A Viton O-ring, compatible with all standard fill fluids, and a Teflon back-up ring provide a seal between the diaphragm capsule and the top housing.
- A thin Teflon PTFE gasket between the diaphragm and bottom housing assures a leak-tight corrosion resistant seal even at high pressure.
- Top housing and pressure instrument are removable.
- Continuous-duty design will prevent loss of process fluid if pressure instrument is removed or fails.



SELECTION TABLES

Table A – Process Connection/Type Number

	Process Connection Size/Code—Inches										Type Number
	Size	¼	½	¾	1	1½	2	3	4	6	8	
Process Connection	Code	25	50	75	10	15	20	30	40	60	80	Capsule
Threaded–female NPT		•	•	•	•	•						100
Threaded–female NPT (with flushing connection)		•	•	•	•	•						101
Flanged(1)			•	•	•	•	•	•				102
Flanged (with flushing connection)			•	•	•	•	•	•				103
In-line—threaded NPT		•	•	•	•							104
Saddle								•	AND LARGER			105
In-line—butt weld		•	•	•	•	•	•					108
In-line—flanged(2)			•	•	•	•	•	•	•	•	•	106
In-line—socket weld		•	•	•	•	•	•					107

Pressure Ratings—All 2500 psi except flanged seals are per ASME B 16.5, temperature limit determined by diaphragm, bottom housing and/or filling fluid.

Table B
Diaphragm Material

Material	Code
316L stainless steel	S
304 stainless steel	C
Monel 400	P
Nickel	N
Carpenter 20	D
Tantalum	U
Hastelloy B	G
Hastelloy C 22(7)	J
Hastelloy C 276(7)	H
Halar Coated Monel	PH
Gold Plated 304 st. stl.	W

Table C
Bottom Housing Materials

Material	Code
Steel	B
304L stainless steel	C
316L stainless steel	S
Hastelloy B	G
Hastelloy C 22(7)	J
Hastelloy C 276(7)	H
Carpenter 20	D
Monel "400"	M
Inconel "600"	W
Nickel	N
PVC(8)	V
Tantalum clad stainless steel(9)	SU
Halar coated stainless steel(10)	BH
Teflon flanged steel(11)	T
Kynar(13)(14)	KY
Titanium(13)	TI

Table D
Instrument Connection

Size – NPT	Code
¼	02T
½	04T

NOTES:

(1) 150, 300, 600, 900, 1500 & 2500 class flanges.

(2) 1˝150 thru 8˝300 class flanges only.

(7) Use on applications where NACE standard MR-01-75 2003 is specified.

(8) Maximum Press./Temp.
Threaded: 200 psi/74°F, 125 psi/125°F, 80 psi/150°F.
Flanged: 75 psi/100°F.

(9) Type 102 only.

(10) Type 102 only – Temp. Limits: –40/300°F.

(11) Only available in 1˝, 1 ½˝, & 2˝150 class, Types 102.
Max. Press./Temp. – 270 psi and 150°F.
Consult factory for conditions beyond these limits.

(13) On application.

(14) Maximum Pressure/Temp.: 200 psi and 180°F.

Table E – Filling Fluid

Filling	Service	Connection to Instrument	Temperature Range °F	Code
Glycerin	Pressure	Direct Only	0/400	CG
Silicone	Pressure/Vacuum	Direct or Flexible Line	–40/600	CK
Halocarbon	Pressure/Vacuum in presence of strong oxidizing agent	Direct or Flexible Line	–70/300	CF
Syltherm	Pressure/Vacuum	Direct or Flexible Line	–40/750	HA

TO ORDER THIS TYPE 100 DIAPHRAGM SEAL:

1. **From Table A**...select TYPE NUMBER based on process connection, process connection size and diaphragm type/construction. (e.g., Threaded/1˝/capsule–code-10-100)
2. **From Table B**...select DIAPHRAGM MATERIAL. (e.g., 316L stainless steel–code S)
3. **From Table C**...select BOTTOM HOUSING MATERIAL. (e.g., 316 stainless steel–code S)
4. **From Table D**...select INSTRUMENT CONNECTION size. (e.g., ¼ NPT–code 02T)
5. **From Table E**...select FILLING FLUID, if diaphragm seal will be attached to instrument. (e.g., Glycerin–code CG)

Coded order: 10–100SS–02T–CG

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Phone (203) 385-0217, Fax (203) 385-0602 or
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ASHCROFT®

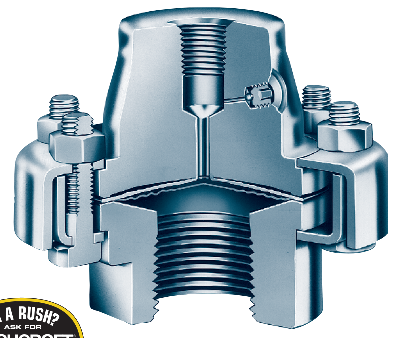
Diaphragm Seal
Type 200, Welded or Bonded

Type 200 Welded

- Teflon gasketed, continuous-duty diaphragm capsule is welded to the top housing, which is then clamped to a bottom housing.
- Fill/bleed connection is standard.
- Top housing and pressure instrument are removable.
- Available in same process connections, materials, types and sizes as the Type 100 capsule design.
- Top housing is interchangeable with all standard Ashcroft® bottom housings.

Type 200 Bonded Viton, Kalrez and Teflon

Similar in construction, materials, and product features to the Type 300 clamped diaphragm seal on page 142, the diaphragm in the Type 200 seal is bonded permanently to the top housing – and is the removable type.



SELECTION TABLES

Table A – Process Connection/Type Number

Process Connection	Process Connection Size/Code—Inches											Type Number
	Size	¼	½	¾	1	1½	2	3	4	6	8	Welded &
	Code	25	50	75	10	15	20	30	40	60	80	Bonded(3)
Threaded–female NPT		•	•	•	•	•						200
Threaded–female NPT (with flushing connection)		•	•	•	•	•						201
Flanged(1)			•	•	•	•	•	•				202
Flanged (with flushing connection)			•	•	•	•	•	•				203
In-line—threaded NPT		•	•	•	•							204
Saddle								•	AND LARGER			205
In-line—butt weld		•	•	•	•	•	•					208
In-line—flanged(2)			•	•	•	•	•	•	•	•	•	206
In-line—socket weld		•	•	•	•	•	•					207

Pressure Ratings—All 2500 psi except flanged seals are per ASME B 16.5, temperature limit determined by diaphragm, bottom housing and/or filling fluid.

NOTES:

(1) 150, 300, 600, 900, 1500 & 2500 class flanges.

(2) 1˝150 thru 8˝300 class flanges only.

(3) Metal diaphragms welded; Teflon, Kalrez & Viton diaphragms bonded.

(5) Temp. Limits: –40/400°F.

(6) Max. Pressure: 500 psi.
Temp. Limits: –40/350°F.

(7) Use on applications where NACE standard MR-01-75 2003 is specified.

(8) Maximum Press./Temp.
Threaded: 200 psi/74°F, 125 psi/125°F, 80 psi/150°F.
Flanged: 75 psi/100°F.

(9) Type 202 only.

(10) Temp. Limits: –40/300°F.

(11) Only available in 1˝, 1 ½˝, & 2˝150 class, Type 202.
Max. Press./Temp. – 270 psi and 150°F.
Consult factory for conditions beyond these limits.

(12) Max. Pressure: 500 psi
Temp. Limits: 30/212°F.

(13) Maximum Pressure/Temp.: 200 psi and 180°F.

Table B
Diaphragm Material

Material	Code
316L stainless steel	S
304 stainless steel	C
Monel 400	P
Nickel	N
Carpenter 20	D
Tantalum	U
Hastelloy B	G
Hastelloy C 22(7)	J
Hastelloy C 276(7)	H
Teflon(5)	T
Viton(6)	Y
Kalrez(12)	K
Titanium	TI

Table C
Bottom Housing Materials

Material	Code
Steel	B
304L stainless steel	C
316L stainless steel	S
Hastelloy B	G
Hastelloy C 22(7)	J
Hastelloy C 276(7)	H
Carpenter 20	D
Monel "400"(7)	M
Inconel "600"	W
Nickel	N
PVC(8)	V
Tantalum clad stainless steel(9)	SU
Halar coated stainless steel(10)	BH
Teflon flanged steel(11)	T
Kynar(13)	KY
Titanium)	TI

Table D
Instrument Connection

Size – NPT	Code
¼	02T
½	04T

Table E – Filling Fluid

Filling	Service	Connection to Instrument	Temperature Range °F	Code
Glycerin	Pressure	Direct Only	0/400	CG
Silicone	Pressure/Vacuum	Direct or Flexible Line	–40/600	CK
Halocarbon	Pressure/Vacuum in presence of strong oxidizing agent	Direct or Flexible Line	–70/300	CF
Syltherm	Pressure/Vacuum	Direct or Flexible Line	–40/750	HA

TO ORDER THIS TYPE 200 DIAPHRAGM SEAL:

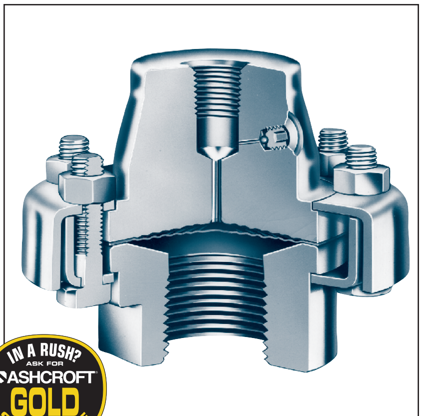
1. **From Table A**...select TYPE NUMBER based on process connection, process connection size and diaphragm type/construction. (e.g., Threaded/1˝/welded–code-10-200)
2. **From Table B**...select DIAPHRAGM MATERIAL. (e.g., 316L stainless steel–code S)
3. **From Table C**...select BOTTOM HOUSING MATERIAL. (e.g., 316 stainless steel–code S)
4. **From Table D**...select INSTRUMENT CONNECTION size. (e.g., ¼ NPT–code 02T)
5. **From Table E**...select FILLING FLUID, if diaphragm seal will be attached to instrument. (e.g., Glycerin–code CG)

Coded order: 10–200SS–02T–CG

ASHCROFT®

Diaphragm Seal Type 300, Clamped

- Broad selection of materials for meeting various service applications, including Teflon, Viton and Kalrez diaphragms.
- Elastomeric diaphragm is clamped securely between the top and bottom housings by clamp rings, assuring positive seal.
- Top housing is contoured to match diaphragm, minimizing distortion of the diaphragm should the pressure instrument be removed.
- Continuous duty.
- Fill/bleed connection is standard.
- Top housing and diaphragm are nonremovable.
- Teflon, Viton and Kalrez diaphragms available in threaded and flanged inlet connections.



SELECTION TABLES

Table A – Process Connection/Type Number

	Process Connection Size/Code—Inches											Type Number
	Size	¼	½	¾	1	1½	2	3	4	6	8	Clamped(4)
Process Connection	Code	25	50	75	10	15	20	30	40	60	80	
Threaded–female NPT		•	•	•	•	•						300
Threaded–female NPT (with flushing connection)		•	•	•	•	•						301
Flanged(1)			•	•	•	•	•	•				302
Flanged (with flushing connection)			•	•	•	•	•	•				303
In-line—threaded NPT		•	•	•	•							304

Pressure Ratings—All 2500 psi except flanged seals are per ASME B 16.5, temperature limit determined by diaphragm, bottom housing and/or filling fluid.

Table B Diaphragm Material

Material	Code
Teflon(5)	T
Viton(6)	Y
Kalrez(12)	K

Table C Bottom Housing Materials

Material	Code
Steel	B
304L stainless steel	C
316L stainless steel	S
Hastelloy B	G
Hastelloy C 22(7)	J
Hastelloy C 276(7)	H
Carpenter 20	D
Monel "400"	M
Inconel "600"	W
Nickel	N
PVC(8)	V
Tantalum clad stainless steel(9)	SU
Halar coated stainless steel(10)	BH
Teflon flanged steel(11)	T
Kynar(13)(14)	KY
Titanium(13)	TI

Table D Instrument Connection

Size – NPT	Code
¼	02T
½	04T

NOTES:

(1) 150, 300, 600, 900, 1500 & 2500 class flanges except 1˝1.50.

(4) Viton diaphragm in Types 302 & 303 limited to 2˝ – 150 class flange.

(5) Temp. Limits: –40/400°F.

(6) Max. Pressure: 500 psi. Temp. Limits: –40/350°F.

(7) Use on applications where NACE standard MR-01-75 2003 is specified.

(8) Maximum Press./Temp. Threaded: 200 psi/74°F, 125 psi/125°F, 80 psi/150°F. Flanged: 75 psi/100°F.

(9) Type 302 only.

(10) Type 302 only – Temp. Limits: –40/300°F.

(11) Only available in 1˝, 1 ½˝, & 2˝ 150 class, Type 302. Max. Press./Temp. – 270 psi and 150°F. Consult factory for conditions beyond these limits.

(12) Max. Pressure: 500 psi Temp. Limits: 30/212°F.

(13) On application.

(14) Maximum Pressure/Temp.: 200 psi and 180°F.

Table E – Filling Fluid

Filling	Service	Connection to Instrument	Temperature Range °F	Code
Glycerin	Pressure	Direct Only	0/400	CG
Silicone	Pressure/Vacuum	Direct or Flexible Line	–40/600	CK
Halocarbon	Pressure/Vacuum in presence of strong oxidizing agent	Direct or Flexible Line	–70/300	CF
Syltherm	Pressure/Vacuum	Direct or Flexible Line	–40/750	HA

TO ORDER THIS TYPE 300 DIAPHRAGM SEAL:

1. **From Table A**...select TYPE NUMBER based on process connection, process connection size and diaphram type/construction. (e.g., Threaded/1˝/clamped–code-10-300)
2. **From Table B**...select DIAPHRAGM MATERIAL. (e.g., 316L stainless steel–code S)
3. **From Table C**...select BOTTOM HOUSING MATERIAL. (e.g., 316 stainless steel–code S)
4. **From Table D**...select INSTRUMENT CONNECTION size. (e.g., ¼ NPT–code 02T)
5. **From Table E**...select FILLING FLUID, if diaphragm seal will be attached to instrument. (e.g., Glycerin–code CG)

Coded order: 10–300SS–02T–CG

ASHCROFT®

"Mini" Diaphragm Seal
Type 310, 315 All-Welded

- Compact size to fit space-restricted areas
- Designed to protect transducers, miniswitches and 3½″ or smaller pressure gauges from corrosion, plugging or freeze-up
- All-welded metal construction prevents leakage of process media
- Rated for 2500 psi at 100°F
- Fill/bleed connection is standard

SELECTION TABLES

Table A – Process Connection/Type Number

	Process Connection Size/Code—Inches													
	Size	⅛	¼	½	¾	1	1½	2	3	4	6	8	Type Number	Pressure Rating(1)
Process Connection	Code	12	25	50	75	10	15	20	30	40	60	80		
Threaded–female NPT			•	•									310 All-welded mini-seal	2500 psi @ 100°F
Threaded–female NPT			•	•									315 All-welded mini-seal with flushing connection	2500 psi @ 100°F
	Size	⅛	¼	½	¾	1							Type Number	Pressure Rating(1)
Process Connection	Code	01	02	04	06	08								
Threaded–male NPT		•	•	•	•	•							310	2500 psi @ 100°F

Table B
Diaphragm Material

Material	Code
316L stainless steel	S
Hastelloy C 276	H
Tantalum	U
Monel	P

Table C
Housing Materials

Bottom Material(2)	Code	Top Material(3)
316L SS	S	316L SS
Hastelloy C 276	H	316L SS
Monel	M	Monel
Hastelloy B	G	316 SS

Table D
Instrument Connection

Size – NPT	Code
¼	02T
⅛	01T

Table E – Filling Fluid

Filling	Service	Connection to Instrument	Temperature Range °F	Code
Glycerin	Pressure	Direct Only	0/400	CG
Silicone	Pressure/Vacuum	Direct or Flexible Line	–40/600	CK
Halocarbon	Pressure/Vacuum in presence of strong oxidizing agent	Direct or Flexible Line	–70/300	CF
Syltherm	Pressure/Vacuum	Direct or Flexible Line	–40/750	HA

NOTES:
(1) For use with most 3½″ and smaller gauges. Movementless gauge 4½″ (exception).
(2) Other bottom housing materials on application.
(3) Top housing material is 316L SS (standard). Monel mini-seal standard with monel top housing.

TO ORDER THIS TYPE 310 DIAPHRAGM SEAL:

1. **From Table A**...select TYPE NUMBER and process connection size (e.g., ¼″ process–code 25-310)
2. **From Table B**...select DIAPHRAGM MATERIAL. (e.g., 316L stainless steel–code S)
3. **From Table C**...select BOTTOM HOUSING MATERIAL. (e.g., 316 stainless steel–code S)
4. **From Table D**...select INSTRUMENT CONNECTION size. (e.g., ¼ NPT–code 02T)
5. **From Table E**...select FILLING FLUID, if diaphragm seal will be attached to instrument. (e.g., Glycerin–code CG)

Coded order: 25-310SS-02T-CG

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Diaphragm Seal
Type 320 Quick-Connect

The Ashcroft® Type 320 quick-connect diaphragm seal is designed especially for those applications that require ease of dismantling and re-assembly and do not require a 3A standard rating in accordance with sanitary standard 74-00.

Typical applications include the pharmaceutical, dairy, food processing, biotechnology, and filtration markets. Also included are breweries, distilleries, wineries and citrus juice production plants.

Standard features include:

- 316L stainless steel diaphragm welded to a 316L stainless steel top housing.
- Fill/bleed connection
- Top housing and pressure instrument removable from process.
- Compatible with Tri-Clover and Cherry Burrell S line connections

IN A RUSH? ASK FOR ASHCROFT GOLD SERVICE

SPECIFICATIONS

Table A – Piping System/Type Number

Type Number	Piping System	Code	Top Housing Materials(2)	Code	Diaphragm Material	Code	Instrument Connection	Code
320	1½″(1)	15	316L SS	S	316L SS	S	¼ NPT	02T
320	2″	20	316L SS	S	316L SS	S	¼ NPT ½ NPT	02T 04T

Table B – Filling Fluid

Filling	Service	Connection to Instrument	Temperature Range °F	Code
Glycerin	Pressure	Direct Only	0/400	CG
Silicone	Pressure/Vacuum	Direct or Flexible Line	–40/600	CK
Halocarbon	Pressure/Vacuum in presence of strong oxidizing agent	Direct or Flexible Line	–70/300	CF
Syltherm	Pressure/Vacuum	Direct or Flexible Line	–40/750	HA

NOTES:
(1) For use with most 3½″ and smaller gauges. Movementless gauge 4½″ (exception).
(2) Top housing material is 316L SS (standard). Monel mini-seal standard with monel top housing.

PRODUCT INFORMATION:

- The 1½″-Type 320 is for use on most 3½″ and smaller size gauges; the 2″-Type 320 can be attached to gauges up through 4½″ size.
- Quick-connect clamps, gaskets or bottom housings are not supplied.
- Can be used with pressure instruments such as gauges, switches and transducers.
- Replaces Ashcroft Type 110 series quick-connect diaphragm seals.
- Maximum operating pressure and temperature is determined by the gaskets and clamping devices used in the piping system.

TO ORDER THIS TYPE 320 DIAPHRAGM SEAL:

1. **From Table A**...select TYPE NUMBER & piping system size, diaphragm and top housing material, ¼″ instrument connection (e.g., 1½″ process, 316 stainless steel diaphragm and top housing code 15-320SX-02T)
2. **From Table B**...select FILLING FLUID if diaphragm seal will be attached to instrument. (e.g., glycerin–code CG)

Coded order: 15-320SX-02T-CG

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Diaphragm Seal
Types 400/500, All Welded

- Recommended for use where clamped joints are not acceptable
- Assists in controlling plant emissions by helping prevent potential leakage of hazardous chemicals
- Prevents inadvertent disassembly
- All-stainless steel construction is standard. Other materials available

Type 400

Type 500

SELECTION TABLES

Table A – Process Connection/Type Number

Type No.	Process Connection	Process Connection Size/Code—Inches										Pressure Rating
		Size	¼	½	¾	1	1½	2	3	4	6	8	
		Code	25	50	75	10	15	20	30	40	60	80	
400	Threaded–female NPT		•	•	•	•							4400 psi[1][5]
401	Threaded–female NPT (with flushing connection)		•	•	•	•							4400 psi[1][5]
402	Raised face flange			•	•	•	•	•	•				Per ASME B16.5[2]
403	Raised face flange (with flushing connection)			•	•	•	•	•	•				
500	Threaded–female NPT		•	•	•	•							500 psi
501	Threaded–female NPT (with flushing connection)		•	•	•	•							500 psi

Table B
Diaphragm Material

Material	Code
316L SS	S
Hastelloy B	G
Hastelloy C 22	J
Hastelloy C 276	H
Tantalum	U
Monel	P
Titanium	TI

Table C
Housing Materials[3]

Bottom Material	Code	Top Material[4]
316L SS	SL	316L SS
Hastelloy B	G	316L SS
Hastelloy C 22	J	316L SS
Hastelloy C 276	H	316L SS
Monel	M	Monel
Titanium	TI	Titanium

Table D
Instrument Connection

Size – NPT	Code
¼	02T
½	04T

Table E – Filling Fluid

Filling	Service	Connection to Instrument	Temperature Range °F	Code
Glycerin	Pressure	Direct Only	0/400	CG
Silicone	Pressure/Vacuum	Direct or Flexible Line	–40/600	CK
Halocarbon	Pressure/Vacuum in presence of strong oxidizing agent	Direct or Flexible Line	–70/300	CF
Syltherm	Pressure/Vacuum	Direct or Flexible Line	–40/750	HA

NOTES:

(1) XHP (High Pressure Rings) with 9000 psi rating available on Type 400 only.
(2) Flange ratings 150 class through 1500 class.
(3) Other bottom housing materials on application.
(4) Top housing material is 316L SS (standard) except for monel which has a monel top housing and titanium which has a titanium top housing.
(5) Continuous duty.

TO ORDER THIS TYPE 400 & 500 DIAPHRAGM SEAL:

1. **From Table A**...select TYPE NUMBER & process connection size (e.g., 1″ process–code 10-400)
2. **From Table B**...select DIAPHRAGM MATERIAL. (e.g., AISI 316L stainless steel–code S)
3. **From Table C**...select BOTTOM HOUSING MATERIAL. (e.g., AISI 316 stainless steel–code S)
4. **From Table D**...select INSTRUMENT CONNECTION size. (e.g., ¼ NPT–code 02T)
5. **From Table E**...select FILLING FLUID, if diaphragm seal will be attached to instrument. (e.g., Glycerin–code CG)

Coded order: 10-400SS-02T-CG

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Flush Mini-Diaphragm Seal Type 330 All Welded 1″ Male NPT

- All welded metal construction, prevents leakage of process media
- Flush design eliminates pockets that could cause clogging or build-up of process media
- Diaphragm area easy to clean up
- Provided with a 1″ MNPT process connection
- Compact size to fit space-restricted areas
- No gaskets or bolts
- For use on pressure gauges up to 3½″ from 60 to 3000 psi
- Top housing and diaphragm material 316L stainless steel
- ¼ & ½ NPT instrument connection
- Adds an additional 1% tolerance to the gauge

SELECTION TABLES

Table A – Process Connection

Process Connection	Size	Code
Threaded – male NPT	1″	08

Table B – Type

Description	Code
All welded flush mini-seal	330

Table C – Diaphragm Materials

Materials	Code
316L stainless steel	S

Table D – Instrument Connection

Instrument Connection	Size	Code
Threaded – female NPT	¼ NPT	02T
Threaded – female NPT	½ NPT	04T

Table E – Filling Fluid

Fill	Service	Connection to Instrument	Temperature Range °F	Code
Glycerin	Pressure	Direct Only	0/400	CG
Silicone	Pressure/Vacuum	Direct or Flexible Line	–40/600	CK
Halocarbon	Pressure/Vacuum in presence of strong oxidizing agent	Direct or Flexible Line	–70/300	CF
Syltherm	Pressure	Direct or Flexible Line	–40/750	HA

TO ORDER THIS TYPE 330 FLUSH MINI-SEAL ASSEMBLY:

1. **From Table A**...select PROCESS CONNECTION SIZE (e.g., 08 for 1″ male NPT)
2. **From Table B**...select TYPE (e.g., 330 for all welded flush mini-seal)
3. **From Table C**...select DIAPHRAGM MATERIAL (e.g., S for 316L stainless steel)
4. **Next**...insert X (Which indicates no lower housing)
5. **From Table D**...select INSTRUMENT CONNECTION SIZE (e.g., 02T for ¼″ female NPT)
6. **From Table E**...select FILLING FLUID, if diaphragm seal will be attached to instrument (e.g., Glycerin – CG)

Coded order: 08-330-SX-02T-CG

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Midi-Diaphragm Seal
Type 311/312
All Welded

- All welded metal construction, prevents leakage of process media
- No gaskets or bolts
- For use on pressure gauges up to 3½″ from 60 to 1000 psi and 4½″ gauges 100 psi to 1000 psi
- Top housing material 316L stainless steel standard
- Diaphragm materials in 316L stainless steel, hastelloy C and tantalum
- Bottom housing materials in 316L stainless steel and Hastelloy C
- ¼ NPT or ½ NPT instrument connections
- Type 312 furnished with ⅛ NPT flushing connection
- Type 312 not available in male process connections

SELECTION TABLES

Table A – Process Connection

Process Connection	Size	Code
Threaded – male NPT*	¼	02
Threaded – male NPT*	½	04
Threaded – male NPT*	¾	06
Threaded – male NPT*	1	08
Threaded – female NPT	¼	25
Threaded – female NPT	½	50
Threaded – female NPT**	¾	75
Threaded – female NPT**	1	10

*Threaded process connection available in Type 311 only.
**Not available on Type 312.

Table B – Type

Description	Code
All welded midi-seal	311
All welded midi-seal w/flushing connection	312

Table C – Diaphragm Materials

Materials	Code
316L stainless steel	S
Tantalum	U
Hastelloy C 276	H

Table D – Bottom Housing Materials

Materials	Code
316L stainless steel	S
Hastelloy C-276	H

Table E – Instrument Connection

Instrument Connection	Size	Code
Threaded – female NPT	¼ NPT	02T
Threaded – female NPT	½ NPT	04T

Table F – Filling Fluid

Fill	Service	Connection to Instrument	Temperature Range °F	Code
Glycerin	Pressure	Direct Only	0/400	CG
Silicone	Pressure/Vacuum	Direct or Flexible Line	–40/600	CK
Halocarbon	Pressure/Vacuum in presence of strong oxidizing agent	Direct or Flexible Line	–70/300	CF
Syltherm	Pressure	Direct or Flexible Line	–40/750	HA

TO ORDER THIS TYPE 311/312 MIDI-SEAL ASSEMBLY:

1. **From Table A**...select PROCESS CONNECTION SIZE (e.g., 50 for ½″ female NPT)
2. **From Table B**...select TYPE (e.g., 311 for all welded midi-seal)
3. **From Table C**...select DIAPHRAGM MATERIAL (e.g., U for Tantalum)
4. **From Table D**...select BOTTOM HOUSING MATERIAL (e.g., H for Hastelloy C)
5. **From Table E**...select INSTRUMENT CONNECTION SIZE (e.g., 02T for ¼″ female NPT)
6. **From Table F**...select FILLING FLUID, if diaphragm seal will be attached to instrument (e.g., Glycerin – CG)

Coded order: 50-311-UH-02T-CG

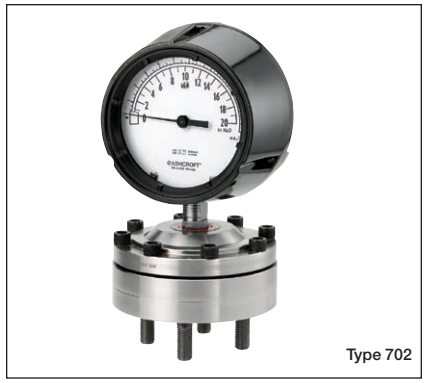
Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Instrument Isolator
Type 740, 741, 702, 703
High Displacement

- For pressure instruments ranging from 30˝ H_2O to 750 psi
- Used in instruments with large displacement actuators
- For applications requiring an impermeable metallic diaphragm
- Available in many material combinations
- Diaphragm electron beam welded to isolator body
- Furnished with fill/bleed connection

Type 740


Type 702

SELECTION TABLES

Table A – Process Connection/Type Number

Process Connection	Process Connection Size/Code – Inches[1][2] Size Code	¼ 25	½ 50	¾ 75	1 10	1½ 15	2 20	3 30	4 40	6 60	8 80	Type No.	Pressure Rating[1]
Threaded–female NPT		•	•	•	•							740	30 in.H_2O to 750 psi
Threaded–female NPT (with flushing connection)[2]		•	•	•	•							741	30 in.H_2O to 750 psi
												Type No.	Flange Rating
Raised Face Flange			•	•	•	•	•	•				702	150 to 600 class
Raised Face Flange (with flushing connection)[2]			•	•	•	•	•	•				703	150 to 600 class

(1) Per ASME B16.5.
(2) 741 and 703 seal supplied with ¼˝ flushing connection.

Table B
Diaphragm Materials[1]

Material	Code	Top Material
316L stainless steel	S	316L SS
Hastelloy B	G	316L SS
Hastelloy C 276	H	316L SS
Tantalum	U	316L SS
K-Monel	P	Monel 400
Titanium	TI	Titanium

(1) Diaphragms welded to top housing.

Table C
Bottom Housing Materials

Material	Code
Steel	C
316L stainless steel	S
Hastelloy B	G
Hastelloy C 276	H
Carpenter 20	D
Monel	M
Titanium	TI

Table D
Instrument Connection

Size – NPT	Code
¼	02T
½	04T

Table E – Filling Fluid

Filling	Service	Connection to Instrument	Temperature Range °F	Code
Glycerin[1]	Pressure	Direct Only	0/400	CG
Silicone	Pressure/Vacuum	Direct or Flexible Line	–40/600	CK
Halocarbon[2]	Pressure/Vacuum in presence of strong oxidizing agents	Direct or Flexible Line	–70/300	CF
Syltherm	Pressure/Vacuum	Direct or Flexible Line	–40/750	HA

(1) Glycerin not recommended for vacuum, compound or inches of water ranges.
(2) Halocarbon required on applications involving strong oxidizing agents.

TO ORDER THIS TYPE 740 DIAPHRAGM SEAL:

1. **From Table A**...select TYPE NUMBER and process connection size (e.g., ¼˝ process–code 50-740)
2. **From Table B**...select DIAPHRAGM MATERIAL. (e.g., Tantalum–code U)
3. **From Table C**...select BOTTOM HOUSING MATERIAL. (e.g., Hastelloy C 276–code H)
4. **From Table D**...select INSTRUMENT CONNECTION size. (e.g., ½ NPT–code 04T)
5. **From Table E**...select FILLING FLUID, if diaphragm seal will be attached to instrument. (e.g., Halocarbon–code CF)

Coded order: 50-740-UH-04T-CF

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

M&G Replacement Saddle T-205 3˝ and 4˝ and Larger Flange Extended, All Welded

- Ashcroft® replacement assembles directly into M&G lower housings that are welded in existing piping systems
- All welded metal construction
- For use on pressure gauges up to 4½˝ from vac. to 2500 psi
- Top housing material 316L stainless steel standard
- Diaphragm materials in 316L stainless steel, Hastelloy C and tatalum
- Continuous-duty design will prevent loss of process fluid if pressure instrument is removed or fails
- ¼ or ½ NPT instrument connections
- Adds an additional ½% tolerance to the gauge

SELECTION TABLES

Table A – Process Connection

Process Connection	Size	Code
	3˝	30
	4˝ & larger	40

Table B – Type

Description	Code
M&G replacement saddle	205

Table C – Diaphragm Materials

Materials	Code
316L stainless steel	S
Tantalum	U
Hastelloy C-276	H

Table D – Bottom Housing Materials

Materials	Code
Non Required	X

Table F – Instrument Connection

Instrument Connection	Size	Code
Threaded – female NPT	¼	02T
Threaded – female NPT	½	04T

TO ORDER THIS TYPE M&G REPLACEMENT SADDLE T-205 ASSEMBLY:

1. **From Table A**...select PROCESS CONNECTION SIZE (e.g., 30 for 3˝ size)
2. **From Table B**...select TYPE (e.g., 205 for M&G replacement top housing assembly)
3. **From Table C**...select DIAPHRAGM MATERIAL (e.g., S for 316L stainless steel)
4. **From Table D**...insert (X) which indicates no lower housing
5. **From Table E**...select INSTRUMENT CONNECTION SIZE (e.g., 02T for ¼˝ female NPT)
6. **Insert (#2584) on the suffix**

Coded order: 30-205-X-02T-#2584

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

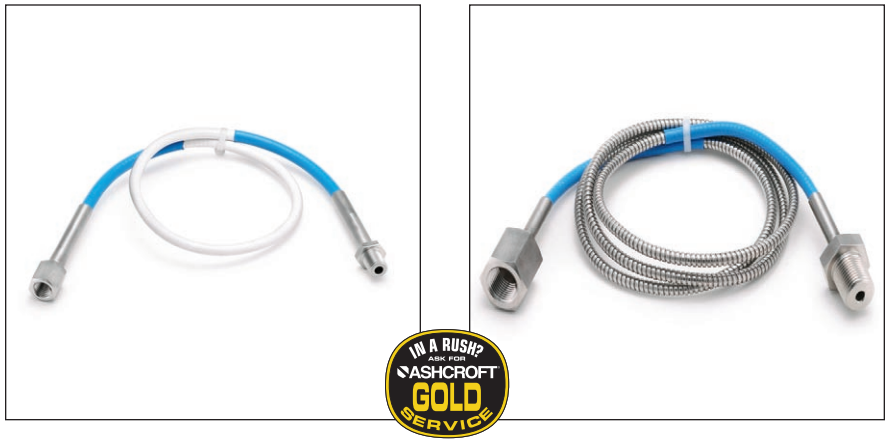
ASHCROFT®

Line Assemblies
Type 1115A/1115P
All Welded

- All welded construction
- Type 1115A is our standard stainless steel armored capillary
- Type 1115P stainless steel armored capillary, with the addition of PVC sheathing for maximum corrosion resistance
- The assemblies have standard line lengths of five feet in increments of five feet
- Line lengths in one foot increments are available with one foot being the minimum allowed, 150 feet being the maximum

Ashcroft® line assemblies are offered in a wide variety of configurations to suit all of your applications. Our standard assembly is in an all welded design of 300 series stainless components. The capillary is 304 stainless steel with an O.D. of 125 x .062 I.D. A spiral wound armor shields the assembly.

¼″ or ½″ male or female connections are available. Other connections available upon request. PVC jacketed line assemblies are also available.



SELECTION TABLES

Table A – Process Connection

Process Connection	Size	Code
Threaded – male NPT	¼	02
Threaded – male NPT	½	04
Threaded – female NPT	¼	25
Threaded – female NPT	½	50

Table B – Type

Description	Code
Stainless steel armored capillary	1115A
Stainless steel armored capillary w/PVC sheathing	1115P

Table C – Instrument Connection

Instrument Connection	Size	Code
Threaded – male NPT	¼	02
Threaded – male NPT	½	04
Threaded – female NPT	¼	25
Threaded – female NPT	½	50

Table D – Example Lengths

Example Lengths	Feet	Code
Increments of	1	001
Increments of	5	005
Increments of	25	025
Increments of	100	100

TO ORDER THIS TYPE 1115 LINE ASSEMBLY:

1. **From Table A**...select PROCESS CONNECTION SIZE (e.g., 02 for ¼″ male NPT)
2. **From Table B**...select TYPE (e.g., 1115A for stainless steel armored)
3. **From Table C**...select INSTRUMENT CONNECTION SIZE (e.g., 25 for ¼″ female NPT)
4. **From Table D**...determine DESIRED LENGTH (e.g., 005 for five foot long assembly)

Coded order: 02-1115A-25-005

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Iso-Ring, Iso-Spool
Types 80/81/85/86

With the Ashcroft® isolation ring, the instrument is in contact with the fill fluid, not directly with the process flow. Clogging or fouling is never a problem. The Iso-Ring has a flexible inner cylinder, behind which is the fill fluid. As process liquid flows through the pipe, it exerts pressure. The pressure exerted by the fill fluid is then monitored by the instrument-sensing element. A 360-degree flexible cylinder means no plugging, assuring reliable and accurate pressure readings. A built-in threaded needle valve is provided as standard. This permits the removal of a pressure instrument for calibration, repair, or replacement without shutting down the process flow.

Adaptable to a variety of process conditions and applications, the Ashcroft Iso-Ring can be used for protection of instrumentation such as pressure gauges, switches, transmitters, recorders and transducers. The Iso-Ring fits between customer-supplied piping flanges like many butterfly valves, and is available for piping diameters from 2″ to 20″. It can be used at any pressure within the limitations of ASME classes 150 and 300, and even in most vacuum applications.

Ashcroft® Type 85 and 86 Iso-Spools are used for small-diameter piping. Designed to provide a large sensing area in the smaller pipe diameters from 1″ to 2″, the patented Iso-Spool is offered in either NPT threaded or flanged models. Type 86 is available with flat or raised-face flanges.

Type 80 Iso-Ring (Wafer)
Type 81 Iso-Ring (Bolt Thru)

Type 86 Iso-Spool (Flanged)

Type 85 Iso-Spool (Threaded)

SELECTION TABLES

Table A – Pipe Size/Type Number

Size Code	Pipe Size/Code—Inches													Type Number	Housing Material
	1	1½	2	3	4	6	8	10	12	14	16	18	20		
	01	15	02	03	04	06	08	10	12	14	16	18	20		
			•	•	•	•	•	•	•	•	•	•	•	80	Carbon Steel
	•	•												85(1)	
	•	•	•											86(2)	
			•	•	•	•	•	•						81	

Table B
Inner Flexible Wall(5)

Material	Code	Temp. Limits
Buna N	E	up to 225°F (107°)
Teflon(3)	T	up to 350°F (177°)
Silicone(4)	SI	up to 450°F (232°)
Viton	Y	up to 350°F (177°)
White Neoprene	CR	up to 225°F (107°)
Natural Rubber	NR	up to 225°F (107°

Table C
Assembly Flanges

Material	Code
Carbon steel	B
316 stainless steel	S
Chlorinated Polyvinyl Chloride	CP
Teflon Enveloped	CT
Polypropylene	PP

Table D
Instrument Connection

Size – NPT	Code
¼	02T
½	04T

NOTES:
(1) Female threaded ends.
(2) Flanged ends.
(3) Not available in sizes 12″ or larger.
(4) Iso-Spool only.
(5) Temperature limits of both wall and fill fluid must not be exceeded.

Table E – Filling Fluid

Filling	Service	Connection to Instrument	Temperature Range °F	Code
Glycerin	Pressure	Direct Only	0/400	CG
Silicone	Pressure/Vacuum	Direct or Flexible Line	–40/600	CK
Halocarbon	Pressure/Vacuum in presence of strong oxidizing agent	Direct or Flexible Line	–70/300	CF
Syltherm	Pressure/Vacuum	Direct or Flexible Line	–40/750	HA

TO ORDER THIS ISO-RING/ISO-SPOOL:

1. **From Table A**...select TYPE NUMBER based on Type number and pipe size (e.g., Type 80/6″–code-8006)
2. **From Table B**...select INNER FLEXIBLE WALL (e.g., Buna N–code E)
3. **From Table C**...select ASSEMBLY FLANGE MATERIAL. (e.g., AISI 316 stainless steel–code S)
4. **From Table D**...select INSTRUMENT CONNECTION size. (e.g., ¼ NPT–code 02T)
5. **From Table E**...select FILLING FLUID, if Iso-Ring/Spool will be attached to instrument. (e.g., Glycerin–code CG)

Coded order: 8006-ES-02T-CG

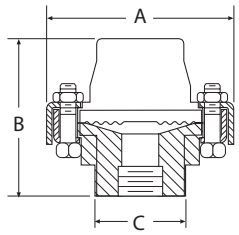
Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Diaphragm Seals Style Chart

- Threaded
- Flanged
- In-line
- Saddle
- Quick-Connect
- All Welded
- Mini-Seal
- Iso-Ring/Iso-Spool

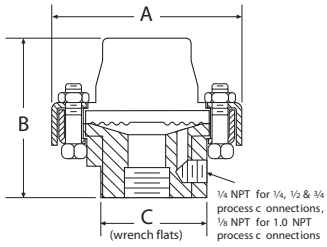
Types 100, 200, 300, 400



Types 100, 200, 300, 400 – Threaded ¼, ½, ¾, 1 NPT

A		B		C	
in	mm	in	mm	in	mm
3¾	(95)	2⅞	(73)	1 13/16	(46)

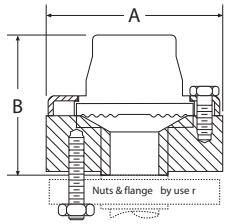
Types 101, 201, 301,401



Types 101, 201, 301, 401 – Threaded ¼, ½, ¾, 1 NPT with flushing connection

A		B		C	
in	mm	in	mm	in	mm
3¾	(95)	2⅞	(73)	1 13/16	(46)

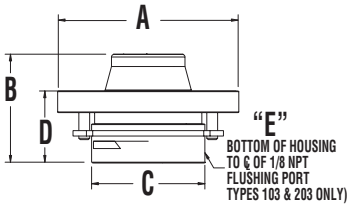
Types 102, 202, 302



Types 102, 202, 302 – Flanged ½″, ¾″

Flange Size	Rating #	A in	A mm	B in	B mm
	150	3½	(89)	2 15/16	(75)
½″	300 or 600	3¾	(95)	3	(76)
	900 or 1500	4¾	(121)	3 3/16	(81)
	150	3⅞	(98)	2 13/16	(71)
¾″	300 or 600	4⅝	(117)	3	(76)
	900 or 1500	5⅛	(130)	3 3/16	(81)

Types 102, 202, 103, 203

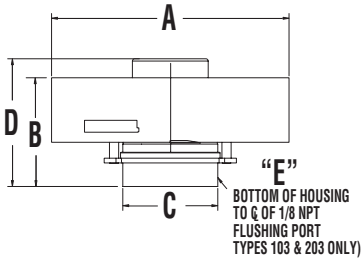


Types 102, 202, 103, 203 – Flanged 1″ (raised face only) (1 piece bottom housing) with and without flushing connection

Flange Size	Rating #	A in.	A mm	B in.	B mm	C in.	C mm
1	150 300 or 600	4-1/4 5	(100) (127)	2-9/16	(65)	1-23/32	(69)

Flange Size	Rating #	D in.	D mm	103 & 203 only E in.	E mm
1	150 300 or 600	1-5/8	(41)	3/8	(9)

Types 102, 202, 103, 203

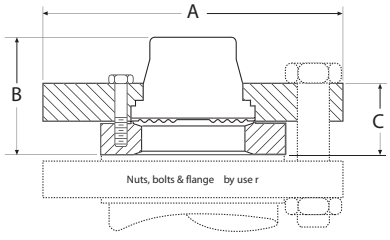


Types 102, 202, 103, 203 – Flanged 1″ (raised face only) (1 piece bottom housing) with and without flushing connection

Flange Size	Rating #	A in.	A mm	B in.	B mm	C in.	C mm
1	900 or 1500 2500	5-7/8 6-1/4	(149) (159)	2-7/8	(73)	2-1/4	(57)

Flange Size	Rating #	D in.	D mm	103 & 203 only E in.	E mm
1	900 or 1500 2500	3-3/8	(86)	3/8	(9)

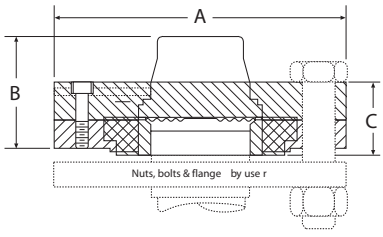
Types 102, 202, 302



Types 102, 202, 302 – Flanged (one piece bottom housing) – 1½″, 2″, 3″ (raised face only) – all materials except PVC, Teflon and Kynar.

Flange Size	Rating #	A in	A mm	B in	B mm	C in	C mm
	150	5	(127)			1½	(38)
1½″	300 or 600	6¼	(159)	2⅜	(61)	1½	(38)
	900 or 1500	7	(178)			1½	(38)
	150	6	(152)			1⅜	(35)
2″	300 or 600	6½	(165)	1 15/16	(49)	1½	(38)
	900 or 1500	8½	(216)			2⅛	(54)
	150	7½	(191)	2	(51)	1⅝	(41)
3″	300 or 600	8¼	(206)	2 1/16	(52)	1⅞	(47)
	900 or 1500	10½	(267)	2 11/16	(68)	3¼	(82)

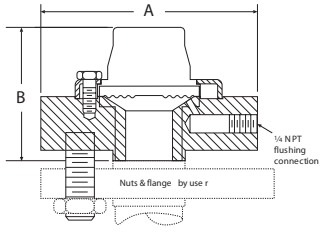
Types 102, 202, 302



Types 102, 202, 302 – Flanged (raised face only) (two piece bottom housing) – 1½″, 2″ – PVC, Teflon and Kynar

Flange Size	Rating #	A in	A mm	B in	B mm	C in	C mm
1″	150	4¼	(100)	2 3/16	(56)	1⅜	(35)
1½″	150	5	(127)	2 5/16	(59)	1 13/32	(39)
2″	150	6	(152)	2⅛	(54)	1 9/16	(40)

Types 103, 203, 303



Types 103, 203, 303 – Flanged ½″, ¾″ with flushing connection

Flange Size	Rating #	A in	A mm	B in	B mm
	150	3½	(89)	2 15/16	(75)
½″	300 or 600	3¾	(95)	3	(76)
	900 or 1500	4¾	(121)	3 3/16	(81)
	150	3⅞	(98)	2 13/16	(71)
¾″	300 or 600	4⅝	(117)	3	(76)

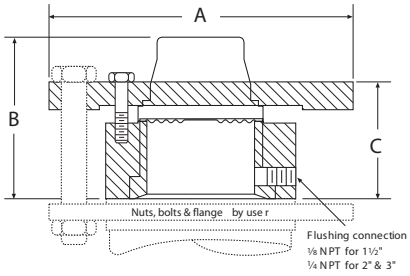
Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Diaphragm Seals Style Chart

- Threaded
- Flanged
- In-line
- Saddle
- All Welded
- Mini-Seal
- Iso-Ring/Iso-Spool
- Quick-Connect

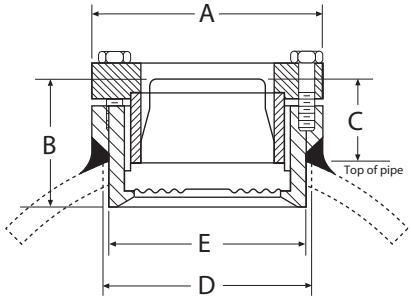
Types 103, 203, 303



Types 103, 203, 303 – Flanged 1½, 2″, 3″ (raised face only) (one piece bottom housing with flushing connection)

Size	Flange Rating #	A in	A mm	B in	B mm	C in	C mm
1½″	150	5	(127)	3	(76)	2 1/16	(52)
	300 or 600	6¼	(159)				
	900 or 1500	7	(178)				
2″	150	6	(152)	3 11/32	(84)	2⅜	(60)
	300 or 600	6½	(165)				
	900 or 1500	8½	(215)				
3″	150	7½	(191)	3 3/32	(79)	2 7/32	(56)
	300 or 600	8¼	(210)	3 5/16	(81)	2 7/32	(57)
	900	9½	(241)	3 23/32	(94)	2¾	(70)
	1500	10½	(267)				

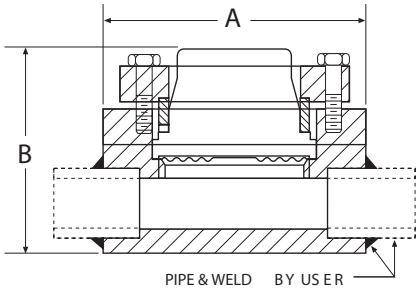
Types 105, 205



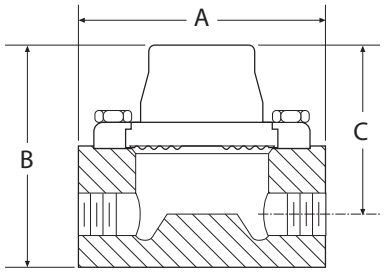
Types 105, 205 – Saddle – 4″ Pipe only

A in	A mm	B in	B mm	C in	C mm	D in	D mm	E in	E mm
3½	(89)	1 15/16	(50)	1 3/16	(31)	3	(76)	2 31/32	(75)

Types 107, 207



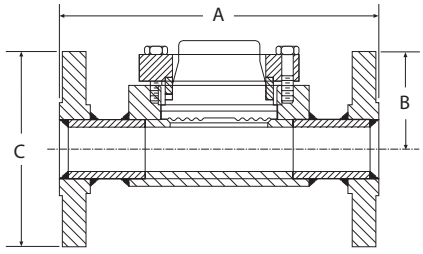
Types 104, 204, 304



Types 104, 204, 304 – In-Line Threaded ¼, ½, ¾, 1 NPT

Process Connection	A in	A mm	B in	B mm	C in	C mm
¼ NPT	4	(102)	2⅝	(67)	2⅛	(54)
½ NPT			3⅝	(92)	2¾	(70)
¾ NPT			3⅞	(98)	3	(76)
1 NPT			3⅞	(98)	3	(76)

Types 106, 206



Types 106, 206 – In-Line Flanged – ½″, 1″, 1½″, 2″, 3″

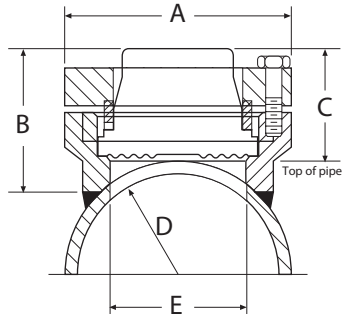
Size	Flange Rating #	A in	A mm	B in	B mm	C in	C mm
½″	150	7	(178)	2 7/16	(62)	3½	(89)
	300	7	(178)			3⅞	(98)
1″	150	7	(178)	2 7/16	(62)	4¼	(108)
	300	8	(203)			4⅞	(123)
1½″	150	8	(203)	2 11/16	(68)	5	(127)
	300	9	(229)			6⅛	(155)
2″	150	9	(229)	2 15/16	(75)	6	(152)
	300	10	(254)			6½	(165)
3″	150	11	(279)	3⅝	(92)	7½	(229)
	300	12	(305)			8¼	(254)

Types 107, 207

Types 107, 207 – In-Line Welded – ¼″, ½″, ¾″, 1″, 1½″, 2″

Pipe Size	A in	A mm	B in	B mm
¼″	4	(102)	2 11/32	(60)
½″, ¾″			2 11/32	(60)
1″			2 15/32	(63)
1½″			2 23/32	(69)
2″			2 31/32	(75)

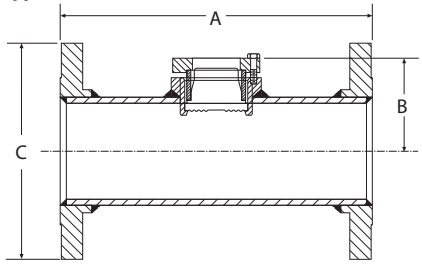
Types 105, 205



Types 105, 205 – Saddle – 3″ Pipe only

A in	A mm	B in	B mm	C in	C mm	D in	D mm	E in	E mm
3½	(89)	2¼	(57)	1⅞	(48)	1¾	(44)	2⅛	(54)

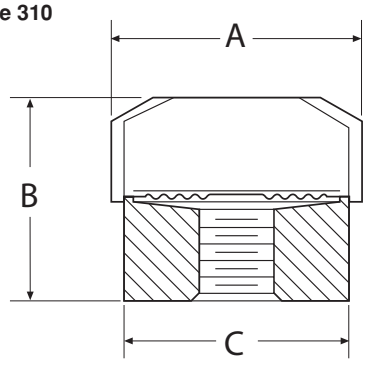
Types 106, 206



Types 106, 206 – In-Line Flanged – 4″, 6″, 8″

Size	Flange Rating #	A in	A mm	B in	B mm	C in	C mm
4″	150	13	(330)	3⅜	(86)	9	(229)
	300	14	(356)			10	(254)
6″	150	16	(406)	4 7/16	(113)	11	(279)
	300	17	(432)			12½	(318)
8″	150	16	(406)	5 7/16	(138)	13½	(343)

Type 310



Type 310 Mini-seal – Threaded – ¼, ½ NPT

A in	A mm	B in	B mm	C in	C mm
1½	(38)	1 3/16	(30)	1 11/32	(34)

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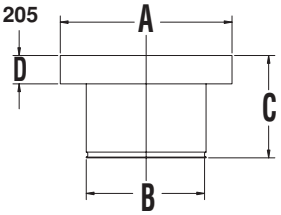
Diaphragm Seals Style Chart

- Threaded
- Flanged
- In-line
- Saddle
- Quick-Connect
- All Welded
- Mini-Seal
- Iso-Ring/Iso-Spool

Type 205

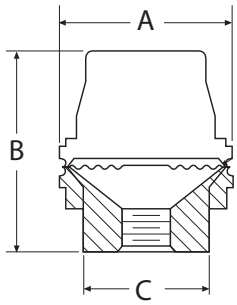


TYPE 205 (M&G REPLACEMENT)

Type 205 M&G Replacement Saddle 3″ (4″ and Larger)

Size*	A in	A mm	B in	B mm	C in	C mm	D in	D mm
3″	3.44	(87)	2.44	(62)	1.35	(34)	0.57	(14)
4″					2.05	(52)		

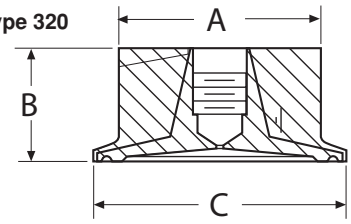
Type 500 All Welded



Type 500 All Welded – ¼, ½, ¾, 1 NPT

A in	A mm	B in	B mm	C in	C mm
2½″	(63)	2⅞	(73)	1 13/16	(46)

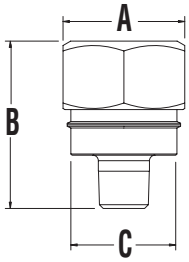
Type 320



Type 320 Quick Connect – ¼, ½ NPT

Size*	A in	A mm	B in	B mm	C in	C mm
1½″	1 21/32	(42)	⅞	(22)	2	(50)
2″	2	(51)	1⅛	(29)	2½	(63)

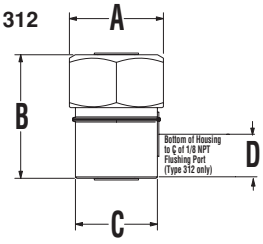
Type 311



Type 311 Midi-Seal – Male NPT Process Connection

Size	Code	A in	A mm	B in	B mm	C in	C mm
¼ ½ ¾ 1	02 04 06 08	2	(51)	3/8	(35)	1¾	(44)

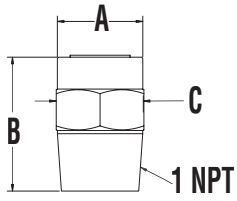
Types 311 & 312



Types 311 & 312 – Female NPT Process Connection

A in	A mm	B in	B mm	C in	C mm	D in	D mm
2.00	(51)	2.65	(67)	1.75	(44)	0.94	(24)

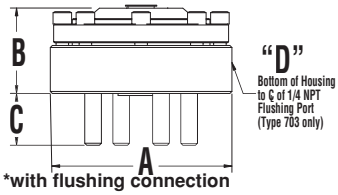
Type 330



Type 330 Flush Mini-Seal – Threaded ¼″ & ½″ Instrument Connection

A in	A mm	B in	B mm	C in	C mm
2½″	(63)	2⅞	(73)	1 13/16	(46)

Types 702, 703*



*with flushing connection

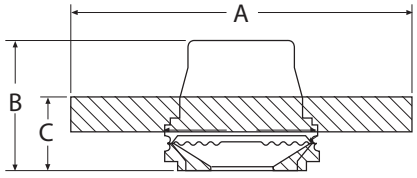
Types 702, 703 – Flanged – ½″ through 3″

Rating # / Size	150# A in.	A mm	B in.	B mm	C in.	C mm	703 Only, All Sizes D in.	D mm
1/2″	5-5/16	(135)	2-9/16	(65)	1-15/32	(37)	1-1/16	(27)
3/4″	5-5/16	(135)	2-9/16	(65)	1-15/32	(37)	1-1/16	(27)
1″	5-5/16	(135)	2-1/2	(64)	1-15/32	(37)	1	(25)
1-1/2″	5-5/16	(135)	2-1/2	(64)	1-15/32	(37)	1	(25)
2″	6	(152)	2-5/8	(67)	2-1/16	(52)	1-1/8	(29)
2-1/2″	7-1/2	(191)	2-1/2	(64)	2-1/16	(52)	1	(25)
3″	7-1/2	(191)	2-3/8	(60)	2-1/16	(52)	1-1/16	(27)

Rating # / Size	300# A in.	A mm	B in.	B mm	C in.	C mm	703 Only, All Sizes D in.	D mm
1/2″	5-5/16	(135)	2-9/16	(65)	1-15/32	(37)	1-1/16	(27)
3/4″	5-5/16	(135)	2-3/4	(70)	2-1/16	(52)	1-1/16	(27)
1″	5-5/16	(135)	2-3/4	(70)	2-1/16	(52)	1	(25)
1-1/2″	6-1/2	(165)	2-3/4	(70)	2-11/16	(68)	1	(25)
2″	6-1/2	(165)	2-5/8	(67)	2-1/16	(52)	1-1/8	(29)
2-1/2″	7-1/2	(191)	2-5/8	(67)	2-11/16	(68)	1	(25)
3″	8-1/2	(216)	2-5/8	(67)	2-11/16	(68)	1-1/16	(27)

Rating # / Size	600# A in.	A mm	B in.	B mm	C in.	C mm	703 Only, All Sizes D in.	D mm
1/2″	5-5/16	(135)	2-3/4	(70)	1-15/32	(37)	1-1/16	(27)
3/4″	5-5/16	(135)	2-3/4	(70)	1-15/32	(37)	1-1/16	(27)
1″	5-5/16	(135)	2-3/4	(70)	1-15/32	(37)	1	(25)
1-1/2″	6-1/2	(165)	2-3/4	(70)	1-15/32	(37)	1	(25)
2″	6-1/2	(165)	2-5/8	(67)	2-1/16	(52)	1-1/8	(29)
2-1/2″	7-1/2	(191)	2-5/8	(67)	2-1/16	(52)	1	(25)
3″	8-1/2	(216)	2-5/8	(67)	2-1/16	(52)	1-1/16	(27)

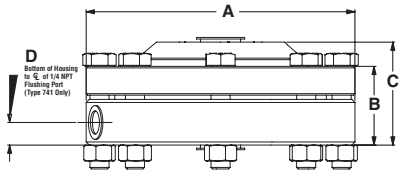
Types 402, 403



Types 402, 403 Raised Face – Flanged – 1″, 1½″, 2″

Flange Size	Flange Rating (#)	Type 402 A in	A mm	B in	B mm	C in	C mm	Type 403 A in	A mm	B in	B mm	C in	C mm
1″	150	4¼	(108)	2⅛	(54)	1 3/16	(30)	4¼	(108)	2⅞	(73)	1 15/16	(49)
	300 or 600	5	(127)			1¼	(32)	5	(127)			2	(51)
	900 or 1500	6	(152)			1¼	(32)	6	(152)			2	(51)
1½″	150	5	(127)	2 7/16	(62)	2 7/16	(62)	5	(127)	2 15/16	(75)	1⅞	(48)
	300 or 600	6¼	(159)					6¼	(159)				
	900 or 1500	7	(178)					7	(178)				
2″	150	6	(152)	2 15/32	(63)	2 15/32	(63)	6	(152)	2 15/16	(75)	2 3/16	(56)
	300 or 600	6½	(165)					6½	(165)				
	900 or 1500	8½	(216)					8½	(216)				

Types 740, 741



Types 740, 741 – High Displacement – Threaded – ¼″, ½″, ¾″, 1″

A in	A mm	B in	B mm	C in	C mm	D in	D mm
5.25	(133)	1.5	(38)	2.0	(51)	0.437	(11)

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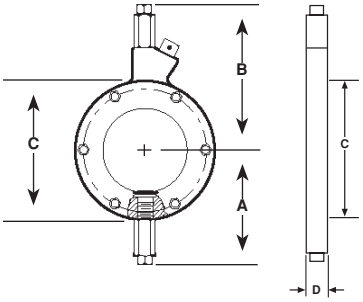
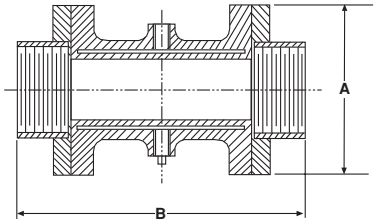
Diaphragm Seals Style Chart

- Threaded
- Flanged
- In-line
- Saddle
- Quick-Connect
- All Welded
- Mini-Seal
- Iso-Ring/Iso-Spool

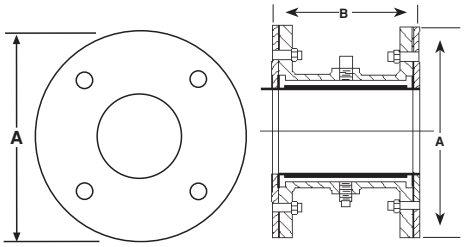
Type 80 Iso-Ring – 2″-20″



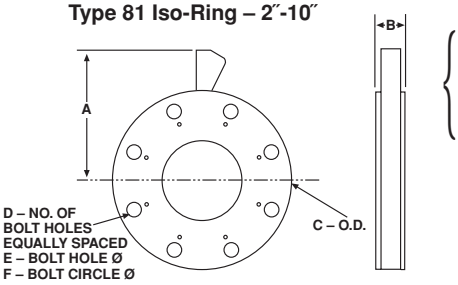
Type 85 Iso-Spool – 1″, 1½″



Type 86 Iso-Spool – 1″, 1½″, 2″



Type 81 Iso-Ring – 2″-10″



Dimensions: Table A[1]

Type	Nominal Pipe Size	A	B	C	D Chlorinated PVC Thickness	D Carbon Steel/ 316SS Thickness	Approximate Shipping Weight
Type 800 Iso-Ring*	2″	3.69″ (94mm)	5.22″ (133mm)	4.22″ (107mm)	2.25″ (57mm)	2.00″ (51mm)	3 lbs (1.35kg)
	3″	4.31″ (110mm)	5.84″ (148mm)	5.47″ (139mm)	2.25″ (57mm)	2.00″ (51mm)	6 lbs (2.7kg)
	4″	4.72″ (120mm)	6.25″ (159mm)	6.28″ (160mm)	1.75″ (44mm)	1.50″ (38mm)	8 lbs (3.6kg)
	6″	5.78″ (147mm)	7.34″ (187mm)	8.44″ (214mm)	1.75″ (44mm)	1.50″ (38mm)	12 lbs (5.4kg)
	8″	6.84″ (174mm)	8.38″ (213mm)	10.53″ (267mm)	1.75″ (44mm)	1.50″ (38mm)	16 lbs (7.3kg)
	10″	7.97″ (202mm)	9.53″ (242mm)	12.81″ (325mm)	1.75″ (44mm)	1.50″ (38mm)	20 lbs (9.7kg)
	12″	9.00″ (229mm)	10.53″ (267mm)	14.84″ (377mm)	N/A	1.75″ (44mm)	25 lbs (11.4kg)
	14″	10.16″ (258mm)	11.72″ (298mm)	17.20″ (437mm)	N/A	1.75″ (44mm)	50 lbs (22.7kg)
	16″	11.19″ (284mm)	12.72″ (323mm)	19.22″ (488mm)	N/A	1.75″ (44mm)	60 lbs (27.2kg)
	18″	12.31″ (313mm)	13.88″ (352mm)	21.50″ (546mm)	N/A	1.75″ (44mm)	70 lbs (31.8kg)
	20″	13.25″ (337mm)	14.78″ (375mm)	23.34″ (593mm)	N/A	1.75″ (44mm)	80 lbs (36.3kg)
Type 850 Iso-Spool (Female Threaded)	1″	3.56″ (90mm)	7.63″ (194mm)				10 lbs (4.5kg)
	1½″	4.38″ (111mm)	7.88″ (200mm)				12 lbs (5.4kg)
Type 860 Iso-Spool (Flanged**)		Class 150	Class 300				Class 150 / Class 300
	1″	4.25″ (108mm)	4.88″ (124mm)	5.38″ (136mm)			8 lbs (3.6kg) / 8 lbs (3.6kg)
	1½″	5″ (127mm)	6.13″ (156mm)	5.38″ (136mm)			10 lbs (4.5kg) / 12 lbs (5.4kg)
	2″	6″ (152mm)	–	5.38″ (136mm)			15 lbs (6.8kg)

*Centering gages supplied with Iso-Ring.
**Specify FF (Flat Face Flange) or RF (Raised Face Flange) when ordering.
(1) All dimensions ±.12″ (3mm).

Dimensions: Table B

Type	Nominal Pipe Size	A	B	B (w/CPVC End Flanges)	C	D	E	F
Type 810 Iso-Ring	2″	5.06″ (129mm)	2.00″ (51mm)	2.25″ (57mm)	6.00″ (152mm)	4	.75″ (19mm)	4.75″ (121mm)
	3″	5.81″ (148mm)	2.00″ (51mm)	2.25″ (57mm)	7.50″ (191mm)	4	.75″ (19mm)	6.00″ (152mm)
	4″	6.56″ (167mm)	1.50″ (38mm)	1.75″ (44mm)	9.00″ (229mm)	8	.75″ (19mm)	7.50″ (191mm)
	6″	7.56″ (192mm)	1.50″ (38mm)	1.75″ (44mm)	13.00″ (330mm)	8	.88″ (22mm)	9.50″ (241mm)
	8″	8.75″ (222mm)	1.50″ (38mm)	1.75″ (44mm)	13.50″ (343mm)	8	.88″ (22mm)	11.75″ (298mm)
	10″	10.00″ (254mm)	1.50″ (38mm)	1.75″ (44mm)	16.00″ (406mm)	12	1.00″ (25mm)	14.25″ (362mm)

Specifications: Table C

	Iso-Ring	Iso-Spool	Code
Housing	Carbon Steel	Carbon Steel	
Assembly Flanges	Carbon Steel 316 StainlessSteel Chlorinated Polyvinyl Chloride[2]	Carbon Steel 316 Stainless Steel Chlorinated Polyvinyl Chloride Teflon Encased[1,3]	B S CP CT
Inner Flexible Wall[4]	Buna N . . . . . up to 225°F (107°C) Teflon[1,2] . . . . . up to 350°F (177°C) Silicone[3] . . . . . up to 450°F (232°C) Viton[1] . . . . . up to 350°F (177°C) White Neoprene . . . . . up to 225°F (107°C) Natural Rubber . . . . . up to 212°F (100°C)		E T SI Y CR NR
Fill Fluid[4]	Glycerin . . . . . 0°F to 400°F (–5°C to 204°C) Silicone . . . . . –40°F to 600°F (–29°C to 316°C) Halocarbon . . . . . –70°F to 300°F (–29°C to 149°C) Food Grade Silicone . . . . . 0°F to 300°F (–5°C to 149°C) Distilled Water . . . . . 45°F to 180°F (– °C to °C) Ethyl Glycol and Water . . . . . –30°F to 220°F (– °C to °C) Propylene Glycol . . . . . –50°F to 200°F (– °C to °C)		CG CK CF CZ FJ CT CV

(1) Trademark of E. I. DuPont de Nemours and Company.
(2) Not available in sizes 12″ or larger .
(3) Iso-Spool only.
(4) Temperature limits of both wall and fill fluid must not be exceeded.

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

Optional Features	Code
316 stainless steel top housing	YT
Stainless steel clamp rings and flanged ring – includes 300 stainless steel clamping bolts (1500 psi max)	SE
300 series stainless steel clamping bolts (maximum pressure is 1500 psi)	SB
Pipe plugs for flushing connections – pipe plugs are available in the same materials as bottom housings per Table C – see pages 64-66	PU
5000 psi pressure rating – (Type 100/200 only) threaded inlet only, no flushing connection (metal diaphragm only) 7500 psi pressure rating (T-400)	HP
Welded instrument to diaphragm seal	DU
Dual flushing connections (1/2 NPT) (Limited to 2″ thru 3″ flanged seals	DB
Ring joint	RJ
Flat face	FF
No Teflon gasket. Special matching on bottom housing (2)	NX
Clean for gaseous oxygen or strong oxidizing agent applications (3)	6B
For accessories – see pages 243-250	—

Multiple Instruments Attached to Diaphragm Seals

Code	Description
XH3	02L Gauge Connection, 1/4 NPT Transducer, 02T Seal Connection
XH5	04L Gauge Connection, 1/2 NPT Switch, 02T Seal Connection
XH6	04L Gauge Connection, (2) 1/2 NPT Switches, 02T Seal Connection
XH7	02L Gauge Connection, 1/4 NPT Female Switch, 02T Seal Connection
XH8	02L Gauge Connection, (2) 1/4 NPT Instruments, 02T Seal Connection
XH9	02L Gauge Connection, 1/2 NPT Female Switch, 04T Seal Connection
XL3	02L Gauge Connection, 1/4 NPT Female Switch, 02T Seal Connection, 1/4 NPT Snubber (separate line item)

PRESSURE TRANSDUCERS/ TRANSMITTERS

(Refer to product specifications for accuracies)

ASHCROFT®

PATENTED

Xmitr™ Transmitter Gauge
All Stainless Steel
Type X1009 2½˝, 3½˝

TRANSMITTER SPECIFICATIONS

Output (Supply):
4-20mA 2 wire (12 to 30 Vdc Supply)
1-5 Vdc 3 wire Regulated (10 to 24 Vdc Supply)
0.5-4.5 Vdc 3 wire Ratio-metric (5 Vdc ±5% Supply)

Ranges: 15 to 15,000 psi (see table 3)

Performance:(1)
±1% FSO from best fit straight line (includes non-linearity, hysteresis, and non-repeatability)

Temperature:

Storage:	–40 to 221°F	(–40 to 105°C)(5)
Operating:	–40 to 221°F	(–40 to 105°C)(5)
Compensated:	–4 to 185°F	(–20 to 85°C)
Thermal effect:	1.4% per 100°F, 3%/100°C typical (zero & full scale combined)	

CE Conformity:
Meets CE heavy industrial Per EN 61326: 1998 Annex A

Enclosure: Stainless steel case IP50 (std), IP65 (XLJ)(2)

Media: Liquid, gas or vapor

Wetted Materials: 316L Stainless Steel

Electrical Protection:
Reverse polarity 75 Vdc, Over-voltage 60 Vdc continuous, and short-circuit protection.(3)

Shock: 100g-force per IEC770.

Vibration: 5g's 50 to 2000Hz.

Humidity: 95% non-condensing

Proof Pressure:
0 to 600 psi = 125% of full scale
1,000 to 15,000 psi = 110%

Burst Pressure:
0 to 1,500 psi = 10x burst
2,000 to 6,000 psi = 3x
10,000 to 15,000 psi = 1.8x

Response Time: Less than 10 ms (electronics)

Wake-up Time: 1 ms

Insulation: 1 meg ohm at 200 Vdc

Electrical Connection:
2´ shielded cable (Standard)
Mini-Hirschmann series G

Process Connection: Lower

Process Connection:
⅛ NPT, ¼ NPT, G ¼

GAUGE SPECIFICATIONS

Dial Size: 2½˝, 3½˝

Gauge Accuracy: 1% full-scale Grade 1A

Window: Polycarbonate

Gauge Movement:
Patented PowerFlex™ movement

Features

- A transducer and gauge in one instrument (2 in 1)
- A 1% performance industrial transducer
- Quality 316L st. st. media compatibility
- Voltage and 4-20mA outputs
- Robust CE heavy industrial
- Ranges compound to 15,000 psi
- Vibration dampening via patented *PLUS!™* Performance

OPTIONS (Table 1)

Throttle plugs: (not provided with LJ)
(TU): .013˝ SS Throttle Plug
(TS): Helical Throttle Plug
IP65 (LJ): Provides hard case plug for IP65/NEMA4 weather protection (not liquid fillable).
(LL): Patented *PLUS!* Performance provides vibration dampening in a dry case.
(SG): Safety Glass

ELECTRICAL CONNECTORS (Table 2)

Shielded Cable	CODE
2´ shielded cable	FL
Mini-Hirschmann G Series	
No Mating Connection	HM
With Mate (with 1 meter cable)	M2
With Mate (no cable)	M1
With Mate (with 3 meter cable)	M3

Table 4

Output	Code	Wiring
4-20 mA	4	Red = Supply + Black = Supply –
1-5 Vdc	1	Red = Supply + Black = Supply – (Signal Ref.) White = Signal
.5-4.5 Vdc Ratiometric	R	

PRESSURE RANGES (Table 3)

psi	kg/cm²(4)	bar(4)	kPa(4)	mPa(4)
0/15	1	1	100	0.1
0/30	1.6	1.6	160	0.2
0/60	2.5	2.5	250	0.3
0/100	4	4	400	0.4
0/160	6	6	600	0.6
0/200	10	10	1,000	1
0/300	16	16	1,600	1.6
0/400	25	25	2,500	2.5
0/600	40	40	4,000	4
0/1000	60	60	6,000	6
0/2000	100	100	10,000	10
0/3000	160	160	16,000	16
0/5000	250	250	25,000	25
0/7500	400	400	40,000	40
0/10,000	600	600	60,000	60
0/15,000	1000	1000	100,000	100
COMPOUND RANGES				
30IMV&15	–1, .6	–1, .6	–100, 60	–.1, .1
30IMV&30	–1, 1.5	–1, 1.5	–100, 150	–.1, .2
30IMV&60	–1, 3	–1, 3	–100, 300	–.1, .3
30IMV&100	–1, 5	–1, 5	–100, 500	–.1, .5
30IMV&150	–1, 9	–1, 9	–100, 900	–.1, .9
30IMV&300	–1, 24	–1, 24	–100, 2400	–.1, 2.4

(1) 1% BFSL from 10% to 90% full scale, 1.5% from 0% to 10% and 90% to 100% full scale
(2) Not Liquid Fillable
(3) For ratio-metric output, reverse polarity 20 Vdc and over-voltage of 25 Vdc continuous.
(4) 10 piece minimum per line item.
(5) Cable rated to 105°C. Other connectors to 90°C.

HOW TO ORDER

25	X	1009	SD	02L	4	FL	X(LJ)	100 psi

1. Dial Size 2.5˝
2. Patented Xmitr Transmitter Gauge
3. Case Number: 1009 (Table 5)
4. Socket Material: 316L SS
5. Connection Size/Location: ¼ NPT Lower
6. Output: 4-20mA ouput (Table 4)
7. Connector: 2´ Shielded Cable (Table 2)
8. Select Option(s): IP65 (Table 1)
9. Range: 100 psi (Table 3)

Table 5

Dial Size	Code	Type
2.5˝	**25**	1009
3.5˝	**35**	1009

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

PATENTED

Xmitr™ Transmitter Gauge
Type X1005 2˝
Type X2001 2½˝, 3½˝

TRANSMITTER SPECIFICATIONS

Output (Supply):
4-20mA 2 wire (12 to 30 Vdc Supply)
1-5 Vdc 3 wire Regulated (10 to 24 Vdc Supply)
0.5-4.5 Vdc 3 wire Ratio-metric (5 Vdc ±5% Supply)

Ranges: Vacuum to 5,000 psi (see table 3)

Performance:(1)
±1% FSO from best fit straight line (includes non-linearity, hysteresis, and non-repeatability)

Temperature:

Storage:	–40 to 221°F	(–40 to 105°C)(5)
Operating:	–40 to 221°F	(–40 to 105°C)(5)
Compensated:	–4 to 185°F	(–20 to 85°C)

Thermal effect: 1.4% per 100°F, 3%/100°C typical (zero & full scale combined)

CE Conformity:
Meets CE heavy industrial per EN61326: 1998 Annex A

Enclosure: Stainless steel case
Type 1005: IP54
Type 2001: IP43 (std), IP54 (XLJ)(2)

Media: Liquid, gas or vapor

Wetted Materials: Bronze/brass

Electrical Protection:
Reverse polarity 75 Vdc, Over-voltage 60 Vdc continuous, and short-circuit protection.(3)

Shock: 100g-force per IEC770.

Vibration: 5g's 50 to 2000Hz.

Humidity: 95% non-condensing

Proof Pressure:
0 to 200 psi = 150% of full scale
300 to 5,000 psi = 120%

Burst Pressure:
0 to 200 psi = 10x burst
300 to 5,000 psi = 3x

Response Time: Less than 10 ms (electronics)

Wake-up Time: 1 ms

Insulation: 1 meg ohm at 200 Vdc

Electrical Connection:
2´ shielded cable
Mini-Hirschmann series G

Process Connection: Lower

Process Connection:
⅛ NPT, ¼ NPT, G ¼

GAUGE SPECIFICATIONS

Dial Size: Type 1005 – 2˝, Type 2001 2½˝, 3½˝

Gauge Accuracy: 3/2/3% full-scale Grade B (1% electric output)

Window: Polycarbonate

Case: Stainless Steel

Gauge Movement:
Patented PowerFlex® movement

Features

- A transducer and gauge in one instrument (2 in 1)
- A 1% performance general purpose transducer
- Custom OEM configurations
- Voltage and 4-20mA outputs
- Robust CE heavy industrial
- Ranges vac. to 5000 psi
- Vibration dampening via exclusive FlutterGuard™
- Save time, money, space

OPTIONS (Table 1)

Throttle plugs: (not provided with LJ)

(T5): .013˝ (standard on 1000 psi and above)

(T7): .020˝

(T4): .007˝ (for clean gas)

IP54 (LJ): For Type X2001. Not fillable. Type X2001 is standard with no O-ring as IP43.

(SF): FlutterGuard™ vibration dampening

ELECTRICAL CONNECTORS (Table 2)

Shielded Cable	CODE
2´ shielded cable	FL
Mini-Hirschmann G Series	
No Mating Connection	HM
With Mate (with 1 meter cable)	M2
With Mate (no cable)	M1
With Mate (with 3 meter cable)	M3

Table 4

Output	Code	Wiring
4-20 mA	4	Red = Supply + Black = Supply –
1-5 Vdc	1	Red = Supply + Black = Supply – (Signal Ref.) White = Signal
.5-4.5 Vdc Ratiometric	R	

PRESSURE RANGES(6) (Table 3)

psi	kg/cm² (4)	bar (4)	kPa (4)	mPa (4)
0/30	2	2	200	0.2
0/60	4	4	400	0.4
0/100	7	7	700	0.7
0/160	10	10	1,000	1
0/200	14	14	1,500	1.5
0/300	21	21	2,000	2
0/400	28	28	3,000	3
0/600	42	42	4,000	4
0/1000(6)	70	70	7,000	7
0/2000(6)	140	140	15,000	15
0/3000(6)	210	210	20,000	20
0/5000(6)	350	350	35,000	35
COMPOUND RANGES				
30/0/IMV(6)	–1, 0	–1, 0	–100, 0	–.1, 0
30IMV&15	–1, 1	–1, 1	–100, 100	–.1, .1
30IMV&30	–1, 2	–1, 2	–100, 200	–.1, .2
30IMV&60	–1, 4	–1, 4	–100, 400	–.1, .4
30IMV&100	–1, 7	–1, 7	–100, 700	–.1, .7
30IMV&150	–1, 10	–1, 10	–100, 1000	–.1, 1.0
30IMV&300	–1, 20	–1, 20	–100, 2000	–.1, 2.0
30IMV&400	–1, 27	–1, 27	–100, 2700	–.1, 2.7
30IMV&600	–1, 39	–1, 39	–100, 3900	–.1, 3.9

(1) 1% BFSL from 10% to 90% full scale, 1.5% from 0% to 10% and 90% to 100% full scale

(2) Type 2001 provides case to socket O-ring to seal case for IP54 (not fillable). Other IP ratings upon request.

(3) For ratio-metric output, reverse polarity 20 Vdc and over-voltage of 25 Vdc continuous.

(4) 10 piece minimum per line item.

(5) Cable rated to 105°C. Other connectors to 90°C.

(6) Vacuum and ranges above 600 psig contact factory for availability.

Table 5

Dial Size	Code	Type
2˝	**20**	1005
2.5˝	**25**	2001
3.5˝	**35**	2001

HOW TO ORDER

25	X	2001	HD	02L	4	FL	X(LJ)	100 psi

1. Dial Size 2.5˝
2. Patented Xmitr Transmitter Gauge
3. Case Number: 2001 (Table 5)
4. Socket Material: Brass
5. Connection Size/Location: ¼ NPT Lower
6. Output: 4-20mA ouput (Table 4)
7. Connector: 2´ Shielded Cable (Table 2)
8. Select Option(s): IP54 (Table 1)
9. Range: 100 psi (Table 3)

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Type T2 – High Performance Pressure Transducer for General Industrial Applications

APPLICATIONS:

A new Ashcroft pressure transducer to meet demanding requirements in general industrial applications:

- *Process automation*
- *Compressor control*
- *Hydraulic systems*
- *Engine monitoring*
- *Pump control*
- *Pneumatics*
- *Refrigeration equipment*
- *Presses*
- *Machine Tools*
- *Other general industrial applications*

Important features include:

- *0.25% accuracy class*
- *Ranges 30 psi through 20,000 psi*
- *Broad temperature capability*
- *All-welded pressure construction*
- *Proven polysilicon thin film sensor*
- *Precision ASIC based electronics*
- *High EMI/RFI immunity rating*
- *Highly configurable*
- *Voltage and current outputs*
- *Choice of electrical connections*
- *Optional panel meter digital display – see Ashcroft model 2269*

PERFORMANCE SPECIFICATIONS

Ref. Temperature, 21°C ±1°C (72°F, ±2°F)

Accuracy:

Static Accuracy Class: ±0.25% of span (BFSL Method) including linearity, hysteresis, non repeatability at reference temperature

Temperature Effect:

–20°C to 85ºC <±1% of Span – Total Error Band
–40°C to –20ºC <±1.5% of Span – Total Error Band
85°C to 125ºC <±1% of Span – Total Error Band

Total Error Band includes the combined effects of non-linearity (Terminal Point Method), hysteresis, non-repeatability, temperatureand zero offset and span setting errors. For higher performance availability consult factory

Stability: Less than ±0.25% span/year

Durability: Tested to 50 million cycles

ENVIRONMENTAL SPECIFICATIONS

Temperature:

Compensated	–40 to 125°C	(–40 to 257°F)
Operating	–40 to 125°C	(–40 to 257°F)
Storage	–40 to 125°C	(–40 to 257°F)

Humidity: 0 to 100% R.H., no effect

FUNCTIONAL SPECIFICATIONS

Select from over 25 pressure ranges starting at 30 psi and running through 20,000 psi. Compound (vacuum & pressure) ranges are also available, see below.

Overpressure (F.S.):	**Proof**	**Burst**
750 psi & below	200% FS	1000% FS
1500 psi	200% FS	500% FS
3000 psi	200% FS	500% FS
5000 psi	150% FS	500% FS
7500 psi	120% FS	500% FS
10,000 psi	120% FS	240% FS
20,000 psi	120% FS	240% FS

Vibration: Random vibration (20 g) over temperature range (–40° to 125°C). Exceeds typical MIL. STD. requirements

Shock: 100gs, 6 ms

Drop Test: Withstands 1 meter on concrete 3 axis

Response Time: Less than 1 msec

Warm-up Time: Less than 500 msec typical

Position Effect: Less than ±0.01% span, typical

ELECTRICAL SPECIFICATIONS

Output Signals Available:

Voltage Output	**Excitation**	**Supply Current**
0-5 Vdc, 3 wire	9-36 Vdc	5mA
0-10 Vdc, 3 wire	14-36 Vdc	5mA
1-5 Vdc, 3 wire	9-36 Vdc	4mA
1-6 Vdc, 3 wire	9-36 Vdc	4mA
Ratiometric Output		
0.5-4.5 Vdc, 3 wire	5 Vdc ±0.5 Vdc	3.5mA
Current Output		
4-20mA, 2 wire	9-36 Vdc	

Reverse Polarity & Miswired Protected: Yes

Insulation Breakdown Voltage: 100 Vac

Insulation Resistance: Greater than 100 megohms at 100 Vdc

CE Compliance: Per EN 61326: 1997 + A1: 1998 + A2: 2001, Annex A (Heavy Industrial)

PHYSICAL SPECIFICATIONS

Pressure Connection: 304 stainless steel

Sensor Material: 17-4PH SS

Housing: 20% Glass Reinforced Nylon, Fire retardant to UL94 V1

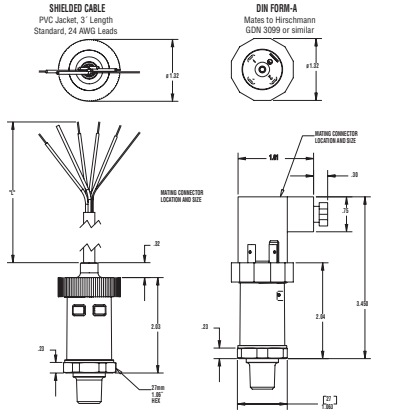
Available Process Connections (Male):
⅛ NPT, ¼ BSP, ¼ NPT, G¼ B, 7/16-20 UNF-2A
For other connections consult factory

Ingress Rating: Enclosure meets NEMA 4X, IP65

ELECTRICAL TERMINATION

- Pigtail: 3 feet of shielded cable, PVC jacket, 24 AWG leads
- DIN 43 650-A
- Bendix style 4 pin, PTO 2A-8-4P or similar
- M12 x 1, 4 pin, Circular style

DIMENSION DRAWINGS



M12 and Bendix style termination designs share similar dimensions to those shown above.

TO ORDER THE T2 PRESSURE TRANSDUCER:

T 2 — **Type Configuration** (T2)

7 — **Accuracy ±0.25% Static Accuracy Class (BFSL)**
±1.00% Total Error Band –20°C to +85°C
±1.50% Total Error Band –40°C to –20°C, 85°C to 125°C

Pressure Connection
M01 ⅛ NPT-male
M02 ¼ NPT-male
MEK 7/16-20 SAE-male
MS2 ¼-19 BSP male
MG2 G ¼ B male
Consult Factory Other Connections

Output Signal
05= 0-5 Vdc
10 = 0-10 Vdc
15 = 1-5 Vdc
16 = 1-6 Vdc
42 = 4-20mA
RM = 0.5-4.5 Vdc Ratio Metric to 5Vdc supply

Electrical Connection
DIN 43 650-A – Mates to Hirschmann GDM 3009 or similar
DN = no mating conn.
D0 = w/mating conn., no cable
D2 = w/mating conn. 3´ shielded cable
M12 – Mates to Hirschmann 933 172-100 or similar
EW = no mating conn.
E0 = w/mating conn. no cable
E2 = w/mating conn. & 3´ shielded cable
Circular 4 Pin – Mates to Amphenol Bendix PTO6A-8-4S-SR or similar
B4 = no mating conn.
H1 = w/mating conn., no cable
L1 = w/mating conn. 3´ shielded cable
Pigtail – Shielded cable with PVC Jacket and 24 AWG leads
F2 = w/3´ cable length
P1 = w/3´ cable length
F3 = w/6´ cable length
Consult factory for additional cable lengths

Pressure Ranges

psi Ranges

30#	=	30 psi
50#	=	50 psi
60#	=	60 psi
100#	=	100 psi
150#	=	150 psi
200#	=	200 psi
300#	=	300 psi
500#	=	500 psi
750#	=	750 psi
1000#	=	1000 psi
1500#	=	1500 psi
2000#	=	2000 psi
3000#	=	3000 psi
5000#	=	5000 psi
7500#	=	7500 psi
10000#	=	10000 psi
20000#	=	20000 psi

Pressure Type
G = Gauge pressure, vented housing
For sealed housing (PSIS) consult factory

Compound Ranges

30# & vac	=	30 psi/-14.7 psi
45# & vac	=	45 psi/-14.7 psi
60# & vac	=	60 psi/-14.7psi
85# & vac	=	85 psi/-14.7 psi
100# & vac	=	100 psi/-14.7 psi
150# & vac	=	150 psi/-14.7 psi
200# & vac	=	200 psi/-14.7 psi
300# & vac	=	300 psi/-14.7 psi

Ranges in bar, kPa and MPa are also available

X — **Optional X-Variations**
Consult factory for available options

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Type G2† – High Performance Pressure Transducer for Tough OEM Applications

† Patent Pending

APPLICATIONS:

A new Ashcroft pressure transducer to meet demanding requirements in applications involving:

- *Off-road equipment*
- *Construction machinery*
- *Compressor control*
- *HVAC and refrigeration*
- *Agricultural implements*
- *Process automation and control*
- *Hydraulic and pneumatic sensing*
- *Pump monitoring*

Important features include:

- *1% total error band accuracy††*
- *Broad temperature capability*
- *All-welded pressure construction*
- *High EMI/RFI rating*
- *Ranges 30 psi through 20,000 psi*
- *Housing IP67 rating*
- *Diagnostic rails*
- *Polysilicon thin film sensor*

††Tighter accuracy performance available, consult factory.

PERFORMANCE SPECIFICATIONS

Ref. Condition 21°C ±1°C (72°F ±2°F)
Accuracy:
Total Error Band includes combined effects of temperature, non-linearity (Terminal Point Method), hysteresis, non repeatabilty, zero offset and span setting errors
±1% of Span: From –20 to 85°C (–4 to 185°F)
±1.5% of Span: From –40 to -20°C (–40 to –4°F)
±1.5% of Span: From 85 to 125°C (185 to 257°F)
Note: Non-linearity, hysteresis and non-repeatability combined less than .15% of span typical (Best Fit Straight Line)
Stability: Less than ±0.25% span/year
Durability: Tested to 50 million cycles

ENVIRONMENTAL SPECIFICATIONS

Temperature:

Compensated	–40 to 125°C	(–40 to 257°F)
Operating	–40 to 125°C	(–40 to 257°F)
Storage	–40 to 125°C	(–40 to 257°F)

Humidity: 0 to 100% R.H., no effect

FUNCTIONAL SPECIFICATIONS

Select from over 25 pressure ranges starting at 30 psi and running through 20,000 psi gauge. Compound (vacuum & pressure) ranges are also available, see "To Order" below.

Overpressure (F.S.):	Proof	Burst
750 psi & below	200% FS	1000% FS
1500 psi	200% FS	500% FS
3000 psi	200% FS	500% FS
5000 psi	150% FS	500% FS
7500 psi	120% FS	500% FS
10,000 psi	120% FS	240% FS
20,000 psi	120% FS	240% FS

Vibration: Random vibration (20 g) over temperature range (-40° to 125°C). Exceeds typical MIL. STD. requirements
Shock: 100gs, 6 ms
Drop Test: Withstands 1 meter on concrete 3 axis
Response Time: Less than 1 msec
Warm-up Time: Less than 500 msec typical
Position Effect: Less than ±0.01% span, typical

ELECTRICAL SPECIFICATIONS

Output Signals Available:

Voltage Output	**Excitation**	**Supply Current**
0-5 Vdc, 3 wire	9-36 Vdc	5mA
0-10 Vdc, 3 wire	14-36 Vdc	5mA
1-5 Vdc, 3 wire	9-36 Vdc	4mA
1-6 Vdc, 3 wire	9-36 Vdc	4mA
Ratiometric Output		
0.5-4.5 Vdc, 3 wire	5 Vdc ±0.5 Vdc	3.5mA
Current Output		
4-20mA, 2 wire	9-36 Vdc	

Reverse Polarity & Miswired Protected: Yes
Insulation Breakdown Voltage: 100 Vac
Insulation Resistance: Greater than 100 megohms at 100 Vdc
CE Compliance: Per EN 61326: 1997 + A1: 1998 + A2: 2001, Annex A (Heavy Industrial)

PHYSICAL SPECIFICATIONS

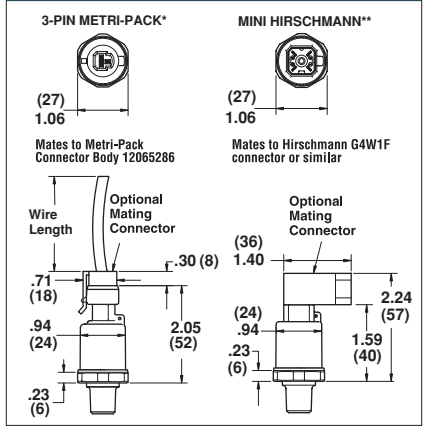
Pressure Connection: 304 stainless steel
Sensor Material: 17-4PH SS
Housing: 20% Glass Reinforced Nylon, Fire retardant to UL94 V1
Available Process Connections (Male):
⅛ NPT, ¼ BSP, ¼ NPT, G¼ B, 7/16-20 UNF-2A
For other connections consult factory
Ingress Rating: IP67

ELECTRICAL TERMINATION

- Shielded Cable: 1 meter standard, 24 AWG, PVC Jacket
- Flying Lead: 1 meter standard, 18 AWG
- Metri-Pack 150 series*
- Hirschmann G series**

*Metri-Pack is a trademark of Delphi Packard Electric Systems
** Trade Mark of Richard Hirschmann of America, Inc.

DIMENSION DRAWINGS



Shielded cable and flying lead designs share similar dimensions to those shown.

TO ORDER THE G2 PRESSURE TRANSDUCER:

G 2 — **Type Configuration** (G2)

7 — **Accuracy**
±1.0% Total Error Band –20°C to 85°C
±1.5% Total Error Band – 40°C to -20°C, 85 to 125°C

Pressure Connection
M01 ⅛ NPT-male
M02 ¼ NPT-male
MEK 7/16-20 SAE-male w/Buna-N O-ring
MS2 ¼-19 BSP male
MG2 G ¼ B male
Consult Factory for Other Connections

Output Signal
05 = 0-5 Vdc
10 = 0-10 Vdc
15 = 1-5 Vdc
16 = 1-6 Vdc
42 = 4-20mA
RM = 0.5-4.5 Vdc Ratio Metric to 5Vdc supply

Electrical Connection
Metri-Pack
GN = no mating conn.
G2 = mating conn. 1m cable
G1 = mating conn. w/customer specified length
Hirschmann G Series
HM = No mating conn.
M1 = with mating conn. no cable
M2 = mating conn. 1m cable
P9 = mating conn. w/customer specified length
Flying Leads
W2 = 1m flying leads
W9 = Customer specified length
Shielded Cable
F2 = 1m shielded cable
P1 = customer specified length

Pressure Ranges

psi Ranges	**Compound Ranges**
30# = 30 psi	**30#&vac** = 30 psi/–14.7 psi
50# = 50 psi	**45#&vac** = 45 psi/–14.7 psi
60# = 60 psi	**60#&vac** = 60 psi/–14.7 psi
100# = 100 psi	**85#&vac** = 85 psi/–14.7 psi
150# = 150 psi	**100#&vac** = 100 psi/–14.7 psi
200# = 200 psi	**150#&vac** = 150 psi/–14.7 psi
300# = 300 psi	**200#&vac** = 200 psi/–14.7 psi
500# = 500 psi	**300#&vac** = 300 psi/–14.7 psi
750# = 750 psi	
1000# = 1000 psi	
1500# = 1500 psi	
2000# = 2000 psi	
3000# = 3000 psi	
5000# = 5000 psi	
7500# = 7500 psi	
10000# = 10000 psi	
20000# = 20000 psi	

G — **Measurement Type**
G = Gauge Pressure

X — **Optional X-Variations**
Consult Factory for Available Options

Refer to Bulletin G2-1

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Type A2 Heavy Industrial and Hazardous Locations Pressure Transmitter

APPLICATIONS

Test stands, compressor control, hydraulic systems, oil field equipment, upstream oil and gas production, natural gas compression and transfer control

BENEFITS AND FEATURES

- ***Choice of .25, .50 or 1.0% accuracy***
- ***Intrinsically safe and explosion proof approvals***
- ***Pressure ranges from 5 psi through 10,000 psi***
- ***CE mark is standard***
- ***17-4 pH and 316L SS diaphragm materials available***
- ***304 SS case in standard, welded or explosion proof construction***
- ***Six output signals to choose from***
- ***Optional absolute pressure ranges available***
- ***Available externally adjustable zero and span access***
- ***FM, UL, CSA and ATEX listings available***
- ***Optional panel meter digital display – see Ashcroft model 2269***

Designed for heavy industrial and hazardous location applications, the Ashcroft® A2 pressure transmitter is a durable instrument that provides considerable specification flexibility in terms of performance, construction and optional features. Specify a base unit from a broad choice of standard ranges, process connections, output signals and electrical terminations or customize the transmitter from a long list of optional features and construction variables.

PERFORMANCE SPECIFICATIONS

Reference temperature 68°F (20°C)

Accuracy, Three Classes (% Span):

Includes non-linearity (Terminal Point Method), hysteresis, non-repeatability, zero offset and span setting errors)	±.25	±0.5	±1.0
Best Fit Straight Line* (BFSL):	±.20	±.40	±.50

*Add ±.05% for ranges above 5000 psi

Stability:
Sensor Material 316L SS: ±0.1% Span/year
Sensor Material 17-4PH: <0.5% Span/year

Durability: Greater than 10 million cycles

ENVIRONMENTAL SPECIFICATIONS

Temperature Limits:

Storage:	–40 to +125°C (–40 to 257°F)
Process:	–40 to +125°C (–40 to 257°F)
Operating:	–40 to +125°C (–40 to 257°F)
Compensated:	–20 to +85°C (–4 to 185°F)
Available:	–40 to +125°C (–40 to 257°F)

Temperature Effects: –20 to +85°C (–4 to 185°F)
- 1.0% of Span for .25% Accuracy Class
- 2.0% of Span for .50% and 1.0% Accuracy Classes

Humidity Effects: No performance effects from 0 to 95% relative humidity, non-condensing, 0-100% RH with "W" enclosure.

FUNCTIONAL SPECIFICATIONS

Respone Time: <2ms

Pressure Ranges: Vacuum, gauge, compound and absolute pressure from 0-5 psi through 0-10,000. Equivalent ranges in bar available. See order guide below.

Vibration Effect:

Shock:	100g Peak, 11ms
Random:	10g RMS, 20-2000Hz
Sweep:	50-2000Hz, 5g peak

Position Effect: ± 0.02% Typical

CE Mark (standard):
EN 61326:1997 + A1: 1998 Annex A
Heavy Industrial Immunity (Annex A, Table A.1)
Light Industrial/Residential Emission (Table 4)

Overpressure (F.S.):	Proof	Burst
0#/vac. to 2000 psi	2 x range	min. 3 x F.S.
3000-5000 psi	1.5 x range	min. 3 x F.S.
7500-10,000 psi	1.2 x range	1.5 x F.S.

ELECTRICAL SPECIFICATIONS

Output Signal:		Supply Voltage: (unregulated) Minimum	Maximum
0-5Vdc	(3 Wire)	12Vdc	36Vdc
0-10Vdc	(3 Wire)	14Vdc	36Vdc
1-5Vdc	(3 Wire)	10Vdc	36Vdc
1-6Vdc	(3 Wire)	10Vdc	36Vdc
4-20mA*	(2 Wire)	12Vdc	36Vdc
0.5-4.5 Ratiometric	(3 Wire)	4.5Vdc	5.5Vdc

*For intrinsically safe, see entity parameters for supply voltage & load limits. Refer to Ashcroft Drawing #825A022

Power Requirements:
Supply Current: <5mA for voltage outputs

Electrical Terminations:
See To Order below for Options

PHYSICAL SPECIFICATIONS

Case: Material 304SS

Wetted Materials: 17-4 SS sensor with 316L SS pressure port or all 316L SS

Ingress Protection Rating:

Enclosure	Rating
Basic	IP65, NEMA 4X
Zero/Span	IP65, NEMA 4X
All Welded (w/Z/S)	IP65, NEMA 4X
All Welded (w/o Z/S)	IP67, NEMA 6
Explosion Proof	IP65, NEMA 7,9

Diaphragm: 17-4 pH SS or 316L SS specify below

Standard Process Connections: 316 SS
See options below

OPTIONAL HAZARDOUS AREA CERTIFICATIONS

Explosion Proof – UL:
Class I, Div. 1 & 2, Groups A, B, C and D
Class II, Div. 1 & 2, Groups E, F and G

Explosion Proof – ATEX:
CE Ex II 2 GD
Ex d IIC T4
Ex nC IIC T4

Intrinsically Safe – FM:
Class I, Div. 1
Class I, Div. 2 Non-Incendive
For other approvals consult factory
Enclosure options S, W, X (see To Order below) and 4-20mA output

TO ORDER THE A2 PRESSURE TRANSMITTERS:

A2 ☐ ☐ ☐☐☐ ☐☐ ☐☐ ☐☐☐☐☐☐ ☐ X☐☐

Type Configuration
(A2)

Enclosure
(S) Basic
(Z) Zero & Span Access
(Y) Welded with Zero & Span Access
(W) Welded w/out Zero & Span Access
(X) Explosion-Proof Enclosure (Electrical Termination C2, C3, C4)

Accuracy/Temp. Effects
(A) 0.25%/±1.0%(–4°F to +185°F)
(B) 0.50%/±2.0%(–4°F to +185°F)
(C) 1.00%/±2.0%(–4°F to +185°F)

Pressure Connection

(M01)	⅛ NPT-M	(F09)	9⁄16-18 (¼)-F (Aminco)
(M02)	¼ NPT-M	(M04)	½ NPT-M
(F02)	¼ NPT-F	(F04)	½ NPT-F
(MEK)	7⁄16-20 SAE-M	(MG2)	G ¼ M
		(MG4)	G ½ M

Output Signal
(05) 0-5 Vdc
(10) 0-10 Vdc
(15) 1-5 Vdc
(16) 1-6 Vdc
(RM) 0.5-4.5 Vdc Ratio Metric
(42) 4-20mA

Electrical Termination

Integral (Pigtail)
(F2) 3 ft cable
(P1) (specify length)

Hirschmann Style Form A, DIN 43650-A
(DN) w/o mating conn.
(D0) with mate, no cable
(D2) with mate, 3´ cable
(D1) with mate, (specify length)

4-Pin Bendix Style
(B4) w/o mating conn.
(H1) with mate, no cable
(L1) with mate, 3´ cable
(P2) with mate, (specify length)

½ NPT-M Conduit
(C1) with 3´ pigtail
(P7) (specify length)

½ NPT-M Conduit
(C2) 3´ flying leads
(C3) (specify length)
(C4) 15´ flying leads

M12 Threaded
(EW) w/o mating conn.
(E0) with mate, no cable
(E2) with mate, 3´ cable
(E1) with mate, (specify length)

Pressure Range**

(5#) 5 psi*	(1000#) 1000 psi
(10#) 10 psi*	(2000#) 2000 psi
(15#) 15 psi*	(3000#) 3000 psi
(30#) 30 psi*	(5000#) 5000 psi
	(7500#) 7500 psi
(60#) 60 psi	(10,000#) 10,000 psi
(100#) 100 psi	(0# & vac.) vac./0 psi*
(150#) 150 psi	(15# & vac.) 15 psi & vac.*
(200#) 200 psi	(30# & vac.) 30 psi & vac.
(300#) 300 psi	(45# & vac.) 45 psi & vac.
(500#) 500 psi	(60# & vac.) 60 psi & vac.
(750#) 750 psi	

* 316L Sensor Required

Enclosure
(G) Gauge Pressure Sensor
(A) Absolute Pressure Sensor

Optional X-Variations
(XCL)
Non-standard** calibration
(XNS)
316 Sensor Material

**Minimum 10 piece for non-standard pressure ranges.

Consult factory for guidance in product selection Phone (203) 385-0217, Fax (203) 385-0602 or visit our web site at www.ashcroft.com

ASHCROFT®

Type KM10 Rugged, Compact Transducer for the High Volume OEM

APPLICATIONS:

High Volume Pressure Sensing in: Off Road Equipment, Construction Machinery, Compressors, Pump Control

BENEFITS & FEATURES

- ***Compact size***
- ***All welded sensor***
- ***–40/120°C operating temp***
- ***Rugged SS construction***
- ***IP 67 ingress rating***
- ***Ranges through 7500 psi***

The Ashcroft® KM10 Pressure Transducer is the ideal choice for the high volume OEM who requires an economical yet durable pressure transducer. The KM10 marries a proven polysilicon thin film sensor to a high performance ASIC to provide a highly accurate, stable, and rugged pressure sensing instrument.

PERFORMANCE SPECIFICATIONS

Ref. Condition 23°C ±2° (73°F)
Accuracy: Includes non-linearity, hysteresis, non-repeatability, zero offset and span setting errors – Terminal Point method:
±0.5% Span, 100 psig F.S. and above
±1.0% Span, 75 psig F.S. and below
Stability: ±0.25% Span/year
Interchangeability: < .5% Span
Durability: Tested to 50 million cycles

ENVIRONMENTAL SPECIFICATIONS

Temperature:

Storage	–40/120°C	(–40/250°F)
Operating	–40/120°C	(–40/250°F)
Compensated	–30/120°C	(–25/250°F)

Humidity: 0/100%R.H., no effect
Thermal Coefficients: –30 to 120°C (–25 to +250°F)

Zero	Span
±0.01%/°C (±0.0055%/°F)	±0.01%/°C (±0.0055%/°F)

FUNCTIONAL SPECIFICATIONS

Ranges:

vac/0 psi*	0/15 psi	0/1000 psi
vac/15 psi*	0/30 psi	0/1500 psi
vac/30 psi*	0/50 psi	0/2000 psi
vac/50 psi*	0/75 psi	0/3000 psi
vac/75 psi*	0/100 psi	0/5000 psi
vac/100 psi*	0/200 psi	0/7500 psi
vac/150 psi*	0/300 psi	
vac/200 psi*	0/500 psi	
vac/300 psi*	0/750 psi	

Overpressure (F.S.):	**Proof**	**Burst**
750 psi & below	2 x range	10 x range
1500 psi	2 x range	5 x range
3000 psi	2 x range	5 x range
5000 psi	1.5 x range	5 x range
7500 psi	1.2 x range	5 x range

Vibration: Random to 1 KHz, 20 g's
Shock: 50 g's, 11 msec
Drop Test: No effect 1 meter drop on concrete
Response Time: Less than 1msec
Position Effect: Less than 0.01% F.S.

ELECTRICAL SPECIFICATIONS

Output Signal Options:

Output	Excitation	Supply Current
0.5-4.5 Vdc (ratiometric)	5 Vdc ± .5 Vdc	10mA typical
1-5 Vdc	8-32 Vdc	10mA typical
1-6 Vdc	10-32 Vdc	10mA typical

Reverse Polarity Protection: Yes
Insulation Breakdown Voltage: (Circuit to case) 150 Vac/1 min.
Insulation Resistance: (Circuit to Case) 100M ohm min.@50 Vdc.
Warm-up Time: <25 msec

PHYSICAL SPECIFICATIONS

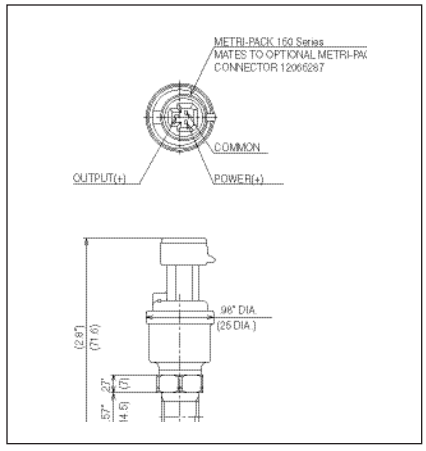
Pressure Connection Options: see "To Order" below
Pressure Connection: 304 SS
Housing: 304 SS
Sensor Material: 17-4 PH SS
Electrical Termination: see "To Order" below

- Metri Pack 150 Series
- Shielded Cable
- Flying Lead
- Sumitomo HW090

Protection Rating: IP67
Weight: Approx. 2 oz. (60g)

OPTIONS

Throttle screws
Custom mating harness
Special cleaning (for O_2)
Non-standard pressure ranges
Alternate process connections
Special calibration/accuracy



Shielded cable termination and flying lead termination is also available.

TO ORDER THE KM10 PRESSURE TRANSDUCER:

K M 1 0	☐	☐☐☐	☐☐	☐☐	☐☐☐☐☐#	X☐☐☐
Model Type (KM10)	**Accuracy Class** (5) 0.50% (100 psi & above) (7) 1.0% (75 psi & below)	**Pressure Connection** (MO1) ⅛ NPT-M (MO2) ¼ NPT-M (M38) ⅜-24 UNF-2A (MEK) 7/16-20 UNF-2A (FRW) 7/16-20 UNF-2B (M10) M10 x 1 (M14) M14 x 1.5 (MR3) R ⅜ (MR2) R ¼ (MG3) G ⅜ (MG2) G ¼	**Output Signal** (15) 1-5 Vdc (RM) Ratiometric 0.5-4.5 Vdc (16) 1-6 Vdc	**Electrical Termination** **For Metri-Pack 150 Series Integral Connector** (GN) No mating connector (G2) Mating connector w/36" cable (G1) Mating connector w/custom length **For Shielded Cable** (F2) 36"PVC sheath (P1) Other length **For Flying Leads** (12) 12 inch length (24) 24 inch length (36) 36 inch length	**Pressure Range**		**Special Features** (XTS) Throttle (X6B) Oxygen cleaning

PSI	PSI*
Vac./0	0/100
Vac./15	0/150
Vac./30	0/200
Vac./50	0/300
Vac./75	0/500
Vac./100	0/750
Vac./150	0/1000
Vac./200	0/1500
Vac./300	0/2000
0/15	0/3000
0/30	0/5000
0/50	0/7500
0/75	*Sealed Sensor

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Type K1 Thin Film Pressure Transducer/Transmitter For Industrial Applications

APPLICATIONS:
Hydraulic, refrigeration, machine tool, test/measurement, pump control, HVAC, medical, construction equipment and all general purpose industrial process applications

BENEFITS & FEATURES:
- ***0.5% and 1.0% accuracy***
- ***Vac.-20,000 psi pressure range***
- ***FM approved and UL listed***
- ***Superior long-term stability and repeatability***
- ***Stainless steel NEMA 4X enclosure***
- ***Current/voltage output***
- ***Wide range of electrical connections available***
- ***Optional panel meter digital display – see Ashcroft model 2269***

The Ashcroft® K1 is a proven and versatile pressure transducer/transmitter incorporating polysilicon thin film technology. Modern low-pressure chemical vapor deposition methods provide simple, stable molecular bonds between a proven metal diaphragm and a polysilicon strain gage bridge. There are no epoxies or bonding agents to contribute to signal instability or drift.

The integral metal diaphragm and polysilicon bridge are virtually unaffected by shock, vibration or mounting.

These transmitters are offered in many standard pressure ranges with either current or voltage output signals. Transmitter performance

is directly traceable to the National Institute of Standards and Technology and specifications are conservatively stated. A calibration test certificate is available with each transmitter.

PERFORMANCE SPECIFICATIONS

Accuracy Class (Span):
See page 258-259 for definitions

Includes non-linearity (Terminal Point Method), hysteresis, non-repeatability, zero offset and span setting errors	±.5%	±1.0%
Best Fit Straight Line (BFSL) (Includes non-linearity, hysteresis and non-repeatability errors)	±.25%	±.4%
Interchangeability	±.25%	±.6%

Durability: 10^8 cycles with negligible performance change

Stability: ±0.5% Span/yr

ENVIRONMENTAL SPECIFICATIONS

Temperature Limits:

Storage:	–54 to 121°C	(–65 to +250°F)
Operating:	–28 to 82°C	(–20 to +180°F)
Comp. Range:	–28 to 71°C	(–20 to +160°F)

Thermal Coefficients: (68°F (20°C) ref.)
% Span/°F
Standard:

	0.5%	1%
ZERO	±0.028%	±0.04%
SPAN	±0.028%	±0.04%

Optional:

ZERO	±0.014%	N/A
SPAN	±0.014%	N/A

Multiply thermal zero coefficients by 1.5 on 0/30 psi, vac/15 range and by 3 on 0/15 and vac/0 ranges

Humidity:
No performance effect at 95% relative humidity-noncondensing

FUNCTIONAL SPECIFICATIONS

Standard Ranges (psi) gauge, compound:

0/15*	0/300	0/5000*	vac./60*
0/30*	0/500	0/7500*	vac./45*
0/60*	0/750	0/10,000*	vac./30*
0/100	0/1000	0/15,000*	vac./15*
0/150	0/2000	0/20,000*	vac./0*
0/200	0/3000		

*1% accuracy ranges only.
Consult factory for nonstandard ranges.

Overpressure Limits (F.S.):

	15-2000	3000-5000	7500-20,000
Proof	200%	150%	120%
Burst	800%	300%	150%

Vibration Sweep:
Less than ±0.1%F.S. effect for 0-2000 Hz at 20 g's in any axis
Shock: Less than ±0.05% F.S. effect for 100 g's, 20ms shock in any axis
Response Time: Less than 5 ms
Position Effect: Less than 0.01% F.S.

ELECTRICAL SPECIFICATIONS

Output Signal (consult factory for options):
4-20mA (2 wire)
1-5 Vdc (3 wire)
1-6 Vdc (3 wire)
1-11 Vdc (3 wire) (minimum excitation 15 Vdc)
Power Requirements: 10-36 Vdc unregulated, <3mA for voltage output

PHYSICAL SPECIFICATIONS

Enclosure: NEMA 4X (NEMA 1 only if <500 psig if electrical termination is Bendix® or Hirschman®)

Weight: 2 oz. (approx. w/o cable)
Reverse Polarity Protected
Supply Current: <3mA for voltage output
MATERIALS:
Case: 300 series stainless steel
Cable: No. 24 AWG, 36˝ PVC, shielded, vented, UL approved
Diaphragm: 17-4 PH stainless steel
Standard Process Connections:
(316 stainless steel)
1/8 NPT male or female
1/4 NPT male or female
1/4 SAE-J-514 (male)
1/4 AMINCO (female) required for pressures over 10,000 psi
Other connections available

HAZARDOUS LOCATION CERTIFICATIONS

(Available option on 0.5% model only)
Factory Mutual approvals
Intrinsically Safe for use in:
Class I, II, III, Div. 1, Groups A, B, C,D, F, G when used with safety barriers in accordance with Ashcroft drawing 71B212 Sht (1-3).
Nonincendive for: Class I, Div. 2, Groups A, B, C, D
Special Protection for: Class II, III, Div. 2, Group F, G

TO ORDER THIS TYPE K1 TRANSDUCER/TRANSMITTER:

Select: K 1 ☐ ☐☐☐ ☐☐ ☐☐ ☐☐☐☐☐ ☐☐

1. **Type Configuration (K1)**
2. **Accuracy/TC**
   (3) 0.50%, ±0.014%/°F **(5)** 0.50%, ±0.028%/°F
   (7) 1.0%, ±0.040%/°F
3. **Pressure Connection**
   (M01) 1/8 NPT-M **(F01)** 1/8 NPT-F **(M02)** 1/4 NPT-M **(F02)** 1/4 NPT-F
   (MEK) 7/16 -20-M **(F09)** aminco 9/16-18-Female
4. **Output Signal**
   (42) 4-20mA **(15)** 1/5 Vdc **(16)** 1/6 Vdc **(11)** 1/11 Vdc
5. **Electrical Termination**
   (F2) 36˝ cable, shielded, PVC sheathing **(B4)** Bendix 4-pin # PT02A-8-4P* **(HM)** Hirschmann miniature
   (B6) Bendix 6-pin # PT02A-10-6P* **(B8)** WP Bendix 4-pin # PT02E-8-4P*
   (B9) WP Bendix 6-pin # PT02E-10-6P* **(C1)** 1/2 NPT-M Conduit w/36˝ Cable
6. **Pressure Range**
   (Vac./0) Vac./0 through **(20000)** 20,000 psi (see standard ranges). Call for more options.
7. **Hazardous Area Approvals**
   (XFM) FM Approval Option, (XUL) UL Approval

*Mating connector available as necessary

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Type K2 Thin Film Pressure Transducer with Conditioned MilliVolt Output

APPLICATIONS:

Hydraulic, machine tool, test and measurement, and all general purpose industrial process applications

BENEFITS & FEATURES:

- ***0.5% and 1.0% accuracy***
- ***Vac.-2000 psi pressure range***
- ***Superior long-term stability and repeatability***
- ***Stainless steel NEMA 4X enclosure***
- ***Conditioned millivolt output***
- ***Wide range of pressure and electrical connections available***

The K2 is similar to the K1 Series except offering mV/V output options. The K2 is a proven and versatile pressure transducer incorporating polysilicon thin film technology. Modern low-pressure chemical vapor deposition methods provide simple, stable molecular bonds between a proven metal diaphragm and a polysilicon strain gage bridge. There are no epoxies or bonding agents to contribute to signal instability or drift.

The integral metal diaphragm and polysilicon bridge are virtually unaffected by shock, vibration or mounting.

These transducers are offered in many standard pressure ranges with high-quality millivolt output

signal ratiometric to supply voltage. Trans-ducer performance is directly trace-able to the National Institute of Standards and Technology and specifications are conservatively stated. A calibration test certificate is available with each transducer.

PERFORMANCE SPECIFICATIONS

Accuracy Class (Span):
See page 258-259 for definitions

Includes non-linearity (Terminal Point Method), hysteresis, non-repeatability errors	±.5%	±1.0%
Best Fit Straight Line (BFSL) (Includes non-linearity, hysteresis and non-repeatability errors)	±.25%	±.4%
Interchangeability	±.5%	±1.0%

Durability: 10^8 with negligible performance change
Stability: ±0.5% Span/yr

ENVIRONMENTAL SPECIFICATIONS

Temperature Limits:

Storage:	–54 to 121°C	(–65 to +250°F)
Operating:	–28 to 82°C	(–20 to +180°F)
Comp. Range:	–28 to 71°C	(–20 to +160°F)

Thermal Coefficients:
(68°F (20°C) ref.) %Span/°F
Standard:

	0.5%	1%
ZERO	±0.028%	±0.04%
SPAN	±0.028%	±0.04%

Optional:

ZERO	±0.014%	N/A
SPAN	±0.014%	N/A

Multiply zero thermal coefficients by 1.5 on 0/30 psi range and by 3 and 0/15 and vac/0 ranges

Humidity:
No performance effect at 95% relative humidity – noncondensing

FUNCTIONAL SPECIFICATIONS

Standard Ranges (psi)

0/15*	0/300	0/5000*	vac./60*
0/30*	0/500	0/7500*	vac./45*
0/60*	0/750	0/10,000*	vac./30*
0/100	0/1000	0/15,000*	vac./15*
0/150	0/2000	0/20,000*	vac./0*
0/200	0/3000		

1% accuracy ranges only.
Consult factory for nonstandard ranges.

Overpressure Limits (F.S.):

	15-2000	3000-5000	7500-20,000
Proof	200%	150%	120%
Burst	800%	300%	150%

Vibration: Less than ±0.1%F.S. effect for 0-2000 Hz at 20 g's in any axis
Shock: Less than ±0.05 F.S. effect for 100 g's, 20 ms shock in any axis

Response Time: Less than 5 ms

Position Effect: Less than 0.01% Span

ELECTRICAL SPECIFICATIONS

Sensitivity:
2mV/V
3mV/V
10mV/V
20mV/V

Power Requirements: 5-10 Vdc regulated, <3mA
Zero Offset: ±0.5% Span or ±1.0% Span dependent on accuracy class
Circuit to Case Insulation Resistance:
100 M ohms @ 50 Vdc

PHYSICAL SPECIFICATIONS

Enclosure: NEMA 4X
(NEMA 1 only if <500 psig if electrical termination is Bendix® or Hirschmann®)
Weight: 2 oz. (approx. w/o cable)

MATERIALS:
Case: 300 series stainless steel
Cable: No. 24 AWG, 36˝ PVC, shielded, vented, UL approved
Diaphragm: 17-4 PH stainless steel
Standard Process Connections:
(316 stainless steel)
1/8 NPT male or female
1/4 NPT male or female
1/4 SAE-J-514 male
1/4 AMINCO female required for pressures over 10,000 psi
Other connections available
Shunt calibration feature is available as an option. Calibration report is standard with 0.5% and optional with 1% accuracy units. Consult factory for pricing, availability and required minimums for nonstandard products.

Bendix® is a registered trademark of Amphenol Corp.
Hirschmann® is a registered trademark of Richard Hirschmann of America Inc.

TO ORDER THIS TYPE K2 TRANSDUCER:

Select:

K 2 [ ] [ ][ ][ ] [ ][ ] [ ][ ] [ ][ ][ ][ ][ ]

1. Type Configuration (K2)

2. Accuracy/TC
(3) 0.50%, ±0.014%/°F **(5)** 0.50%, ±0.028%/°F
(7) 1.0%, ±0.040%/°F

3. Pressure Connection
(M01) 1/8 NPT-M **(F01)** 1/8 NPT-F **(M02)** 1/4 NPT-M **(F02)** 1/4 NPT-F
(MEK) 7/16-20 SAE-J-514 **(FO9)** aminco 9/16-18-Female

4. Sensitivity
(02) 2mV/V **(03)** 3mV/V **(10)** 10mV/V **(20)** 20mV/V

5. Electrical Termination
(F2) 36˝ cable, shielded, PVC sheathing **(B4)** Bendix 4-pin # PT02A-8-4P*
(B6) Bendix 6-pin # PT02A-10-6P* **(C1)** 1/2 NPT-M Conduit w/36˝ cable **(HM)** Hirschmann miniature

6. Pressure Range
(Vac./0) Vac./0 through **(20000)** 20,000 psi (see standard ranges). Call for more options.
*Mating connector available as necessary

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Type K8 Thin Film Pressure Transducer with Unconditioned MilliVolt Ouput

APPLICATIONS:

Hydraulic, hand tools, machine tool, compressor, HVAC, medical, control valves, construction equipment and all general purpose industrial process and OEM applications

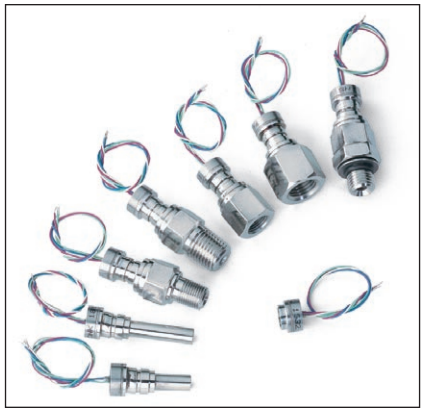
BENEFITS & FEATURES:

- ***0.5% and 1.0% accuracy***
- ***45-20,000 psi pressure ranges***
- ***Superior long-term stability and repeatability***
- ***Wide range of pressure and electrical connections available***
- ***Miniature size and light weight***
- ***Millivolt output***

The Ashcroft® K8 is a proven pressure transducer incorporating polysilicon thin film technology. Modern low-pressure chemical vapor deposition methods provide simple, stable molecular bonds between a proven metal diaphragm and a polysilicon strain gage bridge. There are no epoxies or bonding agents to contribute to signal instability or drift.

The K8 is offered in many standard pressure ranges with high quality millivolt output. Signal output is proportional to supply voltage, and sensitivity varies between 6-18 mV/V at full scale.

Transducer performance is directly traceable to the National Institute of Standards and Technology and specifications are conservatively stated.



PERFORMANCE SPECIFICATIONS

Accuracy Class (Span):
See page 258-259 for definitions

Includes non-linearity (Terminal Point Method), hysteresis, non-repeatability	±.5%	±1.0%
Best Fit Straight Line (BFSL)	±.25%	±.4%
Interchangeability	±.25%	±.6%

Durability: 10^8 cycles with negligible performance change

Stability: ±0.5% Span/yr

ENVIRONMENTAL SPECIFICATIONS

Temperature Limits:

Storage:	–54 to 121°C	(–65 to +250°F)
Operating:	–28 to 82°C	(–20 to +180°F)
Comp. Range:	–28 to 82°C	(–20 to +180°F)

Thermal Coefficients:
(68°F (20°C) ref.) %Span/°F

Standard:	**0.5%**	**1%**
ZERO	±0.028%	±0.04%
SPAN	±0.028%	±0.04%
Optional:		
ZERO	±0.014%	N/A
SPAN	±0.014%	N/A

Humidity:
No performance effect at 95% relative humidity – noncondensing

FUNCTIONAL SPECIFICATIONS

Standard Ranges (psi)

0/45*	0/300	0/3000	0/20,000*
0/60*	0/500	0/5000*	
0/100	0/750	0/7500*	
0/150	0/1000	0/10,000*	
0/200	0/2000	0/15,000*	

*1% accuracy ranges only.
Consult factory for nonstandard ranges.

Overpressure Limits (F.S.):

	45-2000	3000-5000	7500-20,000
Proof	200%	150%	120%
Burst	800%	300%	150%

Vibration Sweep:
Less than ±0.1%F.S. effect for 0-2000 Hz at 20 g's in any axis

Shock: Less than ±0.05% F.S. effect for 100 g's, 20ms shock in any axis

Response Time: Less than 5 ms

Position Effect: Less than 0.01% F.S.

ELECTRICAL SPECIFICATIONS

Output signal varies from 6-18mv/V at full scale, output proportional to supply voltage.

Excitation: 3-10 Vdc regulated

Supply Current: 1.4mA (nominal)

Zero Offset: ±3mV/Vdc

Bridge Resistance: 3500 ohms (nominal)

Circuit to Case Insulation Resistance:
100 M ohms @ 50 Vdc

PHYSICAL SPECIFICATIONS

Weight: 2 oz (approx. without cable F1 Type)

MATERIALS:

Socket: 300 series stainless steel

Cable: 4˝ polyethylene coated, 30 AWG or UL approved 36˝, shielded, vented cable (24 AWG)

Diaphragm: 17-4 PH stainless steel

Standard Process Connections:
(316 stainless steel)
1/8 NPT male or female
1/4 NPT male or female
1/4 SAE-J-514 (male)
1/4 AMINCO (female) required for pressures over 10,000 psi
Other connections available

DIMENSIONS:

FIG. 1
F2 Electrical Termination

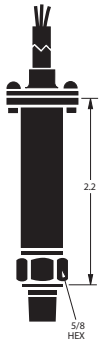


FIG. 2
F1 Electrical Termination

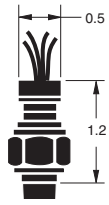
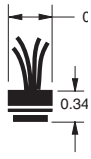


FIG. 3
F1 Electrical Termination



TO ORDER THIS TYPE K8 TRANSDUCER:

Select:

K 8 [ ] [ ][ ][ ] M V [ ] [ ][ ][ ][ ][ ]

1. **Type Configuration (K8)**
2. **Accuracy/TC**
   (3) 0.50%, ±0.014%/°F **(5)** 0.50%, ±0.028%/°F
   (7) 1.0%, ±0.040%/°F
3. **Pressure Connection**
   (M01) 1/8 NPT-M **(F01)** 1/8 NPT-F **(M02)** 1/4 NPT-M **(F02)** 1/4 NPT-F
   (MEK) 7/16-20 SAE-J-514 **(F09)** 9/16-18 UNF **(T01)** 1/4 Comp. Fit **(000)** None
4. **Sensitivity**
   (MV) mV/V
5. **Electrical Termination**
   (F1) 4˝ leads, see Fig. 2/3 for dimensions **(F2)** 36˝ shielded PVC jacketed cable, see Fig. 1 for dimensions
6. **Pressure Range**
   (45) 45 psi through **(20000)** 20,000 psi (see standard ranges).

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Type KX Flush Mount Thin Film Pressure Transducer/Transmitter For Pulp and Paper Applications

APPLICATIONS:
Pulp/paper, waste water, spray booths and all heavy medium pumping processes

BENEFITS & FEATURES:
- ***Available with PMC adapter (shown)***
- ***Flush-mounted integral 316 stainless steel diaphragm***
- ***Stainless steel NEMA 4X enclosure***
- ***Current/voltage output***

The Ashcroft® KX transmitter combines the proven benefits of polysilicon thin film performance with the utility of a flush-mounting sensing diaphragm. Modern low-pressure chemical vapor deposition methods provide simple, stable molecular bonds between a proven metal diaphragm and a polysilicon strain gage bridge. There are no epoxies or bonding agents to contribute to signal instability or drift.

The flush sensing element is provided by an integral, silicone filled stainless steel diaphragm seal. The small sensing area and low internal volume ensure accurate measurement under severe conditions.

The polysilicon strain resistors combine very low noise levels with very high signal output. There are no semiconductor (p-n) junctions to change with temperature, time or use. The integral metal diaphragm and polysilicon bridge are virtually unaffected by shock, vibration or mounting position.

These transmitters are offered in many standard pressure ranges with either current or voltage output signals. Transmitter performance is directly traceable to the National Institute of Standards and Technology and specifications are conservatively stated.

PERFORMANCE SPECIFICATIONS

Accuracy Class (Span):
Includes non-linearity, (Terminal Point Method), hysteresis, non-repeatability, zero offset and span setting errors) 1%
Best fit straight line (BFSL) ±0.75%

ENVIRONMENTAL SPECIFICATIONS

Temperature

Storage	–65/+250°F
Operating	–20/+180°F
Compensated	–20/+160°F

Thermal Coefficients: (68°F ref.) %F.S./°F
Standard:

ZERO	±0.04%
SPAN	±0.04%

Humidity:
No performance effect at 95% relative humidity – noncondensing

FUNCTIONAL SPECIFICATIONS

Standard Ranges (psi)

0/100	0/500	0/3000
0/150	0/750	0/5000
0/200	0/1000	
0/300	0/2000	

Consult factory for nonstandard ranges.

Overpressure: (F.S.)	0/100-0/2000	0/3000-0/5000
Proof	200%	150%
Burst	800%	300%

Vibration Sweep:
Less than ±0.1%F.S. effect for 0-400 Hz at 20 g's in any axis

Shock:
Less than ±0.1%F.S. effect for 20 g's 20ms shock in any axis

ELECTRICAL SPECIFICATIONS

Output Signal:
4-20mA (2 wire)
1-5 Vdc (3 wire)
1-6 Vdc (3 wire)

Power Requirements:
10-36 Vdc unregulated

Supply Current:
Less than 3mA for voltage output

Output Impedance: 100 ohms

Circuit to Case Insulation Resistance:
100 M ohms @ 50 Vdc

PHYSICAL SPECIFICATIONS

Enclosure: NEMA 4X

Weight:
10 oz (approx. without cable)

MATERIALS

Case: 300 series stainless steel

Connection: 316 stainless steel

Cable:
No. 24 AWG, 36 PVC, shielded, vented, UL approved

Diaphragm: 316Ti stainless steel

Standard Process Connection:
G-½ metric pipe thread*
O-ring seal (max. 150 psi)
½ NPT male pipe thread used in conjunction with XWB, XWC and XWE screw-on adapters

OPTIONS

Flush weldnut (XWB)
Recessed weldnut (XWC)
Weldnut plug (XWD)
Paper mill adapter (shown in photo) (XWE)
Halocarbon fill (XWG)

Warning: Sensitive Diaphragm

TO ORDER THIS TYPE KX TRANSDUCER/TRANSMITTER:

Select: K X 7 ☐☐☐ ☐☐ ☐☐ ☐☐☐☐☐ ☐☐☐

1. **Type Configuration (KX)**
2. **Accuracy**
   (7) 1.0%, ±0.04%/°F
3. **Pressure Connection**
   (MG4) G ½ **(RS1)** O-Ring Seal (max. 150 psi) **(M04)** ½ NPT M
4. **Output Signal**
   (15) 1/5 Vdc **(16)** 1/6 Vdc **(42)** 4-20mA
5. **Electrical Termination**
   (C1) ½ NPT-M Conduit w/36˝ cable **(DN)** 43650 connector **(RT)** ½ NPT with RTD Head (4-20mA only)
   (M1) DIN 43650 with mating connector G4WIF **(M2)** DIN 43650 with mating connector G4WIF w/36˝ cable
6. **Pressure Range**
7. **Optional X-Variations** (See above options)

*Mating connector available as necessary

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Type KS Thin Film Pressure Transducer/Transmitter For Sanitary Applications

APPLICATIONS:

Dairy, food, pharmaceutical and any 3A sanitary application

BENEFITS & FEATURES:

- ***316L stainless steel electropolished (1½″-2″) Tri-Clamp® style diaphragm***
- ***Vac.-1000 psi pressure range***
- ***Stainless steel NEMA 4X enclosure***
- ***Superior long-term stability and repeatability***
- ***Current/voltage/millivolt output***
- ***Wide range of electrical connections available***
- ***All-welded construction***

Ashcroft® combines the proven polysilicon thin film technology with its longtime know-how of diaphragm seals to create the KS sanitary pressure transmitter. The all-welded stainless steel construction meets the 3A Sanitary Standard 74-02.

The KS Sanitary Pressure Transmitter features the benefits of polysilicon thin film performance at an affordable price. Modern chemical vapor disposition methods provide simple, stable, molecular bonds between a proven metal diaphragm and polysilicon strain gage bridge. There are no epoxies or bonding agents to contribute to signal instability or drift.

The integral metal diaphragm and polysilicon bridge are virtually unaffected by shock, vibration or mounting position.

PERFORMANCE SPECIFICATIONS

Accuracy Class (Span):
Includes non-linearity, (Terminal Point Method), hysteresis, non-repeatability, zero offset and span setting errors) 1%

Best fit straight line (BFSL) ±0.75%

ENVIRONMENTAL SPECIFICATIONS

Temperature

Storage	–65/+250°F	(–54 to +120°C)
Operating	–20/+180°F	(–28 to +82°C)
Compensated	+30/+130°F	(0 to +50°C)

Thermal Coefficients: (68°F (20°C) ref.) % Span/°F
Standard:

ZERO	±0.04%
SPAN	±0.04%

Humidity:
No performance effect at 95% relative humidity – noncondensing

FUNCTIONAL SPECIFICATIONS

Standard Ranges (psi)

0/30*†	0/300†	vac./30*†
0/60*†	0/500	vac./60*†
0/100†	0/750	vac./100†
0/150†	0/1000	
0/200†		

Consult factory for nonstandard ranges.

*T/C multiply by 1.5 times.
†NEMA 4X only with F2 and C1 electrical connections.

Overpressure: (F.S.)

Proof	200%
Burst	800%

Vibration Sweep:
Less than ±0.1%F.S. effect for 0-2000 Hz at 20 g's in any axis

Shock:
Less than ±0.05%F.S. effect for 100 g's, 20ms shock in any axis

Position Effect: Less than 0.01% F.S.

ELECTRICAL SPECIFICATIONS

Transmitter Output Signal:
4-20mA (2 wire)
1-5 Vdc (3 wire)
1-6 Vdc (3 wire)

Supply Current:
Less than 3mA for voltage output

Power Requirements:
10-36 Vdc unregulated
Reverse polarity protected

Transducer Output Signal:
2m V/V ratiometric
3m V/V ratiometric
10m V/V ratiometric
20m V/V ratiometric

Power Requirements: 5-10 Vdc regulated

Circuit to Case Insulation Resistance:
100 M ohms @ 50 Vdc

PHYSICAL SPECIFICATIONS

Enclosure: NEMA 4X

Weight:
13.5 oz (approx. without cable)

MATERIALS

Case: 300 series stainless steel

Cable:
No. 24 AWG, 36″ PVC, shielded, vented, UL approved

Diaphragm: 316L stainless steel

Standard Process Connections:
316L stainless steel electropolished Tri-Clamp® style 1½″, 2″

Fill: USP grade 99.5% glycerin fill, contact factory for other fill fluids

Consult factory for pricing, availability and required minimums for nonstandard products.

WARNING! Sensitive Diaphragm!

TO ORDER THIS TYPE KS TRANSDUCER/TRANSMITTER:

Select: KS 7 ☐☐☐ ☐☐ ☐☐ ☐☐☐☐☐

1. Type Configuration (KS)

2. Accuracy/TC
(7) 1.0%, ±0.040%/°F

3. Sanitary Seal
(S15) 1½ inch Sanitary Connection **(S20)** 2 inch Sanitary Connection

4. Output Signal
(42) 4-20mA **(16)** 1/6 Vdc **(15)** 1/5 Vdc **(02)** 2mV/V
(03) 3mV/V **(10)** 10mV/V **(20)** 20mV/V

5. Electrical Termination
(F2) 36″ cable, shielded, PVC sheathing **(B4)** Bendix 4-pin # PT02A-8-4P*
(B6) Bendix 6-pin # PT02A-10-6P* **(B8)** WP Bendix 4-pin # PT02E-8-4P*
(B9) WP Bendix 6-pin # PT02E-10-6P* **(C1)** 1/2 NPT-M Conduit w/36″ cable **(HM)** Hirschman miniature

6. Pressure Range
(Vac./30) vac./30 through **(1000)** 1000 psi (see standard ranges).

*Mating connector available as necessary

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

CXLdp Differential Pressure Transmitter

APPLICATIONS

Static or velocity pressure measurement for four stations, ducts, building pressure, filter efficiency, VAV boxes or room pressurization

EXCLUSIVE CXLdp FEATURES:

- ***Rugged ABS package capable of DIN rail or standard panel mounting***
- ***LED power status indicator to assist in trouble shooting, correct wiring or quickly locating the instrument on a duct***
- ***Detachable Euro style terminal block reduces wiring errors and field wiring time***
- ***20 standard pressure ranges all capable of withstanding 15 psi without damage or calibration change***
- ***Digitally compensated. NIST traceable 0.4% F.S. and 0.8% F.S. accuracy models***

The Ashcroft® CXLdp transmitter uses the patented Ashcroft Si-Glas™ variable capacitance sensor. This MEMS sensor provides extraordinary sensitivity and long term stability. New digital compensation is accomplished using a highly reliable application specific integrated circuit (ASIC).

PERFORMANCE SPECIFICATIONS

Accuracy Class (F.S.): ±0.8% ±0.4%
Accuracy includes the effects of linearity, hysteresis and repeatability
Stability – Max. Change (F.S./year): ±0.25% ±0.25%
Standard Ranges (Inches W.C.)
Unidirectional Ranges:
Differential

0/0.1	0/1.0	0/5.0
0/0.25	0/2.0	0/10.0
0/0.5	0/2.5	0/15.0
0/0.75	0/3.0	0/25.0

Bidirectional Ranges:
Compound

±0.1		±5.0
±0.25	±1.0	±10.0
±0.5	±2.0	±15.0

Response Time: 250 msec

ENVIRONMENTAL SPECIFICATIONS

Temperature Limits:
Storage –40 to 180°F
Operating +0 to 160°F
Compensated Range +35 to 130°F
(10-95% R.H. non-condensing)
Temperature Coefficients:
Zero & Span ±0.03%F.S./°F
EMC: CE Compliant to EN61326: 1997+A1: 1998+A2: 2001 Annex A (Heavy Industrial)

FUNCTIONAL SPECIFICATIONS

Overpressure Limits:

Proof Pressure	15 psi
Burst Pressure	25 psi

Mounting Position Effect: ±1% /g (lowest range)
Note: Calibration in vertical position is standard.

ELECTRICAL SPECIFICATIONS

Output Signal: 4-20mA (2 wire)
Power: 12-36 Vdc (unregulated)
Output signal is independent of power supply changes
Reverse Wiring Protected
Zero and Span Adjustment:
Externally accessible
Zero: ±5%F.S.
Span: ±5%F.S.

PHYSICAL SPECIFICATIONS

Pressure Connections:
¼˝ brass barbed fittings
⅛ NPT Female brass
Electrical Connection: Euro style pluggable terminal block accepts 12-26 gauge wire

Enclosure: NEMA Type 1 Fire-retardant ABS (meets UL 94-5VA)
LED visual indicator standard
Weight: Approx. 2.5 oz
Media: Clean, dry and non-corrosive gas
Mounting: Threaded fastener and 35mm DIN rail mount standard
Option: ½˝ plenum/conduit mounting bracket and cover kit (order part #101A213-01)
XRH: (9 point NIST Calibration Certification)

HOW TO ORDER THIS CXLdp TRANSDUCER/TRANSMITTER:

Select:

C X

1. **Type Configuration (CXLdp)**
2. **Accuracy/TC**
   (8) 0.8%, ±0.03%/°F
   (4) 0.4%, ±0.03%/°F
3. **Pressure Connection**
   (MB2) ¼ Barbed Male
   (FO1) ⅛ NPT Female
4. **Output Signal**
   (42) 4-20mA
5. **Pressure Range**
   Diff. or Gauge: (P1IW) 0.10˝W.C. **(P25IW)** 0.25˝W.C. **(P5IW)** 0.50˝W.C. **(P75IW)** 0.75˝W.C. **(1IW)** 1.00˝W.C. **(2IW)** 2.00˝W.C. **(2P5IW)** 2.50˝W.C. **(3IW)** 3.00˝W.C. **(5IW)** 5.00˝W.C. **(10IW)** 10.00˝W.C. **(15IW)** 15.00˝W.C. **(25IW)** 25.00˝W.C.
   Compound: (P1WL) ±0.10˝W.C. **(P25IWL)** ±0.25˝W.C. **(P5IWL)** ±0.5˝W.C. **(1IWL)** ±1.0˝W.C. **(2IWL)** ±2.0˝W.C. **(5IWL)** ±5.00˝W.C. **(10IWL)** ±10.00˝W.C. **(15IWL)** ±15.00˝W.C.

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

DXLdp Low Pressure Differential Transducer/Transmitter

APPLICATIONS:
High reliability HVAC, bio-pharm, bio-tech, room pressurization and control, velocity pressure

BENEFITS AND FEATURES:

- ***The exclusive patented Ashcroft® SpoolCal™ actuator provides in-place system calibration without disturbing process tubes***
- ***Front access test jacks provide on-line signal reference without removing wiring***
- ***LED range status indicators for instant troubleshooting information***
- ***DIN Rail Mount – dramatically reduces installation and calibration costs***
- ***2:1 range turndown options***
- ***CE standard with all outputs***
- ***On-board voltage regulation allows use of lower cost, unregulated power supply***

The Ashcroft® DXLdp is a variable capacitance sensor within a glass-clad silicon chip. The patented Si-Glas™ tech-nology combines the inherent high sensitivity of a variable capacitance transducer with the repeatability of a micro-machined, ultra-thin silicon diaphragm.

The Ashcroft Si-Glas sensor enables precise measurement and control of very low pressure. Although the ultra-thin silicon diaphragm deflects only a micron, the sensor is 100 times more sensitive to pressure than available silicon piezo-resistive pressure sensors.

The Si-Glas sensor is composed of only sputtered metals and glass molecularly bonded to silicon. There are no epoxies or other organics in the sensor to contribute to drift or mechanical degradation over time. The glass-clad silicon diaphragm withstands extreme overpressure as well as severe shock and vibration.

PERFORMANCE SPECIFICATIONS

Accuracy Class (F.S.): 0.25% 0.5% 1.0%

Non-linearity			
Best fit straight line (BFSL)	±0.15	±0.3%	±0.6%
Hysteresis	±0.02	±0.02%	±0.05%
Non-repeatability	±0.03	±0.05%	±0.10%

Stability – Max. Change (F.S./year): ±0.25%
Standard Ranges (Inches W.C.)
Unidirectional Ranges:
Differential or Gauge

0/0.1	0/1.0	0/3.0	0/20.0
0/0.25	0/1.5	0/5.0	0/25.0
0/0.5	0/2.0	0/10.0	0/50.0
0/0.75	0/2.5	0/15.0	

Bidirectional Ranges:
Compound

±0.05	±0.5	±2.0	±5.0
±0.1	±0.75	±2.5	±10.0
±0.25	±1.0	±3.0	±25.0

Custom Ranges: Special range calibration, (XCL) – Consult factory

Standard Response Time: 250m sec
(Consult factory for optional damping times)

ENVIRONMENTAL SPECIFICATIONS

Temperature Limits:
Storage: –40 to 180°F
Operating: –20 to 160°F
(10-95% R.H. noncondensing)
Compensated Range: +35 to 135°F

Thermal Coefficients:
ZERO ±0.02%F.S./°F
SPAN ±0.02%F.S./°F

FUNCTIONAL SPECIFICATIONS

Overpressure Limits:
Proof 15 psid
Burst 25 psi
Max. Static Line Pressure: 25 psi

Mounting Position Effect:
0.5˝W.C. and higher 0.1% F.S./g
Below 0.5˝W.C. 0.25% F.S/g.

Note: Mounting Position Effect easily corrected with zero potentiometer.

ELECTRICAL SPECIFICATIONS

Output Signal:	**Power:**
4-20mA (2 wire)	12-36 Vdc
1-5 Vdc	12-36 Vdc
1-6 Vdc	12-36 Vdc
0-5 Vdc	12-36 Vdc
0-10 Vdc	12-36 Vdc

Output signal is independent of power supply changes:
12-36 Vdc range without effect on output signal
Reverse Wiring Protected
Zero and Span Potentiometers:
Front accessible, non-interactive
Zero: ±5%F.S. Span: ±3%F.S.
Supply Current: < 10mA for voltage
Warm-up Time: 5 sec. max. to meet stated specifications from initial power-up

PHYSICAL SPECIFICATIONS

Pressure Connections: ⅛ NPT Female
Weight: 4.5 oz., NEMA 1 Case
MATERIALS:
Enclosure: Glass-filled polycarbonate (UL94-V-1)
Media: Clean, dry and non-corrosive gas (consult factory for use on other media).
NOT FOR USE ON LIQUIDS
Mounting: DIN rail types EN50022, 35 & 45

OPTIONS

- **Option XDL:**
  LED for quick process diagnostics:
  Zero Pressure.....Center Amber LED
  In Range ± .....Adjacent Green LED's
  Out of Range ± .....Adjacent Red LED's
  Includes: front access test jacks for on-line data access without disturbing wiring
- **Option XNL:** Front access jacks without LED's
- **Option XPV:** SpoolCal™ process valve actuator provides in-place system calibration without disturbing process tubes. From Off position the removable SpoolCal™ actuator tool provides the following functions:
  - A 90 degree clockwise rotation puts the DXLdp in the CAL mode isolating it from the process and allowing direct external pressure input
  - A 90 degree counter clockwise rotation puts the DXLdp in the MONITOR mode to tee the process pressure to the DXLdp sensor and out, providing external measurement or recording capabilities. Includes SpoolCal™ actuator tool with 7˝ silicon tubing (as shown in front photo). (Refer to Ashcroft® ATE series calibrator for data collection and instrumentation)
- **Option X21:** 2:1 turn down, 0.25% accuracy is maintained on initialized range
- **Option XCL:** Special range calibration

HOW TO ORDER THIS DXLdp TRANSDUCER/TRANSMITTER:

Select: D X | | F 0 1 | | | S T | | | | | | | X | |

1. **Type Configuration (DXLdp)**
2. **Accuracy/TC**
   (3) 0.25%, ±0.02%/°F **(5)** 0.50%, ±0.02%/°F
3. **Pressure Connection**
   (F01) ⅛ NPT Female
4. **Output Signal**
   (05) 0/5 Vdc **(10)** 0/10 Vdc **(15)** 1/5 Vdc **(16)** 1/6 Vdc **(42)** 4-20mA
5. **Output Connection**
   (ST) Screw Terminal
6. **Pressure Range**
   Diff. or Gauge: (P1IW) 0.10˝W.C. **(P25IW)** 0.25˝W.C. **(P5IW)** 0.50˝W.C. **(P75IW)** 0.75˝W.C. **(1IW)** 1.00˝W.C. **(1P5IW)** 1.5˝W.C. **(2IW)** 2.00˝W.C. **(2P5IW)** 2.50˝W.C. **(2IW)** 2.00˝W.C. **(3IW)** 3.00˝W.C. **(5IW)** 5.00˝W.C. **(10IW)** 10.00˝W.C. **(25IW)** 25.00˝W.C. **(50IW)** 50.00˝W.C.
   Compound: (P05WL) ±0.05˝W.C. **(P1WL)** ±0.10˝W.C. **(P25IWL)** ±0.25˝W.C. **(P5IWL)** ±0.5˝W.C. **(P75IWL)** ±0.75˝W.C. **(1IWL)** ±1.0˝W.C. **(2IWL)** ±2.0˝W.C. **(2P5IWL)** ±2.5˝W.C. **(5IWL)** ±5.00˝W.C. **(10IWL)** ±10.00˝W.C. **(25IWL)** ±25.00˝W.C.
7. **Optional X-Variation**
   (XLD) LED **(XPV)** Process Valve Actuator **(X21)** 2:1 Turn Down **(XNL)** Test Jacks **(XCL)** Special Range Calibration

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

RXLdp Differential Pressure Transmitter

APPLICATIONS:
HVAC, fume hood control, lab/clean room pressurization, laminar flow, leak detection, medical, fan tracking, glovebox and velocity measurements

FEATURES:

- ***0.1″-50″-H_2O pressure ranges***
- ***CE approval***
- ***High overpressure protection***
- ***Stainless steel & Lexan NEMA 1 construction***
- ***Five types of output signals available***
- ***Mounts inside standard 3½″ electrical box***
- ***Board level OEM versions available***
- ***On-board voltage regulation allows use of lower cost unregulated power supply***

The Ashcroft® RXLdp transmitter introduces a variable-capacitance sensor using a glass-clad silicon chip. The patented Si-Glas™ technology combines the inherent high sensitivity of a variable capacitance transducer with the repeatability of a micro-machined, ultra-thin single crystal silicon diaphragm.

The Ashcroft Si-Glas sensor enables precise measurement and control of very low pressure. Although the ultra-thin silicon diaphragm deflects only a micron, the sensor is 100 times more sensitive to pressure than available silicon piezo-resistive pressure sensors.

The Si-Glas sensor is composed of sputtered metals and glass molecularly bonded to silicon. There are no epoxies or other organics in the sensor to contribute to drift or mechanical degradation over time.

PERFORMANCE SPECIFICATIONS

Accuracy Class (F.S.): 1%
Non-linearity
Best fit straight line (BFSL) ±0.6%
Hysteresis ±0.05%
Non-repeatability ±0.10%

Stability – Max. Change (F.S./year): ±0.5 %

Standard Ranges (Inches W.C.)

Unidirectional Ranges:
Differential or Gauge

0/0.1	0/1.0	0/3.0	0/50.0
0/0.25	0/1.5	0/5.0	
0/0.5	0/2.0	0/10.0	
0/0.75	0/2.5	0/25.0	

Bidirectional Ranges:
Compound

±0.05	±0.5	±5.0
±0.1	±1.0	±10.0
±0.25	±2.5	±25.0

Custom Ranges: Special range calibration, (XCL) – Consult factory
Response Time Standard: 250ms (factory set) (Consult factory for damping options)

ENVIRONMENTAL SPECIFICATIONS

Temperature Limits:
Storage: –40 to 180°F
Operating: 0 to 160°F
(10-95% R.H. noncondensing)
Compensated Range: 40 to 125°F

Thermal Coefficients:
ZERO ±0.025%F.S./°F
SPAN ±0.025%F.S./°F

Vibration Sweep:
Less than ±0.05%F.S. temporary effect with 5 g's 0-60Hz

EMC: CE model compliant to EN61326: 1997 Annex A. Harmonized heavy industrial transmitter specification

FUNCTIONAL SPECIFICATIONS

Overpressure Limits:
Proof 15 psid
Burst 25 psi
Max. Static Line Pressure: 25 psi

Mounting Position Effect:
0.5″ W.C. and higher 0.1% F.S./g
Below 0.5″ W.C. 0.25% F.S./g
Note: Calibrated horizontally standard, unless otherwise specified. Mounting Position Effect easily corrected with zero potentiometer.

ELECTRICAL SPECIFICATIONS

Output Signal:	**Power:**
4-20mA* (2 wire)	12-36 Vdc
1-5 Vdc	12-36 Vdc
1-6 Vdc	12-36 Vdc
0-5 Vdc	12-36 Vdc
0-10 Vdc	12-36 Vdc

*Optional CE versions available

Output signal is independent of power supply changes:
12-36 Vdc range without effect on output signal

Reverse Wiring Protected

Zero Span Potentiometers: Externally accessible; non-interactive

ZERO	±5%F.S.
SPAN	±3%F.S.

Supply Current: <6mA for voltage output

Warm-up Time:
Five seconds max. to meet stated specifications

PHYSICAL SPECIFICATIONS

Pressure Connections:
Stainless steel ⅛ NPF, ¼″ and ⅛″ barbed connection

Electrical Connections: Terminal strip

Weight: 4.5 oz, NEMA 1 Case

MATERIALS:

Case/Cap: Stainless steel/Lexan

Media: Clean, dry and noncorrosive gas (consult factory for use on other media)
NOT FOR USE ON LIQUIDS

OPTIONS

- (XRK) Back plate adapter
- (XRH) Calibration report
- (XCL) Custom calibration
  Follow part number with XRK, XCL or XRH when ordering, additional charge, see price list
- (XCE) CE compliant 4-20mA only

NOTES:

- Consult factory on other pressure range, temperature compensation, packaging variations or response times available

TO ORDER THIS TYPE RXLdp TRANSDUCER/TRANSMITTER:

R	X	7					S	T									

Select:

1. **Type Configuration (RXLdp)**
2. **Accuracy/TC**
   (7) 1.0%, ±0.025%/°F
3. **Pressure Connection**
   (MB2) ¼ Barbed **(MB1)** No Case OEM Option **(MB8)** ⅛ Barbed **(FO1)** ⅛ FNPT
4. **Output Signal**
   (05) 0/5 Vdc **(10)** 0/10 Vdc **(15)** 1/5 Vdc **(16)** 1/6 Vdc **(42)** 4-20mA
5. **Output Connection**
   (ST) Screw Terminal
6. **Pressure Range**
   Diff. or Gauge: (P1IW) 0.10″W.C. **(P25IW)** 0.25″W.C. **(P5IW)** 0.50″W.C. **(P75IW)** 0.75″W.C. **(1IW)** 1.00″W.C. **(1P5IW)** 1.5″W.C. **(2IW)** 2.00″W.C. **(2P5IW)** 2.50″W.C. **(2IW)** 2.00″W.C. **(3IW)** 3.00″W.C. **(5IW)** 5.00″W.C. **(10IW)** 10.00″W.C. **(25IW)** 25.00″W.C. **(50IW)** 50.00″W.C.
   Compound: (P1WL) ±0.10″W.C. **(P25IWL)** ±0.25″W.C. **(P5IWL)** ±0.5″W.C. **(1IWL)** ±1.0″W.C. **(2P5IWL)** ±2.5″W.C. **(5IWL)** ±5.00″W.C. **(10IWL)** ±10.00″W.C. **(25IWL)** ±25.00″W.C.
7. **Optional X-Variation**
   (XRK) Back Plate Adapter **(XRH)** Calibration Report **(XCE)** CE Approval Option (Includes all options in list)

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Type XLdp – Ultra-Low Variable Capacitance Pressure Transducer/Transmitter

APPLICATIONS:
HVAC, fume hood control, lab/clean/hospital room pressurization, medical lung function or breathing equipment, fan tracking, filter monitoring, or very low velocity measurements

FEATURES:
- ***Certified 0.25% and 0.5% accuracy***
- ***0.1″-50″-H_2O pressure ranges***
- ***CE approved***
- ***High overpressure protection***
- ***NEMA 2 stainless steel construction***
- ***Three output signals available***
- ***Easy installation***
- ***On-board voltage regulation allows use of lower cost, non-precise, unregulated power supply***
- ***9 point NIST Traceable Calibration Certificate***

The Ashcroft® XLdp is a variable capacitance sensor within a glass-clad silicon chip. The patented Si-Glas™ technology combines the inherent high sensitivity of a variable capacitance transducer with the repeatability of a micro-machined, ultra-thin silicon diaphragm.

The Ashcroft Si-Glas sensor enables precise measurement and control of very low pressure. Although the ultra-thin silicon diaphragm deflects only a micron, the sensor is 100 times more sensitive to pressure than available silicon piezo-resistive pressure sensors.

The Si-Glas sensor is composed of only sputtered metals and glass molecularly bonded to silicon. There

are no epoxies or other organics in the sensor to contribute to drift or mechanical degradation over time. The glass-clad silicon diaphragm withstands extreme overpressure as well as severe shock and vibration.

PERFORMANCE SPECIFICATIONS

Accuracy Class (F.S.):	**0.25%**	**0.50%**
Non-linearity		
Best fit straight line (BFSL)	±0.15%	±0.3%
Hysteresis	±0.02%	±0.02%
Non-repeatability	±0.03%	±0.05%

Stability – Max. Change (F.S./year): ±0.25 %
Standard Ranges (Inches W.C.)
Unidirectional Ranges:
Differential or Gauge

0/0.1	0/1.0	0/3.0	0/25.0
0/0.25	0/1.5	0/5.0	0/50.0
0/0.5	0/2.0	0/10.0	
0/0.75	0/2.5	0/15.0	

Bidirectional Ranges:
Compound

±0.05	±1.0	±5.0
±0.1	±2.0	±10.0
±0.25	±2.5	±25.0
±0.5	±3.0	

Custom Ranges: Special range calibrations (XCL) – consult factory
Standard Response Time: 250msec (Consult factory for damping options)

ENVIRONMENTAL SPECIFICATIONS

Temperature Limits:

Storage:	–40 to 180°F
Operating:	–20 to 160°F
(10-95% R.H. non-condensing)	
Compensated Range:	+35 to 135°F

Thermal Coefficients:

ZERO	±0.015% F.S./°F
SPAN	±0.015% F.S./°F

Vibration Sweep: Less than 0.05% F.S. temporary effect with 5 g's 0-60 Hz
EMC: CE model compliant to EN61326: 1997 Annex A. Harmonized heavy industrial transmitter specification

FUNCTIONAL SPECIFICATIONS

Overpressure Limits:

Proof	15 psid
Burst	25 psi
Max. static line pressure	25 psi

Mounting Position Effect:

0.5″ W.C. and higher	± 0.10% F.S./g
0.25″ W.C.	± 0.25% F.S./g
0.1″ W.C.	± 0.50% F.S./g

Note: Calibrated horizontally standard unless otherwise specified. Mounting Position Effect easily corrected with zero potentiometer.

ELECTRICAL SPECIFICATIONS

Output Signal:	**Power:**
4-20mA (2 wire)*	12-36 Vdc
1-5 Vdc (3 wire)	12-36 Vdc
1-6 Vdc (3 wire)	12-36 Vdc

*Optional CE version
Output Signal is Independent at Power Supply Changes: 12-36 Vdc range without effect on output signal
Reverse Wiring Protected
Zero and Span Potentiometers: Externally accessible, non-interactive, ±10% F.S. adjustment
Supply Current: <6mA for voltage output
Warm-up Time: 5 seconds max. to meet stated specifications

PHYSICAL SPECIFICATIONS

Pressure Connections: 1/4″ barbed stainless steel
1/8″ barbed stainless steel (optional)
1/4 NPT female stainless steel (optional)
Electrical Connections: Teminal strip
Weight: 14 oz, NEMA 2 Case
MATERIALS:
Case: 300 series stainless steel
Media: Clean, dry, non-corrosive gas (consult factory for use on other media)
DO NOT USE ON LIQUIDS
NOTES:
- Consult factory for use with media other than air or nonconducting gases
- Calibration curve (0.25%) or data (0.50%) supplied with each transmitter
- Consult factory on other pressure range, temperature compensation or packaging variations

OPTIONS

- (XCL) Custom calibration
- (XCE) CE compliant 4-20mA only
- (XV9) Calibrated vertically
- (XX1) – Fast response time 5 msec.
- (XX2) – Slow response time 1 sec.

NOTES:
- Consult factory for additional options including pressure ranges, temperature compensation, packaging variations and signal response time.

TO ORDER THIS TYPE XLdp TRANSDUCER/TRANSMITTER:

X	L							S	T										

Select:
1. **Type Configuration (XLdp)**
2. **Accuracy % F.S.**
   (3) 0.25%, ±0.015%/°F **(5)** 0.50%, ±0.015%/°F
3. **Pressure Connection**
   (F02) 1/4 NPTF **(MB2)** 1/4 Barbed **(MB8)** 1/8 Barbed
4. **Output Signal**
   (15) 1-5 Vdc **(16)** 1-6 Vdc **(42)** 4-20mA
5. **Output Connection**
   (ST) Screw Terminal
6. **Pressure Range**
   Diff. or Gauge: (P1IW) 0.10″W.C. **(P25IW)** 0.25″W.C. **(P5IW)** 0.50″W.C. **(P75IW)** 0.75″W.C. **(1IW)** 1.00″W.C. **(1P5IW)** 1.50″W.C. **(2IW)** 2.00″W.C. **(2P5IW)** 2.50″W.C. **(3IW)** 3.00″W.C. **(5IW)** 5.00″W.C. **(10IW)** 10.00″W.C. **(15IW)** 15.00″W.C. **(25IW)** 25.00″W.C. **(50IW)** 50.00″W.C.
   Compound: (PO5IWL) ±0.05″W.C. **(P1IWL)** ±0.10″W.C. **(P25IWL)** ±0.25″W.C. **(P5IWL)** ±0.50″W.C. **(1IWL)** ±1.00″W.C. **(2PIWL)** ±2.00″W.C. **(2P5IWL)** ±2.50″W.C. **(3IWL)** ±3.00″W.C. **(5IWL)** ±5.00″W.C. **(10IWL)** ±10.00″W.C. **(25IWL)** ±25.00″W.C.
7. **Optional X-Variations (XCE)** CE Approval Option (Includes all options in list)

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Industrial IXLdp Ultra-Low Variable Capacitance Pressure Transmitter

APPLICATIONS:
HVAC, fume hood control, lab/clean room pressurization, laminar flow, furnace/stack draft, leak detection, or pollution monitoring, medical equipment, fan tracking, filter monitoring and velocity measurements

BENEFITS & FEATURES:
- ***Certified 0.25% and 0.5% accuracy***
- ***0.1″-200″-H_2O pressure ranges***
- ***High overload protection***
- ***FM approved for hazardous locations***
- ***NEMA 4X metal construction***
- ***Six types of output signals available***
- ***5:1 turndown option***
- ***Variable dampening option***
- ***On-board voltage regulation allows use of lower cost, non-precise, unregulated power supply***
- ***Hazardous environments***

The Ashcroft® Industrial IXLdp was designed for the measurement and control of very low pressure and flow in industrial and process plant environments. The Industrial IXLdp transmitter features a rugged NEMA 4X enclosure, built-in electrical terminal box isolated from the electronics and threaded process connections.

The Ashcroft IXLdp transmitter utilizes a state-of-the-art variable capacitance sensor with a glass-clad silicon chip. The Si-Glas™ technology combines the inherent high sensitivity of a variable capacitance transducer with the repeatability of a micro-machined, single-crystal silicon diaphragm.

The Si-Glas sensor is composed of sputtered metals and glass molecularly bonded to silicon. There are no epoxies or other organics in the sensor to contribute to drift or mechanical degradation over time.

PERFORMANCE SPECIFICATIONS

Accuracy Class (F.S.):	0.25%	0.50%
Non-linearity		
Terminal point	±0.2%	±0.4%
Best fit straight line (BFSL)	±0.15%	±0.3%
Hysteresis	±0.02%	±0.02%
Non-repeatability	±0.03%	±0.05%

Stability – Max. Change (F.S./year): ±0.25 %
Standard Ranges (Inches W.C.)
Unidirectional Ranges:

Differential or Gauge			
0/0.1	0/2.0	0/10	0/50
0/0.25	0/2.5	0/15	0/100
0/0.50	0/3.0	0/20	0/150
0/1.0	0/5.0	0/25	0/200

Bidirectional Ranges:

Compound			
±0.05	±0.5	± 5.0	± 25.0
±0.10	±1.0	±10.0	± 50.0
±0.20	±2.0	±15.0	±100.0
±0.25	±2.5	±20.0	

Custom Ranges: Special range calibrations (XCL) – consult factory
Response Time: Standard: 250ms
(Consult factory for damping options)
Optional variable damping (0-30 sec) (X1D)

ENVIRONMENTAL SPECIFICATIONS

Temperature Limits:
Storage: –40 to 210°F
Operating: –20 to 185°F (0-95% relative humidity)
Compensated: 0 to 160°F
Thermal Coefficients:

	0.25% Acc.	0.5% Acc.
ZERO	±0.01%F.S./°F	±0.02%F.S./°F
SPAN	±0.01%F.S./°F	±0.02%F.S./°F

Vibration Sweep:
Less than 0.2%F.S./g temporary effect 10-130 Hz

FUNCTIONAL SPECIFICATIONS

Overpressure Limits:
Proof: 20 psid
Burst differential pressure: 50 psid
Maximum static (line) pressure: 100 psi
Static pressure effect: less than 0.5% F.S.
Mounting Position Effect:

1″W.C. and higher	0.1% F.S./g
0.25″ up to 0.5” W.C.	0.5% F.S./g
0.1″W.C.	0.8% F.S./g

Note: Calibrated horizontally standard unless otherwise specified. Mounting Position Effect easily corrected with zero potentiometer.

ELECTRICAL SPECIFICATIONS

Output Signal:
Current: 4-20mA two wire current loop
Voltage: All voltage outputs are 3 wire

0-5 Vdc	1-6 Vdc	±5 Vdc
1-5 Vdc	±2.5 Vdc	

Output Signal is Independent of Power Supply Changes: 12-36 Vdc range without effect on output signal
Reverse Wiring Protected
Internal Zero and Span: ±10% F.S. Adjustment
Supply Current: 2.6mA typical for voltage output
Warm-up Time:
Full specification: Less than one second
Fast Response, Turndown & Variable Damping Optional

PHYSICAL SPECIFICATIONS

Enclosure:
NEMA 4X, 300 series stainless steel
Process Connections: Two ¼ NPT female
Electrical Connections: Two ½″ female electrical conduit connections isolated from the electronics. Separate access cover for terminal connections
Media: Clean, dry and noncorrosive gas (consult factory for use on other media)
NOT FOR USE ON LIQUIDS

OPTIONS

(XX1) – Fast Response: 8 ms
(X41) – 5:1 Turndown
(X1D) – Variable dampening (0-30 sec.)
(XNH) – Paper tag
(XCL) – Custom pressure range calibration
(XFM) – FM approval

- Consult factory on other pressure range, temperature compensation, packaging variations or response times

Factory Mutual (FM) approvals intrinsically safe for use in:
Class I, Div. 2, Groups A, B, C, D
Class II, Div. 1, Groups E, F, G
Class III, Div. 1, when wired in accordance with Dresser drawings 71B241 (1-3)
FM option cannot be combined with options X41 or X1D.

TO ORDER THIS TYPE IXLdp TRANSDUCER/TRANSMITTER:

I	X		F	0	2			S	T							X	F	M

Select:
1. **Type Configuration (XLdp)**
2. **Accuracy/TC**
   (3) 0.25%, ±0.01%/°F **(5)** 0.50%, ±0.02%/°F
3. **Pressure Connection**
   (F02) ¼ NPT-Female
4. **Output Signal**
   (05) 0/5 Vdc **(15)** 1/5 Vdc **(16)** 1/6 Vdc **(25)** ±2.5 Vdc **(50)** ±5.0 Vdc **(42)** 4-20mA
5. **Electrical Terminal**
   (ST) Screw Termination
6. **Pressure Range**
   Diff. or Gauge: (P1IW) 0.10″W.C. **(P25IW)** 0.25″W.C. **(P5IW)** 0.50″W.C. **(1IW)** 1.00″W.C. **(2IW)** 2.00″W.C. **(2P5IW)** 2.50″W.C. **(3IW)** 3.00″W.C. **(5IW)** 5.00″W.C. **(10IW)** 10.00″W.C. **(15IW)** 15.00″W.C. **(20IW)** 20.00″W.C. **(25IW)** 25.00″W.C. **(50IW)** 50.00″W.C. **(100IW)** 100.00″W.C. **(150IW)** 150.00″W.C. **(200IW)** 200.00″W.C.
   Compound: (P05IWL) ±0.05″W.C. **(P1IWL)** ±0.10″W.C. **(P2IWL)** ±0.20″W.C. **(P25IWL)** ±0.25″W.C. **(P5IWL)** ±0.5″W.C. **(1IWL)** ±1.00″W.C. **(2IWL)** ±2.00″W.C. **(2P5IWL)** ±2.50″W.C. **(3IWL)** ±3.00″W.C. **(5IWL)** ±5.00″W.C. **(10IWL)** ±10.0″W.C. **(15IWL)** ±15.00″W.C. **(20IWL)** ±20.00″W.C. **(25IWL)** ±25.00″W.C. **(50IWL)** ±50.00″W.C. **(100IWL)** ±100.00″W.C.
7. **Optional X-Variation (XFM)** FM Approval Option (Includes all options in list)

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Duratran® Transmitter Type 2279, ASME B 40.1 Grade 2A (±0.5% of span)

Duratran® Transmitter/Gauge, takes the place of an electronic transmitter and a mechanical gauge

- ***FM approved to 10,000 psi***
- ***4-20mA, 2 wire output***
- ***Zero and span adjustments***
- ***4½″ solid-front phenolic case***
- ***Accuracy: ±0.5% full scale including linearity, hysteresis and repeatability***

New Duratran®PLUS! Option:

- ***Liquid-filled performance in a dry gauge***
- ***Fights vibration and pulsations without liquid-filled headaches***
- ***See page 10 for details***
- ***Order as option XLL***

The result is reliable, local, analog pressure indication with an economical transmitter . . . A niche solution for any facility.

The Duratran® solution is a reliable Duragauge® pressure gauge fitted with optical circuitry to provide a 4-20mA output.

The 4½″ phenolic case is hermetically sealed, chemical and heat resistant.

The wide selection of system materials and corrosion-proof housing meets a variety of demanding applications . . . even those with vibration and pulsation.

This transmitter/gauge allows you to save money, replacing two instruments with one Duratran.

TABLE A – BOURDON TUBE SELECTION

Ordering Code	Bourdon Tube and Tip Material (all joints TIG welded)	Socket Material	Pressure Range Type	(psi)	NPT Connection
S	316 stainless steel	316 stainless steel	Drawn "C" Tube	12/1500	½
			Drawn Helical Tube	2000/20,000	
P	K Monel	Monel 400	Drawn "C" Tube	12/1500	½
			Drawn Helical Tube	2000/20,000	

TABLE B – STANDARD psi RANGES

0/12	0/600
0/15	0/800
0/30	0/1000
0/60	0/1500
0/100	0/2000
0/160	0/3000
0/200	0/5000
0/300	0/10,000
0/400	0/20,000*

*Not FM approved range

SPECIFICATIONS

Functional Service:	Liquid, gas or vapor
Ranges:	See Table B
Output:	4-20mA, 2 wire
Power Supply:	12/40 Vdc
Zero Adjustment:	±20% of full scale
Span Adjustment:	±10% of full scale
Temperature Limit:	-40°F to 160°F
Overpressure Limits:	130% of range without damage to tube
Humidity Limits:	Up to 90% relative humidity noncondensing
Signal Damping:	Fixed electronic damping time constant of 0.2 seconds
Turn On Time:	Less than 1 second
Enclosure:	Similar to NEMA 4

AGENCY APPROVAL

Factory Mutual approved as intrinsically safe for Class I, II and III, Division 1, applicable Groups A, B, C, D, E and G in accordance with Dresser drawing 71B185 and entity requirements; nonincendive for Class I, II, III, Division 2, Groups A, B, C, D and G hazardous locations.

PERFORMANCE

Accuracy:	±0.5% including linearity, hysteresis, and repeatability
Stability:	±0.25% F.S. for 6 months
Temperature Effect:	Less than 0.02% of span/°F
Position Effect:	Vertical mounting recommended May be re-zeroed to correct error in other positions

PHYSICAL

Dial Size:	4½″
Case:	Solid front, black phenolic hermetically sealed
Ring:	Threaded, glass-filled polypropylene
Mounting:	Stem, surface, flush (with 1278 M ring)
Pressure Connection:	½ NPT
Window:	Laminated safety glass
Calibration:	Transmitter—Span and zero adjustment on dial Gauge—Zero adjustment with micrometer pointer
Electrical Connection:	30″ #18 wire AWG, ½ NPT liquid tight conduit connection at case
Weight:	3 lb

TO ORDER THIS TYPE 2279 DURATRAN TRANSMITTER:

Select:	4½″	2279	(S)SH	04L	XFM	w/1278M Ring	0/100 psi
1. Dial Size							
2. Case Type Number							
3. Bourdon System (ordering code)—Table A							
4. Connection: Location & Size—½ NPT (04) Lower (L)							
5. Factory Mutual Approval							
6. Mounting Accessory or Variation (if required)							
7. Range—Table B							

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

MADE IN U.S.A.

ASHCROFT®

Digital Panel Meter 2269 with Alarm Board Option

- *Easy single-button scaling with lockout feature*
- *4-20mA, 1-5V, 0-5V or 0-10V field-selectable inputs*
- *24V transmitter power supply standard*
- *Steady, accurate display to ±199,990*
- *4½ digit and extra zero*
- *NEMA 4X front panel*
- *Two relay-output options*

The new Ashcroft® Digital Panel Meter 2269 is a high-performance, easy-to-use industrial-grade microprocessor digital process meter. It accepts all the standard process signals: 4-20mA, 1-5V, 0-5V and 0-10V from transmitters and transducers, and displays these signals in engineering units on a 4½ digit display. The display includes an extra zero which may be used to handle numbers up to 199,990.

SPECIFICATIONS

Inputs:
Field-selectable 4-20mA, 1-5V, 0-5V, 0-10V

Display:
Bright, large, 0.56˝ (14.2mm) high efficiency red or green LED. 4½ digits + extra zero; ±19999(0), (0) may be switched on to display 199,990

Front Panel:
NEMA 4X, panel gasket provided

Calibration Range:
4mA, (1V) input may be set to display anywhere in range of meter. 20mA (5V) input may be set anywhere above or below 4mA input

Lockout:
Jumper 3 at rear of instrument restricts modification of calibration values

Loop Power:
Isolated 24 Vdc at 20mA regulated. Noise less than 10mV p-p. Max. loop resistance of 1200 ohms

Hold Reading:
Connect terminals HLD and COM

Accuracy:
±0.05% of calibrated span

Input Impedance:
Voltage ranges, greater than 100k ohms.
Current range, 100 ohms

Power:
115 Vac or 230 Vac ± 10%, 50/60 Hz, 10 VA

Environmental:
Operating temperature range: –10°C to +65°C
Storage temperature range: –40°C to +75°C
Relative humidity: 0 to 90% noncondensing

Enclosure:
⅛ DIN, ABS plastic, UL 94V-0

Connections:
Removable screw terminal block (provided)

Alarm Points:
Two, any combination of high or low alarms

Alarm Status Indication:
Front panel LED

Alarm Deadband:
0-100%, user selectable

2269 AT PANEL METER WITH ALARM BOARD OPTION SPECIFICATIONS

Rating:
2 relays; 2 amp SPDT (form C). The contacts are rated 2 amp @ 30 Vdc or 2 amp @ 250Vac resistive load; 1/14 hp @ 125/250 Vac for NC contacts and 1/10 hp @ 125/250 Vac for NO contacts, inductive load

Reset:
User selectable

1. Automatically when the input passes the reset point
2. Automatically + manually (via user-supplied switch or front panel ACK button)

Failsafe Operation:
The relay coils are energized in the nonalarm condition. In the case of a power failure, the relays will go to the alarm state

Auto Initialization:
When power is applied to the meter, the relays will always reflect the state of the input to the meter

Deadband:
0-100%, user selectable

TO ORDER THIS TYPE 2269 DIGITAL PANEL METER:

Select	2269	A	—	XK4	Complete Type Number

1. Type–Ashcroft Digital Panel Meter
2. Supply Voltage–A=110 Vac
   B=220 Vac
3. Alarm Board/Screw terminal Conn.– — = None
   T = Alarm Board w/screw terminal Conn.
4. Variations–XJ6=Factory Set Alarm (1)
   XK4=Factory Calibrated meter (2)

Note 1: When ordering XJ6 also specify XK4. Supply the meter range and the high and low setpoints.

Note 2: Calibrated range must be specified when ordering.

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

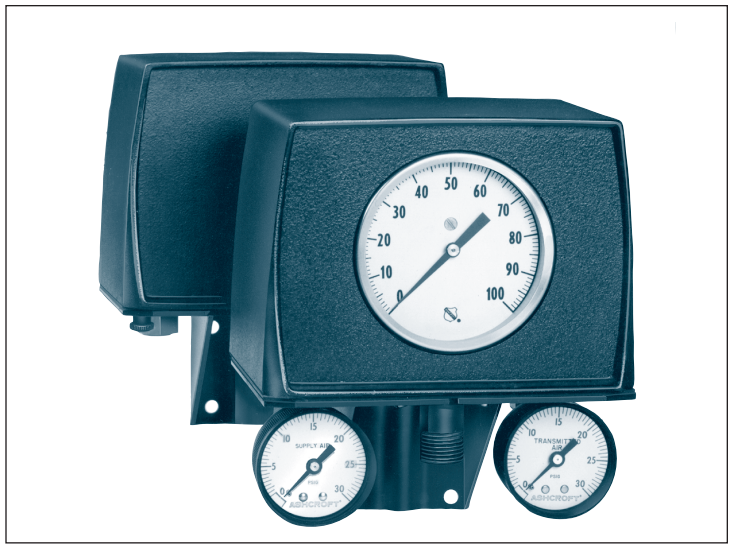
MADE IN U.S.A.

ASHCROFT®

Pneumatic Transmitter,
Type 4080, ASME B 40.1 Grade 1A (±1.0% of span)
Type 4480, ASME B 40.1 Grade 2A (±0.5% of span)

Providing plus-values which will coordinate key functional areas in your plant, this Ashcroft® pneumatic transmitter serves pressure applications throughout all industries. A positive report of process fluid and media performance is provided at designated operational check points by a signal accurately transmitted with maximum efficiency, assuring operating economies and safety.

The Ashcroft transmitter is a self-nulling motion- balance instrument, using a pneumatic relay operating on the nonbleed force balance principle for converting input pressures into proportional low air pressure signals for transmittal to remote indicators or controllers.



SPECIFICATIONS

Types	**4080**	**4480**
Ranges	see Standard Ranges	
Output ranges, psi	3-15 & 3-27 (see note below for vacuum application)	
Supply air requirements	18-20 psi for 3-15 psi range; 30-35 psi for 3-27 psi range	
Air consumption SCFM	0.1	
Speed of response	time constant of 4 seconds per 500 ft of tubing	
Air connection	¼ NPT Female	
Calibration adjustments	5	2
Accessories	see optional features and accessories	
Transmission distance	1000 ft	
Mounting weight	approximate weight 9 lb	
Accuracy ±% of span	1.0	0.5
Sensitivity ±% of span	0.1	0.001
Repeatability % of span	0.15	
Actuation	Bourdon tube	
Input sensing element material	316 SS	
Ambient temperature effect	½% per 50°F	
Process connection	½ NPT (ordering code 04L)	

Note: Vacuum application: The transmitted air pressure increases as the measured vacuum approaches zero.

STANDARD RANGES

Process Connection	Pressure			Vacuum	Compound
½ Male NPT Lower	0/8 psi* 0/10 psi* 0/15 psi 0/30 psi 0/60 psi 0/100 psi 0/160 psi	0/200 psi 0/300 psi 0/400 psi 0/600 psi 0/800 psi 0/1000 psi 0/1500 psi 0/2000 psi*	0/3000 psi 0/5000 psi 0/10,000 psi* 0/20,000 psi	10/0 in.Hg* 15/0 in.Hg* 20/0 in.Hg* 30/0 in.Hg	30 in.Hg/15 psi 30 in.Hg/30 psi 30 in.Hg/60 psi 30 in.Hg/100 psi 30 in.Hg/150 psi 30 in.Hg/200 psi 30 in.Hg/300 psi

* Applies to 4480 only.

TUBE MATERIALS

Type Number	Range Limits	Ordering Code	Bourdon Tube Material
4080 (indicating) **4480** (nonindicating)	Vacuum to 20,000 psi	S	316 stainless steel

TO ORDER THESE TYPE 4080, 4480 PNEUMATIC TRANSMITTERS:

Pressure transmitters (specify the following):

1. Type number: 4080 indicating, 4480 nonindicating
2. Bourdon Tube material. Specify material ordering code letter
3. Range or span (process pressure)
4. Output range. The standard 3-15 psi range will be supplied unless specified otherwise
5. Accessories (see page 239-244) or optional features (see page 181)

Example: 4480S-04L, 3-15# Range 0/100 psi

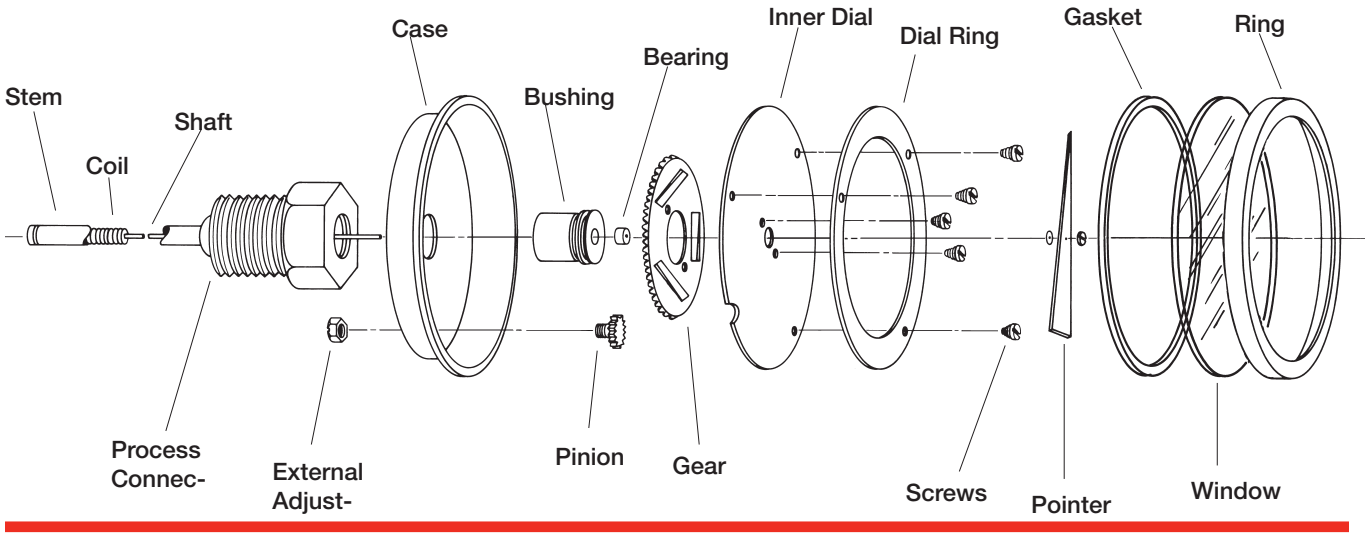
Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

MADE IN U.S.A.

DIRECT READING THERMOMETERS

ASHCROFT®

Product Selection Information
Bimetal Thermometers



Warning: When selecting all bimetal thermometers, consider the media and the ambient operating conditions. Improper application can be detrimental to the thermometer and can cause failure and possibly personal injury or property damage. Inaccuracies resulting from improper setting of the external adjustment by the user may cause personal injury or property damage. Consult ASME B40.3 for guidance in selection and use of bimetal thermometers.

Temperature Ranges: Standard Fahrenheit and Celsius ranges have been established to encompass all normal temperature measurement requirements. A bimetal thermometer can be used at an operating temperature anywhere throughout its dial range. Provision should be made for extreme temperature conditions. No bimetal thermometer should be exposed continuously to process temperatures over 800°F (425°C).

Operating Conditions: The maximum ambient temperature of the case should be no more than 200°F (95°C); liquid-filled series 150°F (65°C). Temperatures beyond this value may cause discoloration of the dial or result in increased pressure inside the casing which would ultimately lead to failure of the window. The lowest ambient temperature should not exceed –40°F (–40°C).

Thermowells: Thermowells must be used on any application where the stem of the bimetal thermometer may be exposed to pressure, corrosive fluids or high velocity. Additionally, the use of a thermowell permits instrument interchange or calibration check without disturbing or closing down the process.

Pointers: The pointers are balanced to close tolerances, and the paint finishes are controlled to assure long-term stability under adverse ultraviolet conditions.

Cases: There are three case styles. The CI series has no adjustment but is hermetically sealed. The hermetic seal prevents entry of moisture into the casing, minimizing the possibility of icing or fogging inside the case. The EL series provides the same features as the EI plus the added benefit of liquid filling which prolongs instrument life. Potential wear problems caused by excessive vibration are minimized through dampening, and the liquid medium improves readability. The instruments are leak-tested to ensure the integrity of the joints. Case and stem material is 304 stainless steel.

Coils: The bimetallic coils are carefully wound and inspected. Each is heat treated for optimum stability and overtemperature capability.

Bearings: The bearings are made of Teflon or other low-friction material.

Shafts: Shafts are made of specially drawn stainless steel wire with a very smooth finish.

Dials: The dials are based on computer-calculated temperature deflection data and have the Maxivision® format to minimize parallax error.

Windows: The standard window on EI and CI series are heavy-duty glass. Plastic and shatterproof glass are optional. The standard window on EL series is polycarbonate. No other options are available.

The complete line of Ashcroft® industrial bimetal thermometers and accessories provides quality choices for your temperature applications. There is a long history of superior quality in engineering, manufacturing and customer service of these products. Each Ashcroft industrial bimetal thermometer is backed by a limited five year warranty.

Each instrument is manufactured to a standard accuracy of 1% of span (ASME B40.3, Grade A) traceable to the National Institute of Standards and Technology (NIST). The bimetal coils are heat treated for stability and overtemperature capability. A single helix is used to reduce lag time. The bearings are made of a low-friction long-life material. The shafts are made of specially drawn stainless steel with a very smooth finish. All joints are welded, and the weld between the stem and the outlet is located at the bottom of the threads to eliminate the possibility of crevice corrosion.

Silicone dampening is included for improved vibration resistance. The Ashcroft Maxivision® dial eliminates parallax error by placing the pointer in the same plane as the graduations. The dial can be rotated 360 degrees and can be angled 180 degrees with the Everyangle™ connection.

Everyangle – Case Connection: The Ashcroft Everyangle industrial bimetal thermometer dial face with Maxivision dial can be rotated 360 degrees and angled 180 degrees. It is available in the EI and EL (5˝ only in EL) series with either a threaded or compression type union connection.

This design provides maximum utility. Since the entire case can be rotated and angled, the instrument can be installed almost anywhere and adjusted so that the dial face can be easily read.

ASHCROFT®

Bimetal Thermometers
Series EI, ASME B40.3
Grade A (±1% of span)

- *Hermetically sealed*
- *External adjustment*
- *Maxivision® dial*
- *±1% full-span accuracy (ASME B40.3 Grade A)*
- *All-welded stainless steel construction*
- *Silicone on the coil provides vibration dampening and superior time response*
- *Heavy-duty glass standard; plastic or shatterproof glass optional*
- *Limited five-year warranty*

This series has a hermetic seal and an external adjustment in the rear of the case. As with other Ashcroft® industrial bimetal thermometers, it has a Maxivision® dial which eliminates parallax by placing the pointer on the same plane as the graduations. The connection locations are rear, lower, and Everyangle™.

The hermetic seal prevents entry of moisture into the casing, thus minimizing the possibility of icing or fogging inside the case. The window stays clear, and with the Maxivision dial, precise readings are certain.

IN A RUSH? ASK FOR ASHCROFT GOLD SERVICE

SELECTION TABLE

Case Size		Style Code	Stem				Stem Lengths Available		Temperature Range					
Dial	Code		Connection	Code	Location	Code	"S" Length (inches)	Code	°F* Fahrenheit	°/Div.	Fig. Inter.	°C Celsius	°/Div.	Fig. Inter.
2″	20	EI	Plain	40	Rear	R			–80/120	2	20	–50/50	1	10
			Pointed Plain	50	Rear	R	2½	025	–20/120††			–20/120	2	20
			¼ NPT	60	Rear	R	4	040	30/130††	1	10	0/50††	1	5
3″	30		½ NPT Union	42	Everyangle	E	6	060	0/200	2	20	0/100	1	10
			½ NPT	60			9	090	0/250		50	10/150	2	20
			½ NPT	60	Rear	R	12	120	50/300			0/200		
					Lower	L	15	150	50/400	5		0/300	5	50
5″	50		½ NPT Union	42	Everyangle	E	18	180	50/550			50/450**†		
			½ NPT	60			24	240	200/700†			100/500**†		
			½ NPT	60	Rear	R			100/800†	10	100			
					Lower	L			200/1000**†					

*Dual scale ranges available for all standard °F ranges (3″ and 5″ case only)

**Satisfactory for continuous service up to 800°F or 425°C. Can be used for intermittent service from 800 to 1000°F, or 425 to 500°C. Use Ashcroft Duratemp® thermometers for ranges above and below those listed above.

†Minimum stem length for these ranges is 4″.

††Minimum stem length for lower connection and Everyangle is 4″.

Thermowells must be used on all pressure or velocity applications, to protect the stem of thermometer from corrosion and physical damage, and to facilitate removal of the thermometer without disturbing the process. Maximum ambient temperature is 200°F (95°C).

Overtemperature Limits	
Top of Range °F	Maximum Overtemperature
up to 250	100% of span
250/550	50% of span
550/1000	800°F **

TO ORDER THIS EI SERIES BIMETAL THERMOMETER:

Select: 30 EI 60 R 040 0/250°F XNH

1. Case Size: 3″ Code 30
2. Style: Code EI
3. Stem Conn: ½ NPT Code 60
4. Stem Location: Rear Code R
5. Stem Length: 4″ Code 040
6. Range: Code 0/250°F
7. Options: Stainless Steel Tag (see Page 210)

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

MADE IN U.S.A.

ASHCROFT®

Bimetal Thermometers
Series CI, ASME B40.3
Grade A (±1% of span)

- *Hermetically sealed*
- *Tamper resistant*
- *Maxivision® dial*
- *±1% full-span accuracy (ASME B40.3 Grade A)*
- *All-welded stainless steel construction*
- *Silicone on the coil provides vibration dampening and superior time response*
- *Heavy-duty glass standard; plastic or shatterproof glass optional*
- *Limited five-year warranty*

This series is tamper proof, hermetically sealed and has the Maxivision® dial. The connection locations are rear and lower. The CI series of Ashcroft® industrial bimetal thermometers was designed for applications where external adjustment or pointer reset are not desired.

The hermetic seal prevents entry of moisture into the casing, thus minimizing the possibility of fogging inside the case. The Maxivision dial provides accurate temperature readings.

IN A RUSH? ASK FOR ASHCROFT GOLD SERVICE

SELECTION TABLE

Case Size		Style Code	Stem				Stem Lengths Available		Temperature Range					
Dial	Code		Connection	Code	Location	Code	"S" Length (inches)	Code	°F* Fahrenheit	°/Div.	Fig. Inter.	°C Celsius	°/Div.	Fig. Inter.
2″	20	CI	Plain	40	Rear	R	2½	025	–80/120	2	20	–50/50	1	10
			Pointed Plain	50	Rear	R			–20/120††			–20/120	2	20
			¼ NPT	60	Rear	R	4	040	30/130††	1	10	0/50††	1	5
3″	30		½ NPT	60	Rear	R	6	060	0/200	2	20	0/100	1	10
					Lower	L	9	090	0/250		50	10/150	2	20
5″	50		½ NPT	60	Rear	R	12	120	50/300			0/200		
							15	150	50/400	5		0/300	5	50
							18	180	50/550			50/450**†		
					Lower	L	24	240	200/700†			100/500**†		
									100/800†	10	100			
									200/1000**†					

*Dual scale ranges available for all standard °F ranges (3″ and 5″ case only)
**Satisfactory for continuous service up to 800°F or 425°C. Can be used for intermittent service from 800 to 1000°F, or 425 to 500°C.
Use Ashcroft Duratemp® thermometers for ranges above and below those listed above.
†Minimum stem length for these ranges is 4″.
††Minimum stem length for lower connection is 4″.

Thermowells must be used on all pressure or velocity applications, to protect the stem of thermometer from corrosion and physical damage, and to facilitate removal of the thermometer without disturbing the process.
Maximum ambient temperature is 200°F (95°C).

Overtemperature Limits	
Top of Range °F	Maximum Overtemperature
up to 250	100% of span
250/550	50% of span
550/1000	800°F **

TO ORDER THIS CI SERIES BIMETAL THERMOMETER:

Select: 30 CI 60 R 040 0/250°F XNH

1. Case Size: 3″ Code 30
2. Style: Code CI
3. Stem Conn: ½ NPT Code 60
4. Stem Location: Rear Code R
5. Stem Length: 4″ Code 040
6. Range: Code 0/250°F
7. Options: Stainless Steel Tag (see Page 210)

MADE IN U.S.A.

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Bimetal Thermometer
Series EL, ASME B40.3
Grade A (±1% of span)

- *Silicone liquid filled*
- *External adjustment*
- *Durable polycarbonate window*
- *Maxivision® dial*
- *±1% full-span accuracy (ASME B40.3 Grade A)*
- *All-welded stainless steel construction*
- *Limited five-year warranty*

This series – liquid filled – is available in 3″ rear, 5″ rear and 5″ Everyangle™ connections. The external adjustment is standard.

The Ashcroft® liquid-filled thermo-meter provides the same features as the EI style with the added benefit of liquid filling.

The potential wear problem caused by excessive vibration is minimized through dampening and the instrument life is prolonged. The liquid medium also improves readability.

IN A RUSH? ASK FOR ASHCROFT GOLD SERVICE

SELECTION TABLE

Case Size		Style Code	Stem				Stem Lengths Available		Temperature Range					
Dial	Code		Connection	Code	Location	Code	"S" Length (inches)	Code	°F* Fahrenheit	°/Div.	Fig. Inter.	°C Celsius	°/Div.	Fig. Inter.
3″	30	EL	½ NPT	60	Rear	R	2½	025	–40/160	2	20	–20/120	2	20
							4	040	–20/120†	2	20	–10/110	2	10
							6	060	30/130†	1	10			
5″	50		½ NPT Union	42	Everyangle	E	9	090	0/200	2	20	0/50†	1	5
							12	120	0/250	2	50	0/100	1	10
			½ NPT	60			15	150	50/300	2	50	10/150	2	20
							18	180	50/550	5	50	0/300	5	50
			½ NPT	60	Rear	R	24	240						

*Dual scale ranges available for all standard °F ranges.
†Minimum stem length for Everyangle connection is 4″.
•Use Ashcroft Duratemp® thermometers for ranges above and below those listed above.

•Thermowells must be used on all pressure or velocity applications, to protect the stem of thermometer from corrosion and physical damage, and to facilitate removal of the thermometer without disturbing the process. Maximum ambient temperature is 150°F (65°C).

Overtemperature Limits	
Top of Range °F	Maximum Overtemperature
up to 160	100% of span
160/300	300°F
300/550	550°F

TO ORDER THIS EL SERIES BIMETAL THERMOMETER:

Select: 30 EL 60 R 040 0/250°F XNH

1. Case Size: 3″ Code 30
2. Style: Code EL
3. Stem Conn: ½ NPT Code 60
4. Stem Location: Rear Code R
5. Stem Length: 4″ Code 040
6. Range: Code 0/250°F
7. Options: Stainless Steel Tag (see Page 210)

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

MADE IN U.S.A.

ASHCROFT®

Pocket Test Bimetal Thermometer Series FT, ASME B40.3, Grade A (±1% of span)

- *±1% accuracy*
- *304 stainless steel case and stem*
- *Extra-heavy polycarbonate window*
- *5˝ stem length*
- *Hermetically sealed case*
- *Externally adjustable*
- *Protective polyethylene clip-sheath*

The sturdy 1˝ test thermometer offers accuracy and versatility normally found in larger, more expensive instruments. The Ashcroft® pocket test thermometer provides precise temperature readings in solids, liquids, and gases – such as frozen food, meats, vats, cookers, stills, air-conditioning ducts, and in numerous other places. Protective clip-sheath fastens securely to a pocket, holding the thermometer safely, yet readily accessible.

An external adjustment feature permits simple zero reset in seconds by clamping hex nut under head firmly and rotating the head by hand.

SELECTION TABLE

Case Size		Style Code	Stem				Stem Lengths Available		Temperature Range			
Dial	Code		Connection	Code	Connection	Code	"S" Length (inches)	Code	°F Fahrenheit	°/Div.	°C Celsius	°/Div.
1˝	10	FT	Plain	50	Rear	R	5	050	–80/120 –40/160 –20/120 25/125 0/220	2	–30/50 10/150	2
									60/300 50/550	5	0/200	5

TO ORDER THIS FT SERIES BIMETAL THERMOMETER:

Select: 10 FT 50 R 050 0/220°F

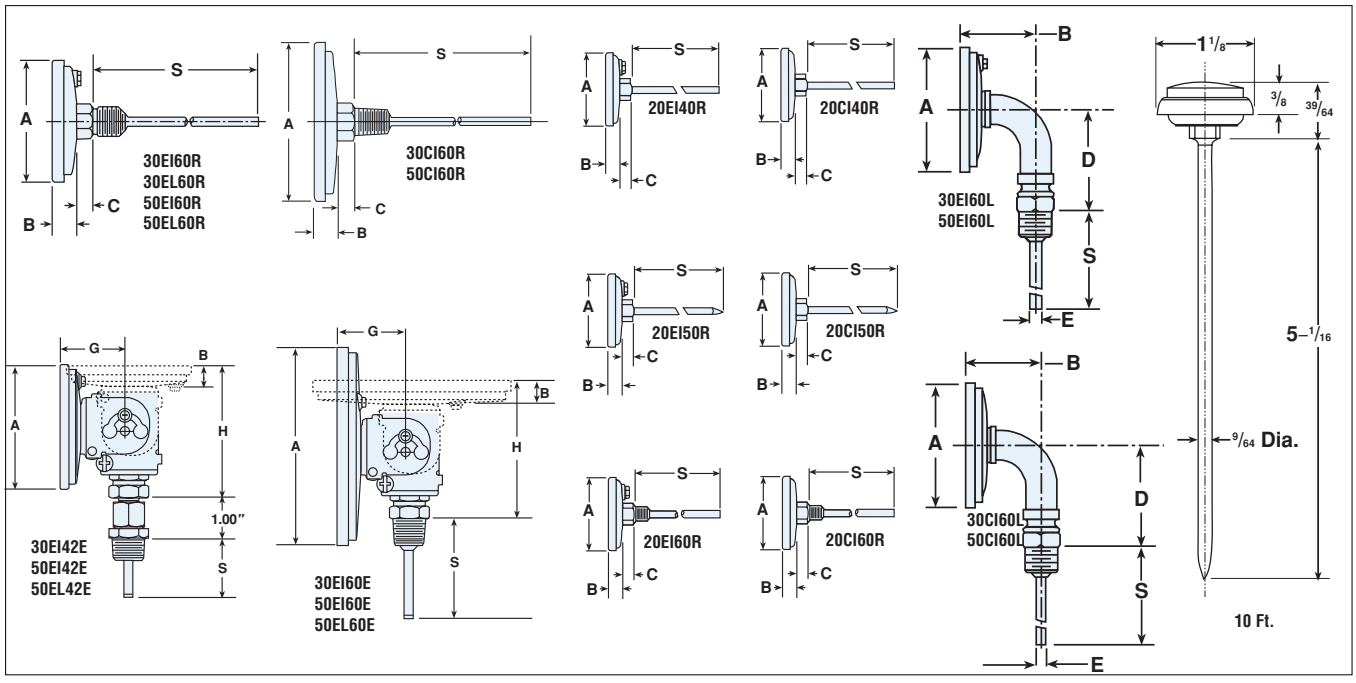
1. Case Size: 1˝ Code 10
2. Style: Code FT
3. Stem Conn: Pointed plain Code 50
4. Stem Location: Rear Code R
5. Stem Length: 5˝ Code 050
6. Range: Code 0/220°F

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

MADE IN U.S.A.

ASHCROFT®

Case Dimensions



Case Series	Dial Size	Connection Location	A	B	C	D	E	G	H	S	NPT	Hex	Weight in ounces[3] S – 2½″ Case Series		
													CI	EI	EL
CI, EI	2″	Rear (Plain)	2 3/32 (53)	3/8 (10)	5/16 (8)	–	–	–	–	–[2]	–	11/16	4½	4½	–
CI, EI	2″	Rear (Plain, pointed stem)	2 3/32 (53)	3/8 (10)	5/16 (8)	–	–	–	–	–[2]	–	11/16	4½	4½	–
CI, EI	2″	Rear (Threaded)	2 3/32 (53)	3/8 (10)	5/16 (8)	–	–	–	–	–[2]	¼	11/16	4½	4½	–
CI, EI, EL	3″	Rear	3 5/32 (80)	19/32 (15)	5/16 (8)	–	–	–	–	–[2]	½	⅞	7	7	8
CI, EI	3″	Lower	3 5/32 (80)	1 27/32 (47)	–	2 5/8 (67)	¼ (6)	–	–	–[2]	½	⅞	11	11	–
EI	3″	Everyangle	3 5/32 (80)	19/32 (15)	–	–	–	1 21/32 (42)	3 7/16 (87)	–[2]	½	⅞	–	10	–
CI, EI, EL	5″	Rear	5 1/32 (128)	23/32 (18)	5/16 (8)	–	–	–	–	–[2]	½	⅞	15	16	18
CI, EI	5″	Lower	5 1/32 (128)	1 15/16 (49)	–	3 5/8 (92)	¼ (6)	–	–	–[2]	½	⅞	24	26	–
EI, EL	5″	Everyangle	5 1/16 (128)	23/32 (18)	–	–	–	1 7/8 (48)	3 9/16 (91)	–[2]	½	⅞	–	25	28

NOTES

1 Figures in parenthesis ( ) are in millimeters. All other dimensions are in inches.

2 Standard "S" dimensions are 2½, 4, 6, 9, 12, 15, 18 and 24 inches. Standard stem diameter is ¼ inch.

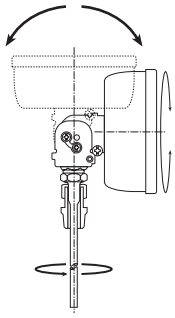
3 Add 1 oz. for every 2 inches of stem length.

ASHCROFT®

Duratemp® Thermometer
Direct-Mounted Series 600B
Accuracy (1% F.S.)

- *Exclusive movementless design resists shock and vibration – no gears to wear out – or misalign resulting in increased instrument life*
- *Gas-operated molecular sieve*
- *Mercury free*
- *1% full-span accuracy*
- *Everyangle Duratemp® thermometer can be rotated 360° and can be angled 180°, ensuring readability in any installation*
- *Maxivision® dial*
- *Limited five-year warranty*

The direct-reading thermometer (stainless steel case only) offers the same unique features of the Ashcroft® Duratemp® remote-reading thermometer for those critical applications where only a direct-connected instrument can be used. Available in 4½″ dial size.



The Everyangle™ Duratemp® thermometer may be rotated 360° for readability and the stem turned 180° for the most challenging installations.

SELECTION TABLE

600B — 01 — AB

Type	Table 1		Table 2			
600B	CODE	STEM LENGTH	CODE	SINGLE RANGES	CODE	DUAL RANGES
DIRECT-MOUNTED	01	Semirigid Stainless Steel 6″	AB	–320/200°F	CE	20/240°F 0/120°C
	02	Semirigid Stainless Steel 9″	AE	–100/100°F		
	03	Semirigid Stainless Steel 12″	AG	–40/180°F	CF	50/550°F 0/300°C
	04	Semirigid Stainless Steel 15″	AK	20/240°F		
	05	Semirigid Stainless Steel 18″	AL	50/300°F	DR	50/300°F 10/150°C
	06	Semirigid Stainless Steel 24″	AN	50/550°F		
	07	Semirigid Stainless Steel 30″	AR	50/750°F*	DT	–40/180°F –40/80°C
	08	Semirigid Stainless Steel 36″	AT	400/1200°F*		
			AY	–200/100°C		
			BL	–80/40°C		
			BN	–40/80°C		
			BS	0/120°C		
			BT	10/150°C		
			BU	0/300°C		
			BW	0/400°C*		
			BJ	200/650°C*		

*For these ranges a minimum "S" dimension (stem length) of 9 inches is recommended. This removes case from exposure to high temperature which may damage the instrument.

NOTE: Thermowells must be used whenever an Ashcroft Duratemp® thermometer is installed on a pressurized application or where fluid velocity or corrosive media is present.

TO ORDER THIS 600B DURATEMP THERMOMETER:

SELECT — **600B 01 AB XNH**

1. Stem Length: Length: 6″ _____ Table 1
2. Temperature Range: –320/200°F _____ Table 2
3. Options: Stainless Steel Tag _____ See Page 210

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
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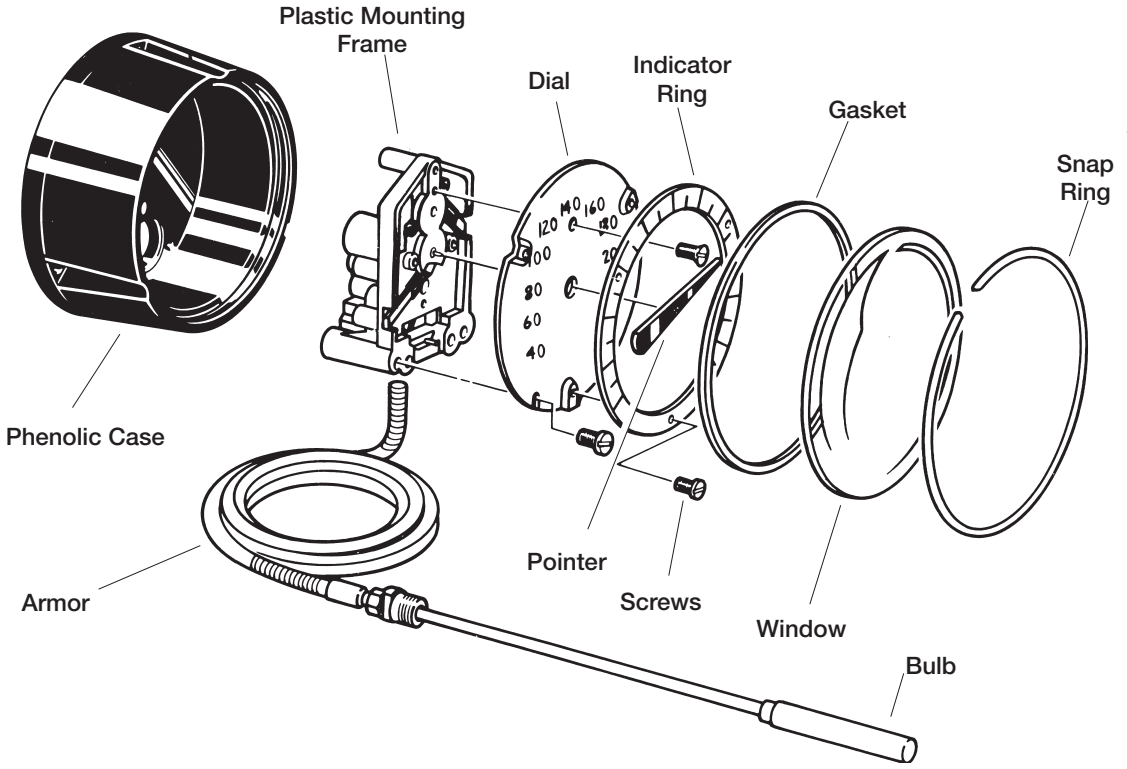
REMOTE READING THERMOMETERS

REMOTE READING THERMOMETERS

ASHCROFT®

Product Selection Information
Duratemp® Remote-Mount Thermometers



The superiority of a Duratemp® thermometer is revealed by comparison to conventional thermometry. Conventional gas thermometers operate on the principle that the absolute pressure is proportional to the absolute temperature. To obtain a usable temperature span, elevated working pressures must be used which frequently produce high stresses in the Bourdon tube. These high stresses reduce instrument life and may be hazardous.

The Duratemp thermometer on the other hand utilizes a combination of inert gas and activated carbon called a molecular sieve. This combination produces much lower internal pressures than conventional thermometers for the same temperature span. These lower pressures are transmitted to a compact helical Bourdon tube. The Bourdon tube connects directly to the pointer shaft thus eliminating the traditional movement assembly.

With this advantage the Duratemp thermometer is able to provide long life and sustained accuracy under the most adverse shock and vibration conditions.

Accuracy: ±1% of range span.

Bulb Size: 3″ long by ⅜″ O.D. bulb.

Bulb Material: 316SS

Ambient Error: Ambient error is a function of line length, ambient temperature and other system parameters. The error at mid-scale will be ±½% of range span for a ±25°F change in ambient temperature, for a typical thermometer. Consult factory for details.

Vibration and Shock Resistance: Extreme resistance similar to that required by MIL-T-19646.

Actuation: Gas/activated carbon. Pointer driven directly by lightweight helical Bourdon tube which is silicone damped.

Field Zero Adjustment: Adjustable pointer.

Over-range: Minimum 25% of span beyond top of range. If greater over-range is anticipated, consult Customer Service.

Head Error: None. No correction required for any mounting configuration.

Capillary Material: 300 series stainless steel.

Line Length: 5-80 ft in standard increments.

Armor: AISI 302 Spring Armor as standard.

Dial Sizes: Maxivision® anti-parallax two piece dial design 4½″ and 6″ sizes – Celcius or Fahrenheit. Single plane design for all dual scales and 8½″ size.

Ranges: Standard Fahrenheit ranges available from –320°F to 1200°F. Celsius and dual scale also available.

Cases: 5 basic cases with lower or back connections, surface or flush mounted in stainless steel, phenolic or aluminum. All remote mount cases are field interchangeable, within the same range. Direct mount units available 4½″ stainless steel case only. (Everyangle)

Direct Mount Stem Lengths: Four standard increment of semi-rigid stainless steel from 6 inches to 15 inches. (Consult factory for longer stem lengths.)

Direct Mount Union: ½ NPT union connection fixed at the top of the stem.

Operating Conditions: The maximum case temperature should not exceed 160°F (71°C). The line should be laid so that it will not be exposed to extreme temperatures such as nearby steam pipes, ovens or other heated surfaces.

Thermowells: Thermowells must be used on any application where the bulb of the thermometer may be exposed to pressure, corrosive fluids or high velocity. Additionally, the use of a thermowell permits instrument interchangeability or recalibration without shutting down the process.

Dials: Aluminum dials have highly legible black markings on a white background. The Maxivision dial is a linear anti-parallax dial for excellent readability in the 4½″ and 6″ sizes. The divisions and the pointer are in the same plane which allows readability from any angle without parallax error.

Windows: The standard window for the Duratemp thermometer is glass. Shatterproof glass and plastic disc windows are optional.

MERCURY FREE

Gas Filled: NIOSH and OSHA compliance for mercury contamination hazards. Protects personnel and processes from accidental contamination.

No Head or Elevation Error: Gear and pinion movements are eliminated, resulting in increased instrument life and reduced replacement costs.

Silicone damped Bourdon tube eliminates damage from shock and vibration.

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
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ASHCROFT®

Duratemp® Thermometer
Series 600A-01
Accuracy (±1% F.S.)

- *Exclusive movementless design resists shock and vibration – no gears to wear or misalign resulting in increased instrument life*
- *Gas-operated molecular sieve*
- *No elevation error*
- *Mercury free*
- *One bulb size for all ranges*
- *±1% full-span accuracy*
- *Maxivision® dial*
- *Readily available – two to three weeks delivery*
- *Limited five-year warranty*

A high impact-resistant polished stainless steel case. Bayonet ring facilitates easy removal for glass replacement and pointer adjustment.
A versatile case that enables surface or flush mounting. Available in 4½˝ dial size.

SELECTION TABLE

600A — 01 — C01 — B01 — A1 — L07 — AK

600A

Table 1 – CASE STYLE

CODE	DESCRIPTION
01	ST. ST. BAYONET RING

Table 2 – CASE SIZE & MOUNTING

CODE	SIZE	MOUNTING: SURFACE	MOUNTING: FLUSH	CONNECTION: LOWER	CONNECTION: REAR
C01	4½	✓		✓	
C11	4½		✓		✓

Table 3 – BULB STYLES*

CODE	DESCRIPTION
B01	12˝ Bendable extension with ½ NPT union connection
B03	Plain bulb with rigid extension, no union
B08	Plain bulb with rigid extension, ½ NPT union on armor
B17	18˝ Bendable extension with ½ NPT union connection
B18	24˝ Bendable extension with ½ NPT union connection

*Minimum recommended insertion length ("u" dimension) in liquids is 4 inches and in gases is 6 inches for standard ⅜ x 3˝ bulb

Table 4 – ARMOR STYLE

CODE	DESCRIPTION
A1	Stainless Steel Spring

Table 5 – LINE LENGTH

CODE	LINE LENGTH
L01	5´
L03	10´
L07	20´
L09	30´
L13	50´
L19	80´

Table 6 – RANGES

CODE	SINGLE RANGES
AB	–320/200°F
AE	–100/100°F
AG	–40/180°F
AK	20/240°F
AL	50/300°F
AN	50/550°F
AR	50/750°F
AT	400/1200°F
AY	–200/100°C
BL	–80/40°C
BN	–40/80°C
BS	0/120°C
BT	10/150°C
BU	0/300°C
BW	0/400°C
BJ	200/650°C
	DUAL RANGES
CE	20/240°F
	0/120°C
CF	50/550°F
	0/300°C
DR	50/300°F
	10/150°C
DT	–40/180°F
	–40/80°C

TO ORDER THIS DURATEMP 600A-01 THERMOMETER:

Select: 600A 01 C01 B01 A1 L07 AK XNH

1. Case Style: Stainless Steel/Bayonet Ring — Table 1
2. Case Size & Mounting: 4½˝ Surface, Lower — Table 2
3. Bulb Style: 12˝ Bendable Extension with Union Connection — Table 3
4. Armor Style: Stainless Steel Spring — Table 4
5. Line Length: 20 feet — Table 5
6. Temperature Range: 20/240°F — Table 6
7. Options: Stainless Steel Tag — (See Page 210)

Consult factory for guidance in product selection
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MADE IN U.S.A.

ASHCROFT®

Duratemp® Thermometer
Series 600A-02
Accuracy (±1% F.S.)

- *Exclusive movementless design resists shock and vibration – no gears to wear or misalign resulting in increased instrument life*
- *Gas-operated molecular sieve*
- *No elevation error*
- *Mercury free*
- *One bulb size for all ranges*
- *±1% full-span accuracy*
- *Maxivision® dial*
- *Readily available – two to three weeks delivery*
- *Limited five-year warranty*

An aluminum case with a durable epoxy finish. Designed specifically for panel mounting. A hinged ring permits glass replacement and pointer adjustment. Available in 4½˝, 6˝ and 8½˝ sizes.

SELECTION TABLE

600A — 02 — C12 — B01 — A1 — L07 — AK

600A

Table 1 – CASE STYLE

CODE	DESCRIPTION
02	ALUMINUM HINGED RING

Table 2 – CASE SIZE / MOUNTING

CODE	SIZE	MOUNTING: SURFACE	MOUNTING: FLUSH	CONNECTION: LOWER	CONNECTION: REAR
C12	4½		✓		✓
C27	6		✓		✓
C35	8½		✓		✓

Table 3 – BULB STYLES*

CODE	DESCRIPTION
B01	12˝ Bendable extension with ½ NPT union connection
B03	Plain bulb with rigid extension, no union
B08	Plain bulb with rigid extension, ½ NPT union on armor
B17	18˝ Bendable extension with ½ NPT union connection
B18	24˝ Bendable extension with ½ NPT union connection

*Minimum recommended insertion length ("u" dimension) in liquids is 4 inches and in gases is 6 inches for standard ⅜ x 3˝ bulb

Table 4 – ARMOR STYLE

CODE	DESCRIPTION
A1	Stainless Steel Spring

Table 5 – LINE LENGTH

CODE	LINE LENGTH
L01	5´
L03	10´
L07	20´
L09	30´
L13	50´
L19	80´

Table 6 – RANGES

CODE	SINGLE RANGES
AB	–320/200°F
AE	–100/100°F
AG	–40/180°F
AK	20/240°F
AL	50/300°F
AN	50/550°F
AR	50/750°F
AT	400/1200°F
AY	–200/100°C
BL	–80/40°C
BN	–40/80°C
BS	0/120°C
BT	10/150°C
BU	0/300°C
BW	0/400°C
BJ	200/650°C
	DUAL RANGES
CE	20/240°F
	0/120°C
CF	50/550°F
	0/300°C
DR	50/300°F
	10/150°C
DT	–40/180°F
	–40/80°C

TO ORDER THIS DURATEMP 600A-02 THERMOMETER:

Select: 600A 02 C12 B01 A1 L07 AK XNH

1. Case Style: Aluminum/Hinged Ring — Table 1
2. Case Size & Mounting: 4½˝ Flush, Rear — Table 2
3. Bulb Style: 12˝ Bendable Extension with Union Connection — Table 3
4. Armor Style: Stainless Steel Spring — Table 4
5. Line Length: 20 feet — Table 5
6. Temperature Range: 20/240°F — Table 6
7. Options: Stainless Steel Tag — (See Page 210)

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MADE IN U.S.A.

ASHCROFT®

Duratemp® Thermometer
Series 600A-03
Accuracy (±1% F.S.)

- *Exclusive movementless design resists shock and vibration – no gears to wear or misalign resulting in increased instrument life*
- *Gas-operated molecular sieve*
- *No elevation error*
- *Mercury free*
- *One bulb size for all ranges*
- *±1% full-span accuracy*
- *Maxivision® dial*
- *Readily available – two to three weeks delivery*
- *Limited five-year warranty*

A black-coated aluminum case with excellent impact resistance. Threaded ring permits adjustment. Available in 4½″ and 6″ sizes.

SELECTION TABLE

600A — 03 — C02 — B01 — A1 — L07 — AK

600A

Table 1 – CASE STYLE

CODE	DESCRIPTION
03	ALUMINUM THREADED RING

Table 2 – CASE SIZE / MOUNTING

CODE	SIZE	MOUNTING: SURFACE	MOUNTING: FLUSH	CONNECTION: LOWER	CONNECTION: REAR
C02	4½	✓		✓	
C15	6	✓		✓	

Table 3 – BULB STYLES*

CODE	DESCRIPTION
B01	12″ Bendable extension with ½ NPT union connection
B03	Plain bulb with rigid extension, no union
B08	Plain bulb with rigid extension, ½ NPT union on armor
B17	18″ Bendable extension with ½ NPT union connection
B18	24″ Bendable extension with ½ NPT union connection

*Minimum recommended insertion length ("u" dimension) in liquids is 4 inches and in gases is 6 inches for standard ⅜ x 3″ bulb

Table 4 – ARMOR STYLE

CODE	DESCRIPTION
A1	Stainless Steel Spring

Table 5 – LINE LENGTH

CODE	LINE LENGTH
L01	5′
L03	10′
L07	20′
L09	30′
L13	50′
L19	80′

Table 6 – RANGES

CODE	SINGLE RANGES
AB	–320/200°F
AE	–100/100°F
AG	–40/180°F
AK	20/240°F
AL	50/300°F
AN	50/550°F
AR	50/750°F
AT	400/1200°F
AY	–200/100°C
BL	–80/40°C
BN	–40/80°C
BS	0/120°C
BT	10/150°C
BU	0/300°C
BW	0/400°C
BJ	200/650°C
	DUAL RANGES
CE	20/240°F 0/120°C
CF	50/550°F 0/300°C
DR	50/300°F 10/150°C
DT	–40/180°F –40/80°C

TO ORDER THIS DURATEMP 600A-03 THERMOMETER:

Select: 600A 03 C02 B01 A1 L07 AK XNH

1. Case Style: Aluminum/Threaded Ring — Table 1
2. Case Size & Mounting: 4½″ Surface, Lower — Table 2
3. Bulb Style: 12″ Bendable Extension with Union Connection — Table 3
4. Armor Style: Stainless Steel Spring — Table 4
5. Line Length: 20 feet — Table 5
6. Temperature Range: 20/240°F — Table 6
7. Options: Stainless Steel Tag — (See Page 210)

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MADE IN U.S.A.

ASHCROFT®

Duratemp® Thermometer
Series 600A-04
Accuracy (±1% F.S.)

- *Exclusive movementless design resists shock and vibration – no gears to wear or misalign resulting in increased instrument life*
- *Gas-operated molecular sieve*
- *No elevation error*
- *Mercury free*
- *One bulb size for all ranges*
- *±1% full-span accuracy*
- *Maxivision® dial*
- *Readily available – two to three weeks delivery*
- *Limited five-year warranty*

The phenolic case construction is ideal for most ambient conditions. Flush or surface mounting. Snap ring permits pointer adjustment. Available in 4½˝, 6˝, and 8½˝ sizes.

SELECTION TABLE

600A — 04 — C03 — B01 — A1 — L07 — AK

600A

Table 1 – CASE STYLE

CODE	DESCRIPTION
04	PHENOLIC SNAP RING

Table 2 – CASE SIZE / MOUNTING

CODE	SIZE	MOUNTING: SURFACE	MOUNTING: FLUSH	CONNECTION: LOWER	CONNECTION: REAR
C03	4½	✓		✓	
C08	4½	✓			✓
C38	4½		✓		✓
C16	6	✓		✓	

Table 3 – BULB STYLES*

CODE	DESCRIPTION
B01	12˝ Bendable extension with ½ NPT union connection
B03	Plain bulb with rigid extension, no union
B08	Plain bulb with rigid extension, ½ NPT union on armor
B17	18˝ Bendable extension with ½ NPT union connection
B18	24˝ Bendable extension with ½ NPT union connection

*Minimum recommended insertion length ("u" dimension) in liquids is 4 inches and in gases is 6 inches for standard ⅜ x 3˝ bulb

Table 4 – ARMOR STYLE

CODE	DESCRIPTION
A1	Stainless Steel Spring

Table 5 – LINE LENGTH

CODE	LINE LENGTH
L01	5´
L03	10´
L07	20´
L09	30´
L13	50´
L19	80´

Table 6 – RANGES

CODE	SINGLE RANGES
AB	–320/200°F
AE	–100/100°F
AG	–40/180°F
AK	20/240°F
AL	50/300°F
AN	50/550°F
AR	50/750°F
AT	400/1200°F
AY	–200/100°C
BL	–80/40°C
BN	–40/80°C
BS	0/120°C
BT	10/150°C
BU	0/300°C
BW	0/400°C
BJ	200/650°C
	DUAL RANGES
CE	20/240°F 0/120°C
CF	50/550°F 0/300°C
DR	50/300°F 10/150°C
DT	–40/180°F –40/80°C

TO ORDER THIS DURATEMP 600A-04 THERMOMETER:

Select: 600A 04 C03 B01 A1 L07 AK XNH

1. Case Style: Phenolic Snap Ring — Table 1
2. Case Size & Mounting: 4½˝ Surface, Lower — Table 2
3. Bulb Style: 12˝ Bendable Extension with Union Connection — Table 3
4. Armor Style: Stainless Steel Spring — Table 4
5. Line Length: 20 feet — Table 5
6. Temperature Range: 20/240°F — Table 6
7. Options: Stainless Steel Tag — (See Page 210)

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MADE IN U.S.A.

ASHCROFT®

Duratemp® Thermometer
Series 600H-45
Accuracy (±1% F.S.)

- *Exclusive movementless design resists shock and vibration – no gears to wear or misalign resulting in increased instrument life*
- *Gas-operated molecular sieve*
- *No elevation error*
- *Mercury free*
- *One bulb size for all ranges*
- *±1% full-span accuracy*
- *Maxivision® dial*
- *Readily available – two to three weeks delivery*
- *Limited five-year warranty*

This hermetically sealed case is designed for applications where extreme moisture or dust is present. Available in a 4½″ solid front phenolic turret case, lower connection.

SELECTION TABLE

600H — 45 — C60 — B01 — A1 — L07 — AK

600H

Table 1 – CASE STYLE

CODE	DESCRIPTION
45	PHENOLIC HERMETICALLY SEALED

Table 2 – CASE SIZE & MOUNTING

CODE	SIZE	MOUNTING: SURFACE	MOUNTING: FLUSH	CONNECTION: LOWER	CONNECTION: REAR
C60	4½	✓		✓	

Table 3 – BULB STYLES*

CODE	DESCRIPTION
B01	12″ Bendable extension with ½ NPT union connection
B03	Plain bulb with rigid extension, no union
B08	Plain bulb with rigid extension, ½ NPT union on armor
B17	18″ Bendable extension with ½ NPT union connection
B18	24″ Bendable extension with ½ NPT union connection

*Minimum recommended insertion length ("u" dimension) in liquids is 4 inches and in gases is 6 inches for standard ⅜ x 3″ bulb

Table 4 – ARMOR STYLE

CODE	DESCRIPTION
A1	Stainless Steel Spring

Table 5 – LINE LENGTH

CODE	LINE LENGTH
L01	5′
L03	10′
L07	20′
L09	30′
L13	50′
L19	80′

Table 6 – RANGES

CODE	SINGLE RANGES
AB	–320/200°F
AE	–100/100°F
AG	–40/180°F
AK	20/240°F
AL	50/300°F
AN	50/550°F
AR	50/750°F
AT	400/1200°F
AY	–200/100°C
BL	–80/40°C
BN	–40/80°C
BS	0/120°C
BT	10/150°C
BU	0/300°C
BW	0/400°C
BJ	200/650°C
	DUAL RANGES
CE	20/240°F 0/120°C
CF	50/550°F 0/300°C
DR	50/300°F 10/150°C
DT	–40/180°F –40/80°C

TO ORDER THIS DURATEMP 600H-45 THERMOMETER:

Select: 600H 45 C60 B01 A1 L07 AK XNH

1. Case Style: Phenolic Hermetically Sealed — Table 1
2. Case Size & Mounting: 4½″ Surface, Lower — Table 2
3. Bulb Style: 12″ Bendable Extension with Union Connection — Table 3
4. Armor Style: Stainless Steel Spring — Table 4
5. Line Length: 20 feet — Table 5
6. Temperature Range: 20/240°F — Table 6
7. Options: Stainless Steel Tag — (See Page 210)

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MADE IN U.S.A.

ASHCROFT®

Digital Thermometer Type 2400E and 2410E Accuracy (±2° NSF per C-2)

- *Watertight ultrasonic-sealed case*
- *Solid state design*
- *LED display with ½˝ high numerals*
- *Reverse-polarity protection*
- *Detachable sensors*
- *Retrofits 2˝ and 2½˝ vapor thermometers*
- *Accessible zero and span adjustment*
- *NSF approval*
- *UL-recognized power supply*
- *Accuracy ±2°F per NSF C-2*

The Ashcroft® 2400E and 2410E digital thermometers are compact, solid state temperature measurement and display devices. The 2400E measures temperature with a laser-trimmed 2000 ohm RTD contained in a stainless steel probe. The signal from the RTD is conditioned and sent through an analog-to-digital converter and is shown on a LED display.

The unit is powered by 6 Vdc, which is delivered through a power supply that operates on 110 Vac (220 Vac and 24 Vac are optional). When more than one indicator is required, two thermometers can be operated by one 110 Vac supply. The power supply is UL recognized and the complete unit is NSF

SELECTION TABLE

2400		E		A		080		–40/199°F	XJ8	
Table 1 Model		Table 2 Display		Table 3 Power Supply(1)		Table 4 Line Length(3)		Table 5	Table 6 Options	
Code	Desc.	Code	Desc.	Code	Desc.	Code	Desc.	Range Code	Code	Desc.
2400	Panel mount	E	LED	A	110 Vac	080	8 feet	–40/199°F	XJ7(2)	2½˝ mounting plate
				B	220 Vac	XXX	Special	0/250°F		
2410	2˝ Panel mount w/u clamp			C	24 Vac		Length(4)	–40/120°C	XJ8(2)	2˝ mounting plate

(1) If power supply is not required change model number 2400 to 2401 or 2410 to 2411.
(2) Not available on 2410 case.
(3) Stainless steel probe dimension, 0.250˝ dia. x 2.54˝ long.
(4) Maximum line length is 30 feet.

TO ORDER THIS TYPE 2400E/2410E DIGITAL THERMOMETER:

Select:		2400	E	A	080	–40/199°F	XJ8
1. Type: Display w/power pack	Table 1						
2. Display: LED	Table 2						
3. Power: 110 Vac	Table 3						
4. Line Length: 8′	Table 4						
5. Temperature Range: –40/199°F	Table 5						
6. Option: 2˝ Mounting Plate	Table 6						

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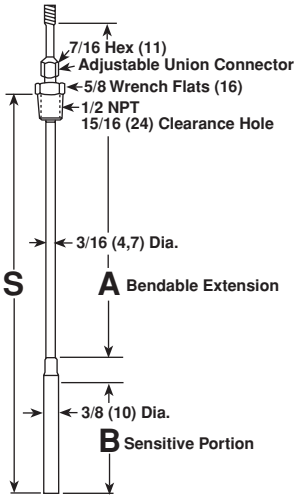
Style B01, B17 and B18

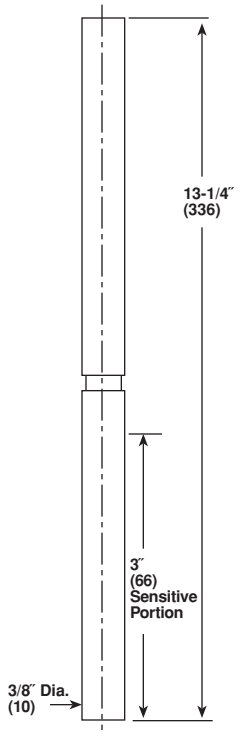
Bendable Extension, Union Connection



Bulb Code	Bulb Size "B"	"A"	"S" Max.	"S" Min.
B01	3 (76)	12 (305)	15 (381)	4 (102)
B17	3 (76)	18 (457)	21 (533)	4 (102)
B18	3 (76)	24 (610)	27 (686)	4 (102)

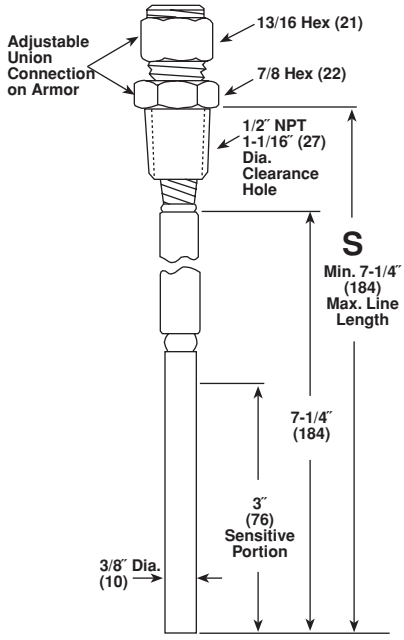
Style B03

Plain

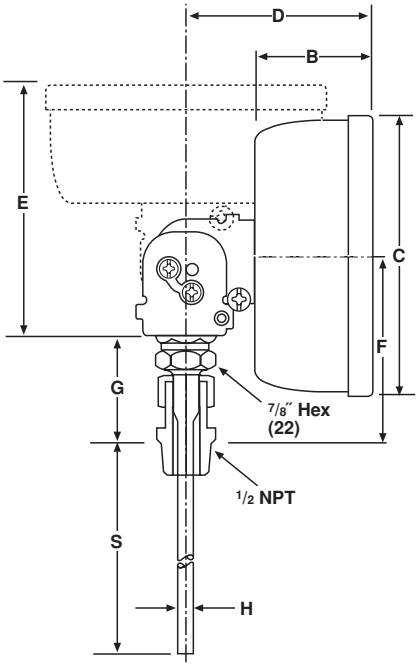


Style B08

Long Extension, Locking Fitting



600B Everyangle



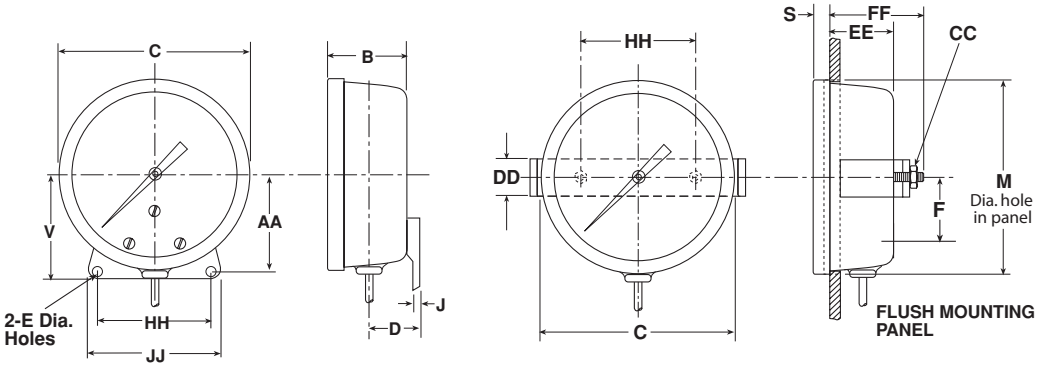
FOR TEMPERATURES BELOW 750°F	
S	U-Dimension (Insertion Length)
6 (152)	4½ (114)
9 (229)	7½ (191)
12	10½

FOR TEMPERATURES 750°F AND ABOVE USE WELL WITH 3″ LAG		
S	Well Lag	U-Dimension (Insertion Length)
9 (229)	3	4½ (114)
12 (305)	3	7½ (191)
15 (381)	3	10½ (268)

Dial Size Inches	B	C	D	E	F	G	H
4½	2 1/16 (52)	5 1/32 (128)	3 11/64 (81)	4 13/16 (122)	3 (76)	1 (25)	3/8 (10)

NOTE: Dimensions in inches, ( ) are miliimeters.

600A-01 Stainless Steel Case



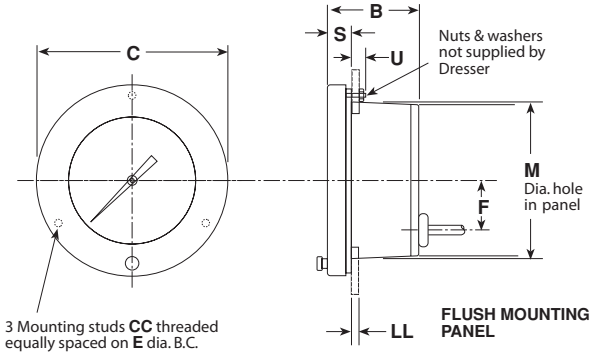
Dial Size Inches	B	C	D	E	F	J	M	S	T	U	V	AA	CC	DD	FF	EE	HH	JJ
4½	2 3/16 (56)	5 1/8 (130)	1 1/16 (27)	7/32 (6)	1 5/8 (141)	1/16 (2)	4 25/32 (121)	7/16 (11)	5/8 (16)	1 7/16 (37)	2 7/8 (73)	2 5/8 (67)	#10-32	1 (25)	2 1/4 (57)	1 5/8 (41)	3 (76)	3 1/2 (89)

APPROXIMATE WEIGHT (LBS.)			
Line Length	Case Size		
	4½″	6″	8½″
5′	1.75	2.55	3.40
10′	2.05	2.85	3.70
20′	2.65	3.45	4.30
30′	3.25	4.05	4.90
50′	4.45	5.25	6.10
80′	6.25	7.05	7.90

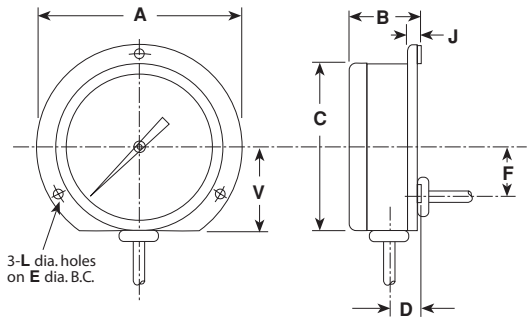
600A-02 Hinged Ring Case

Case Size Inches	B	C	CC	E	M	S	U	LL	F
4½	2 3/16 (56)	6 1/4 (159)	10-24	5 3/8 (137)	4 7/8 (124)	5/8 (16)	3/4 (19)	1/8 1/2 (3) (13)	1 5/8 (41)
6	2 1/4 (57)	7 9/16 (192)	1/4-20	7 (178)	6 1/2 (165)	5/8 (16)	3/4 (19)	1/8 1/2 (3) (13)	2 1/8 (54)
8½	2 1/4 (57)	10 1/16 (256)	1/4-20	9 5/8 (244)	9 (229)	5/8 (16)	3/4 (19)	1/8 1/2 (3) (13)	2 1/8 (54)

NOTE: Dimensions in inches, ( ) are millimeters.



600A-03 Aluminum-Threaded Ring Case



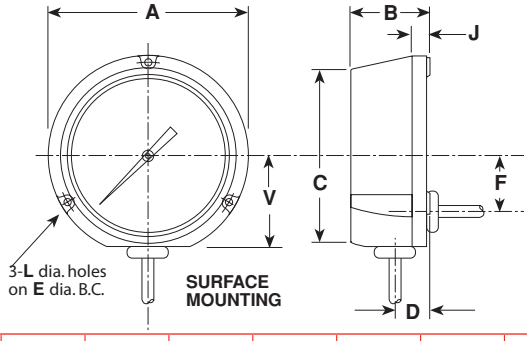
Flanged Ring for Flush Mounting

Case Size Inches	C1	V	B	J	F	M	E	L	LL	S	PP	NN
4½	5 7/8 (149)	2 3/8 (60)	2 1/4 (57)	3/8 (10)	1 5/8 (41)	4 15/16 (125)	5 3/8 (137)	7/32 (5,5)	1/16 1/2 (2) (13)	3/16 (5)	#10-24	C Sink 7/16 x 82° incl. angle (11) x 82°
6	7 5/8 (194)	3 1/8 (79)	2 1/4 (57)	7/16 (11)	2 1/8 (54)	6 7/16 (164)	7 (178)	9/32 (7)	1/16 1/2 (2) (13)	3/16 (5)	#10-24	C Sink 9/16 x 82° incl. angle (14) x 82°

Beaded Ring for Surface Mounting

Case Size Inches	A	B	C	D	E	F	J	L	V
4½	5 13/16 (148)	2 1/4 (57)	4 31/32 (126)	15/16 (24)	5 3/8 (137)	1 5/8 (41)	3/8 (10)	7/32 (5,5)	2 3/8 (60)
6	7 5/8 (194)	2 1/4 (57)	6 1/2 (165)	15/16 (24)	7 (178)	2 1/8 (54)	7/16 (11)	9/32 (7)	3 1/8 (79)

600A-04, 600H-45 Phenolic Case



Model	Case Size Inches	A	B	C	D	E	F	J	L	V	AA	M	PP
600A-04	4½	5 13/16 (148)	2 5/16 (59)	5 1/16 (129)	1 (25)	5 3/8 (137)	1 5/8 (41)	9/16 (14)	7/32 (5,5)	2 5/8 (67)	6 (154)	5 37/64 (148)	#10-24 x 7/8
	6	7 5/8 (194)	2 3/8 (60)	6 5/8 (168)	1 1/16 (27)	7 (178)	2 1/8 (54)	5/8 (16)	9/32 (7)	3 1/2 (89)	7 3/4 (197)	7 17/64 (185)	#1/4-20 x 7/8
600H-45	4½	5 13/16 (148)	3 3/8 (86)	5 1/16 (129)	1 5/8 (41)	5 3/8 (137)	—	1 (25)	7/32 (5,5)	2 5/8 (67)	6 (154)	5 37/64 (148)	#10-24 x 7/8

NOTE: Dimensions in inches, ( ) are miliimeters.

ASHCROFT®

Thermowells

75	W	0750	____	____	H	T	260	C	____	____	____	____
Size		U-Dimesion	Thread	Lagging	Shank	Type	Bore	Material	Cap & Chain	Facing	Rating	Special Lagging Length

Code	Inches
50	½
75	¾
10	1
12	1¼
15	1½
20	2
30	3
40	4

Code	Inches
0162	1⅝
0250	2½
0450	4½
0750	7½
1050	10½
1350	13½
1650	16½
1950	19½
2250	22½

Code	Inches
–	Without
L	With

Code	Type
T	NPT Thd.
W	Weld-in
F	Flanged
V	Van Stone
S	Socket Weld
M	Limited Space Threaded
G	Ground Joint
C	Sanitary

Code	Type
AA	Brass
B	Carbon Steel
C	AISI 304
S	AISI 316

Code	Rating #
150	150
300	300
600	600
1500	1500
2500	2500

Code	Internal Thread
–	½ NPSM

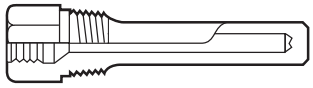
Code	Shank
H	Tapered
S	Straight
R	Stepped
B	Built-up

Code	Diameter
260	.260″
385	.385″

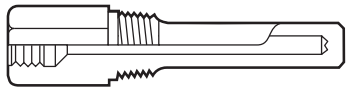
Code	Material
1	Brass
2	Stainless Steel

Code	Facing
F	Flat Face
R	Raised Face
J	Ring Joint
L	Lap Joint

Type: Straight (Uniform) Shank, Threaded
Bore Size: .385
Process Conn.: ½, ¾, 1 NPT, Wed-In
Materials: Brass, Carbon Steel
304 Stainless Steel, 316 Stainless Steel

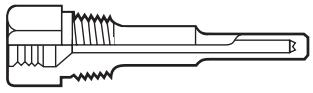


Standard Configuration

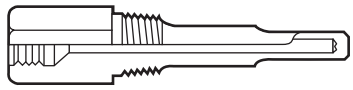


Lagging Configuration

Type: Stepped Shank, Threaded
Bore Size: .260
Process Conn.: ½, ¾, 1 NPT
Materials: Brass, Carbon Steel
304 Stainless Steel, 316 Stainless Steel

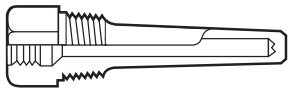


Standard Configuration

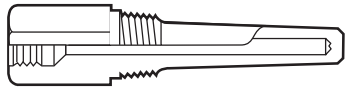


Lagging Configuration

Type: Tapered Shank, Threaded
Bore Size: .260, .385
Process Conn.: ½, ¾, 1 NPT
Materials: Brass, Carbon Steel
304 Stainless Steel, 316 Stainless Steel

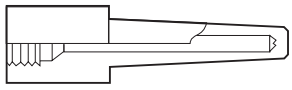


Standard Configuration

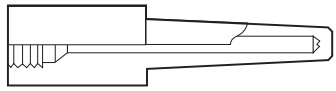


Lagging Configuration

Type: Socket Weld
Bore Size: .260, .385
Process Conn.: ¾″, 1″ Pipe Size
Materials: 304 Stainless Steel, 316 Stainless Steel, Carbon Steel

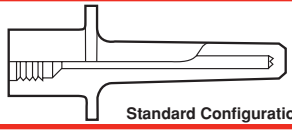


Standard Configuration



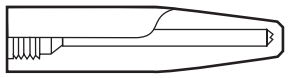
Lagging Configuration

Type: Van Stone
Bore Size: .260, .385
Process Conn.: 1,″ 1½″ Pipe Size
Materials: 304 Stainless Steel, 316 Stainless Steel



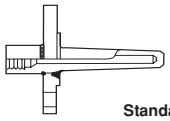
Standard Configuration

Type: Weld-in
Bore Size: .260, .385
Process Conn.: 1½″ Dia.
Materials: 304 Stainless Steel, 316 Stainless Steel



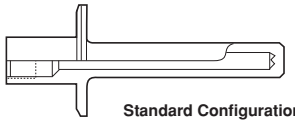
Standard Configuration

Type: Flanged
Bore Size: 260, .385
Process Conn.: 1″, 1½″, 2″ Pipe Size
Materials: 304 Stainless Steel, 316 Stainless Steel

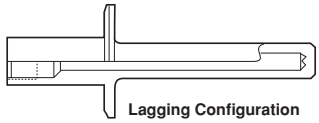


Standard Configuration

Type: Sanitary
Bore Size: .260, .385
Process Conn.: Tri-Clamp connection® 1″, 1½″, 2″
Materials: 304 Stainless Steel, 316 Stainless Steel



Standard Configuration



Lagging Configuration

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

MADE IN U.S.A.

ASHCROFT®

Bimetal Thermometer and Duratemp® Thermometer Options

DURATEMP AND BIMETAL OPTIONS			
Code	Description	Bimetal	Duratemp
XCS[1]	Dual scale	●	
XDM	Dial marking	●	●
XED[2]	High and low electric contacts		●
XEE[2]	Double high-electric contacts		●
XEF[2]	Double low-electric contacts		●
XEG[2]	Electric contacts off at low or high and on in-between		●
XEO	Externally adjustable red set hand		●
XEP	Externally adjustable maximum pointer		●
XEQ	Externally adjustable minimum pointer		●
XNG	Nonglare		●
XNN	Paper tag	●	●
XNH	Stainless steel tag	●	●
XPD[3]	Plastic window	●	●
XSG	Shatterproof glass	●	●
XSH	Stationary red set hand		●
XTK	Tank car thermometer		●
X3B[4]	⅜″ stem diameter with ½ NPT	●	
X02[5]	¼ NPT when ½ NPT is standard	●	

1. 3″ and 5″ case only.
2. 4½″ and 6″ – 600A02, 600A03 and 600A04 styles only.
3. Not available on EL liquid filled thermometers. Lexan is the standard window on EL series.
4. Not available on 2″ case.
5. Only available on rear connect.
6. Not available on 2″ type EI case.

BULB AND ARMOR STYLED – REMOTE MOUNTED

Styles B01, B17 and B18 are bendable extensions with union connections. B01 (12″ bendable extension) is the standard Duratemp® bulb style and is suitable for a variety of insertion lengths and lagging requirements. B17 is a 18″ bendable extension, B18 is a 24″ bendable extension. The union connection on all three styles is pressure tight and can be freely moved the entire length of the bendable portion. After installation, the bendable extension may be formed to suit the application.

Style B03

13″ plain bulb for applications used in open tanks where pressures and velocities are negligible.

Style B08

The compression fitting fastens anywhere along the armored line. This bulb style is well suited for insertion requirements in excess of 131/2″. The B08 style is not a pressure tight connection. A thermowell is recommended for this style and for all bulb styles.

ARMOR STYLE

Style A1

AISI 302 stainless steel spring armor is supplied as standard. Originally designed for U.S. Navy Hi Shock thermometers.

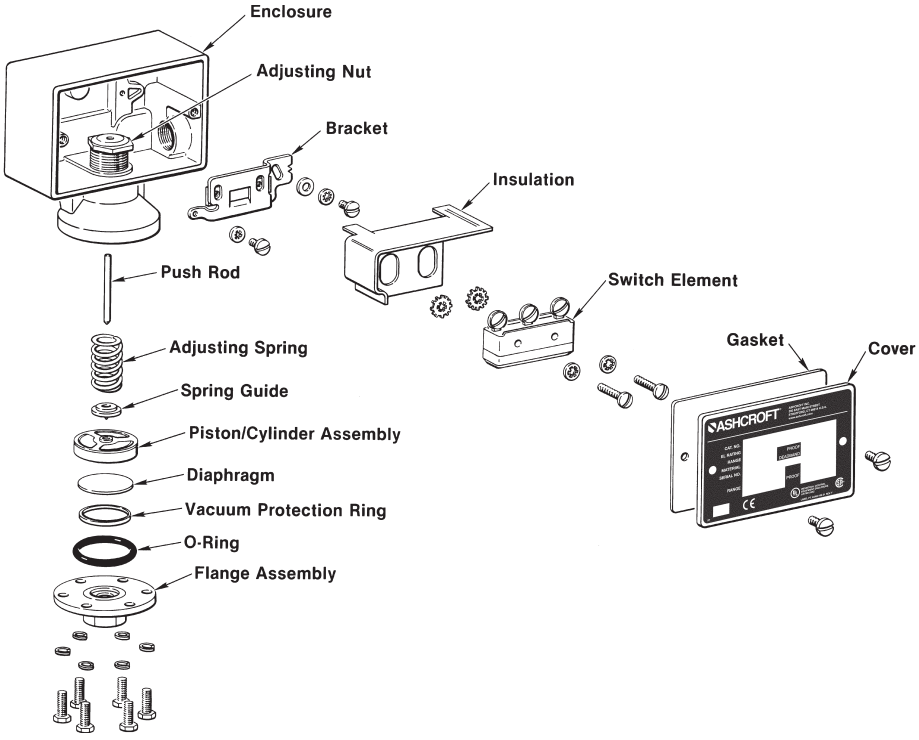
TANK CAR THERMOMETER

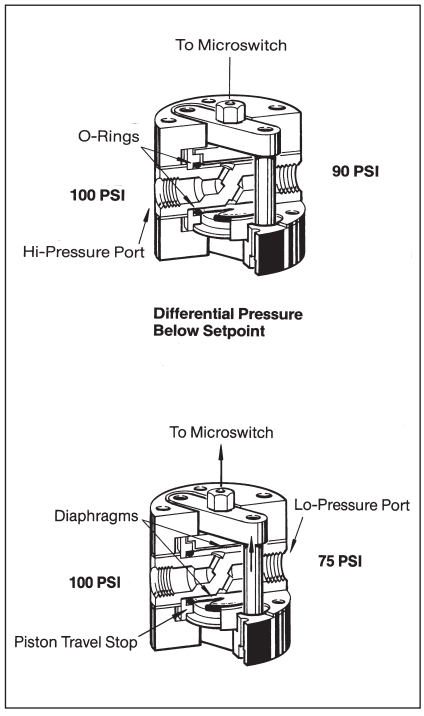
Code XTK

Ashcroft's Duratemp® movementless design is well suited for severe vibration and shock applications as seen in railroad tank cars or other rolling stock apllications, such as milk, chemical and produce transportation.

The option XTK is available in a 8½″ case with a large adjustable pointer and a maximum indicating pointer. The range available is 20/240°F and the dial is marked "Tank Car Thermometer." The maximum indicating pointer illustrates the highest temperature sensed by the thermometer. Case size and pointer size makes the Duratemp easily read from a distance.

PRESSURE AND TEMPERATURE SWITCHES





PRESSURE, TEMPERATURE AND DIFFERENTIAL PRESSURE SWITCH SELECTION

Before making your selection, consider the following:

1. Actuator

The actuator responds to changes in pressure, temperature or differential pressure and operates the switch element in response to these changes.

The actuator is normally exposed to process fluid and must therefore be chemically compatible with it. The following may be used to help select actuator type:

For nominal pressure ranges 0-15 psi through 0-3000 psi, the standard actuator is a diaphragm-sealed piston. In this actuator, process pressure acting on the piston area causes it to overcome the adjustment spring force and actuate a snap-action switch. A diaphragm and O-ring seal the process media from this mechanism. These are available in various materials, i.e.: Buna N, Teflon and Viton. The standard process connection is stainless steel. Optional monel pressure connection is available.

For ˝ H_2O Pressure and Differential Pressure Ranges, a diaphragm actuator is used. In this design, the standard pressure connections are carbon steel. Diaphragms are available in Viton, Buna N and Teflon. Always review process temperature limits before making seal selections.

Optional stainless steel pressure connections are available (option XTA).

For High Differential Pressure Actuator Ranges, 3-15 to 60-600 psid, a Dual Diaphragm-Sealed Piston Actuator is used. This actuator is designed to for high static-pressure applications. The standard pressure connections are nickel-plated brass. Diaphragms are available in Viton, Buna N and Teflon. Always review process temperature limits before making seal selections. Optional stainless steel pressure connections are available (option XUD).

For all temperature ranges the standard Ashcroft® temperature actuator operates on the vapor pressure principle: the vapor pressure in a sealed thermal system is applied to a sensing element, which in turn actuates a switch. This is known as a SAMA Class II system. Various filling materials are used, including Propane, Butane, Methyl Alcohol, N Propyl Alcohol and Xylene. High overtemperature capability is possible with this type of system. The interface between liquid and vapor is the point at which sensing occurs. This is the "sensitive" portion of the bulb. Bulb extensions and capillary are normally filled with vapor, and have little effect on the setpoint, regardless of ambient temperature variations; therefore, no ambient compensation is required. For best results, the bulb should be mounted within 60 degrees of vertical to assure the liquid remains in the bulb.

2. Enclosure

The enclosure protects the switch element and mechanism from the environment and has provisions for mounting and wiring. All Ashcroft switch enclosures are epoxy-coated aluminum or stainless steel for maximum corrosion resistance. Choose between watertight NEMA 4, 4X for most industrial applications and explosion-proof NEMA 7/9 for most process applications.

Ashcroft enclosures include watertight cover gaskets, external mounting holes and one or two $^3/_4$ NPT electrical conduit holes for ease of installation. Pressure switches may also be mounted directly to the process by means of the standard $^1/_4$ NPTF or optional $^1/_2$ NPT pressure connection.

Note: When installing Ashcroft switches, refer to instruction sheets included with each switch, the National Electrical Code, and any other local codes or requirements to assure safety.

3. The Switching Function

Next, consider the switching function. Most applications for alarm and shutdown are satisfied by single setpoint, fixed deadband models. For high/low or alarm and shutdown, the dual setpoint models may be selected. For pump, compressor, level and other control applications, an adjustable deadband model is often the best choice.

4. The Switch Element

Finally, the electrical switching element must be compatible with the electrical load being switched. For ease of selection, all electrical

switching elements are snap acting, SPDT (single pole-double throw), or 2 (SPDT). Select a switch element with electrical rating that exceeds the electrical rating of the device being controlled by the switch. For better reliability and safety, optional Hermetically Sealed switching elements may be specified.

ADDITIONAL SWITCH TERMINOLOGY

Accuracy – (See repeatability) Accuracy normally refers to conformity of an indicated value to an accepted standard value. There is no indication in switch products; thus, instead, the term repeatability is used as the key performance measure. Ashcroft switch accuracy is 1% of nominal range.

Automatic Reset Switch – Switch which returns to normal state when actuating variable (Pressure or Temperature) is reduced.

Adjustable or Operating Range – That part of the nominal range over which the switch setpoint may be adjusted. Normally about 15% to 100% of the nominal range for pressure and differential pressure switches and the full span for temperature switches.

Burst Pressure – The maximum pressure that may be applied to a pressure switch without causing leakage or rupture. This is normally at least 400% of nominal range for Ashcroft switches. Switches subjected to pressures above the nominal range can be permanently damaged.

Deadband – The difference between the setpoint and the reset point, normally expressed in units of the actuating variable. Sometimes referred to as differential.

Division 1 – A National Electrical Code Classification of hazardous locations. In Division 1 locations, hazardous concentrations of flammable gases or vapors exist continuously, intermittently or periodically under normal conditions; frequently because of repair or maintenance operation/leakage or due to breakdown or faulty operation of equipment or processes which might also cause simultaneous failure of electrical equipment. Explosion-proof NEMA 7/9 enclosures are required in Division 1 locations.

Division 2 – A National Electrical Code Classification of Hazardous locations. In Division 2 hazardous locations, flammable or volatile liquid or flammable gases are handled, processed or used, but will normally be confined within closed containers or closed systems from which they can escape only in case of accidental rupture or breakdown or in case of abnormal operation of equipment. Either Nema 7/9 explosion-proof enclosures or any enclosure with hermetically sealed switch contacts may be used in Division 2 locations.

Explosion Proof – A term commonly used in industry referring to enclosures capable of withstanding an internal explosion of a specified gas without igniting surrounding gases. Strict installation practices in accordance with the national electrical code are also required for safety.

Fixed Deadband – The difference between the setpoint and the reset point of a pressure or temperature switch. It further signifies that this deadband is a fixed function of the pressure switch and not adjustable.

Hermetically Sealed Switch – A switch element whose contacts are completely sealed from the environment to provide additional safety and reliability. Contact arc cannot cause an explosion and atmospheric corrosive elements cannot affect the contacts.

Manual Reset Switch – Pressure or Temperature switch in which contacts remain actuated even after the actuating variable returns to normal. On Ashcroft manual reset switches, a button must be pushed to reset the contacts.

National Electrical Manufacturers Association (NEMA) – This group has defined several categories of enclosures, usually referred to as "types." Further, they designate certain features and capabilities each type must include. For example, among other features, a NEMA 4 enclosure must include a threaded conduit connector, external mounting provision and cover gaskets. When selecting a NEMA 4 enclosure from any manufacturer, a buyer is assured of receiving these features.

NEMA 4 – Watertight and dusttight enclosures intended for use indoors or outdoors to protect the equipment against splashing, falling or hose-directed water, external condensation and water seepage. They are also sleet-resistant.

NEMA 4X – Watertight, dusttight and corrosion-resistant enclosures with same qualifications as NEMA 4, but with added corrosion resistance.

NEMA 7 – Enclosures for indoor Class I, Division 1 hazardous locations with gas or vapor atmospheres.

NEMA 9 – Enclosures for indoor Class II, Division 1 hazardous locations with combustible dust atmospheres.

Normal Switch Position – Contact position before actuating pressure (or variable) is applied. Normally closed contacts open when the switch is actuated. Normally open contacts close when the switch is actuated.

Normally Closed – Refers to switch contacts that are closed in the normal switch state or position (unactuated). A pressure change opens the contacts.

Normally Open Switch – Refers to the contacts that are open in the normal switch state or position (unactuated). A pressure change closes the contacts.

Overpressure Rating(s) – A nonspecific term that could refer to either burst or proof pressure, or both.

Proof Pressure – The maximum pressure which may be applied without causing damage. This is determined under strict laboratory conditions including controlled rate of change and temperature: This value is for reference only. Consult factory for applications where switch must operate at pressures above nominal range or reference temperature (70°F).

Repeatability (Accuracy) – The closeness of agreement among a number of consecutive measurements of the output setpoint for the same value of the input under the same operating conditions, approaching from the same direction, for full-range traverses. Ashcroft switch repeatability is 1% of nominal range.

Note: It is usually measured as nonrepeatabil-ity and expressed as repeatability in percent of span or nominal range. It does not include hysteresis or deadband.

Reset Point – The reset point is the Pressure, Temperature or Differential Pressure Value where the electrical switch contacts will return to their original or normal position after the switch has activated.

Setpoint – The setpoint is the Pressure, Temperature or Differential Pressure value at which the electrical circuit of a switch will change state or actuate. It should be specified either on increase or decrease of that variable. (See also reset point.)

Single-Pole Double Throw (SPDT) Switching Element – A SPDT switching element has one normally open, one normally closed, and one common terminal. The switch can be wired with the circuit either normally open (N/O) or normally closed (N/C). SPDT is standard with most Ashcroft pressure and temperature switches.

Snap Action – In switch terminology, snap action generally refers to the action of contacts in the switch element. These contacts open and close quickly and snap closed with sufficient pressure to firmly establish an electrical circuit. The term distinguishes products from mercury bottle types that were subject to vibration problems.

Static Pressure – For differential pressure switches, static pressure refers to the lower of the two pressures applied to the actuator.

ASHCROFT®

Additional Pressure and Temperature Switch Application Information

DIFFICULT PROCESS MEDIA

When specifying pressure or temperature switches, the material in contact with media must be compatible with it. Otherwise, failure could occur, resulting in leakage, injury, loss of life, property or production. The user should review prior experience with materials of construction in the process for guidance in material selection. If this is not appropriate, contact Customer Service for assistance. Relevant information such as process media, concentration of each constituent, temperature, pressure, the presence of contaminants, particulate, vibration or pulsation is necessary to make the best recommendation.

Some applications are best handled by adding an Ashcroft diaphragm seal to isolate the fluid media from the pressure or differential pressure switch.

Diaphragm seals are recommended where:

- The process media being sensed could clog the pressure element.
- The process media temperature is above or below the ratings of the actuator seal materials.
- The application calls a for sanitary process connection.

Note: The addition of a diaphragm seal may increase the deadband and response time of the pressure switch to process pressure changes. Please consult Customer Service for details.

OXIDIZING MEDIA

When specifying a pressure switch for use in oxidizing media, such as chlorine, oxygen and several other chemical compounds, the wetted materials must be compatible with the media, and the switch should be cleaned for oxygen service. This is necessary to remove any residue that might react violently with the oxidizing media. Specify option X6B (clean for oxygen service).

STEAM SERVICE

In order to prevent live steam from coming into contact with the switch actuator, a siphon filled with water should be installed between the switch and the process line. We recommend the optional stainless steel welded process connection and diaphragm even though viton is rated for use with steam. Experience has shown that in many steam applications, the 300°F high temperature limit of viton is exceeded by steam under pressure.

In some boiler applications, a special U.L. listing, "MBPR", which requires unique features is needed. Ashcroft offers these features with option XG8.

NACE

NACE is the acronym for the National Associations of Corrosion Engineers. Their standard MRO175-93 titled "Sulfide Stress Cracking Resistant Metallic Materials for Oilfield Equipment," is cited when ordering instruments for oilfield applications involving sour oil or gas with traces of hydrogen sulfide. It is a legal requirement in many states. NACE instruments are also suitable for use in sewage treatment plants and other applications with traces of hydrogen sulfide in the process.

For high concentrations of hydrogen sulfide in a diaphragm seal should be used; a Tantalum diaphragm and Hastelloy C (C276) lower housing are recommended. For over 3% or 30,000ppm, a seal is essential.

HIGH TEMPERATURE PROCESS

Refer to the actuator seal table for process temperature limits for pressure switch actuators. Pressure switches mounted directly to the process can withstand up to 300°F when equipped with optional viton, stainless steel or monel wetted parts. If process temperature exceeds 300°F, four feet of ½˝ tubing between the process and the switch will generally protect the switch from damage.

Alternatively, an Ashcroft diaphragm seal, can be used to isolate the switch from the hot process.

VIBRATION

Generally, vibration will not harm Ashcroft pressure switches. However, premature tripping may occur under severe conditions. This tends to be annoying, but repeatable for a given situation and might be in the order of 5% to 10% of switch range from the setpoint, i.e. a 100 psi switch set at 50 psi on increasing pressure might trip somewhere between 40 and 45 psi on increasing pressure. This would not reduce the life of the pressure switch.
The best approach in this type of application is to mount the switch remotely, connecting the switch to the process or equipment with flexible tubing. If this is not possible, consider the use of the Belleville actuator, option XG3.

PULSATION

Pressure pulsation below the range of the pressure switch will not harm it. However, because the switch can react to pressure pulses less than one second duration, it might be desirable to include a dampening device. Several Ashcroft accessories, such as snubbers address this situation. Consult Customer Service for more information.

MOUNTING

All Ashcroft pressure, temperature and differential pressure switches with snap acting contacts may be mounted in any position. This includes the sensing bulbs of temperature switches. This is an important advantage of snap acting switch designs.

SWITCH ELEMENT SELECTION

B-Series switches are available with a wide variety of snap acting switch elements to meet most electrical requirements. The standard contact arrangement is single pole, double throw (SPDT). This includes both normally open and normally closed contacts. Standard contact material is fine silver which generally is suitable for switching 8 volts or more, up to the rating in the Switch Element Selection Table. When switching less than 8 volts, optional Gold Alloy contacts are recommended.

Optional Dual, or 2 SPDT contacts may be supplied in B-Series enclosures for applications requiring two switch functions at the same setpoint. These contacts are technically not double pole, double throw (DPDT). They are synchronized at the factory to actuate within 1% of nominal range of each other. For simultaneous actuation of 2 SPDT contacts, option XG3 should be ordered.

ASHCROFT®

Additional Pressure and Temperature Switch Application Information

INFORMATION & GUIDELINES FOR SETTING ASHCROFT PRESSURE, TEMPERATURE AND DIFFERENTIAL PRESSURE SWITCHES

All Ashcroft pressure, temperature and differential pressure switches can be set at any point between about 15% and 100% of the range as designated on the label or the nominal range table.

Ashcroft pressure and temperature switches can be either set in the field or ordered from the factory preset to your requirements. When set at the factory, the specification is ±1% of the nominal range.

Factory setting, or XFS, is a very popular option, and as a result, we often get orders that do not have enough information or have incorrect information.

HOW TO ORDER

When "XFS" is desired:

1. Setpoint must be indicated.
2. Increasing or decreasing pressure must be indicated.

   Ex: B424B XFS 100#
   Set: 60# decreasing
3. For differential pressure switches, static operating pressure must be given also.

HAZARDOUS LOCATIONS

a. **Division I.**
Ashcroft 700 series or other explosion proof enclosures are required to meet the requirements of Division I Hazardous Locations as defined by the National Electrical Code.

b. **Division II.**
These enclosures also meet the less stringent requirements for Division II Hazardous Locations. Alternatively, Ashcroft 400 series or other watertight enclosures, with hermetically sealed switch elements are approved for use in Division II hazardous locations.

c. **Intrinsic Safety.**
Any Ashcroft pressure or temperature switch may be used with an approved barrier in most intrinsically safe systems. These switches do not create or store energy and are therefore designated "simple devices" in these systems.
Exception: Ashcroft N series electronic pressure switches require power and may not be suitable for use in all intrinsically safe systems.

c. **ATEX.**
ATEX is a European designation that deals with standards for equipment and protective systems intended for use in potentially explosive atmospheres. This approval is required for switches intended for use in hazardous locations, especially important to OEMs who export to Europe and contractors specifying or purchasing products for European applications.

Ashcroft is the leader in providing pressure and temperature switches for alarm, shutdown and control in hazardous locations.

Models are available with single or dual setpoints, fixed or adjustable deadbands.

Choose from standard, miniature or compact enclosures, construction of epoxy coated aluminum or stainless steel.

ASHCROFT®

Miniature Pressure Switches, Watertight Brass Body, Type A-Series

- *Wide variety of electrical connections including spade, screw and DIN*
- *Rugged brass body sealed for environmental protection*
- *Precision snap-acting switch element*
- *Choice of field-adjustable or factory-adjusted to setpoint requirements*
- *UL and CSA listed*

The Ashcroft® A-Series pressure switches are designed for tough industrial and OEM applications requiring a durable, high-quality miniature switch.

Ideal for pressure alarm, shutdown, or control on heavy vehicles, machine tools, electronic equipment, engines, compressors, and wherever size is a consideration or equipment is being downsized.

IN A RUSH? ASK FOR ASHCROFT GOLD SERVICE

1 - FUNCTION

APS - Pressure switch, single setpoint, fixed deadband, factory set
APA - Pressure switch, single setpoint, fixed deadband, field adjustable

2 - BODY (ENCLOSURE)

RB - Brass/polycarbonate body with polycarbonate switch seal

3A - SWITCH ELEMENT CODE

Code	SPDT Switch Elements UL/CSA Listed	
D	General Purpose	5A, 125/250 Vac 5A, 28 Vdc
M	Gold Contacts	1A, 125 Vac

3B - ELECTRICAL CONNECTION CODE

Code	Electrical Terminations
L	Wire leads, 3-#18 AWG Insulated – 12″
S	Screw terminals, 3-#6 binding head screws
T	Spade terminal, 3-.187 male spade
C	½ NPT male conduit connection with wire leads
H	Micro DIN connector

4 - ACTUATOR SEAL

Code	Material	Process Temperature Limits (°F)
B	Buna N	0-150
V	Viton	20-200
T	Teflon	0-150
H	Stainless Steel Piston/ Viton O-Ring	20-200

5 - PRESSURE CONNECTION CODE

Code	Description
01	⅛ NPT Male
02	¼ NPT Male

6 - A-SERIES OPTIONS

Code	Description
XFS	Factory adjusted setpoints
XNH	Tagging stainless steel
X6B	Cleaned for oxygen service

Ambient operating temperature limits –20°F to 150°F. Setpoint shift of up to one additional setpoint repeatability per 50°F change is normal.

Note: Switches calibrated at 70°F reference.

7A - AP NOMINAL RANGE & PERFORMANCE TABLE – CODES B, V, T ACTUATOR SEAL

Nominal Range		Proof Pressure	Setpoint Repeatability APS (Factory Set)	Setpoint Adjustability Range	Deadband (All Switch Elements)	
psi	bar	psi	psi	psi	Buna N	Viton & Teflon
30 in.Hg Vac	–1	1000	±1.0 in.Hg	–30 to –4 in.Hg	1-5 in.Hg	1.0-7.0
15	1	1000	±0.5	1.5-15	0.1-1.0	0.2-2.0
30	2	1000	±0.5	3-30	0.2-1.3	0.3-2.5
60	4	1000	±1.0	6-60	0.3-1.5	0.5-3.0
100	7	1000	±2.0	10-100	1.0-5.0	4.0-10
200	14	1000	±5.0	20-200	4.0-12	5.0-18
400	28	1600	±10	40-400	5.0-20	8.0-25
600	40	2400	±15	60-600	8.0-25	10.0-34

7B - AP NOMINAL RANGE & PERFORMANCE TABLE – CODE H ACTUATOR SEAL

Nominal Range		Proof Pressure	Setpoint Repeatability APS (Factory Set)	Setpoint Adjustability Range	Deadband
psi	bar	psi	psi	psi	Code D, M, DD, MM
1000	70	4000	±20	100-1000	50-100

TO ORDER THIS A-SERIES PRESSURE SWITCH:

Select:	APS	RB	DL	BO2	XFS	30#
1. Function:						
2. Body:						
3. Electrical:						
4. Pressure Port:						
5. Options (see table 6):						
6. Pressure Range (see table 7A & 7B):						

Set at:
(Add your setpoint requirements.)

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Miniature Pressure Switches, Watertight or Explosion-Proof Stainless Steel Body, A-Series

- *All-welded stainless steel actuator for long, reliable service*
- *High pressure piston with Viton O-ring optional*
- *Wide variety of pressure connections, including NPT, straight threads, etc.*
- *Rugged stainless steel body epoxy-sealed for environmental protection*
- *Precision snap-acting switch element*
- *Choice of field adjustable with locking feature or factory-adjusted to setpoint requirements*
- *UL and CSA listed*
- *Choice of electrical termination*

The Ashcroft® A-Series pressure switches are designed for tough industrial and OEM applications requiring a durable, high-quality miniature switch; especially where corrosion resistance or leakage is a concern.

Ideal for pressure alarm, shut-down, or control on heavy vehicles, machine tools, electronic equipment, engines, compressors, food and beverage processing equipment, and wherever size is a consideration or equipment is being downsized. Explosion-proof models are available.

IN A RUSH? ASK FOR ASHCROFT GOLD SERVICE

1 - FUNCTION

APS - Pressure switch, single setpoint, fixed deadband, factory set
APA - Pressure switch, single setpoint, fixed deadband, field adjustable

2 - BODY (ENCLOSURE)

NS - Watertight stainless steel body with glass to metal switch seal
RS - Watertight stainless steel body with polycarbonate switch seal
N7 - Explosion proof body with glass to metal switch seal(1)

(1) Available with 1/2 NPT male conduit connection. (Code C) only.

3A - SWITCH ELEMENTS CODE

Code	SPDT Switch Elements UL/CSA Listed	
D	General Purpose	5A, 125/250 Vac 5A, 28 Vdc
M	Gold Contacts	1A, 125 Vac

3B - ELECTRICAL CONNECTION CODE

Code	Electrical Terminations
L	Wire leads, 3-#18 AWG Insulated – 12″
S	Screw terminals, 3-#6 binding head screws
T	Spade terminal, 3-.187 male spade
C	1/2 NPT male conduit connection with wire leads(2)
H	Micro DIN connector

(2) Available only with glassd to metal switch seal, enclosures NS or N7.

4 - ACTUATOR SEAL

Code	Material	Process Temperature Limits (°F)
S	316 Stainless Steel Welded	0-200
H	Stainless Steel Piston/ Viton O-Ring	20-200

5 - PRESSURE CONNECTION CODE

Code	Description
01	1/8 NPT Male
02	1/4 NPT Male
03	1/8 NPT Female
04	1/4 NPT Female
05	7/16 -20 SAE
09	3/4 Tri-Clamp Connection

6 - A-SERIES OPTIONS

Code	Description
XFS	Factory adjusted setpoints
XNH	Tagging stainless steel
X6B	Cleaned for oxygen service
X3A	1½″ or 2″ Tri-Clover connection with 3A approval

Ambient operating temperature limits –20°F to 150°F. Setpoint shift of up to one additional setpoint repeatability per 50°F change is normal.

Note: Switches calibrated at 70°F reference.

7A - AP NOMINAL RANGE & PERFORMANCE TABLE – CODE S ACTUATOR SEAL

Nominal Range		Proof Pressure	Setpoint Repeatability	Setpoint Adjustability Range	Deadband (All Switch Elements)
psi	bar	psi	psi	psi	
30 in.Hg Vac./15	–1/1	2000	±1.0 in.Hg/±0.5	–30 in.Hg to 15	1-6 in.Hg/1-5.0
30	2	2000	±0.5	5-30	1.0-5.0
60	4	2000	±1.0	8-60	2.0-7.0
100	7	2000	±2.0	10-100	3.0-10
200	14	2000	±5.0	35-200	12-20
400	28	2000	±10	45-400	20-40
600	40	3000	±15	60-600	30-60

7B - AP NOMINAL RANGE & PERFORMANCE TABLE – CODE H ACTUATOR SEAL

Nominal Range		Proof Pressure	Setpoint Repeatability	Setpoint Adjustability Range	Deadband (All Switch Elements)
psi	bar	psi	psi	psi	
1000	70	8000	±20	100-1000	50-100
2000*	140	8000	±25	200-2000	100-200

*APS only

TO ORDER THIS A-SERIES PRESSURE SWITCH:

Select:	APS	NS	DL	SO2	XFS	30#
1. Function:						
2. Body:						
3. Electrical:						
4. Pressure Port:						
5. Options (see table 6):						
6. Pressure Range (see table 7A & 7B):						

Set at: (Add your setpoint requirements.)

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Pressure and Differential Pressure Switches, Watertight Enclosure, Type 400, B-Series

This general purpose Ashcroft® switch series is ideal for use in virtually all Industrial and OEM applications.

- ***Watertight NEMA 4X enclosure, IP66***
- ***Choice of switch elements for all applications, including hermetically sealed***
- ***Wide choice of wetted materials, including all-welded Monel or stainless steel***
- ***Fixed or limited adjustable deadband***
- ***Approved for UL, CSA and FM[8] ratings***
- ***Setpoints adjustable from 15-100% of range***
- ***Choice of actuators, including designs for fire-safe and NACE applications[8]***
- ***Readily available***
- ***Standard pressure connection materials:***

  Pressure psi ranges
  - 316L stainless steel

  Differential psid ranges
  - Nickel-plated brass[9]

  Pressure and differential inches of water ranges
  - Epoxy coated carbon steel

IN A RUSH? ASK FOR ASHCROFT GOLD SERVICE

1 - ENCLOSURE

B4 - Pressure switch, type 400, watertight enclosure meets NEMA 3, 4, 4X and 13, IP66 requirements

D4 - Differential pressure switch, type 400, watertight enclosure meets NEMA 3, 4, 4X and 13, IP66 requirements

2 - SWITCH ELEMENTS

Order Code	Description/Maximum Electrical Ratings UL/CSA Listed SPDT	
20[4]	Narrow deadband	15A, 125/250 Vac
21[9]	Ammonia service	5A, 125/250 Vac
22[3]	Hermetically sealed switch, narrow deadband	5A, 125/250 Vac
23	Heavy duty ac	20A,125/250 Vac
24[1]	General purpose	15A,125/250/480 Vac 1/2A, 125 Vdc 1/4A, 250 Vdc
25	Heavy duty dc	10A,125/ Vac or dc 1/8HP 125/ Vac or dc
26[4]	Sealed environment proof	15A, 125/250 Vac
27	High temp. 300°F	15A, 125/250 Vac
28	Manual reset trip on increasing	15A, 125/250 Vac
29	Manual reset trip on decreasing	15A, 125/250 Vac
31	Low level (gold) contacts	1A,125/250 Vac
32	Hermetically sealed switch, general purpose	11A, 125/250 Vac 5A, 30 Vdc
50	Variable deadband	15A,125/250 Vac
UL/CSA Listed Dual SPDT[2]		
61[4]	Dual narrow deadband	15A, 125/250 Vac
62[4]	Dual narrow environment proof	15A, 125/250 Vac
63	Dual high temp. 300°F	15A, 125/250 Vac
64	Dual general purpose	15A, 125/250/480 Vac 1/2A, 125 Vdc 1/4A, 250 Vdc
65	Dual ammonia service	5A, 125/250/480

3 - ACTUATOR SEAL[7]

Code & Material	Process Temp.[6] Limits °F	Range			
		Vac in.H_2O	0-600 psi	1000 psi	2000-3000 psi
B-Buna N	0 to 150	●	●	●	●
V-Viton	20 to 300	●	●	●	
T-Teflon	0 to 150	●	●	●	●
S-SS[5][10]	0 to 300		●	●	
P-Monel[5][10]	0 to 300		●	●	

4 - OPTIONS

(See pages 238-239)

5 - STANDARD PRESSURE RANGES

(See page 235)

NOTES:

1. Standard switch.
2. Dual switches are 2 SPDT snap-action switches not independently adjustable.
3. Estimated dc rating, 2.5A, 28 Vdc (not UL listed).
4. Estimated dc rating, .4A, 120 Vdc (not UL listed).
5. Available on pressure only.
6. Ambient operating temperature limits –20 to 150°F, all styles. Setpoint shift of ±1% of range per 50°F is normal. Switch calibrated at 70°F reference.
7. Items are wetted by process fluid.
8. Refer to Option Table.
9. Order Option XUD, stainless steel process connection.
10. On differential switches, stainless steel is available in 15, 30, 60 and 90 psid ranges only. Includes Teflon O-ring and 316 SS connection.

HERMETICALLY SEALED SWITCH

We recommend hermetically sealed switch elements for improved reliability. The hermetically sealed switch provides uncompromising contact protection in harsh or corrosive environments. The Ashcroft 400 Series is also approved for installation in Division II hazardous areas when supplied with hermetically sealed contacts.

Features:
- UL-recognized component, guide WSQ2, File E85076
- All-stainless steel welded construction

TO ORDER THIS B-SERIES PRESSURE SWITCH:

Select: B4 20 B XPK 600#

1. Enclosure: B4
2. Switch Element: 20
3. Actuator Seal: B
4. Options (See pages 238-239): XPK
5. Pressure Range (See page 235): 600#

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Temperature Switches Watertight Enclosure, Type 400, B-Series

This broad Ashcroft® switch series is easy to use and readily retrofits to virtually all process, industrial and OEM applications.

- ***Watertight NEMA 4X, IP66 enclosure***
- ***Choice of switch elements for all applications, including hermetically sealed (NEMA 4 meets Class I, Div. 2, Groups A, B, C, & D with hermetically sealed switch)***
- ***UL, CSA listings standard***
- ***Setpoints adjustable from 15-100% of range***
- ***Wetted material is all-welded stainless steel***
- ***Fixed or limited adjustable deadband***
- ***Readily available***

IN A RUSH? ASK FOR ASHCROFT GOLD SERVICE

1 - ENCLOSURE

T4 - Temperature switch, type 400, watertight enclosure meets NEMA 3, 4, 4X and 13, IP66 requirements

2 - SWITCH ELEMENTS

Order Code	Description/Maximum Electrical Ratings UL/CSA Listed SPDT	
20[4]	Narrow deadband	15A, 125/250 Vac
21	Ammonia service	5A, 125/250 Vac
22[3]	Hermetically sealed switch, narrow deadband	5A, 125/250 Vac
23	Heavy duty ac	20A,125/250 Vac
24[1]	General purpose	15A,125/250/480 Vac 1/2A, 125 Vdc 1/4A, 250 Vdc
25	Heavy duty dc	10A,125/ Vac or dc 1/8HP 125/ Vac or dc
26[4]	Sealed environment proof	15A, 125/250 Vac
27	High temp. 300°F	15A, 125/250 Vac
28	Manual reset trip on increasing	15A, 125/250 Vac
29	Manual reset trip on decreasing	15A, 125/250 Vac
31	Low level (gold) contacts	1A,125/250 Vac
32	Hermetically sealed switch, general purpose	11A, 125/250 Vac 5A, 30 Vdc
50	Variable deadband	15A,125/250 Vac
	UL/CSA Listed Dual SPDT[2]	
61[4]	Dual narrow deadband	15A, 125/250 Vac
62[4]	Dual narrow environment proof	15A, 125/250 Vac
63	Dual high temp. 300°F	15A, 125/250 Vac
64	Dual general purpose	15A, 125/250/480 Vac 1/2A, 125 Vdc 1/4A, 250 Vdc
65	Dual ammonia service	5A, 125/250/480

3 - THERMAL SYSTEM SELECTION[5]

DIRECT MOUNT

Order Code	System Material	Style
TS	316 stainless steel	Rigid

REMOTE MOUNT

Order Code	System Material	Line Length	Style
T05	316 stainless steel	5´	Capillary with 302 SS Spring Armor
T10	316 stainless steel	10´	
T15	316 stainless steel	15´	
T20	316 stainless steel	20´	
T25	316 stainless steel	25´	

4 - BULB LENGTH SELECTION[6]

DIRECT MOUNT

Order Code	"S" Dimension	Minimum Thermowell "U" Dimension
027	2¾″	—
040	4″	2½″
060	6″	4½″
090	9″	7½″
120	12″	10½″
	REMOTE MOUNT	
030	3″	2½″

5 - OPTIONS

See pages 238-239

6 - STANDARD TEMPERTATURE RANGES

See page 235

NOTES:

1. Standard switch.
2. Dual switches are 2 SPDT snap-action switches not independently adjustable.
3. Estimated dc rating, 2.5A, 28 Vdc (not UL listed).
4. Estimated dc rating, 0.4A, 120 Vdc (not UL listed).
5. Additional line lengths available, call factory.
6. Additional bulb lengths available, call factory.

Switches calibrated at 70°F ambient reference.

HERMETICALLY SEALED SWITCH

We recommend hermetically sealed switch elements for improved reliability. The hermetically sealed switch provides uncompromising contact protection in harsh or corrosive environments. The Ashcroft 400 Series is also approved for installation in Division II hazardous areas when supplied with hermetically sealed contacts.

Features:
- UL-recognized component, guide WSQ2, File E85076
- All-stainless steel welded construction

TO ORDER THIS B-SERIES TEMPERATURE SWITCH:

Select: T4 20 T05 030 XNH 150° to 260°F

1. Enclosure: T4
2. Switch Element: 20
3. Thermal System: T05
4. Bulb Length: 030
5. Options (see pages 238-239): XNH
6. Temperature Range (see page 235): 150° to 260°F

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Pressure and Differential Pressure Switches, Explosion-Proof Enclosure, Type 700, B-Series

This broad Ashcroft® switch series is ideal for use in virtually all process and industrial applications.

- ***Explosion-proof NEMA 7/9, IP66 enclosure (explosion-proof enclosure Class I, Div. 1 & 2, Groups B, C, & D and Class II, Div. 1 & 2, Groups E, F & G)***
- ***Choice of switch elements for all applications, including hermetically sealed***
- ***Wide choice of wetted materials, including all-welded Monel or stainless steel***
- ***Fixed or limited adjustable deadband***
- ***UL listed***
- ***Various actuators available***
- ***Belleville actuator(8)***
- ***Readily available***
- ***Standard pressure connection materials:***
  - ***Pressure psi ranges - 316L SS***
  - ***Differential psid ranges - Nickel plated brass(9)***
  - ***Pressure and differential inches of water ranges - Epoxy coated carbon steel***
- ***ATEX models available(8)***
- ***CSA models available(8)***
- ***FM models available(8)***
- ***Setpoints adjustable from 15-100% of range***

ATEX model shown

1 - ENCLOSURE

B7 - Pressure switch, type 700, explosion-proof enclosure meets Div.1 & 2, NEMA 7/9, IP66 requirements

D7 - Differential pressure switch, type 700, explosion-proof enclosure meets Div. 1 & 2, NEMA 7/9, IP66 requirements

2 - SWITCH ELEMENTS

Order Code	Description/Maximum Electrical Ratings UL/CSA Listed SPDT	
20(4)	Narrow deadband	15A, 125/250 Vac
21(9)	Ammonia service	5A, 125/250 Vac
22(3)	Hermetically sealed switch, narrow deadband	5A, 125/250 Vac
23	Heavy duty ac	20A,125/250 Vac
24(1)	General purpose	15A,125/250/480 Vac 1/2A, 125 Vdc 1/4A, 250 Vdc
25	Heavy duty dc	10A,125/ Vac or dc 1/8HP 125/ Vac or dc
26(4)	Sealed environment proof	15A, 125/250 Vac
27	High temp. 300°F	15A, 125/250 Vac
31	Low level (gold) contacts	1A,125/250 Vac
32	Hermetically sealed switch, general purpose	11A, 125/250 Vac 5A, 30 Vdc
50	Variable deadband	15A,125/250 Vac
	UL/CSA Listed Dual SPDT(2)	
61(4)	Dual narrow deadband	15A, 125/250 Vac
62(4)	Dual narrow environment proof	15A, 125/250 Vac
63	Dual high temp. 300°F	15A, 125/250 Vac
64	Dual general purpose	15A, 125/250/480 Vac 1/2A, 125 Vdc 1/4A, 250 Vdc
65	Dual ammonia service	5A,125/250/480 Vac
67(3)	Hermetically sealed switch, narrow deadband	5A, 125/250 Vac
68	Dual hermetically sealed switch, general purpose	11A,125/250 Vac 5A, 30 Vdc

3 - ACTUATOR SEAL(7)

Code & Material	Process Temp.(6) Limits °F	Range			
		Vac in.H_2O	0-600 psi	1000 psi	2000-3000 psi
B-Buna N	0 to 150	●	●	●	●
V-Viton	20 to 300	●	●	●	
T-Teflon	0 to 150	●	●	●	●
S-SS(5)(10)	0 to 300		●	●	
P-Monel(5)	0 to 300		●	●	

4 - OPTIONS

(See pages 238-239)

5 - STANDARD PRESSURE RANGES

(See page 235)

NOTES:

1. Standard switch.
2. Dual switches are 2 SPDT snap-action switches not independently adjustable.
3. Estimated dc rating, 2.5A, 28 Vdc (not UL listed).
4. Estimated dc rating, .4A, 120 Vdc (not UL listed).
5. Available on pressure only.
6. Ambient operating temperature limits –20 to 150°F, all styles. Setpoint shift of ±1% of range per 50°F is normal. Switch calibrated at 70°F reference.
7. Items are wetted by process fluid.
8. Refer to Option Table.
9. Order Option XUD, stainless steel process connection.
10. On differential switches, stainless steel is available in 15, 30, 60 and 90 psid ranges only. Includes Teflon O-ring and 316 SS connection.

ATEX APPROVAL FOR HAZARDOUS LOCATIONS

ATEX is a European designation that deals with standards for equipment and protective systems intended for use in potentially explosive atmospheres. This approval is required for switches intended for use in hazardous locations, especially important to OEMs who export to Europe and contractors specifying or purchasing products for European applications. XCN option adds special features to Ashcroft 700-Series switch enclosures that meet the requirements for the highest levels of security and danger, such as:

- Special locking device requiring an Allen wrench to remove cover
- Special vents that blow out should the diaphragm rupture, thus preventing pressure build-up in the enclosure
- Special conduit plug requiring an Allen wrench for removal
- Available on pressure, temperature and differential pressure models
- Meets Explosion Class EEx d IIC T6

LOOK FOR THIS AGENCY MARK ON OUR PRODUCTS

TO ORDER THIS B-SERIES PRESSURE SWITCH:

Select: **B7** **20** **B** **X06** **600#**

1. Enclosure: **B7**
2. Switch Element: **20**
3. Actuator Seal: **B**
4. Options (see pages 238-239): **X06**
5. Pressure Range (see page 235): **600#**

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Temperature Switches Explosion-Proof Enclosure, Type 700, B-Series

This broad Ashcroft® switch series ideal for use in virtually all process, industrial and OEM applications.

- ***Explosion-proof NEMA 7/9, IP66 enclosures***
- ***Choice of switch elements for all applications, including hermetically sealed***
- ***Fixed or limited adjustable deadband***
- ***Readily available***
- ***UL listings standard***
- ***CSA listings available(7)***
- ***ATEX models available(7)***
- ***Setpoints adjustable from 15-100% of range***

1 - ENCLOSURE

T7 - Temperature switch, type 700, explosion proof enclosure meets Div. 1 & 2, NEMA 7/9, IP66 requirements

2 - SWITCH ELEMENTS

Order Code	Description/Maximum Electrical Ratings UL/CSA Listed SPDT	
20(4)	Narrow deadband	15A, 125/250 Vac
21	Ammonia service	5A, 125/250 Vac
22(3)	Hermetically sealed switch, narrow deadband	5A, 125/250 Vac
23	Heavy duty ac	20A,125/250 Vac
24(1)	General purpose	15A,125/250/480 Vac 1/2A, 125 Vdc 1/4A, 250 Vdc
25	Heavy duty dc	10A,125/ Vac or dc 1/8HP 125/ Vac or dc
26(4)	Sealed environment proof	15A, 125/250 Vac
27	High temp. 300°F	15A, 125/250 Vac
31	Low level (gold) contacts	1A,125/250 Vac
32	Hermetically sealed switch, general purpose	11A, 125/250 Vac 5A, 30 Vdc
50	Variable deadband	15A,125/250 Vac
	UL/CSA Listed Dual SPDT(2)	
61(4)	Dual narrow deadband	15A, 125/250 Vac
62(4)	Dual narrow environment proof	15A, 125/250 Vac
63	Dual high temp. 300°F	15A, 125/250 Vac
64	Dual general purpose	15A, 125/250/480 Vac 1/2A, 125 Vdc 1/4A, 250 Vdc
65	Dual ammonia service	5A, 125/250/480
67(3)	Hermetically sealed switch, narrow deadband	5A, 125/250 Vac
68	Dual hermetically sealed switch, general purpose	11A,125/250 Vac 5A, 30 Vdc

3 - THERMAL SYSTEM SELECTION(5)

DIRECT MOUNT

Order Code	System Material	Style
TS	316 stainless steel	Rigid

REMOTE MOUNT

Order Code	System Material	Line Length	Style
T05	316 stainless steel	5´	Capillary with 302 SS Spring Armor
T10	316 stainless steel	10´	
T15	316 stainless steel	15´	
T20	316 stainless steel	20´	
T25	316 stainless steel	25´	

4 - BULB LENGTH SELECTION(6)

DIRECT MOUNT

Order Code	"S" Dimension	Minimum Thermowell "U" Dimension
027	2¾″	—
040	4″	2½″
060	6″	4½″
090	9″	7½″
120	12″	10½″

REMOTE MOUNT

030	3″	2½″

5 - OPTIONS

See pages 238-239

6 - STANDARD TEMPERTATURE RANGES

See page 235

NOTES:

1. Standard switch.
2. Dual switches are 2 SPDT snap-action switches not independently adjustable.
3. Estimated dc rating, 2.5A, 28 Vdc (not UL listed).
4. Estimated dc rating, 0.4A, 120 Vdc (not UL listed).
5. Additional line lengths available, call factory.
6. Additional bulb lengths available, call factory.
7. Refer to Options Table.
   Switches calibrated at 70°F ambient reference.

HERMETICALLY SEALED SWITCH

We recommend hermetically sealed switch elements for improved reliability. The hermetically sealed switch provides uncompromising contact protection in harsh or corrosive environments.

Features:
- UL-recognized component, guide WSQ2, File E85076
- All-stainless steel welded construction

TO ORDER THIS B-SERIES TEMPERATURE SWITCH:

Select: **T7** **20** **T05** **030** **XNH** **150° to 260°F**

1. Enclosure: T7
2. Switch Element: 20
3. Thermal System: T05
4. Bulb Length: 030
5. Options (see pages 238-239): XNH
6. Temperature Range (see page 235): 150° to 260°F

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Compact Pressure Switch
Explosion-Proof Body
F-Series

Special features:

- *Diaphragm-sealed piston actuator for long, reliable service*
- *Choice of wetted materials and pressure connections for all applications*
- *Watertight anodized aluminum body for environmental protection*
- *Hermetically sealed snap-acting switch element*
- *Field adjustable*
- *Standard ½ NPT Male electrical conduit connection*
- *Factory sealed leads*
- *Directly interchangeable with many similar models for convenience*
- *UL and CSA listed standard*
- *Setpoints adjustble from 15-100% of range. Exception: stainless steel welded (codes) adjustable from 20-100%*

Ideal for pressure alarm, shutdown, control on:

- *Engines and compressors*
- *Process applications*
- *Offshore applications*
- *Panels*
- *Pipelines*
- *Hazardous locations*
- *Corrosive environments*
- *Machine tools*
- *Replacement and retrofit*
- *Where size is a consideration or equipment is being downsized*

1 - FUNCTION

FPS - Pressure switch, single setpoint, fixed deadband, field adjustable

2 - ENCLOSURE (BODY)

N7 - NEMA 3, 4, 7 & 9, IP66
Anodized aluminum for hazardous locations

3 - SWITCH ELEMENT CODE

Code	SPDT Switch Elements UL/CSA Listed	
P	Hermetically Sealed, Narrow Deadband	5A, 125/250 Vac
J	Hermetically Sealed, General Purpose	11A, 125/250 Vac 5A, 30 Vdc
L	Hermetically Sealed, Gold Contacts	1A, 125 Vac

4 - ACTUATOR SEAL

Code	Material	Proc. Temp. Limits (°F)
B	Buna N	0-150
V	Viton	20-200
T	Teflon	0-150
R	SS Diaphragm/Viton O-Ring	0-150
S	316 SS Welded	0-200
H	SS Piston/Viton O-Ring	20-200

5 - PRESSURE CONNECTION

Code	Description
25	¼ NPT Female
07	½ NPT Female (Standard)

6 - F-SERIES OPTIONS

Code	Description
XFP	Fungus proofing
XFS	Factory adjusted setpoint
XK3	Terminal blocks
XNH	Tagging stainless steel
X6B	Cleaned for oxygen service

7A - NOMINAL RANGE & PERFORMANCE TABLE – BUNA (CODE B)

Nominal Range		Proof Pressure	Deadband (by Switch Element)	
psi	bar	psi	Code J	Code P,L
30 in.Hg Vac.†	–1	1000	1.8-8.0	0.4-5.0
30	2	1000	0.2-1.5	0.1-1.3
60	4	1000	0.2-2.5	0.3-1.5
100	7	1000	0.5-4.0	0.5-2.5
200	14	1000	1.5-8.0	0.5-5.0
400	28	1600	1.0-15.0	1.5-9.0
600	40	2400	4.0-28.0	2.0-15.0
1000	70	4000	6.0-50.0	3.0-30.0

7B - NOMINAL RANGE & PERFORMANCE TABLE – HIGH PRESSURE (CODE H)

1000	70	12,000	50-100	N/A
2000	140	12,000	100-200	N/A
3000	210	12,000	150-300	N/A
4000	280	16,000	150-350	N/A

7C - NOMINAL RANGE & PERFORMANCE TABLE – WELDED SS (CODE S)

30	2	1000	1.0-4.5	0.5-3.5
60	4	1000	1.0-5.0	0.5-4.0
100	7	1000	1.5-10.0	1.0-6.0
200	14	1000	2.0-18.0	1.0-12.0
400	28	1600	5.0-32.0	2.0-20.0
600	40	2400	9.0-50.0	4.0-30.0
1000	70	4000	15.0-80.0	7.0-50.0

7D - NOMINAL RANGE & PERFORMANCE TABLE – BUNA (CODE V, T, R)

30 in.Hg Vac.†	–1	1000	1.5-10.0	0.5-7.0
30	2	1000	0.5-3.5	0.2-2.5
60	4	1000	0.5-4.0	0.5-3.0
100	7	1000	1.0-7.0	1.0-4.5
200	14	1000	12.5-12.0	1.0-8.5
400	28	1600	5.0-30.0	2.0-17.0
600	40	2400	8.0-48.0	4.0-34.0
1000	70	4000	10.0-80.0	5.0-55.0

Note: Switches calibrated at 70°F reference.

TO ORDER THIS F-SERIES PRESSURE SWITCH:

Select:	FPS	N7	P	B	07	XFS	30#
1. Function:							
2. Body:							
3. Switch Element (Table 3):							
4. Actuator Seal (Table 4):							
5. Pressure Port: Standard ½ NPTF							
6. Options (see table 6):							
7. Nominal Range (see Tables 7A, 7B, 7C, 7D):							

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Pressure and Differential Pressure Switches, Watertight 316 SS Enclosure, G-Series

This broad Ashcroft® switch series is easy to use and readily retrofits to virtually all process, industrial and OEM applications.

- ***Single or dual independently adjustable setpoints meet all setpoint requirements***
- ***Watertight NEMA 4X, IP65 enclosure***
- ***316 SS construction***
- ***Choice of switch elements for all applications, including hermetically sealed***
- ***Fixed or fully adjustable deadband***
- ***Approved for UL and CSA ratings***
- ***Wide choice of actuators, including designs for fire-safe and NACE applications[7]***
- ***Standard pressure connection materials:***
  - ***Pressure psi ranges***
    - ***316L stainless steel***
  - ***Differential psid ranges***
    - ***316 stainless steel standard***
  - ***Pressure and differential inches of water ranges***
    - ***316 stainless steel standard***
- ***Readily available***
- ***3A sanitary connection available[7]***
- ***Setpoints adjustable from 15-100% of range***

1 - FUNCTION

GPA - Pressure control, single setpoint, adjustable deadband

GPD - Pressure control, two independently adjustable setpoints, fixed deadband

GPS - Pressure control, single setpoint, fixed deadband

GDA - Differential pressure control, single setpoint, adjustable deadband

GDD - Differential pressure control, two independently adjustable setpoints, fixed deadband

GDS - Differential pressure control, single setpoint, fixed deadband

2 - ENCLOSURE

N4 - NEMA 4/4X, IP65 (watertight and corrosion resistant)

3 - SWITCH ELEMENTS FOR GPA & GDA CONTROLS

Code	Description/Maximum Electrical Ratings UL/CSA Listed	
H	General purpose	10A,125/250 Vac 1/2A, 125 Vdc 1/4A, 250 Vdc
J	Hermetically sealed switch, general purpose	11A, 125/250 Vac 5A, 30 Vdc

SWITCH ELEMENTS FOR GPD, GPS, GDD & GDS CONTROLS

Code		Switch Elements UL/CSA Listed	
Single (GS)	Dual (GD)		
K[4]	KK	Narrow deadband	15A, 125/250 Vac
F[4]	FF	Sealed environment proof	15A, 125/250 Vac
G[5]	GG	General purpose	15A, 125/250/480 Vac 1/2A, 125 Vdc 1/4A, 250 Vdc
P[3]	PP	Hermetically sealed switch, narrow deadband	5A, 125/250 Vac
J	JJ	Hermetically sealed switch, general purpose	11A,125/250 Vac 5A, 30 Vdc

4 - ACTUATOR SEAL[1]

Code & Material	Process Temp.[2] Limits °F	Range			
		Vac. in.H_2O	0-600 psi	1000 psi	2000-3000 psi
B-Buna N	0 to 150	●	●	●	●
V-Viton	20 to 300	●	●	●	
T-Teflon	0 to 150	●	●	●	●
S-SS[6]	0 to 300		●	●	
P-Monel[6]	0 to 300		●	●	

5 - PRESSURE PORT[1]

Order Code	
25	¼ NPT Female
06	¼ NPT Female and ½ NPT Male Combination
07	½ NPT Female

6 - OPTIONS

See pages 238-239

7 - STANDARD PRESSURE RANGES

See page 237

NOTES:

1. These items are wetted by process fluid.
2. Ambient operating temperature limits –20 to 150°F, all styles. Setpoint shift of ±1% of range per 50°F temperature change is normal. Switches calibrated at 70°F reference.
3. Estimated dc rating, 2.5A, 28 Vdc (not UL listed).
4. Estimated dc rating, .4A, 120 Vdc (not UL listed).
5. Not UL listed at 480 Vac.
6. Available on pressure only.
7. Refer to Option Table.

HERMETICALLY SEALED SWITCH

We recommend hermetically sealed switch elements for improved reliability. The hermetically sealed switch provides uncompromising contact protection in harsh or corrosive environments. The Ashcroft G Series is also approved for installation in Division II hazardous areas when supplied with hermetically sealed contacts.

Features:
- UL-recognized component, guide WSQ2, File E85076
- All-stainless steel welded construction

TO ORDER THIS G-SERIES PRESSURE SWITCH:

Select: GPD N4 GG B 25 X07 30#

1. Function: GPD
2. Enclosure: N4
3. Switch Element: GG
4. Actuator Seal: B
5. Pressure Port: 25
6. Options (see pages 238-239): X07
7. Pressure Range (see page 237): 30#

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Temperature Switches, Watertight 316 Stainless Steel Enclosure, G-Series

This Ashcroft® specialty switch series is ideally suited for harsh and corrosive environments often found in many process, industrial and OEM applications.

- ***Watertight NEMA 4X, IP65 enclosure***
- ***316 SS construction***
- ***Choice of switch elements for all applications, including hermetically sealed (NEMA 4 meets Class I, Div. 2, Groups A, B, C, & D with hermetically sealed switch***
- ***Single or dual independently adjustable setpoints meet all setpoint requirements***
- ***Fixed or fully adjustable deadband***
- ***Readily available***
- ***UL, CSA listings standard***
- ***Setpoints adjustable from 15-100% of range***

HERMETICALLY SEALED SWITCH

We recommend hermetically sealed switch elements for improved reliability. The hermetically sealed switch provides uncompromising contact protection in harsh or corrosive environments. The Ashcroft G Series is also approved for installation in Division II hazardous areas when supplied with hermetically sealed contacts.

Features:
- UL-recognized component, guide WSQ2, File E85076
- All-stainless steel welded construction

1 - FUNCTION

GTA - Temperature control, single setpoint, adjustable deadband

GTD - Temperature control, two independently adjustable setpoints, fixed deadband

GTS - Temperature control, single setpoint, fixed deadband

2 - ENCLOSURE

N4 - NEMA 4/4X, IP65 (watertight and corrosion resistant)

3 - SWITCH ELEMENTS FOR PTA CONTROLS

Order Code	Description/Maximum Electrical Ratings UL/CSA Listed	
H	General purpose	10A,125/250 Vac 1/2A, 125 Vdc 1/4A, 250 Vdc
J	Hermetically sealed switch, general purpose	11A, 125/250 Vac 5A, 30 Vdc

SWITCH ELEMENTS FOR GTD & GTS CONTROLS

Code		Switch Elements UL/CSA Listed	
Single (GS)	Dual (GD)		
K[2]	KK	Narrow deadband	15A, 125/250 Vac
F[2]	FF	Sealed environment proof	15A, 125/250 Vac
G[3]	GG	General purpose	15A, 125/250/480 Vac 1/2A, 125 Vdc 1/4A, 250 Vdc
P[1]	PP	Hermetically sealed switch, narrow deadband	5A, 125/250 Vac
J	JJ	Hermetically sealed switch, general purpose	11A,125/250 Vac 5A, 30 Vdc

4 - LINE LENGTH SELECTION[4]

Order Code	Line Length ft	Style
DIRECT MOUNT		
00	Not Applicable	Rigid
REMOTE MOUNT		
05	5	Capillary with Armor (Std.)
10	10	
15	15	
20	20	
25	25	

5 - THERMAL SYSTEM SELECTION

Order Code	Description
LINE MATERIAL	
DIRECT MOUNT	
	No entry required for Direct Mount
REMOTE MOUNT	
A7	Stainless Steel Armor (Std.)

6 - BULB LENGTH SELECTION[5]

Order Code	"S" Dimension	Minimum Thermowell "U" Dimension
DIRECT MOUNT		
027	2¾″	—
040	4″	2½″
060	6″	4½″
090	9″	7½″
120	12″	10½″
REMOTE MOUNT		
030	3″	2½″

7 - OPTIONS

See pages 238-239

8 - STANDARD TEMPERTATURE RANGES

See page 237

NOTES:

1. Estimated dc rating, 2.5A, 28 Vdc (not UL listed).
2. Estimated dc rating, 0.4A, 120 Vdc (not UL listed).
3. Not UL listed at 480 Vac.
4. Additional line lengths available, call factory.
5. Additional bulb lengths available, call factory. Switches calibrated at 70°F ambient reference.

TO ORDER THIS G-SERIES TEMPERATURE SWITCH:

Select:	GTA	N4	H	05	A7	030	XNH	150° to 260°F
1. Function:								
2. Enclosure:								
3. Switch Element:								
4. Line Length:								
5. Thermal System:								
6. Bulb Length:								
7. Options (see pages 238-239):								
8. Temperature Range (see page 237):								

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Hydraulic Pressure Switches, Watertight Enclosure, H-Series

This Ashcroft® speciality switch is designed for applications such as trash compactors, balers and similar types of hydraulic control systems.

- ***Watertight NEMA 4X, IP66 enclosure***
- ***High overpressure protection***
- ***Vibration resistant O-ring sealed piston actuator***
- ***Choice of switch elements for all applications, including hermetically sealed***
- ***Fixed or limited adjustable deadband***
- ***Readily available***
- ***Setpoints adjustable from 15-100% of range***

1 - FUNCTION

H4 - Hydraulic switch, type 400, watertight enclosure meets NEMA 4, 4X and 13, IP66 requirements

2 - SWITCH ELEMENTS

Order Code	Description/Maximum Electrical Ratings UL/CSA Listed SPDT	
20[3]	Narrow deadband	15A, 125/250 Vac
23	Heavy duty ac	20A,125/250 Vac
24[1]	General purpose	15A,125/250/480 Vac 1/2A, 125 Vdc 1/4A, 250 Vdc
25	Heavy duty dc	10A,125/ Vac or dc 1/8HP 125/ Vac or dc
26[3]	Sealed environment proof	15A, 125/250 Vac
27	High temp. 300°F	15A, 125/250 Vac
28	High limit, manual reset	15A, 125/250 Vac
32	Hermetically sealed, general purpose	11A, 125/250 Vac 5A, 30 Vdc
	UL/CSA Listed Dual SPDT[2]	
61[3]	Dual narrow deadband	15A, 125/250 Vac
62[3]	Dual narrow environment proof	15A, 125/250 Vac
63	Dual high temp. 300°F	15A, 125/250 Vac
64	Dual general purpose	15A, 125/250/480 Vac 1/2A, 125 Vdc 1/4A, 250 Vdc

3 - ACTUATOR SEAL

Order Code	
V-Viton	Viton O-ring, 304 SS press. conn. Connection style 1/4 NPT Female

4 - OPTIONS

(see pages 238-239)

5 - STANDARD PRESSURE RANGES

Range psi	Adjustable Setpoint Limits psi	Proof Pressure psi
1000	150-1000	12,000
2000	300-2000	12,000
3000	450-3000	12,000
5000	750-5000	10,000
7500	1125-7500	10,000

NOTES:

1. Standard switch.
2. Dual switches are 2 SPDT snap-action switches not independently adjustable.
3. Estimated dc rating, 0.4A, 120 Vdc (not UL listed).

TO ORDER THIS H-SERIES PRESSURE SWITCH:

Select: H4 24 V XFS 3000#

1. Enclosure: H4
2. Switch Element: 24
3. Actuator Seal: V
4. Options (see pages 238-239): XFS
5. Pressure Range (from table 5): 3000#

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Pressure and Differential Pressure Switches, Watertight Enclosure, L-Series

This broad Ashcroft® switch series is easy to use and readily retrofits to virtually all process, industrial and OEM applications.

- ***Single or dual independently adjustable setpoints meet all setpoint requirements***
- ***Watertight NEMA 4X, IP66 enclosure***
- ***Choice of switch elements for all applications, including hermetically sealed***
- ***Fixed or adjustable deadband***
- ***Standard pressure connection materials:***

  Pressure psi ranges
  - 316L SS

  Differential psid ranges
  - Nickel-plated brass[7]

  Pressure and differential inches of water ranges
  - Epoxy coated carbon steel
- ***Approved for UL, CSA and FM[7] ratings***
- ***Wide choice of actuators, including designs for fire-safe and NACE applications[7]***
- ***Readily available***
- ***Setpoints adjustable from 15-100% of range***

1 - FUNCTION

LPA - Pressure control, single setpoint, adjustable deadband

LPD - Pressure control, two independently adjustable setpoints, fixed deadband

LPS - Pressure control, single setpoint, fixed deadband

LDA - Differential pressure control, single setpoint, adjustable deadband

LDD - Differential pressure control, two independently adjustable setpoints, fixed deadband

LDS - Differential pressure control, single setpoint, fixed deadband

2 - ENCLOSURE

N4 - NEMA 4/4X, IP66 (watertight and corrosion resistant)

3 - SWITCH ELEMENTS FOR LPA & LDA CONTROLS

Code	Description/Maximum Electrical Ratings UL/CSA Listed	
H	General purpose	10A,125/250 Vac 1/2A, 125 Vdc 1/4A, 250 Vdc
J	Hermetically sealed switch, general purpose	11A, 125/250 Vac 5A, 30 Vdc

SWITCH ELEMENTS FOR LPD, LPS, LDD & LDS CONTROLS

Code		Switch Elements UL/CSA Listed	
Single (PS)	Dual (PD)		
K[4]	KK	Narrow deadband	15A, 125/250 Vac
F[4]	FF	Sealed environment proof	15A, 125/250 Vac
G[5]	GG	General purpose	15A, 125/250/480 Vac 1/2A, 125 Vdc 1/4A, 250 Vdc
P[3]	PP	Hermetically sealed switch, narrow deadband	5A, 125/250 Vac
J	JJ	Hermetically sealed switch, general purpose	11A,125/250 Vac 5A, 30 Vdc

4 - ACTUATOR SEAL[1]

Code & Material	Process Temp.[2] Limits °F	Range			
		Vac. in.H_2O	0-600 psi	1000 psi	2000-3000 psi
B-Buna N	0 to 150	●	●	●	●
V-Viton	20 to 300	●	●	●	
T-Teflon	0 to 150	●	●	●	●
S-SS[6],[8]	0 to 300		●	●	
P-Monel[6]	0 to 300		●	●	

5 - PRESSURE PORT[1]

Order Code	
25	¼ NPT Female
06	¼ NPT Female and ½ NPT Male Combination
07	½ NPT Female

6 - OPTIONS

See pages 238-239

7 - STANDARD PRESSURE RANGES

See page 237

NOTES:

1. These items are wetted by process fluid.
2. Ambient operating temperature limits –20 to 150°F, all styles. Setpoint shift of ±1% of range per 50°F temperature change is normal. Switches calibrated at 70°F reference.
3. Estimated dc rating, 2.5A, 28 Vdc (not UL listed).
4. Estimated dc rating, .4A, 120 Vdc (not UL listed).
5. Not UL listed at 480 Vac.
6. Available on pressure only.
7. Refer to Option Table.
8. Order Option XUD, stainless steel process connection.

HERMETICALLY SEALED SWITCH

We recommend hermetically sealed switch elements for improved reliability. The hermetically sealed switch provides uncompromising contact protection in harsh or corrosive environments. The Ashcroft L Series is also approved for installation in Division II hazardous areas when supplied with hermetically sealed contacts.

Features:
- UL-recognized component, guide WSQ2, File E85076
- All-stainless steel welded construction

TO ORDER THIS L-SERIES PRESSURE SWITCH:

Select:	LPD	N4	GG	B	25	XK3	30#
1. Function:							
2. Enclosure:							
3. Switch Element:							
4. Actuator Seal:							
5. Pressure Port:							
6. Options (see pages 238-239):							
7. Pressure Range (see page 237):							

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Temperature Switches, Watertight Enclosure, L-Series

This broad Ashcroft® switch series is easy to use and readily retrofits to virtually all process, industrial and OEM applications.

- ***Single or dual independently adjustable setpoint(s) meet all setpoint requirements***
- ***Watertight NEMA 4X, IP66 enclosure***
- ***Choice of switch elements for all applications, including hermetically sealed (NEMA 4 meets Class I, Div. 2, Groups A, B, C, & D with hermetically sealed switch***
- ***Fixed or fully adjustable deadband***
- ***Readily available***
- ***UL, CSA listings standard***
- ***Setpoints adjustable from 15-100% of range***

HERMETICALLY SEALED SWITCH
We recommend hermetically sealed switch elements for improved reliability. The hermetically sealed switch provides uncompromising contact protection in harsh or corrosive environments. The Ashcroft L Series is also approved for installation in Division II hazardous areas when supplied with hermetically sealed contacts.

Features:
- UL-recognized component, guide WSQ2, File E85076
- All-stainless steel welded construction

1 - FUNCTION

LTA - Temperature control, single setpoint, adjustable deadband

LTD - Temperature control, two independently adjustable setpoints, fixed deadband

LTS - Temperature control, single setpoint, fixed deadband

2 - ENCLOSURE

N4 - NEMA 4/4X, IP66 (watertight and corrosion resistant)

3 - SWITCH ELEMENTS FOR LTA CONTROLS

Order Code	Description/Maximum Electrical Ratings UL/CSA Listed	
H	General purpose	10A,125/250 Vac 1/2A, 125 Vdc 1/4A, 250 Vdc
J	Hermetically sealed switch, general purpose	11A, 125/250 Vac 5A, 30 Vdc

SWITCH ELEMENTS FOR LTD & LTS CONTROLS

Code		Switch Elements UL/CSA Listed	
Single (LS)	Dual (LD)		
K[2]	KK	Narrow deadband	15A, 125/250 Vac
F[2]	FF	Sealed environment proof	15A, 125/250 Vac
G[3]	GG	General purpose	15A, 125/250/480 Vac 1/2A, 125 Vdc 1/4A, 250 Vdc
P[1]	PP	Hermetically sealed switch, narrow deadband	5A, 125/250 Vac
J	JJ	Hermetically sealed switch, general purpose	11A,125/250 Vac 5A, 30 Vdc

4 - LINE LENGTH SELECTION[4]

Order Code	Line Length ft	Style
DIRECT MOUNT		
00	Not Applicable	Rigid
REMOTE MOUNT		
05	5	Capillary with Armor (Std.)
10	10	
15	15	
20	20	
25	25	

5 - THERMAL SYSTEM SELECTION

LINE MATERIAL

Order Code	Description
DIRECT MOUNT	
	No entry required for Direct Mount
REMOTE MOUNT	
A7	Stainless Steel Armor (Std.)

6 - BULB LENGTH SELECTION[5]

Order Code	"S" Dimension	Minimum Thermowell "U" Dimension
DIRECT MOUNT		
027	2¾″	—
040	4″	2½″
060	6″	4½″
090	9″	7½″
120	12″	10½″
REMOTE MOUNT		
030	3″	2½″

7 - OPTIONS

See pages 238-239

8 - STANDARD TEMPERTATURE RANGES

See page 237

NOTES:

1. Estimated dc rating, 2.5A, 28 Vdc (not UL listed).
2. Estimated dc rating, 0.4A, 120 Vdc (not UL listed).
3. Not UL listed at 480 Vac.
4. Additional line lengths available, call factory.
5. Additional bulb lengths available, call factory. Switches calibrated at 70°F ambient reference.

TO ORDER THIS L-SERIES TEMPERATURE SWITCH:

Select:	LTA	N4	H	05	A7	030	XNH	150° to 260°F
1. Function:								
2. Enclosure:								
3. Switch Element:								
4. Line Length:								
5. Thermal System:								
6. Bulb Length:								
7. Options (see pages 238-239):								
8. Temperature Range (see page 237):								

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Electronic Pressure Switches, Watertight or Explosion-Proof Enclosure, N-Series

Special features:

- *Ashcroft® K Series polysilicon thin film pressure sensor (transducer) for long, stable life (minimum 1 million cycles at rated load)*
- *Setpoint repeatability of 0.5% of range*
- *Choice of watertight, NEMA 4 or explosion-proof NEMA 7/9, IP66 enclosures for safety and reliability*
- *Pressure setpoints to 20,000 psi*
- *Deadbands adjustable between 0.1% and 95% of nominal range*
- *Multi-turn potentiometers make setpoint and deadband adjustments easy*
- *Status lights indicate switch state*
- *Continuous power assures operation first time and every time even after years of inactivity*

Ideal for pressure alarm, shutdown, control on:

- *Machine tools*
- *Injection molding machines*
- *Presses*
- *Pumps*
- *Hydraulic systems*
- *Turbines and compressors*
- *Most process applications*

IN A RUSH? ASK FOR ASHCROFT GOLD SERVICE

NEMA 7 (N7) Model Shown

1 - FUNCTION

NPA - Single setpoint with adjustable deadband

2 - ENCOSURE

N4	NEMA 4, IP66, watertight
N7	NEMA 7/9, IP66, explosion proof

3 - OUTPUT

D	SPDT Relay	10A, 250 Vac 10A, 30 Vdc
I	SPDT Relay and current output	10A, 250 Vac 10A, 30 Vdc and 4-20mA

4 - POWER REQUIREMENTS

Code	Power Supply
L	110 Vac, 50/60 Hz
C	24 Vdc
V	250 Vac, 50/60 Hz

5 - PRESSURE CONNECTIONS

Code	Description
S01	⅛ NPT male
S02	¼ NPT male
S03	⅛ NPT female
S04	¼ NPT female
S05	7/16-20 SAE-male
S06	½ NPT male
S07	¼ AMINCO-female
S08	7/16-20 SAE-J514-female

6 - OPTIONS

Code	Description
XEA	External adjustment (N4 only)

7 - STANDARD PRESSURE RANGES

Range psi	Setpoint[1] Limits psi	Proof psi	Burst psi
60	3-60	120	480
100	5-100	200	800
200	10-200	400	1600
300	15-300	600	2400
500	25-500	1000	4000
750	35-750	1500	6000
1000	50-1000	2000	8000
2000	100-2000	4000	16,000
3000	150-3000	4500	15,000
5000	250-5000	7500	25,000
7500	375-7500	9000	22,500
10,000[2]	500-10,000	12,000	30,000
15,000[2]	750-15,000	18,000	45,000
20,000[2]	1000-20,000	24,000	60,000

(1) Switch setpoint is adjustable throughout these limits.
(2) Pressure connection S07 only on these ranges.

NOTES:

Temperature Specifications (70°F ref.)
–20°F to 160°F ambient and process
Setpoint shift of up to 2% of range per 50°F change can be expected

OPTIONAL TRANSMITTER SPECIFICATIONS

PERFORMANCE CHARACTERISTICS

Accuracy Class (F.S.):	**1%**
Nonlinearity	
Terminal Point*	±0.7%
B.F.S.L.	±0.4%
Hysteresis	±0.2%
Nonrepeatability	±0.07%
Interchangeability	±1.0%

*Includes hysteresis

Stability: ±0.5% F.S./year

Durability: 10^8 cycles 20/80% F.S. with negligible performance change

Response Time: Less than 5msec

ENVIRONMENTAL CHARACTERISTICS

Temperature Limits:

Storage	–65/+250°F
Operating	–20/+180°F
Compensated	–20/+160°F

Thermal Coefficients (70°F ref.):

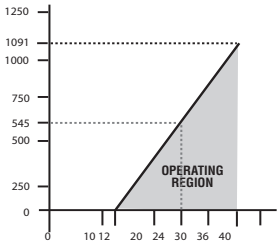
Accuracy	Zero and Span
1%	±0.040% F.S./°F

ELECTRICAL SPECIFICATIONS

Output Signal: Supply Voltage:
4-20mA (2 wire)12-36 Vdc unregulated

Reverse wiring protected.
Zero Offset: ±1.0%F.S.

Load Limitations 4-20mA Output
Loop Resistance (Ω)



V_{min} = 12V+ [.022A*(R_L)]
*Includes a 10% safety factor
$R_L = R_S + R_W$
R_L = Loop Resistance (ohms)
R_S = Sense Resistance (ohms)
R_W = Wire Resistance (ohms)

TO ORDER THIS N-SERIES PRESSURE SWITCH:

Select:	NPA	N4	D	L	S02	XEA	100#
1. Function:							
2. Body:							
3. Electrical Output:							
4. Power Requirements:							
5. Pressure Port:							
6. Options (see table 6):							
7. Pressure Range (see table 7):							

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Electronic Pressure Switches, Watertight Enclosure with Pressure Indication, N-Series

Ideal for pressure alarm, shutdown, control on:

- *Machine tools*
- *Injection molding machines*
- *Presses*
- *Pumps*
- *Hydraulic systems*
- *Turbines and compressors*
- *Most process applications*

Special features:

- *Ashcroft® K Series polysilicon thin film pressure sensor (transducer) for long, stable life (minimum 1 million cycles at rated load)*
- *Setpoint repeatability of 0.5% of range*
- *Watertight, NEMA 4X, IP66 enclosures for safety and reliability*
- *Pressure setpoints to 20,000 psi*
- *Deadbands adjustable between 0.1% and 95% of nominal range*
- *Multi-turn potentiometers make set-point and deadband adjustments easy*
- *Status lights indicate switch state*
- *Continuous power assures operation first time and every time even after years of inactivity*
- *Big, easy-to-read LED display shows process pressure, setpoint and reset point*

Ideal for pressure alarm, shutdown, control on:

- *Machine tools*
- *Injection molding machines*
- *Presses*
- *Pumps*
- *Hydraulic systems*
- *Turbines and compressors*
- *Most process applications*

1 - FUNCTION

NPI - Single setpoint with adjustable deadband and indication

2 - ENCLOSURE

N4	NEMA 4, IP66, watertight

3 - OUTPUT

D	SPDT Relay	10A, 250 Vac 10A, 30 Vdc
I	SPDT Relay and current output	10A, 250 Vac 10A, 30 Vdc and 4-20mA

4 - POWER REQUIREMENTS

Code	Power Supply
L	110 Vac, 50/60 Hz
C	24 Vdc
V	250 Vac, 50/60 Hz

5 - PRESSURE CONNECTIONS

Code	Description
S01	⅛ NPT male
S02	¼ NPT male
S03	⅛ NPT female
S04	¼ NPT female
S05	7/16-20 SAE-male
S06	½ NPT male
S07	¼ AMINCO-female
S08	7/16-20 SAE-J514-female

6 - OPTIONS

Code	
XEA	External adjustment (N4 only)

7 - STANDARD PRESSURE RANGES

Range psi	Setpoint(1) Limits psi	Proof psi	Burst psi
60	3-60	120	480
100	5-100	200	800
200	10-200	400	1600
300	15-300	600	2400
500	25-500	1000	4000
750	35-750	1500	6000
1000	50-1000	2000	8000
2000	100-2000	4000	16,000
3000	150-3000	4500	15,000
5000	250-5000	7500	25,000
7500	375-7500	9000	22,500
10,000(2)	500-10,000	12,000	30,000
15,000(2)	750-15,000	18,000	45,000
20,000(2)	1000-20,000	24,000	60,000

(1) Switch setpoint is adjustable throughout these limits.
(2) Pressure connection S07 only on these ranges.

NOTES:

Temperature Specifications (70°F ref.)
–20°F to 160°F ambient and process
Setpoint shift of up to 2% of range per 50°F change can be expected

OPTIONAL TRANSMITTER SPECIFICATIONS

PERFORMANCE CHARACTERISTICS
Accuracy Class (F.S.): 1%

Nonlinearity	
Terminal Point*	±0.7%
B.F.S.L.	±0.4%
Hysteresis	±0.2%
Nonrepeatability	±0.07%
Interchangeability	±1.0%

*Includes hysteresis

Stability: ±0.5% F.S./year

Durability: 10^8 cycles 20/80% F.S. with negligible performance change

Response Time: Less than 5msec

ENVIRONMENTAL CHARACTERISTICS
Temperature Limits:

Storage	–65/+250°F
Operating	–20/+180°F
Compensated	–20/+160°F

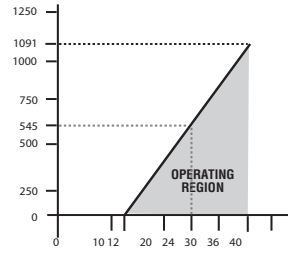
Thermal Coefficients (70°F ref.):

Accuracy	Zero and Span
1%	±0.040% F.S./°F

ELECTRICAL SPECIFICATIONS
Output Signal: Supply Voltage:
4-20mA (2 wire)12-36 Vdc unregulated

Reverse wiring protected.
Zero Offset: ±1.0%F.S.

Load Limitations 4-20mA Output
Loop Resistance (Ω)



V_{min} = 12V+ [.022A*(R_L)]
*Includes a 10% safety factor
$R_L = R_S + R_W$
R_L = Loop Resistance (ohms)
R_S = Sense Resistance (ohms)
R_W = Wire Resistance (ohms)

TO ORDER THIS N-SERIES PRESSURE SWITCH:

Select:	NPI	N4	D	L	S02	XEA	100#
1. Function:							
2. Body:							
3. Electrical Output:							
4. Power Requirements:							
5. Pressure Port:							
6. Options (see table 6):							
7. Pressure Range (see table 7):							

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Pressure and Differential Pressure Switches, Watertight and Explosion-Proof Enclosure, P-Series

This top-of-the-line Ashcroft® process switch series includes many state-of-the-art features for safety and reliability in virtually all process applications.

- ***Die cast aluminum enclosure is standard with NEMA 4X (weatherproof, corrosion resistant) NEMA 7 (explosion-proof enclosure Class I, Div. 1 & 2, Groups B, C & D and Class II, Div. 1 & 2, Groups E, F & G). Dual chamber design allows setpoint changes to be made safely even with power connected.***
- ***Single or dual independently adjustable setpoints meet all setpoint requirements***
- ***UL, CSA[7] listed***
- ***Fixed or adjustable deadband***
- ***Readily available***
- ***Standard pressure connection materials:***
  - ***Pressure psi ranges - 316L stainless steel***
  - ***Differential pressure ranges - Nickle plated brass[8]***
  - ***Pressure and differential inches of water ranges - Epoxy coated carbon steel***
- ***Setpoints adjustable from 15-100% of range***

1 - FUNCTION

PPA - Pressure control, single setpoint, adjustable deadband

PPD - Pressure control, two independently adjustable setpoints, fixed deadband

PPS - Pressure control, single setpoint, fixed deadband

PDA - Differential pressure control, single setpoint, adjustable deadband

PDD - Differential pressure control, two independently adjustable setpoints, fixed deadband

PDS - Differential pressure control, single setpoint, fixed deadband

2 - ENCLOSURE

N7 - NEMA 7/9, IP65, watertight, corrosion resistant and explosion proof Div. 1 & 2

3 - SWITCH ELEMENTS FOR PPA & PDA CONTROLS

Code	Description/Maximum Electrical Ratings UL/CSA Listed	
H	General purpose	10A,125/250 Vac 1/2A, 125 Vdc 1/4A, 250 Vdc
J	Hermetically sealed switch, general purpose	11A, 125/250 Vac 5A, 30 Vdc

SWITCH ELEMENTS FOR PPD, PPS, PDD & PDS CONTROLS

Code		Switch Elements UL/CSA Listed	
Single (PS)	Dual (PD)		
K[4]	KK	Narrow deadband	15A, 125/250 Vac
F[4]	FF	Sealed environment proof	15A, 125/250 Vac
G[5]	GG	General purpose	15A, 125/250/480 Vac 1/2A, 125 Vdc 1/4A, 250 Vdc
P[3]	PP	Hermetically sealed switch, narrow deadband	5A, 125/250 Vac
J	JJ	Hermetically sealed switch, general purpose	11A,125/250 Vac 5A, 30 Vdc

4 - ACTUATOR SEAL[1]

Code & Material	Process Temp.[2] Limits °F	Range			
		Vac. in.H_2O	0-600 psi	1000 psi	2000-3000 psi
B-Buna N	0 to 150	●	●	●	●
V-Viton	20 to 300	●	●	●	
T-Teflon	0 to 150	●	●	●	●
S-SS[6][9]	0 to 300		●	●	
P-Monel[6]	0 to 300		●	●	

5 - PRESSURE PORT[1]

Order Code	
25	¼ NPT Female
06	¼ NPT Female and ½ NPT Male Combination
07	½ NPT Female

6 - OPTIONS

See pages 238-239

7 - STANDARD PRESSURE RANGES

See page 236

NOTES:

1. These items are wetted by process fluid.
2. Ambient operating temperature limits –20 to 150°F, all styles. Setpoint shift of ±1% of range per 50°F temperature change is normal. Switches calibrated at 70°F reference.
3. Estimated dc rating, 2.5A, 28 Vdc (not UL listed).
4. Estimated dc rating, .4A, 120 Vdc (not UL listed).
5. Not UL listed at 480 Vac.
6. Available on pressure only.
7. Refer to Option Table.
8. Order Option XUD, stainless steel process connection.
9. On differential switches, stainless steel is available in 15, 30, 60 and 90 psid ranges only. Includes Teflon O-ring and 316 SS connection.

HERMETICALLY SEALED SWITCH

We recommend hermetically sealed switch elements for improved reliability. The hermetically sealed switch provides uncompromising contact protection in harsh or corrosive environments.

Features:
- UL-recognized component, guide WSQ2, File E85076
- All-stainless steel welded construction

TO ORDER THIS P-SERIES PRESSURE SWITCH:

Select: PPD N7 GG B 25 XK3 30#

1. Function: PPD
2. Enclosure: N7
3. Switch Element: GG
4. Actuator Seal: B
5. Pressure Port: 25
6. Options (see pages 238-239): XK3
7. Pressure Range (see page 236): 30#

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Temperature Switches, Watertight and Explosion-Proof Enclosure, P-Series

This top-of-the-line Ashcroft® process switch series includes many state-of-the-art features for safety and reliability in virtually all process applications.

- ***Choice of watertight NEMA 4X or explosion-proof NEMA 7/9, IP55 enclosures (NEMA 4 meets Class I, Div. 2, Groups A, B, C, & D with hermetically sealed switch***
- ***Single or dual independently adjustable setpoints meet all setpoint requirements***
- ***UL listings standard***
- ***CSA listings available(6)***
- ***Dual-chamber design for improved safety. Choice of switch elements for all applications, including hermetically sealed***
- ***Fixed or fully adjustable deadband***
- ***Setpoints adjustable from 15-100% of range***

HERMETICALLY SEALED SWITCH
We recommend hermetically sealed switch elements for improved reliability. The hermetically sealed switch provides uncompromising contact protection in harsh or corrosive environments.

Features:
- UL-recognized component, guide WSQ2, File E85076
- All-stainless steel welded construction
- Available on 400 and 700 models

1 - FUNCTION

PTA - Temperature control, single setpoint, adjustable deadband

PTD - Temperature control, two independently adjustable setpoints, fixed deadband

PTS - Temperature control, single setpoint, fixed deadband

2 - ENCLOSURE

N4 - NEMA 4/4X, IP65 (watertight and corrosion resistant)

N7 - NEMA 7/9, IP65 (explosion proof Div. 1 & 2)

3 - SWITCH ELEMENTS FOR PTA CONTROLS

Order Code	Description/Maximum Electrical Ratings UL/CSA Listed	
H	General purpose	10A,125/250 Vac 1/2A, 125 Vdc 1/4A, 250 Vdc
J	Hermetically sealed switch, general purpose	11A, 125/250 Vac 5A, 30 Vdc

SWITCH ELEMENTS FOR PTD & PTS CONTROLS

Code		Switch Elements UL/CSA Listed	
Single (PS)	Dual (PD)		
K(2)	KK	Narrow deadband	15A, 125/250 Vac
F(2)	FF	Sealed environment proof	15A, 125/250 Vac
G(3)	GG	General purpose	15A, 125/250/480 Vac 1/2A, 125 Vdc 1/4A, 250 Vdc
P(1)	PP	Hermetically sealed switch, narrow deadband	5A, 125/250 Vac
J	JJ	Hermetically sealed switch, general purpose	11A,125/250 Vac 5A, 30 Vdc

4 - LINE LENGTH SELECTION(4)

Order Code	Line Length ft	Style
DIRECT MOUNT		
00	Not Applicable	Rigid
REMOTE MOUNT		
05	5	Capillary with Armor (Std.)
10	10	
15	15	
20	20	
25	25	

5 - THERMAL SYSTEM SELECTION

LINE MATERIAL	
DIRECT MOUNT	
Order Code	Description
No entry required for Direct Mount	
REMOTE MOUNT	
A7	Stainless Steel Armor (Std.)

6 - BULB LENGTH SELECTION(5)

Order Code	"S" Dimension	Minimum Thermowell "U" Dimension
DIRECT MOUNT		
027	2¾″	—
040	4″	2½″
060	6″	4½″
090	9″	7½″
120	12″	10½″
REMOTE MOUNT		
030	3″	2½″

7 - OPTIONS

See pages 238-239

8 - STANDARD TEMPERTATURE RANGES

See page 236

NOTES:

1. Estimated dc rating, 2.5A, 28 Vdc (not UL listed).
2. Estimated dc rating, 0.4A, 120 Vdc (not UL listed).
3. Not UL listed at 480 Vac.
4. Additional line lengths available, call factory.
5. Additional bulb lengths available, call factory.
6. Refer to Option Table. Switches calibrated at 70°F ambient reference.

TO ORDER THIS P-SERIES TEMPERATURE SWITCH:

Select:	PTA	N7	H	05	A7	030	XNH	150° to 260°F
1. Function:								
2. Enclosure:								
3. Switch Element:								
4. Line Length:								
5. Thermal System:								
6. Bulb Length:								
7. Options (see pages 238-239):								
8. Temperature Range (see page 236):								

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Nominal Ranges and Deadbands Pressure and Temperature Switches, B-Series

PRESSURE/VACUUM SWITCHES

Nominal Range [1]			Overpressure Ratings		Approximate Deadband[2] Switch Element (Buna-N Diaphragm)				
			Proof psi	Burst psi	20, 26, 27	21, 24, 31	50	22	32, 42
Vacuum									
–30 in.Hg	–760 mmHg	–100 kPa	250	400	0.3-0.7	1.5-4.0	0.5-2.2	0.4-1.5	2.1-4.2
Compound									
–15 in.H_2O/	–375 mmH_2O/	–3.7 kPa	20	35	0.15-0.75/	1.5-2.5/	.45-2.0/	0.5-1.2/	2.1-3.5/
15 in.H_2O	375 mmH_2O	3.7 kPa			0.15-0.75	1.5-2.5	0.45-2.0	0.5-1.2	.2.1-3.5
–30 in.H_2O	–760 mmH_2O/	–7.5 kPa	20	35	0.30-0.60/	1.5-2.5/	0.45-2.0/	0.5-1.5/	2.1-3.5/
30 in.H_2O	760 mmH_2O	7.5 kPa			0.30-0.60	1.5-2.5	0.45-2.0	0.5-1.5	2.1-3.5
–30 in.Hg/	–760 mmHg/	–100 kPa	250	400	0.5-1.0/	2.0-3.5/	0.75-2.5/	0.7-1.8/	2.8-4.2/
15 psi	1.0 kg/cm^2	100 kPa			0.3-0.7	0.5-2.0	0.5-1.0	0.5-1.4	0.7-2.1
–30 in.Hg/	–760 mmHg/	–100 kPa	250	400	1.0-1.5/	3.0-6.0/	1.2-4.5/	1.4-2.4/	4.2-8.4/
30 psi	2.0 kg/cm^2	200 kPa			0.3-0.8	1.0-2.0	0.7-1.5	0.4-1.3	1.4-2.8
–30 in.Hg/	–760m mmHg/	–100 kPa	250	400	2.0-3.0	5.0-9.0	2.5-7.0	2.8-4.5/	7.0-12.0
60 psi	4.0 kg/cm^2	400 kPa			0.7-1.5	3.0-5.0	1.1-4.0	1.0-2.3	4.2-7.0
Pressure									
10 in.H_2O	250 mmH_2O	2.5 kPa	20	35	0.2-0.5	1.0-2.0	0.35-1.5	0.4-1.0	1.4-2.8
30 in.H_2O	750 mmH_2O	7.5 kPa	20	35	0.3-0.6	1.5-2.5	4.5-2.0	0.5-2.0	2.1-3.5
60 in.H_2O	1500m mmH_2O	15 kPa	20	35	0.5-1.3	1.5-3.5	0.9-2.5	0.7-3.0	2.1-5.0
100 in.H_2O	2500 mmH_2O	25 kPa	20	35	0.6-1.6	2.5-5.5	1.1-4.0	1.0-4.0	3.5-7.7
150 in.H_2O	3750 mmH_2O	37 kPa	20	35	1.0-2.5	4.5-8.5	1.7-6.5	2.0-6.0	6.0-12.0
15 psi	1.0 kg/cm^2	100 kPa	500	1500	0.1-.35	0.5-1.5	0.2-1.0	0.4-1.0	0.7-2.1
30 psi	2.5 kg/cm^2	200 kPa	500	1500	0.1-.50	0.5-1.5	0.3-1.0	0.4-1.0	0.7-2.1
60 psi	4.0 kg/cm^2	400 kPa	500	1500	0.3-1.0	1.0-3.5	0.7-2.5	0.6-2.0	1.4-5.0
100 psi	7.0 kg/cm^2	700 kPa	1000	3000	0.5-1.7	1.5-5.0	1.1-3.5	1.0-4.5	2.1-7.0
200 psi	14 kg/cm^2	1400 kPa	1000	3000	1-3	5-13	2-9	3.0-7.5	7.0-18.2
400 psi	28 kg/cm^2	2800 kPa	2400	3000	4-7.5	5-24	5.5-15	4.0-11.0	7.0-33.6
600 psi	42 kg/cm^2	4200 kPa	2400	3000	4-11	9-30	7-20	5.0-23.0	12.6-42
1000 psi [8]	70 kg/cm^2	7000 kPa	12000	18000	7-30	30-110	18-70	15.0-60	42-154
3000 psi	210 kg/cm^2	21000 kPa	12000	18000	15-60	80-235	37-160	30.0-130.0	112-329

DIFFERENTIAL PRESSURE SWITCHES

Nominal Range [1]			Overpressure Ratings		Approximate Deadband[2,4] Switch Element (Buna-N Diaphragm)				
			Static psi	Proof psi	20, 26, 27	21, 24, 31	50	22	32, 42
30 in.H_2Od	750 mmH_2O	7.5 kPa	5.4	21.6	0.3-0.6	1.5-2.5	0.45-2.0	0.5-2.0	2.1-3.5
60 in.H_2Od	1500 mmH_2O	15 kPa	5.4	21.6	0.5-1.3	1.5-3.5	0.9-2.5	0.7-3.0	2.1-5.0
100 in.H_2Od	2500 mmH_2O	25 kPa	5.4	21.6	0.6-1.6	2.5-5.5	1.1-4.0	1.0-4.0	3.5-7.7
150 in.H_2Od	3750 mmH_2O	37 kPa	5.4	21.6	1.0-2.5	4.5-8.5	1.8-6.5	2.0-6.0	6.3-12.0
15 psid	1 kg/cm^2	100 kPa	500	2000	0.5-1.0	2.0-5.0	0.7-3.5	0.7-1.4	2.8-7.0
30 psid	2.5 kg/cm^2	200 kPa	500	2000	1.0-2.0	2.0-5.0	1.5-3.5	1.4-2.8	2.8-7.0
60 psid	4 kg/cm^2	400 kPa	500	2000	2.0-4.0	3.0-6.0	3.0-4.5	2.8-5.6	4.2-8.5
100 psid	7 kg/cm^2	700 kPa	1000	4000	4.0-10.0	11.0-20.0	7.0-15.0	6.0-14.0	16.0-28.0
200 psid	14 kg/cm^2	1400 kPa	1000	4000	5.0-15.0	12.0-40.0	10.0-86.0	7.0-21.0	17.0-56.0
400 psid	28 kg/cm^2	2800 kPa	1000	8000	10.0-20.0	20.0-60.0	15.0-40.0	14.0-28.0	28.0-84.0
600 psid	42 kg/cm^2	4200 kPa	1000	8000	20.0-40.0	80.0-150.0	30.0-115.0	30.0-56.0	112.0-210.0

TEMPERATURE RANGE SELECTION

Adjustable Range		Max. Temp. °F	Approximate Deadband[6] Switch Element				
°F	°C		20, 26, 27	21, 24, 31	50	22	32, 42
–40 to 60	–40 to16	400	1.0-2.0	3.0-8.0	1.5-5.5	1.4-6.0	8.0-16.0
0 to 100	–20 to 40	400	1.5-3.0	5.0-12.0	2.2-8.5	1.5-7.5	9.0-20.0
75 to 205	20 to 95	400	1.5-3.5	8.0-16.0	2.5-12.0	2.0-9.0	10.0-24.0
150 to 260	65 to125	400	1.5-3.0	5.0-12.0	2.2-8.5	2.0-9.0	10.0-24.0
235 to 375	110 to 190	500	1.5-3.5	5.0-12.0	2.2-8.5	2.0-9.0	10.0-24.0
350 to 525[7]	175 to 275	700	2.0-4.5	8.0-16.0	3.2-12.0	2.5-10.0	15.0-34.0
500 to 750[3]	260 to 400	900	4.0-8.0	16.0-30.0	7.0-24.0	5.0-23.0	30.0-50.0

NOTES:

1. Switches may generally be set between 15% and 100% of nominal range on increasing pressure. Consult factory for applications where setpoints must be lower.
2. All deadbands are given in English units as shown in the nominal range column. Deadbands shown are for switches with Buna N diaphragm.

Approximate deadbands for optional diaphragms:
Viton: Multiply Buna N value by 1.4
Teflon: Multiply Buna N value by 1.2
Stainless Steel: Multiply Buna N value by 1.7
Monel: Multiply Buna N value by 1.7

3. Available with remote mount thermal system only.
4. Deadbands given are for zero static working pressure.
5. For approximate deadbands for dual switch elements, multiply the single switch element by 1.6.
6. All deadbands given in °F.
7. Not available with 2¾″ stem.
8. Proof pressure is 4000 psi with stainless steel and monel welded diaphragms.

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

ASHCROFT®

Nominal Ranges and Deadbands Pressure and Temperature Switches, P-Series

PRESSURE/VACUUM SWITCHES

Nominal Range [1]			Overpressure Ratings Proof psi	Overpressure Ratings Burst psi	Approximate Deadband[2] Switch Element (Buna-N Diaphragm) PPA[3] Switch Element J, H	PPS[4] G	PPS[4] J, H	PPS[4] K, F	PPS[4] P	PPD[4] GG	PPD[4] JJ, HH	PPD[4] KK,FF	PPD[4] PP
Vacuum													
–30 in.Hg	–760 mmHg	–100 kPa	250	400	7-26	3-5	3-6.5	1-2	1-2.5	3-5	3-6.5	1-2	1.0-3.5
Compound													
–30 in.Hg/ 15 psi	–760 mmHg/ 1.0 kg/cm²	–100 kPa 100 kPa	250	400	10-25 4-13	3-5 1-2	2.5-3.5 1-3	1-2 0.5-2	1-2.5 0.5-2	3-5 2-4	2.5-4.5 1-3	1-2 0.5-1	1.0-3.5/ 1.0-2.8
Pressure													
30 in.H_2O	750 mmH_2O	7.5 kPa	20	35	4.-27	1.5-3.5	2-5	0.5-1	0.5-2	1.5-3.5	2-5	0.5-1	1.0-2.8
60 in.H_2O	1500 mmH_2O	15 kPa	20	35	5-54	1.5-3.5	2.5-5	0.5-2.0	1-2	1.5-3.5	2.5-5.0	.0.5-2.0	1.0-2.8
100 in.H_2O	2500 mmH_2O	25 kPa	20	35	8.5-90	4-6	4-8.5	1-2	1-3	4-7	4-8.5	1-2	2.0-4.2
150 in.H_2O	3750 mmH_2O	37 kPa	20	35	18-135	5-11	10-18	1.5-3	2-6	8-14	10-18	1.5-3	3.0-8.4
15 psi	1 kg/cm²	100 kPa	500	1500	2.5-13	1-2	1-0.5	0.5-1	0.5-2	1-2	1-3.0	0.5-1	1.0-2.8
30 psi	2.5 kg/cm²	200 kPa	500	1500	3.5-26	1-2.5	2-4.5	0.5-1.5	0.5-1.5	1-2.5	2-4.5	0.5-1.5	1.0-3.0
60 psi	4 kg/cm²	400 kPa	500	1500	6.5-54	2-4	4-7	1-2	1-2.5	2-4	4-7	1-2	2.0-3.5
100 psi	7 kg/cm²	700 kPa	1000	3000	10-90	5-7	5-10	1-2.5	2-4	5-7	5-10	1-2.5	2.0-5.6
200 psi	14 kg/cm²	1400 kPa	1000	3000	20-180	10-15	10-18	1-4	5-15	10-20	15-25	3-6	4.0-12.0
400 psi	28 kg/cm²	2800 kPa	2400	3000	45-360	16-30	16-45	4-8	5.0-15	16-30	16-45	4-8	5.0-21.0
600 psi	42 kg/cm²	4200 kPa	2400	3000	75-540	16-50	20-75	5-8	6-25	16-50	20-75	5-15	8.0-35.0
1000 psi [9]	70 kg/cm²	7000 kPa	12000	14000	160-900	75-130	50-160	7-30	10-85	75-130	50-160	7-30	20.0-119.0
2000 psi	140 kg/cm²	14000 kPa	12000	14000	350-1800	150-200	150-350	20-50	25-110	150-200	150-350	20-50	35.0-154.0
3000 psi	210 kg/cm²	21000 kPa	12000	14000	400-2600	180-250	180-400	30-70	30-190	180-250	180-400	30-70	40.0-266.0

DIFFERENTIAL PRESSURE SWITCHES

Nominal Range [1]		Static Working Pressure psi	Overpressure Ratings Proof psi	Approximate Deadband[2,6] Switch Element (Buna-N Diaphragm) PDA[3] Switch Element J, H	PDS[4] G	PDS[4] J, H	PDS[4] K, F	PDS[4] P	PDD[4] GG	PDD[4] JJ, HH	PDD[4] KK,FF	PDD[4] PP
30 in.H_2Od	750 mmH_2O	5.4	21.6	5.5-27	3-5	4-6.5	0.5-1	.5-2	3-5	4-6.5	0.5-1	1.0-2.8
60 in.H_2Od	1500 mmH_2O	5.4	21.6	5.5-54	3-5	4.5-6.5	0.5-2	1-2	3-5	4.-6.5	0.5-2	1.0-2.8
100 in.H_2Od	2500 mmH_2O	5.4	21.6	8.5-90	4-6	4.0-8.5	1-2	1-3	4-7	4.-8.5	1-2	2.0-4.2
150 in.H_2Od	3750 mmH_2O	5.4	21.6	18-135	5-11	10-18	1.5-3	2-6	8-14	10-18	1.5-3.	3.0-8.4
15 psid	2 kg/cm²	500	2000	2.5-13	1-2	1-3	0.5-1	0.5-2	1-2	1-3	0.5-1	1.0-2.8
30 psid	2 kg/cm²	500	2000	3.5-27	1-2.5	2-4.5	0.5-1	1-2	1-2.5	2-4.5	0.5-1.5	1.0-2.8
60 psid	4 kg/cm²	500	2000	6.5-54	2-4	4-7	1-1.5	1-2.5	1-2.4	4-7	1-2	1.0-3.5
100 psid	7 kg/cm²	500	2000	10-90	5-7	5-10	1-2.5	2-4	5-7	5-10	1-2.5	2.0-5.6
200 psid	14 kg/cm²	1000	4000	20-180	10-1 5	10-18	1-4	5-8	10-20	10-18	3-6	3.0-11.2
400 psid	28 kg/cm²	1000	8000	45-360	16-30	16-45	4-8	5-15	16-30	16-45	4-8	40.-21.0

TEMPERATURE RANGE SELECTION

Nominal Range °F	Nominal Range °C	Max. Temp. °F	Approximate Deadband (Buna N Diaphragm)[2] PTA[3] Switch Element J, H	PTS[4] G	PTS[4] J, H	PTS[4] K, F	PTS[4] P	PTD[4] GG	PTD[4] JJ, HH	PTD[4] KK, FF	PTD[4] PP
–40 to 60	–40 to16	400	18-90	2-10	9-18	1-2	1-5	2-10	9-18	1-2	2.0-7.0
0 to 100	–20 to 40	400	30-90	2-15	10-30	1-3	1.5-7	2-15	10-30	1.5-3	3.0-10.0
75 to 205	20 to 95	400	34-120	2-17	10-34	1.5-3.5	1.5-8	2-17	10-34	1.5-3.5	3.0-12.0
150 to 260	65 to125	400	25-100	2.5-12	9-25	1-2.5	1-7	2.5-12	9-25	1-2.5	3.0-10.0
235 to 375	110 to 190	500	35-130	2-18	10-35	1-3.5	1.5-8	2-18	10-35	1-3.5	3.0-12.0
350 to 525[8]	175 to 275	700	40-165	3-25	15-40	2-4.5	2.5-11	3-25	15-40	2-4.5	4.0-15.5
500 to 750[5]	200 to 400	900	50-200	20-36	36-60	5-10	6-21	20-36	36-60	5-10	7.0-30.0

NOTES:

1. Switches may generally be set between 15% and 100% of nominal range on increasing pressure. Consult factory for applications where setpoints must be lower.
2. All deadbands are given in English units as shown in the nominal range column. Deadbands shown are for switches with Buna N diaphragm.

Approximate deadbands for optional diaphragms:
Viton: Multiply Buna N value by 1.4
Teflon: Multiply Buna N value by 1.2
Stainless Steel: Multiply Buna N value by 1.7
Monel: Multiply Buna N value by 1.7

3. Deadbands for PTA, PPA and PDA are adjustable between the values shown.
4. Deadbands for PPS, PPD, PDS, PDD, PTD, and PDS models are fixed within the range of values shown.
5. Available with remote mount thermal system only.
6. Deadbands given are for zero static working pressure.
7. All deadbands given in °F.
8. Not available with 2¾″ stem.
9. Proof pressure is 4000 psi with stainless steel and monel welded diaphragms.

ASHCROFT®

Nominal Ranges and Deadbands Pressure and Temperature Switches, L- and G-Series

PRESSURE/VACUUM SWITCHES

Nominal Range [1]		Overpressure Ratings: Proof psi	Overpressure Ratings: Minimum Burst psi	Approximate Deadband[2] Switch Element (Buna-N Diaphragm): LPA-GPA[3] J, H	LPS-GPS[4] G	LPS-GPS[4] J, H	LPS-GPS[4] K, F	LPS-GPS[4] P	LPD-GPD[4] GG	LPD-GPD[4] JJ, HH	LPD-GPD[4] KK,FF	LPD-GPD[4] PP
				Switch Element								
Vacuum												
–30 in.Hg	–760 mmHg	250	400	6-24	2.5-4	4-6	1-2	1-2.5	3-5.5	4-6.5	1-2	1-2.5
Compound												
–30 in.Hg/ 15 psi	–760 mmHg/ 1.0 kg/cm²	250	400	6-24 3-12	2.5-4 1-2.5	4-6 1-3.5	1-2 0.5-1.5	1-2.5 0.5-2	3-5.5 1.5-3.5	4-6.5 1.5-4	1-2 1-2	1-2.5 1-2
Pressure												
30 in.H_2O	750 mmH_2O	20	35	4.0-27	1.5-3.5	2.0-4.0	0.5-1.0	0.7-2.0	2.1-4.9	2.8-5.6	0.7-1.4	0.7-2.8
60 in.H_2O	1500 mmH_2O	20	35	5.0-54	1.5-4.	2.5-5.0	0.5-1.4	1.0-2.5	3-5.6	3.5-7.0	0.7-2.0	2-3.5
100 in.H_2O	2500 mmH_2O	20	35	8.5-90	2.0-5.5	4.0-8.5	1.0-2.0	1.4-3.0	4-7.7	5.6-11.7	1.4-2.8	2-4.2
150 in.H_2O	3750 mmH_2O	20	35	18-135	5.0-11	10-18	1.5-3.0	2.0-6.0	7.0-16	14-25.1	2.1-4.2	5-9.2
15 psi	1 kg/cm²	500	1500	2.5-13	1.0-1.5	1.0-2.5	0.5-1.0	0.75-1.5	1.4-2.1	1.4-3.5	.7-1.4	1-1.4
30 psi	2 kg/cm²	500	1500	3.0-27	1.0-2.8	1.0-3.2	.75-1.5	1-1.8	1.4-5	3-6	1-2.1	1.4-2.5
60 psi	4 kg/cm²	500	1500	5.0-54	2.0-4.0	2.0-4.5	1.0-2.0	1.0-2.5	3-7	4-8	1.4-2.8	1.4-3.5
100 psi	7 kg/cm²	1000	3000	10-90	3-6	5.0-10	1.0-2.5	1.4-3.2	7-12	7.0-14	1.4-3.5	3-7
200 psi	14 kg/cm²	1000	3000	18-180	7-14	10-18	1.0-4.0	5.0-8.0	10-23	14-25	1.4-5.6	7.0-11.2
400 psi	28 kg/cm²	2400	3000	45-360	16-30	16-45	4.0-8.0	5.0-15	22-42	22-63	5.6-11.2	7.0-21
600 psi	42 kg/cm²	2400	3000	75-540	16-50	20-75	5.0-15	6.0-25	22-70	28-105	7.0-21	8.0-35
1000 psi[10]	70 kg/cm²	12000	14000	160-900	75-130	50-160	7.0-30	10-85	70-180	70-223	10-42	14-119
2000 psi	140 kg/cm²	12000	14000	350-1800	150-200	150-350	20-50	25-110	209-279	209-488	28-70	35-154
3000 psi	210 kg/cm²	12000	14000	400-2600	180-250	180-400	30-70	30-190	251-349	251-558	42-98	42-226

DIFFERENTIAL PRESSURE SWITCHES

Nominal Range [1]		Overpressure Ratings: Static psi	Overpressure Ratings: Minimum Proof psi	Approximate Deadband[2,7] Switch Element (Buna-N Diaphragm): LDA-GDA[3] J, H	LDS-GDS[4] G	LDS-GDS[4] J, H	LDS-GDS[4] K, F	LDS-GDS[4] P	LDD-GDD[4] GG	LDD-GDD[4] JJ, HH	LDD-GDD[4] KK,FF	LDD-GDD[4] PP
				Switch Element								
Pressure												
30 in.H_2Od	750 mmH_2O	5.4	21.6	4.0-27	1.5-3.5	2.0-4.0	0.5-1.0	0.7-2.0	2.1-4.9	2.8-5.6	0.7-1.4	0.7-2.8
60 in.H_2Od	1500 mmH_2O	5.4	21.6	5.0-54	1.5-4.0	2.5-5.0	0.5-1.4	1.0-2.5	2.5-6	3.5-7.0	0.7-2.0	2-3.5
100 in.H_2Od	2500 mmH_2O	5.4	21.6	8.5-90	4.0-5.5	4.0-8.5	1.0-2.0	1.4-3.0	5.6-7.7	5.6-11.9	1.4-2.8	2-4.2
150 in.H_2Od	3750 mmH_2O	5.4	21.6	18-135	5.0-11	10-18	1.5-3.0	2.0-6.0	7.0-15.4	14-25.2	2.1-4.2	2.8-8.4
30 psid	2 kg/cm²	500	2000	3.0-27	1.0-2.5	1.0-3.0	1.0-1.5	1.0-1.8	2-5	3-6	1-2.1	1.4-2.4
60 psid	4 kg/cm²	500	2000	5-54	2-4	2-4.5	1-2	1-2.5	3-7	4-8	1.4-2.8	1.4-3.5
200 psid	14 kg/cm²	1000	4000	18-180	10-15	10-18	1.0-4.0	5.0-8.0	14-23	14-30	1.4-5.6	7.0-11.2
400 psid	28 kg/cm²	1000	8000	45-360	16-30	16-45	4.0-8.0	5.0-15	22.4-42	22.4-36	5.6-11.2	7.0-21.0

TEMPERATURE RANGE SELECTION

Adjustable Range °F	Adjustable Range °C	Max. Temp. °F	Approximate Deadband[8] Switch Element: LTA-GTA[3] J, H	LTS-GTS[4] G	LTS-GTS[4] J, H	LTS-GTS[4] K, F	LTS-GTS[4] P	LTD-GTD[4] GG	LTD-GTD[4] JJ, HH	LTD-GTD[4] KK,FF	LTD-GTD[4] PP
			Switch Element								
–40 to 60	–40 to16	400	18-90	4.0-10	9.0-18	1.5-3	2-5	4-10	9.0-18	1.5-3	2-5
0 to 100	–20 to 40	400	30-90	5.0-15	10-30	1.5-5.5	3-7	5-15	10-30	1.5-4.5	3-7
75 to 205	20 to 95	400	34-120	6.0-18	10-34	3-5.5	3-8	6-18	10-34	3-5.5	3-8
150 to 260	65 to125	400	25-100	3-13	9.0-25	1.5-4	3-7	3-13	9.0-25	1.5-4	3-7
235 to 375	110 to 190	500	35-130	6-19	10-35	2-5.5	3-8	6-17	10-35	2-5.5	3-8
350 to 525[9]	175 to 275	700	40-165	5-27	15-40	3-7	3.5-11	5-27	15-40	3-7	3.5-11
500 to 750[6]	260 to 400	900	50-200	20-36	5-10	6-21	20-36	20-36	36-60	5-10	6-21

NOTES:

1. Switches may generally be set between 15% and 100% of nominal range on increasing pressure. Consult factory for applications where setpoints must be lower.
2. All deadbands are given in English units as shown in the nominal range column. Deadbands shown are for switches with Buna N diaphragm.
   Approximate deadbands for optional diaphragms:
   Viton: Multiply Buna N value by 1.4
   Teflon: Multiply Buna N value by 1.2
   Stainless Steel: Multiply Buna N value by 1.7
   Monel: Multiply Buna N value by 1.7
3. Deadbands for LTA, LPA and LDA are adjustable between the values shown for all diaphragm materials.
4. Deadbands for LPS, LPD, LDS, LDD, LTD, and LDS models are fixed within the range of values shown.
5. Switches can be set at increase or decrease throughout the nominal range.
6. Available with remote mount thermal system only.
7. Deadbands given are for zero static working pressure.
8. All deadbands given in °F.
9. Not available with 2¾″ stem.
10. Proof pressure is 4000 psi with stainless steel and monel welded diaphragms.

Consult factory for guidance in product selection
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ASHCROFT®

Pressure, Differential Pressure and Temperature Switch Options

PRESSURE SWITCH OPTIONS (ALL SERIES)

OPTION CODE	DESCRIPTION	SWITCH SERIES A	B	L	P	G	F	N	H	NOTES
XBP	Wall mounting bracket (˝H_2O)		●	STD	STD	STD				
XBX	69C bushing (St. St.)									Assembled to capillary. Remote Temperature only.
XCH	Chained cover		●	●	●	●		●	●	
XCN	ATEX approval on 700 Series		●							
XC8	CSA approval	STD	●		●		STD			Standard on NEMA 4 enclosures. F series and A series.
XFM	FM approval – Single element – Dual element		● ●	● ●						N/A on temperature switches.
XFP	Fungus proofing		●	●	●	●	●	●	●	
XFS	Factory adjusted setpoint	●	●	●	●	●	●	●	●	Setpoint must be given as well as increase or decrease.
XG3	Belleville actuator		●							Setpoint limits reduced to 30% to 100% of range.
XG5	Gas/oil UL limit differential pressure control to 150˝ H_2O		●	●						Buna N & Viton diaphragm only. B400 & LDS single setpoint only. N/A w/code 22, 32, P or J switch elements.
XG6	Gas/oil UL limit pressure control to 600 psi		●	●						Buna N and Viton diaphragm only.
XG7	Special actuator with redundant seal design (SS primary diaphragm)		●							B700 switch only. UL listed.
XG8	Steam limit pressure control to 300 psi		●	●						Stainless steel or Viton diaphragm only.
XG9	Fire safe actuator		●	●	●	●				Stainless steel diaphragm only.
XHS	High static differential		●	●	●					Available with Buna N and Viton diaphragms only. 15 psid and 30 psid only.
XHX	40 psi static pressure/dp only 160 psi proof pressure/dp only 100 psi proof pressure/press only Inches of water ranges		●	●	●	●				
XJK	Left side conduit connection		●	●				●	●	Standard on 700 series. N/A with DPDT element on 400 series.
XJL	¾˝ to ½˝ conduit reducing bushing		●	●	●	●		●	●	
XK3	Terminal block		●	●	●	●	●			Terminal blocks standard with dual switches on 700 series. N/A on 400 series.
XLE	6 foot leads on the micro switch	●	●	●	●	●	●		●	
XMD	Metric range on label		●							N7 switches only. Standard on N4.
XNH	Stainless steel tagging		●	●	●	●	●	●	●	Specify tag information.
XNN	Paper tag		●	●	●	●	●	●	●	Specify tag information.
XPJ	24 Vdc pilot light(s) – Single – Dual		● ●	● ●	● ●					B, L & P Nema 4 only.
XPK	Pilot light(s), top mounted		●	●	●				●	N/A on explosion-proof enclosures.
XPM	¾˝ sealed conduit connection with 16˝ lead wires		●	●	●	●	STD		●	
XRN	Range scale		●							Standard on L, G, P & F series.
XTA	316 SS pressure port(s) for in H_2O ranges		●	●	●	STD				
XTM	2˝ pipe mounting bracket		●	●	●	●		●		

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ASHCROFT®

Pressure, Differential Pressure and Temperature Switch Options

PRESSURE SWITCH OPTIONS (ALL SERIES)

OPTION CODE	DESCRIPTION	SWITCH SERIES A	B	L	P	G	F	N	H	NOTES
XUD	316 stainless steel diff. press. conn.		●	●	●	STD				
XO6	Pressure connection: ½ NPT male, ¼ NPT female combination		●	●	●	●	N/A	●		Standard with 1000, 2000 and 3000 psi ranges. Bottom connection only on D/P ˝H_2O ranges.
XO7	Pressure connection: ½ NPT female		●	●	●	●	STD			
X2C	DPDT with single setpoint adjustment			●		●				Available with LPS, LDS, LTS, GPS, GTS and GDS models.
X3A	Sanitary seal approved by 3A council	●	●	●		●				Select either 1½˝ or 2˝ Tri-Clamp seal.
X6B	Cleaned for oxygen service		●	●	●	●	●	●		N/A with Buna N diaphragm.
	Diaphragm seals	●	●	●	●	●	●	●		

ACCESSORIES & OPTIONS

ACCESSORIES AND OPTIONS

Throttling Devices

A throttling device should be used when a pressure gauge is subjected to rapid pressure fluctuations, which make the gauge difficult to read because of rapid pointer movement. Such a device reduces pressure impact, slows the speed and range of pointer movement, and prolongs gauge life.

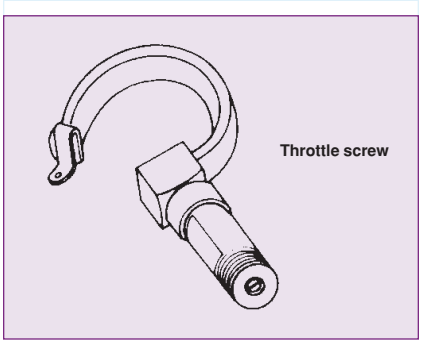
Throttling effect is obtained by installing a restricting orifice between the gauge socket connection and the bourdon tube. Several types are available: throttle screws, pressure snubbers, pulsation dampeners, Gauge Saver® and the Campbell MICRO-BEAN.

Severe service applications are characterized by the presence of significant levels of pressure pulsation and/or vibration. Gauges should be protected from severe pressure pulsation by the inclusion of a dampener such as a throttle plug/screw or porous metal snubber. If the pulsation is extreme, a liquid-filled gauge, with dampener, should be used. A liquid-filled gauge will also last significantly longer than a comparable dry gauge when vibration is present. If the vibration levels are extreme, the only solution may be to remotely mount the gauge away from the source of vibration. In that case capillary tubing may be used to connect the gauge to the pressure source.

THROTTLE SCREWS

The simplest means of providing a restriction in the socket, a throttle screw, should be ordered with the gauge. Threaded or pressed into an instrument socket, the throttle screw orifice selected is based on the viscosity of the pressure fluid, rapidity of pressure fluctuations, and the amount of dampening effect desired.

A smaller orifice should be used for low viscosities, high frequencies, high pressure and reduced pointer amplitude. To accommodate these variables, throttle screws are available in these sizes: 0.0135, 0.020, 0.031, 0.040, and 0.070 inches, in brass and stainless steel. When orifice size or service condition is not specified, a 0.020-inch orifice will be supplied on Duragauge® pressure gauges 0.0135, on 25-35 1009 and 63 and 100mm 1008S.

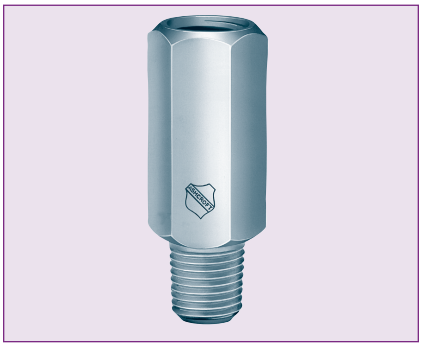


PULSATION DAMPENER

Threads onto a gauge socket and provides restriction by means of a moving pin, which may be placed in either of five different sized holes, and thus allows the user to vary the amount of dampening to suit requirements. The pulsating pressure moves the pin up and down, providing a self-cleaning action. Dampeners are shipped with a pin in the "middle" hole, and may be used in either a vertical or horizontal po-sition. Maximum pressure is 5000 psi.

Type Number	NPT Conn.	Material	Weight (oz.)
25-1106B	¼	Brass	4
50-1106B	½	Brass	8
25-1106D	¼	Steel*	4
50-1106D	½	Steel*	8
25-1106S	¼	Stainless steel	4
50-1106S	½	Stainless steel	8

* Internal parts are stainless steel.

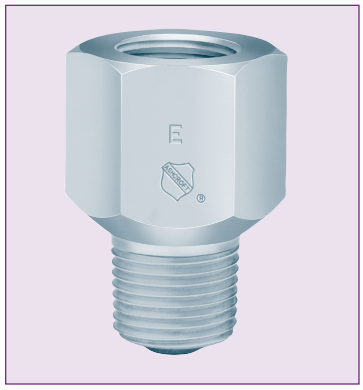


PRESSURE SNUBBER

Type Number	NPT Conn.	Material		Max psi Rating
		Housing	Filter Disc	
25-1112B	¼	Brass	316 stainless steel	10,000
50-1112B	½			
25-1112S	¼	303 stainless steel	316 stainless steel	15,000
50-1112S	½			
25-1112M	¼	R Monel	Monel	15,000
50-1112M	½			

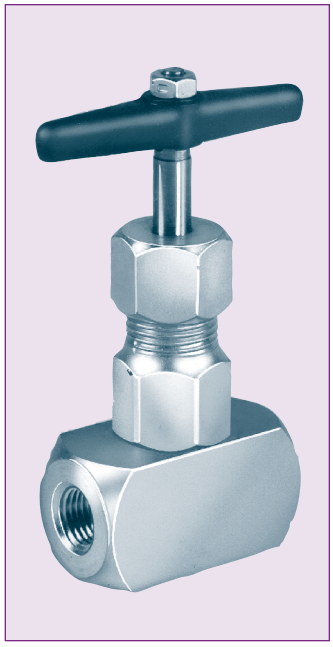
Porosity	Max Pore Cap. Opening (Inches)	CFH at 1 psi Diff. Press.	For use with
D	0.005	6.5	Oil (50 to 500 S.S.U.)
E	0.0025	3.0	Water & Light Oils (Under 50 S.S.U.)
G	0.0008	1.1	Air, Steam and Gases
HX	0.0006	0.4	Mercury Manomometers

Used for dampening and filtering, the snubber has a metal disc available in four standard grades of porosity. The one best suited for the application can be selected from the chart, using the same guidelines as for throttle screws. Due to the large filter area, the snubber has less tendency to clog than orifice-type devices. All-metal construction permits the snubber to be washed in a variety of common solvents.



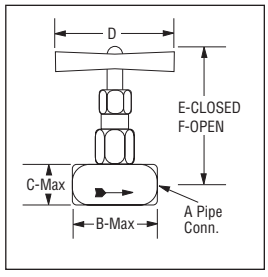
STEEL NEEDLE VALVE

The steel needle valve is an economical, adjustable throttling device for any severe gauge application where the precise adjustment of the Campbell MICRO-BEAN® is not required. It provides the most practical means for varying the orifice to determine the exact orifice for any specific service condition. The valve has an internal seat and is of bar stock construction.



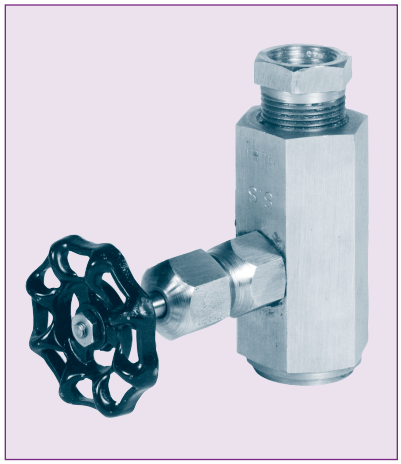
Dimension – Inches						
A NPT Conn.	B	C	D – min.	E	F	Weight oz.
¼	2⅛	⅞	2½	3	3⅛	8
½	2¼	1¼	2½	3 1/16	3 3/16	21

NPT Conn.	Type Numbers Lock Bonnet Type Valves	Material	Pressure Ratings Noncorrosive Service (psi) 100°F	550°F	850°F	1000°F
¼	25-7001L	Carbon steel with 12-14% chrome	10,000	7735	—	—
½	50-7001L	Stainless steel stem				
¼	25-7004L	316 stainless steel	7000	4500	3895	3535
½	50-7004L					



CAMPBELL MICRO-BEAN

This precision valve has a very long taper on the plug, which will permit precise adjustment of the dampening effect. A filter is built into the valve in order to keep foreign matter from plugging the fine orifice. The MICRO-BEAN is made of 1½″ hexagonal bar stock and is 4″ in length. Turning the handwheel produces the degree of dampening required.



Type Number	NPT Conn.	Material	Weight	Pressure Rating psi
25-1110B	¼	Brass	2¼ lb	3000
50-1110B	½	Bass	2¼ lb	3000
25-1110S	¼	Steel	2¼ lb	6000
50-1110S	½	Steel	2¼ lb	6000
25-1110C	¼	303 stainless steel	2¼ lb	10,000
50-1110C	½	303 stainless steel	2¼ lb	10,000
25-1110A	½	316 stainless steel	2¼ lb	10,000
50-1110M	½	Monel	2¼ lb	10,000

CHEMIQUIP PRESSURE LIMITING VALVE SNUBBER[1]

Type Number	Conn.	Material	Available Ranges
25-255B[2]	¼ NPTF	Brass	10-150 psi[3] 150-500 psi 500-1000 psi 1000-3000 psi
25-255S[2]	¼ NPTF	303 SS	
50-2550D[4]	½ NPTF	316 SS	

(1) Cannot be used with Ashcroft diaphragm seals.
(2) Specify porosity designation.
(3) Use code XFS for factory setting.
(4) Meets NACE MR01-75 requirements.

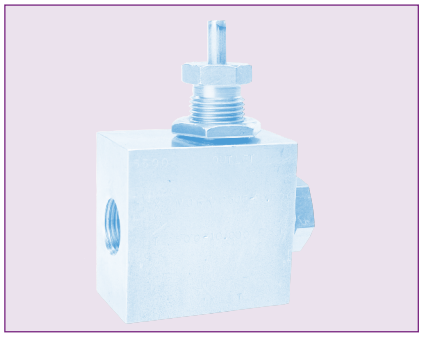
Assures positive, repeatable performance of the instrument by protecting against surges and pulsations. Automatically shuts off when overpressure occurs and is restored when pressure falls below preset values.

CHEMIQUIP PRESSURE LIMITING VALVE [4]

Type Number	Conn.	Material	Available Ranges[3]
25-5460	¼ NPTF	303 SS	100-800 psi 800-2500 psi 2500-10,000 psi[1] 10,000-18,000 psi[2]
50-5500	½ NPTF	303 SS	
09-6430[1]	¼ AMINCO	303 SS	

(1) Not available attached to instrument at factory.
(2) Available with model 09-6430 only.
(3) Use code XFS for factory setting.

Protects pressure instruments against surges and pulsations. Provides automatic positive protection and accurate, repeatable performance. Automatic pressure shut-off. Built-in snubber enhances instrument, protecting performance.

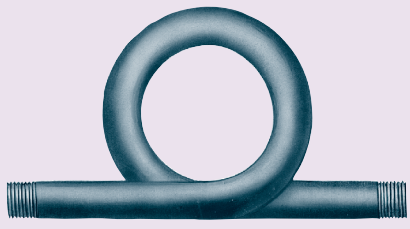


Type of Service	Porosity Designations
High viscous fluids (over 500 S.S.U.)	C
Oil (225-500 S.S.U.)	D
Water and light oils (30-225 S.S.U.)	E
Vapor and low viscosity fluids (Below 30 S.S.U.)	F
Air or other gases	G
Extreme gas pulsations	HX

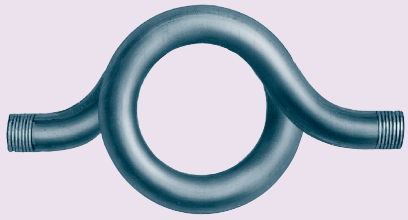
SIPHONS

In order to prevent live steam from entering a pressure gauge Bourdon tube, a siphon filled with water should be installed between the gauge and the process line. If freezing of the condensate in the loop of a siphon is a possibility, a diaphragm seal should be used to isolate the gauge from the process steam. Also use siphons whenever condensing hot vapors (not just steam) are present.

- Pig Tail Siphon–Number 1100 Series, ¼″ sizes: to 500 psi and 400°F.
- Coil Pipe Siphon–Number 1098 Series, ¼,″ ½″ sizes: to 9550 psi and 400°F.



Type 1100



Type 1098

Type Number	NPT Conn.	Material	Capacity
25-1098 I	¼	Iron	500 psi @ 400°F
25-1098 B	¼	Brass	250 psi @ 400°F
25-1098 S	¼	ASTM A-106 seamless steel, Grade A	338 psi @ 1000° to 3360 psi from –20° to 400°F
50-1098 S	½	ASTM A-106 seamless steel, Grade A	333 psi @ 1000°F to 3000 psi from –20° to 400°F
50-1098 SD	½	ASTM A-106 seamless steel, Grade A	420 psi @ 1000°F to 3740 psi from –20° to 400°F
50-1098 CD	½	ASTM A-213 seamless steel, Grade T 22	1048 psi @ 1200°F to 9550 psi from –20° to 400°F
50-1098 NS	½	Seamless stainless steel, Type 316	294 psi @ 1500°F to 3981 psi from –20 to 100°F
50-1098 ND	½	Seamless stainless steel, Type 316	336 psi @ 1500°F 5840 psi from –20° to 100°F
25-1100 A	¼	Stainless steel	500 psi @ 400°F
25-1100 I	¼	Iron – 6⅜″ Long	
25-1100 IL	¼	Iron – 8″ Long	
25-1100 IN	¼	Iron – Angle	
25-1100 B	¼	Brass – 5⅜″ Long	250 psi @ 400°F
25-1100 BL	¼	Brass – 8″ Long	

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DIAPHRAGM SEALS

Designed for use with pressure gauges or switches or transmitters on process applications where:

- Process element materials capable of withstanding corrosive effects of certain fluids are not available.
- The process fluid being measured would normally clog the pressure measuring element.
- The process fluid in the measuring element might freeze due to changes in ambient temperatures.

A diaphragm assembly fabricated of materials that will withstand various corrosive media encountered, separates the measuring element from the process fluid. Since the space between the diaphragm and the measuring element is solidly filled with liquid, any movement of the diaphragm caused by a change in the process pressure will be indicated by the instrument.

Ashcroft diaphragm seals are normally mounted directly to the socket of an instrument. A flexible stainless steel armored line assembly, is available for mounting the gauge at some point away from the seal location to provide easy reading or to limit the temperature at the gauge to 150°F maximum.

Diaphragm seals (isolators) with filled, capillary line assemblies are another good solution to the problem of hot liquid and gas lines. Due to the small diameter of the flexible line (capillary) a five foot line length will usually assure that the temperature of the gauge connection does not exceed 150°F. This solution is also superior to a siphon on steam service where the water filled siphon might freeze.

ELECTRIC WARNING CONTACTS

The Ashcroft® 2265 electric contact is an ideal accessory to turn on a signal light, sound an alarm, or operate a pump or valve. The contacts can easily be set so that a circuit can be closed or opened at a desired pressure or temperature.

Settings can be easily made in the field without removing the instrument from service. Contact adjustment is made externally with a removable key to make the instrument virtually tamper proof.

The contact is designed for easy installation on Types 1279, 1377 and 1379 Duragauge pressure gauges (either stem or flush mounted), Type 1125 differential pressure gauges, or Type 600A Duratemp dial thermometers.

Contacts are equipped with adjustable magnets to eliminate chatter caused by vibration. A plug-in connector with five feet of electrical cable is standard.

Use with Ashcroft Model No.	Description	Availability			
		Code		Mounting	
		45	60		
		4½″ Dial	6″ Dial	Stem	Flush
1279	Duragauge	X	—	X	X[(1)]
1377	pressure	X	X	—	X
1379	gauge	X	X	X	X[(1)]
1125	D/P gauge	X	X	X	X
				Surface	Flush
600A-02	Duratemp	X	X	—	X
600A-03	remote	X	X	X	X
600A-04	thermometer	X	X	X	X

(1) Flush mounting requires type 1278 flush mounting ring.
All specifications are subject to change without notice.

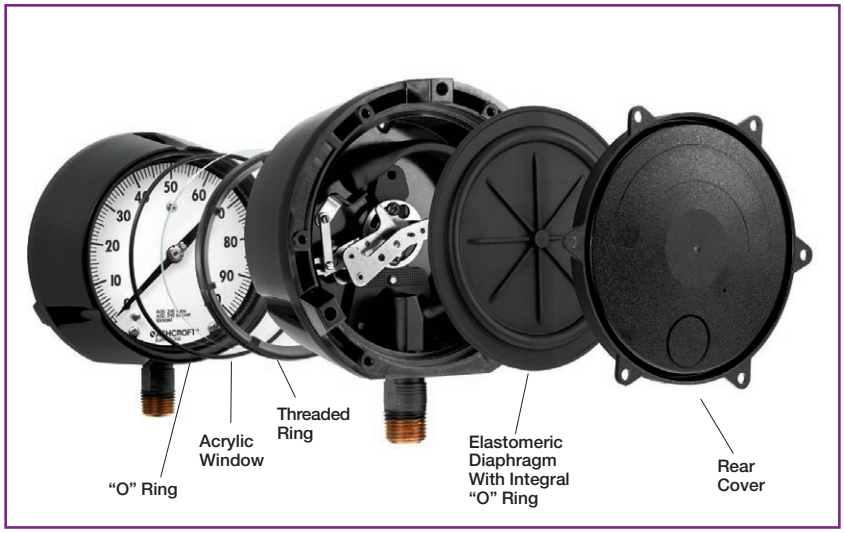
Model	Code	Contact arrangements
2265	XED	High and low contact
	XEE	Double high contact
	XEF	Double low contact
	XEG	"OFF" at low and high, and "ON" in between

Indicating accuracy of Ashcroft Duragauge, above 300 psi with contact: Pointer not carrying contact – 1.0%.
Pointer carrying contact – 1.5%. For ranges below 30 psi, add an additional ½% to indicating accuracies.

CONVERSION KIT

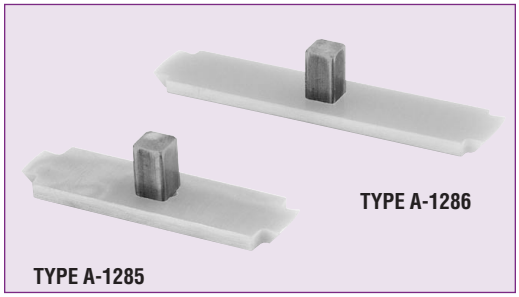
For field converting 4½″ 1279(*)S and 4½″ and 6″ 1379(*)S Duragauge® gauges to a sealed case design suitable for either hermetic sealing or liquid filling. Kit includes (Typical A1280 kit shown):

- O-ring for front case seal.
- Acrylic window.
- Elastomeric diaphragm (Buna-N) for rear case seal.
- Glass filled polypropylene threaded ring for rear of case.
- 302 stainless steel rear cover and mounting screws.
- 303 stainless steel and Monel throttle screws.



HOW TO ORDER THIS CONVERSION KIT

FOR:
4½″ 1379, lower connected – order type A1280 Kit.
4½″ 1379, back connected – order type A1283 Kit.
4½″ 1279, lower connected – order part no. 101A202-01.
4½″ 1279, back connected – order part no. 101A2023-01.
6″ 1379, lower & back connected – order type A1284 Kit.



TYPE A-1285

Ring Wrench – 4½″

(For installing front threaded rings in 4½″ Duragauge gauge)

TYPE A-1286

Ring Wrench – 6″

(For installing front threaded rings in 6″ Duragauge gauge)

TYPE A-1287

Cone Tool

For installing diaphragm and garter spring on back connected liquid-filled or hermetic sealed Duragauge® gauges.

TYPE A-1287

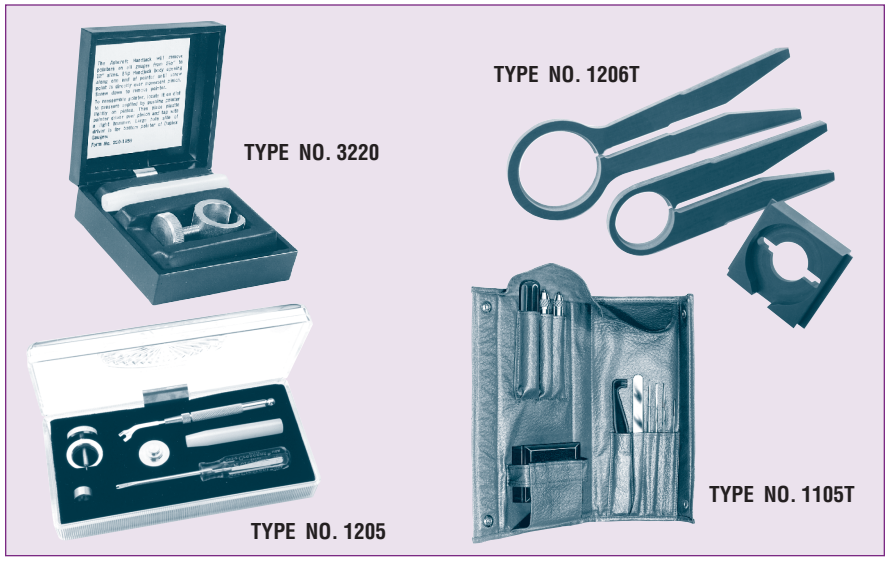
TOOLS

Hand Jack Set – gauge pointer remover and a pointer set to secure pointer to the shaft. Type No. 3220.

Ring Removal – For the 2½″ and 3½″ 1009 gauge. Includes 2½″ and 3½″ wrench and nest. Type No. 1206T.

Small Tools – For the 2½″ and 3½″ 1009. Includes pointer puller, span adjust wrench, slotted screw driver for pointer adjustment, pointer staker and pinion backup. Type No. 1205.

Gauge Tool Kit – A complete kit for gauge maintenance. Includes hand jack set, screw driver, five reamers, pin vise holder, wiggler and tweezer all packed in a neat carrying case. Ideal for a gauge maintenance shop. Type No. 1105T.



TYPE NO. 3220

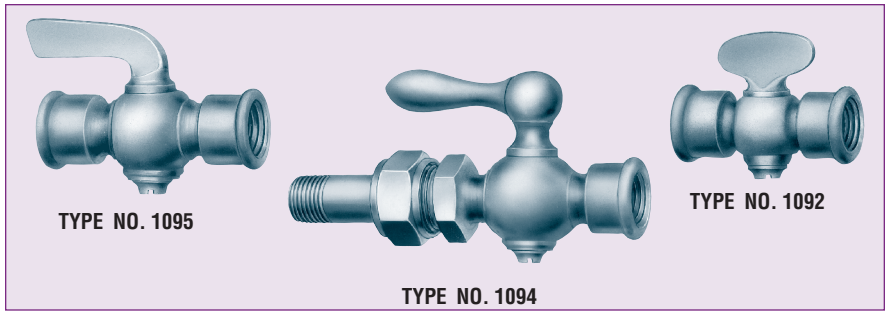
TYPE NO. 1206T

TYPE NO. 1205

TYPE NO. 1105T

COCKS

- ¼″ brass Tee Handle Cock No. 1092 – Wgt. 3 oz.
- ¼″ brass Lever Handle Union Cock No. 1094 – Wgt. 10 oz.
- ¼″ brass Lever Handle Cock No. 1095 – Wgt. 4 oz.
- All rated 100 psi air.



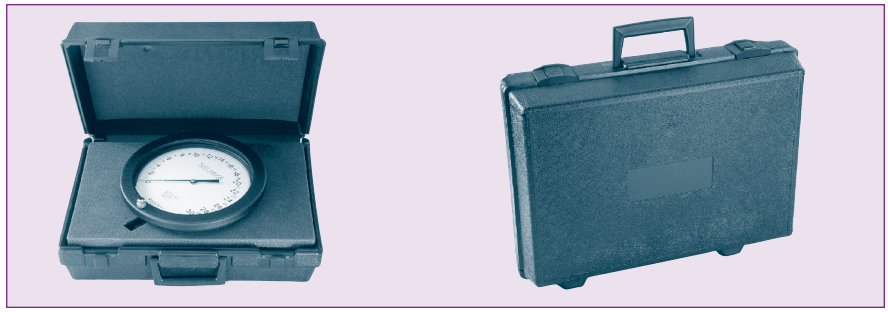
TYPE NO. 1095

TYPE NO. 1092

TYPE NO. 1094

TEST GAUGE CARRYING CASE

This rugged blow-molded high-density polyethylene carrying case accommodates the standard 4½″, 6 & 8½″ Ashcroft Type 1082 analog test gauge. It accepts both lower and back connect gauges. A foam insert protects the gauge when not in use.



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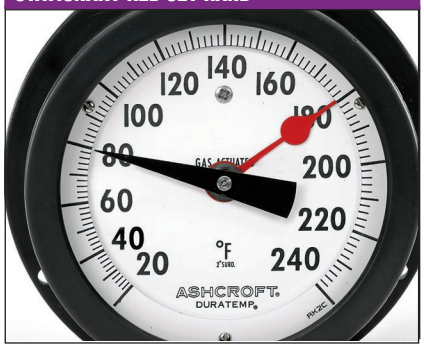
ASHCROFT®

Options for Process, Stainless Steel, Test and Industrial Pressure Gauges

CODE	DESCRIPTION	PRESSURE GAUGE TYPE							
			STAINLESS STEEL CASE				INDUSTRIAL GAUGE		
PLUS! Performance		DURAGAUGE GAUGES	1009 (2½", 3½")	1009 (4½", 6")	1008S	TEST GAUGES	GENERAL SERVICE	SPECIAL SERVICE	1490/1495 SERIES
XLL	***PLUS!*** Performance	●	●		●(1)				
XNS	***PLUS!*** Performance – Silicone Free	●	●		●				
XBF	Wall mounting bracket			●					
XFW	Back flange		●						
XFF	Front flange		●	●	●				
XUC	U-clamp		●	●				●	●
XLJ	Dry liquid-fillable gauge	●	●	●	●				
XOS	Overload stop	●	STD	●	STD(1)	STD	●	●	
XVS	Underload stop	●	STD	●	STD(1)	STD	●	●	
XTS	Throttle screw	●		●		●	●	●	
XTU	Throttle plug		●		●				●
XS4	Slotted link movement (decrease)	●		●			●	●	
XRJ	Slotted link (increase)	●		●			●	●	
XAP	Adjustable pointer		●	●			●	●	
XMP	Micrometer pointer	STD	●	●			●	●	
XSH	Red set hand stationary	●	●	●			●	●	
XEO	Red set hand adjustable	●	●	●		●	●	●	●
XEP	Maximum pointer	●		●		●	●	●	
XEQ	Minimum pointer	●		●		●	●	●	
XPD	Plastic window	●	STD	●	STD(2)	●	●	●	STD
XSG	Safety glass	●	●	●		●	●	●	
XMG	Metric version gauge		●		●				
XRG	Regular glass	STD		STD		STD	STD	STD	
XDA	Dial marking	●	●	●	●	●	●	●	●
XNN	Paper tag	●	●	●	●	●	●	●	●
XNH	Stainless steel tag	●	●	●	●	●	●	●	●
XAB	Absolute pressure	●		●			●		
XAJ	½% optional accuracy	STD		●			●	●	
XAN	1% optional accuracy		STD	STD			STD		●
XRA	Retard scale	●		●			●		
XWN	White dial	STD	●	●	STD	STD	●	●	STD
XBD	Black dial	●	●	●	●	●	●	●	●
X6B	Oxygen-cleaned gauges (gaseous)	●	●	●	●	●	●	●	
XTB	Tip bleed	●				●			
XED	High and low electric contacts	●							
XEE	Double high-electric contacts	●							
XEF	Double low-electric contacts	●							
XEG	Electric contacts off at low or high and in-between	●							
XGV	Silicone-filled gauge	●	●	●	●				
XGX	Halocarbon-filled gauge	●	●	●	●				
XCH	Carrying handle					●			
XC4	Calibration Chart	●	●	●	●	●	●	●	●

NOTES:
The options listed above are only a partial listing. For other options on these or other pressure instruments please call the factory for availability.
(1) Available on 63mm and 100mm.
(2) Available on 40mm and 50mm.

STATIONARY RED SET HAND

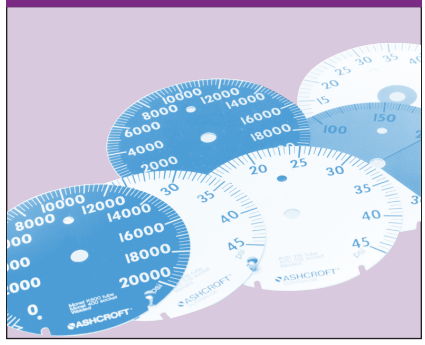


Stationary Red Set Hand
to indicate a specific pressure. Ring must be removed to move the hand.

OVERLOAD STOP

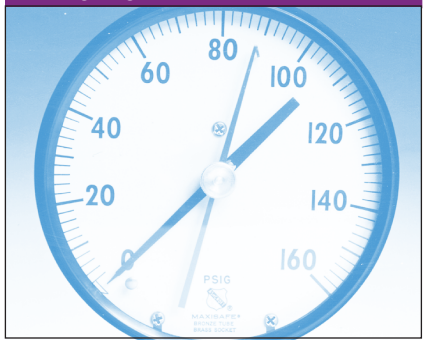
Overload Stop
to protect gauge system against extreme overpressure.

SPECIAL DIAL



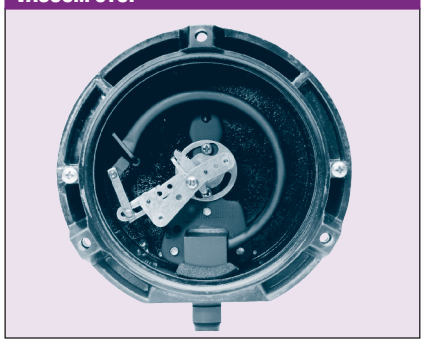
Special Dial
ranges different from standards, or custom artwork, available on application.

MAXIMUM POINTER



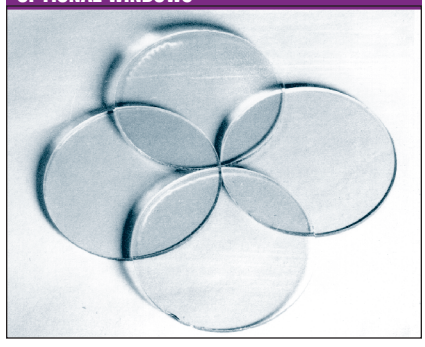
Maximum Pointer
available for gauges 4½″ size and larger. Indicates maximum pressure attained. Can be reset by a knob on outside of window.

VACUUM STOP



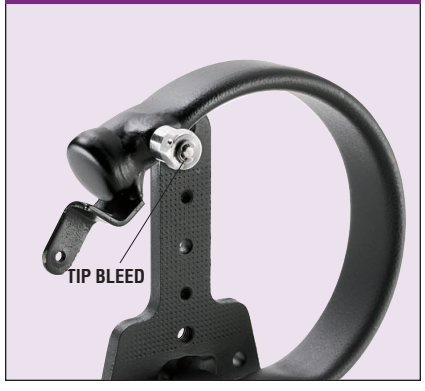
Vacuum Stop
to protect low range gauges against vacuum.

OPTIONAL WINDOWS



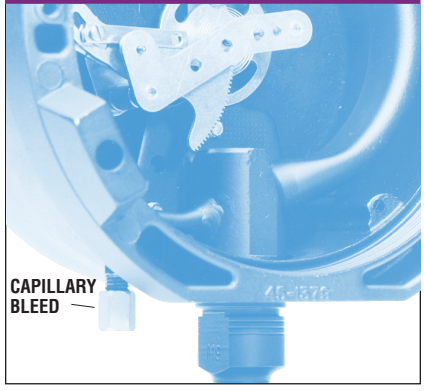
Plastic Disc – optional for glass window
Laminated Safety Glass – optional for glass window
Nonglare Glass – optional for glass window

TIP BLEEDER



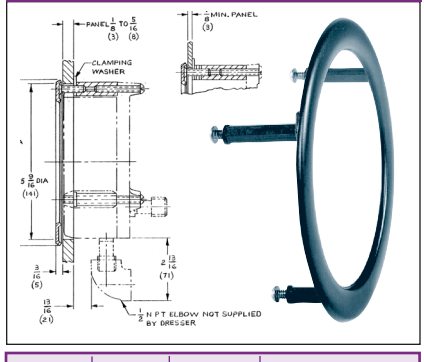
These bleeders allow trapped air to be removed from the bourdon tube. They can also be used for back-flushing or cleaning the system. The tip bleed is available with 316 stainless steel systems. It is accessible by removing the pressure relief back. Tip bleeders are available to 23,000 psi. The capillary bleeder provides an external case connection to the internals of the Bourdon

CAPILLARY BLEEDER



tube. It may be used as a pressure testing tap for gauge inspection without removing the gauge from service. Capillary bleeders are available in bottom connected gauges only. The capillary bleeder is available in 300 Series stainless steel and limited to 4½″ 1379(S)S case with 316 stainless steel system. Capillary bleeders are available to 1000 psi.

TYPE 1278M FLUSH MOUNTING RING



Gauge Size (inches)	Ring O.D. (inches)	A Dia. (inches)	"B"-Three Screws Size
4½	6.000	5.625	#10-24 x 1⅝″
6	7.765	7.25	¼-20 x 1½″

Used to flush-mount gauge types 1188, 1220, 1279 and 1379. Standard finish is black; polished stainless steel finish is available at an extra charge, 4½″ and 6″.

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

APPLICATION DATA

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Pressure Element Selection
Media Application

The media being measured must be compatible with the wetted parts of the pressure instrument. To use the chart below, locate the media whose pressure is to be measured and select a suitable material from those available. This is a simplified chart and assumes the media temperature is below 200°F except for media with a "*" which must be below 100°F. ***PLUS!***™ option, throttling devices and/or a liquid-filled instrument are recommended in applications with pulsation or vibration. These recommendations are only a guide, as service life is dependent on temperature, concentrations, catalysts that may be added, or other conditions beyond our control. Consult Stratford, CT customer service for specific applications and any media not listed. Additional corrosion data is available on our web site, **www.ashcroft.com** in the Application Data Section.

MEDIA APPLICATION	Pressure Instrument Material: Brass or bronze	Steel	316 SS	Monel	Diaphragm seals**
Acetone*	•		•	•	
Acetic Acid <40%			•		
Acetic Anhydride					•
Acetylene (Dry)		•	•		
Acrolein 100%					•
Air	•	•	•	•	
Alcohol, Ethyl	•		•	•	
Alum. Chloride >10%					•
Alum. Sulfate 10-50%					•
Ammonia Gas (Dry)		•	•		
Ammonium Chloride <40%					•
Ammonium Nitrate <50%			•		
Ammonium Sulfate <60%					•
Aniline>99%			•		
Argon	•	•	•	•	
Beer			•		
Benzidine >99%					•
Benzene <50%			•	•	
Benzoic Acid <70%					•
Boric Acid <25%			•		
Bromine (Dry)					•
Butane	•	•	•	•	
Butyric Acid <10%					•
Calcium Chloride <80%					•
Calcium Hydroxide <50%					•
Carbon Dioxide	•	•	•	•	
Carbon Monoxide (Dry) >99%	•		•	•	
Chlorine (Dry)					•
Chlorine (Moist)					•
Chloroform (Dry)			•	•	
Chromic Acid					•
Citric Acid 10-50%			•		
Corn Oil			•		
Crude Oil (Sour)				•	
Crude Oil (Sweet)			•	•	
Ethyl Acetate	•		•	•	
Ethylene Oxide >99%*	•		•	•	
Ferric Chloride <40%					•
Ferric Sulfate <10%			•		
Ferrous Chloride <30%					•
Ferrous Sulfate <50%					•
Fluorine Gas (Dry) No Air				•	
Formaldehyde <95%			•	•	
Formic Acid*					•
Freons		•	•		
Furfural <10%					•
Gasoline (Flowing)	•		•		
Glycerin >99%	•	•	•	•	
Hydrobromic Acid					•
Hydrochloric Acid					•
Hydrofluoric Acid					•
Hydrofluosilic Acid					•
Hydrogen(2)	•		•		
Hydrogen Peroxide <50%					•
Kerosene	•	•	•	•	
Lactic Acid <70%*(2)			•		
Magnesium Chloride <40%					•
Mercury >99%			•		
Milk			•		
Naphtha >99%	•	•	•	•	
Naphthalene >99%			•	•	
Nickel Chloride >99%					•
Nitric Acid <95%*			•		
Nitrogen	•	•	•	•	
Oleic Acid	•				•
Oxalic Acid*					•
Oxygen (Gas)(1)	•		•	•	
Palmitic Acid >99%*			•		
Phosphoric Acid <80%*			•		
Picric Acid <10%			•		
Propane (Dry) DOT Quality	•	•	•	•	
Sea Water (Flowing)				•	
Silver Nitrate <70%					•
Sodium Bicarbonate <20%			•	•	
Sodium Bisulfate <30%					•
Sodium Carbonate <40%			•	•	
Sodium Chromate <60%	•	•	•	•	
Sodium Cyanide*		•	•		
Sodium Hydroxide < 40%				•	
Sodium Hypochlorite <25%					•
Sodium Phosphate,Tri <60%		•	•	•	
Sodium Silicate <50%		•	•	•	
Sodium Sulfide <50%					•
Stannous Chloride <10%					•
Steam (Use siphon)	•	•	•	•	
Stearic Acid			•		
Sulfur Dioxide (Dry) >99%					•
Sulfur Trioxide (Dry) >99%					•
Sulfuric Acid					•
Tannic Acid <80%		•	•	•	
Tartaric Acid <50%			•	•	
Tin Chloride (ous) <10%					•
Toluene >99%	•	•	•	•	
Turpentine >98%	•	•	•	•	
Water (tap)	•		•	•	
Whiskey			•		
Zinc Chloride <25%*					•
Zinc Sulphate <40%					•

(1) Monel and 316 stainless steel are acceptable for oxygen service, provided the instrument has been cleaned for service and is free from oil. Order variation X6B.

(2) Over 1000 psi–entire system must be 316 stainless steel.

*Media temperature must be below 100°F.

**Any standard Bourdon tube or bellows material may be used in conjunction with a diaphragm seal (with bellows use a Viton or Kalrez diaphragm), but the gauge selection should take into consideration the corrosive environment in which it is to operate.

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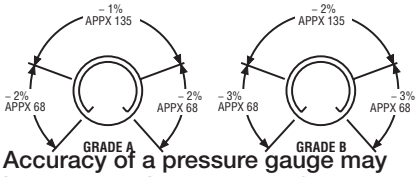
Conversion Factors for Units of Pressure

TO CONVERT FROM ▼ TO ▶	psi	mbar	bar	atm	Pa	kPa	cmH_2O @ 20°C	inH_2O @ 20°C	ftH_2O @ 20°C	mmHg @ 0°C	inHg @ 0°C	kg/cm^2	ft sea water
psi	1	68.9476	0.0689476	0.0680460	6894.76	6.8947	70.433	27.730	2.3108	51.7149	2.03602	0.07030686	2.2457
mbar	0.0145038	1	0.001	9.86923×10^{-4}	100	0.100	1.0215	0.40218	0.03352	0.75006	0.0295300	0.00101972	032571
bar	14.5038	1000	1	0.986923	100000	100	1021.5	402.18	33.52	750.06	29.5300	1.019716	32.571
atm	14.6959	1013.25	1.01325	1	101325	101.325	1035.08	407.511	35.959	760.0	29.9213	1.033227	33.002
Pa	$1,45038 \times 10^{-4}$	0.01	0.00001	9.86923×10^{-6}	1	0.001	0.010215	0.0040218	3.352×10^{-4}	7.5006×10^{-3}	2.95300×10^{-4}	1.019716×10^{-5}	3.2571×10^{-4}
kPa	0.145038	10.0	0.010	0.0098692	1000	1	10.215	4.02118	0.3352	7.5006	0.295300	0.0101972	0.32571
cmH_2O @ 20°C	0.014198	0.97891	9.7891×10^{-4}	9.66105×10^{-4}	97.891	0.097891	1	0.3937	0.035281	0.73424	0.028907	9.9821×10^{-4}	0.031884
inH_2O @ 20°C	0.036063	2.4864	0.0024864	2.45392×10^{-3}	248.64	0.24864	2.5400	1	0.083333	1.8650	0.073424	0.0025354	0.080986
ftH_2O @ 20°C	0.432756	29.8368	0.0298368	0.0294470	2983.68	2.98368	30.480	12	1	22.380	0.881089	0.030425	0.97183
mmHg @ 0°C	0.0193368	1.33322	0.0013322	0.00131579	133.322	0.133322	1.3619	0.53620	0.04468	1	0.03937	0.00135951	0.043424
inHg @ 0°C	0.491154	33.8639	0.0338639	0.0334211	3386.39	3.38639	34.593	13.619	1.13491	25.400	1	0.0345316	1.1030
kg/cm^2	14.2233	980.665	0.980665	0.967842	98060.5	98.0665	1001.8	394.41	32.868	735.559	28.959	1	31.9410
ft sea water	0.4453	30.702	0.030702	0.030301	3070.2	3.0702	31.3638	12.3482	1.02900	23.029	0.90664	0.031308	1

ACCURACY:

Accuracy – the conformity of indication to an accepted standard or true value. Accuracy is the difference (error) between the true value and the indication expressed as a percent of the span. It includes the combined effects of method, observer, apparatus and environment. Accuracy error includes hysteresis and repeatability errors but not friction error. It is determined under specific conditions. (Normal position, 73.4°F (23°C), and 29.92 in Hg barometric pressure.)

The following tables define the ASME B40.1* accuracy grades used by Ashcroft products.



Accuracy of a pressure gauge may be expressed as percent of span or percent of indicated reading. Percent of span is the most common method. Percent of indicated reading is usually limited to precision test gauges and unless specifically spelled out, it may be assumed that an accuracy of ±½% means ±½% of span.

GRADE 4A:
gauges offer the highest accuracy and are calibrated to ±0.1% of span over the entire range of the gauge. The gauges are called laboratory precision test gauges and are generally 8½″, 12″ or 16″ dials. These high-accuracy gauges may be temperature compensated. They must be handled carefully in order to retain accuracy.

GRADE 3A:
gauges are calibrated to an accuracy of ±0.25% of span over the entire range of the gauge. The gauges are called test gauges and are generally 4½″, 6″ or 8½″ dials. The gauges are generally not temperature compensated (except Ashcroft Type 1082).

GRADE 2A:
gauges are calibrated to an accuracy of ±0.5% of span over the entire range of the gauge. These gauges are generally used by the petrochemical industry for process pressure measurement. They are often referred to as process gauges and are usually supplied as 4½″ and 6″ cases and are not temperature compensated.

GRADE 1A:
gauges are calibrated to an accuracy of ±1% over the entire range of the gauge. These gauges are high-quality industrial gauges and are supplied in 2½″, 3½″ and 4½″ sizes.

GRADE A:
gauges are calibrated to an accuracy of ±1% of span over the middle half of the scale and ±2% of span over the first and last quarters of the scale. These gauges are often referred to as industrial gauges and are usually supplied in 2½″, 3½″ and 4½″ case sizes.

GRADE B:
gauges are calibrated to an accuracy of ±2% of span over the middle half of the scale and ±3% of span over the first and last quarters of the scale. This accuracy of gauge represents the majority of those manufactured and used for pressure measurement on water pumps, swimming pool filters, air compressors, filter regulations, etc. These gauges are often referred to as commercial or utility gauges and are supplied in 1½″, 2″, 2½″, 3½″ and 4½″ case sizes.

GRADE C:
gauges are calibrated to an accuracy of ±3% of span over the middle half of the scale and ±4% of span over the first and last quarters of the scale. These are used in similar applications as Grade B gauges except that they are less accurate.

GRADE D:
gauges are calibrated to an accuracy of ±5% of span over the entire scale. These 5% gauges are used as indicators when minimal accuracy is required for application on water pumps and pool filters.

ACCURACY EXAMPLES

Range	Accuracy Span	Grade	Permissible Error % of Span	Dial Units
0/100 psi	100 psi	1A	1.0	1 psi
0/400 kPa	400 kPa	2A	0.5	2 kPa
0/1000 bar	1000 bar	B	3 (0/250 & 750/1000 bar)	30 bar
			2 (250/750 bar)	20 bar
–100/400	400 kPa	2A	0.5	2 kPa
30 in.Hg/	44.7 psi	4A	0.1	.045 psi
30 psi				.022 in.Hg

The last item (30 in. Hg/30 psi)deserves some explanation. The span is defined as the algebraic difference between the limits of the scale. 30 in. Hg = –14.7 psi Span = 30 psi -(–14.7) = 44.7 psi. 0.1% of 44.7 psi = .045 psi or .022 Hg.

*ASME B40.1 may be ordered from:
American Society of Mechanical Engineers
Three Park Avenue, New York, NY 10016

ACCURACY EXAMPLES

Type of Gauge	Grade	Permissible Error % of Span: Lower 25%	Middle 50%	Upper 25%	Max. Friction (% of Span)
Precision Test (A4A)	4A	0.1	0.1	0.1	See Note
Test (1082)	3A	0.25	0.25	0.25	0.25
Process (1279)	2A	0.5	0.5	0.5	0.5
Industrial/ Hydraulic (1009)	1A	1.0	1.0	1.0	1.0
Industrial/ Hydraulic (1010, 1188, 1490)	A	2.0	1.0	2.0	1.0
Commercial/ Utility (1005, 3005, 1008)	B	3.0	2.0	3.0	2.0

Note: Grade 4A gauges must remain within 0.1% before and after being lightly tapped.

ASHCROFT®

Bimetal Thermometer Accuracy Definitions

ASME B40.3* STANDARD ACCURACIES:

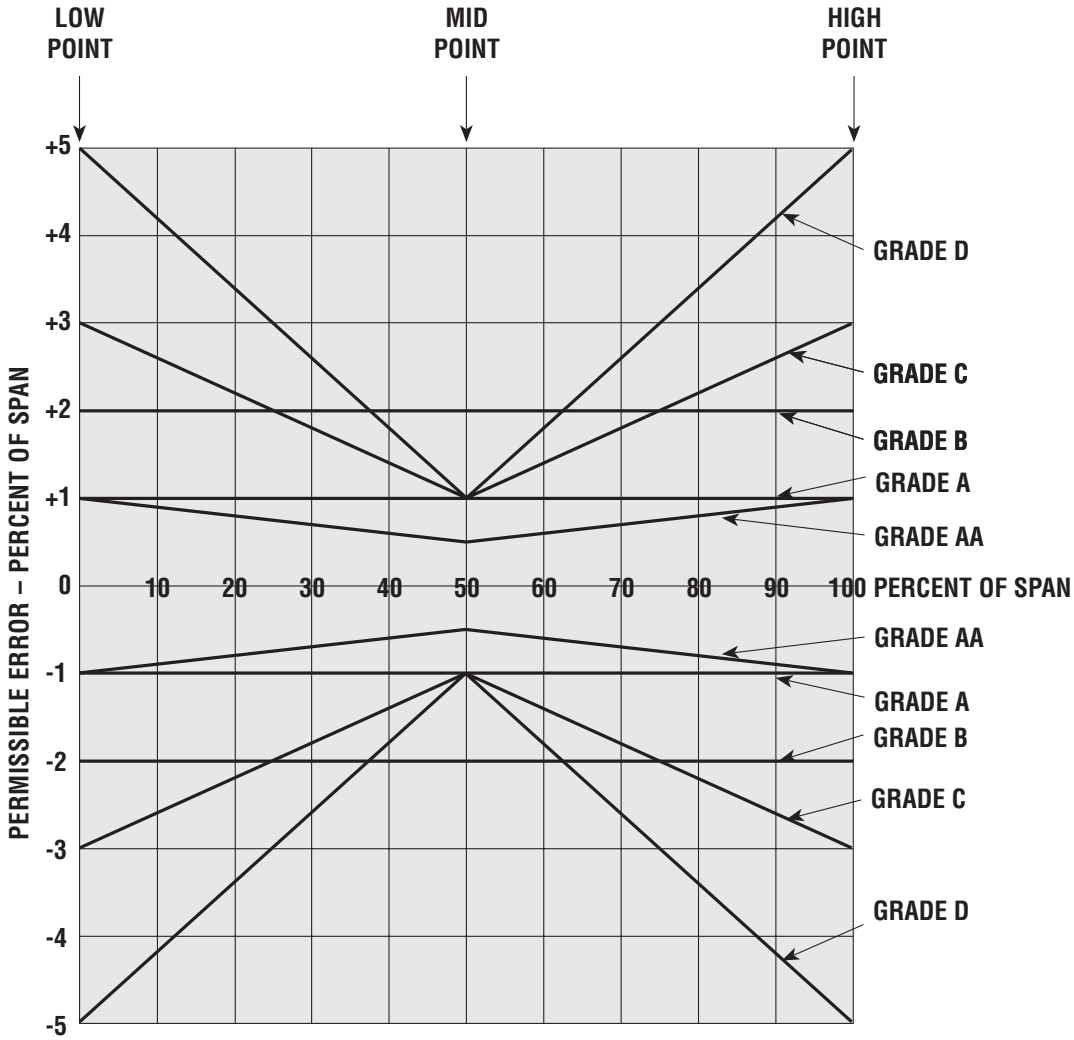
Example #1: Range 0/250°F Grade A
Span = 250-0 = 250°F
Accuracy at 20% of span (50°F) = ±1% = ±2.5°F
Accuracy at 50% of span (125°F) = ±1% = ±2.5°F
Accuracy at 100% of span (250°F) = ±1% = ±2.5°F

Example #2: –40/160°F Grade E
Span = 160-(–40) = 200°F
Accuracy at 20% of span (0°F) = ±3.4% = ±6.8°F
Accuracy at 50% of span (60°F) = ±1% = ±2.0°F
Accuracy at 100% of span (160°F) = ±5% - ±10.0°F

Example #3: Range 50/300°F Grade AA
Span = 300-(–50) = 250°F
Accuracy at 0% of span (50°F) = ±1% = ±2.5°F
Accuracy at 50% of span (175°F) = ±0.5% = ±1.25°F
Accuracy at 70% of span (225°F) = ±0.7% = ±1.75°F

ACCURACY:
Thermometer accuracy is graded as shown in the table below.
Adjustment of the case of a thermometer, with an adjustable angle connection, may affect its accuracy. This effect should not exceed 0.5% of span .

*ASME B40.3 may be ordered from:
American Society of Mechanical Engineers
Three Park Avenue
New York, NY 10016



– TABLE 1 –

Primary enclosure characteristics of NEMA standard 250-1979 and equivalents in DIN standard 40050

STANDARDS		PROTECTION LEVEL
IP20	***NEMA 1***	***Fingers***
IP22	NEMA 2	Falling dirt and water
IP53	NEMA 3	Windblown dust, rain, sleet
	NEMA 3R	Falling rain and sleet
	NEMA 3S	Windblown dust, rain, sleet, mechanisims operate when iced over
IP65	***NEMA 4***	***Hosedown***
	NEMA 4X	***Hosedown and corrosion***
	NEMA 5	Dust and falling dirt
IP67	***NEMA 6***	***Temporary submersion***
IP68	NEMA 6P	Occasional prolonged submersion and corrosion
	NEMA 7	Indoor hazardous Class I, Groups A, B, C or D
	NEMA 8	Indoor hazardous Class II, Groups A, B, C or D
	NEMA 9	Indoor hazardous Class II, Groups E, F, G
	NEMA 10	Mine safety
	NEMA 11	Oil seepage and corrosion
	NEMA 12	***Oil seepage***
	NEMA 12K	Oil seepage, has knockouts
	NEMA 10	***Oil sprays***

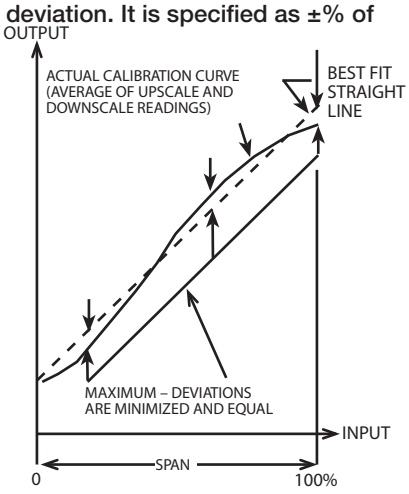
**Types of greatest interest are italicized.*

ASHCROFT®

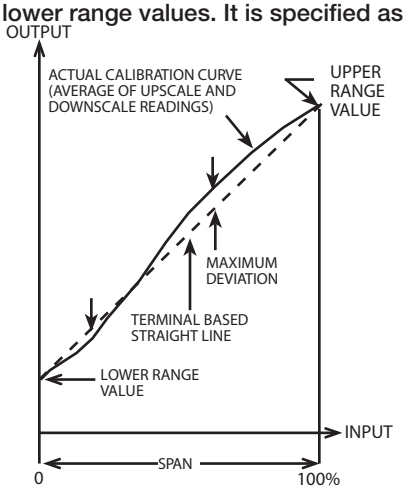
Pressure Transducers/ Transmitters Accuracy Definitions

ACCURACY:
Accuracy is defined as the degree of conformity of a measure to an accepted standard or true value. It is a measure of the actual output deviation from the standard or true value reported as a percentage (±) of output span. Accuracy does account for the effects of linearity, hysteresis and repeatability. In addition, the maximum errors of these effects for Ashcroft Transducers are reported separately.

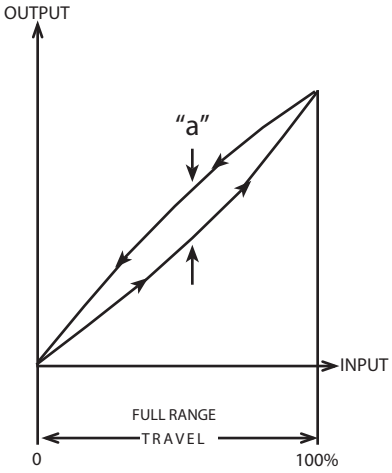
LINEARITY –
BEST FIT STRAIGHT LINE (B.F.S.L.)
The linearity defined as the maximum deviation of the calibration curve (average of upscale and downscale readings) from a straight line so positioned as to minimize the maximum deviation. It is specified as ±% of span.



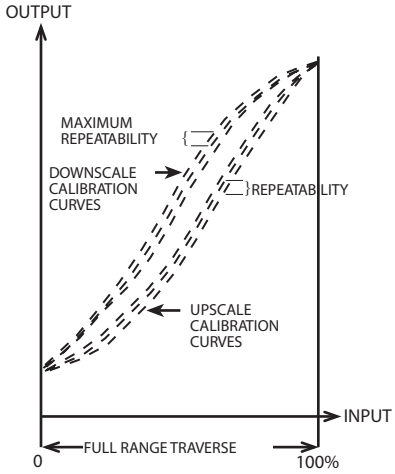
LINEARITY – TERMINAL POINT (T.P.)
The linearity defined as the maximum deviation of the calibration curve (average of upscale and downscale readings) from a straight line positioned to pass through the upper and lower range values. It is specified as ±% of span.



HYSTERESIS
The maximum difference in output ("a" below) within the range when the value is approached with increasing pressure and then with decreasing pressure for full range traverses. It is specified as ±% of span.



REPEATABILITY
The closeness of agreement among a number of consecutive measurements of the output for the same value of the input under the same operating conditions, approaching from the same direction, for full range traverses. It is specified as ±% of span.

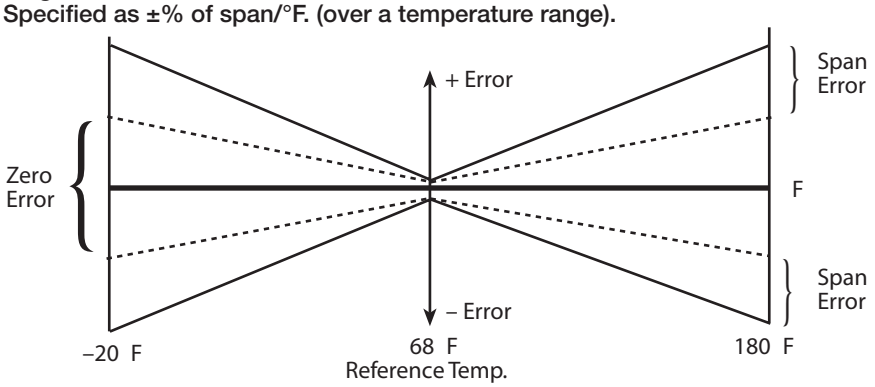


TEMPERATURE ERROR
The maximum change in output at any input value within the range when the product is changed from room (reference) temperature to

specified temperature extremes. Temperature errors are specified in two ways defined as
follows:

THERMAL COEFFICIENT DATA

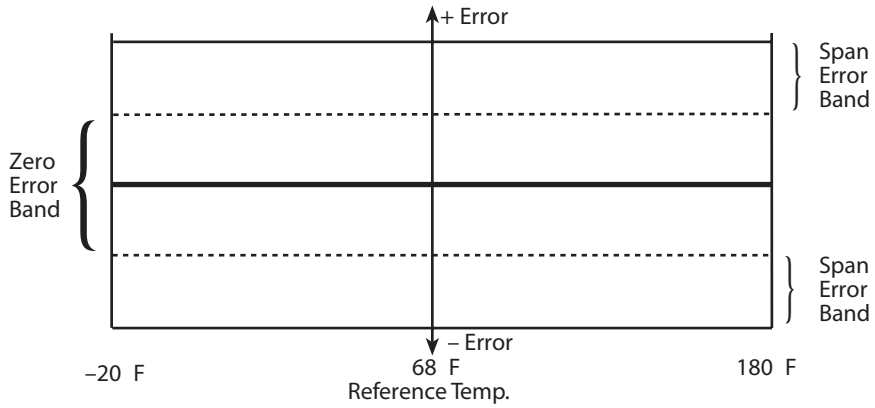
Thermal Coefficient of Zero – the zero shift due to changes in temperature from room (reference) temperature to the specified limits of the operating range.
Specified as ±% of span/°F. (over a temperature range).



Thermal Coefficient of Span – the span shift due to changes in temperature from room (reference) temperature to the specified limits of the operating range.
Specified as ±% of span/°F. (over a temperature range).

THERMAL ERROR DATA

Thermal Error of Zero – the zero shift due to changes in temperature from room (reference) temperature to the specified limits of the operating range.



Specified as ±% of span (over a temperature range).

Thermal Error of Span – the span shift due to changes in temperature from room (reference) temperature to the specified limits of the operating range.
Specified as ±% of reading (over a temperature range).

Note: Definitions are in accordance with:
ANSI/ISA S51.1 - 1993 “Process Instrumentation Terminology”
ANSI/ISA S37.1 - 1982 “Electrical Transducer Terminology”

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