

SP400 Electropneumatic Smart Positioner

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 MPC2 filter regulator with coalescing filter or equivalent must be used. A fixing kit is available to mount the MPC2 filter regulator onto the actuator. For further product data regarding the MPC2 see Technical Information sheet TI-P054-04.

Applications

The SP400 can be used with the following pneumatic actuators:

PN1000 and PN2000 series

PNS3000 and PNS4000 series

PN9000 series

Optional extras

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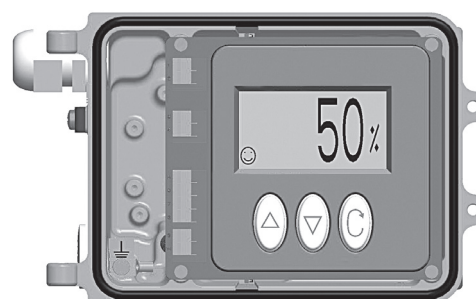
Materials

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



For the programmable functions see page 2

SP400 with front cover closed



SP400 with front cover removed

Technical data

Input signal range	4 - 20 mA nominal
Minimum input signal	3.6 mA
Minimum air supply pressure	1 bar g above minimum spring range pressure
Maximum air supply pressure	7.0 bar g
Air quality	Air supply must be dry, oil and dust free to ISO 8573-1 class 2:3:1
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

Dimensions (approximate) in mm

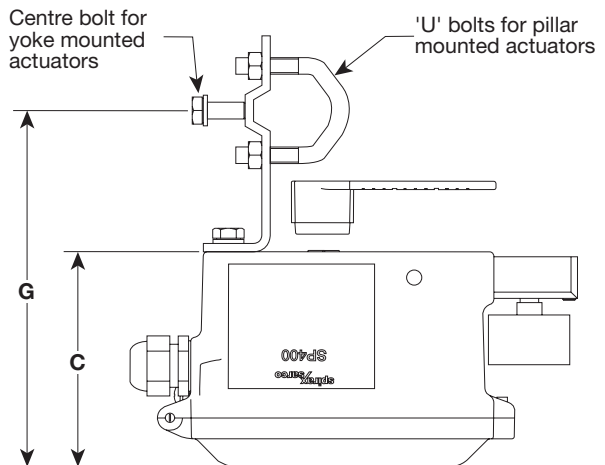
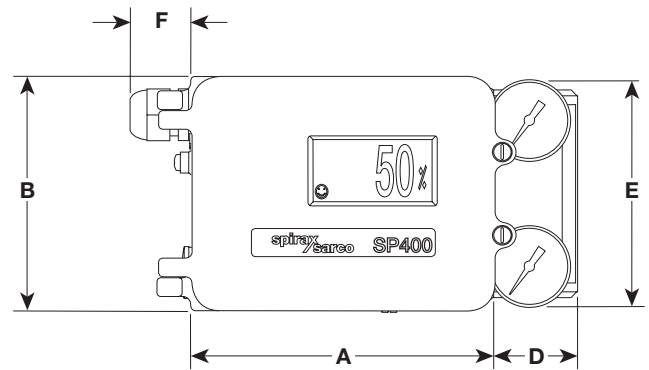
A	B	C	D	E	F	G
145	113	105	40	109	30	172

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)
	OFF range 4-20 mA
Split range	Low range 4-13 mA
	High range 11-20 mA
	0.5%
Deadband	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



Safety information, installation and maintenance

Full details are contained in the SP400 electropneumatic smart positioner Installation and Maintenance Instructions (IM-P343-37) supplied with the product.

Positioner nomenclature guide

Positioner series	SP400	SP400
Movement/action	0 = Linear, single action 1 = Rotary, single action	0
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
Gauge block	0 = Not mounted G2 = Full scale 2 bar G4 = Full scale 4 bar G7 = Full scale 7 bar	G4

Selection example:

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 MPC2 filter regulator with coalescing filter or equivalent must be used inclusive of fixing kit - See Technical Information sheet TI-P054-04 for further data and How to order.