ELECTRO-PNEUMATIC POSITIONERS
PS100

DESCRIPTION



The ADCATrol PS100 is a digital electronically configurable positioner designed for mounting to pneumatic linear or rotary actuators. It features a small and compact design with an excellent cost-performance ratio.
Fully automatic determination of the control parameters and adaptation to the final control element yield considerable time savings and an optimal control behaviour.

MAIN FEATURES

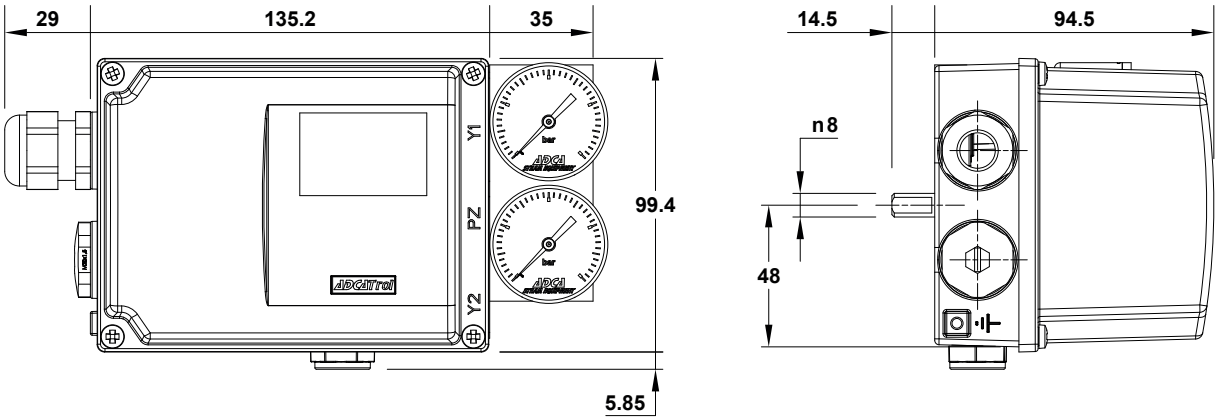
Low operating cost.
Compact and cost-effective.
Easy to comission with user-friendly interface.
Mounting onto any linear or rotary actuator.
Negligible air consumption in stationary operation.
Increased shock and vibration resistance, including steam hammers.
Non-contact position detection with one-button initialization.
Leakage compensation to ensure a constant actual value and to protect the actuator.
Fast response in end positions ensures short positioning times and tight valves.
Fast open/close end position behavior.

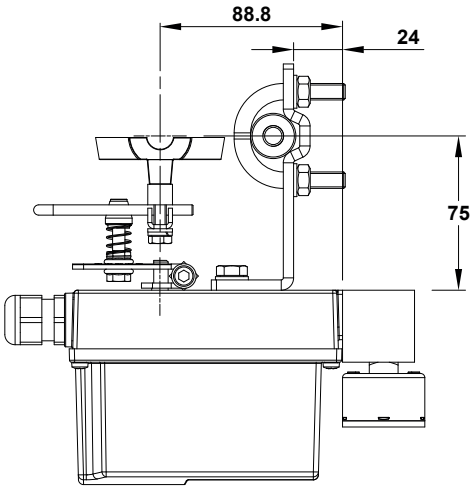
OPTIONS AND ACCESSORIES:

ATEX, FM, CSA and IECEx approvals.
Module for analog position feedback.
Digital input and digital output signals.
Attachment kit for linear actuators according to IEC 534/NAMUR and rotary actuators according to VDI/VDE 3845.
Connection manifold with gauges.

AVAILABLE MODELS:

PS100.





TECHNICAL DATA

GENERAL	
IP rating	IP 66 NEMA 4X
Material	Housing in Aluminium or Alu/polycarbonate Gauge block in aluminium or stainless steel Pressure gauge in stainless steel and brass
Pneumatic connections	Female threaded ISO 228 G 1/4" or 1/4" NPT
Electrical connections	M20 x 1,5 or NPT Cable glands Screw terminals: max. 2,5 mm²
Weight	Approx. 1 kg (without accessories)
Mounting orientation	Any *
Directives	Compliant with: - EMC directive 2004/108/EC from 12/2004 - EC Directive for CE conformity marking

* In wet environments the pneumatic connections and exhaust openings should not be facing upwards.

OPERATING CONDITIONS	
Ambient temperature	-20 to +80 ºC
Relative humidity	0 to 100%
Pollution degree acc. to IEC 61010-1	2
Overvoltage category acc. to IEC 61010-1	II
Vibration resistance	98 m/s², 27 to 300 Hz *

* Recommended continuous operation range of the complete valve of 30 m/s².

CONTROLLER	
Controller unit	Adaptive five point switch
Deadband	Adjustable max. value ± 0,1 to 3% Minimization of the max. value is always active
Analog input (IA)	Sampling interval: 50 ms Resolution: 0,05%
Position detection	Sampling interval: 10 ms Resolution at 10mm stroke: 0,1% Temperature influence effect: 0,1%/10 K

We reserve the right to change the design and material of this product without notice.

AIR SUPPLY *	
Purity	Maximum particle size: 5 µm Maximum particle density: 5 mg/m³
Oil content	Maximum concentration: 1 mg/m³
Pressure dew point	Minimum 20 K below operating temp
Supply pressure **	1.4 to 7 bar
Air consumption	In stationary operation: < 36 x 10^{-3} Nm³/h During pressurization: 7,1 Nm³/h at 4 bar; 9,8 Nm³/h at 6 bar During exhaust: 13,7 Nm³/h at 4 bar; 19,2 Nm³/h at 6 bar
Valve leakage	< 6 x 10^{-4} Nm³/h
Sound pressure	L_{Aeq} < 75 dB; L_{Amax} < 80 dB

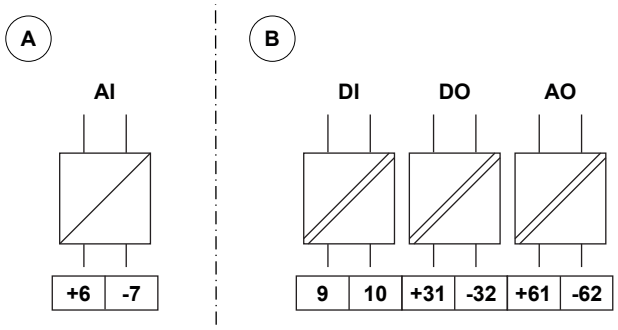
* Free of oil, water and dust, according to DIN/ISO 8573-1, with oil content and purity according to Class 3.

** Do not exceed the maximum operating pressure of the actuator!

ELECTRICAL CONNECTIONS

TERMINALS	
TERMINAL	**DESCRIPTION**
+6 / -7	Analog input
9 / 10	Digital input DI (optional)
+31 / -32	Digital output DO (optional)
+61 / -62	Analog feedback AO (optional)

Remarks: The descriptions on the PS100 front cover sticker does not imply that the unit is fitted with the respective option modules. Optional modules are not retrofitable and can not be activated with a digital key.



A Basic device

B Options

ANALOG INPUT (AI)	
Terminals	+6 / -7
Nominal operating range	4 to 20 mA, two-wire
Minimum current to maintain operation	3,8 mA
Static destruction limit	± 40 mA
Load voltage	6,5 V at 20 mA
Impedance	325 Ω at 20 mA

MODULE FOR ANALOG FEEDBACK (AO) *	
Terminals	+61 / -62
Signal range	4 to 20 mA
Faulty current	< 3,6 mA
Supply voltage (two-wire technology)	24 V DC (12 to 30 V DC)
Resolution	0,05%
Transmission error	± 0,3%
Effect of ambient temperature	± 0,1%/10K
Max. residual ripple	± 0,5%
Electrical isolation	Electrically isolated from the other inputs and outputs

Remarks: Without any signal from the positioner (e.g. “no power”, “initializing”, or in the event of an error), the module sets the output to >20 mA (alarm level).

DIGITAL INPUT (DI)	
Terminals	9 / 10
Electrical isolation	Electrically connected to analog signal and isolated from the outputs
Signal state “0”	> 300 kΩ
Signal state “1”	< 3 kΩ
Contact load	Max. contact load < 20 µA, 3V (suitable only for floating contact)

DIGITAL OUTPUT (DO)	
Terminals	+31 / -32
Max. supply voltage	35 V
External current consumption	To be limited to 50 mA
Signal status High	Conductive, maximum rated voltage of 3 V
Signal status Low	Blocked, I < 60 µA *

* Locked is also the state at which the device is faulty or analog input (AI) is equal to 0 mA.

Remark: For full product specifications, including requirements for use in potentially explosive atmospheres please consult.

We reserve the right to change the design and material of this product without notice.

ORDERING CODES PS100										
GROUP DESIGNATION	**6DR71**	**0**	**1**	**0**	**N**	**N**	**0**	**11A**	**A9**	
PS100 – Electro-pneumatic positioner	**6DR71**									
ENCLOSURE MATERIAL										
Aluminium body and polycarbonate lid with inspection window		**0**								
Aluminium body and lid without inspection window (non standard)		**1**								
OUTPUT / SAFE POSITION (IN CASE OF AN ELECTRIC POWER FAILURE)										
Single acting, fail safe			**1**							
Double acting, fail safe (non standard)			**2**							
EXPLOSION PROTECTION										
Without explosion protection				**0**						
Ex ia (ATEX, IECEx, FM, CSA,...) **(a)**				**1**						
COMMUNICATION										
4 to 20 mA					**N**					
DIGITAL SIGNALS										
Without digital signal module						**N**				
Digital input (DI) and digital output (DO) **(b)**						**A**				
ANALOG POSITION FEEDBACK										
Without analog output module							**0**			
Analog position feedback (AO), signal range 4 to 20 mA, two-wire							**1**			
CONNECTIONS										
Electrical: M20 x 1,5 with plastic cable glands; Pneumatic: ISO 228 G 1/4"								**11A**		
Electrical: 1/2" NPT without cable glands; Pneumatic: 1/4" NPT								**44B**		
MOUNTED ACCESSORIES										
None									**A9**	
SPECIAL CONSTRUCTION / ADDITIONAL OPTIONS										
A full description must to be provided and validated in case of a non-standard construction										**E**

(a) ATEX 2 G Ex ia IIC T4 Gb. IECEx II 2 G Ex ia IIC T4 Gb. FM Cl Zn 1 AEx ia IIC T4 Gb. CSA Ex ia IIC T4 Gb. For further information consult the manufacturer.

(b) Not available with Ex ia explosion protection.

We reserve the right to change the design and material of this product without notice.