

VA-3003 SERIES SELF-ADJUSTING ACTUATOR

DESCRIPTION

VA-3003 series self-adjusting actuator is electromechanical product. Used with VB-3000 series valve, it can control flow rate in central air-conditioning system, heating system, water treatment or industrial processing industry. With different connectors, it can match with other different valve bodies.



CHARACTERISTICS

- Low AC voltage synchronic reversible motor.
- Hall switch sensor
- Self-adjusting function, automatic record stroke data
- Working state (DA or RA) can be selected by jumper.
- 0(2)~10V DC or (0)4~20mA DC input signal control, proportional control
- 0~10V DC feedback signal.
- With manual open/close valve function (only for VA-3XXXM)
- Fireproof ABS plastic casing.
- Conveniently mounting.

SPECIFICATIONS AND TECHNICAL DATA

MODEL		VA-3103(M)	VA-3203(M)
MOTOR		24VAC±10%, 50/60Hz, 5.5VA	
CONTROL SIGNAL		0~10V DC, 2~10V DC、0~20mA DC or 4~20mA DC	
FEEDBACK SIGNAL		0~10V DC	
ELECTRICAL CIRCUIT		1VA	
OPERATION		Proportional control, direct or reversible	
EFFECTIVE FORCE		1000N	1500N
MATERIAL	GEAR	Stainless steel & POM plastic	Stainless steel & brass
	BRACKET	Die-casting aluminum alloy	
	HOUSING	Fireproof ABS engineering plastic (UL94V-0)	
	REDUCER PLATE	Galvanized steel	
OPERATION DURATION		50Hz: 4.6s/mm 60Hz: 3.8s/mm	50Hz: 7.77s/mm 60Hz: 6.45s/mm
AMBIENT TEMP.	OPERATION	2 ~ 55 °C	
	STORAGE	- 20 ~ 65 °C	
MAX. RH		< 90%Rh no condensation	
WIRING		0.5 ~ 1mm ²	
MAX. STROKE		31mm	
DEFAULT SETTING		Input signal: 0~10V DC; Working mode: DA; Stem moves upward to fully-close position	
ACCESSORIES		Lock nut, position indicator, position pointer	

- The model with "M" has manual open/close valve function.

PCB SETTING

1. **Study status:** After power is on, set JP1 switch as request (refer to the following list). First, switch "4" of JP1 to position ON, then press SW1 STUDY/REPOSITON button, buzzer will sound every 5 seconds, and the actuator stem is going down (opening valve) until gears are blocked (has reached the maximum stroke). Then the stem will go upward until gears are blocked again (has been in the initial position). Buzzer will make a long sound to indicate the study status is over. MCU will keep the data in memory even power is off.

Then switch "4" of JP1 back to position OFF to transform to running status. If this step is missed, the actuator will operate as usual, but it will go through the study status every time when power is on.

2. **Running status:** The actuator will reposition (search the initial position) every time when power is on. It

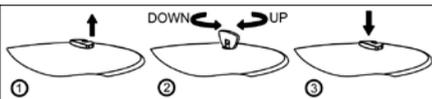
will close the valve at first, and then the buzzer will make a long sound to indicate the actuator is ready for control signal.

- Study/running status shift:** If user needs to switch study/running status, make sure the JP1 has been set correctly, then press SW1 STUDY/REPOSITION button. Don't need to cut off power.

JP1 SWITCH SETTING:		CONTROL SIGNAL				DEFAULT SETTING	PCB DIAGRAM
STATUS SWITCH		0~10V DC	2~10V DC	0~20mA DC	4~20mA DC		
RUNNING STATUS	DA	OFF ON 1 2 3 4					
	RA	OFF ON 1 2 3 4					
STUDY STATUS	DA	OFF ON 1 2 3 4					
	RA	OFF ON 1 2 3 4					

NOTICE: We strongly recommend that JP1 switch should be set on running status in normal use.

MANUAL OPEN/CLOSE VALVE FUNCTION OF VA-3XXXM :



INSTALLATION

1

The gradient of actuator must be kept in 30°.

2

3

4

5

6

INPUT CONTROL SIGNAL		ACTUATOR STEM
DA	RA	DOWN
INCREASE	DECREASE	UP
DECREASE	INCREASE	

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