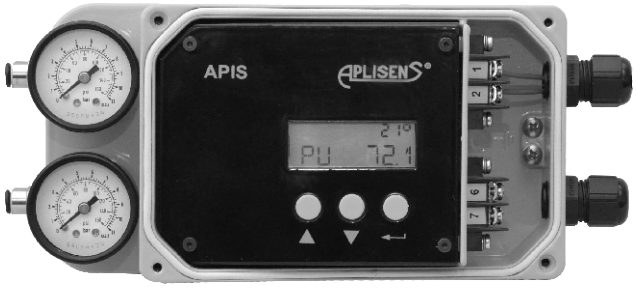
Electropneumatic positioner APIS

- ✓ **HART protocol**
- ✓ **ATEX certificate Ⓔx II 2G Exia IIC T6/T5 Gb**
- ✓ **Simple in installation and programming**
- ✓ **Possibility of remote assembling of positioner**
- ✓ **Low air consumption**
- ✓ **Programmable speed of movement of the actuator's piston rod**
- ✓ **Position transmitter**
- ✓ **Possibility of manual controlling of position of actuator's piston rod**



Technical data

Input signal (control)	4…20mA
Output signal (position transmitter)	4…20mA + Hart
Supply of position transmitter	10÷36 VDC (Ex 10÷30 VDC)
Input resistance	490 Ω /20mA
Supply pressure	140÷800 kPa
Pneumatic input signal (control actuator)	0…100% of supply pressure
Own air consumption	≤ 0,035 kg/h at supply voltage 140 kPa ≤ 0,015 kg/h at supply voltage 600 kPa
Air mass stream on positioner output	≥ 3,25 kg/h at supply voltage 140 kPa ≥ 13kg/h at supply voltage 800 kPa
Actuator piston rod displacement range	10÷100 mm (for single-acting linear actuators) 80÷900 mm (for double-acting linear actuators) 0÷180º (for rotational actuators)
Actuator operation characteristics	linear
Positioner operation mode	normal or reversible
Positioner transducer mode	normal or reversible
Additional errors	< 0,05% / 100kPa
- from supply pressure changes	0,15% / 10ºC – for temperature range -30ºC÷+60ºC
- from ambient temperature changes	0,25% / 10ºC – for temperature range -30ºC÷-40ºC and +60ºC÷+85ºC
- from vibration in range: 10...60Hz, amplitude < 0,35 mm 60....500Hz, acceleration 5g	0,25%
Hysteresis	< 0,4%
Insensibility threshold	< 0,1%
Protection degree of positioner enclosure	IP 65 according to PN-EN 60529:2003
Operation position	any
Weight	1,8 kg

Operating conditions

Working medium	air free of dust, oil, aggressive pollutants, solid particles bigger than 1.5 µm, such relative humidity not lower that dew point's temperature should not be lower than 10 °C with respect to ambient temperature (acc. to PN-EN 60654-2:1999).
Ambient temperature Execution without manometers and with stainless steel manometers:	-40ºC÷+85ºC
Executions with manometers in stainless steel and carbon steel enclosure:	-25ºC÷+65ºC
Humidity of ambient air	< 95%
Allowable vibrations 10...60Hz, 60...500Hz	acc. to PN-EN 60654-3: 1997; class VH6 amplitude < 0,35 mm acceleration ≤ 5g

Ordering procedure

APIS - X X X – DXX – RXX – IXX – TXX – PX – MX – WX – AX

Intend use:
- for single-operating actuator..... **1**
- for double-operating actuator..... **2**

- for actuator with linear movment..... **0**
- for actuator with rotational movment..... **5**

- for installation on acutator..... **0**
- for installation outside acutator..... **1**

Distance of positioner from actuator:
- … m (0 ÷ 15 m)..... **XX**

Execution:
- standard..... **St**
- intrinsically safe ⟨Ex⟩II 2G Exia IIC T6/T5 Gb..... **EX**

Input signal:
- 4÷20 mA [1]..... **AN**
- 4÷20 mA + HART protocol with pressure sensor..... **HS**
- 4÷20 mA + HART protocol without pressure sensor..... **HE**

Analog position transmitter:
- without position transmitter..... **00**
- with output signal 4÷20 mA [2]..... **20**

Pneumatic connectors:
- without connectors (1/8"NPT female port)..... **0**
- connectors to brass pipes ø6 mm..... **1**
- connectors to stainless steel pipes ø6 mm..... **2**
- connectors to Polyethylene pipes ø6 mm..... **3**
- connectors to brass pipes ø8 mm..... **4**
- connectors to stainless steel pipes ø8 mm..... **5**
- connectors to Polyethylene pipes ø8 mm..... **6**
- connectors to Polyethylene pipes ø6 mm (ERMETO)..... **7**

Manometers:
- without manometers..... **0**
- with manometers in standard execution (Ø 40 mm, black color steel housing, glass window).. ..... **1**
- with manometers in st. steel execution (Ø 40 mm, st. steel housing, glass window)..... **2**
- with manometers in st. steel execution and st. steel wetted parts (Ø 40 mm, glass window)..... **3**

Electrical entry:
- without packing gland (thread M16x1,5)..... **0**
- plastic packing gland (Ø 4 ÷ 9 mm cable) [3]..... **1**
- nickeled brass packing gland (Ø 4 ÷ 9 mm cable)..... **2**

Mounting kit:
- without mounting kit..... **0**
- with mounting kit (code according to documentation)..... **X**

[1] The positioner can control analogue reverse signal 20-4 mA. The reverse function of control signal is switched on programmatically by the user.
[2] The positioner can set reverse of analogue output signal (20-4 mA). The reverse function of the output signal is switched on programmatically by the user.
[3] Not available with ATEX

Example:
Electropneumatic positioner is intended for installation on one-sided, linear movement actuator, in standard execution, with analogue input signal 4…20 mA with input signal from position transmitter (4…20 mA) with connectors to the polyethylene pipes ø 6 mm, with manometers in standard execution for measurement of air supplying positioner and pressure of actuator's control air.

Electropneumatic positioner, type **APIS-100-D00-RSt-IAN-T20-P3-M1-W1-A0**

Mounting set – ordering procedure

POSITIONER TYPE	SPECIFICATION AND THE TYPE OF THE PNEUMATIC ACTUATOR		APIS-A0XX
	ACTUATOR TYPE	ACTUATOR SPECIFICATION	
APIS-100-…	Piston spring-and-diaphragm single acting	**Diaphragm multi-spring (actuator mounted on the columns)** Type P or R, Polna Ltd company or type 5700 and 5333, Spirax Sarco company - for APIS-100 - for APIS-101	00
APIS-101-…			10
APIS-100-…		**Yoke** Type 37 or 38, Polna Ltd company - for APIS-100 - for APIS-101	01
APIS-101-…			11
APIS-100-…		**Diaphragm multi-spring** Type P1 or R1, Polna Ltd company - for APIS-100 - for APIS-101	02
APIS-101-…			12
APIS-100-…		**In accordance with PN-EN 60534-6-1:2001** Actuator with control valve from Samson or Arca Regler company - for APIS-100 - for APIS-101	03
APIS-101-…			13
APIS-100-…		According to customer specification	40
APIS-101-…			40
APIS-150-… **APIS-250-…**	Rotary, single or double acting	**In accordance with EN ISO 5211, DIN 3337, VDI/VDE 38450 Namur** e.g. actuators of Air Torque company , series AT and AD, Ebro- Armaturen type EB-EW and EB-DW, EL-O-Matic series PE, ES, PD, ED	50
APIS-151-… **APIS-251-…**		According to customer specification	55
APIS-150-… **APIS-250-…**		According to customer specification	52
APIS-151-… **APIS-251-…**		According to customer specification	56

Drawings available on the website

Example 1: Mounting set for the positioner APIS-100-… intended for use with the spring-and-diaphragm single action pneumatic actuator type P1 from Polna Ltd company

Mounting set **APIS-A002**

Example 2: Mounting set for the positioner APIS-1250-… intended for use with rotary, part-turn double action pneumatic actuator

Mounting set **APIS-A050**

APIS 250 (for double-operating actuator with rotational movment)

Mounting set – ordering procedure

POSITIONER TYPE	SPECIFICATION AND THE TYPE OF THE PNEUMATIC ACTUATOR		APIS -	X	X	XX
	ACTUATOR TYPE	ACTUATOR SPECIFICATION				
APIS-200-…* APIS-201-…	Double-acting piston actuator with linear piston rod movement	**In accordance with ISO 6431** e.g. actuators from PREMA or FESTO - for APIS-201 - for APIS-200		A		
		CNOMO series from PREMA Kielce/Poland - for APIS-201 - for APIS-200		B		
		According to customer specification		C		
			Ø of piston [mm]			
			According to customer specification		1	
			Ø 63; ISO-6431; M16x1,5; G3/8" CNOMO; M20x1,5; G3/8"		2	
			Ø 80; ISO-6431 i CNOMO M20x1,5; G3/8"		3	
			Ø 100; ISO-6431; M20x1,5; G1/2" CNOMO; M27x2; G1/2"		4	
			Ø 125; ISO-6431 i CNOMO M27x2; G1/2"		5	
			Ø 160; ISO-6431 i CNOMO M36x2; G3/4"		6	
			Ø 200; ISO-6431 i CNOMO M36x2; G3/4"		7	
			Ø 250; ISO-6431; M42x2; G1"		8	
			Ø 320; ISO-6431; M48x2; G1"		9	
			Actuator's stroke [mm]			
			80			01
			100			02
			125			03
			150			04
			160			05
			200			06
			250			07
			300			08
			320			09
			400			10
			500			11
			600			12
			According to customer specification			40

Drawings available on the website

* - Apply for pneumatic actuator with a maximum 300 mm stroke.

Example 3: Mounting set for the positioner APIS-201-… intended for use with a double-action piston pneumatic actuator which comply with ISO 6432 standard (cylinder diameter 100mm, rotary, part-turn double action pneumatic actuator, thread M20x1.5 at the tip of the rod, attachment holes of the control pressure G1/2", actuator's stroke 250mm)
Mounting set **APIS-A050**