

spirax

sarco

EP500

Standard

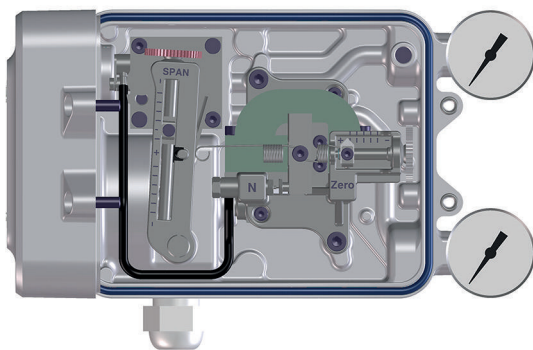
Electropneumatic Positioner

TI-P343-43

CTLS Issue 2



EP500 with front cover closed



EP500 with front cover opened to display the inside

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Description

With the highest precision the EP500 electropneumatic positioner can control any valve that is actuated by a linear pneumatic actuator that conforms with NAMUR. It guarantees an exact proportionality between the stroke of the valve and the value of the electrical input signal (mA) into the positioner.

Simple construction and high operational reliability make-up this high precision unit which further offers simplicity of maintenance and calibration.

The EP500 has a cast aluminium housing that is also treated for outdoor installation. The unit can be mounted onto pneumatic actuators that have a stroke limit of between 10 and 100 mm.

As standard the unit is supplied with a mounting kit for actuators that have a stroke limit of between 10 to 70 mm; however if specified at the at the time of order placement the unit can be supplied with a kit to facilitate strokes up to 100 mm.

As standard the EP500 is equipped with two gauges to indicate the supply air pressure and the air pressure command sent to the pneumatic actuator.

The positioner is supplied for a control signal in mA and for an air supply pressure up to 6 bar.

With simple calibration the positioners can be arranged for sequential operation of two or more pneumatic valves in such a way that the stroke of each valve is obtained by a split-range control signal. For example: 4 to 12 and 12 to 20 mA in the case of two valves; and 4 to 9, 9 to 14 and 14 to 20 mA with three valves, etc..

The EP500 electropneumatic positioner can also be used to reverse the action of the control signal.

Air supply

The EP500 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 EP500 can be used with any actuator that conforms to NAMUR, this includes all of the following Spirax Sarco pneumatic actuators:

PN1000 and PN2000 series

PNS3000 and PNS4000 series

PN9000 series

TN2000 series

Materials

Part	Material	Finish
Case and cover	Die cast aluminium	Anti-corrosive paint to RAL9006

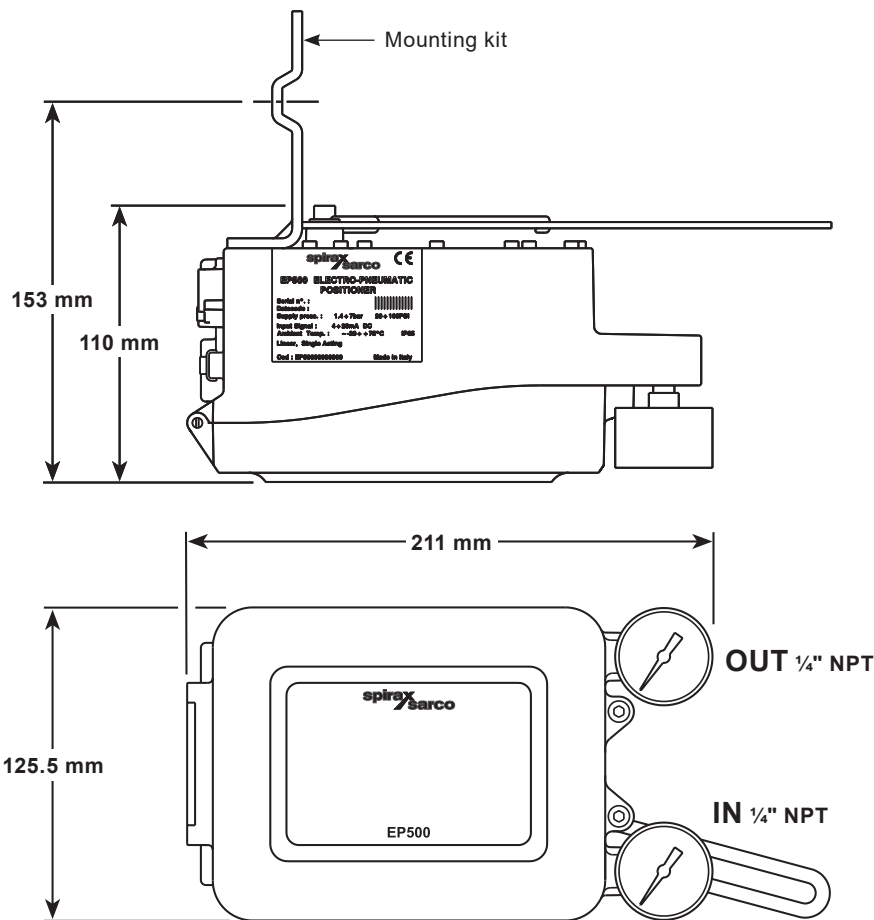
4 Control systems  
Positioners and controllers

Technical data

Input signal range	4-20 mA (split range minimum amplitude 4 mA)
Input resistance	228 Ω
Air supply	1.4 to 6.0 bar (regulate 5 to 10 psi above actuator spring range)
Air quality	Air must be free of water, oil and dust
Output pressure	0 to 100% supply pressure
Actuator stroke	10 mm to 100 mm
Action	Single acting / fail vent
Operating temperature	-20 °C to +75 °C
Air flow	3.20 Nm³/h @ 1.4 bar

Steady state air consumption	0.1 Nm³/h @ 1.4 bar
Air connections	¼" NPT female
Sensitivity	≤0.2% F.S. (Full Scale)
Histerisis	≤0.4% F.S.
Linearity	≤1.0% F.S.
Repeatability	≤0.5% F.S
Electrical connections	Cable gland M20 internal terminals for conductors from 0.5 to 2.5 mm² wire
Degree of protection	IP65
Characteristic	Linear
Shipping weight	2.35 kg

Dimensions  
(approximate) in mm



Safety information, installation and maintenance

Full details are contained in the EP500 electropneumatic positioner Installation and Maintenance Instructions (IM-P343-44) supplied with the product.

Available spares

Gauges	Full-scale 0 to 2 bar	<b>How to order spares</b> Always order spares by using the adjacent description and state which unit it is intended for. <b>For example:</b> 1 off Amplifying relay set for an EP500 standard electropneumatic positioner.
	Full-scale 0 to 4 bar	
	Full-scale 0 to 7 bar	
Back plate, gasket and screw		
Amplifying relay set		
Gasket set		
Mounting kit		

Positioner nomenclature guide

Positioner series	EP500S = Standard electropneumatic positioner	EP500S
Movement/action	1 = Linear, single action for a maximum stroke limit of 70 mm	1
	3 = Linear, single action for a maximum stroke limit of 100 mm	
Enclosure	0 = Standard	0
Approvals	0 = Standard	0
Gauges	G2 = Full-scale 2 bar	G4
	G4 = Full-scale 4 bar	
	G7 = Full-scale 7 bar	

Selection example:	EP500S	1	0	0	G4
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How to order

**Example:** 1 off Spirax Sarco EP500S100G4 standard electropneumatic linear positioner having a stroke limit of 70 mm supplied equipped with gauges for a full scale pressure reading of 4 bar.

**Caution:** The EP500 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.





TI-P703-01  
CTLS Issue 2

EP6

Electro-pneumatic Positioner



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Description

The EP6 Electro-pneumatic positioner can control any valve that is actuated by a linear or rotary pneumatic actuator that conforms with NAMUR. It guarantees an exact proportionality between the stroke of the valve and the value of the electrical input signal (mA) into the positioner.

The EP6 has a cast aluminium housing that is also treated for outdoor installation. The unit can be mounted onto pneumatic actuators either rotary 55-90° or linear 20 to 150 mm.

The positioner can be supplied without a mounting kit or with a kit for rotary or linear actuators, the type must be specified when ordering. As standard the EP6 is equipped with a pressure gauge to indicate the air pressure command sent to the pneumatic actuator.

The positioner is supplied for a control signal in mA and for an air supply pressure up to 7 bar.

The EP6 positioner can also be used to reverse the action of the control signal.

Air supply

The EP6 positioner must be provided with a high quality air supply to ISO 8573-1:2010 Class 3:3:2

Applications

The EP6 can be used with any actuator that conforms to NAMUR, this includes all of the following Spirax Sarco pneumatic actuators:

- BVA300 rotary
- PN1600 series
- PNS3000 and PNS4000 series
- PN9000 series
- TN2000 series

Materials

Part	Material	Finish
Case and cover	Die cast aluminium	Anti-corrosive paint to RAL9016
Mounting bracket	Steel	EP protected
Feedback pin	Stainless steel	
Feedback lever	Stainless steel	
Feedback pin locator	Stainless steel	
Screws	Stainless steel	

Control systems

Positioners and controllers

Technical data

Input signal range	4-20 mA (split range minimum amplitude 8 mA)	
Impedance	Max 250 +/- 15 Ω	
Air supply	1.4 to 7.0 bar (regulate 5 to 10 psi above actuator spring range)	
Air quality	ISO 8573-1:2010 Class 3:3:2	
Output pressure	0 to 100% supply pressure	
Actuator stroke	20 mm to 150 mm or 55 ° to 90 °	
Action	Single acting/fail vent/Double acting	
Operating temperature	Standard temperature	-20 °C to +70 °C
	High temperature	-20 °C to +120 °C
Air flow	80 LPM @ 1.4 bar	
Steady state air consumption	2.4 LPM @ 1.4 bar	
Air connections	¼" NPT female	
Sensitivity	Single : +/- 0.2% F.S. (Full Scale)	
	Double : +/- 0.5% F.S	
Hysteresis	+/- 1% F.S.	
Linearity	Single +/- 1% F.S.	
	Double +/- 2% F.S.	
Repeatability	+/- 0.5% F.S	
Electrical connections	Cable gland M20 internal, terminals for conductors from 0.5 to 2.5 mm² wire	
Degree of protection	IP66	
Characteristic	Linear	
Shipping weight	Linear 2.8 kg (positioner only)	
	Mounting Kits for Linear EY3 and EY4 - 1.3 kg, UY1,2,3 - 0.9 kg, UBC - 0.2 kg	
	Rotary 4.1 kg (Positioner and mounting kit)	

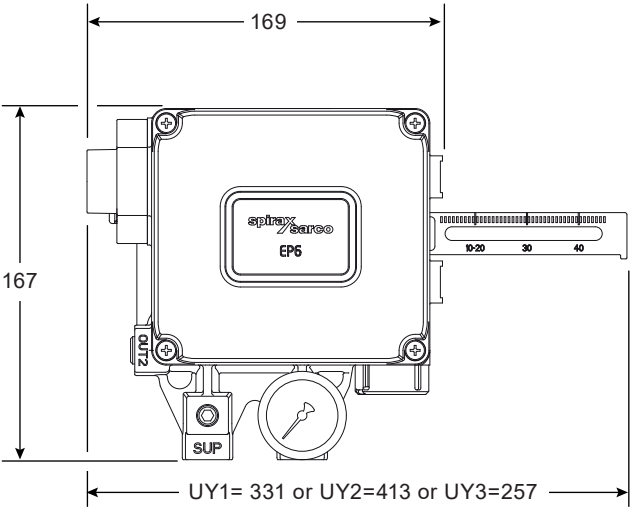
Positioner options

Basic model	Aluminium enclosure	EP6
Acting type	Single acting	S
	Single Acting + Reduced Orifice Ø 1	A
	Double acting	D
Mounting type	Linear - See page 4 for Mounting Kit selection	L
	Rotary - Mounting Kit included	R
Hazardous area protection	Safe area	S
Electrical and Air connection	M20 -¼" NPT	1
Non standard features	Standard model	A
	Standard Model + Supply Pressure Gauge	B
	High Temp Model (-20 °C to +120 °C)	H
	High Temp Model (-20 °C to +120 °C) + Supply Pressure Gauge	K

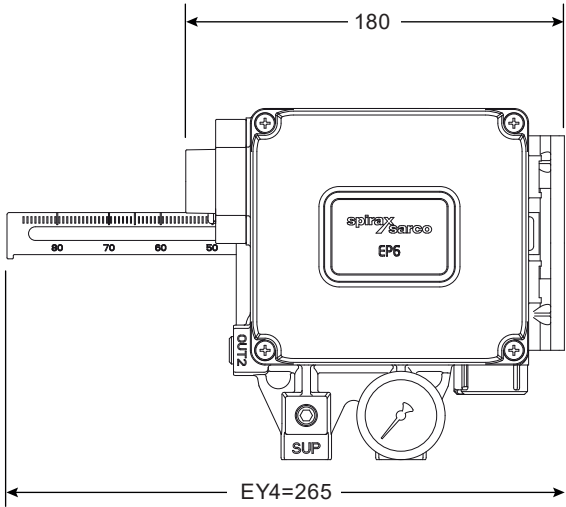
Ordering Code Example:

EP6	S	L	S	1	-	A
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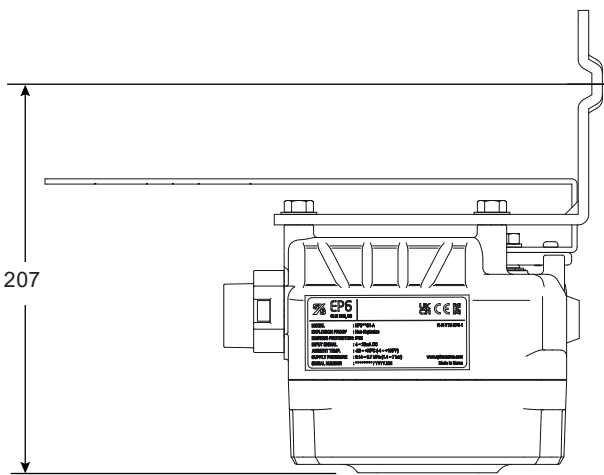
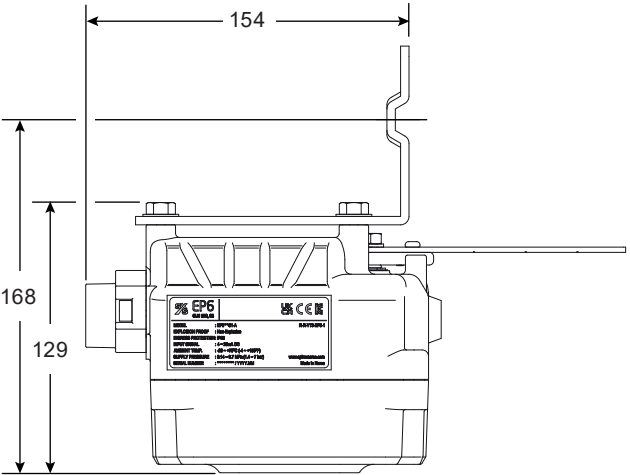
Dimensions (approximate) in mm



Linear left mounted

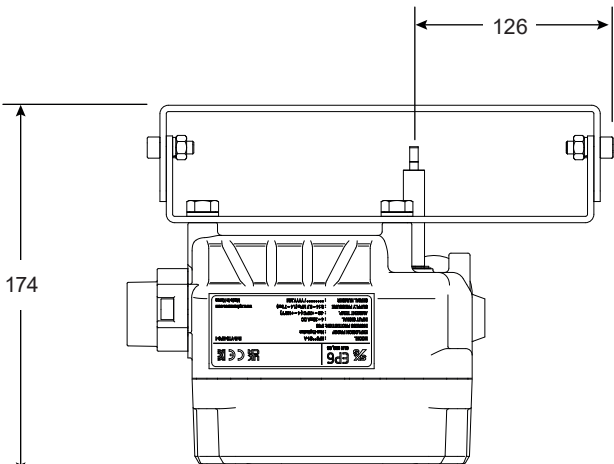
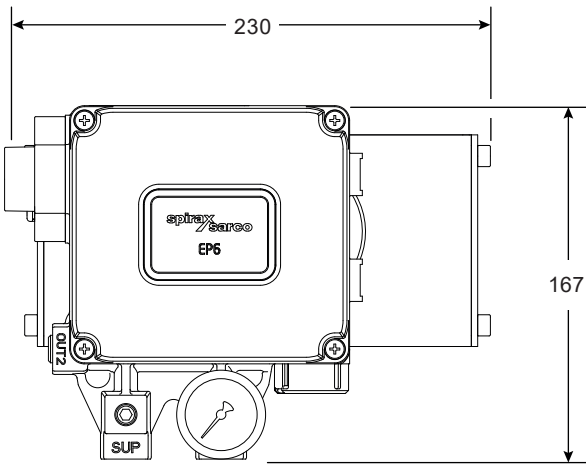


Linear centrally mounted



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Rotary mounted

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Control systems  
Positioners and controllers

Mounting/linkage kit : Positioner mounting kits will be supplied for central mounting as standard.

Mounting Position	Actuator Model	Valve Models	Valve Sizes	Spirax kit Nomenclature
Central	PN9100	Spira-trol™ two port and QL three port	DN15 to DN50	EY3
	PN9200		DN15 to DN100	
	PN9300			DN125 to DN300
	PN9400			
	TN2150	Spira-trol™ two port and QL three port	DN15 to DN100	EY3
	TN2300		DN125 to DN300	EY4
	TN2400			
	TN2270			
	PN3000 Sprg Ext	LE, LEA and Steri-trol	DN15 to DN100	EY3
	PN4000 Sprg Ret			
	PN5000	KE, KEA, LE and LEA	DN15 to DN100	EY3 + UBC
	PN6000			
	PN5000	Spira-trol™ QL three port	DN125 to DN200	EY4 + UBC
	PN6000			
Left side	PN9100	Spira-trol™ two port and QL three port	DN15 to DN50	UY3
	PN9200		DN15 to DN100	
	PN9300			DN125 to DN300
	PN9400			
	TN2150	Spira-trol™ two port and QL three port	DN15 to DN100	Not Compatible
	TN2300		DN125 to DN300	UY1
	TN2400			
	TN2270			
	PN3000 Sprg Ext	LE, LEA and Steri-trol	DN15 to DN100	UY3
	PN4000 Sprg Ret			
	PN5000	KE, KEA, LE and LEA	DN15 to DN100	UY3 + UBC
	PN6000			
	PN5000	Spira-trol™ QL three port	DN125 to DN200	UY1 + UBC
	PN6000			
	PN1600	'C' series	DN65 to DN100	UY1
	PN1600	'C' series	DN125 to DN200	UY2
	PN1600	Spira-trol™	DN125 to DN300	

Customer requirement example:  
1 off Electro-pneumatic positioner for use with single acting PN9300 actuator, having 30 mm stroke.

How to order  
Example: 1 off Spirax Sarco EP6SLS1-A Electro-pneumatic Positioner + EY3 mounting kit.  
Caution: The EP6 positioner must have a high quality air supply to ISO 8573-1:2010 Class 3:3:2.