

PNEUMATIC
PROPORTIONAL VALVE
CATALOG



Pneumatic Proportional Technology

SENTRONIC Pneumatic Proportional Valves



The Sentronic Pneumatic Proportional valve is a closed loop control valve capable of controlling pressures from vacuum up to 725 psi. This 3-way valve has the control electronics and pressure sensor built into the valve. It is a compact valve package for its capabilities. Controlling voltages are 0-10 V DC, 4-20 mA, 0-20 mA and 8-bits digital.

PULSTRONIC Pneumatic Proportional Valves



The Pulstronic is a compact electropneumatic pressure regulator, which converts an electronic signal into a pneumatic pressure using two valves that pulse back and forth to control the pressure. It is particularly suited for precise pressure regulation due to its integrated control loop.

SERVOTRONIC Pneumatic Solenoid Operated Servovalves



There are two models of the Servotronic valve. The flow version is a 3-port/3-position slide servovalve with an electronic control supplying a flow rate proportional to a given set point. The other version is a 3-port/3-position pressure control valve with electronic control supplying a pressure proportional to a given set point.

The Sentronic Pneumatic Proportional valve is a closed loop control valve capable of controlling pressures from vacuum up to 725 psi. This 3-way valve has the control electronics and pressure sensor built into the valve. This valve package has Bus capabilities that include the following: Interbus-S, Profibus-DP and DeviceNet.

PIEZOTRONIC Subbase Mounted Pneumatic Proportional Valves



Piezotronic Subbase Mounted Pneumatic Proportional Valve is a small valve using a multi layer Piezo element to regulate pressure. The electronics that control this valve are made onto the end of the Piezo element to keep the size to a minimum.

SENTRONIC Pneumatic Proportional Valves (Servo Model)



The Servo model of Sentronic Pneumatic Proportional Valve is an open loop 3-way valve that can be controlled by working in conjunction with a PI card, separate pressure transducer and a PLC or PC to close the loop. These controls are external of the valve. The electronics can be located separately from the valve due to temperature or atmospheric conditions.

For More Information: Phone 803/548-1300



ASCO Pneumatic Controls • 460-J Greenway Industrial Drive
Fort Mill, SC 29708 • www.ascovalue.com

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PNEUMATIC PROPORTIONAL VALVE

SENTRONIC

Electropneumatic 3-Port Valve with Internal supply or External pressure port for sensor

SERIES
601

GENERAL SPECIFICATIONS

FLUIDS	Air or inert gas filtered to 25 µm, without condensate, lubricated or dry
PIPE SIZE	1/8, 1/4, 1/2, 1
MAXIMUM AIR PRESSURE (MAP)	(see "PP" in table below)
TEMPERATURE (FLUID)	32°F - 140°F (122°F 1/8 size)(0°C - 60°C (50°C 1/8 size)
TEMPERATURE (AMBIENT)	32°F - 105°F (0°F - 40°F)
VOLTAGE	: 24VDC +/- 10% (max. ripple 10%)
SET-POINT (ANALOG)	: 0 - 10 Volts sensitivity <50mV - impedance 100K Ohms 0 - 20 mA or 4 - 20mA (as option) (sensitivity <0.1 mA - impedance 500 Ohms)
SET-POINT (DIGITAL AS OPTION)	: 8 bits +memory function 8 bits + pressure reset
HYSTERICIS	: <1% of the maximum pressure (Max. Reg. Press.)
LINEARITY	: <0.5% of (Max. Reg. Press.)
REPEATABILITY	: <0.5% of (Max. Reg. Press.)
MINIMUM SET-POINT	: 50 +/-20mV (0.1 mA) with switch-off function

CONSTRUCTION

VALVE TYPE	Direct operated poppet valve
BODY MATERIAL	body of brass or anodised aluminium or stainless steel
INTERNAL PARTS	stainless steel and brass
SEALING MATERIAL	(1/8):Viton (FPM) (1/4 to 1):Nitrile (NBR)

INSTALLATION

ASSEMBLY POSITION	: Any direction
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ELECTRICAL CHARACTERISTICS

Ports	Max. Power (W)	Max. Current (mA)
1/8	15	600
1/4	29	1200
1/2	34	1400
1	44	1800

INSULATION CLASS

: Type F

PROTECTION

: IP 65

CONNECTION

: Plug-in connector 7 pins DIN

43651 (16 pins for digital)

ORDERING INFORMATION

EXAMPLE: 833 - 35C A S ID PP + OPTIONS

C = PRESSURE SUPPLY

- 4 = Internal Pressure Supply
- 5 = External Pressure Supply

A = CONSTRUCTION

- 0 = G1/4", Aluminum
- 1 = G1/2", Aluminum
- 2 = G1", Aluminum
- 4 = NPT1/4", Aluminum
- 5 = NPT1/2", Aluminum
- 6 = NPT1", Aluminum
- 7 = G1/8", Brass
- 8 = G1/4", Brass
- 9 = NPT1/8", Brass
- A = NPT1/4", Brass (0 to 290 psi)
- C = G1/4", Stainless Steel
- G = NPT1/4" High Pressure Control (435 to 725 psi), Aluminum
- N = G1/8", Subbase Mt.
- T = NPT1/4", Position Control

S = SETTING

- 0 = 0...10V
- 1 = 0...20mA
- 2 = 4...20mA
- 3 = Digital input, 8 bit, Hold, 24VDC
- 4 = Digital input, 8 bit, pressure reset
- 6 = Digital input, 8 bit, Hold, TTL

I = SENSOR OUTPUT

- 0 = Without sensor input
- 1 = 0...10V
- 2 = 0...20mA
- 3 = 4...20mA
- 4 = Sensor input: 0...10V
- 5 = Sensor input: 0...20mA
- 6 = Sensor input: 4...20mA
- 7 = LED Display

D = PRESSURE SWITCH

- 0 = Without
- 1 = +/-5%, PNP, feedback=setpoint
- 2 = +/-5%, NPN, feedback=setpoint
- 3 = +/-5%, PNP, feedback≠setpoint
- 4 = +/-5%, NPN, feedback≠setpoint
- 8 = 1, 0.5sec Delay
- 9 = 2, 0.5sec Delay

OPTIONS:

- Oxygen Cleaning
- EPDM Seals
- Viton Seals
- Pressure sealed coil
- 12VDC option on 1/8" and 1/4"

PP = PRESSURE RANGE

Relative Pressure Ranges:

- 40 = 0-1.5 psi
- 50 = 0-7.5 psi
- 60 = 0-15 psi
- 02 = 0-30 psi
- 03 = 0-45 psi
- 05 = 0-75 psi
- 06 = 0-90 psi
- 10 = 0-145 psi
- 12 = 0-175 psi
- 16 = 0-230 psi (1/8 & 1/4 only)
- 20 = 0-290 psi (1/8 & 1/4 only)
- 30 = 0-435 psi (1/4 brass only)
- 4H = 0-580 psi (1/4 brass only)
- 5H = 0-725 psi (1/4 brass only)

Absolute pressure Ranges:

- 4A = 0-1.5 psi, absolute
- 5A = 0-7.5 psi, absolute
- 6A = 0-15 psi, absolute
- A2 = 0-30 psi, absolute
- A3 = 0-45 psi, absolute
- A4 = 0-75 psi, absolute
- A6 = 0-90 psi, absolute
- A8 = 0-115 psi, absolute
- 1A = 0-145 psi, absolute
- 1B = 0-175 psi, absolute
- 1C = 0-230 psi, absolute
- 1D = 0-290 psi, absolute

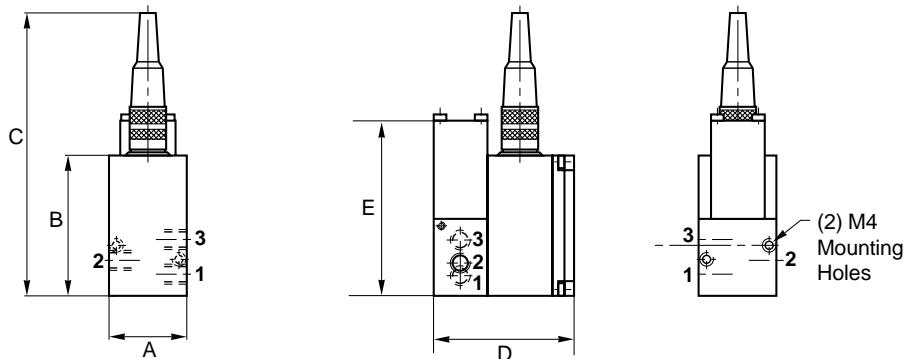
Vacuum Applications:

- V1 = 0...-15 psi, (shut off)
- V2 = 0...-15 psi, (bypass)

SERIES 601

DIMENSIONS & WEIGHTS

1/8



GENERAL NOTES

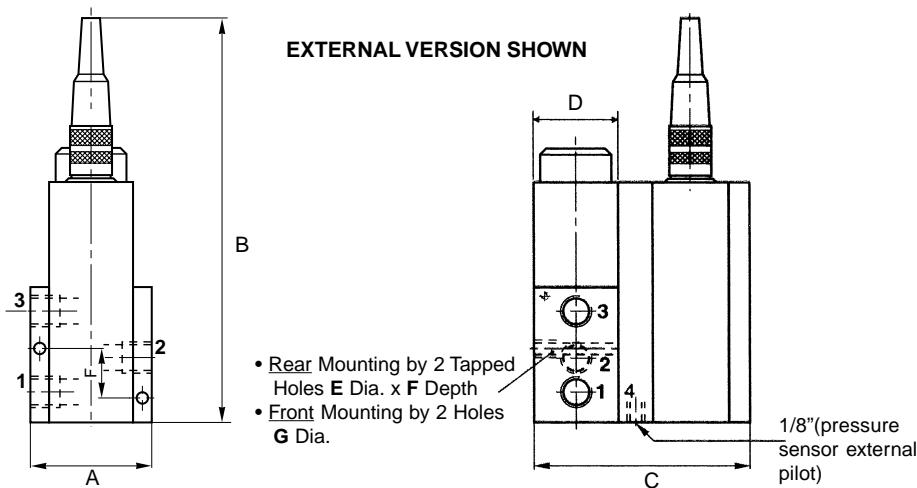
Orifice Diameters

1/8 Size	0.12 in.(3mm)
1/4 Size	0.24 in.(6mm)
1/2 Size	0.47 in.(12mm)
1 Size	0.79 in.(20mm)

Flows

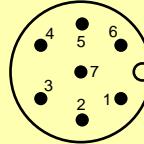
1/8 Size	0.21Cv(0.18 Kv)
1/4 Size	0.7 Cv(0.60 Kv)
1/2 Size	1.4 Cv(1.20 Kv)
1 Size	5.6 Cv(4.80 Kv)

1/4 to 1



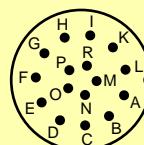
* For "C" dimension of INTERNAL version - SUBTRACT: .71 or 18mm

CONNECTOR WIRING



ANALOG Version Set-point
(Top View)

- 1 -- Power +24V
- 2 -- GND (Power)
- 3 -- Input set-point
- 4 -- GND (Input)
- 5 -- Output voltage stabilized 12V, max. 30mA
- 6 -- Actual pressure (sensor output) (signal 0-10 V band of max. regulation PMR - max. 10mA)
- 7 -- Not connected (standard)



DIGITAL Version Set-point
(Top View)

- A -- Power +24V
- B -- GND (Power)
- C -- Bit 1 (LSB)
- D -- Bit 2
- E -- Bit 3
- F -- Bit 4
- G -- Bit 5
- H -- Bit 6
- I -- Bit 7
- K -- Bit 8
- L -- Memory function (option 010 537)
Pressure reset (option 010 606)
- M -- Not connected (standard)
Option : pressure switch output connection NPN or PNP (500 mA max.)
- N -- Not connected
- O -- Not connected
- P -- Pressure signal (pressure sensor output 0-10V for the pressure range)

CONSTRUCTION REF. 2

Pipe Size	A		B		C		D		E		F		G		Weight	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	Lbs.	Kg.
1/8	1.4	35	2.6	65	5.7	145	2.5	63	3.2	80.5	—	—	—	—	1.4	0.65
1/4	2.1	52	6.9	175	* 3.6	92	1.4	35	M5	M5	.79	20	.16	4.0	2.1	0.95
1/2	2.8	70	8.1	205	* 4.4	111	1.8	45	M6	M6	1.1	28	.18	4.5	4.2	1.90
1	3.8	96	9.5	240	* 5.3	135	2.4	60	M8	M8	1.3	33	.26	6.5	8.6	3.90

PNEUMATIC PROPORTIONAL VALVE

SENTRONIC

Electropneumatic 3-Port Valve with Bus Interface

SERIES
601

GENERAL SPECIFICATIONS

FLUIDS	: Air or inert gas filtered to 25 µm, without condensate, lubricated or dry
PIPE SIZE	: 1/4, 1/2, 1
MAXIMUM AIR PRESSURE (MAP)	: (see table below)
ADJUSTMENT RANGE	: (see table below)
TEMPERATURE (FLUID)	: 32°F - 140°F (0°C - 60°C)
TEMPERATURE (AMBIENT)	: 32°F - 104°F (0°C - 40°C)
VOLTAGE	: 24VDC +/- 10% (max. ripple 10%)
SET-POINT	: 8 bits
ERROR DIAGNOSTICS	: Supply voltage control, monitoring of control electronics
HYSTERESIS	: <1% of Max. Reg. Press.
LINEARITY	: <0.5% of Max. Reg. Press.
REPEATABILITY	: <0.5% of Max. Reg. Press.

CONSTRUCTION

VALVE TYPE	: Direct operated poppet valve
BODY MATERIAL	: Brass or anodised aluminum or stainless steel
INTERNAL PARTS	: stainless steel and brass
SEALING MATERIAL	: Nitrile (NBR)

INSTALLATION

ASSEMBLY POSITION	: Any direction
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DESCRIPTION

The Sentronic valve operates as a slave in the fieldbus system. The setpoint is entered with an 8-bit output data word. The feedback value and the pressure switch function can be read in with an input data word.

- INTERBUS-S: The valve is a participant in the remote installation bus. 33H is used as ident code. This corresponds to an analog remote bus participant with input/output addresses.
- PROFIBUS-DP: ... The participant's address is set with two rotary switches (03 ... 09). The baud rate is entered over the master. The ident number is 0454 Hex. A diskette with the appropriate GSD is supplied.
- DEVICENET: The Sentronic valve operates as a slave. The address and baud rate are set with DIP switches.

ORDERING INFORMATION

EXAMPLE: 833 - 35C A S ID PP + OPTIONS

C = PRESSURE SUPPLY

4 = Internal Pressure Supply
5 = External Pressure Supply

A = CONSTRUCTION

0 = G1/4", Aluminum
1 = G1/2", Aluminum
2 = G1", Aluminum
4 = NPT1/4", Aluminum
5 = NPT1/2", Aluminum
6 = NPT1", Aluminum
8 = G1/4", Brass
A = NPT1/4", Brass
C = G1/4", Stainless Steel
T = Position Control, NPT1/4"

S = SETTING

7 = Interbus-S
8 = Profibus-DP
9 = DeviceNet
A = PWM Signal

I = SENSOR OUTPUT

0 = Without sensor input
1 = 0...10V
2 = 0...20mA
3 = 4...20mA
4 = Sensor input: 0...10V
5 = Sensor input: 0...20mA
6 = Sensor input: 4...20mA

D = PRESSURE SWITCH

0 = Without
1 = +/-5%, PNP, feedback=setpoint
2 = +/-5%, NPN, feedback=setpoint
3 = +/-5%, PNP, feedback≠setpoint
4 = +/-5%, NPN, feedback≠setpoint
8 = 1, 0.5sec Delay
9 = 2, 0.5sec Delay

OPTIONS:

Oxygen Cleaning
EPDM Seals
Viton Seals
Pressure sealed coil



ELECTRICAL CHARACTERISTICS

Ports	Max. Power (W)	Max. Current (mA)
1/4	24	1000
1/2	34	1400
1	44	1800

INSULATION CLASS

: Type F

PROTECTION

: IP 65

CONNECTION

: Supply voltage: Female connector M18. Fieldbus:

circular connector IP 65

PP = PRESSURE RANGE

Relative Pressure Ranges:

40 = 0-1.5 psi
50 = 0-7.5 psi
60 = 0-15 psi
02 = 0-30 psi
03 = 0-45 psi
05 = 0-75 psi
06 = 0-90 psi
10 = 0-145 psi
12 = 0-175 psi
16 = 0-230 psi (1/8 & 1/4 only)
20 = 0-290 psi (1/8 & 1/4 only)
30 = 0-435 psi (1/4 brass only)
4H = 0-580 psi (1/4 brass only)
5H = 0-725 psi (1/4 brass only)

Absolute pressure Ranges:

4A = 0-1.5 psi, absolute
5A = 0-7.5 psi, absolute
6A = 0-15 psi, absolute
A2 = 0-30 psi, absolute
A3 = 0-45 psi, absolute
A4 = 0-75 psi, absolute
A6 = 0-90 psi, absolute
A8 = 0-115 psi, absolute
1A = 0-145 psi, absolute
1B = 0-175 psi, absolute
1C = 0-230 psi, absolute
1D = 0-290 psi, absolute

1/4 Construction Ref.1

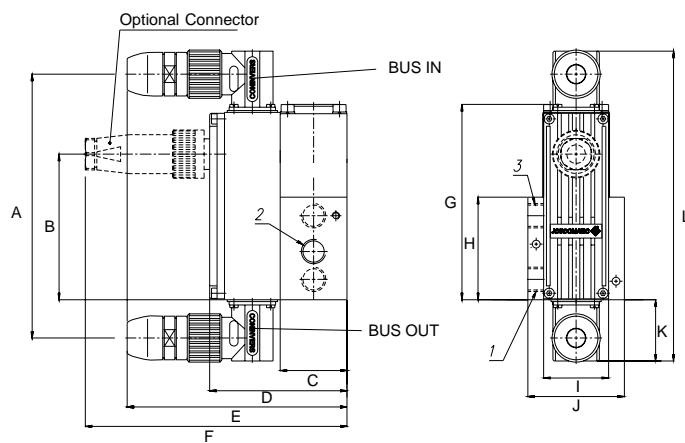
Weight: 2.4 Lbs. (1.1 Kg)

GENERAL NOTES**Orifice Diameters**

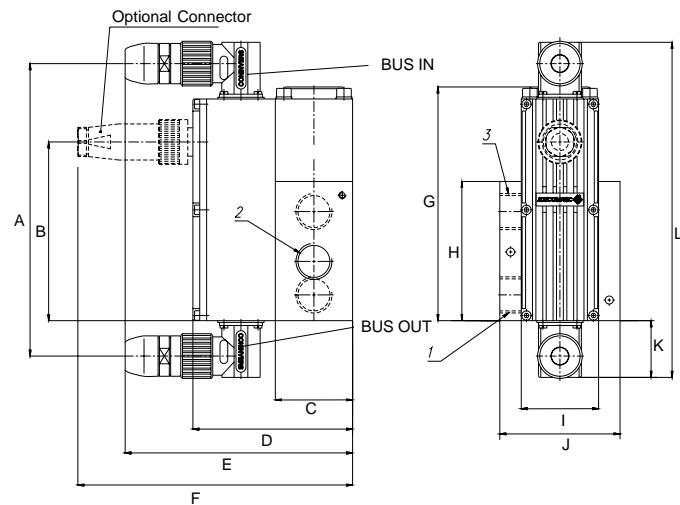
1/4 Size	0.24 in.(6mm)
1/2 Size	0.47 in.(12mm)
1 Size	0.79 in.(20mm)

Flows

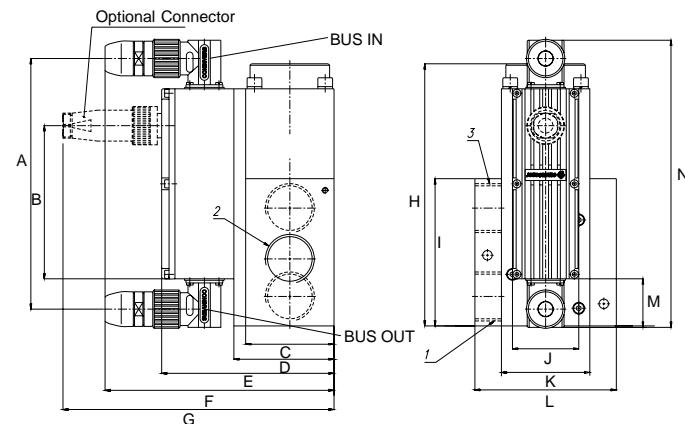
1/4 Size	0.7 Cv(0.6 Kv)
1/2 Size	1.4 Cv(1.2 Kv)
1 Size	5.6 Cv(4.8 Kv)

**1/2** Construction Ref.2

Weight: 4.7 Lbs. (2.15 Kg)

**1** Construction Ref.3

Weight: 9.6 Lbs. (4.34 Kg)

**CONSTRUCTION REFS. 1, 2 & 3**

Pipe Size	A		B		C		D		E		F		G		H		I		J		K		L		M		N	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
1/4	5.6	143	3.1	78.5	1.4	36	2.9	74	4.8	122	5.7	145	4.1	105.3	2.2	55.3	1.4	35	2.0	52	1.3	33	6.6	168	-	-	-	-
1/2	6.7	170	4.1	104	1.8	45	3.7	93	5.2	132.5	6.3	160	5.4	136	3.2	81	1.78	45	2.8	70	1.3	33	7.7	195	-	-	-	-
1	6.7	170	4.1	104	2.4	60	2.7	68	4.6	117	6.1	155.5	7.2	184	7.0	178	3.9	100	1.8	45	2.4	60	3.8	96	1.3	33	7.7	195

SIGNIFICANCE OF DATA WORDS

OUTPUT DATA WORD

								MSB	LSB													
								Out 7	Out 6	Out 5	Out 4	Out 3	Out 2	Out 1	Out 0							
not used								Setpoint														

INPUT DATA WORD

		MSB								LSB							
V	R	not used						D	IN 7	IN 6	IN 5	IN 4	IN 3	IN 2	IN 1	IN 0	
pressure feedback value																	

PRESSURE SWITCH

- 1 - Feedback = Setpoint $\pm 5\%$
- 0 - Feedback \neq Setpoint $\pm 5\%$

DIAGNOSTICS OF PRESSURE ADJUSTMENT

- 1 - OK
- 0 - ERROR, no adjustment possible

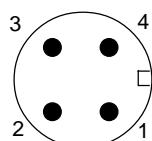
DIAGNOSTICS OF SUPPLY VOLTAGE

- 1 - OK
- 0 - Low voltage $< 18\text{ V}$

CONNECTION OF OPERATING VOLTAGE (not for DeviceNet)

View on screw side of female connector, female thread M18 (Code 881 61 903)

Cable feed-through: 6.5 - 8 mm
(supplied)



- 1 - + 24V
- 2 - not connected
- 3 - GND
- 4 - not connected

■ Interbus-S (remote installation bus)

Circular 9-pin connector to IP 65
Male connector: CONINVERS
(Code: 881 61 952)
Interbus-S output

Circular 9-pin connector to IP 65
Female connector: CONINVERS
(Code: 881 61 951)
Interbus-S input

Cable feed-through: 5 - 8 mm
(supplied)

Signal	Circular 9-pin male connector	Circular 9-pin female connector	Color
DO	1	1	yellow
$\overline{\text{DO}}$	2	2	green
DI	3	3	grey
$\overline{\text{DI}}$	4	4	pink
Ground	5	5	brown
PE	6	6	green/yellow (1 mm ²)
+24 V	7	7	red (1 mm ²)
0 V	8	8	blue (1 mm ²)
	9	-	
Shield	Housing	Housing	braid

} Not connected internally and looped.
Supply voltage over M18 female connector.

Pin assignment IBS CCO-R-KONFEK-T
Pin 5 and pin 9 must be bridged at the Interbus-S output.

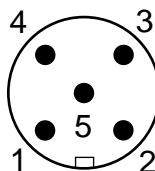
CONNECTOR WIRING

■ Profibus-DP (bus cable)

View on screw side of female connector (Code: 881 00 304)

Cable feed-through: 4 - 6 mm

(supplied)



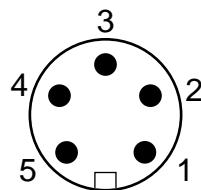
Pin	Signal name	Description
1	R x D/T x D - P	Data line B/B
2	5V - Bus (*)	-
3	R x D/T x D - N	Data line A/A
4	GND - BUS (*)	-
5	PE (**)	Protection earth

Lines B/B' and A/A' are one line each of the cable twisted in pairs.

(*) These signals are only necessary for the terminating resistor, they are not wired.

(**) Connect the cable shield to pin 5 of the female connector.

■ DeviceNet (bus cable)



24V DC voltage supply over bus cable (see table below).

Pin	Signal name	Description	DeviceNet cable (colors)
1	DRAIN	Shield, capacitive ground	(shield)
2	+24V	Voltage supply over bus cable	red
3	GND	Ground	black
4	CAN-H	Data - "high" active	white
5	CAN-L	Data - "low" active	blue

The male panel connector is on the top side of the valve. Two connections are possible:

- Plug the T-connector (881 61 932) directly into the male panel connector.
- Connect the T-connector (881 61 932) with a stub (max. length: 3 m).

Both ends of the bus line must be provided with a terminating resistor.

Accessories to be supplied separately:

- Terminating resistor with male thread:
Code: **881 61 934**
- Terminating resistor with female thread:
Code: 881 61 933
- Straight 5-pin male connector
Thread: 7/8" - 16 UN (250 V 9A)
Cable feed-through: 9 - 12 mm
Code: **881 61 931**
- 5-pin T-connector (with female thread)
Thread: 7/8" - 18 UN (250 V, 9A)
Cable feed-through: 9 - 12 mm
Code: **881 61 932** (see also accessories for DeviceNet)

PNEUMATIC PROPORTIONAL VALVE

SENTRONIC

Proportional 3 - Port Solenoid Valve

SERIES
602

GENERAL INFORMATION

Together with an electronic PI card and separate pressure detector, this solenoid valve is the equivalent to a servo valve SENTRONIC.

This modular arrangement allows the components to be built into specific regulation systems. Installation of the proportional valve allows a higher ambient temperature range than the SENTRONIC valve.

GENERAL SPECIFICATIONS

FLUIDS	Air or inert gas filtered to 25 µm, without condensate, lubricated or dry
PIPE SIZE	1/4, 1/2, 1
MAXIMUM AIR PRESSURE (MAP)	115 or 230 PSI (8 or 16 bar) (1/4 - see table below) 175 PSI (12 bar) (1/2 to 1)
MAXIMUM REGULATED PRESSURE ..	90 or 230 PSI (6 or 16 bar) (1/4 - see table below) 175 PSI (12 bar) (1/2 to 1)
TEMPERATURE (FLUID)	15°F - 140°F (-9°C - 60°C)
TEMPERATURE (AMBIENT)	15°F - 140°F (-9°C - 60°C)
VOLTAGE	24VDC +/- 10% (max. ripple 10%)

CONSTRUCTION

VALVE TYPE	Direct operated poppet valve
BODY MATERIAL	anodized aluminium
INTERNAL PARTS	stainless steel and brass
SEALING MATERIAL	Nitrile(NBR), Viton(FPM) optional

INSTALLATION

ASSEMBLY POSITION

: Any direction

SELECTION CHART

Pipe Size	Orifice Dia. in. (mm)	Flow (Cv)	MAP (psi)	Regulation Band (psi)	Model Number (NPT or G)	
					NPT	G
1/4	.236 (6)	.7	115	0 - 90	602 00 103	602 00 002
			230	0 - 230	602 00 010	602 00 001
1/2	.472 (12)	1.4	175	0 - 175	602 00 013	602 00 004
1	.787 (20)	5.6	175	0 - 175	602 00 016	602 00 007

OPTION: Viton(FPM) Sealing material - code: **460 594**

DIMENSIONS & WEIGHTS

1/4 to 1

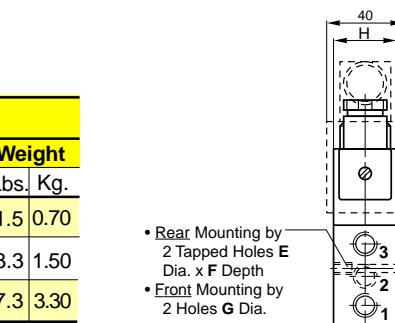
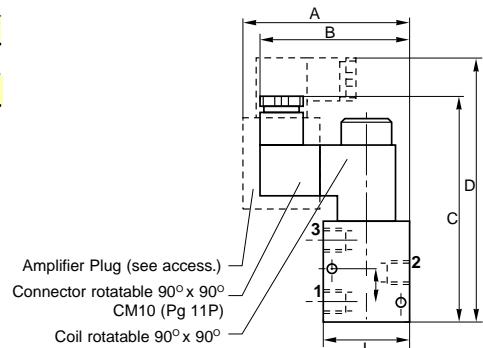
CONSTRUCTION REF. 1																				
Pipe Size	A		B		C		D		E		F		G		H		I		Weight	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	Lbs.	Kg.
1/4	4.2	107	3.2	82	4.8	123	6.1	153	M5	M5	.39	10	.16	4.0	1.4	35	2.0	52	1.5	0.70
1/2	4.7	119	3.8	96	5.9	151	7.5	190	M6	M6	.39	10	.18	4.5	1.8	45	2.7	70	3.3	1.50
1	-	-	4.6	116	7.2	184	-	-	M8	M8	.60	15	.25	6.5	.25	60	3.8	96	7.3	3.30



ELECTRICAL CHARACTERISTICS

Ports	Max. Power (W)	Max. Current (mA)
1/4	20	800
1/2	27	1100
1	35	1400

INSULATION CLASS : Type F
PROTECTION : IP 65
CONNECTION : Connector ISO 4400 rotatable 90° x 90° - CM 10 (Pg11P)



PNEUMATIC PROPORTIONAL VALVE

SENTRONIC

Accessory For Proportional Valve Control

SERIES
603

AMPLIFIER PLUG

For 1/4 and 1/2 proportional valves. The electronic control unit amplifies the external signal to the proportional valve in an open loop control system. The signal sent to the electronic control unit could be 0 - 10 volts, 0 - 20mA or 4 - 20mA to control the valve in the process.

SPECIFICATIONS

VOLTAGE	: 24VDC +/- 10% (max. ripple 10%)
PROTECTION	: IP 65 dust tight/water tight
CONNECTION	: DIN plug CM10
INPUT	: VOLTAGE: 0 - 10 Volts CURRENT: 0 - 20 mA or 4 - 20 mA
CURRENT OUTPUT	: 1,100 mA max.

SELECTION CHART

Description	Model Number
Set-point voltage 0 - 10 V or current 0 - 20mA ,4 - 20 mA	603 00 019

- 12VDC option available. Consult factory.
- Amplifier Plug for 1" proportional valve available. Consult factory.



OTHER ASCO PNEUMATIC CONTROLS

Technology Products

MEGA

A compact, reliable and modular spool valve island

- Easy assembly
- High flow rate
- Low power consumption
- Long service life
- Spool position indicators



VCS – Valve Connection System

Intelligent connectors for solenoid and spool valves

- Vampire-type plugs for quick connection
- No tools needed
- No cable assembly required
- Modular design
- Automatic addressing



PNEUMATIC PROPORTIONAL VALVE

PULSTRONIC

With Control Circuit

SERIES

605

GENERAL SPECIFICATIONS

FLUIDS	Air or inert gas filtered to 25 µm, without condensate, lubricated or dry
PIPE SIZE	G1/4, G1/2,G1
OPERATING PRESSURE	(see table below)
TEMPERATURE (FLUID)	: 32°F - 140°F (0°C - 60°C)
TEMPERATURE (AMBIENT)	: 32°F - 122°F (0°C - 50°C)
VOLTAGE	: 24VDC +/- 10% (max. ripple 10%)
SET-POINT ANALOG)	0 - 10 Volts (input resistance 100K Ohms) 0 - 20 mA (input resistance 500 Ohms) 4 - 20mA (input resistance 500 Ohms)
SET-POINT (DIGITAL AS OPTION)	8 bits +memory function 8 bits + pressure reset
HYSERESIS	<1% of Max. Reg. Press.
REPEATABILITY	<0.5% of Max. Reg. Press.

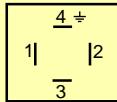
CONSTRUCTION

VALVE TYPE	: Direct operated poppet valve
BODY MATERIAL	: Aluminum and Polyamide
INTERNAL PARTS	: stainless steel and Polyamide
SEALING MATERIAL	: Nitrile (NBR), Fluorocarbon (FKM)

INSTALLATION

ASSEMBLY POSITION	: Any direction
-------------------------	-----------------

CONNECTION



- 1 - + 24V (POWER)
- 2 - GND (POWER)
- 3 - Setpoint (0 - 10 V / 0 - 20 mA / 4 - 20 mA)
- 4 - Option: Feedback output or pressure switch



ACCESSORIES

334 00 036: Fastening clips for rails to DIN 50022, set of 10 clips

PRESSURE RANGE

Regulated Pressure PSI (Bar)	Max. Input Pressure PSI (Bar)
0 - 30 (0 - 2)	35 - 115 (2.5 - 8)
0 - 75 (0 - 5)	80 - 100 (5.5 - 7)
0 - 145 (0 - 10)	150 - 175 (10.5 - 12)

ELECTRICAL CHARACTERISTICS

Max. Power (W)	Max. Current (mA)	Insulation class	Degree of protection	Electrical connection
3.6	150	F	IP 65	Female plug-in connector size 15 rotatable x 90°, CM6 (Pg 7P)

ORDERING INFORMATION

EXAMPLE: 605 A S O F P

A = CONSTRUCTION

- 0=G1/4", indirectly operated
- 1=G1/2", indirectly operated
- 5=instant fitting for flex. hose OD 4mm, directly operated
- 7=G1/8", indirectly operated
- 9=NPT 1/8", indirectly operated
- A=NPT 1/4", indirectly operated
- B=NPT 1/2", indirectly operated
- C=0.5mm, directly operated

S = SETPOINT

- 0=0...10 Volt
- 1=0..20 mA
- 2=4...20 mA

O = OPTION⁽¹⁾

- 1=Feedback output 0...10 Volt
- 2=PNP pressure switch, +/- 5%

P = PRESSURE RANGE

- | | |
|---------------------|----------------------|
| Relative pressure: | Max. input pressure: |
| 2 = 0-30 psi | 35-115 psi |
| 5 = 0-75 psi | 80-100 psi |
| 0 = 0-145 psi | 150-175 psi |

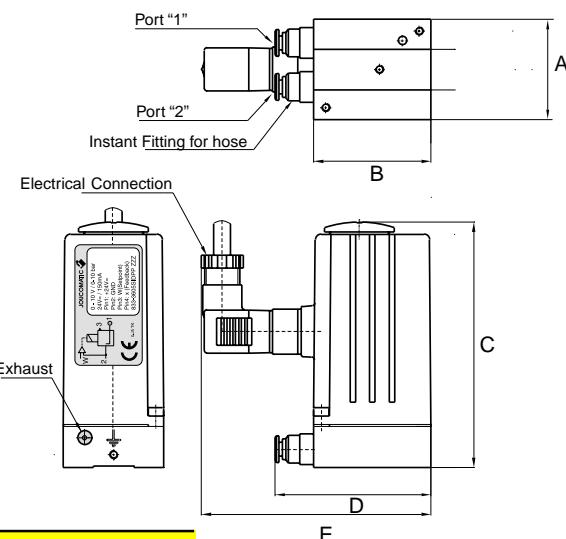
F = FAILSAFE BEHAVIOR

- 0 = pressure held
- 5 = pressure released

⁽¹⁾Only one option possible.
Special designs (consult us)

VERSION W/INSTANT FITTING O.D. 4mm

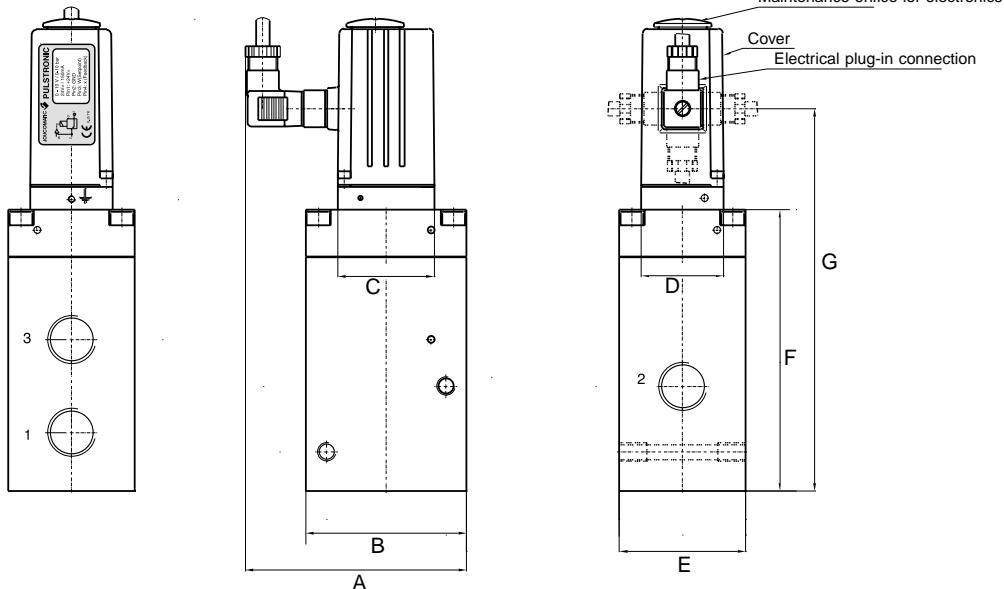
Weight: 0.39 Lbs. (175 g)



INSTANT FTG. VERSION

Nom. Dia	A in. mm	B in. mm	C in. mm	D in. mm	E in. mm
0.5	1.4	36	1.7	42	3.5

VERSIONS: 1/8 - 1/4 - 1/2



VERSIONS 1/8, 1/4 & 1/2

Nom. Dia	A in. mm	B in. mm	C in. mm	D in. mm	E in. mm	F in. mm	G in. mm	Weight Lb. g
1/8	3.3	83	1.7	42	1.7	36	1.4	.88 400
1/4	3.7	94	2.4	60	1.7	42	1.4	1.54 700
1/2	3.9	98	2.7	70	1.7	42	1.4	2.20 1000

2-PORTED MINI PROPORTIONAL VALVE

PIEZOTRONIC

Subbase M5, 1/8 or Instant Fittings

SERIES
630

GENERAL SPECIFICATIONS

FLUIDS Air or inert gas filtered to 5 µm, without condensate, lubricated or dry
 PRESSURE 0 to 60 or 115 PSI (0 to 4 or 8 bar)
 MAXIMUM AIR PRESSURE (MAP) 115 PSI (8 bar)
 TEMPERATURE (FLUID) 32°F - 140°F (0°C - 60°C)
 TEMPERATURE (AMBIENT) 32°F - 140°F (0°C - 60°C)
 STORAGE TEMPERATURE -40°F - 140°F (-40°C - +60°C)
 BASE Compatible CNOMO E06.36.120N (size 15)
 CNOMO E06.05.80 (size 30, with adapter)
 MOUNTING On subbases M5, 1/8 or instant fittings
 SERVICE LIFE >10⁹ cycles at 90 PSI (6 bar)
 MOUNTING POSITION all
 HYSTERESIS 10 to 15% of Max. Reg. Press.

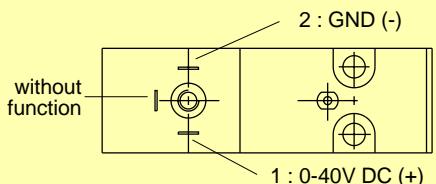
CONSTRUCTION

PROPORTIONAL OPERATED VALVE
 BODY MATERIAL Polyphenylene Sulfide (PPS)
 INTERNAL PARTS piezo ceramics
 SEALING MATERIAL nitrile (NBR)
 MANUAL OVERRIDE without or impulse type
 SUBBASE brass, polyamide, zinc diecast

ELECTRICAL CONNECTION

VERSION WITH PINS:

Piezo-valve has polarization



VERSION WITH WIRES:

Piezo-valve has polarization

red wire : (+)
 black wire : (-)



ACCESSORIES

- 881 30 401 ...: Visual indicator LED (Caution, consumption .25W and voltage 24V max.)
- 881 43 567 ...: Plug size 15 with 72 in. cable
- 881 43 580 ...: Plug size 15 with built-in visual indicator (LED), with 72 in. cable (24V=~/ max.)
- 882 63 001 ...: Adapter for mounting PIEZOTRONIC on CNOMO base E06.05.80 (size 30)

ELECTRICAL CHARACTERISTICS

Voltage (Maximum ripple: 10%)	Consumption (hold position)	Degree of protection	Electrical connection
0 to 40 VDC	< 100 µA	IP 65	Connector size 15 rotatable by 90°, CM6 (Pg 7P) Option : with 2 wires AWG 28, 39 in. long

SELECTION CHART

Functions	Flow Cv	Allowable differential pressure (ΔP in psi)		Manual Override	Model Number		
		min.	max.		PIEZOTRONIC with pins with standard connector	PIEZOTRONIC with pins without connector	PIEZOTRONIC with 2 wires, 39 in. long
2/2 NC	.006	0	115 psi	●	630 00 075	630 00 027	630 00 035
	.0084	0	60 psi	■	630 00 079	630 00 031	630 00 039
2/2 NO	.006	0	115 psi	●	630 00 076	630 00 028	630 00 036
	.0084	0	60 psi	■	630 00 080	630 00 032	630 00 040
				●	630 00 077	630 00 029	630 00 037
				■	630 00 081	630 00 033	630 00 041
				●	630 00 078	630 00 030	630 00 038
				■	630 00 082	630 00 034	630 00 042

MANUAL OVERRIDE: ● without ■ Impulse

SUBBASE : Single subbase with lateral connection M5 - model number : 882 63 002

Single or joinable subbase with instant fittings or 1/8

Multiple subbase, consult factory

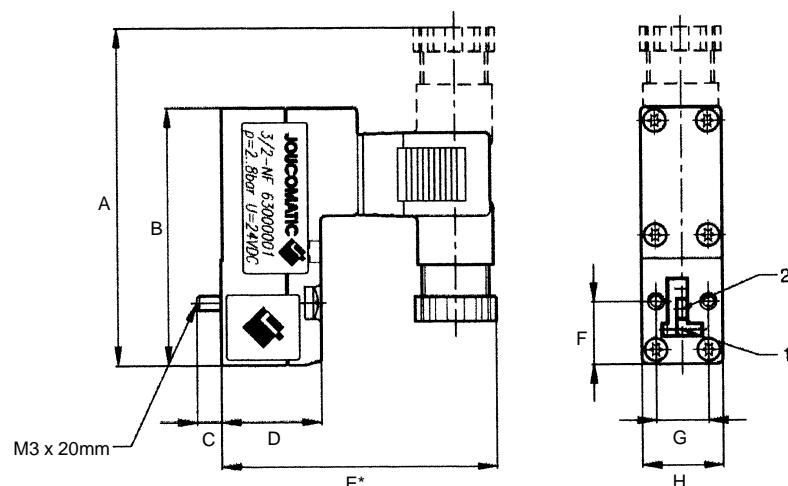
MINI VALVE WITH STD. CONNECTOR

Construction Ref.1

Weight: 0.05 Lbs. (24 g) without connector
0.07 Lbs. (34 g) with connector

PROPORTIONAL VERSION

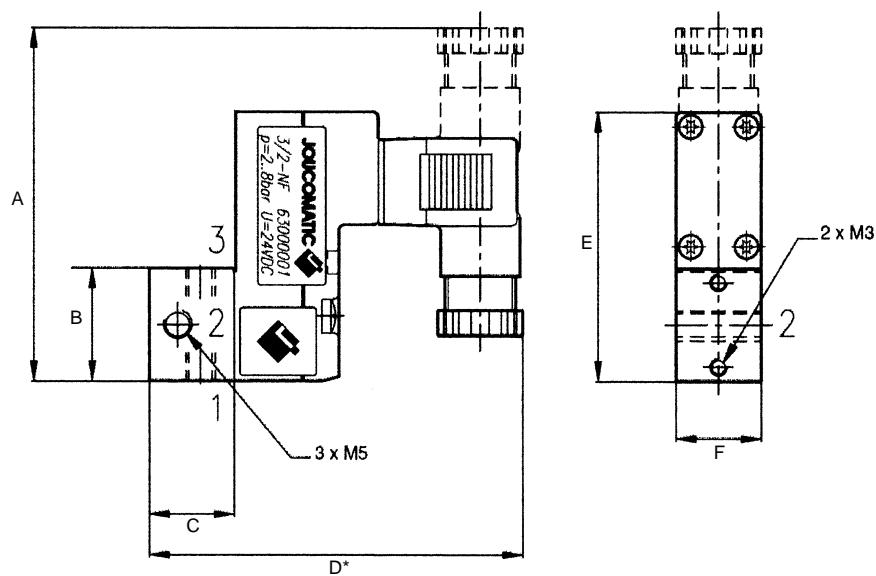
NOTE: The current must be limited by a serial resistor greater than 30 ohms.



MINI VALVE ON SINGLE SUBBASE 882 63 002

Construction Ref.2

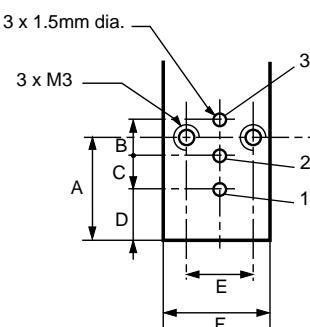
Weight: 0.15 Lbs. (68 g)



Construction Ref.3

MOUNTING FACE

Subbase for mini piezo-valve
CNOMO E06.36.120N (size 15)



SINGLE SUBBASE CONNECTION

Outlet (2) can be connected on the left or the right of subbase;
closed unused port with a M5 dia. plug (supplied).

① Connector size 15 rotatable by 90° CM6 (Pg 7P)

② Manual override by impulse

(*) + 10 mm for clearance

NOTE : port 3 not used

CONSTRUCTION REFS. 1, 2 & 3

Constr. Ref.	A		B		C		D		E		F		G		H	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
1	2.5	63	1.9	48	.18	4.5	.73	18.5	2.0	51	.45	11.5	.38	9.7	.60	15
2	2.5	63	.78	20	.60	15	2.6	66	1.9	48	.60	15	-	-	-	-
3	.45	11.5	.15	3.8	.15	3.8	.25	6.3	.38	9.7	.60	15	-	-	-	-

PNEUMATIC SERVOVALVE
SERVOTRONIC
 Electropneumatic 3-Port Servo Valve for
Flow-rate Control

**SERIES
607**

GENERAL SPECIFICATIONS

CONTROLLED FLUIDS : Air or inert gas filtered to 5 µm, without condensate, lubricated or dry
 CONNECTION : G1/4
 MAXIMUM AIR PRESSURE (MAP) : 145 PSI (10 bar)
 FLOW RATE : 1400 l/min (ANR), when fully open
 MAX. LEAKAGE : 50 l/min (ANR) (setpoint at 0V)
 TEMPERATURE (FLUID) : 40°F - 105°F (5°C - 40°C)
 TEMPERATURE (AMBIENT) : 40°F - 105°F (5°C - 40°C)
 VOLTAGE : 24VDC +/- 10% (max. ripple 10%)
 SET-POINT (ANALOG) : +/-10 Volts (impedance 100K Ohms)
 MECHANICAL RESPONSE TIME : 5 ms (at 50% amplitude)
 BANDWIDTH : 150 Hz (at -3 dB, and at 50% amplitude)

CONSTRUCTION

VALVE TYPE : Direct acting spool valve
 HOUSING : Treated light alloy
 INTERNAL PARTS : Treated light alloy

INSTALLATION

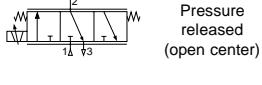
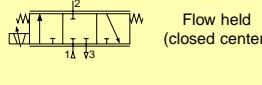
ASSEMBLY POSITION : Any direction



OPTION

010 643 ... : Floating input (Common mode voltage accepted: +/- 24V to ground)

SELECTION CHART

Pipe Size	Current function	Load pressure (psi)	Max. flow (Cv)	Model Number
1/4	 Pressure released (open center)	0 - 145	1.4	607 00 005
	 Flow held (closed center)	0 - 145	1.4	607 00 006

ELECTRICAL CHARACTERISTICS

Ports	Max. Power (W)	Max. Current (mA)
1/4	30	1250
INSULATION CLASS : Type F		
PROTECTION : IP 65		
CONNECTION : Plug-in connector 7 pins DIN 43651		

Electromagnetic compatibility : electrostatic discharge IEC 61000-4-2 fast electrical transience (coupling clip) IEC 61000-4-4

PNEUMATIC SERVOVALVE

SERVOTRONIC

Electropneumatic 3-Port Servo Valve for
Pressure Control

SERIES
607

GENERAL SPECIFICATIONS

CONTROLLED FLUIDS	: Air or inert gas filtered to 5 µm, without condensate, lubricated or dry
CONNECTION	: G1/4
CONTROL RANGE	: 0-1.5 to 0-230 PSI (0-0.1 to 0-16 bar) (see table below)
MAXIMUM AIR PRESSURE (MAP)	: (see table below)
FLOW RATE	: 1400 l/min (ANR), when fully open
MAX. LEAKAGE	: 50 l/min (ANR) (setpoint at 0V)
TEMPERATURE (FLUID)	: 40°F - 105°F (5°C - 40°C)
TEMPERATURE (AMBIENT)	: 40°F - 105°F (5°C - 40°C)
VOLTAGE	: 24VDC +/- 10% (max. ripple 10%)
SET-POINT (ANALOG)	: +/-10 Volts (impedance 100K Ohms)
SET-POINT (DIGITAL-OPTIONAL)	: 8 bits + memory function 8 bits + pressure reset
HYSERESIS	: < 0.5% of the PMR
INDEPENDENT LINEARITY	: < 0.1% of the PMR

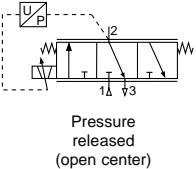
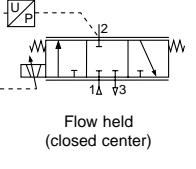
CONSTRUCTION

VALVE TYPE	: Direct acting spool valve
HOUSING	: Treated light alloy
INTERNAL PARTS	: Treated light alloy

INSTALLATION

ASSEMBLY POSITION	: Any direction
-------------------------	-----------------

SELECTION CHART

Pipe Size	Current function	Max. flow (Cv)	MRP control range (psi)	MAP (psi)	Model Number
1/4	 Pressure released (open center)	1.4	0 - 1.5	30	607 00 007
			0 - 7.5	30	607 00 008
			0 - 15	30	607 00 009
			0 - 45	115	607 00 010
			0 - 90	175	607 00 011
			0 - 145	175	607 00 012
			0 - 230	260	607 00 013
1/4	 Flow held (closed center)	1.4	0 - 1.5	30	607 00 014
			0 - 7.5	30	607 00 015
			0 - 15	30	607 00 016
			0 - 45	115	607 00 017
			0 - 90	175	607 00 018
			0 - 145	175	607 00 019
			0 - 230	260	607 00 020



OPTIONS

010 644 ...	: Analog set-point 0 - 20mA (input impedance 500 Ohms)
010 645 ...	: Analog set-point 4 - 20mA (input impedance 500 Ohms)
010 819 ...	: Floating input of set-point 0 - 20 mA (1)
010 820 ...	: Floating input of set-point 4 - 20 mA (1)
010 646 ...	: Pressure information output 0 - 20 mA (max. load 500 Ohms)
010 647 ...	: Pressure information output 4 - 20 mA (max. load 500 Ohms)
010 648 ...	: PNP pressure switch if set-point reached
010 649 ...	: NPN pressure switch if set-point reached
010 817 ...	: PNP pressure switch if set-point not reached
010 818 ...	: NPN pressure switch if set-point not reached
010 650 ...	: Digital set-point (8 bits + memory function)
010 651 ...	: Digital set-point (8 bits + pressure reset)
010 652 ...	: Additional spool control loop (2)

(1) Common mode voltage accepted +/- 24V to ground
(2) Optional loop for pressure release version (open center). The loop is included in the pressure held standard version (closed center)

ELECTRICAL CHARACTERISTICS

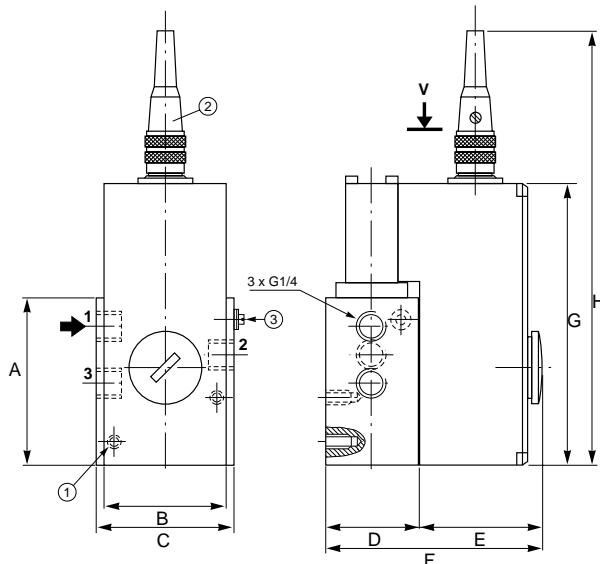
Ports	Max. Power (W)	Max. Current (mA)
1/4	30	1250

INSULATION CLASS : Type F
PROTECTION : IP 65
CONNECTION : Plug-in connector 7 pins DIN 43651

Electromagnetic compatibility : electrostatic discharge IEC 61000-4-2 fast electrical transience (coupling clip) IEC 61000-4-4

SERVOTRONIC 607

Weight: 2.4 Lbs. (1.1 kg)



- ① - Lower attachment : 2 M5 holes tapped depth: 12mm
- ② - Electric connection by plug-in connector
- ③ - External ground terminal

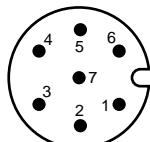
DIMENSIONS

Port Size	A		B		C		D		E		F		G		H	
	in.	mm	in.	mm												
1/4	3.0	77	2.2	55	2.5	63	1.7	42	2.2	56	3.9	98	5.1	130	7.9	201

CONNECTION OF OPERATING VOLTAGES

Version : Analog set-point

View on soldered side of female connector



Flow control

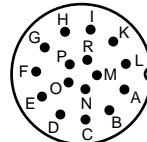
- 1 - +24V power supply
- 2 - Ground (power supply)
- 3 - + set-point input
- 4 - Ground (set-point)
- 5 - Not connected
- 6 - Not connected
- 7 - Not connected

Pressure control

- 1 - +24V power supply
- 2 - Ground (power supply)
- 3 - + set-point input
- 4 - Ground (set-point)
- 5 - 12V stabilized voltage output (30 mA max)
- 6 - Pressure signal (pressure sensor output 0-10V for the pressure range in question)
- 7 - Not connected (standard)
On option : pressure switch output connection NPN or PNP (500 mA max) (500 mA max)

Version : Digital set-point

View on soldered side of female connector



Pressure control

- | | |
|---|---|
| A - +24V power supply | G - Bit 5 |
| B - Ground (power supply) | H - Bit 6 |
| C - Bit 1 (LSB) | I - Bit 7 |
| D - Bit 2 | K - Bit 8 (MSB) |
| E - Bit 3 | L - Memory function (option 010650) |
| F - Bit 4 | Pressure reset function (option 010651) |
| M - Not connected (standard) | N - Not connected |
| On option: pressure switch output connection NPN or PNP (500 mA max) | O - Not connected |
| P - Pressure signal (pressure sensor output 0-10V for the pressure range in question) | R - Not connected |

The digital set-point version is not proposed in the flow control mode.

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IDAHO

Contact California office

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Contact New York (Northern) office

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Contact New Jersey office

MASSACHUSETTS

Contact New York (Northern) office

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Fax (248) 645-9696

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MONTANA

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Fax (315) 453-3795

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