

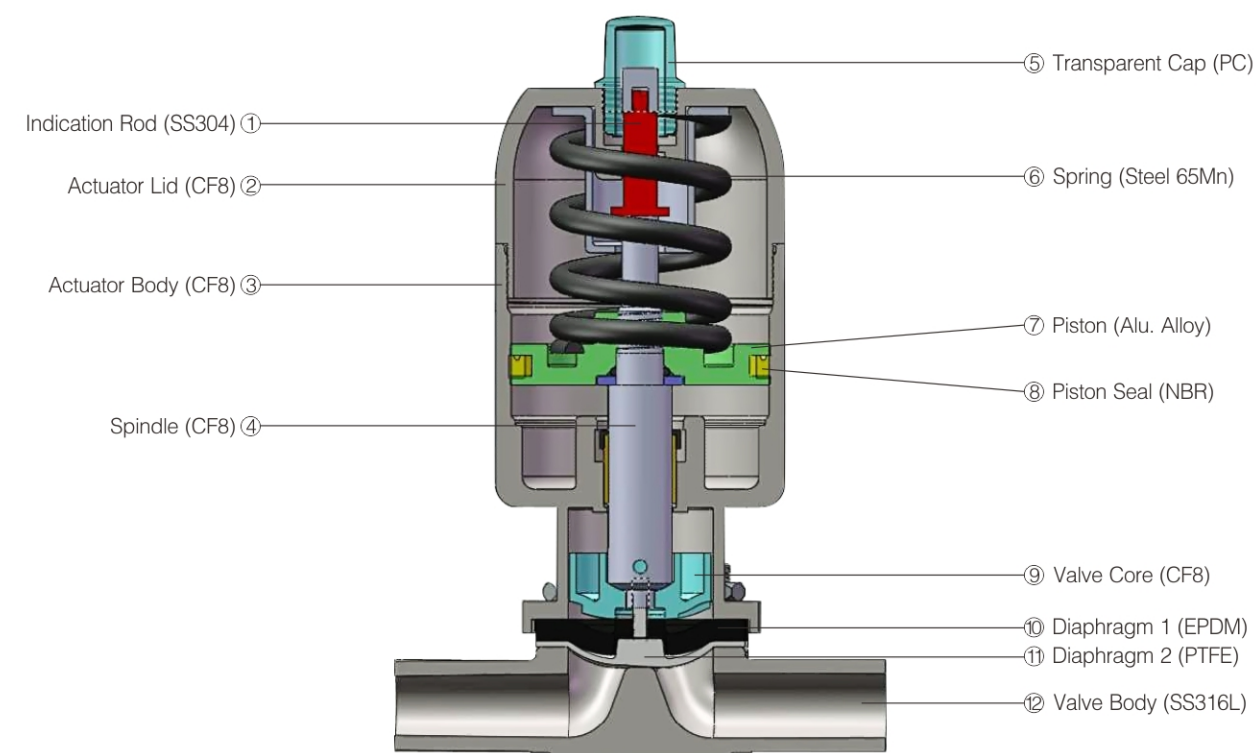
Diaphragm Valve



Diaphragm valves are widely used in pharmaceutical, beverage, food, and chemical industry, due to its large flux and low residue, ensuring safety and reliability. The diaphragm meets safety standards set by FDA and USP for pharmaceutical and food industries, and satisfies various requirements and demands of end users. ESG never ceases to adapt to the ever-changing market demand with high-quality products.

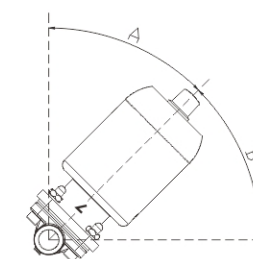
Application Industry

Pharmaceutical, food and beverages, cosmetics, brewing, chemicals, etc.



Installation Angle

Size	Installation angle	
	A	B
DN08	40.4°	49.6°
DN10	33.6°	56.4°
DN15	22.2°	67.8°
DN20	26.5°	63.5°
DN25	29.9°	60.1°
DN40	27.2°	62.8°
DN50	30.1°	59.9°



Technical Specification

- Material: (Body) SS316L
(Pneumatic) Actuator + Valve seat SS304;
(Manual) Valve seat SS304
- Internal surface: $Ra \leq 0.4 \mu m$, mechanically polished
- Diaphragm material: EPDM + PTFE
(double-layer diaphragm)
- Operating pressure: 0–10bar (0–145psi)
- Fluid temperature: $-10^{\circ}C$ — $+150^{\circ}C$
- Control pressure(pneumatic): 4.5–7bar (65–102psi)

Typical Applications

Fermentation tank, Preparation vessel, Filling machine, Sterilizing equipment, Aseptic fluid transfer, CIP/SIP, etc.



Diaphragm Valve



Quality Control

1. Valve assembly inspection:
100% inspection according to the shipping inspection form
2. Diaphragm valve seal test:
100% valve assembly seal test, tested according to DIN EN 12266-1
3. Inner surface finish:
100% IPQC (in-process control), roughness sampling test according to GB2828
4. Contact surface inspection:
Material testing – Spectrum analyzer; Dimension inspection – Three Coordinate Measuring Machine
5. Qualification:
Quality Management System ISO9001, Food Contact Raw Materials and Products Directive EC1935-2004, Explosion-proof Safety ATEX Directive 2014/34/EU



Roughness tester



Spectromax meter



Three-coordinate measurement machine

Diaphragm Introduction



* Diaphragm is available for purchase separately

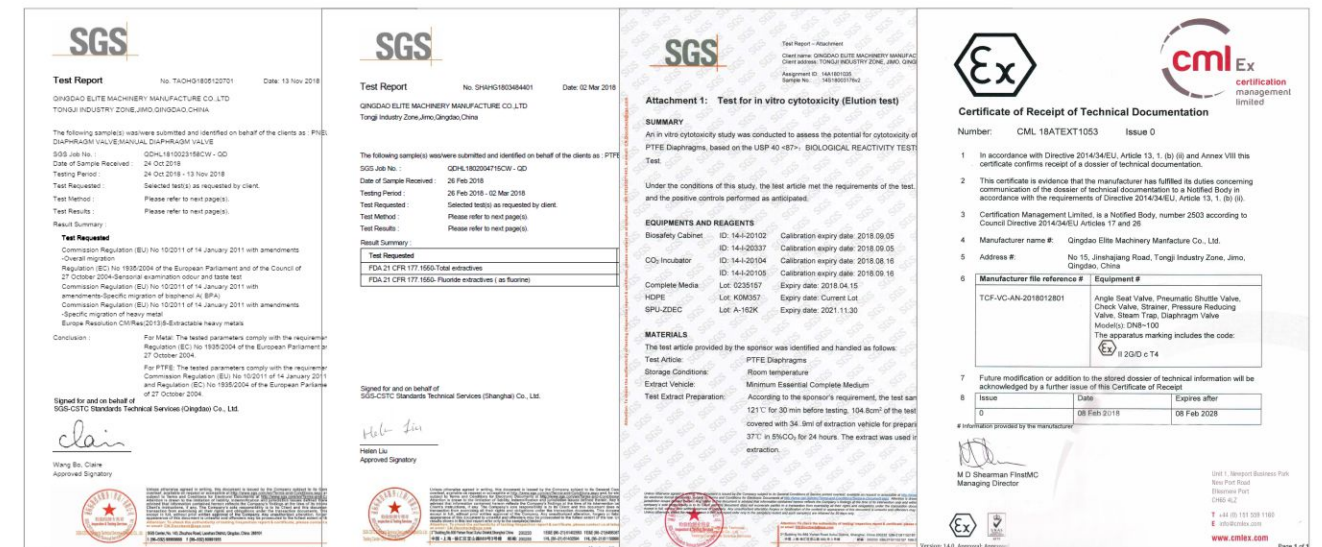
Advantages

Safety, reliability and durability of diaphragm valves are heavily dependent upon performance of the diaphragm. Diaphragm is the soul of diaphragm valve.

PTFE/EPDM two-piece diaphragm is a high-standard diaphragm typically used for aseptic and hygienic applications. PTFE diaphragms are developed and manufactured by ESG. High quality raw materials sourced globally are manufactured into highly dense, smooth and flexible diaphragm products. Our diaphragms are SIP-capable and autoclavable thanks to its superb high-temperature performance. We have tested our diaphragms through accredited institutions and obtained FDA 21CFR 177.1550 and USP40-NF25 certifications, which correspond to the highest standards in food, beverage and pharmaceutical industries.

Diaphragm certificate

ESG PTFE diaphragms are tested and certified by accredited 3rd party institution (SGS in Switzerland)



● EC 1935 / FDA(Food and Drug Administration) Certificate / USP(US Pharmacopeia) Certificate / ATEX anti-explosion certificate

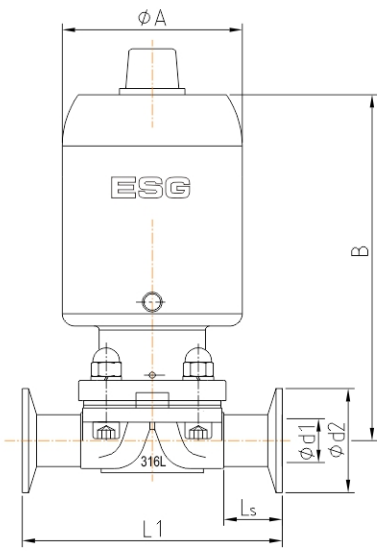
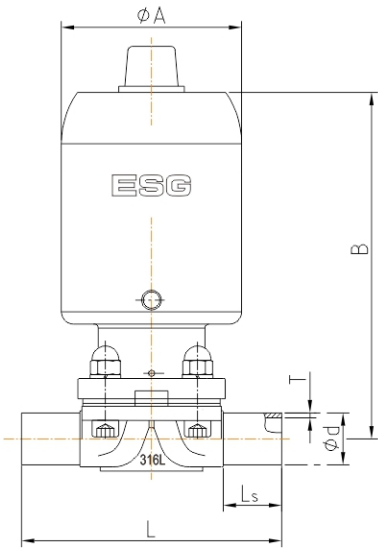
Diaphragm Valve



A00 Series
Welded Pneumatic
Diaphragm Valve



A00 Series
Tri-Clamp Pneumatic
Diaphragm Valve



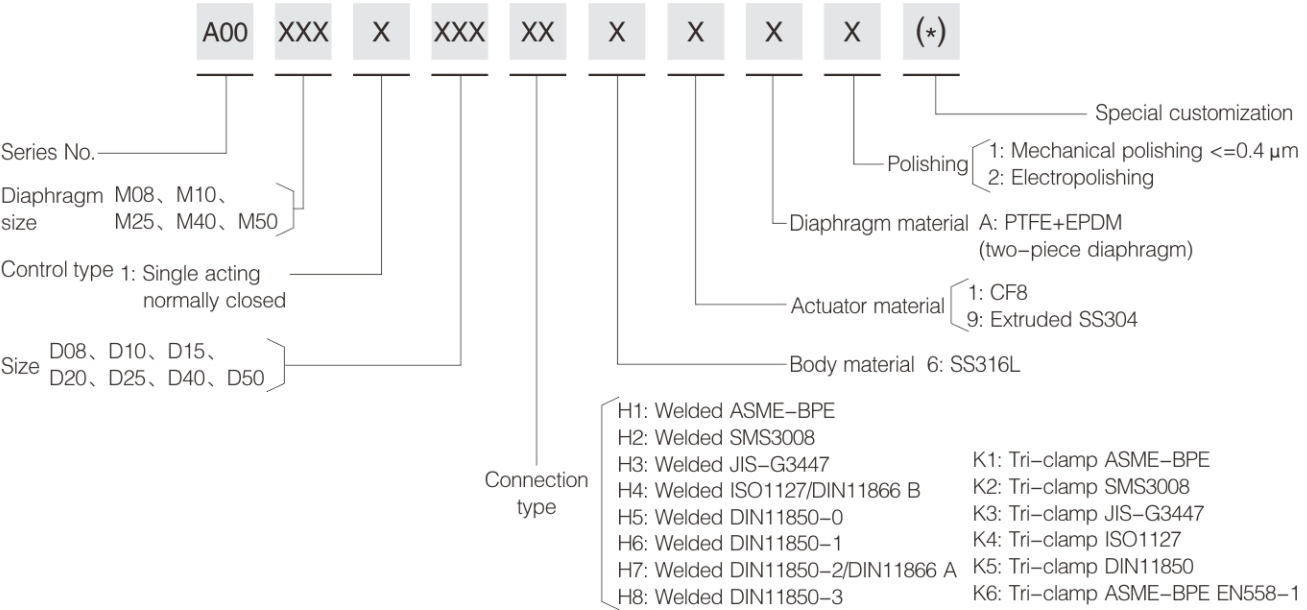
Main Dimension

Pneumatic diaphragm valve -Welded connection		ASME-BPE		SMS3008		JIS-G3447		ISO-1127		DIN-11850				DIN-11866	
										-0	-1	-2	-3	A	B
Size	Diaphragm	Actuator	ΦA	B	Ls	L	Φd×T	Φd×T	Φd×T	Φd×T	Φd×T	Φd×T	Φd×T	Φd×T	Φd×T
DN8	8	42	47	85	20	72	6.35×0.89	-	-	-	-	-	-	-	-
DN10	8	42	47	85	20	72	9.53×0.89	-	-	-	-	-	-	-	-
DN15	8	50	57	106	20	72	12.70×1.65	-	-	-	-	-	-	-	-
	10	57	65	134	29	108	-	-	-	21.3×1.6	18×1.5	18×1.0	19×1.5	20×2	19×1.5 21.3×1.6
DN20	10	57	65	134	29	108	19.05×1.65	-	-	-	-	-	-	-	-
	25	80	88	170	26	120	-	-	-	26.9×1.6	22×1.5	22×1.0	23×1.5	24×2	23×1.5 26.9×1.6
DN25	25	80	88	170	26	120	25.4×1.65	25.0×1.2	25.4×1.2	33.7×2	28×1.5	28×1.0	29×1.5	30×2	29×1.5 33.7×2
DN40	40	105	109	196	30	153	38.1×1.65	38.0×1.2	38.1×1.2	48.3×2	40×1.5	40×1.0	41×1.5	43×2	41×1.5 48.3×2
DN50	50	125	129	226	30	173	50.8×1.65	51.0×1.2	50.8×1.5	60.3×2	52×1.5	52×1.0	53×1.5	54×2	53×1.5 60.3×2

Pneumatic diaphragm valve -Tri-clamp connection						ASME-BPE			ASME-BPE			SMS3008			JIS-G3447			ISO-1127			DIN-11850		
									EN558-1 Series 7														
Size	Diaphragm	Actuator	Φ A	B	Ls	Φ d1	Φ d2	L1	Φ d1	Φ d2	L1	Φ d1	Φ d2	L1	Φ d1	Φ d2	L1	Φ d1	Φ d2	L1	Φ d1	Φ d2	L1
DN8	8	42	47	85	15.5	4.57	25	63.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DN10	8	42	47	85	15.5	7.75	25	63.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DN15	8	50	57	106	15.5	9.4	25	63.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10	57	65	134	34	-	-	-	-	-	-	-	-	-	-	-	-	18.1	50.5	108	16.0	34	108
DN20	10	57	65	134	34	15.75	25	101.6	15.75	25	117	15.75	25	117	-	-	-	-	-	-	-	-	-
	25	80	88	170	30	-	-	-	-	-	-	-	-	-	-	-	-	23.7	50.5	117	20.0	34	117
DN25	25	80	88	170	30	22.1	50.5	114.3	22.1	50.5	127	22.6	50.5	127	23	50.5	127	29.7	50.5	127	26.0	50.5	127
DN40	40	105	109	196	33	34.8	50.5	139.7	34.8	50.5	159	35.6	50.5	159	35.7	50.5	159	44.3	64	159	38.0	50.5	159
DN50	50	125	129	226	39	47.5	64	158.8	47.5	64	190	48.6	64	190	47.8	64	190	56.3	77.5	190	50.0	64	190

Other specifications available for customization.

Order Instruction



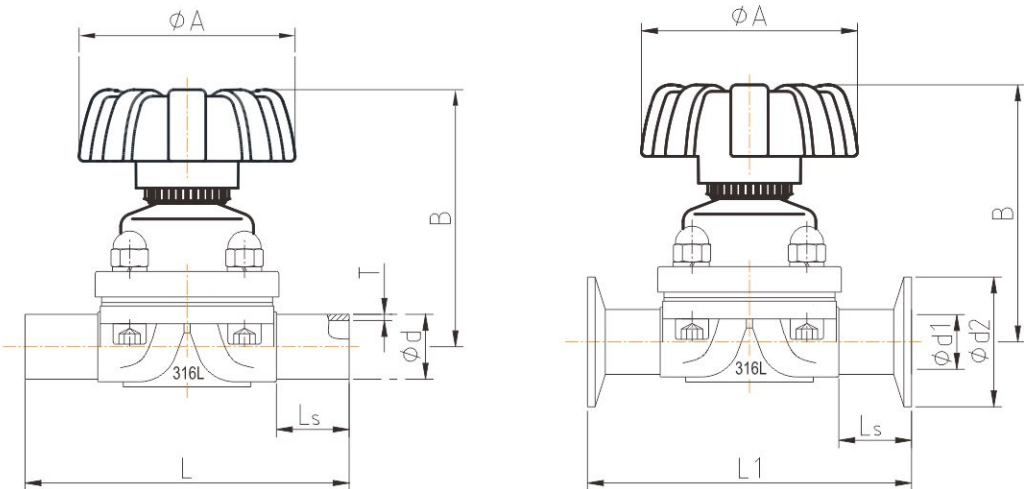
Diaphragm Valve



A01 Series
Welded Manual
Diaphragm Valve



A01 Series
Tri-clamp Manual
Diaphragm Valve



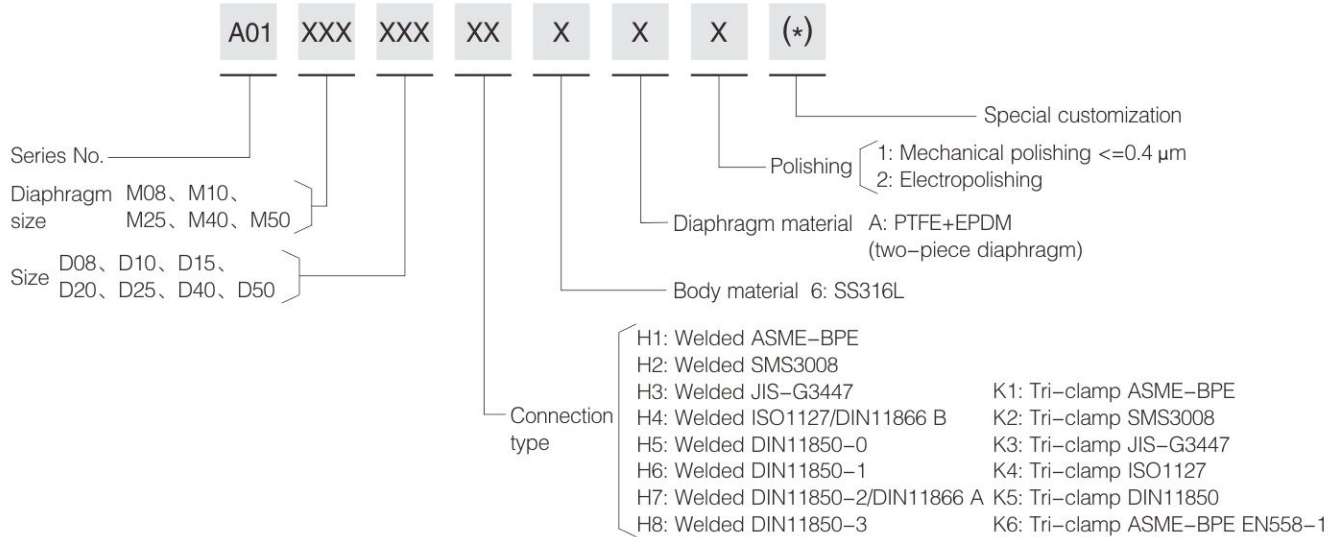
Main Dimension

Manual diaphragm valve -Weld connection						ASME-BPE	SMS3008	JIS-G3447	ISO-1127	DIN-11850				DIN-11866	
Size	Diaphragm	Φ A	B	Ls	L	Φ d × T	Φ d × T	Φ d × T	Φ d × T	Φ d × T	Φ d × T	Φ d × T	Φ d × T	Φ d × T	Φ d × T
DN8	8	40	64	20	72	6.35 × 0.89	-	-	-	-	-	-	-	-	-
DN10	8	40	64	20	72	9.53 × 0.89	-	-	-	-	-	-	-	-	-
DN15	8	50	64	20	72	12.70 × 1.65	-	-	-	-	-	-	-	-	-
DN20	10	65	85	29	108	-	-	-	21.3 × 1.6	18 × 1.5	18 × 1.0	19 × 1.5	20 × 2	19 × 1.5	21.3 × 1.6
	10	65	85	29	108	19.05 × 1.65	-	-	-	-	-	-	-	-	-
DN25	25	85	102	26	120	-	-	-	26.9 × 1.6	22 × 1.5	22 × 1.0	23 × 1.5	24 × 2	23 × 1.5	26.9 × 1.6
	25	85	102	26	120	25.4 × 1.65	25.0 × 1.2	25.4 × 1.2	33.7 × 2	28 × 1.5	28 × 1.0	29 × 1.5	30 × 2	29 × 1.5	33.7 × 2
DN40	40	105	115	30	153	38.1 × 1.65	38.0 × 1.2	38.1 × 1.2	48.3 × 2	40 × 1.5	40 × 1.0	41 × 1.5	43 × 2	41 × 1.5	48.3 × 2
DN50	50	125	133	30	173	50.8 × 1.65	51.0 × 1.2	50.8 × 1.5	60.3 × 2	52 × 1.5	52 × 1.0	53 × 1.5	54 × 2	53 × 1.5	60.3 × 2

Manual diaphragm valve -Tri-clamp connection						ASME-BPE		ASME-BPE EN558-1 Series 7			SMS3008			JIS-G3447			ISO-1127			DIN-11850		
Size	Diaphragm	Φ A	B	Ls	Φ d1	Φ d2	L1	Φ d1	Φ d2	L1	Φ d1	Φ d2	L1	Φ d1	Φ d2	L1	Φ d1	Φ d2	L1	Φ d1	Φ d2	L1
DN8	8	40	64	15.5	4.57	25	63.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DN10	8	40	64	15.5	7.75	25	63.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DN15	8	50	64	15.5	9.4	25	63.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10	65	85	34	-	-	-	-	-	-	-	-	-	-	-	-	18.1	50.5	108	16.0	34	108
DN20	10	65	85	34	15.75	25	101.6	15.75	25	117	15.75	25	117	-	-	-	-	-	-	-	-	-
	25	85	102	30	-	-	-	-	-	-	-	-	-	-	-	-	23.7	50.5	117	20.0	34	117
DN25	25	85	102	30	22.1	50.5	114.3	22.1	50.5	127	22.6	50.5	127	23	50.5	127	29.7	50.5	127	26.0	50.5	127
DN40	40	105	115	33	34.8	50.5	139.7	34.8	50.5	159	35.6	50.5	159	35.7	50.5	159	44.3	64	159	38.0	50.5	159
DN50	50	125	133	39	47.5	50.5	158.8	47.5	64	190	48.6	64	190	47.8	64	190	56.3	77.5	190	50.0	64	190

Other specifications available for customization.

Order Instruction



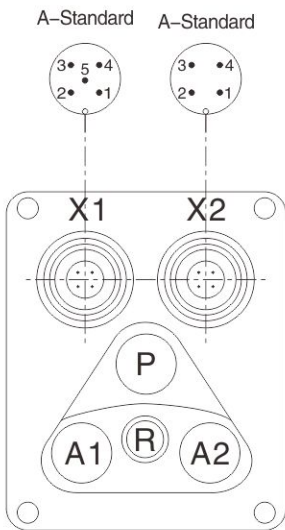
Diaphragm Valve



A02 Series
Proportional Control
Angle Seat Valve



Interface Definition



Electrical Terminal

Port Label	Terminal #	Description	Signal type
X1	1	Analog signal output +	0/4–20mA or 0–5/10V
	2	Improper position alarm output	High level
	3	Safe position enable output	High level
	4	Safe position trigger input	High level
	5	Signal common GND	GND
X2	1	Power +	+24V
	2	Power GND	GND
	3	Set signal input +	0/4–20mA or 0–5/10V
	4	Set signal input to GND	GND

Pneumatic Terminal

Port Label	Description
P	Air input
A1	Pilot port 1
A2	Pilot port 2
R	Exhaust port

Technical Specification

- Voltage: 24V DC
- Power: <5W
- Input signal: 0/4–20mA, 0–5/10V
- Output signal: 0/4–20mA, 0–5/10V
- Enclosure material: PA6–GF30+PC
- Control pressure: 3–7bar (44–102psi)
- Ambient temperature: 0–60°C
- Protection level: IP65

Function Principle

Intelligent positioner is a microprocessor–based valve regulator. The valve's open/close state is controlled by external input signals. It is widely used in industrial fluids control systems in order to enable remote and automated control.

Advantages

1. Compact size meets space constraint.
2. Reliable performance and sensitive reaction.
3. Large LCD display makes it easy to operate.
4. Standard electrical interface allows convenient wiring.
5. High adjustment precision and strong anti–interference performance.
6. Spring–loaded feedback rod for easy installation.
7. Allows various types of connection interface.

Order Instruction

