

AVF – actuators for flanged globe valves



The appearance of the product may differ from the illustration. Technical specifications are subject to change.

AVF SERIES

APPLICATION AND USE

The actuator series AVF has been designed to control the flanged globe valves series VF. The actuator is equipped by a double bidirectional synchronous motor at 1200 and 1800 N and available in Open/Close, 3-point and proportional version. Quick and easy installation. The actuator is fitted with manual override for changing valve position in case of power failure.

TECHNICAL SPECIFICATION

Power supply	24 V _{AC} , 50/60 Hz, 12 VA
Electrical wiring	Screw connection
Actuating force	see table
Max. stroke	see table
Running time	see table
Materials	ABS cover, self-extinguishing Aluminum bracket
Protection degree	IP54
Protection class	II
Working temperature range	-10...+50°C
Storage temperature and humidity	-40...+50°C, 1...95% RH, non-condensing
Fluid temperature	<150°C
Maintenance	Maintenance-free

MODEL SELECTION TABLE

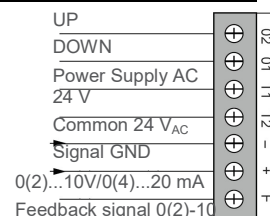
Models	Actuating force [N]	Control	Running time
AVF12	1200	Open/Close, 3-point	114 s @ 50 Hz / 95 s @ 60 Hz
AVF12M	1200	Proportional	114 s @ 50 Hz / 95 s @ 60 Hz
AVF18	1800	Open/Close, 3-point	210 s @ 50 Hz / 175 s @ 60 Hz
AVF18M	1800	Proportional	210 s @ 50 Hz / 175 s @ 60 Hz

ELECTRICAL WIRING

AVF..M (proportional)

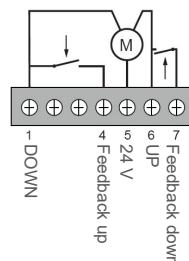
Terminal block J1:

- 02:** When short-circuiting with T2 (o -), then the stem goes completely up (direct way close). The position of W3 jumper has no effect.
- 01:** When short-circuiting with T2 (o -), then the stem goes completely down (direct way open). The position of W3 jumper has no effect.
- T1 T2:** 24 V_{AC} input terminals. T2 is common terminal (T2 is connected with -).
- +:** Input signal 4...20 mA (2... 10 V_{DC}) / 0...20 mA (0...10 V_{DC}). W2 and W4 must be set according to the input signal
- F:** Feedback signal. There is an output signal 0... 10 V_{DC} or 2... 10 V_{DC} available, depending on the setting of W2 jumper.



AVF.. (Open/Close, 3-point)

- 1:** 24 V_{AC} stem down (direct way open)
- 4:** Feedback with stem down (24 V)
- 5:** 24 V_{AC} (common)
- 6:** 24 V_{AC} stem up (direct way close)
- 7:** Feedback with stem down (24 V)



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MONTAŻ

Place motor on the valve and, having placed in seat, tighten the 4 locking screws (1).

Push the steel plate (2) and raise the valve stem or, alternatively, drive down the actuator shaft by manual override (3). Make the electrical connections as shown in the previous diagrams and (only for AVF..M) provide for the jumper settings (3).

JUMPER SETTINGS (AVF..M)

W1: 0%: 50%, 100%. Set the position of valve stroke in case of malfunction or failure of input signal.

0% stem completely up **50%** stem at halfway **100%** stem completely down

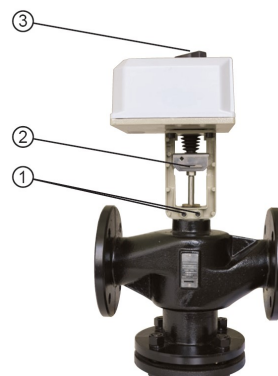
Moving the jumper W3, the situation is reversed.

0% stem completely down **50%** stem at halfway **100%** stem completely up

W2: 4...20 mA (2...10 V DC) / 0...20 mA (0...10 V DC). This jumper must be set according to W4 jumper to select the input signal to J1 terminal block.

W3: Reverse operation. Moving the jumper inverts the logic of operation as compared to the input signal.

W4: mA / V_{DC}. This jumper must be set according to W2 jumper to select the input signal to J1 terminal block.



LED Status Indicator (work): Normal operating status: flashing slowly (1 s on, one s off). During the self-adaptation of the actuator on the valve (after pressing S1 for at least 3 s) flashes rapidly (0.25 s on, 0.25 s off).

Self-adjustment in an error state: blinks twice quickly and off for a long time (on 0.25 s off for 0.25 s, twice, then off by 1.25 s).

LED indication of the rotation direction of the motor:

When the LED **D60** lights up, the valve stem moves downward. When the valve stem reaches the bottom and hold the position for 25 seconds, the LED turns off.

When the LED **D50** lights up, the valve stem moves upward. When the valve stem reaches the top and hold the position for 25 seconds, the LED turns off.

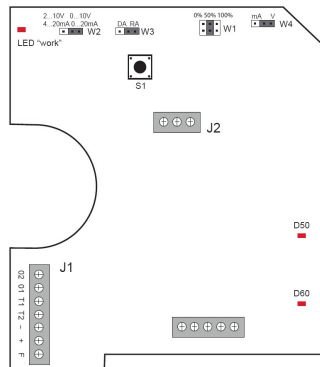
Automatic adaption of the actuator to the valve. Each actuator must be adapted to the valve to which it is coupled.

Press and hold the "**S1**" key for 3 s the actuator automatically will enter the self-adjustment. The LED "work" is flashing rapidly (on 0.25 s, off 0.25 s). The valve shaft moves down to the bottom, and then maintains the position for 25 sec and then move upward until the upper point. The self-adjustment does not end until the valve shaft does not hold the final position for 25 s. To self-adaptation occurred (the previous data is overwritten), the actuator returns to normal operation. Otherwise (the previous data is not overwritten), will be reported the failure of the state of self-adjustment (on 0.25 s off 0.25 s, twice, then off by 1.25 s). You can hold down the "**S1**" key for 3 s to retry the process of self-adjustment, or reboot (power cycle) of the actuator to return to normal working state.

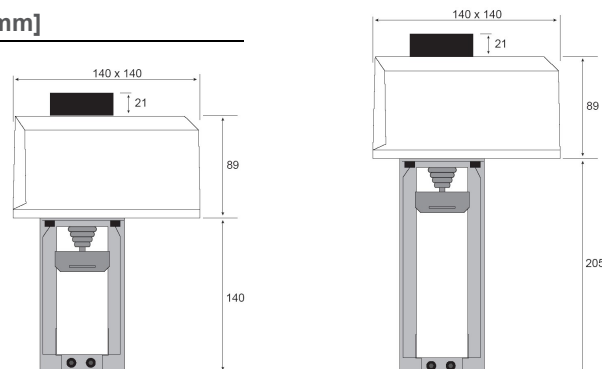
Possible problems of self-adjustment:

- 1: It occurs in the case where the stroke is reached less than half the nominal stroke;
- 2: The connection of the potentiometer is wrong (terminal J2). Correct way: when the valve shaft is downward the potentiometer has the maximum value, when the valve shaft is upward the potentiometer has the minimum value.

Printed circuit board (AVF..M)



DIMENSIONS [mm]



Due to continuous product improvement, specifications are subject to change without notice.

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