

Pressure Sensing Valve

Model 4023

Overview

AMOT Model 4023 can be used as a 2 or 3-way capacity, pressure sensing valve. This valve is ideal for applications that require compressor suction and discharge pressure sensing at high pressure levels. Dual purpose construction provides a wide latitude of applications and permits easy field adjustment or changeover from trip on falling to trip on rising pressure. Trip settings are adjustable in eight ranges from 1.2 bar (18 psi) falling to 524 bar (7600 psi) rising pressure. The 4023 valve is suitable for use on air, hydraulic, or gas control systems with control systems pressure up to 125 psi.

Typical applications

- Well head control
- Actuator piloting valve
- Suction/discharge pressure

Key features and benefits

- Setting to 524 bar (7600 psi)
- 2 or 3-way action
- Balanced 3-way valve - pressure can be applied to any port
- 3-way valve suitable for LP gases, natural gas, oil, air etc
- Bubble-tight seals with center dead spot (no port overlap)
- Field adjustable - rising or falling
- Adjustable setpoint
- Gulfproof finish standard



Type 4023
Pressure Sensing Valve

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Operation

The 3-way valve has a pressure-actuated, spring return operator. Without pressure applied to the sensed pressure port, Port 3 is open to Port 2. With pressure applied to the sensed pressure port, Port 3 closes before Port 1 opens to Port 2. A small dead spot on the center of the stroke prevents valve port overlap. The valve is normally set at the factory so that Port 1 just opens to Port 2 on a pressure rise to the specified tripping pressure setting. The valve is converted to 2-way action by plugging Port 1 or Port 3.

A manual reset feature is available to reset the valve after tripping. Pull out the reset knob to reset after trip on falling pressure. Push in the reset knob to reset after trip on rising pressure.

Units with pressure range code numbers 1 and 2 use a diaphragm with a gulfproofed aluminum housing to sense pressure. Units with a higher pressure range use a Teflon lip-type seal on a stainless steel piston inside a stainless steel cylinder to sense pressure.

Specification

Housings	Anodized aluminum	
Piston and cylinder	Stainless steel	
3-way valve spool	Anodized aluminum	
Standard seals and diaphragm	Nitrile/Buna N	
Piston seal	Teflon	
Maximum Operation Pressure at Ports 1, 2 and 3	8.6 bar	(125 psi)
Maximum Temperature	66°C	(150°F)
Valve free flow area (9/32 diameter port)	Kv = 1.0	Cv = 1.2
Net weight	1.81 kg	(4 lbs)
Shipping Weight	2.26 kg	(5 lbs)

Installation

Model 4023 can be mounted in any position. Use two 1/4" diameter screws through the holes in the back of the case, or two 3/8-16 screws into the case through a mounting plate on the back side. When manual reset (trip on falling pressure) is included, the valve should be mounted with the reset knob down.

With manual reset (trip on rising pressure), the valve should be mounted with the reset knob up. Frictional force of the seal rings holds Valve Spool (20) in position. Machine vibration can cause the valve to reset if not mounted as instructed.

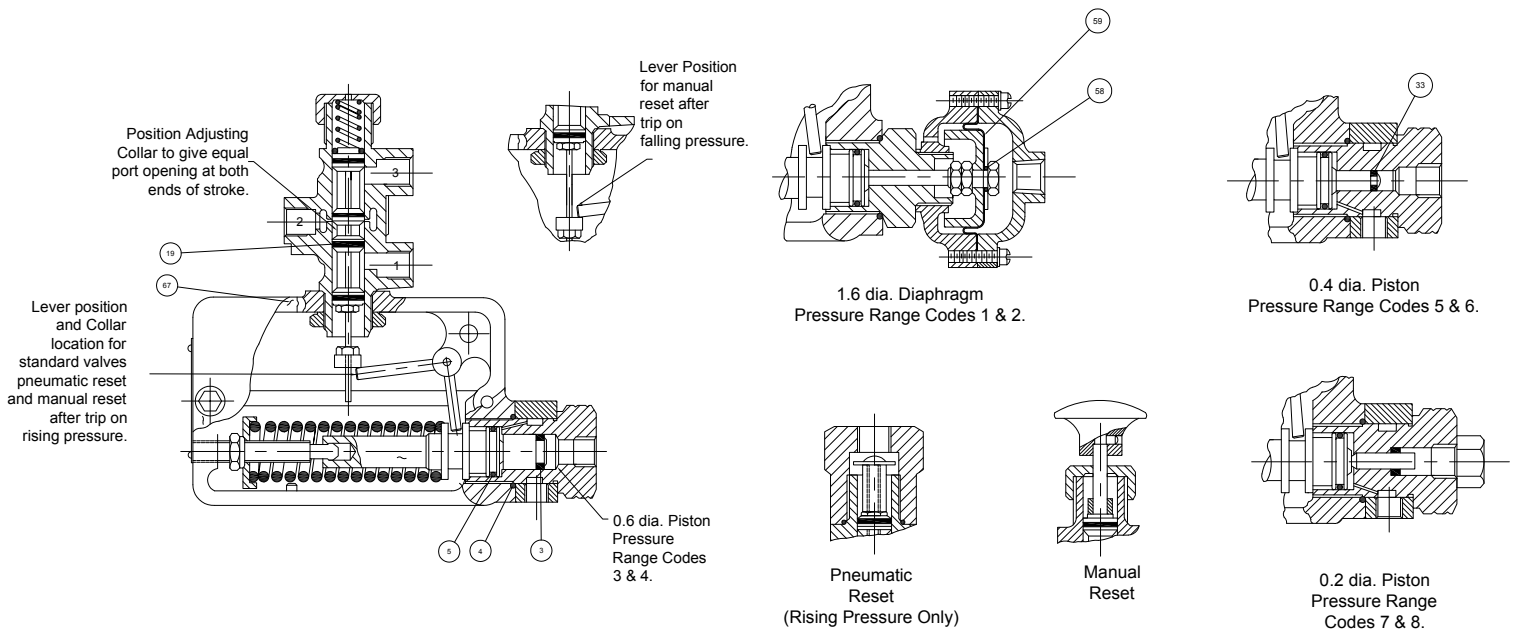
If a 4023 valve with pressure code range numbers 3 or higher have been in stock without being used

for a long period of time, the Teflon seal may leak slightly. It is recommended that this seal be exercised by running the sensed pressure up and down its complete range about six times to overcome any leakage problems. Control pressure, sensed pressure sources and interconnecting tubing must be free of dirt, chips, rust and other contaminants.

Apply a quality thread sealant such as Loctite™ Pipe Sealant to pipe thread connections. Avoid applying excessive torque on fittings at Ports 1, 2 and 3.

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Installation continued



Maintenance

Properly applied and installed 4023 valves require minimal maintenance. Unless leakage or other problems are noticed earlier, an inspection of the units at yearly intervals is adequate to detect and make provision for normal wear and preventive maintenance.

It is recommended that Model 4023 be checked monthly for proper functioning by simulating

an unsafe condition. AMOT designs and tests all products to ensure that high quality standards are met. This product should last for many years. For good product life, carefully follow the installation and maintenance instructions; failure to do so could result in damage to the equipment being protected.

Service kits

Service Kit 9132X - Model 4023E1--A, E2--A		
Ref no.:	Qty	Description
19	4	Seal Ring, Buna N
58	1	O-ring, Buna N
59	1	Diaphragm, Buna N
67	1	Gasket

Service Kit 9132X001 - Model 4023E1--C, E2--C		
Ref no.:	Qty	Description
19	4	Seal Ring, Buna N
58	1	O-ring, Buna N
59	1	Diaphragm, Buna N
67	1	Gasket

Service Kit 9155X001 - Model 4023E3--D, E3--D		
Ref no.:	Qty	Description
3	4	Seal Ring, Teflon
4	1	O-ring, Buna N
5	1	O-ring, Viton
19	4	Seal Ring, Viton
67	1	Gasket

Service Kit 9155X003 - Model 4023E5--D, E6--D		
Ref no.:	Qty	Description
4	1	O-ring, Buna N
5	1	O-ring, Viton
19	4	Seal Ring, Viton
33	1	Seal Ring, Teflon
67	1	Gasket

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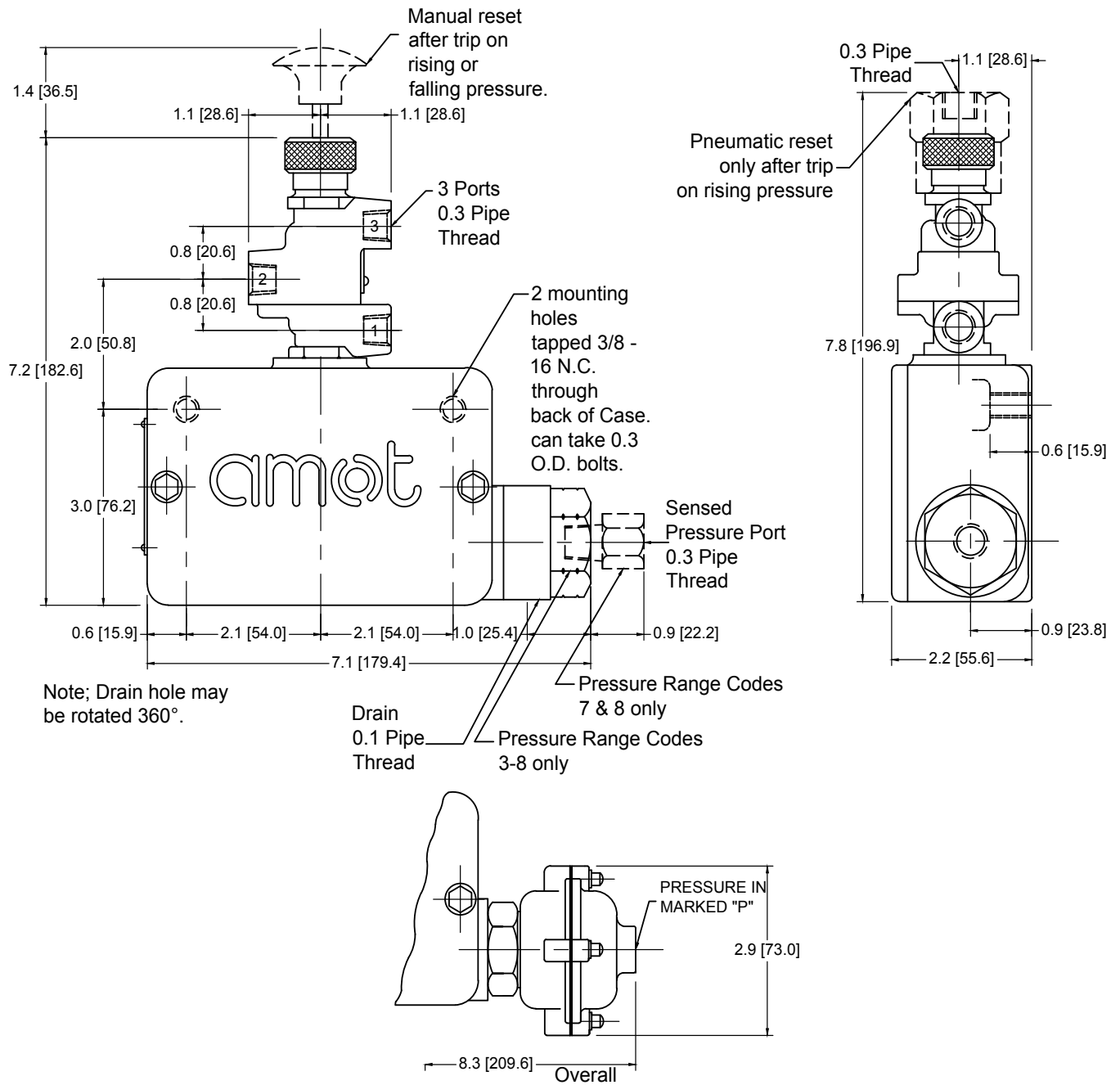
How to order

Use the table below to select the unique specification of your 4023 Pressure Sensing Valve:

Example	4023E	3	4	0	D	Comment			
						Basic Model			
Basic Model	4023E					Basic model number			
						Pressure Range bar (psi)			
						Rising	Falling	Differential	Proof
Pressure Range	1					1.4 - 3.4 (20 - 50)	1.2 - 3.4 (18 - 50)	0.28 - 0.48 (4 - 7)	24 (350)
	2					2.1 - 8.6 (30 - 125)	1.7 - 7.9 (25 - 115)	0.48 - 0.83 (7 - 12)	24 (350)
	3					9.0 - 27.6 (130 - 400)	6.9 - 25.5 (100 - 370)	2.4 - 3.4 (35 - 50)	103 (1500)
	4					17.2 - 55.2 (250 - 800)	13.8 - 48.3 (200 - 700)	3.2 - 4.1 (46 - 60)	103 (1500)
	5					27.6 - 75.8 (400 - 1100)	19.0 - 62.1 (275 - 900)	6.9 - 10 (100 - 145)	241 (3500)
	6					44.8 - 155.1 (650 - 2250)	34.5 - 137.9 (500 - 2000)	8.3 - 11.7 (120 - 170)	241 (3500)
	7					68.9 - 241.3 (1000 - 3500)	51.7 - 206.8 (750 - 3000)	20.7 - 27.6 (300 - 400)	690 (10000)
	8					100 - 524 (1450 - 7600)	68.9 - 482.6 (1000 - 7000)	27.6 - 41.4 (400 - 600)	690 (10000)
						Port Threads and Finish Code			
						Thread		Finish	
Port Threads and Finish Code		4				NPT		Gulfproof	
						Reset Type Code			
Reset Type Code	0					Automatic			
	1					Manual			
	3					Pneumatic (special order)			
						Seal Material Code			
Seal Material Code	A					Buna N/Nitrile for pressure ranges 1 and 2			
	C					Viton for pressure ranges 1 and 2			
	D					Viton for pressure ranges 3 to 8			

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Dimensions



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