

SAFETY GAS SHUTOFF AND VENT VALVES

FIGURE 1059

The Jamesbury® Figure 1059 Automatic Safety Gas Valves are Australian Gas Association (AGA) approved for providing protection against fire and explosive hazards during light-off and operation of gas-burning equipment. When the electrical signal is interrupted, these gas-line valves operate rapidly to isolate or allow gas flow. This action may be initiated either by safety trip or normal shutdown sequencing.

The unit consists of a valve with actuator, limit switch, and solenoid valve, and are approved as an assembly. Flange valves are available in ASME Class 150 and Class 300 1/2" through 6" (DN 15 – 150) standard port and full port sizes. Screwed end and socket weld valves are available in ASME Class 600 1/2" through 2" (DN 15 – 50) standard port and 1/2" through 1-1/2" (DN 15 – 40) full port. Valves are offered with either carbon steel or 316 stainless steel bodies. Trim is 316 stainless steel. Additional materials are available. Contact factory.

All units are specifically sized for fail operation in less than 1 second. Some specific units use a quick exhaust to obtain required closing speeds.

All Figure 1059 units are certified by AGA for use in gas appliances and for automatic gas safety shutoff and vent under AS 4629-2005.

The *Jamesbury* gas valve assemblies are available with a B1J spring return actuator rated for 60 psi (4.2 bar) air supply or a Quadra-Powr®X spring-diaphragm actuator rated for 60 psi (4.2 bar) air supply.

Single-pole single-throw (SPST), single-pole double-throw (SPDT) and double-pole double-throw (DPDT) limit switches are available with the contact arrangements shown on page 2.

FEATURES

Tight Shutoff

- Polymeric flexible lip seat design offers tight shut off in either direction and extended cycle life with minimum maintenance.

Reliable Closing

- Automatic quarter-turn rotation is provided by a choice of spring-diaphragm or spring-return piston actuators.



Corrosion Resistant

- 316 stainless-steel valves are available for highly corrosive atmospheres. Actuators are especially well-suited to industrial environments.

True Position Indication

- Limit switches are actuated directly from the valve/actuator drive train, reliably communicating a true valve-position.

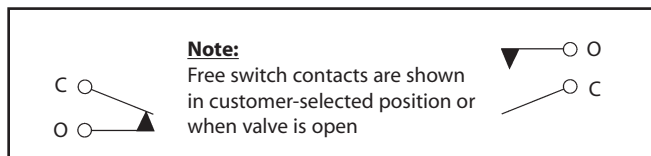
SPECIFICATIONS

Switch Ratings for 1059 Assemblies		
	VAC Rating	VDC Rating
QX2VK02SDM, (-40°F, -40°C) (2) SPDT mech. switches	10 Amp @ 125/250 VAC	0.5 Amp @ 125 VDC
QX2WK02SDM, (-40°F, -40°C) (2) SPDT gold contact mech. switches	1 Amp @ 125 VAC	0.5 Amp @ 30 VDC
QX4XK02SDM, SPST; (-40°F, -40°C) 4 SPST switches configured as SPDT	0.3 Amp @ 125 VAC	0.3 Amp @ 125 VDC

Switch Arrangements

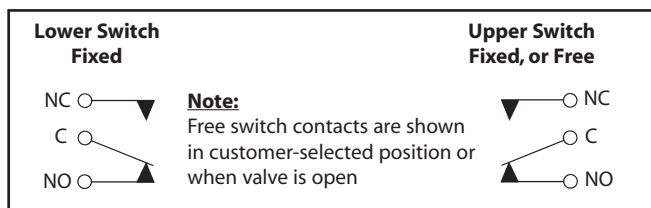
Contacts of Each Switch are in Position Shown When Valve is Closed

SPST Switch Contact Schematic

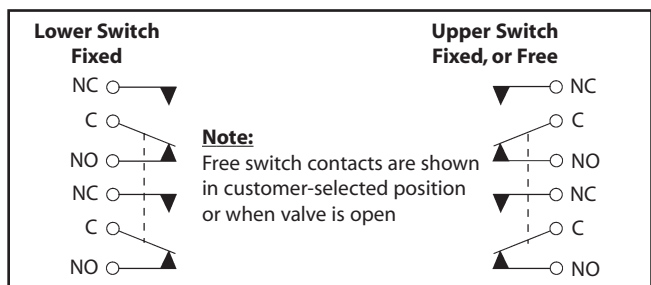


The available switch arrangements are shown in the "How to Order" table. Switches designated as "fixed" are set so that they are actuated only when the valve is in the fully closed position. They are secured to avoid accidental relocation and marked to show any attempts at tampering. Switches indicated as "free" are for indicator lights or other control purposes. These are normally set to close when the valve is fully open, but are not secured and may therefore be adjusted to operate in any valve position. (DPDT switches can be adjusted only for end of travel, i.e., valve full open or valve full closed.

SPDT Switch Contact Schematic



DPDT Switch Contact Schematic



Maximum Operating Pressure/Temperature Ratings

Valve Size		Valve Series	Valve Material	Seats	Maximum Operating Pressure	
Inches	DN				psi	kPa
1/2 - 6	15 - 150	7150/7180	Carbon steel	Xtreme, PTFE	285	2000
			Stainless Steel	Xtreme, PTFE	275	1896
1/2 - 6	15 - 150	9150/9180	Carbon steel	Xtreme, PTFE	285	2000
			Stainless Steel	Xtreme, PTFE	275	1896
1/2 - 6	15 - 150	7300/7380	Carbon steel	Xtreme, PTFE	740	5100
			Stainless Steel	Xtreme, PTFE	720	4965
1/2 - 6	15 - 150	9300/9380	Carbon steel	Xtreme, PTFE	740	5100
			Stainless Steel	Xtreme, PTFE	720	4965
1/2 - 2 1/2 - 1 1/2	15 - 50 15 - 40	4000 Std Port 4000 Full Port	Carbon steel	Xtreme	1200	8273
				PTFE	1000	6895
			Carbon steel	Xtreme	1200	8273
				PTFE	1000	6895

Flow Data

Flow coefficients for Figure 1059 Gas Safety Shutoff and Vent Valves covered in this bulletin can be found in the *Jamesbury* Bulletin for the valve in the assembly.

Valve Series	Bulletin
4000	B150-1
7000	B107-1
9000	B107-2

NOTE: As the use of the assembly is application specific, a number of factors should be taken into account when selecting an assembly for a given application. Therefore, some of the applications in which the assemblies are used are outside the scope of this document. If you have any questions concerning the use, application or compatibility of the assembly with the intended service, contact Metso Automation for more information.

HOW TO ORDER SAFETY GAS SHUTOFF AND VENT VALVES

The Safety Gas Shutoff and Vent Valve designation is made up of numbers and letters that describe all features of the available variations of these units. Coding is as follows:

EXAMPLE: EXAMPLE: A 3" (7), 7180 valve (E), with stainless steel body and trim (2), Xtreme seats (1), driven by a QPX male drive output actuator (A), with a QX4XK02SDM Limit switch (3) with both switches free (0), an ATEX certified flameproof solenoid (B), 120 VAC required (1), safety shut off assembly (- [blank]).

	1	2	3	4	5	6	7	8	9	10
1059	7	E	2	1	A	3	0	B	1	-

1	Valve Size	
Code	inches	DN
1	1/2	15
2	3/4	20
3	1	25
4	1-1/4	32
5	1-1/2	50
6	2	50
7	3	80
8	4	100
9	6	150

2	Valve Body Style	
	Series	Body Style
A	7150	Flanged, Reduced Bore, Class 150 (1/2"-6")
B	7300	Flanged, Reduced Bore, Class 300 (1/2"-6")
C	9150	Flanged, Full Bore, Class 150 (1/2"-6")
D	9300	Flanged, Full Bore, Class 300 (1/2"-6")
E	7180	PED, Flanged, Reduced Bore, Class 150 (1/2"-6")
F	7380	PED, Flanged, Reduced Bore, Class 300 (1/2"-6")
G	9180	PED, Flanged, Full Bore, Class 150 (1/2"-6")
H	9380	PED, Flanged, Full Bore, Class 300 (1/2"-6")
J	4AB	Screwed End, Reduced Bore, Class 600 (1/2"-2")
K	4BB	Screwed End, Full Bore, Class 600 (1/2"-1 1/2")
L	4AM	PED, Screwed End, Reduced Bore, Class 600 (1/2"-2")
M	4BM	PED, Screwed End, Full Bore, Class 600 (1/2"-1 1/2")
N	4CB	Socket Weld, Reduced Bore, Class 600 (1/2"-2")
P	4DB	Socket Weld, Full Bore, Class 600 (1/2"-1 1/2")
Q	4CM	PED, Socket Weld, Reduced Bore, Class 600 (1/2"-2")
R	4DM	PED, Socket Weld, Full Bore, Class 600 (1/2"-1 1/2")

3	Body and Trim Material
1	2236 - Carbon Steel Body & Stainless Steel Trim
2	3600 - Stainless Steel Body & Trim

4	Seat Material
1	Xtreme
2	PTFE

5	Actuator Style	
Code	Actuator	Max Supply Pressure
A	QPX_C/M	410 kPa (60 psi)
B	QPX_C/K_	410 kPa (60 psi)
C	B1J_	410 kPa (60 psi)

6	Limit Switch Description
0	No Switch
1	QX2VK02SDM, 2SPDT, Explosion Proof, Mechanical
2	QX2WK02SDM, 2SPDT, Explosion Proof, Mechanical
3	QX4XK02SDM, 2SPDT, Explosion Proof, Proximity

7	Limit Switch Set-Up
0	No Switch
A	Both Switches Fixed
B	One(1) Switch Fixed, One(1) Switch Free

8	Solenoid Type
A	Standard (Explosion Proof)
B	ATEX Flameproof
C	ATEX Intrinsically Safe

9	Solenoid Voltage
1	120 VAC; 60 Hz
2	24 VDC

10	Actuator Spring Direction
-	Safety Shut Off
0	Safety Vent

Subject to change without prior notice.

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