



SAFE LOAD HOLDING SENSING VALVES
PO CHECK SV27 SERIES

PRODUCT CATALOG



Product Overview

Sensing Safety Function

The SV27 Series Sensing Valve uses a safety-rated DPST (Double-Pole Single-Throw) switch to monitor the valve's operating position. The SV27 3/2 valve can be used for safe shut-off and exhaust functions for Category 2 applications with proper integration and monitoring. The feedback switch informs the controls that the valve internals have shifted properly.



Valve Type	Simplified Schematics	
	Solenoid Pilot Controlled	Pressure Controlled
Single		
Redundant		

Pilot Operated Check valves are designed to trap pressure in order to hold a cylinder in place when a safety event occurs. The SV27 Series Sensing Valve uses a safety-rated DPST switch to monitor the valve's operating position. The SV27 PO Check valves can be used for load holding functions in Category 2 (single) or Category 3 (redundant) applications with proper integration and monitoring. The feedback switch informs the controls that the valve internals have shifted properly.

Single (CAT-2 / PL c)		Redundant (CAT-3 / PL e)	
Solenoid Pilot Controlled	Pressure Controlled	Solenoid Pilot Controlled	Pressure Controlled

VALVE FEATURES

Poppet Design	Dirt tolerant, wear compensating for quick response and high flow capacity Poppet construction for near zero leakage & dirt tolerance
Sensing	Senses internal position & state
Electrical Feedback	Electrical feedback via DPST switch (Double-Pole Single-Throw)
Locking Protection	Directly operated safety-rated force-guided positive-break status switch (DPST)
Diagnostic Coverage	A diagnostic coverage (DC) of up to 90% can be obtained by monitoring the safety switch status
Mounting	Inline
SISTEMA Library	Available for download at rosscontrols.com

STANDARD SPECIFICATIONS

GENERAL	Function		2/2 Single or Redundant Valve
	Construction Design		Poppet
	Actuation		Electrical – Solenoid Pilot Controlled Pneumatic – Pressure Controlled
	Mounting	Type	Inline
		Orientation	Any, preferably vertical
	Connection		Threaded; G, NPT
Minimum Operation Frequency		Once per month, to ensure proper function	

OPERATING CONDITIONS	Temperature	Ambient	40° to 120°F (4° to 50°C)
		Media	40° to 175°F (4° to 80°C)
	Flow Media		Filtered air
	Operating Pressure		40 to 150 psig (2.8 to 10.3 bar)
	Pilot Pressure		Must be equal to or greater than inlet pressure

ELECTRICAL DATA	Maximum Switch Current/Voltage		2.5 A, 120 volts AC
			50 mA, 24 volts DC
	Switch Rating		Rated in excess of 15 million cycles; electrical life of switch varies with conditions and voltage

ELECTRICAL DATA FOR SOLENOID PILOT CONTROLLED VALVES	Solenoids		AC or DC power; Rated for continuous duty
	Operating Voltage		24 volts DC 110-120 volts AC, 50/60 Hz 230-240 volts AC, 50/60 Hz
	Power Consumption (each solenoid)	CNOMO Style Pilot	24 V DC – 6 watts 110-120 V AC – 87 VA inrush, 30 VA holding on 50 or 60 Hz 230-240 V AC – 87 VA inrush, 30 VA holding on 50 or 60 Hz
		Pacer Style Pilot	24 V DC – 14 watts 110-120 V AC – 87 VA inrush, 30 VA holding on 50 or 60 Hz 230-240 V AC – 87 VA inrush, 30 VA holding on 50 or 60 Hz

CONSTRUCTION MATERIAL	Valve Body		Cast Aluminum
	Poppet		Acetal and Stainless Steel
	Seals		Buna-N; Fluorocarbon
	Manual Override (Solenoid Pilot Controlled)		Pacer Style Pilot (only) Flush; rubber, non-locking

SAFETY DATA	Safety Integrity Level (SIL)		Certified by TÜV Rheinland in accordance to IEC 61508 and IEC 61511 safety integrity level 2 (SIL 2) and EN ISO 13849-1, PL c (with application specific diagnosis) in singular application with HFT = 0 and SIL 3 and PL e in redundant application with HFT _{≥1} , for details see certificate.	
	Functional Safety Data	Category	Single	CAT 2, PL c
			Redundant	CAT 3, PL d
		B _{10D}	20,000,000	
			PFH _D	Single
		Redundant		2.47x10 ⁻⁸
		MTTF _D	Single	98.15 (nop: 7360)
	Redundant		100 (nop: 7360)	
	DC (obtained by monitoring safety switch status)		90%	
	ROSS recommends testing the switch function and sealing for load holding valves every 8 hours.			
Vibration/Impact Resistance		Calculated to DIN EN 60068-2-6.		

IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS, WARNINGS on the inside back cover.

PRODUCT CREDENTIALS

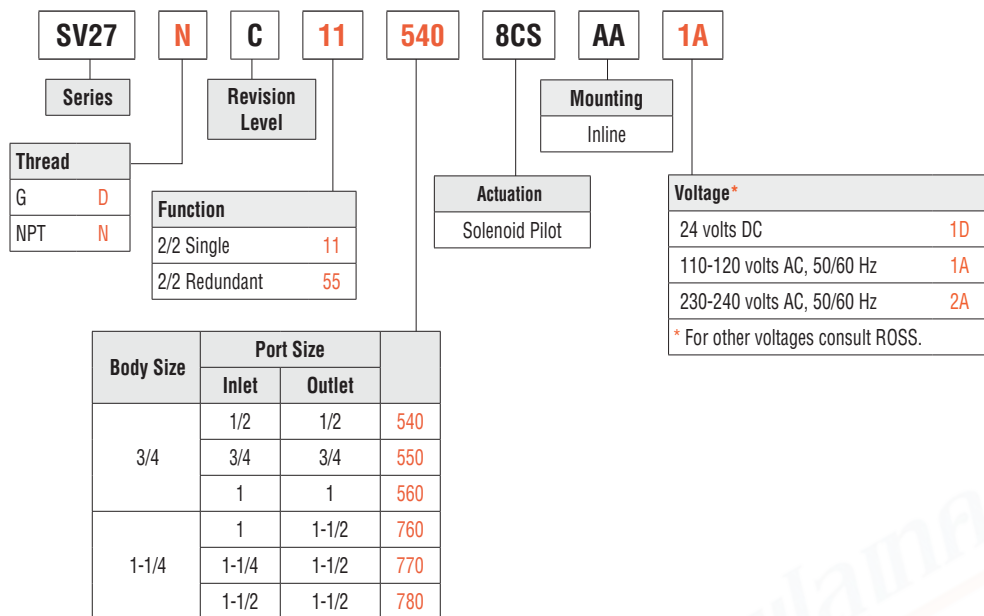
Safety Category	TÜV Rheinland of North America Certificate	CE Conformity Declaration	EAC Conformity Declaration	ISO Standard	CSA Certificate of Compliance	CRN Certification
	 Precisely Right.			ISO 13849-1:2015		Available for appropriately tested valves

Ordering Information

Solenoid Pilot Controlled Valves

Model Number Configurator

2-Way 2-Position Valves



Function	Body Size	Port Size	Cv	Weight lb (Kg)
		1, 2	1-2	
Single	3/4	1/2	4.5	5.0 (2.3)
		3/4	8.3	
		1	10.3	
	1-1/4	1	20	12.5 (5.6)
		1-1/4	29	
		1-1/2	33	
Redundant	3/4	1/2	3.8	10.0 (4.5)
		3/4	5.6	
		1	8	
	1-1/4	1	12	25.0 (11.3)
		1-1/4	19	
		1-1/2	22	



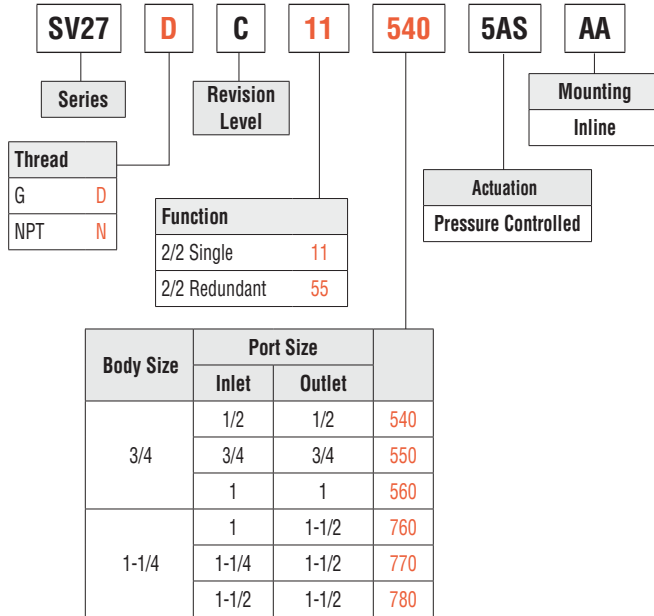
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FLU-TECH CO.,LTD

845/3-4 หมู่ 3 ต.เทพารักษ์ ต.เทพารักษ์ อ.เมือง จ.สมุทรปราการ 10270
845/3-4 Thepharak RD., T.Thepharak, A.Muang, Samutprakarn 10270 THAILAND
Tel. 0 2384 6060, Fax 0 2384 5701, Email : sales@flutech.co.th, www.flutech.co.th

Pressure Controlled Valves

Model Number Configurator

2-Way 2-Position Valves



Function	Body Size	Port Size	Cv	Weight lb (Kg)
		1, 2	1-2	
Single	3/4	1/2	4.5	4.0 (1.8)
		3/4	8.3	
		1	10.3	
	1-1/4	1	20	11.0 (5.0)
		1-1/4	29	
		1-1/2	33	
Redundant	3/4	1/2	3.8	9.0 (4.1)
		3/4	5.6	
		1	8	
	1-1/4	1	12	22.0 (10.0)
		1-1/4	19	
		1-1/2	22	

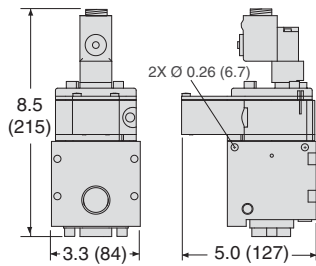


Valve Technical Data

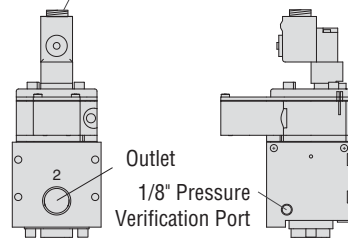
DIMENSIONS

Single, Solenoid Pilot Controlled Valves

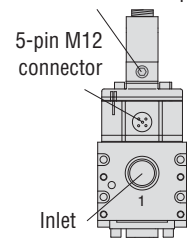
Body Size 3/4
(CNOMO Style Pilot)



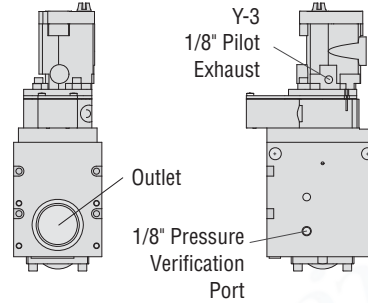
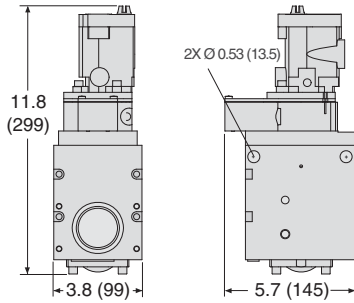
3-pin MINI connector



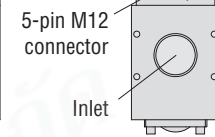
X-1
1/8" External Pilot Supply



Body Size 1-1/4
(Pacer Style Pilot)

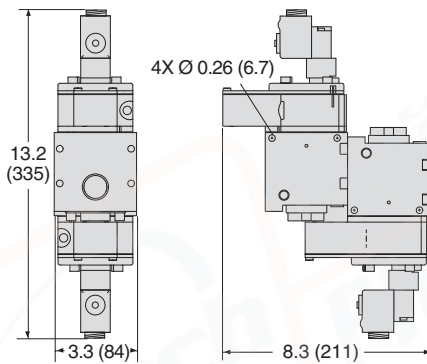


3-pin MINI connector
X-1
1/8" External Pilot Supply

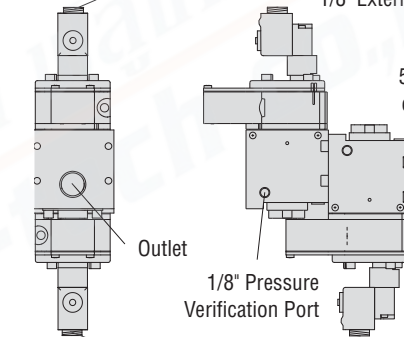


Redundant, Solenoid Pilot Controlled Valves

Body Size 3/4
(CNOMO Style Pilot)

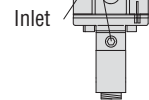


3-pin MINI connector



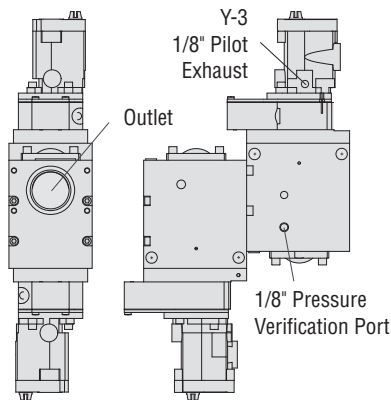
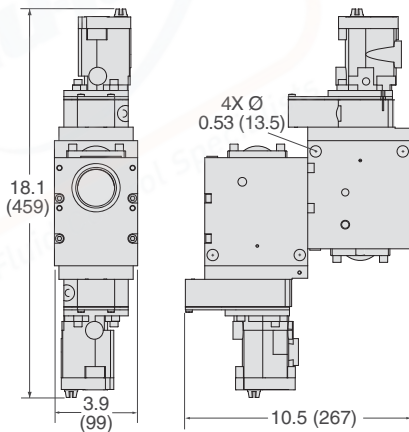
X-1
1/8" External Pilot Supply

5-pin M12 connector



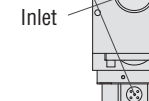
3-pin MINI connector

Body Size 1-1/4
(Pacer Style Pilot)



3-pin MINI connector
X-1
1/8" External Pilot Supply

5-pin M12 connector



X-1
1/8" External Pilot Supply

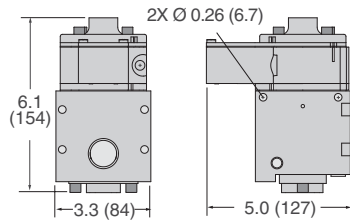
3-pin MINI connector

For additional information, and to assist you with piping and connectivity designs, our products are available in downloadable 2D drawings and 3D CAD models in a wide range of options including native formats, visit www.rosscontrols.com.

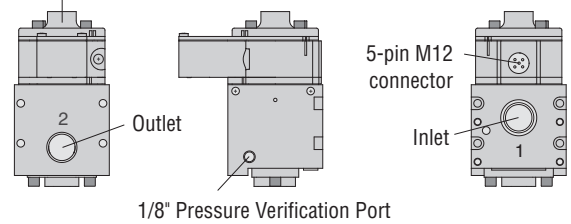
DIMENSIONS

Single, Pressure Controlled Valves

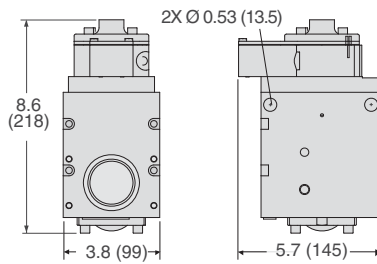
Body Size 3/4
(CNOMO Style Pilot)



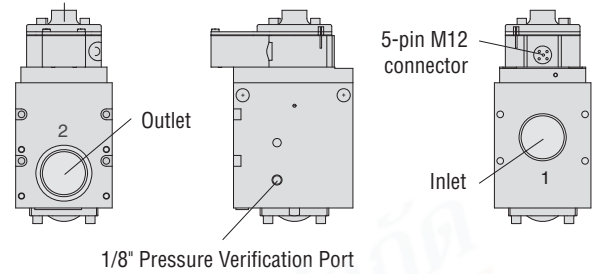
1/4" Signal Port



Body Size 1-1/4
(Pacer Style Pilot)

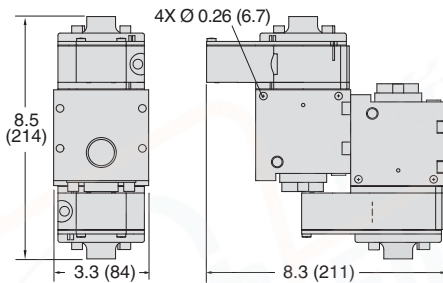


1/4" Signal Port

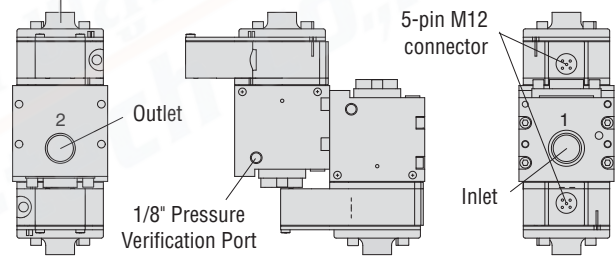


Redundant, Solenoid Pilot Controlled Valves

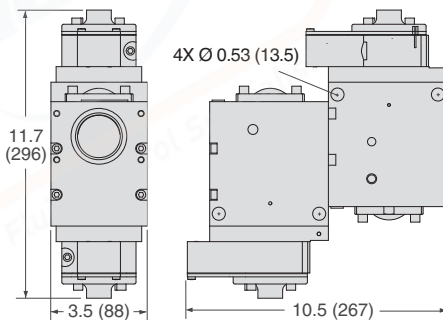
Body Size 3/4
(CNOMO Style Pilot)



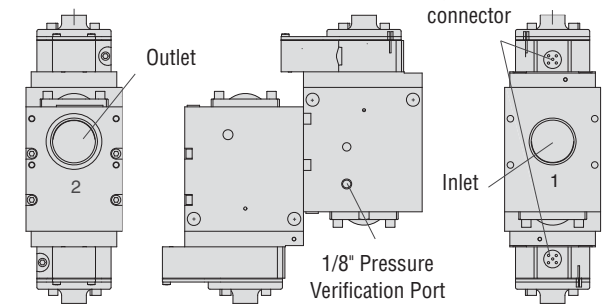
1/4" Signal Port



Body Size 1-1/4
(Pacer Style Pilot)



1/4" Signal Port



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Accessories

ENERGY RELEASE VERIFICATION

Pressure Switches	Verification Type	Installation Location	Connector Type	Model Number	Port Thread	Factory Preset psi (bar)
	Electrical	Downstream	DIN EN 175301-803 Form A	586A86	1/8 NPT	5 (0.3) falling
			M12	1153A30	M10x1	-

Redundant Pressure Switch Assembly	Verification Type	Installation Location	Connector Type	Model Number	Port Size	Factory Preset psi (bar)
	Electrical (Dual)	Downstream	DIN EN 175301-803 Form A	RC026-13	3/8 NPT	5 (0.3) falling

Connectors Pinout

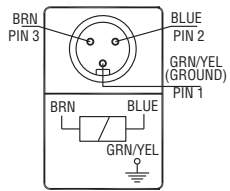
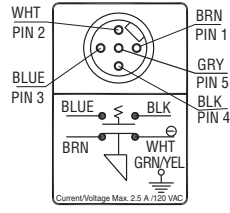
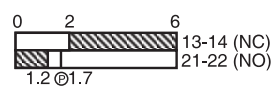
DIN EN 175301-803 Form A	M12
 <ul style="list-style-type: none"> 1 - Common 2 - Normally Closed 3 - Normally Open G - Ground 	 <ul style="list-style-type: none"> 1 - Common 2 - Normally Closed 3 - Not Used 4 - Normally Open

ELECTRICAL CONNECTORS

Pre-wired Connector Kits for Solenoid Controlled Valves	Connection Type	Connector Type	Quantity	End 1	End 2	Length meters (feet)	Model Number*	
							Without Light	
	Solenoid	MINI, 3-pin (Female)	1	Connector	Flying leads	4 (13.1)	2239H77	
	Sensing Switch	M12, 5-pin (Female)	1				2240H77	
Solenoid	MINI, 3-pin (Female)	1	Connector	Flying leads	10 (32.8)	2240H77		
Sensing Switch	M12, 5-pin (Female)	1						

Pre-wired Connectors	Connection Type	Connector Type	Quantity	End 1	End 2	Length meters (feet)	Cord Diameter	Model Number*	
								Without Light	
	Solenoid	DIN EN 175301-803 Form A	1	Connector	Flying leads	2 (6.5)	6-mm	721K77	
							10-mm	371K77	
Sensing Switch	M12, 5-pin (Female)	1	Connector	Flying Leads	4 (13.1)	6-mm	2241H77		
						10 (32.8)	10-mm	2242H77	

* Redundant valves require two connector kits or two pre-wired connectors.

Solenoid Connector Pinout	Status Indicator Connector Pinout
<p>MINI, 3-pin</p> 	<p>M12, 5-pin</p> 
	<p>Integrated Double-Pole Single-Throw Switch (DPST) Switch States Contact conditions during switch travel (0 to 6 mm).</p> 



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Tel. 0 2384 6060, Fax 0 2384 5701, Email : sales@flutech.co.th, www.flutech.co.th

SILENCERS

Silencers For Pacer Style Pilot	Port Size	Thread Type	Model Number		Flow Avg. C _v	Pressure Range psig (bar)
			R Thread	NPT Thread		
	1/8	Male	D5500A1003	5500A1003	1.2	0-290 (0-20) maximum

SOLENOID OPTIONS (PACER Style)

Indicator Light Kits	Valve Model	Model Number	
		24 volts DC	110-120 volts AC 50-60 Hz
	Solenoid Pilot Valves	862K87-W	862K87-Z

Manual Override Kits	Flush Button		Extended Button		Extended Button with Palm	
	Locking Type	Kit Number	Locking Type	Kit Number	Locking Type	Kit Number
	Non-Locking	790K87	Non-Locking	791K87	Non-Locking	984H87
Locking	792K87					

Each of the buttons in the override kits is made of metal and is spring-returned. The locking type button, however, can be kept in the actuated position by turning the slot in the top of the button with a screwdriver.

