



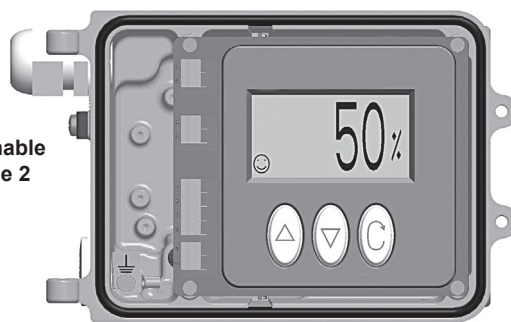
SP400

Electropneumatic Smart Positioner



SP400 with front cover closed

For the programmable functions see page 2



SP400 with front cover removed

Description

The SP400 is a loop powered digital valve positioner for linear and quarter-turn pneumatic valves. It has been designed for users that want the benefits of a smart digital positioner but do not need all the functionality and extra features of the SP500.

Precise control is maintained through valve position feedback that automatically varies the pneumatic output pressure to overcome the effects of stem friction and flow forces to maintain the desired valve position. Indication of valve position is provided through a continuous digital display of % travel.

The pneumatics are based on piezo-valve technology giving high resolution, high reliability, vibration insensitivity and class-leading low air consumption.

The SP400 includes straightforward functionality that can be easily set up through the screen and keypad. The absence of mechanical linkages greatly reduces the time required for the mounting procedure and the software has been designed to simplify operations as much as possible: commissioning requires just assembling the SP400 to the valve and pressing one button.

The SP400 is supplied with a NAMUR standard mounting kit for attachment to yoke or pillar mounted actuators. For quarter-turn valves, a mounting kit compliant to VDI / VDE 3845 is supplied.

Air supply

The SP400 smart positioner must be provided with a high quality air supply. A Spirax Sarco filter regulator with coalescing filter or equivalent must be used. A fixing kit is available to mount the filter regulator onto the actuator.

For further information regarding suitable air filters and regulators see the relevant technical information sheets.

Applications

The SP400 can be used with the following pneumatic actuators:

PN1000 and PN2000 series	PNS3000 and PNS4000 series	PN9000 series
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Optional extras

Gauge block	Complete manifold block with two pressure gauges (supply pressure and pressure to the actuator)
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Materials

Part	Material	Finish
Case and cover	Die cast aluminium	Anti-corrosive paint to RAL5010
Magnet bracket	Die cast aluminium	

Technical data

Input signal range		4 - 20 mA nominal
Minimum input signal		3.6 mA
Air supply pressure		1.4 - 7.0 bar (5-10 psi above spring range pressure)
Air quality		Air supply must be dry, oil and dust free to ISO 8573-1 class 3:3:3
Output pressure		0 to 100% supply pressure
Stroke range	Linear valves	10 mm to 100 mm
	Quarter turn valves	5° to 120°
Action		Single action/fail vent
Operating temperature		-10°C to +80°C
Maximum air flow		4.2 normal m ³ /h at 1.4 bar g
		8.5 normal m ³ /h at 6.0 bar g
Steady state air consumption		Less than 0.016 normal m ³ /h
Air connections		Screwed 1/4" NPT
Cable gland		M20
Electrical connections		Spring clamp terminals for 0.2 to 1.5 mm ² wire
Enclosure rating		IP65
Characteristics		Linear
Resolution (maximum)		0.1% F.S. (Full Scale)
Shut-off		1%
Shipping weight		2.2 kg

Programmable functions

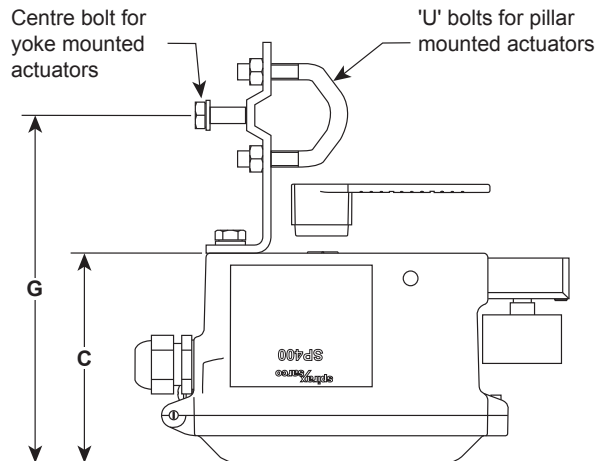
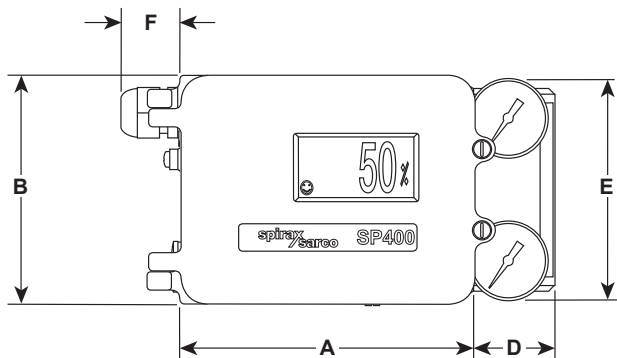
Autostroke	Automatic commissioning routine
Valve type	2-port or 3-port
% travel	Selectable 0 - 100% or 100% - 0% depending on valve/actuator configuration
Control action	Direct or reverse action (4 - 20 or 20 - 4 mA)
Split range	OFF range 4 - 20 mA
	Low range 4 - 13 mA
	High range 11 - 20 mA
Deadband	0,5%
	1,5%
	3,0%
	5,0%
Reset	Resets all programmed values
Input signal	Visualisation of input mA signal

Available spares

Pressure gauge	Pressure gauge only Available ranges: 0 to 2 bar, 0 to 4 bar or 0 to 7 bar
Filter plug kit	Plug plus 3 off filters and 'O' rings

Dimensions (approximate) in mm

A	B	C	D	E	F	G
145	113	105	40	109	30	172



Safety information, installation and maintenance

Full details are contained in the SP400 electropneumatic smart positioner Installation and Maintenance Instructions supplied with the product.

Positioner nomenclature guide

Positioner series	SP400 = SP400	SP400
Movement / action	0 = Linear, single action	0
	1 = Rotary, single action	
Retransmission + software switches	0 = Not mounted	0
Enclosure	0 = Standard	0
Approvals	0 = Standard	0
24 V power supply	0 = Not mounted	0
Remote sensor	0 = No	0
Extended stroke	0 = No	0
	0 = Not mounted	
Gauge block	G2 = Full scale 2 bar	G4
	G4 = Full scale 4 bar	
	G7 = Full scale 7 bar	

Selection example:

SP400	0	0	0	0	0	0	0	G4
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How to order

Please include all the required optional extras as described on the first page.

Example: 1 off Spirax Sarco SP400 000 000 0G4 electropneumatic smart linear positioner equipped with gauge block for full scale pressure of 4 bar.

Caution: The SP400 smart positioner must have a high quality air supply. A Spirax Sarco filter regulator with coalescing filter or equivalent must be used inclusive of fixing kit - See relevant technical information sheets.