

# Pressure Transducer



- ▶ **Pressure**
  - Electronic Pressure Switches
  - Mechanical Pressure Switches
  - **Pressure Transducer**
- ▶ **Valves & Regulators**
- ▶ **Temperature**
- ▶ **Level**
- ▶ **Flow**
- ▶ **Air Suspension Valves**

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# Transducer

## Explosion Proof Transducer (Amplified) *Series 423X, 425X, 426X*

### Features

- ▶ Diffused silicon sensor for high accuracy
- ▶ Explosion proof enclosure for hazardous locations
- ▶ Superior EMI, ESD and RFI protection
- ▶ Rugged stainless steel construction
- ▶ NEMA 4X, 7 and 9
- ▶ ATEX approved for 425X Series only
- ▶ Modular concept
- ▶ Built-in high pressure snubber (2000 psi and above)
- ▶ cULus, CE approved

### Applications

- ▶ Oil & gas pipelines
- ▶ Oil patch
- ▶ Petrochemical plants
- ▶ Refineries
- ▶ Pulp and paper mills
- ▶ Coal and oil fired power plants
- ▶ Cement plants
- ▶ Gas transfers for fuel systems
- ▶ Gas panels
- ▶ Gas mixing systems



### General Specifications\*

<b>Accuracy (LH &amp; R):</b>	±0.25% BSL (±0.5% for vacuum only [-23])
<b>Long Term Stability:</b>	±0.5% FSO of calibration curve
<b>Typical Life Cycle:</b>	100 million cycles
<b>Proof Pressure:</b>	2 times rated pressure or 13,000 psi max. (884 bar), whichever is less
<b>Input:</b>	
423X:	Excitation voltage: 9 to 28 VDC
426X:	Excitation voltage: 14 to 28 VDC
425X:	Excitation voltage: 12 to 28 VDC
<b>Supply Current:</b>	3.0 mA maximum (no load)
<b>Output:</b>	
423X:	Output: 0.5 to 5.5 VDC Full scale output: 5.0 VDC ± 0.8% Zero output: 0.5 VDC ± 0.4%
426X:	Output: 1 to 11 VDC Full scale output: 10 VDC ± 1% Zero output: 1.0 VDC ± 2%
425X:	Output: 4 to 20 mA Full scale output: 16 mA ± 1% Zero output: 4 mA ± 2%
<b>Wetted Parts:</b>	17-4 PH & 300 series stainless steel
<b>Enclosure:</b>	NEMA 4, 300 series stainless steel

<b>Pressure Connection:</b>	1/4"-18 NPT male
<b>Electrical Connection:</b>	3 conductor for voltage series and 2 conductor for current series. 24 awg, PVC jacketed, shielded cable, 3 ft. (1 m) long with integral strain relief and case ground (standard).
<b>Temperature Ranges:</b>	
Operating:	-40° to 185°F (-40° to 85)°C
Compensated:	30° to 160°F (-1° to 71)°C
Storage:	-40° to 185°F (-40° to 85)°C
<b>Temperature Shift:</b>	
Zero & Span:	0.0125% per °F over compensated range 75°F reference
<b>Vibration:</b>	15 g's, 10-2000 Hz, MIL-STD 202
<b>Shock:</b>	50 g's, 11 ms, MIL-STD 202 Method 213, Cond. G.
<b>Approvals:</b>	UL cUL approved as telemetering equipment for use in hazardous locations (UL File E146589, WYMV, WYMV7) as follows:  Class I, Div. 1, Groups A, B, C & D Class II, Groups E, F & G, when installed in accordance with control drawing 272148.  1/2" NPT male conduit models and 1/2" NPTF conduit/DIN connector models are also UL listed as nonincendive devices, approved for use in Class I, Div. 2, Groups A, B, C, D, Class II, Groups F & G, hazardous locations (without barriers).
<b>Weight:</b>	
423X & 426X:	7.4 oz. (221 grams) to 1000 psi 9.9 oz. (281 grams) 2,000 psi and higher
425X:	7.4 oz. (210 grams) to 1000 psi 9.4 oz. (266 grams) 2,000 psi and higher
<b>Warranty:</b>	1 year warranty

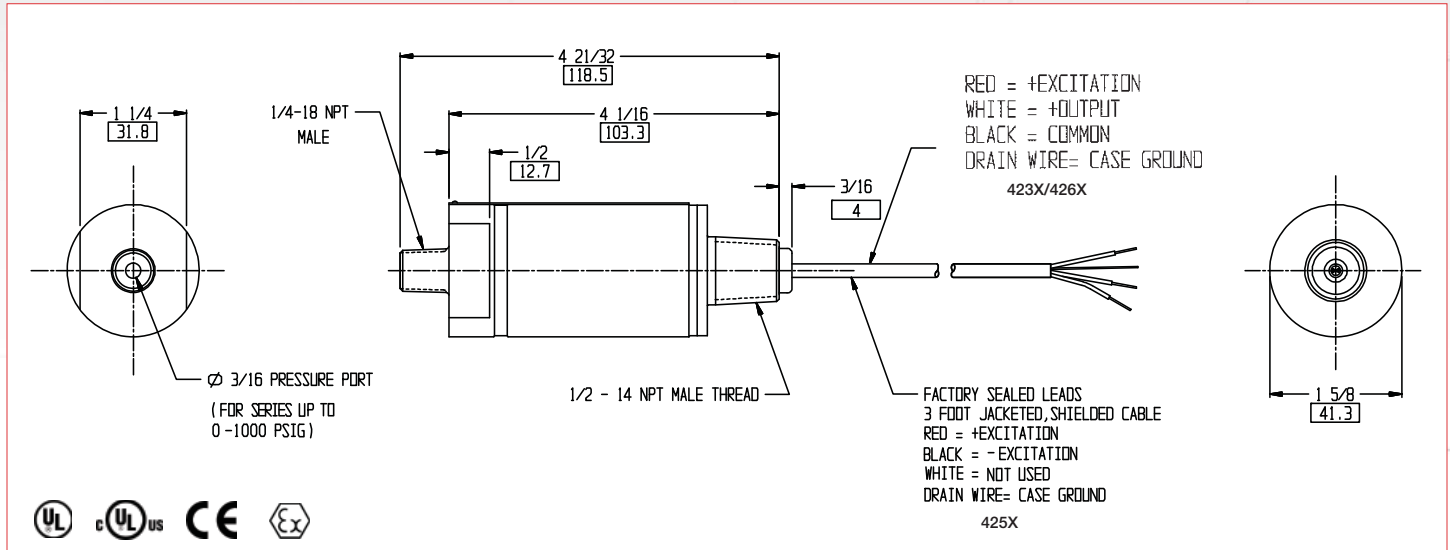
### Wiring Code

MILLIVOLT SERIES - 423X & 426X		
(T4/T5)	(H3/H5)	Signal
1	Red	+ Excitation
3	White	+ Output
2	Black	Common
4	Bare	Drain
MILLIAMP SERIES - 425X		
1	Red	+ Excitation
4	Black	- Excitation
3	Bare	Drain

\* See product configurator for additional options.

# Explosion Proof Transducer (Amplified) *Series 423X, 425X, 426X*

## Technical Drawings



## Product Configurator

Example: **425X -04 -A**

### Base Model

423X	0.5 - 5.5 VDC analog output
425X	4 - 20 mA analog output
426X	1 - 11 VDC analog output

### Pressure Range

-23	0 - 29.9" of Hg
-01	0 - 15 psi (0 - 1 bar) <sup>2</sup>
-21	0 - 30 psi (0 - 2.1 bar) <sup>2</sup>
-22	0 - 60 psi (0 - 4.1 bar) <sup>2</sup>
-03	0 - 50 psi (0 - 3.5 bar) <sup>2</sup>
-04	0 - 100 psi (0 - 6.9 bar) <sup>2</sup>
-05	0 - 150 psi (0 - 10.3 bar) <sup>2</sup>
-06	0 - 200 psi (0 - 12.8 bar) <sup>2</sup>
-07	0 - 300 psi (0 - 20.7 bar) <sup>2</sup>
-08	0 - 500 psi (0 - 34.5 bar)
-19	0 - 600 psi (0 - 41 bar)
-10	0 - 1,000 psi (0 - 69 bar)
-12	0 - 2,000 psi (0 - 138 bar)
-13	0 - 3,000 psi (0 - 207 bar)
-14	0 - 4,000 psi (0 - 276 bar)
-15	0 - 5,000 psi (0 - 345 bar)
-16	0 - 6,000 psi (0 - 414 bar)
-17	0 - 7,500 psi (0 - 517 bar)
-18	0 - 10,000 psi (0 - 689 bar)

Blank	Gauge pressure (standard)
-A	Absolute pressure range (<300psi)

### Process Connection

Blank	1/4-18 NPT male (standard)
-P1	7/16-20 UNF-2B female
-P3	7/16-20 UNF-2B male

### Options

-Z10	1 to 5V output (available only on 423X models)
-Z11	1 to 6V output (available only on 423X models)
-Z12	0.5 to 4.5V output (available only on 423X models)
-Z16	2 to 10V output (available only on 426X models)
-Z15	Calibrated in bars
-Z17 <sup>3</sup>	For high pressure models with larger orifice
-Z18	Z17 and Z10 options combined
-ZXXY	Special pressure ranges (see note 1)
-WXXX	Additional length of free leads (in inches)

Note 1: Add suffix ZXXY for special pressure range calibration. XX = significant digits. Y = number of trailing zeros. Example: 130 psi calibration: add -Z131

2: Available in absolute range

3: For pressure >10kpsi with a 3/16 diameter pressure port orifice, no surge protector will be offered.

4: Minimum quantities may apply.

# Transducer

## Intrinsically Safe Transducer

## Series 443, 445, 446

### Features

- ▶ High accuracy
- ▶ Protection in hazardous environments, Class I, Div 2
- ▶ Superior EMI, ESD and RFI protection
- ▶ Rugged all-welded stainless steel construction
- ▶ NEMA 4X
- ▶ Built-in high pressure snubber (2000 psi and above)
- ▶ cULus, CE approved
- ▶ ATEX approved - 445 only

### Applications

- ▶ Oil & gas pipelines
- ▶ Oil patch
- ▶ Petrochemical plants
- ▶ Refineries
- ▶ Pulp and paper mills
- ▶ Coal and oil fired power plants
- ▶ Cement plants
- ▶ Gas transfers for fuel systems
- ▶ Gas panels
- ▶ Gas mixing systems

### General Specifications\*



<b>Accuracy (LH &amp; R):</b>	±0.25% BSL (±0.5% for vacuum only [-23])
<b>Long Term Stability:</b>	±0.5% FSO of calibration curve
<b>Typical Life Cycle:</b>	100 million cycles
<b>Proof Pressure:</b>	2 times rated pressure or 13,000 psi max. (884 bar), whichever is less
<b>Input:</b>	
443:	Excitation voltage: 9 to 28 VDC
446:	Excitation voltage: 14 to 28 VDC
445:	Excitation voltage: 12 to 28 VDC
<b>Supply Current:</b>	16 mA maximum (no load)
<b>Output:</b>	
443:	Output: 0.5 to 5.5 VDC Full scale output: 5.0 VDC ± 1% Zero output: 0.5 VDC ± 2%
446:	Output: 1 to 11 VDC Full scale output: 10 VDC ± 1% Zero output: 1.0 VDC ± 2%
445:	Output: 4 to 20 mA Full scale output: 16 mA ± 1% Zero output: 4 mA ± 2%
<b>Wetted Parts:</b>	17-4 PH & 300 series stainless steel
<b>Enclosure:</b>	NEMA 4, 300 series stainless steel
<b>Response Time:</b>	2 kHz

\* See product configurator for additional options.

<b>Pressure Connection:</b>	1/4"-18 NPT male
<b>Electrical Connection:</b>	3 conductor for voltage series and 2 conductor for current series, 24 awg, PVC jacketed, shielded cable, 3 ft. (1 m) long with integral strain relief and case ground (standard).
<b>Temperature Ranges:</b>	
Operating:	-40° to 185°F (-40° to 85)°C
Compensated:	30° to 160°F (-1° to 71)°C
Storage:	-40° to 185°F (-40° to 85)°C
<b>Temperature Shift:</b>	
Zero & Span:	0.0125% per °F over compensated range 75°F reference
<b>Vibration:</b>	15 g's, 10-2000 Hz, MIL-STD 202
<b>Shock:</b>	50 g's, 11 ms, MIL-STD 202 Method 213, Cond. G.
<b>Approvals:</b>	Intrinsically safe pressure transducers are UL cULus approved as telemetering equipment for use in hazardous locations (UL File E146589, WYMV, WYMV7) as follows:  Class I, Div. 1, Groups A, B, C & D Class II, Groups E, F & G, when installed in accordance with control drawing 272148 (443); TD-B77 (445); 272147 (446).  DEMCK009 ATEX 143402 Ex ia IICT4 / Ex ia D21T130°C, ATEX  112GD
<b>Weight:</b>	
443 & 446:	7.4 oz. (221 grams) to 1000 psi 9.9 oz. (281 grams) 2,000 psi and higher
445:	7.4 oz. (210 grams) to 1000 psi 9.4 oz. (266 grams) 2,000 psi and higher
<b>Warranty:</b>	1 year warranty

MILLIVOLT SERIES - 443 & 446		
(T4/T5)	(H3/H5)	Signal
1	Red	+ Excitation
3	White	+ Output
2	Black	Common
4	Bare	Case Drain
MILLIAMPER SERIES - 445		
1	Red	+ Excitation
2	Black	- Excitation
4		Case Drain

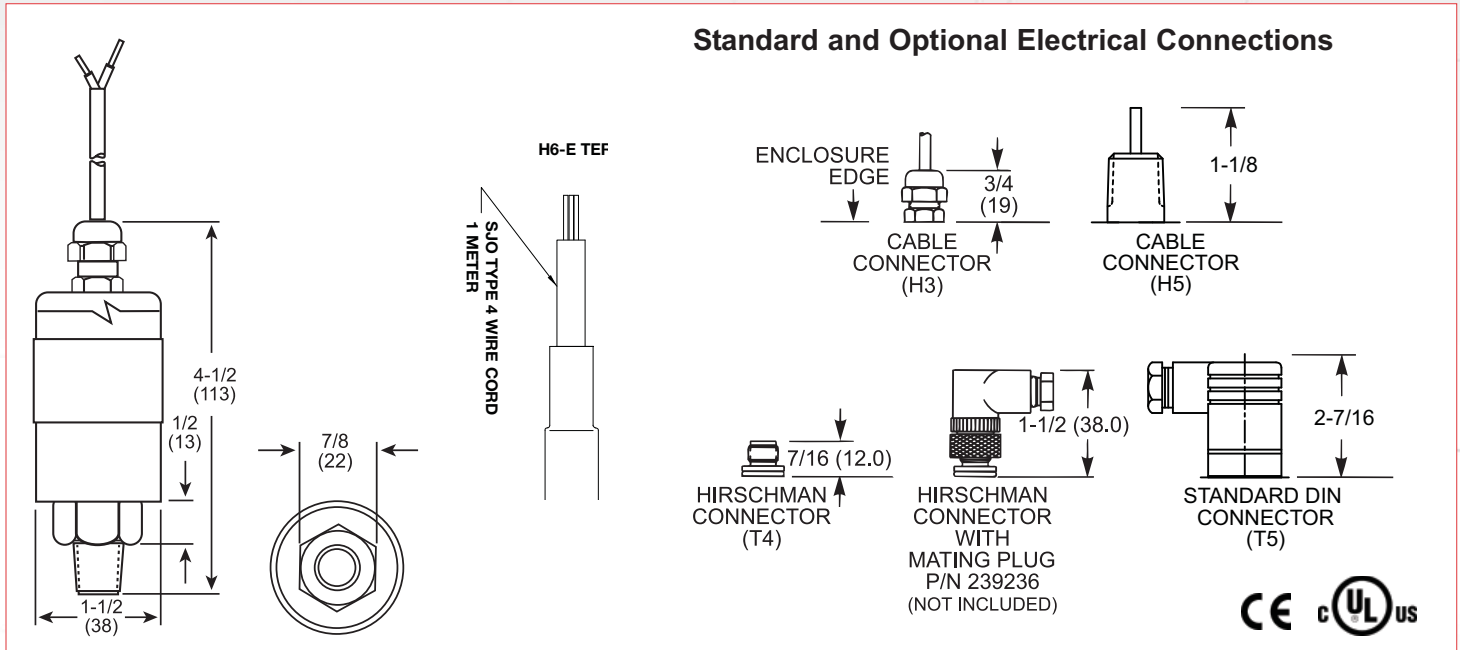
### Wiring Code



# Intrinsically Safe Transducer

## Series 443, 445, 446

### Technical Drawings



### Product Configurator

Example: **445 H3 -05 A**

#### Base Model

443	0.5 - 5.5 VDC analog output
445	4 - 20 mA analog output
446	1 - 11VDC analog output

#### Electrical Connection

H3	Shielded & jacketed #22 AWB cable (1 meter) (standard)
H5	Shielded & jacketed cable with 1/2" male conduit
H6	SJO cable type (1 meter)
T4 <sup>1</sup>	M12 Hirschman connector (ELST 412 PG9)
T5	Standard DIN connector (43650) - mating connector included

#### Accessories

Order #	Description
239236	Hirschman mating connector (T4 electrical option)
208360	Pressure snubber (1/4-18 NPT female/male)

#### Pressure Range

-23	0 - 29.9" of Hg
-25	0 - 5 psi (0 - 0.35 bar)
-01	0 - 15 psi (0 - 1 bar) <sup>3</sup>
-21	0 - 30 psi (0 - 2 bar) <sup>3</sup>
-03	0 - 50 psi (0 - 3.5 bar) <sup>3</sup>
-22	0 - 60 psi (0 - 4 bar) <sup>3</sup>
-04	0 - 100 psi (0 - 6.9 bar) <sup>3</sup>
-05	0 - 150 psi (0 - 10.3 bar) <sup>3</sup>
-06	0 - 200 psi (0 - 12.8 bar) <sup>3</sup>
-07	0 - 300 psi (0 - 20.7 bar) <sup>3</sup>
-08	0 - 500 psi (0 - 34.5 bar)
-19	0 - 600 psi (0 - 41 bar)
-10	0 - 1,000 psi (0 - 69 bar)
-12	0 - 2,000 psi (0 - 138 bar) <sup>4</sup>
-13	0 - 3,000 psi (0 - 207 bar) <sup>4</sup>
-14	0 - 4,000 psi (0 - 276 bar) <sup>4</sup>
-15	0 - 5,000 psi (0 - 345 bar) <sup>4</sup>
-16	0 - 6,000 psi (0 - 414 bar) <sup>4</sup>
-17	0 - 7,500 psi (0 - 517 bar) <sup>4</sup>
-18	0 - 10,000 psi (0 - 689 bar) <sup>4</sup>

#### Options

-E	External adjustment - Zero/Span (5pc min)
-Z10	1 to 5V output (available only on 443 models)
-Z11	1 to 6V output (available only on 443 models)
-Z12	0.5 to 4.5V output (available only on 443 models)
Z16	2 to 10V output (available only on 446 models)
-Z15	Calibrated in 'bars'
-Q36	316 SS fitting <sup>5</sup>
-ZXXY	Special pressure ranges (see note 2)
-WXXX	Additional length of free leads (in inches) (with H3, H5 & H6 connection)

#### Process Connection

Blank	1/4-18 NPT male (standard)
-P1	7/16-20 UNF-2B female
-P3	7/16-20 UNF-2A male
-P4	1/2" NPT male
-P5	1/2" NPT female
-P6	1/4" NPT female

Blank	Gauge pressure
A	Absolute pressure range (<300psi)

<sup>1</sup> Mating connector: Hirschman # ELWIK4 4021 PG7 or equivalent (not included). Order number: 239236

<sup>2</sup> Add suffix ZXXY for special pressure ranges. XX = significant digits. Y = number of trailing zeros.

Example: for 230psi calibration, add Z231

<sup>3</sup> Available in absolute ranges

<sup>4</sup> Built-in surge protector

<sup>5</sup> Available with 445 models

# Transducer

## Non-Incendive Transducer

## Series 433, 435, 436

### Features

- ▶ High accuracy
- ▶ Protection in hazardous environments, Class I, Div 2
- ▶ No safety barriers required
- ▶ Rugged all-welded stainless steel construction
- ▶ Superior EMI, ESD and RFI protection
- ▶ NEMA 4X
- ▶ Built-in high pressure snubber (2000 psi and above)

### Applications

- ▶ Oil & gas pipelines
- ▶ Coal and oil fired power plants
- ▶ Oil patch
- ▶ Cement plants
- ▶ Petrochemical plants
- ▶ Gas transfers for fuel systems
- ▶ Refineries
- ▶ Gas panels
- ▶ Pulp and paper mills
- ▶ Gas mixing systems

### General Specifications\*

<b>Accuracy (LH &amp; R):</b>	±0.25% BSL (±0.5% for vacuum only [-23])
<b>Long Term Stability:</b>	±0.5% FSO of calibration curve
<b>Typical Life Cycle:</b>	100 million cycles
<b>Proof Pressure:</b>	2 times rated pressure or 13,000 psi max. (884 bar), whichever is less
<b>Input:</b>	
433:	Excitation voltage: 9 to 30 VDC
436:	Excitation voltage: 14 to 30 VDC
435:	Excitation voltage: 12 to 28 VDC
<b>Supply Current:</b>	15 mA maximum (no load)
<b>Min. Load Resistance:</b>	2K ohms (voltage series)
<b>Output:</b>	
433:	Output: 0.5 to 5.5 VDC Full scale output: 5.0 VDC ± 1% Zero output: 0.5 VDC ± 2%
436:	Output: 1 to 11 VDC Full scale output: 10 VDC ± 1% Zero output: 1.0 VDC ± 2%
435:	Output: 4 to 20 mA Full scale output: 16 mA ± 1% Zero output: 4 mA ± 2%
<b>Wetted Parts:</b>	17-4 PH & 300 series stainless steel
<b>Enclosure:</b>	NEMA 4, 300 series stainless steel
<b>Pressure Connection:</b>	1/4"-18 NPT male

\* See product configurator for additional options.

MILLIVOLT SERIES - 433 & 436		
(T4/T5)	(H3/H5)	Signal
1	Red	+ Excitation
3	White	+ Output
2	Black	Common
4	Bare	Drain
MILLIAMPER SERIES - 435		
1	Red	+ Excitation
4	White	- Excitation
3	Black	Drain

### ◀ Wiring Code



<b>Response Time:</b>	2kHz
<b>Electrical Connection:</b>	3 conductor for voltage series and 2 conductor for current series, 24 awg, PVC jacketed, shielded cable, 3 ft. (1 m) long with integral strain relief and case ground (standard).
<b>Temperature Ranges:</b>	
Operating:	-40° to 185°F (-40° to 85)°C
Compensated:	30° to 160°F (-1° to 71)°C
Storage:	-40° to 185°F (-40° to 85)°C
<b>Temperature Shift:</b>	
Zero & Span:	0.0125% per °F over compensated range 75°F
<b>Vibration:</b>	15 g's, 10-2000 Hz, MIL-STD 202
<b>Shock:</b>	50 g's, 11 ms, MIL-STD 202 Method 213, Cond. G.
<b>Approvals:</b>	Nonincendive pressure transmitters are UL cUL approved as telemetering equipment for use in Div. 2 hazardous locations as follows:  Class I, Div. 2, Groups A, B, C & D Class II, Div. 2 Groups F & G  Agency approval varies by electrical termination type as follows:  H5(-E), H6(-E) & (-E) models are cULus listed in UL File E146589, (WYMV, WYMV7).  H3(-E), T4(-E) & T5 (-E) models are cURus recognized components in UL File E146589, (WYMV2, WYMV8).
<b>Weight:</b>	
433 & 436:	7.4 oz. (221 grams) to 1,000 psi 9.9 oz. (281 grams) 2,000 psi and higher
435:	7.4 oz. (210 grams) to 1,000 psi 9.4 oz. (266 grams) 2,000 psi and higher
<b>Warranty:</b>	1 year warranty

**Barksdale**  
CONTROL PRODUCTS

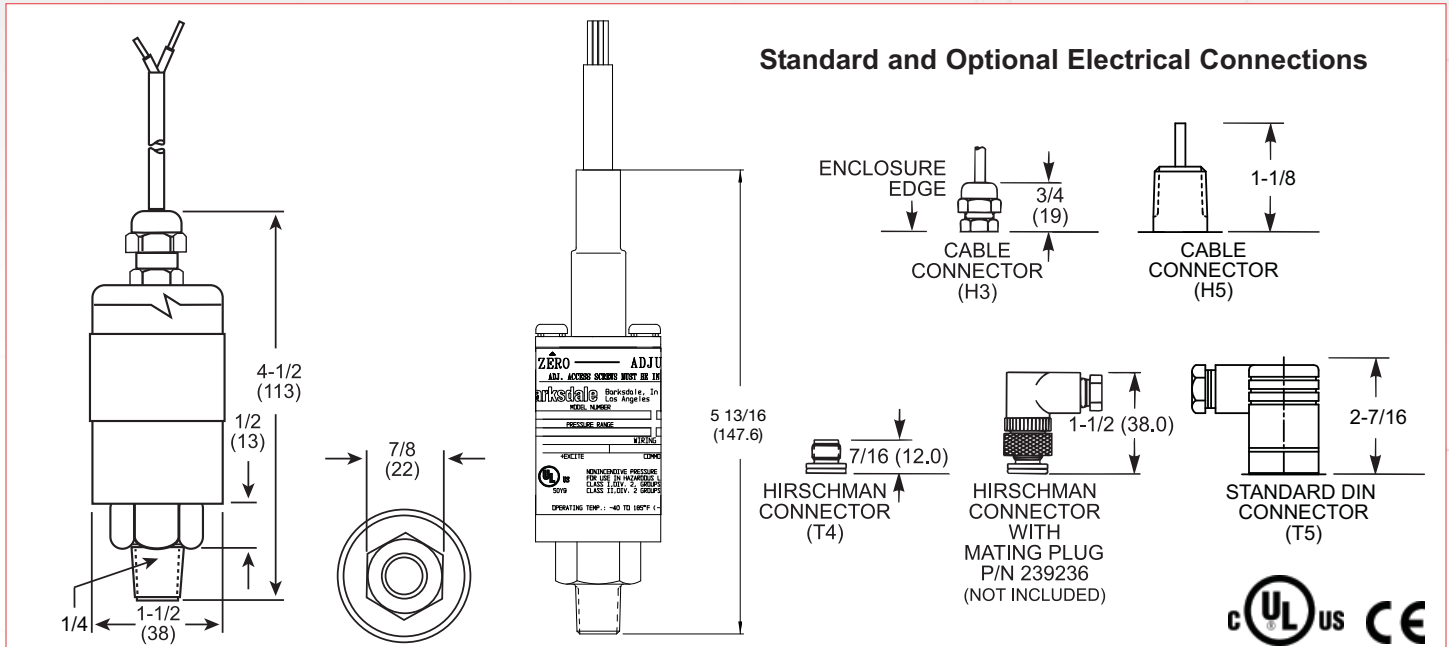
Barksdale, Inc./Barksdale GmbH  
A Subsidiary of Crane Co.



# Non-Incendive Transducer

# Series 433, 435, 436

## Technical Drawings



## Product Configurator

Example: **433 H3 -21**

### Base Model

433	0.5 - 5.5 VDC analog output
435	4 - 20 mA analog output
436	1 - 11 VDC analog output

### Electrical Connection

H3	Shielded & jacketed #22 AWB cable (1 meter), recognized component (standard)
H5	Shielded & jacketed cable with 1/2" male conduit, UL/CSA
H6	SJO cable type (1 meter). UL/CSA
T4 <sup>1</sup>	M12 Hirschman connector (ELST 412 PG9), recognized component
T5	Standard DIN connector (43650) - mating connector included, UL recognized component

### Pressure Range

-23	0 - 29.9" of Hg
-25	0 - 5 psi (0 - 0.35 bar)
-01	0 - 15 psi (0 - 1 bar) <sup>3</sup>
-21	0 - 30 psi (0 - 2 bar) <sup>3</sup>
-03	0 - 50 psi (0 - 3.5 bar) <sup>3</sup>
-22	0 - 60 psi (0 - 4 bar) <sup>3</sup>
-04	0 - 100 psi (0 - 6.9 bar) <sup>3</sup>
-05	0 - 150 psi (0 - 10.3 bar) <sup>3</sup>
-06	0 - 200 psi (0 - 12.8 bar) <sup>3</sup>
-07	0 - 300 psi (0 - 20.7 bar) <sup>3</sup>
-08	0 - 500 psi (0 - 34.5 bar)
-19	0 - 600 psi (0 - 41 bar)
-10	0 - 1,000 psi (0 - 69 bar)
-12	0 - 2,000 psi (0 - 138 bar) <sup>5</sup>
-13	0 - 3,000 psi (0 - 207 bar) <sup>5</sup>
-14	0 - 4,000 psi (0 - 276 bar) <sup>5</sup>
-15	0 - 5,000 psi (0 - 345 bar) <sup>5</sup>
-16	0 - 6,000 psi (0 - 414 bar) <sup>5</sup>
-17	0 - 7,500 psi (0 - 517 bar) <sup>5</sup>
-18	0 - 10,000 psi (0 - 689 bar) <sup>5</sup>

### Options

-E	External adjustment - Zero/Span
-Z10	1 to 5V output (available only on 433 models)
-Z11	1 to 6V output (available only on 433 models)
-Z12	0.5 to 4.5V output (available only on 433 models)
-Z16	2 to 10V output (available only on 436 models)
-Z15	Calibrated in 'bars'
-Z17 <sup>4</sup>	For high pressure models with larger orifice
-ZXXY	Special pressure ranges (see note 2)
-WXXX	Additional length of free leads (inches) (H3 & H6 connection)

### Process Connection

Blank	1/4-18 NPT male (standard)
-P1	7/16-20 UNF-2B female
-P3	7/16-20 UNF-2A male
-P4	1/2" NPT male
-P5	1/2" NPT female
-P6	1/4" NPT female

## Accessories

Order #	Description
239236	Hirschman mating connector (T4 electrical option)
208360	Pressure snubber (1/4-18 NPT female/male)

Blank	Gauge pressure
-A	Absolute pressure range (<300psi)

<sup>1</sup> Mating connector: Hirschman # ELWIKA 4021 PG7 or equivalent (not included). Order number: 239236

<sup>2</sup> Add suffix ZXXY for special pressure ranges. XX = significant digits. Y = number of trailing zeros. Example: for 230psi calibration, add Z231

<sup>3</sup> Available in absolute ranges

<sup>4</sup> For pressure >10kpsi with a 3/16 diameter pressure port orifice, no surge protector is offered.

<sup>5</sup> Built-in surge protector



# Transducers

## General Industrial J-Box

## Series 423N1, 425N1, 426N1

### Features

- ▶ Diffused silicon sensor for high accuracy and reliability
- ▶ NEMA 4 J-Box for industrial use
- ▶ Field-adjustable zero and span output
- ▶ Stainless steel wetted parts
- ▶ Current and voltage signals

### Applications

- ▶ Oil pressure hydraulics
- ▶ Cranes
- ▶ Presses
- ▶ Gas metering
- ▶ Vacuum machinery packaging

### General Specifications\*

<b>Accuracy (LH &amp; R):</b>	±0.25% BSL (±0.5% for vacuum only [-23])
<b>Long Term Stability:</b>	±0.5% FSO of calibration curve
<b>Typical Life Cycle:</b>	100 million cycles
<b>Proof Pressure:</b>	2 times rated pressure or 13000 psi max. (884 bar), whichever is less.
<b>Input:</b>	
423N1:	Excitation voltage: 12 to 32 VDC
426N1:	Excitation voltage: 14 to 32 VDC
425N1:	Excitation voltage: 12 to 32 VDC
<b>Supply Current:</b>	16 mA maximum (no load)
<b>Output:</b>	
423N1:	Output: 0.5 to 5.5 VDC Full scale output: 5.0 VDC ± 1% Zero output: 0.5 VDC ± 2% Zero adjustment range: 0.2 to 0.8 VDC Span adjustment range: 4.7 to 5.3 VDC
426N1:	Output: 1 to 11 VDC Full scale output: 10 VDC ± 1% Zero output: 1 VDC ± 2% Zero adjustment range: 0.5 to 1.5 VDC Span adjustment range: 9.5 to 10.5 VDC
425N1:	Output: 4 to 20 mA Full scale output: 16 mA ± 1% Zero output: 4 mA ± 2% Zero Adjustment Range: 3.0 to 5.0 mA Span adjustment range: 15.0 to 17.0 mA

\* See product configurator for additional options.

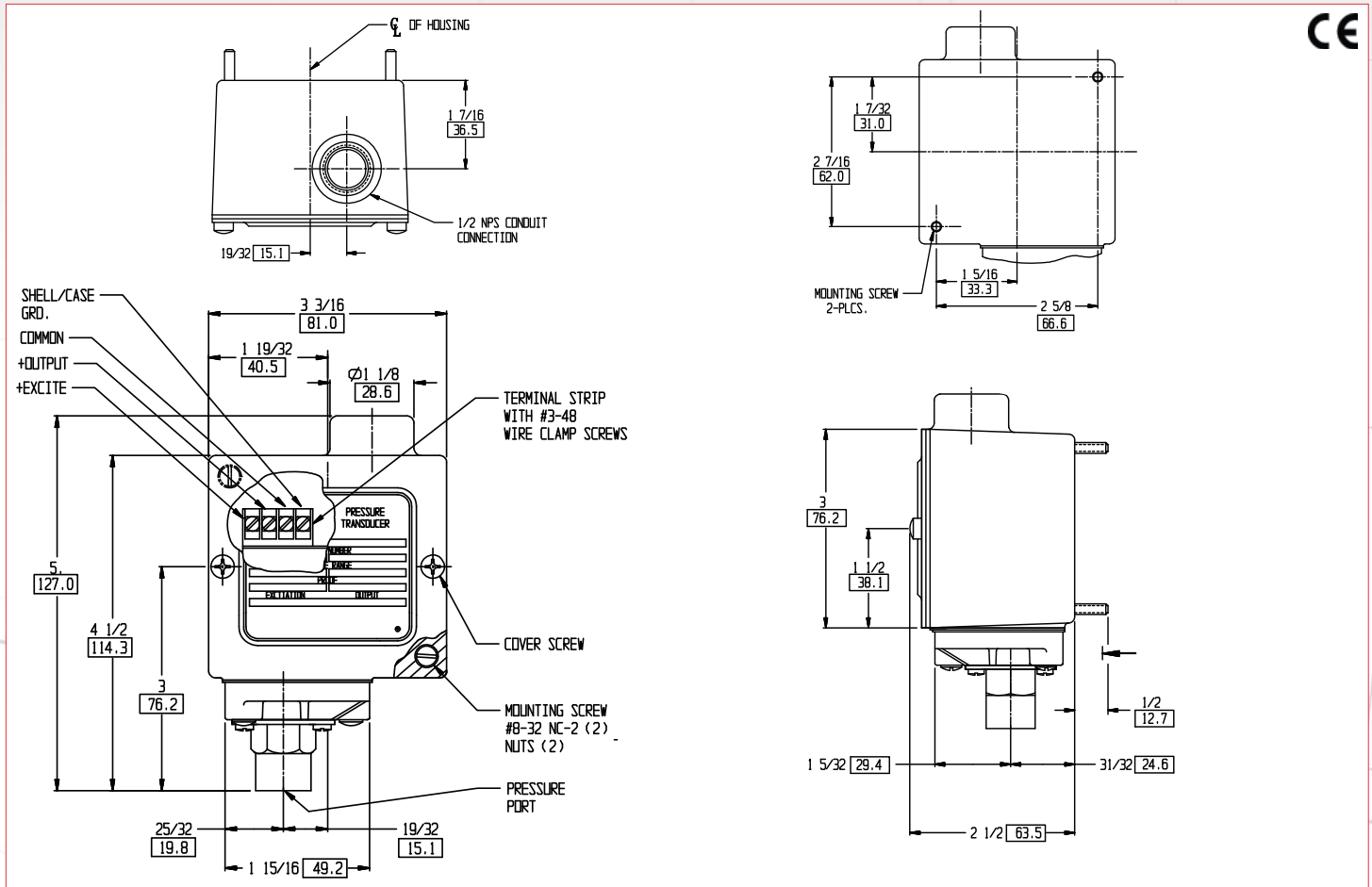
### Wiring Code

423N1, 426N1 (Voltage)		425N1 (Milliamp)	
	GROUND	GROUND	
	COMMON	NOT USED	
	+OUTPUT	DC EXCITATION-	
	+EXCITATION	DC EXCITATION+	



<b>Wetted Parts:</b>	17-4 PH & 300 series stainless steel
<b>Enclosure:</b>	NEMA 4, anodized aluminum
<b>Pressure Connection:</b>	7/16-20 UNF female (standard)
<b>Electrical Connection:</b>	4-pole terminal strip and integral 1/2" NPT female conduit connection
<b>Temperature Ranges:</b>	
Operating:	-0° to 160°F (-18° to 71 °C)
Compensated:	30° to 160°F (1° to 71°C)
Storage:	-40° to 185°F (-40° to 85°C)
<b>Temperature Shift:</b>	
Zero & Span:	0.0125% per °F over compensated range 75°F reference
<b>Vibration:</b>	15 g's, 10-2000 Hz, MIL-STD 202
<b>Shock:</b>	50 g's, 11 ms, MIL-STD 202 Method 213, Cond. G.
<b>Built-in Protection:</b>	Conducted & radiated RF emissions/interference to EN 55011  IEC 801-2 Level 3 ESD (to level 3)  IEC 801-3 Level 3 radiated RF field (80-1000 MHz at 10 V/m) to level 3  IEC 801-4 electrical fast transient/burst (1 kV) to level 4  IEC 801-6 level 3 conducted susceptibility (150 kHz-80 MHz 10 V rms) to level 3  Pressure snubber standard on 2000 psi & above
<b>Weight:</b>	23.7 oz. (672 grams) to 1000 psi 24.2 oz. (686 grams) 2000 psi and higher
<b>Warranty:</b>	1 year warranty

## Technical Drawings



## Product Configurator

Example 425N1 -05

### Base Model

423N1	0.5 - 5.5 VDC analog output
425N1	4 - 20 mA analog output
426N1	1 - 11 VDC analog output

### Pressure Range

-23	0 - 29.9" of Hg	-19	0 - 600 psi (0 - 41 bar)
-25	0 - 5 psi (0 - 0.35 bar)	-10	0 - 1,000 psi (0 - 69 bar)
-01	0 - 15 psi (0 - 1 bar) <sup>1</sup>	-12	0 - 2,000 psi (0 - 138 bar) <sup>2</sup>
-21	0 - 30 psi (0 - 2 bar) <sup>1</sup>	-13	0 - 3,000 psi (0 - 207 bar) <sup>2</sup>
-03	0 - 50 psi (0 - 3.5 bar) <sup>1</sup>	-14	0 - 4,000 psi (0 - 276 bar) <sup>2</sup>
-04	0 - 100 psi (0 - 6.9 bar) <sup>1</sup>	-15	0 - 5,000 psi (0 - 345 bar) <sup>2</sup>
-05	0 - 150 psi (0 - 10.3 bar) <sup>1</sup>	-16	0 - 6,000 psi (0 - 414 bar) <sup>2</sup>
-06	0 - 200 psi (0 - 12.8 bar) <sup>1</sup>	-17	0 - 7,500 psi (0 - 517 bar) <sup>2</sup>
-07	0 - 300 psi (0 - 20.7 bar) <sup>1</sup>	-18	0 - 10,000 psi (0 - 689 bar) <sup>2</sup>
-08	0 - 500 psi (0 - 34.5 bar)		

### Options

-Z1	Cleaned for oxygen service
-N4X	NEMA 4X Enclosure
-R	Turn down ratio 2:1 of FSO

### Process Connection

Blank	7/16-20 UNF female (standard)
-P2	1/4" NPT male

Blank	Gauge pressure
-A	Absolute pressure range (<300psi)

## Accessories

Order #	Description
208225-V	7/16-20 UNF Adaptor to 1/4-18 NPTM

<sup>1</sup> Available in Absolute (option "-A") range  
<sup>2</sup> Built-in surge protector

# Transducers

## General Industrial Transducer (Amplified)

**Series 423, 425, 426**

### Features

- ▶ General purpose, industrial grade transducer
- ▶ Diffused silicon sensor for high accuracy and reliability
- ▶ Rugged stainless steel enclosure
- ▶ Superior surge voltage protection and EMI/RFI immunity
- ▶ Built-in high pressure snubber (2000 psi and above)
- ▶ Current and voltage signals
- ▶ UL and cUL approved (UL508)

### Applications

- ▶ Industrial hydraulic equipment
- ▶ Cranes
- ▶ Compressors
- ▶ Gas metering
- ▶ Vacuum machinery packaging



### General Specifications\*

<b>Accuracy (LH &amp; R):</b>	±0.25% BSL (±0.5% for vacuum only [-23])
<b>Long Term Stability:</b>	±0.5% FSO of calibration curve
<b>Typical Life Cycle:</b>	100 million cycles
<b>Proof Pressure:</b>	2 times rated pressure or 13,000 psi max. (884 bar), whichever is less
<b>Input:</b>	
423:	Excitation voltage: 9 to 30 VDC
426:	Excitation voltage: 14 to 30 VDC
425:	Excitation voltage: 12 to 32 VDC
<b>Supply Current:</b>	16 mA maximum (no load)
<b>Min. Load Resistance:</b>	2K ohms (voltage series only)
<b>Output:</b>	
423:	Output: 0.5 to 5.5 VDC Full scale output: 5.0 VDC ± 1% Zero output: 0.5 VDC ± 2%
426:	Output: 1 to 11 VDC Full scale output: 10 VDC ± 1% Zero output: 1.0 VDC ± 2%
425:	Output: 4 to 20 mA Full scale output: 16 mA ± 1% Zero output: 4 mA ± 2% Span: 16mA

\* See product configurator for additional options.

### Wiring Code

Voltage - Series 423, 426			
	T2	H3	
A	1	Red	+ Excitation
B	3	Black	+ Output
C	2	Green	Common
D	4	White	Case Ground
-		Bare	Shield
Milliamp - Series 425			
A	1	Red	+ Excitation
B	2	Black	- Excitation
D	4	Drain	Case Ground

<b>Wetted Parts:</b>	17-4 PH & 300 series stainless steel
<b>Enclosure:</b>	NEMA 4, 300 series stainless steel
<b>Pressure Connection:</b>	1/4"-18 NPT male (STD)
<b>Response Time:</b>	2 kHz
<b>Electrical Connection:</b>	3 conductor for voltage series and 2 conductor for current series, 24 awg, PVC jacketed, shielded cable, 3 ft. (1 m) long with integral strain relief and case ground.
<b>Temperature Ranges:</b>	
Operating:	-40° to 185°F (-40° to 85)°C
Compensated:	30° to 160°F (-1° to 71)°C
Storage:	-40° to 185°F (-40° to 85)°C
<b>Temperature Shift:</b>	
Zero & Span:	0.0125% per °F over compensated range, 75°F reference (±1% of FSO over temp. range)
<b>Vibration:</b>	15 g's, 10-2000 Hz, MIL-STD 202
<b>Shock:</b>	50 g's, 11 ms, MIL-STD 202 Method 213, Cond. G.
<b>Built-in Electrical Protection:</b>	Conducted & radiated RF emissions/interference to EN 55011  IEC 801-2, -3, -4, -5, and -6 EN/IEC 6100-4-2, -3, -4, -5, -6  Refer to engineering drawing for details.
<b>Weight:</b>	
423 & 426:	7.4 oz. (221 grams) to 1000 psi 9.9 oz. (281 grams) 2,000 psi and higher
425:	7.4 oz. (210 grams) to 1000 psi 9.4 oz. (266 grams) 2,000 psi and higher
<b>Warranty:</b>	1 year warranty

**Barksdale**

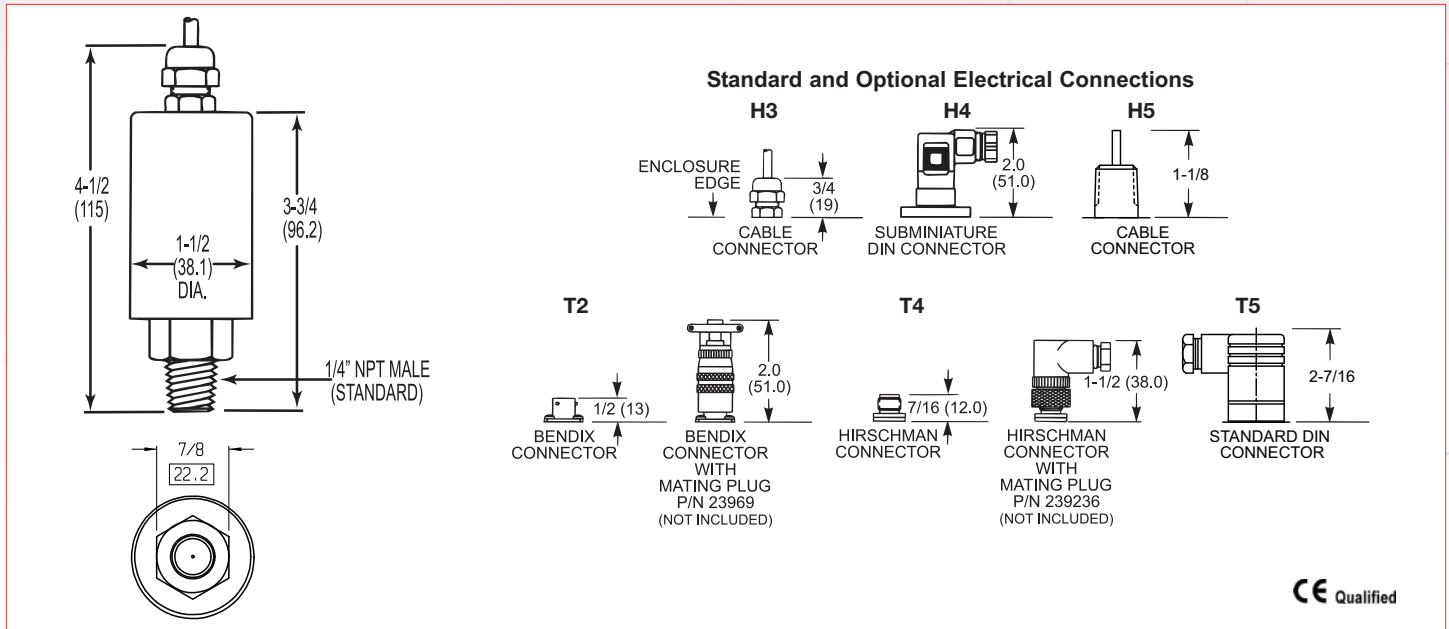
CONTROL PRODUCTS

Barksdale, Inc./Barksdale GmbH  
A Subsidiary of Crane Co.

# General Industrial Transducer (Amplified)

# Series 423, 425, 426

## Technical Drawings



## Product Configurator

Example	425	H3	-19	P1
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### Base Model

423	0.5 - 5.5 VDC analog output
425	4 - 20 mA analog output
426	1 - 11 VDC analog output

### Electrical Connection

H3	Shielded & jacketed #22 AWB cable (1 meter) (standard)
H4	Subminiature DIN connector (43650 type) - mating connector included
H5	Shielded & jacketed cable with 1/2" male conduit
T2 <sup>1</sup>	Bendix connector (PT02A-8-4P) - 4 pin
T4 <sup>2</sup>	M12 Hirschman connector (ELST 412 PG9)
T5	Standard DIN connector (43650) - mating connector included

### Pressure Range

-23	0 - 29.9" of Hg
-25	0 - 5 psi (0 - 0.35 bar)
-01	0 - 15 psi (0 - 1 bar) <sup>4</sup>
-21	0 - 30 psi (0 - 2 bar) <sup>4</sup>
-03	0 - 50 psi (0 - 3.5 bar) <sup>4</sup>
-22	0 - 60 psi (0 - 4 bar) <sup>4</sup>
-04	0 - 100 psi (0 - 6.9 bar) <sup>4</sup>
-05	0 - 150 psi (0 - 10.3 bar) <sup>4</sup>
-06	0 - 200 psi (0 - 12.8 bar) <sup>4</sup>
-07	0 - 300 psi (0 - 20.7 bar) <sup>4</sup>
-08	0 - 500 psi (0 - 34.5 bar)
-19	0 - 600 psi (0 - 41 bar)
-10	0 - 1,000 psi (0 - 69 bar)
-11	0 - 1,500 psi (0 - 104 bar)
-12	0 - 2,000 psi (0 - 138 bar) <sup>5</sup>
-13	0 - 3,000 psi (0 - 207 bar) <sup>5</sup>
-14	0 - 4,000 psi (0 - 276 bar) <sup>5</sup>
-15	0 - 5,000 psi (0 - 345 bar) <sup>5</sup>
-16	0 - 6,000 psi (0 - 414 bar) <sup>5</sup>
-17	0 - 7,500 psi (0 - 517 bar) <sup>5</sup>
-18	0 - 10,000 psi (0 - 689 bar) <sup>5</sup>

### Options

-N4X	Nema 4X enclosure (H3 Option only)
-E <sup>6</sup>	External zero span adjustment
-Z15	Calibrated in bars
-Z10	1 to 5V output (available only on 423 models)
-Z11	1 to 6V output (available only on 423 models)
-Z12	0.5 to 4.5V output (available only on 423 models)
-Z16	0.2 to 10V output (available only on 426 models)
-WXXX	Additional length of free leads (in inches) (H3/H5 connection)
-ZXXY	Special pressure ranges (see note 3)
-U	UL & cUL approved <sup>7</sup>

## Accessories

Order #	Description
23969	Bendix mating connector (T2 electrical option)
239236	Hirschman mating connector (T4 electrical option)
208360	Pressure snubber (1/4-18 NPT female/male)

### Process Connection

Blank	1/4-18 NPT male (standard)
-P1	7/16-20 UNF-2B female
-P3	7/16-20 UNF-2A male (JIC 37°)
Blank	Gauge pressure
-A	Absolute pressure range (<300psi)

<sup>1</sup> Mating connector: Bendix # PT06E-8-4S or equivalent (not included). Order number: 23969

<sup>2</sup> Mating connector: Hirschman # ELWIK 4021 PG7 or equivalent (not included). Order number: 239236

<sup>3</sup> Add suffix ZXXY for special pressure ranges. XX = significant digits. Y = number of trailing zeros. Example: for 230psi calibration, add Z231

<sup>4</sup> Available in absolute ranges

<sup>5</sup> Built-in surge protector

<sup>6</sup> Available with connector options H3 and T4 only

<sup>7</sup> Refer sales drawing for more details

# Transducer

## General Industrial Transducer (Unamplified)

Series 420, 422

### Features

- ▶ General purpose, industrial grade transducer
- ▶ Diffused silicon sensor for high accuracy and reliability
- ▶ Rugged stainless steel construction
- ▶ Built-in pressure snubber for high pressure applications (2000 psi and above)
- ▶ Wide range of electrical connections available

### Applications

- ▶ Oil pressure hydraulics
- ▶ Cranes
- ▶ Presses
- ▶ Gas metering
- ▶ HVAC
- ▶ Medical equipment



### General Specifications\*

<b>Accuracy (LH &amp; R):</b>	±0.25% BSL	<b>Pressure Connection:</b>	1/4"-18 NPT male
<b>Long Term Stability:</b>	±0.5% FSO of calibration curve	<b>Electrical Connection:</b>	4 conductor, 22 awg, PVC jacketed, unshielded cable, 3 ft. (1 m) long with integral strain relief and case ground
<b>Typical Life Cycle:</b>	100 million cycles	<b>Temperature Ranges:</b>	
<b>Proof Pressure:</b>	2 times rated pressure or 13,000 psi max. (884 bar), whichever is less	Operating:	0° to 160°F (-18° to 71°C)
<b>Input:</b>	Excitation voltage: 10 Volt, nominal 5 to 15 VDC (regulated)	Compensated:	30° to 160°F (1 to 71°C)
<b>Input Resistance:</b>	15,000 ohm (maximum)	Storage:	-40° to 185°F (-40° to 85°C)
<b>Output:</b>		<b>Temperature Shift:</b>	
Model 420:	Full scale output: 30 mV ±1 mV 3 mV/V sensitivity Zero output: 0 mV ±2mV	Zero & Span:	±1.0% FSO (max.) over compensated range
Model 422:	Full scale output: 100 mV ±1 mV 10 mV/V sensitivity Zero output: 0 mV ±2mV	<b>Vibration:</b>	15 g's, 10-2000 Hz, MIL-STD 202
<b>Wetted Parts:</b>	17-4 PH & 300 series stainless steel	<b>Shock:</b>	50 g's, 11 ms, MIL-STD 202 Method 213, Cond. G.
<b>Enclosure:</b>	NEMA 3, 304 stainless steel	<b>Built-in Protection:</b>	Built-in pressure snubber for 2K psi and greater
<b>Response Time:</b>	2 kHz	<b>Weight:</b>	4.6 oz. (130 grams) to 1000 psi 6.7 oz. (190 grams) 1000 psi and higher
		<b>Warranty:</b>	1 year warranty

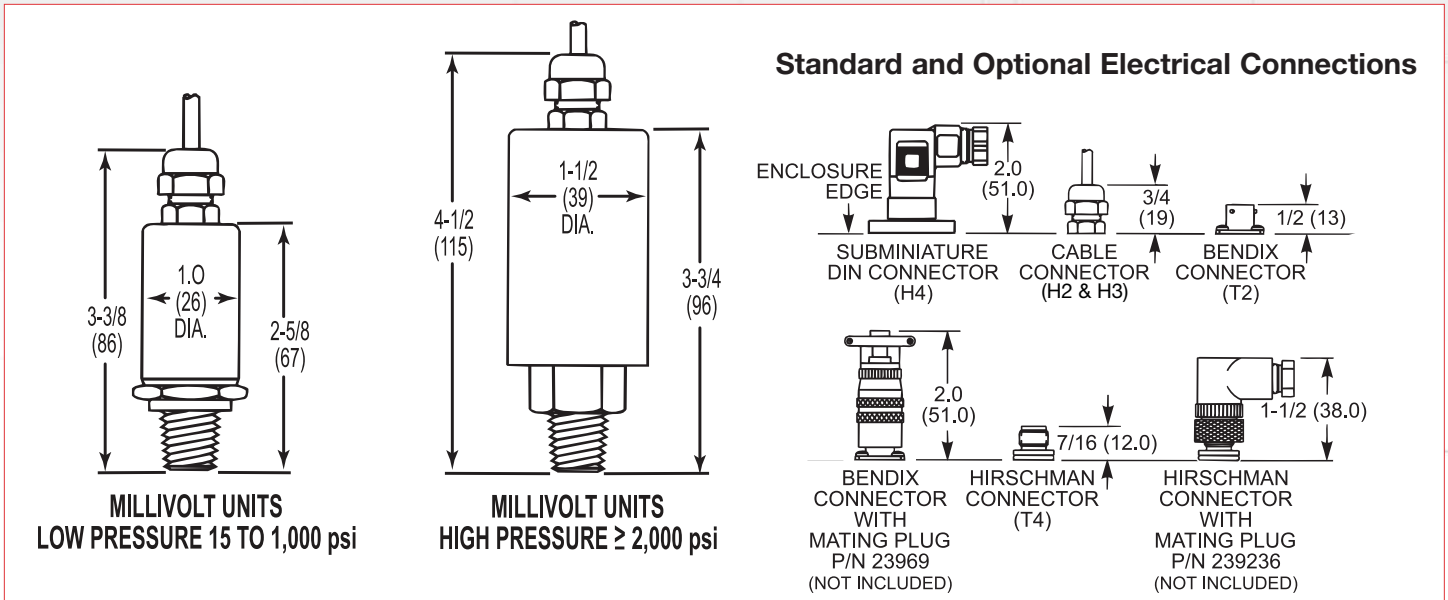
\* See product configurator for additional options.

### Wiring Code

MILLIVOLT SERIES - 420 & 422				
DIN Conn. (H4)	Bendix Conn. (T2)	M12 Hirschman Conn. (T4)	Cable (H2/H3)	Signal
1	A	1	Red	+ Excitation
4	D	4	Black	- Excitation
2	B	3	Green	+ Output
3	C	2	White	- Output
-	-	-	Bare	Shield



## Technical Drawings



## Product Configurator

Example: **422 H3 -04 -A -P3**

### Base Model

420	30mV full scale output (3mV/V)
422	100mV full scale output (10mV/V)

### Pressure Range

-25	0 - 5 psi (0 - 0.35 bar) <sup>3</sup>
-01	0 - 15 psi (0 - 1 bar) <sup>4</sup>
-21	0 - 30 psi (0 - 2 bar) <sup>3</sup>
-03	0 - 50 psi (0 - 3.5 bar) <sup>4</sup>
-22	0 - 60 psi (0 - 4 bar) <sup>3</sup>
-04	0 - 100 psi (0 - 6.9 bar) <sup>4</sup>
-06	0 - 200 psi (0 - 12.8 bar) <sup>4</sup>
-07	0 - 300 psi (0 - 20.7 bar) <sup>4</sup>
-08	0 - 500 psi (0 - 34.5 bar)
-10	0 - 1,000 psi (0 - 69 bar)
-12	0 - 2,000 psi (0 - 138 bar) <sup>5</sup>
-13	0 - 3,000 psi (0 - 207 bar) <sup>5</sup>
-14	0 - 4,000 psi (0 - 276 bar) <sup>5</sup>
-15	0 - 5,000 psi (0 - 345 bar) <sup>5</sup>
-17	0 - 7,500 psi (0 - 517 bar) <sup>5</sup>
-18	0 - 10,000 psi (0 - 689 bar) <sup>5</sup>

### Options

-Z1	Cleaned for oxygen service
-N4	NEMA 4 enclosure
-WXXX	Additional length of free leads (in inches) (H3/H2 connection)

### Electrical Connection

H2	Unshielded jacketed #22 AWG cable (1 meter)
H3	Shielded & jacketed #22 AWG cable (1 meter) (standard)
H4	Subminiature DIN connector (43650 type) - mating connector included
T2 <sup>1</sup>	Bendix connector (PT02A-8-4P)-4 pin
T4 <sup>2</sup>	M12 Hirschman connector (ELST 412 PG9)

### Process Connection

Blank	1/4-18 NPT male (standard)
-P1	7/16-20 UNF-2B female
-P3	7/16-20 UNF-2A male

## Accessories

Order #	Description
23969	Mating conn. for T2 Bendix connection
239236	Mating conn. for T4 Hirschman connection
208360	Pressure snubber (1/4-18 NPT)

Blank	Gauge standard
-A	Absolute pressure range (<300psi) (only available in the 422 Series)

<sup>1</sup> Mating connector: Bendix # PT06E-8-4S or equivalent (not included)  
<sup>2</sup> Mating connector: Hirschman # ELWIKA 4021 PG7 or equivalent (not included)  
<sup>3</sup> Available only on 422 Series  
<sup>4</sup> Available in absolute range for 422 Series  
<sup>5</sup> Built-in snubber

# Transducer

## OEM Transducer

## Series 623, 625, 626, 627

### Features

- ▶ cULus approved
- ▶ Compact size
- ▶ Stainless steel construction
- ▶ Ceramic sensor technology
- ▶ Current and voltage outputs


### Applications

- ▶ Water irrigation systems
- ▶ Medical gas systems
- ▶ HVAC systems
- ▶ Pumps and compressors
- ▶ Machine tools
- ▶ Hydraulic and pneumatic applications
- ▶ Mobile hydraulics
- ▶ General industrial applications



### General Specifications\*

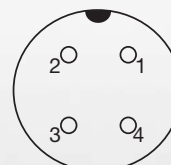
<b>Accuracy (LH &amp; R):</b>	±0.5% FSO Typical
<b>Typical Life Cycle:</b>	100 million cycles
<b>Proof Pressure:</b>	2 times rated pressure, or 9000 psi max, whichever is less.
<b>Input/Excitation Voltage:</b>	
625 (2-wire):	9 to 28 VDC
623 (3-wire):	9 to 30 VDC
626 (3-wire):	14 to 30 VDC
627 (3-wire):	14 to 30 VDC
<b>Output:</b>	
625 (2-wire):	4-20 mA
623 (3-wire):	0.5-5.5 VDC
626 (3-wire):	1-11 VDC
627 (3-wire):	0-10 VDC
<b>Zero and Span:</b>	15 mA maximum (no load)
<b>Wetted Parts:</b>	316 Stainless steel, ceramic and Viton® O-ring (Typical)
<b>Enclosure**:</b>	NEMA 4X IP65 (H4 connection) IP67 (H3/T4 connection)
<b>Pressure Connection:</b>	1/4" NPT standard. Other options available.
<b>Electrical Connection:</b>	PVC jacketed cable standard. Other options available.

<b>Temperature Ranges:</b>	
Operating:	-40°F to +185°F (-40°C to +85°C)
Compensated:	30°F to +130°F (-1°C to +54°C)
Storage:	-40°F to +185°F (-40°C to +85°C)
<b>Temperature Shift:</b>	
Zero and Span:	±0.06% FS/K over operating temperature range
<b>Vibration:</b>	15 g's, 10-2000 Hz, MIL-STD 202
<b>Approval<sup>1</sup>:</b>	 UL File E302981, to UL 508, as Industrial Control Equipment (NMTR, NMTR7), and to UL 61010-1, as Process Control Equipment (QUYX, QUYX7).
<b>Shock:</b>	50 g's, 11 ms, MIL-STD 202 Method 213, Cond. G.
<b>Weight:</b>	5.1 oz (145 grams) (typical)
<b>Warranty:</b>	1 year

### Wiring Code

Electrical Termination		Voltage Output	Current Output
H3	H4 / T4	Series 623/626/627	Series 625
Red	1	+ Excitation	+ Excitation
Black	2	Common	Common
White	3	+ Output	Not used
Drain	4	Case Ground	Case Ground

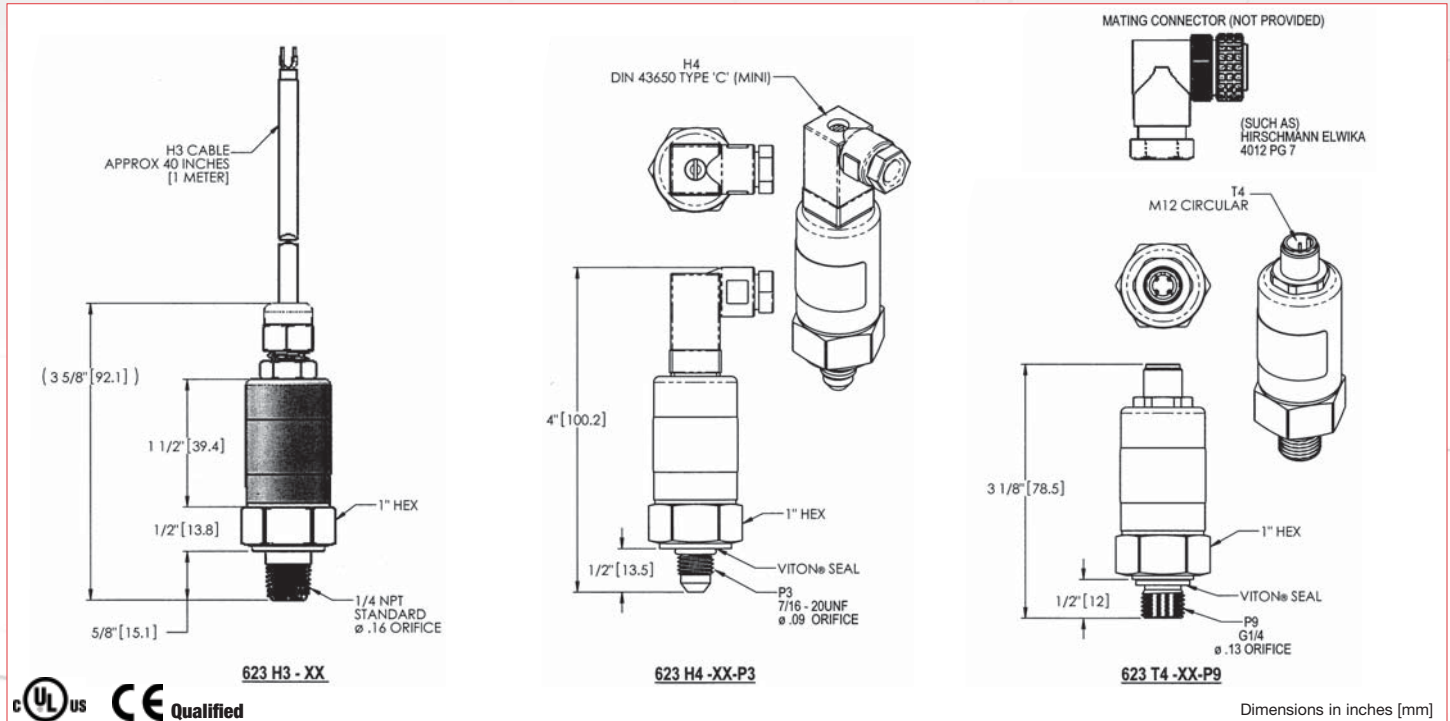
### T4 Pin Out Diagram



\* See product configurator for additional options.

\*\* Mating connector must be properly installed to preserve enclosure rating

## Technical Drawings



## Product Configurator

Example: **625 H3 -05**

### Base Model

625	4-20 mA analog output
623	0.5-5.5 VDC analog output
626	1-11 VDC analog output
627	0-10 VDC analog output

### Electrical Connection

H3	PVC jacketed cable (1 m)
H4	Mini-DIN 43650 Type "C"
T4	M12 circular connector

### Pressure Range<sup>3</sup>

-21	0-30 PSI (0-2 BAR)
-26	0-75 PSI (0-5 BAR)
-05	0-150 PSI (0-10 BAR)
-07	0-300 PSI (0-20 BAR)
-27	0-750 PSI (0-50 BAR)
-11	0-1500 PSI (0-100 BAR)
-13	0-3000 PSI (0-200 BAR)
-16	0-6000 PSI (0-400 BAR)

### Process Connection

Blank	1/4" NPT Male
-P3	7/16-20 UNF Male
-P9	G1/4 Male

### Options

Blank	Standard
-Z1	Cleaned for oxygen service
-Z15	Calibrated in BAR
-Z10	1 to 5 V output (only available on 623)
-Z11	1 to 6 V output (only available on 623)
-Z12	0.5 to 4.5 V output (only available on 623)
-Z16	0.2 to 10 V output (only available on 626)
-Z19	Built in pressure surge suppressor (0.031" orifice)
-Z20	Fluorosilicone O-Ring
-Z21	Built in pressure surge suppressor (0.011" orifice)
-Z22	Combination options: P9 + Z15 + Z19
-Z23	Combination options: P9 + Z15 + Z21
-ZXXY <sup>2</sup>	Special Pressure Ranges
-Wxxx	Specify cable length in inches (H3 longer than 40 inches)

Note 1. Conditions of Use: Class 2 power source, Type 4X indoor, 122°F (50°C) max. ambient.

2. Add suffix ZXXY for special pressure range calibration. XX = significant digits. Y = number of trailing zeros. Example: 130 psi calibration: add -Z131.

3. Other ranges available - consult factory.



## Global Presence

Global Presence

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CONTROL PRODUCTS