

Data sheet

Actuators for modulating control

AME 55, AME 56

Description



The actuators are used with valves:
VL 2/3, VF 2/3 (DN 65,80)* with adapter
065Z0312,

** only for AMV 56 actuator*

- VFS 2 (DN 65-100),
- VL 2/3 (DN 100),
- VF 2/3 (DN 100-150),
- AFQM (DN 65-125).

Features:

- "Self stroking" function
- Load related "Switch off" function that prevents overloading
- Diagnostic LED

Main data:

- Nominal voltage: 24 VAC , 50 Hz/60 Hz
- Control input signal:
0(4)-20 mA,
0(2)-10 V
- Force:
AME 55 - 2000 N,
AME 56 - 1500 N
- Stroke: 40 mm
- Speed:
AME 55 - 8 s/mm,
AME 56 - 4 s/mm
- Max. medium temperature: 200 °C
- Manual operation

Ordering

Actuators

Type	Power supply	Code No.
AME 55	24 VAC	082H3022
AME 56		082H3025

Accessories

Type	Code No.
Active return signal kit for AME 55, AME 56	082H3070
Stem heater (VF, VL valves DN 65-100)	065Z7020
Stem heater (VF valves DN 125, 150 and VFS valves DN 65-100)	065Z7022
Adapter (VF, VL valves DN 65-80)	065Z0312

Technical data

Type		AME 55	AME 56
Power supply	V	24; ± 10%	
Power consumption	VA	9	19.5
Frequency	Hz	50/60	
Control input Y	V	0-10 (2-10) Ri = 24 kΩ	
	mA	0-20 (4-20) Ri = 500 Ω	
Output signal X	V	0-10 (2-10)	
Closing force	N	2000	1500
Max. stroke	mm	40	
Speed	s/mm	8	4
Max. medium temperature	°C	200	
Ambient temperature		0 ... 55	
Storage and transport temperature		-40 ... 70	
Protection class		II	
Grade of enclosure		IP 54	
Weight	kg	3.8	
 - marking in accordance with standards		Low Voltage Directive 73/23/EEC, EMC-Directive 2006/95/EEC: EN 60730-1, EN 60730-2-14	

Installation

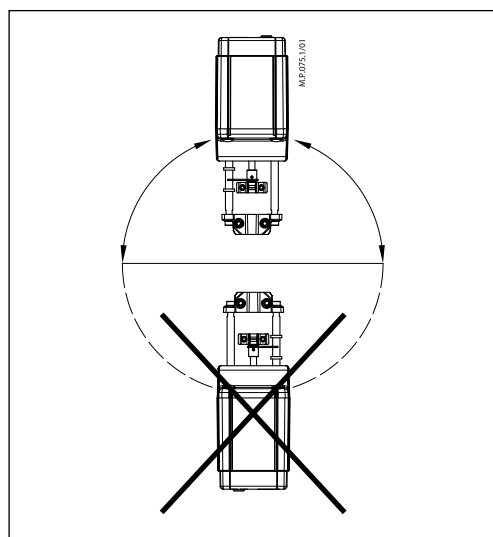
Mechanical

The actuator should be mounted with the valve stem in either horizontal position or pointing upwards. Use a 4 mm Allen key (not supplied) to fit the actuator to the valve body. Allow for necessary clearance for maintenance purposes.

The valve has position indication rings which should be pushed together before commissioning; after stroking they indicate the ends of the stroke.

Electrical

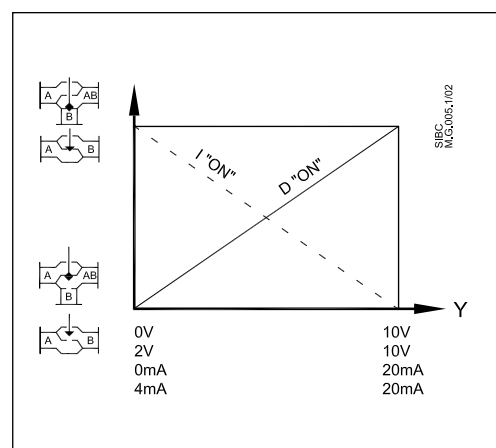
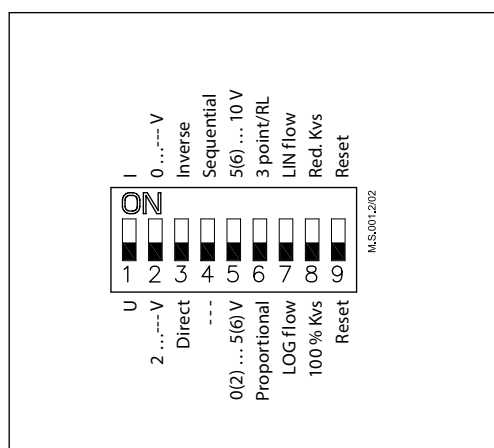
Electrical connections can be accessed by removing the cover. Two M16 × 1.5 cable entries are provided. Both entries are provided with a rubber grommet for use with flexible cable. Note that in order to maintain the enclosure IP rating, appropriate cable glands must be used.



Disposal

The actuator must be dismantled and the elements sorted into various material groups before disposal.

DIP switch setting



The actuator has a function selection DIP switch under the removable cover. In particular, if SW6 is set to ON, the actuator will perform as 3-point actuator.

The switch provides the following functions:

• SW1: U/I - Input signal type selector:

If set to OFF position, voltage input is selected. If set to ON position, current input is selected.

• SW2: 0/2 - Input signal range selector:

If set to OFF position, the input signal is in the range from 2 V to 10 V (voltage input) or from 4 mA to 20 mA (current input). If set to ON position, the input signal is in the range from 0 V to 10 V (voltage input) or from 0 mA to 20 mA (current input).

• SW3: D/I - Direct or inverse acting selector:

If set to OFF position, the actuator is direct acting (stem lowers as voltage increases). If actuator is set to ON position the actuator is inverse acting (stem raises as voltage increases).

• SW4: —/Seq - Normal or sequential mode selector:

If set to OFF position, the actuator is working in range 0(2)...10 V or 0(4)...20 mA. If set to ON position, the actuator is working in sequential range; 0(2)...5 (6) V or 0(4)...10(12) mA or 5(6)...10 V or 10(12)...20 mA).

• SW5: 0...5 V/5...10 V - Input signal range in sequential mode:

If set to OFF position, the actuator is working in sequential range 0(2)...5 (6) V or 0(4)...10 (12) mA. If set to ON position, the actuator is working in sequential range; 5(6)...10 V or 10(12)...20 mA.

• SW6: Prop./3-pnt - Modulating or 3-point mode selector:

If set to OFF position, the actuator is working normally according to control signal. If set to ON position, the actuator is working as 3-point actuator.

• SW7: LOG/LIN - Equal percentage or linear flow through valve selector¹:

If set to OFF position, the flow through valve is equal percentage. If set to ON position, the flow through valve is linear according to control signal.

• SW8: 100% K_{VS}/Reduced K_{VS} - Flow reduction through valve selector¹:

If set to OFF position, the flow through valve is not reduced. If set to ON position, the flow through valve reduced by half of increment standard K_{VS} values (example: valve with K_{VS} 16 and SW8 set to ON – maximum flow through the valve is K_{VS} 13 (middle between standard K_{VS} 16 and K_{VS} 10).

¹ NOTE: To be used only in combination with valves with equal percentage characteristic

• SW9: Reset:

Changing this switch position will cause the actuator to go through a self stroking cycle.

Wiring



24 Vac only.

Wiring length	Recommended square of the wiring
0-50 m	0.75 mm ²
> 50 m	1.5 mm ²

Automatic self stroking feature

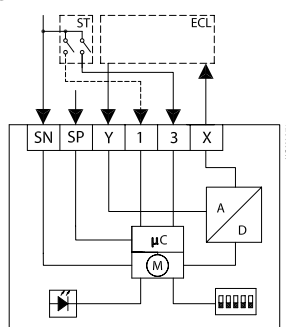
When power is first applied, the actuator will automatically adjust to the length of the valve stroke. Subsequently, the self stroking feature can be re-initialised by changing position of SW9.

Diagnostic LED

The red diagnostic LED is located on the pcb under the cover. It provides indication of three operational states:

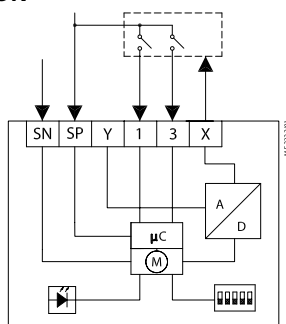
- Actuator Healthy (Permanently ON),
- Self Stroking (Flashes once per second),
- Error (Flashes 3 times per second - seek technical assistance).

DIP 6 = OFF



SN	0 V	Neutral
SP	24 VAC	Power supply
Y	0(2)-10 VAC 0(4)-20 mA	Input
1	24 VAC	Input
3	24 VAC	
X	0(2)-10 V	Output

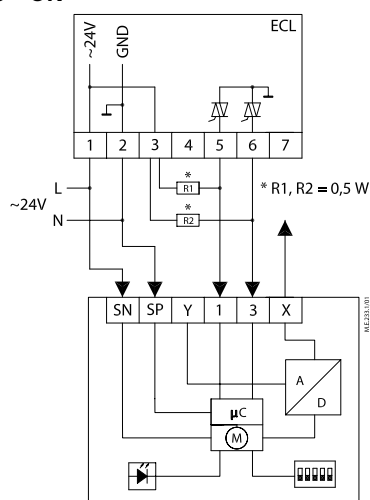
DIP 6 = ON



SN	0 V	Neutral
SP	24 VAC	Power supply
1	24 VAC	Input
3	24 VAC	
X	0(2)-10 VDC	Output

Controller with relay output

DIP 6 = ON



SN	24 V	Power supply
SP	0 V	Neutral
1	24 VAC	Input
3	24 VAC	

Controller with triacs output

Commissioning

Complete the mechanical and electrical installation and perform the necessary checks and tests:

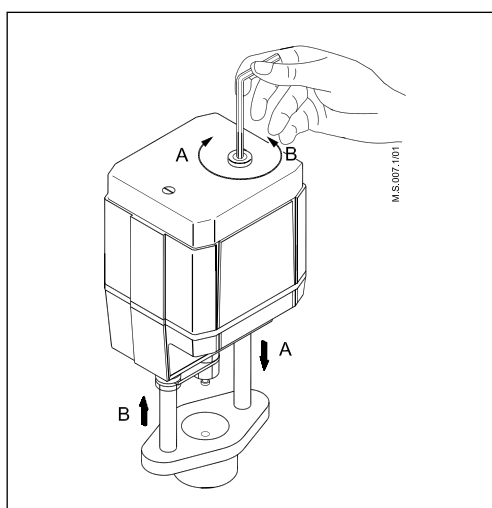
- Isolate control medium. (e.g. self stroking in a steam application without suitable mechanical isolation could cause a hazard).
- Apply the power. Note that the actuator will now perform the self stroking function.
- Apply the appropriate control signal and check the valve stem direction is correct for the application.
- Ensure that the actuator drives the valve over its full stroke, by applying the appropriate control signal. This action will set the valve stroke length.

The unit is now fully commissioned.

Commissioning / testing feature

The actuator can be driven to the fully open or closed positions (depending on valve type) by connecting SN to terminals 1 or 3.

Manual override

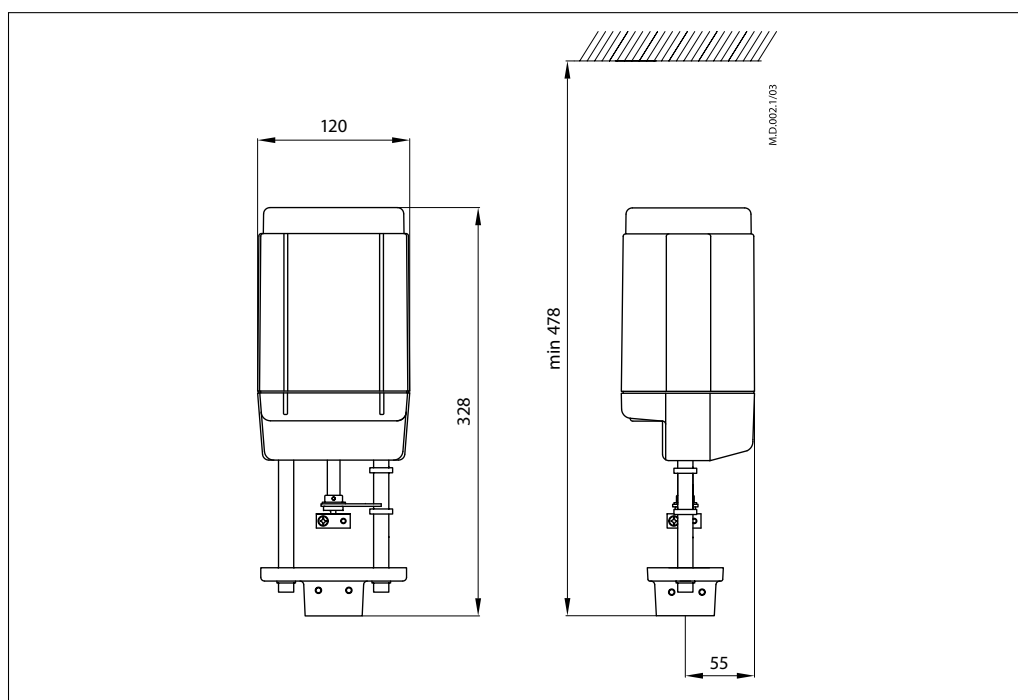


The manual override is applied by rotating the 4 mm Allen key (not supplied) to the required position. Observe the direction of the rotation symbol.

- Disconnect power supply
- Adjust valve position using an Allen key
- Set valve to closed position
- Restore power supply

If manual override has been used then X and Y signal are not correct until the actuator reaches its end position. If this is not accepted reset the actuator, or apply accessory active return signal kit.

Dimensions



Actuator - valve combinations

