



Proportional Control Angle Seat Valve

104 Series
Two-piece Pneumatic
Proportional Control
Angle Seat Valve



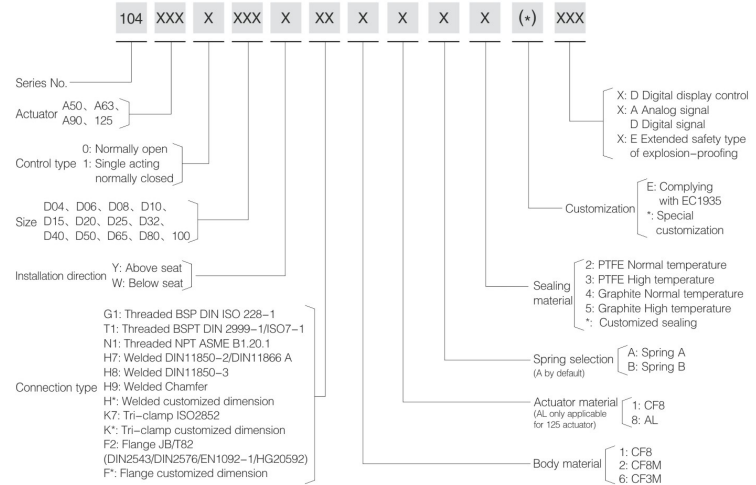
Technical Specification

- Connection type: Threaded, Welded, Tri-clamp, Flange
- Medium temperature: -10°C — $+180^{\circ}\text{C}$
 $+25^{\circ}\text{C}$ — $+220^{\circ}\text{C}$
- Medium temperature: 0 — $+60^{\circ}\text{C}$
- Operating pressure: Refer to the selection table of proportional adjustment angle seat valve
- Control pressure: 4 — 7bar (58—102psi)
- Control power: $24\text{VDC} \pm 10\%$
- Valve set signal: $0/4$ — 20mA or 0 — $5/10\text{V}$
- Power consumption: $<4\text{W}$
- Input Signal Impedance: $120\ \Omega$ at $0/4$ — 20mA ,
 $40\text{K}\ \Omega$ under 0 — $5/10\text{V}$
- Simulated Output signal: Max load is $750\ \Omega$ at $0/4$ — 20mA ,
Max current is 20mA under 0 — $5/10\text{V}$
- Maximum current of digital signal output: 100mA
- Protection: IP65
- Explosion-proof: II 3G Ex ec IIC T4 Gc
- Leakage class: DIN EN 12266 Class A

Advantages

- Convenient to adjust and easy to operate.
- Stable operation with vibration resistance.
- The unique design of adjustable seat establishes a proportional linear relationship between open/close state of the valve with the flow rate, achieving precise flow adjustment.
- For 104 and 124 series, the intelligent positioner and the valve are separate and can be installed at a distance, making it more suitable for high temperature and humidity environment.
- No air consumption when in steady state.
- Can be expanded to digital control or process control functions.

Order Instruction



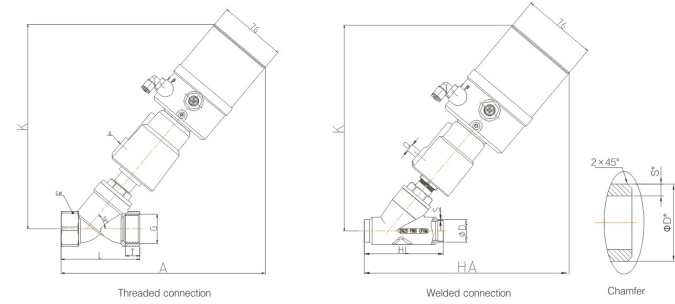
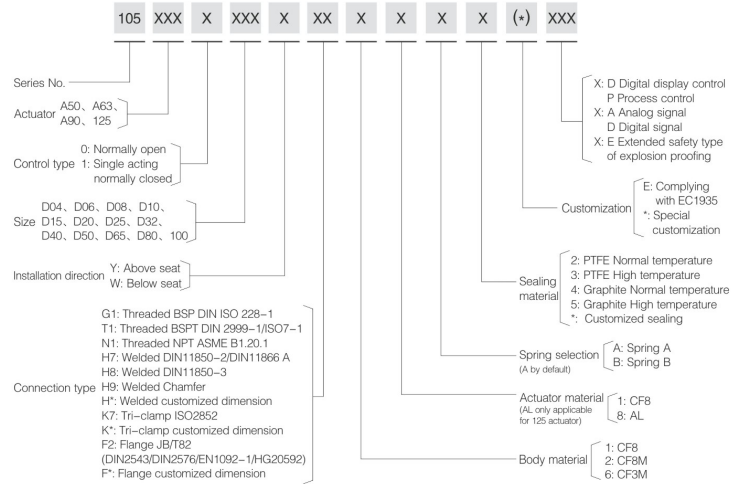


Proportional Control Angle Seat Valve

105 Series
Pneumatic Proportional
Control Angle Seat Valve



Order Instruction



105 Series Main Dimension (Threaded Connection)

Size	Actuator (mm)	Q	K	A	L	G	SW	T
DN4	50	1/8"	224	221	68	1/2" 3/8"	27	12
	50	1/8"	224	221	68	1/2" 3/8"	27	12
DN6	50	1/8"	224	221	68	1/4"	27	12
	63	1/8"	237	233	68	1/4"	27	12
DN8	50	1/8"	224	221	68	3/8"	27	12
	63	1/8"	237	233	68	3/8"	27	12
DN10	50	1/8"	224	221	68	1/2"	27	15
	63	1/8"	237	233	68	1/2"	27	15
DN15	50	1/8"	224	221	68	3/4"	32	16
	63	1/8"	237	233	68	3/4"	32	16
DN20	50	1/8"	231	226	75	1"	40	17
	63	1/8"	244	237	75	1"	40	17
DN25	50	1/8"	235	236	90	1 1/4"	50	21
	63	1/8"	257	253	90	1 1/4"	50	21
DN32	50	1/8"	319	301	116	1 1/2"	56	21
	63	1/8"	269	271	116	1 1/2"	56	21
DN40	50	1/8"	319	301	116	2"	69	22
	63	1/8"	319	301	116	2"	69	22
DN50	125AL	1/4"	386	359	138	3"	100	27
	125AL	1/4"	416	374	178	3"	100	27

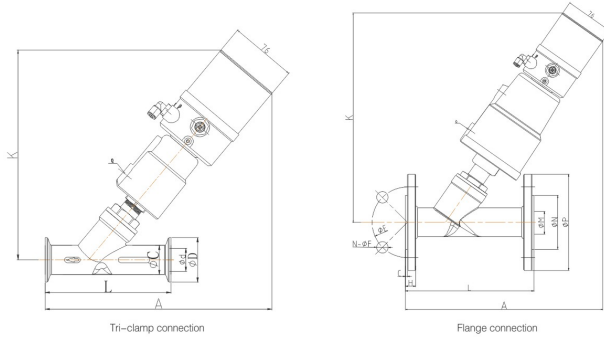
105 Series Main Dimension (Welded Connection)

Size	Actuator (mm)	Q	K	HA	HL	Chamfer		DIN11850-2		DIN11850-3	
						φ D*	S*	φ D	S	φ D	S
DN15	50	1/8"	224	214	70	22	3.5	19	1.5	20	2
	63	1/8"	237	226	70	22	3.5	19	1.5	20	2
DN20	50	1/8"	231	221	82	29	5	23	1.5	24	2
	63	1/8"	244	232	82	29	5	23	1.5	24	2
DN25	50	1/8"	235	236	100	35	5	29	1.5	30	2
	63	1/8"	257	256	100	35	5	29	1.5	30	2
DN32	50	1/8"	269	267	125	39	4	35	1.5	36	2
	63	1/8"	269	267	125	39	4	35	1.5	36	2
DN40	50	1/8"	319	301	130	45	4.5	41	1.5	42	2
	63	1/8"	319	301	130	45	4.5	41	1.5	42	2
DN50	50	1/8"	318	316	155	57	4	53	1.5	54	2
	63	1/8"	318	316	155	57	4	53	1.5	54	2
DN65 Square bonnet	125AL	1/4"	416	414	270	75	5	70	2	—	—
DN80 Square bonnet	125AL	1/4"	441	414	284	90	5.5	85	2	—	—

Note: * Designates design dimension (the actual dimension may vary)



Proportional Control Angle Seat Valve



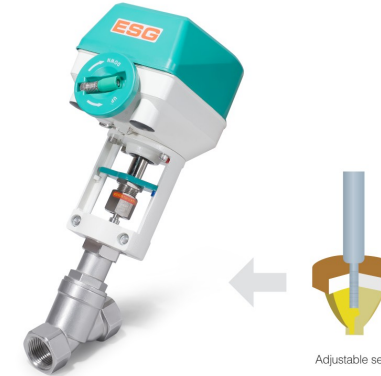
105 Series Main Dimension (Tri-clamp Connection)

Size	Actuator (mm)	Q	K	A	L	ØC	ØD	Ød
DN15	50	1/8"	221	221	80	20.5	34	15
	63	1/8"	243	239	130	25	50.5	19
DN20	50	1/8"	258	256	130	33	50.5	27
	63	1/8"	239	251	130	33	50.5	27
DN25	50	1/8"	261	269	146	37	50.5	31
	63	1/8"	289	281	146	37	50.5	31
DN32	90	1/8"	319	311	160	40	64	34
	90	1/8"	319	321	160	40	64	34
DN40	90	1/8"	331	331	175	53	64	45
	125AL	1/4"	382	379	175	53	64	45
DN65 Square bonnet	125AL	1/4"	416	414	278	75	91	65
DN80 Square bonnet	125AL	1/4"	438	414	290	89.5	106	78.5

105 Series Main Dimension (Flange Connection)

Size	Actuator (mm)	Q	K	A	L	ØP	ØN	ØM	H	C	ØE	n-ØF
DN15	50	1/8"	237	232	130	95	45	16	14	2	65	4-14
DN20	50	1/8"	237	252	150	105	56	19	14	2	75	4-14
	63	1/8"	267	257	160	115	65	26	14	2	85	4-14
DN25	50	1/8"	268	272	160	115	65	26	14	2	85	4-14
	63	1/8"	281	272	180	140	78	31	16	2	100	4-18
DN32	90	1/8"	329	297	180	140	78	31	16	2	100	4-18
	90	1/8"	334	317	200	150	84	38	16	3	110	4-18
DN40	90	1/8"	339	344	230	165	100	54	16	3	125	4-18
	125AL	1/4"	394	385	230	165	100	54	16	3	125	4-18
DN65 Square bonnet	125AL	1/4"	414	430	290	185	120	71	18	3	145	4-18
DN80 Square bonnet	125AL	1/4"	439	435	310	200	135	84	20	3	160	8-18
DN100 Square bonnet	125AL	1/4"	467	482	350	215	155	96	20	3	180	8-18

105 Series Electrical Proportional Control Angle Seat Valve



Technical Specification

- Voltage: 220V AC or 24V AC
- Control Power: 4-20mA or 0-10V DC
- Ambient Temperature: -15°C — +50°C
- Connection type: Threaded, Welded, Flange, Tri-clamp
- Positioner: Electrical motor control
- Protection: IP54
- Leakage class: DIN EN 12266 Class A

Advantages

1. Convenient and easy to use.
2. Operates steadily under vibration to achieve precise flow control.

Function Principle

Electrical positioner controls the angle seat valve's open/close state through 4-20 mA or 0-10V DC signals. It achieves precise flow adjustment using the adjustable seat within the valve and may allow manual control.

Attention

- If the valve body needs to be taken off during installation, please recalibrate the zero-point. Keep the positioner upright at all time.
- To ensure accurate adjustment, please install the valve in below seat direction.
- Please ensure water proof of the positioner.



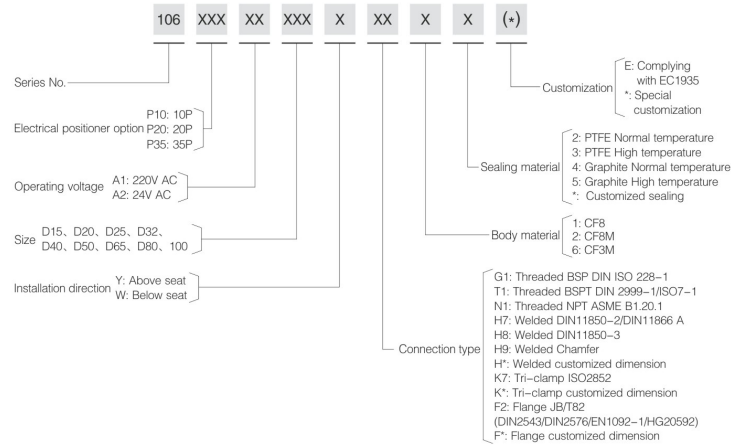
Proportional Control Angle Seat Valve

Pressure Data Sheet

Size	Orifice	Actuator	Pressure range (enter below seat) MPa	Pressure range (enter above seat) MPa
DN15	13	10P	0-1.6	0-1.6
DN20	18	10P	0-1.6	0-1.6
DN25	24	10P	0-1.2	0-1.6
		20P	0-1.6	0-1.6
DN32	31	10P	0-0.5	0-1.2
		20P	0-1.6	0-1.6
DN40	35	10P	0-0.3	0-0.9
		20P	0-1.4	0-1.6
		35P	0-1.6	0-1.6
DN50	45	10P	-	0-0.5
		20P	0-0.6	0-1.1
		35P	0-1.5	0-1.6
DN65	61	20P	-	0-0.6
		35P	0-0.7	0-1.1
DN80	80	20P	-	0-0.3
		35P	0-0.3	0-0.6
DN100	90	35P	-	0-0.4

Note: In order to ensure product performance, it is recommended to select product according to the highest value in the <= 90% pressure range

Order Instruction



124 Series
Two-piece Pneumatic
Proportional Control
Angle Seat Valve



Function Principle

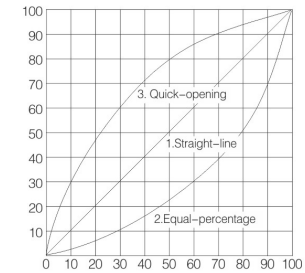
Positioner receives 0/4-20mA(0-5/10V) electrical signals from control system and converts them into air signals to control the valve and make precise flow adjustment using the adjustable seat.

Control Output Chart

By selecting characteristic curve of the positioner, the controlled valve can output to straight-line, equal-percentage, quick-opening and other custom characteristics.

Attention

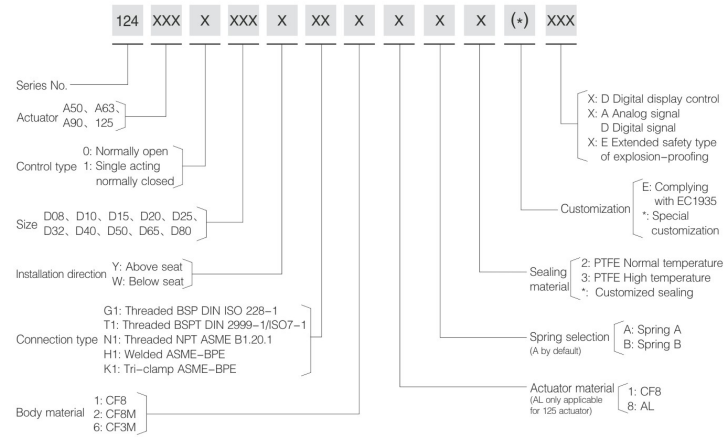
- Ensure that the inlet pressure of P port is sufficient and has been opened.
- Ensure that there is no leakage in the air supply pipeline, especially when there are changes in the air supply.
- Ensure that the power supply wiring is correct.
- Ensure that the signal source input mode matches and there is no interference.
- Ensure that the control valve takes protective measures to avoid water droplets and causing disfunction in operation panel.
- While installation, if the valve body needs to be removed, please adjust to the zero point again after installation.
- It is recommended that the signal to be 4-20mA to reduce the interference when signal value is low.
- It is recommended to use shielding wire for the signal line.
- Make sure the positioner is waterproof.



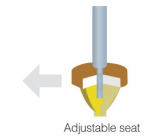


Proportional Control Angle Seat Valve

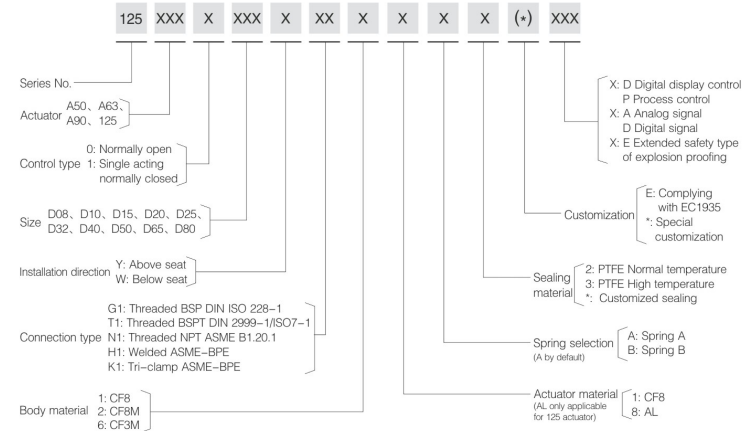
Order Instruction



125 Series
Pneumatic Proportional
Control Angle Seat Valve

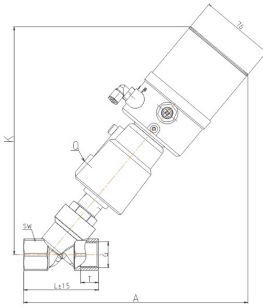


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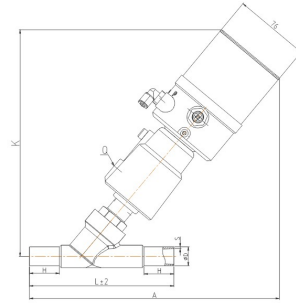




Proportional Control Angle Seat Valve



125 Series Threaded connection



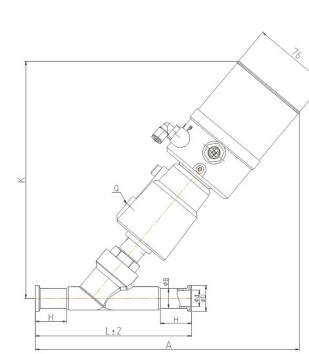
125 Series Welded connection

125 Series Main Dimension (Threaded connection)

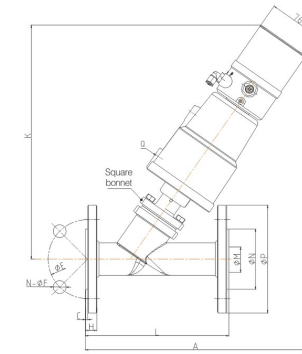
Size	Actuator (mm)	Q	K	A	L	G	SW	T
DN8	50	1/8"	229	224	65	1/4"	27	12
	63	1/8"	244	236				
DN10	50	1/8"	229	224	65	3/8"	27	14
	63	1/8"	244	236				
DN15	50	1/8"	229	224	65	1/2"	27	16
	63	1/8"	244	236				
DN20	50	1/8"	232	229	75	3/4"	32	18
	63	1/8"	246	239				
DN25	50	1/8"	235	235	90	1"	40	20
	63	1/8"	259	254				
DN32	63	1/8"	270	271	110	1 1/4"	50	22
	90	1/8"	312	304				
DN40	90	1/8"	312	308	120	1 1/2"	56	24
	125AL	1/4"	319	326				
DN50	90	1/8"	319	326	150	2	69	26
	125AL	1/4"	374	372				

125 Series Main Dimension (Welded connection)

Size	Actuator (mm)	Q	K	A	L	H	ASME BPE	
							ΦD	S
DN15	50	1/8"	230	247	135	30	12.7	1.65
	63	1/8"	246	259				
DN20	50	1/8"	229	251	145	30	19.05	1.65
	63	1/8"	242	264				
DN25	50	1/8"	236	258	152	30	25.4	1.65
	63	1/8"	259	276				
DN40	90	1/8"	309	329	182	30	38.1	1.65
	125AL	1/4"	319	339				
DN50	90	1/8"	317	386	210	30	50.8	1.65
	125AL	1/4"	417	386				
DN65 Square bonnet	125AL	1/4"	417	386	230	26	63.5	1.65
DN80 Square bonnet	125AL	1/4"	436	436	310	26	76.2	1.65



125 Series Tri-clamp connection



125 Series Flanged connection

125 Series Main Dimension (Tri-clamp connection)

Size	Actuator (mm)	Q	K	A	L	ASME BPE			
						D	B	d	H
DN15	50	1/8"	230	251	130	25	12.7	9.4	30
	63	1/8"	246	262					
DN20	50	1/8"	229	254	150	25	19.05	15.75	30
	63	1/8"	244	263					
DN25	50	1/8"	236	261	160	50.5	25.4	22.1	30
	63	1/8"	259	281					
DN40	90	1/8"	309	336	200	50.5	38.1	34.8	30
	125AL	1/4"	319	351					
DN50	90	1/8"	319	351	230	64	50.8	47.5	30
	125AL	1/4"	374	396					
DN65 Square bonnet	125AL	1/4"	417	416	290	77.4	63.5	60.2	26
DN80 Square bonnet	125AL	1/4"	439	437	315	91	76.2	72.9	26

125 Series Main Dimension (Flanged connection)

Size	Actuator (mm)	Q	K	A	L	ΦP	ΦN	ΦM	H	C	ΦE	n-ΦF
DN15	50	1/8"	237	232	130	95	45	16	14	2	65	4-14
DN20	50	1/8"	237	252	150	105	56	19	14	2	75	4-14
	63	1/8"	267	257	160	115	65	26	14	2	85	4-14
DN25	63	1/8"	268	272								
	DN32	63	1/8"	281	272	180	140	78	31	16	2	100
90		1/8"	329	297								
DN40	90	1/8"	327	307	200	150	84	38	16	3	110	4-18
	125AL	1/4"	334	336								
DN50	90	1/8"	334	336	230	165	100	54	16	3	125	4-18
	125AL	1/4"	394	385								



Proportional Control Angle Seat Valve

Single Acting, Normally closed (NC) -Enter Below Seat

Size	Orifice (mm)	Flow value Kv(m ³ /h)	Actuator (mm)	Differential pressure range ΔP (MPa)	Control pressure (MPa)
DN4	4	0.52	50A	0-1.6	≥0.45
DN6	6	1.1	50A	0-1.6	≥0.45
			50A	0-1.4	≥0.45
DN8	13	2.2	63A	0-1.6	≥0.55
			63B	0-1.6	≥0.30
			50A	0-1.4	≥0.45
DN10	13	3.3	63A	0-1.6	≥0.55
			63B	0-1.6	≥0.30
			50A	0-1.4	≥0.45
			63A	0-1.6	≥0.55
DN15	13	3.3	63B	0-1.6	≥0.30
			50A	0-1.4	≥0.45
			63A	0-1.6	≥0.55
DN20	18	6.7	63B	0-1.6	≥0.30
			50A	0-0.8	≥0.45
			63A	0-1.3	≥0.55
			63B	0-0.7	≥0.30
DN25	24	11.4	63A	0-0.6	≥0.55
			90B	0-1.3	≥0.45
			63A	0-0.5	≥0.55
DN32	31	18.3	90A	0-1.6	≥0.65
			90B	0-1.1	≥0.45
			90A	0-1.0	≥0.65
			90B	0-0.7	≥0.45
DN40	35	24.5	125A	0-1.6	≥0.55
			125B	0-1.1	≥0.45
			90A	0-0.5	≥0.65
			125A	0-0.9	≥0.55
DN50	45	40.4	125B	0-0.6	≥0.45
			90A	0-0.5	≥0.65
			125A	0-0.9	≥0.55
DN65	61	46.8	125B	0-0.6	≥0.45
			125A	0-0.5	≥0.55
DN80	80	84.0	125A	0-0.5	≥0.55

Note: In order to ensure product performance, it is recommended to select product according to the highest value in the <= 90% pressure range

Single Acting, Normally Closed (NC)-Enter Above Seat

(Please pay attention to the selection of spring, 6325, 6332 and 6340 need a customized positioner.)

Size	Orifice (mm)	Flow value Kv(m ³ /h)	Actuator (mm)	Differential pressure range ΔP (MPa)	Control pressure (MPa)
DN15	13	3.3	50A	0-1.6	≥0.45
			63B	0-1.6	≥0.30
DN20	18	6.7	50A	0-1.6	0.45-0.55
			63B	0-1.6	0.30-0.40
DN25	24	11.4	63B	0-1.6	0.30-0.45
			63B	0-1.6	0.30-0.60
DN32	31	18.3	90B	0-1.6	≥0.45
			63B	0-1.6	0.30-0.70
DN40	35	24.5	90B	0-1.6	0.45-0.50
			90B	0-1.6	0.45-0.70
			125A	0-1.6	0.30-0.35
DN50	45	40.4	90B	0-0.9	0.45-0.70
			125A	0-1.6	0.30-0.55
DN65	61	46.8	125A	0-1.6	0.30-0.70
			125A	0-1.0	0.30-0.70

Note: In order to ensure product performance, it is recommended to select product according to the highest value in the <= 90% pressure range

Single Acting, Normally Open(NO)-Enter below Seat

Size	Orifice (mm)	Flow value Kv(m ³ /h)	Actuator (mm)	Differential pressure range ΔP (MPa)	Control pressure (MPa)
DN15	13	3.3	50K	0-1.6	0.30-0.40
DN20	18	6.7	50K	0-1.6	0.30-0.50
			50K	0-1.3	0.30-0.60
DN25	24	11.4	63K	0-1.6	0.30-0.50
			63K	0-1.3	0.30-0.60
DN32	31	18.3	63K	0-1.6	0.30-0.40
DN40	35	21.3	90K	0-1.6	0.30-0.55
DN50	45	40.4	90K	0-1.0	0.30-0.70
			125K	0-1.6	0.30-0.65
DN65	61	46.8	125K	0-1.0	0.30-0.70

Note: In order to ensure product performance, it is recommended to select product according to the highest value in the <= 90% pressure range

Opening (%) - Kv value (m³/h) chart of proportional angle seat valve

Size	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
DN4	0.02	0.04	0.07	0.11	0.14	0.19	0.26	0.35	0.43	0.52
DN6	0.04	0.08	0.14	0.22	0.33	0.43	0.57	0.75	0.93	1.1
DN8	0.53	0.83	1.14	1.53	1.91	2.2	2.2	2.2	2.2	2.2
DN10	0.53	0.83	1.14	1.53	1.91	2.26	2.58	2.84	3.05	3.3
DN15	0.53	0.83	1.14	1.53	1.91	2.26	2.58	2.84	3.05	3.3
DN20	1.48	2	2.57	3.27	4.16	5.06	5.65	6.08	6.43	6.7
DN25	1.37	2.98	4.39	5.94	7.14	8.27	9.03	9.98	10.82	11.4
DN32	3.79	6.74	9.07	11.17	12.12	13.36	15.35	16.37	17.63	18.3
DN40	3.78	6.85	9.39	12.44	15.4	17.46	20.55	22.02	23.54	24.5
DN50	8.64	15.49	21.67	27.02	29.98	32.93	35.45	37.38	39.52	40.4
DN65	7.53	11.34	15.31	17.83	19.4	21.84	27.3	33.4	40.54	46.8
DN80	9.84	11.18	16.53	22.66	29.82	35.73	48.37	60.21	70.69	84
DN100	12.54	14.56	25.32	36.75	45.6	54.38	62.5	72.8	84.23	95



Proportional Control Angle Seat Valve

135 Series
Micro Flow Control Valve



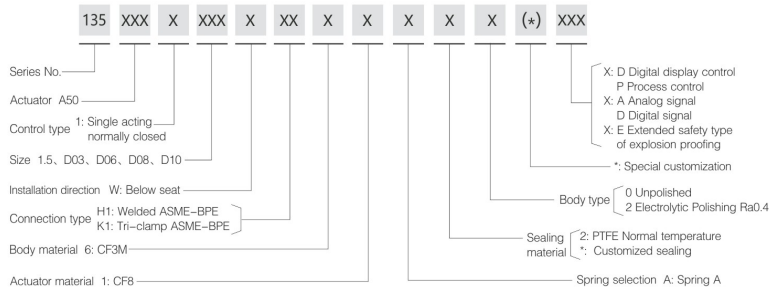
Technical Specification

- Operating pressure: 0–10bar (0–145psi)
- Control pressure: 4–7bar (58–116psi)
- Seal material: PTFE
- Applicable fluid: Water, Neutral gas or Liquid, Organic solvent, Acid and lye
- Fluid temperature: –10°C — +150°C
- Ambient temperature: –10°C — +60°C
- Control type: Single acting normally closed
- Connection type: Tri-clamp, Welded

Advantages

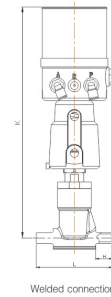
Bellows are used to isolate the medium and meet the requirements of harsh working conditions.

Order Instruction

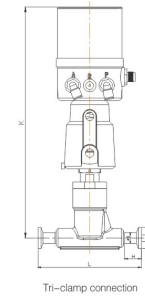


Function Principle

Positioner receives 0/4–20mA(0–5/10v) electrical signals from control system and converts them into air signals to control the valve and make precise low adjustment using the bellows adjustable seat. Diaphragm is arranged between the valve body and the bonnet to isolate the medium in place of the stem packing. Valve stays closed(open) by spring force in its normal state. When piston is actuated by compressed air, valve becomes opened (Closed).



Welded connection



Tri-clamp connection

135 Series Main Dimension (Welded connection)

Size	Actuator (mm)	K	L	H	ASME BPE	
					D	S
DN1.5/3/6	50	275	90	16	12.7	1.65
DN8/10	50	275	90	16	19.05	1.65

135 Series Main Dimension (Tri-clamp connection)

Size	Actuator (mm)	K	L	ASME BPE			
				D	B	d	H
DN1.5/3/6	50	275	122	25	12.7	9.4	20
DN8/10	50	275	122	25	19.05	15.75	20

Single Acting, Normally Closed (NC)-Enter Below Seat Pressure Selection Table

Size	Orifice (mm)	Flow value Kv(m ³ /h)	Actuator (mm)	Differential pressure range ΔP(MPa)	Control pressure (MPa)
BPE-DN1.5	1.5	0.09	50A	0–1.0	≥0.45
BPE-DN3	3	0.26	50A	0–1.0	≥0.45
BPE-DN6	6	0.8	50A	0–1.0	≥0.45
BPE-DN8	8	1.43	50A	0–1.0	≥0.45
BPE-DN10	10	2.16	50A	0–1.0	≥0.45

Note: In order to ensure product performance, it is recommended to select product according to the highest value in the ≤ 90% pressure range

Opening (%) - Kv value (m³/h) chart of proportional angle seat valve

Size	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
BPE-DN1.5	0.011	0.021	0.032	0.043	0.054	0.073	0.082	0.085	0.089	
BPE-DN3	0.025	0.059	0.1	0.13	0.16	0.19	0.21	0.23	0.24	0.26
BPE-DN6	0.03	0.075	0.156	0.247	0.332	0.442	0.53	0.63	0.726	0.8
BPE-DN8	0.05	0.15	0.26	0.39	0.53	0.73	0.98	1.27	1.42	1.43
BPE-DN10	0.1	0.26	0.42	0.61	0.82	1.08	1.45	1.8	2.03	2.16