

VA-2000 SERIES

EASY INSTALLATION ACTUATOR

DESCRIPTION

VA-2000 series easy installation actuator is electromechanical product, and can be mounted on VB-2000Q series valves.

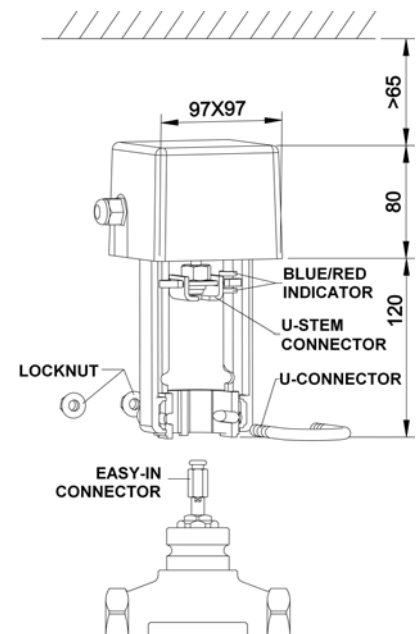
VA-2000 series actuator has 3 basic types:

1. VA-2300 reversible motor operation and provide increasing control;
2. VA-2301 can accept input 0(2)~10V DC or 4~20mA DC control signal and provide proportional control, and also can provide 0~10V DC feedback signal to indicate the position of the actuator;
3. VA-2302 can accept input 0(2)~10V DC or 4~20mA DC control signal and provide proportional control.



CHARACTERISTICS

- Low AC voltage synchronic reversible motor.
- Magnetism clutch.
- The action uses gear to transit. Output gear rollers are supported by surface rolling bearing, which rotate around the central bearing.
- Valve working position indicator.
- Fireproof ABS plastic casing.
- Conveniently mounting.
- 0(2)~10V DC or 4~20mA DC control
- Working state (DA or RA) can be selected by jumper.
- Apply to 13mm, 15mm, 17mm or 19mm stroke can be selected by jumper.
- Have overtime protection function, and failure protection function when without control signal.
- Have 0~10V DC feedback signal.
- Have manual open/close valve function (only for VA-2XXXM)
- Have auxiliary micro-switch (only for VA-2XXXS)
- Have manual open/close valve function and auxiliary micro-switch (only for VA-2XXXK)



OPERATION

1. Actuator is driven by reversible synchronous motor with magnetism clutch. Motor can create stable torsion at stopping condition depending on the magnetism effort, which is created by motor rotor and magnetism clutch. And the motor can stop at any position when there is no current pass through.
2. The signal of the increasing or proportional type controller can make the motor rotate clockwise or anti-clockwise.
3. Ex-factory setting for VA-2301 and VA-2302 are: 19mm stroke, 0(2)~10V DC mode, DA working state, UP direction failure protection. If the manufacturer has already mounted the actuator on the valve body, it will fit with the valve's stroke. Further more, it can select direct (DA) or reversible (RA) working mode. The two modes are just opposite. When there is no control signal, it can select DOWN/UP jumper to select the working direction. For VA-2301 model, it also has 0~10V DC feedback signal output. Since the 0(2)~10V DC and 4~20mA DC control signals are quite different, so if need 4~20mA DC mode, please indicate when ordering, and the factory will adjust the parameter of the PCB.

INSTALLATION

1. Lift up the valve stem.
2. Install the actuator bracket on the valve body, insert the U-connector.
3. Put the lock nut and position pointer onto it, then insert the stem into the U-stem connector. Use spanner to lock the locknut after adjusted the position.
4. Give priority to vertical installation and remain enough room for uninstall.
5. Connect the wires according to the Wiring Diagram.

6. Power supply test: VA-2300 actuator UP or DOWN operation can reliable CLOSE or OPEN valve. For VA-2301 and VA-2302 actuator, it should select the STROKE jumper (J5) according to the valve's stroke, then provide fully-open signal, for example, if provide 10V signal when at 0(2)~10V mode, actuator will move downwards till the red indicator lamp turns dark. If happens the gears of the actuator have stopped, but the indicator lamp is still on, it means the set stroke is a little more than the valve's actual stroke, it needs to micro-adjust the stroke potentiometer PT1 (STROKE) till the indicator lamp turns dark, this is the fully-open position of the valve. Provide 0(2)V fully-close signal, actuator will move upwards till the indicator lamp turns dark, this is the fully-close position of the valve (Ex-factory setting). If the indicator lamp is still on, it needs to decrease a little the threads' depth of screwing into the valve stem till the lamp turns dark. Finally operating a working circle to ensure fully-open and fully-close will make the indicator lamp turns dark.

SPECIFICATIONS AND TECHNICAL DATA

MODEL	VA-2300X*	VA-2301X*	VA-2302X*
MOTOR	Bi-directional Synchronous motor with magnetic clutch.		
POWER FOR MOTOR	24VAC±10%, 50/60Hz, 2.5VA 230VAC±10%, 50/60Hz, 5VA	24VAC±10%, 50 / 60Hz, 2.5VA	
OPERATION/CONTROL	Reversible, increasing control	Proportional control, direct or reversible	
ELECTRICAL CIRCUIT	—	Power: 24V AC±10%, 50/60Hz, Input signal: 0(2)~10V DC or 4~20mA DC Feedback signal: 0~10V DC (5mA)	Power: 24V AC±10%, 50/60Hz; Input signal: 0(2)~10V DC or 4~20mA DC
POWER CONSUMPTION OF PCB	—	2VA	
NORMAL FORCE	500N		
MATERIAL	GEAR: POM plastic		
	REDUCER DOWN PANEL: Zinc-plated steel		
	BRACKET: Die-casting aluminum alloyed		
	CASING: Fire-proof ABS engineering plastic (UL94V-0)		
OPERATION TIME	50Hz: 12.4s/mm; 60Hz: 10.3s/mm		
ROOM TEMP.	OPERATION	2~55℃	
	STORAGE	-20~65℃	
MAX. RH	<90% no condensation		
CONNECTING WIRES	0.5~1 mm ²		
EX-FACTORY SETTING	—	Stroke: 19mm; Input signal: 0(2)~10V DC; Working mode: DA; Failure protection: UP; Move upwards to fully-close position	
NET WEIGHT	0.82kg	0.87kg	
ACCESSORIES	U-type connector, lock nut, indicator guide, valve connector		

Note: The “X” with “*” is additional code: **M**-with manual open/close function; **S**-with auxiliary micro-switch; **K**-with manual open/close function and auxiliary micro-switch; omitted-standard type

NOTE

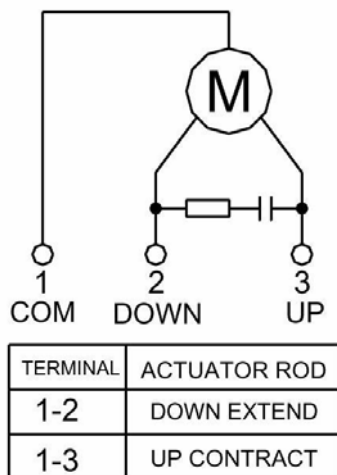
- Actuator must be protected and prevented from water dripping to destroy internal elements and motor.
- Actuator can't be covered with adiabatic material.

CAUTION

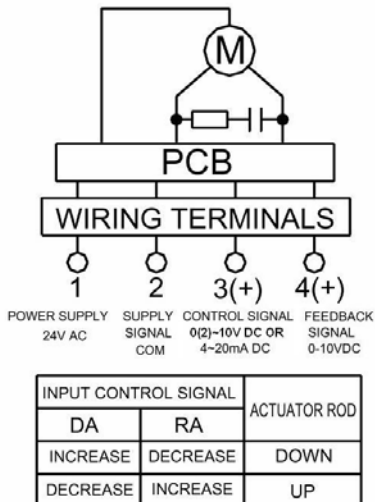
- Cut off power for repairing, to avoid destroying elements or cause casualty because of leakage of electricity.
- When power is on, don't try to connect or disconnect the electrical wires.

WIRING DIAGRAM AND SETTING DIAGRAM

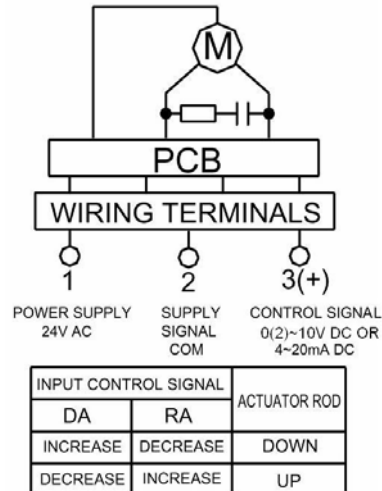
VA-2300X WIRING DIAGRAM



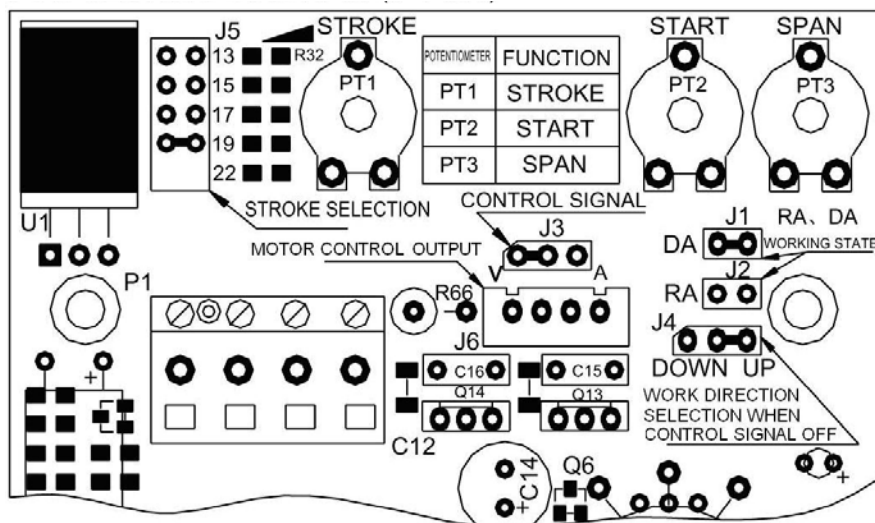
VA-2301X WIRING DIAGRAM



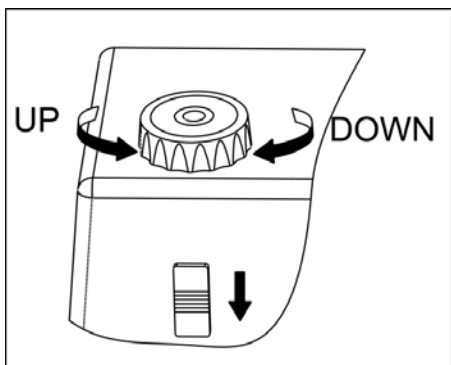
VA-2302X WIRING DIAGRAM



PCB SETTING DIAGRAM (IF ANY)



VA-2XXXM MANUAL SWITCH:



D01
071025

VB-2000 SERIES BRASS VALVE

DESCRIPTION

VB-2000 series brass valve is equipped with electrical control device, it can be used to control the flow of vapor or cool / heat water in central air-conditioning, heating, water handling and industrial processing industry system.



MATERIAL DESCRIPTION AND TECHNICAL DATA

PRODUCT		VB-2000 Standard Valve
MATERIAL	VALVE BODY	Casting brass
	VALVE STEM	Stainless steel AISI 302
	SEALING MATERIAL	Fluon filler and O-ring Nitrile rubber sealing combination
	VALVE PLATE	Forging brass with Nitrile rubber gasket
PRESSURE RATING		1.6MPa (At 95°C)
PIPE CONNECTION		G / BSP
WORKING MEDIUM		Water
FLUID TEMPERATURE		2~94°C
FLOWING CHARACTERISTICS		Equal percentage
LEAKAGE		Less than 0.05% of Kv factor
CLOSING DIRECTION		Valve stem goes up is closing

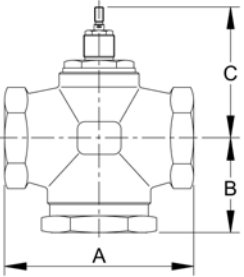
SPECIFICATIONS AND TECHNICAL DATA

MODEL	TYPE	SIZE (DN)		Kv	MAX. DIFF. PRES. (MPa)	STROKE (mm)
		mm	in		FIT WITH VA-21XX	
VB-2200-25(*Q)	2-Way	25	1"	8	0.6	15
VB-2200-32(*Q)		32	1¼"	15	0.4	19
VB-2200-40(*Q)		40	1½"	22	0.3	19
VB-2200-50(*Q)		50	2"	35	0.2	19
VB-2300-25(*Q)	3-Way	25	1"	8	0.6	15
VB-2300-32(*Q)		32	1¼"	15	0.4	19
VB-2300-40(*Q)		40	1½"	22	0.3	19
VB-2300-50(*Q)		50	2"	35	0.2	19

* Q indicates Easy Installation type valve. The Easy Installation Actuator can only be installed on Easy Installation type valve.

DIMENSIONS

FIGURE	MODEL	DIMENSIONS (mm)
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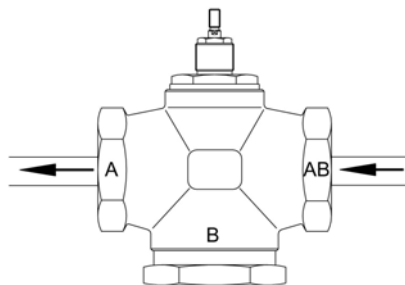
		A	B	C
	VB-2200-25	110	60	111
	VB-2200-32	120	66	111
	VB-2200-40	130	68	114
	VB-2200-50	145	72	126
	VB-2300-25	110	78	111
	VB-2300-32	120	82	111
	VB-2300-40	130	82	114
	VB-2300-50	145	91	126

INSTALLATION

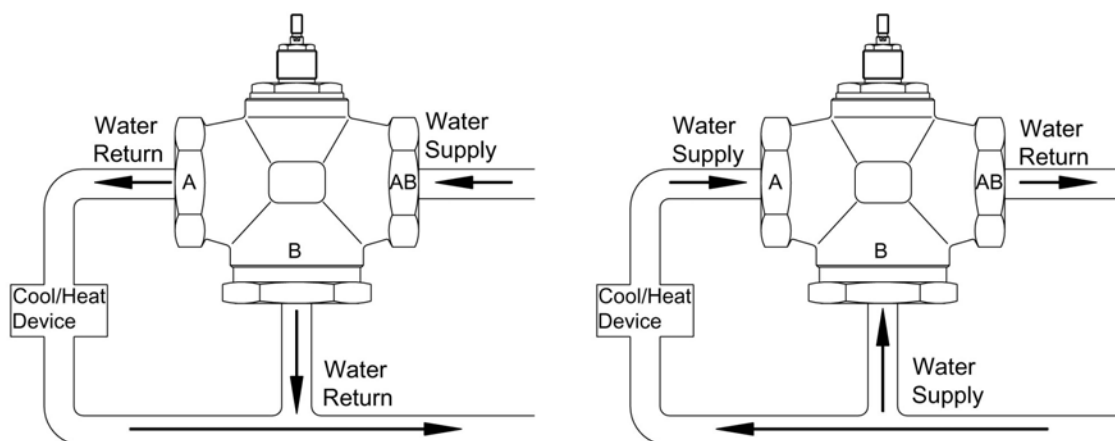
1. Before mounting the valve, make sure that the pipe is clean and free from soldering scraps, metal sheet, sand, stone or other sundries.
2. The pipe and valve body must be connected perfectly without vibration. The water flow direction should be the same as marked on the valve body.
3. The actuator should be mounted vertically on the valve body, and avoid the actuator below the valve body. Remain enough space so that the actuator can be taken down from the valve body during the daily maintenance.
4. Power supply must be shut off or insulated when maintain the valve. There should not have pressure in the water system.
5. For other installation requirements, please refer to the Installation Instruction of the actuator.

FLOW DIRECTION DIAGRAM

TWO-WAY VALVE



THREE-WAY VALVE



Diverting 3-way

Mixing 3-way