

A1005TM-... Electric Modulating Seat Valve Series



**Electric Modulating Seat Valve
A1005TM-...Series
Threaded Connection
PN16/PN25**

Performance & Features:

- ◆ Nominal diameter: DN15...DN50, threaded connection;
- ◆ Control of media such as chilled/hot water, steam, etc.
- ◆ Ideal flow regulation characteristic, with a linear relationship between relative flow rate and relative stroke.
- ◆ Valve stem and valve core made of high-quality stainless steel.

Applications:

This product can be used in air conditioning systems in HVAC systems in air conditioning systems, and plate heat exchanger units in heating systems

Ethylene Glycol ≤50%;	-15°C~130°C Cold and warm water valve
Low Temperature Water	
High Temperature Water	
Saturated Steam (≤130°C)	
Saturated Steam (0.6MPa)	2°C~180°C Steam valve
Superheated Steam (≤180°C)	

Model Designation:

For example: A1005TM-40-16P/(Actuator model)

1. "A10" Electric Control Valve Series;
2. "0": 2-way valve;"3": 3-way valve;
3. "5": Seated valve structure;
4. "T": Threaded connection; "F": Flanged connection;
5. "M": Modulation type; "S": On-off type;
6. "-": separator;
7. "40": Nominal Diameter DN40;
8. "16": Nominal Pressure, PN25/PN16;
9. "P": Stainless Steel, "T": Brass, "B": Bronze, "Q": Ductile Iron, C: Cast Steel;

Technical Specification:

PN (Nominal Pressure)	PN16, PN25 for option
Connection Standard	Threaded connectionISO228/1 (or EN10226)
Leakage rate	<0.02% Kvs
Working Temperature:	
Water control valve	(-15°C~130°C)
Steam	(2°C~+180°C)
Allowable working pressure	1.6MPa, 2.5MPa
Stroke	Below DN100: 20mm, DN100:20 or 40 available Above DN100: 40mm
Body	Brass/Bronze/ Ductile Iron / Cast Steel / Stainless Steel
Stem, balancing valve core	Stainless Steel
Sealing ring	PTFE
Seal housing	V-type seal ring with self-compensation by stainless steel spring

Parameter Table:

A1005: Chilled & Hot Water Valve (-15°C ~ 130°C)

Mode	Pipe diameter (in.)	DN (mm)	Kvs (m ³ /h)	Actuator Selection	Stroke (mm)	Maximum Shut-off Differential Pressure ΔP_s (Mpa)
A1005TM-15-16P	1/2"	15	1.9	500	10	≤ 0.35
A1005TM-20-16P	3/4"	20	4.4	500	10	≤ 0.35
A1005TM-25-16P	1"	25	6.3	500/1000N	15	≤ 0.35
A1005TM-32-16P	1 1/4"	32	10	1000N	20	≤ 0.85
A1005TM-40-16P	1 1/2"	40	20	1500N	20	≤ 0.75
A1005TM-50-16P	2"	50	32	1500N	20	≤ 0.70

Electric Actuator

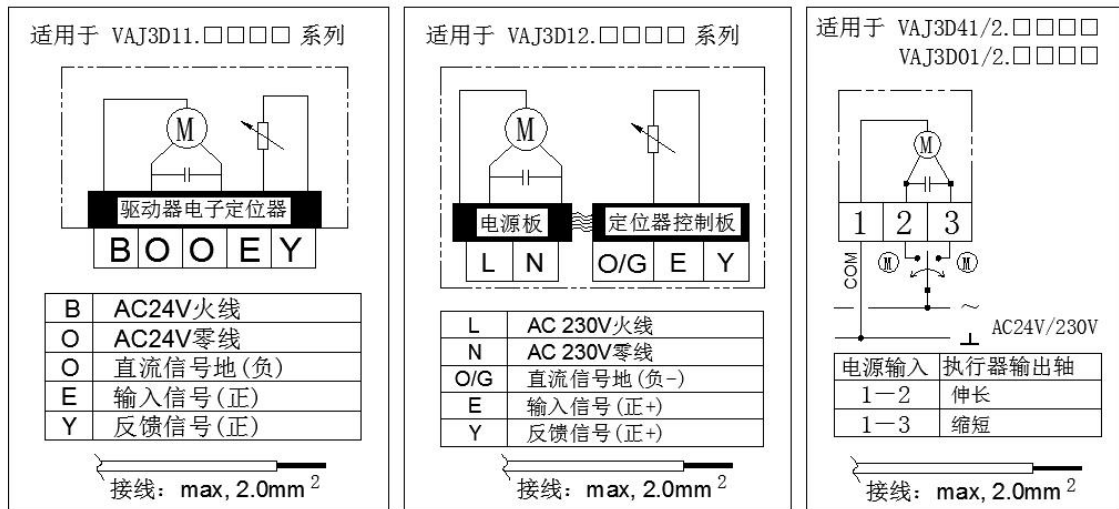
Model	Rated Thrust	AC Voltage	①		Passive Feedback	Torque Limiting Method	Speed (s/mm)	Soft Manual②	Mechanical ③
			Control	Feedback					
VAJ3D11.0A05	500N	24V	Analog Signal		-	Clutch	3.9	√	Optional
VAJ3D12.0A05		220V	Analog Signal		-	Clutch	3.9	√	Optional
VAJ3D41.0A05		24V	3-Point Floating	-	Optional	Clutch & Power Failure	3.9		Optional
VAJ3D42.0A05		220V	3-Point Floating	-	Optional	Clutch & Power Failure	3.9		Optional
VAJ3D11.0A10	1000N	24V	Analog Signal		-	Clutch	3.9	√	Optional
VAJ3D12.0A10		220V	Analog Signal		-	Clutch	3.9	√	Optional
VAJ3D41.0A10		24V	3-Point Floating	-	Optional	Clutch & Power Failure	3.9		Optional
VAJ3D42.0A10		220V	3-Point Floating	-	Optional	Clutch & Power Failure	3.9		Optional
VAJ3D11.0B10		24V	Analog Signal		Optional	Spring Force Limiting	5.13	√	Optional
VAJ3D12.0B10		220V	Analog Signal		Optional	Spring Force Limiting	5.13	√	Optional
VAJ3D01.0B10		24V	3-Point Floating	-	Optional	Spring Force Limiting	5.13		Optional
VAJ3D02.0B10		220V	3-Point Floating	-	Optional	Spring Force Limiting	5.13		Optional
VAJ3D11.0D15	1500N	24V	Analog Signal		Optional	Spring Force Limiting	5.13	√	Optional
VAJ3D12.0D15		220V	Analog Signal		Optional	Spring Force Limiting	5.13	√	Optional
VAJ3D01.0D15		24V	3-Point Floating	-	Optional	Spring Force Limiting	5.13		Optional
VAJ3D02.0D15		220V	3-Point Floating	-	Optional	Spring Force Limiting	5.13		Optional

① Control Signal & Feedback Signal: 3-Point Floating or Analog Signal: 0(2)–10 VDC, 0(4)–20 mA

② Soft Manual: The valve can be set to manual mode via the electronic positioner (set DIP switch No.6 to ON). In this status, the valve can be opened or closed incrementally using the keys on the positioner.

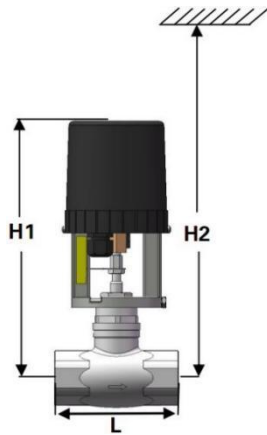
③ When the mechanical manual function is optionally equipped, the 9th digit from the left in the product model shall be changed to **S** or **A**.

Wiring Diagram

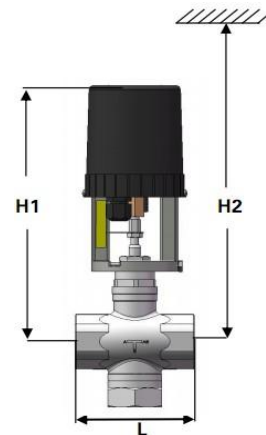


Dimension Chart

2-way control valve



3-way control valve

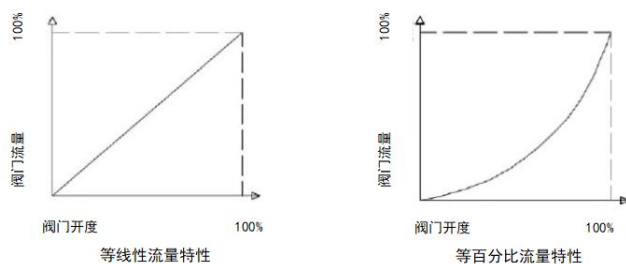


2-way Control Valve Model	3-way Control Valve Model	Pipe	L	H1 2-way	H1 3-way	H2 2-way	H2
		in.	mm	mm	mm	mm	mm
A1005TM-15-16P	A1035TM-15-16P	1/2"	70	270	270	400	400
A1005TM-20-16P	A1035TM-20-16P	3/4"	80	270	275	400	405
A1005TM-25-16P	A1035TM-25-16P	1"	90	280	278	410	408
A1005TM-32-16P	A1035TM-32-16P	1 1/4"	100	290	280	420	410
A1005TM-40-16P	A1035TM-40-16P	1 1/2"	120	295	285	425	415
A1005TM-50-16P	A1035TM-50-16P	2"	135	310	310	440	440

L1: Distance between left and right flange faces; H1: Distance from the center line of left and right flanges to the top of the actuator; H2: Distance from the center line of the left and right flanges to the top of the actuator, plus the required clearance distance.

Note: Sufficient disassembly clearance shall be reserved during installation according to on-site conditions.

Valve Flow Curve



Relationship between Pressure Differential and Flow Rate

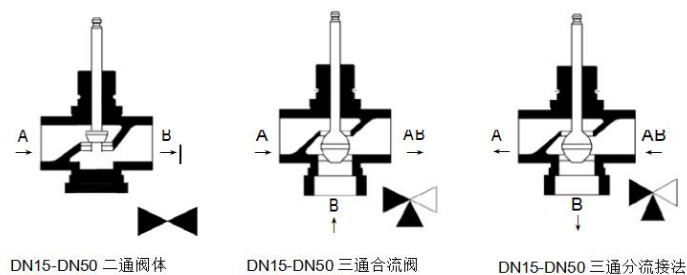
$$Kvs = \frac{Q}{\sqrt{\frac{\Delta P}{100}}}$$

ΔP : Pressure differential between inlet and outlet at full valve opening (KPa);

Q: Rated flow rate at a pressure differential of ΔP (m³/h);

Kvs: Flow rate through the control valve when the valve is fully open, with an inlet and outlet pressure differential of 100 kPa and a medium density of 1 g/cm³;

Flow Direction Diagram



备注:

DN15-DN50 三通阀仅有合流阀, 如果需要分流接法, 请对调节阀 A 口与 AB 口, 按阀体指示操作。

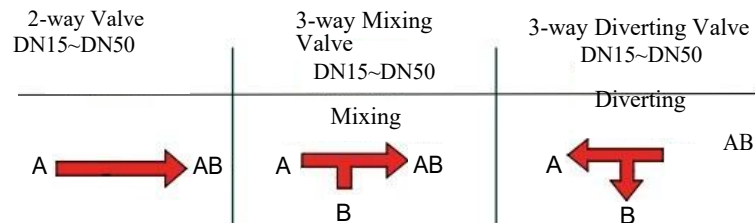
Flow Relationship

Type / Normal Diameter	2-way control valve	3-way Mixing Valve	3-way Diverting Valve
	DN15~DN50	DN15~DN50	DN15~DN50
Flow Direction	A to AB	A,B to AB	AB to A,B
When the valve stem retracts	Flow Decreases	Flow rate of A increases while flow rate of B decreases	Flow rate of A increases while flow rate of B decreases
When the valve stem extends	Flow Increases	Flow rate of A decreases while flow rate of B increases	Flow rate of A decreases while flow rate of B increases

Installation Instructions

Mounting with the pipeline

1. The valve shall be installed in accordance with the direction marked on the valve body.;

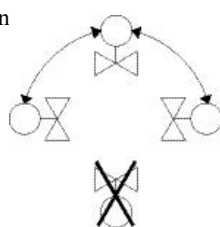


2. The valve can be installed on either the supply or return pipeline, and is generally recommended for installation on the return pipeline (this ensures more stable flow control; in addition, the lower temperature of hot water return helps extend the service life of the valve). It is also recommended to install a filter upstream of the valve. When the medium is steam, a drain valve shall be installed on the pipeline to remove condensate, otherwise the service life of the valve will be affected.

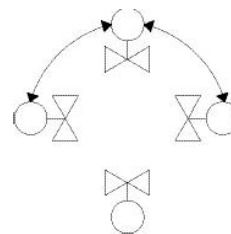
Mounting with the actuator

The valve and actuator can be easily assembled at the installation site. No special tools or adjustments are required.

Installation Orientation



When the medium is chilling or hot water, downward installation is not permitted.



When the medium is steam, installation at any angle is permitted.

Commissioning and Maintenance:

Note: The valve can only be commissioned after the actuator has been correctly installed.

When servicing the actuator, the following sequence shall be followed:

1. Turn off the water pump and disconnect its power supply.
2. Close the pipeline valves, drain the water in the pipeline to reduce pressure, and allow the water pipes (hot water pipes) to cool down naturally.
3. Disconnect the electrical wiring from the terminals.

Note: The actuator must be properly installed before commissioning the valve again.

The valve may only be commissioned after the actuator has been correctly installed.