

1600 Series Intelligent Electropneumatic Valve Positioner

1600 Position controller

1601 Process controller

- Compact stainless steel design
- Electrical waterproof connectors
- LCD with backlight
- Easy to start-up
- Rich additional software functions



1600 series intelligent electro-pneumatic valve positioner is designed for integral pneumatic control valve, particularly suitable for angle seat valves and diaphragm valves.

The product is easy to operate and has rich software functions.

It can easily be operated via the LCD and keypad.

The positioner adjusts the valve position quickly and accurately through detecting the position sensor signal.

Technical data	
Material	PC、PA6-GF30、Stainless Steel、SI
Power supply	24V DC $\pm 10\%$
Set-point signal (1600/1601)	0/4-20mA or 0-5/10 V
Input resistance for set-point signal	240 Ω at 0/4-20mA, 20K at 0-5/10V
Control medium	neutral gases, air DIN ISO 8573-1 Solid particle size and density Class 3 Dew point Class 3 Oil content Class 3
Dust concentration	
Particle density	
Pressure condensation point	
Oil concentration	
Ambient temperature	0-60°C
Pneumatic connection	Plug-in hose connector G1/4(internal $\Phi 6\text{mm}$)
Electrical connection	M12 3-pins B-coded(cable $\varnothing$ 4-6mm) M12 4-pins D-coded(cable $\varnothing$ 4-6mm) M12 5-pins A-coded(cable $\varnothing$ 4-6mm)
Supply pressure	3~7 bar, specific values depending on the actuator
Air flow rate	17 l/min(input pressure of 0.6Mpa) 95 l/min(input pressure of 0.6Mpa ,only single-acting)
Stroke control range	Line 5-50mm Angle 90°
Installation	As required, Preferably with actuator in upright position, Screw
Protection class	IP67
Power consumption	<5W
Linearity & Hysteresis	Linearity: $\leq 0.5\%$, Hysteresis: $\leq 0.5\%$

Combinations

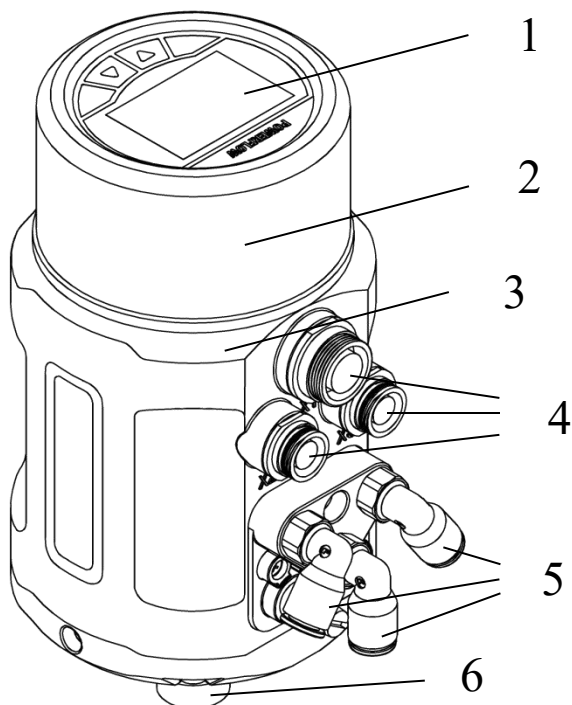


Diaphragm control valve



Angle seat control valve

Structure



1. **LCD and key panel**
2. **Stainless steel body casing**
3. **Main body casing**
4. **Electrical connection**
5. **Pneumatic connection**
6. **Actuator connection**

Selection and ordering data

1600 Without process control function 1601 With process control function	Product series
N No feedback signal Y 4-20mA feedback signal	Feedback signal
S Single-acting D Double-acting	Actuator type
S2 Line 5-25 mm S3 Line 25-50 mm S4 Angle 90°	Valve max stroke
Q1 17 l/min Q2 95 l/min	Air flow rate
T1 G1/4 T2 M16 * 1 T3 M22 * 1.5 T4 M26 * 1.5	Thread type
S Safe F Freeze	Power off state for single-acting

1600	—	N	—	S	—	S2	—	Q1	—	T1	—	S
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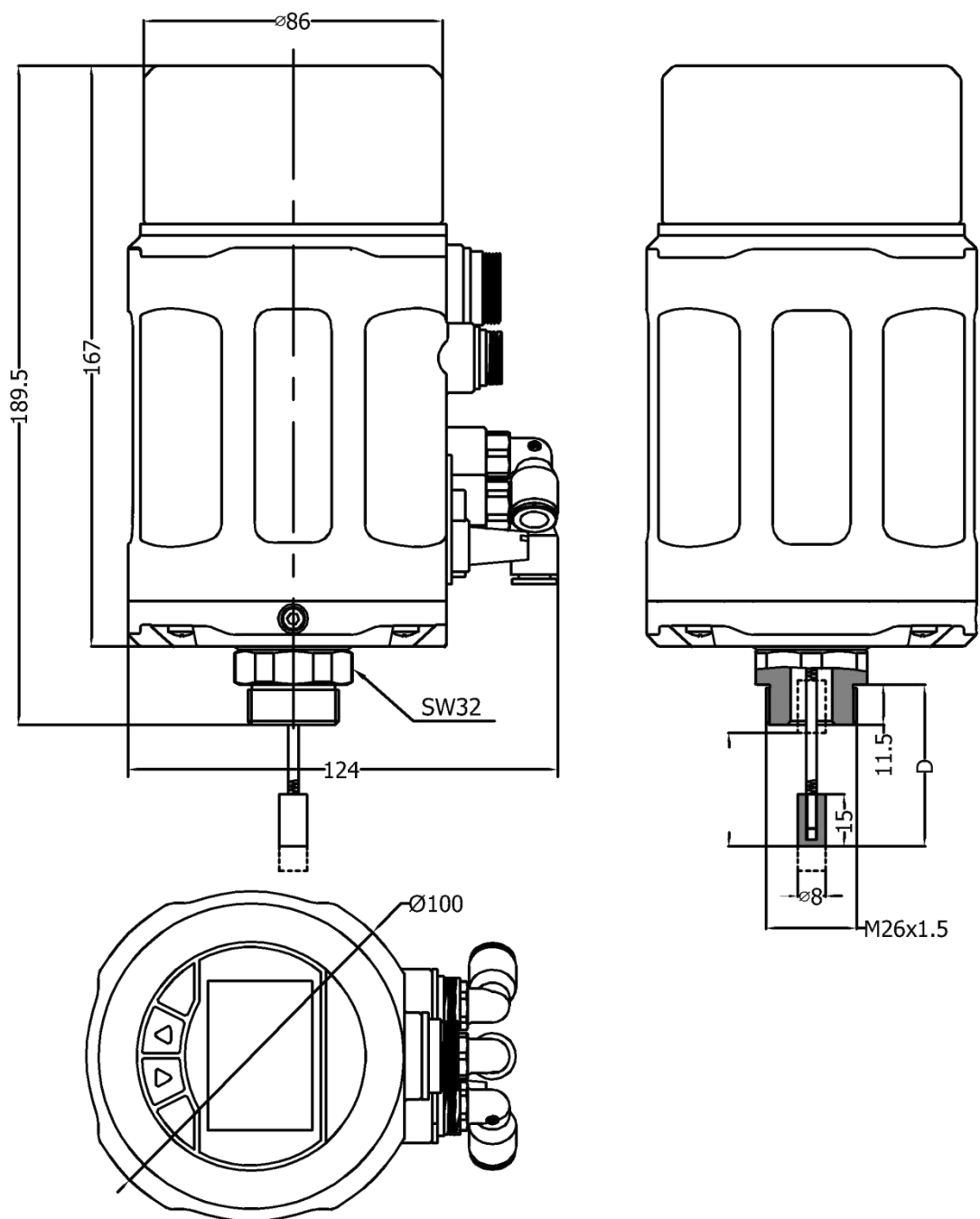
Remark:

In the **air flow rate** option, code Q1 is suggested to match the actuator of 40-100 mm internal gas chamber diameter, code Q2 is suggested to match the actuator of 125-160 mm internal gas chamber diameter. Code **Q2** is only used for **single-acting actuator**, and only in **Freeze** state when power-off. The air flow rates for code Q1 and Q2 are under the condition of 0.6Mpa input pressure.

In the **valve max stroke** option, AT actuator range for code S4 is AT50~AT125. For other actuator models, please consult our company. It is no need to select the **thread type** option for code S4.

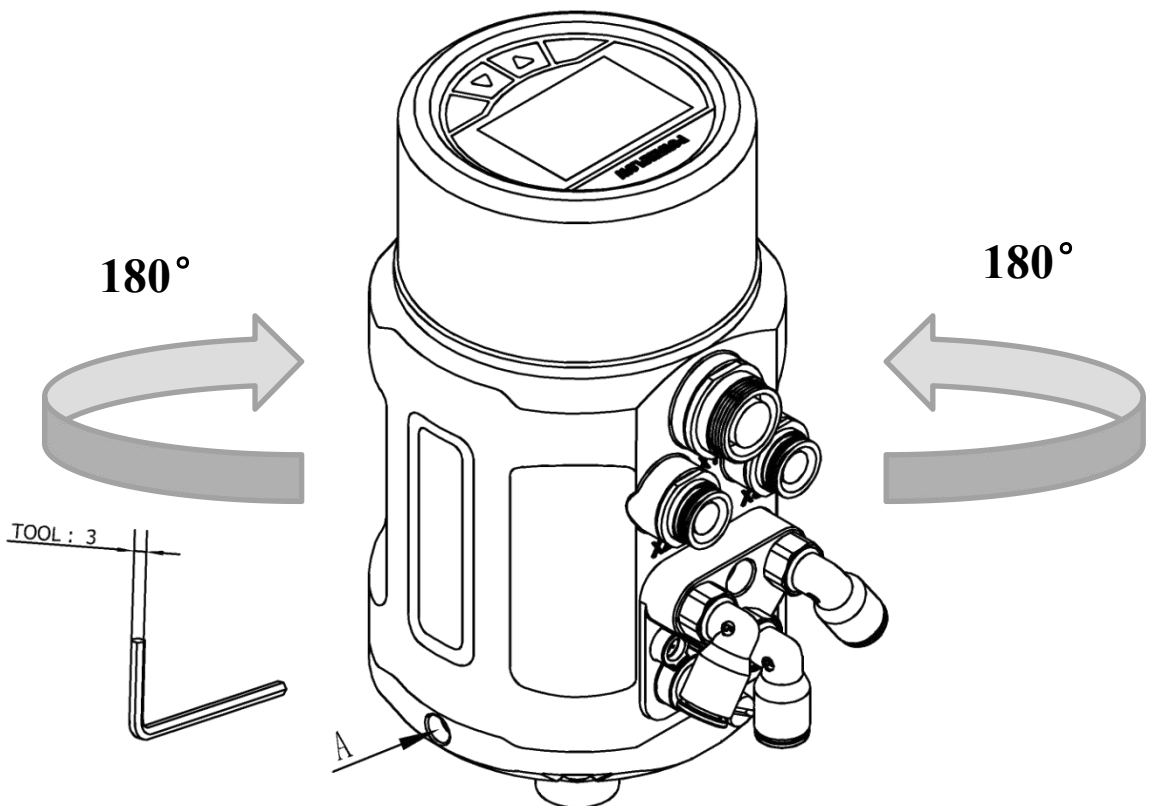
Power off state for single-acting option is **Safe** by default.

Dimensions

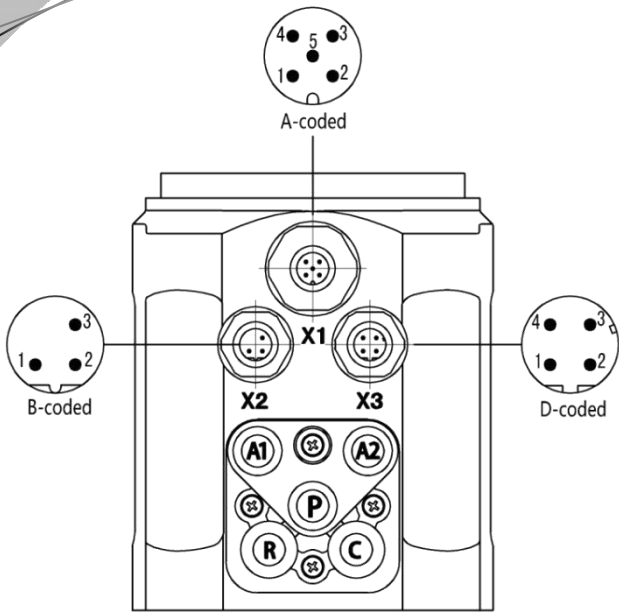


Interface angle adjustment

The angel can be adjusted between the positioner and the valve.If need to adjust the interface angle,relaxing the hexagon screw in place A first.Then adjusting the angle clockwise or counter-clockwise in 180° range. After adjusting the angle, locking the angle by the hexagon screw.



Electrical connections



X2 (1601)

Pin	Description	Signal type
1	Transmitter input +	+24 V
2	Transmitter signal output	4-20 mA
3	Transmitter GND	GND

X3 (1600/1601)

Pin	Description	Signal type
1	Power supply +	+24 V
2	Power supply GND	GND
3	Set signal input +	0/4 – 20 mA or 0 – 5/10 V
4	Set signal input GND	GND

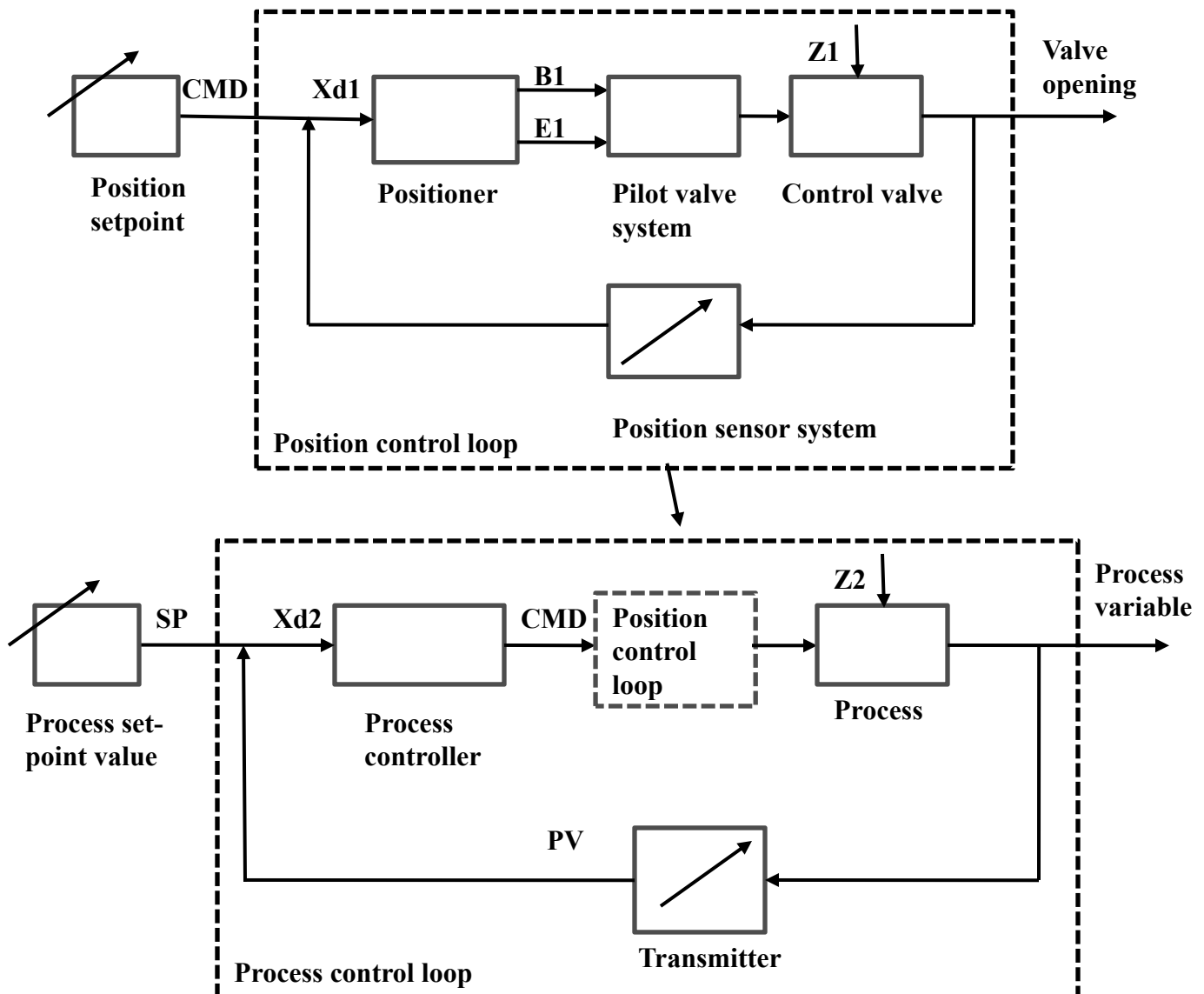
X1 (1600/1601)

Pin	Description	Signal type
1	Analogue signal output +	0/4 – 20 mA
2	Binary signal output 1	0/24 V
3	Binary signal output 2	0/24 V
4	Binary signal input +	0-3V = “0” , 15-30V = “1”
5	Signal common GND	GND

Pneumatic connections

P	Air supply enter(built-in filter, filter size 5 μm)
R	Air exhaust
C	Check valve
A1	Pilot air outlet 1
A2	Pilot air outlet 2

Signal flow diagram

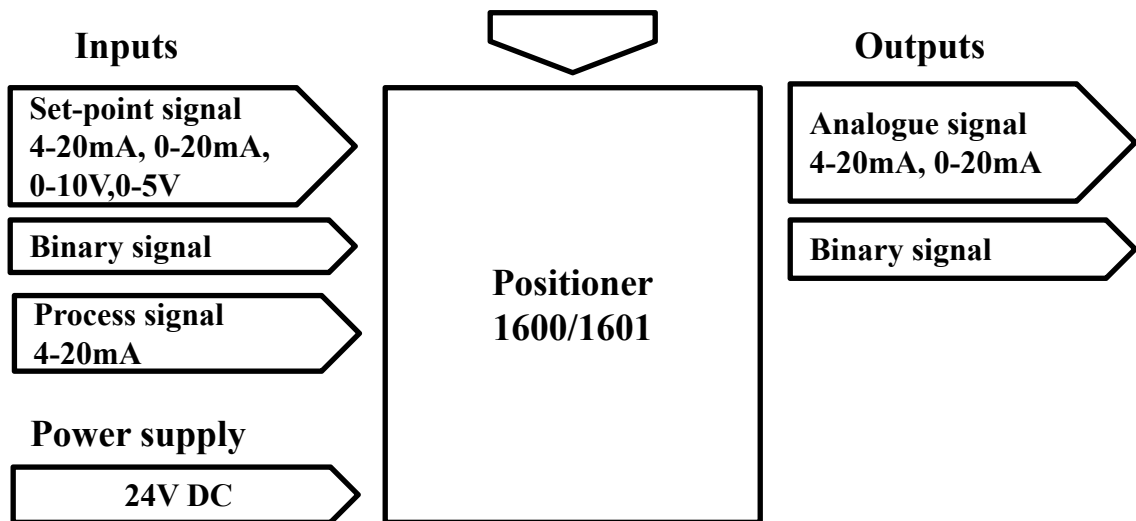


Additional software functions

- Selection of the transfer characteristic between set-point value and stroke.
- Sealing function for position controller.
- Effective sense of direction between input signal and set-point value.
- Limit of the mechanical stroke range.
- Setting for control parameters.
- Safety position setting for the position controller.
- Configuration of signal level fault detection.
- Activating of the binary input.
- Configuration of the outputs.
- Calibrating the control parameters.
- Setting for manual control rate.
- Code protection.

Schematic diagram

Operation through keypad



Function comparison for all types

FUNCTION	1600	1601	1500
Process control	×	√	×
4-20mA signal input	√	√	√
4-20mA signal output	○	○	○
Autotune	√	√	√
Valve position manual adjustment	√	√	√
Sealing function	√	√	√
Dead band setting	√	√	√
4-20mA input signal error detection	√	√	√
Factory setting	√	√	√
Characteristic curve setting	√	√	×
Direction of set-point value	√	×	×
Valve stroke range limiting	√	√	×
Safety position setting	√	√	×
Binary signal input/output	○	○	×
Input signal calibration	√	√	×
Speed setting of manual adjustment	√	√	×
Code protection	√	√	×

√	YES
×	NO
○	optional