

## AVM 105, 115: Actuator

### How energy efficiency is improved

Torque-dependent cut-off facility for efficient usage of energy

### Features

- Activation of 2-way and 3-way valves of the VUN/BUN, VUD/BUD and VUE/BUE series. For controllers with a switching (2-/3-point) output.
- Synchronous motor with electronic control unit and time-dependent cut-off
- Maintenance-free gear unit
- Gear unit can be disengaged in order to position the valve by hand (hexagon key provided)
- Connection with valve spindle created automatically
- Cap nut for valve fitting made of brass
- Fitting vertically upright to horizontal, not suspended



AVM1\*5F\*\*\*



### Technical data

#### Power supply

Power supply 24 V~	±20%, 50...60 Hz
Power supply 230 V~	±15%, 50...60 Hz

#### Parameters

Actuator stroke <sup>1)</sup>	0...8 mm
Response time	200 ms

#### Ambient conditions

Admissible ambient temperature	-10...55 °C
Temperature of medium	Max. 100 °C
Admissible ambient humidity	5...95% rh, no condensation

#### Function

Control	2-/3-point
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#### Construction

Weight	0.7 kg
Housing	Lower section black, upper section yellow
Housing material	Fire-retardant plastic
Power cable	1.2 m long, 3 × 0.75 mm <sup>2</sup>

#### Standards and directives

Type of protection	IP 54 (EN 60529), horizontal
Protection class 24 V	III (IEC 60730)
Protection class 230 V	II (EN 60730)

#### CE conformity according to

EMC directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2 EN 61000-6-3, EN 61000-6-4
Low-voltage directive 2006/95/EC	EN 60730-1 EN 60730-2-14 Over-voltage category III Degree of contamination II
Directive 2006/95/EC	EEC (II B)
Machine directive 2006/42/EC (according to appendix IIB)	EN 12100

#### Overview of types

Type	Running time (s)	Actuating power (N)	Voltage	Power consumption
AVM105F100	30	250	230 V~	2.4 W, 4.5 VA
AVM105F120	120	250	230 V~	2.0 W, 4.0 VA
AVM105F122	120	250	24 V~	1.6 W, 1.7 VA
AVM115F120	120	500	230 V~	2.0 W, 4.0 VA

<sup>1)</sup> Stroke 10 mm for AVM115F901



Type	Running time (s)	Actuating power (N)	Voltage	Power consumption
AVM115F122	120	500	24 V~	1.6 W, 1.7 VA
AVM115F901	160	500	230 V~	2.0 W, 4.0 VA

⚡ *AVM115F901: For SAUTER Valveco VCL040 and VCL050, inverse scale, inverse connection*

⚡ *KTM 512, TA-Regulator DN 15...50*

#### Accessories

Type	Description
0372145001	Auxiliary change-over contacts, single
0372145002	Auxiliary change-over contacts, double
0372249001	Adaptor required when media temperature > 100 °C (recommended for temperatures < 10 °C)
0372273001	Adapter for Siemens valve VVG/VXG 44, 48
0372286001	Potentiometer, 130 Ω
0372286002	Potentiometer, 1000 Ω
0372286003	Potentiometer, 5000 Ω
0372320001	Hexagon key as visualisation for position indicator
0372459100	External switching, 230 V version for parallel operation with A*M 1*4 or actuators with end switch, incl. junction box
0372459102	External switching, 24 V version for parallel operation with A*M 1*4 or actuators with end switch, incl. junction box

⚡ *Auxiliary change-over contacts: Infinitely variable 0...100°, admissible load 5(2) A, 24...230 V*

⚡ *Potentiometers: Only one potentiometer or one set of auxiliary contacts can be fitted for each actuator*

#### Description of operation

When voltage is applied to the cable, the control unit to be activated is moved to any desired position by means of the coupling rod.

*Direction of the stroke for 3-point control:*

- The coupling rod moves out and the valve opens when the actuator is connected to the voltage via the blue (MM/N) and brown (01) cables.
- The coupling rod moves in and the valve closes when the actuator is connected to the voltage via the blue (MM/N) and black (02) cables.

With 3-point control, the direction of the stroke is changed by swapping the connections.

*Direction of the stroke for 2-point control (there is always voltage on the black cable 02):*

- The coupling rod moves out and the valve opens when the actuator is connected to the voltage via the blue (MM/N) and brown (01) cables.
- The coupling rod moves in and the valve closes when the actuator is connected to the voltage via the blue (MM/N) cable, and the brown (01) cable is not connected to the voltage.

In the end positions (limit stop in valve or maximum stroke reached) or in the case of an overload, the magnetic coupling is activated. The positioning signal is switched off by the electronic cut-out after 3 minutes or 60 seconds (F100).

The manual adjustment is performed by releasing the gear unit (slide switch beside the connection cable) and simultaneously turning it with the hex spanner on the top part of the actuator. 8 mm stroke achieved with 1½ turns. The actuator position can be determined by looking at the actuator bracket or the indicator knob on the top part of the actuator.



Note

After manually moving the slide switch, put it back into its original position (engage gear unit).

#### Intended use

This product is only suitable for the purpose intended by the manufacturer, as described in the "Description of operation" section.

All related product documents must also be adhered to. Changing or converting the product is not admissible.

#### Engineering and fitting notes

Condensate, dripping water, etc. must be prevented from entering the actuator along the valve spindle. Hanging position (fitting upside down) is not admissible.

The actuator / valve is mounted by attaching and tightening the cap nut without any additional adjustment. A tool must not be used. The coupling of the valve spindle with the actuator spindle is per-

formed automatically, either by using the manual adjustment and moving to 100% stroke or by connecting the voltage to terminals MM/N and 01. When dismantling, first the actuator and valve spindles are released, then the cap nut. The device is delivered ex works in the middle position.

The concept of synchronous motor and magnetic coupling enables parallel operation of multiple valve actuators of the same type.

The maximum accessory equipment for an actuator is 1 auxiliary change-over contact or 1 potentiometer.

The auxiliary contact accessory is screwed onto the top cover of the actuator. To be able to make the mechanical connection, you first have to remove the indicator knob. A new indicator can be seen on the cover of the accessory.



#### Beware of injury

Opening the housing creates a risk of injury.

► The housing must not be opened.

#### Additional technical data

The upper section of the housing with the cover and indicator knob contains the synchronous motor with capacitor.

The lower section of the housing contains the maintenance-free gear unit and the gear-release knob.

#### Auxiliary change-over contacts:

- Switch rating max. 230 V VAC, current min. 20 mA at 20 V
- Switch rating max. 4...30 V VDC, current 1...100 mA

#### Power consumption

Type	Running time [s]	Status	Active power P [W]	Apparent power S [VA]
AVM105F100	30	Operation	2.4	5.4
AVM105F120	120	Operation	2.0	5.0
AVM105F122	120	Operation	1.6	1.7
AVM115F120	120	Operation	2.0	5.0
AVM115F122	120	Operation	1.6	1.7

#### Outdoor installation

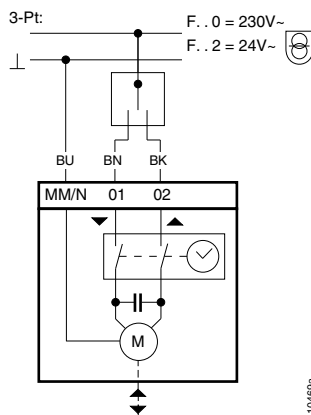
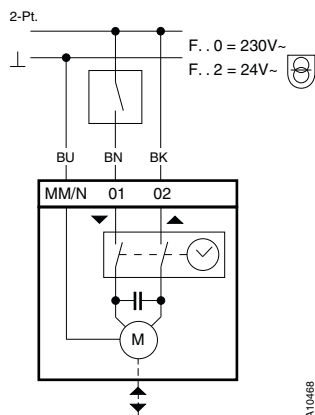
The actuators must also be protected from the weather if they are installed outside the building.

#### Disposal

When disposing of the product, observe the currently applicable local laws.

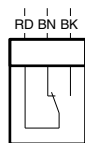
More information on materials can be found in the Declaration on materials and the environment for this product.

#### Connection diagram



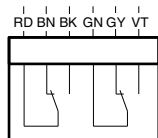
**Accessories**

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RD = red  
BN = brown  
BK = black  
BU = blue

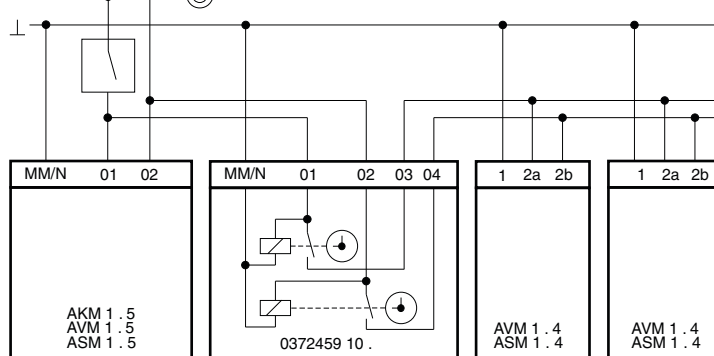
372145 002



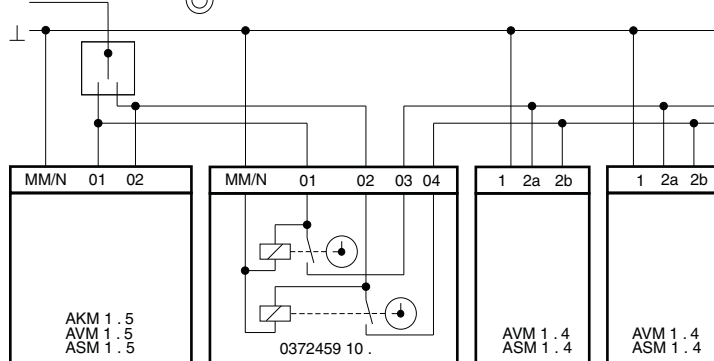
RD = red  
BN = brown  
BK = black  
GN = green  
GY = grey  
VT = violet

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2-Pt: F..0 = 230V~  
F..2 = 24V~

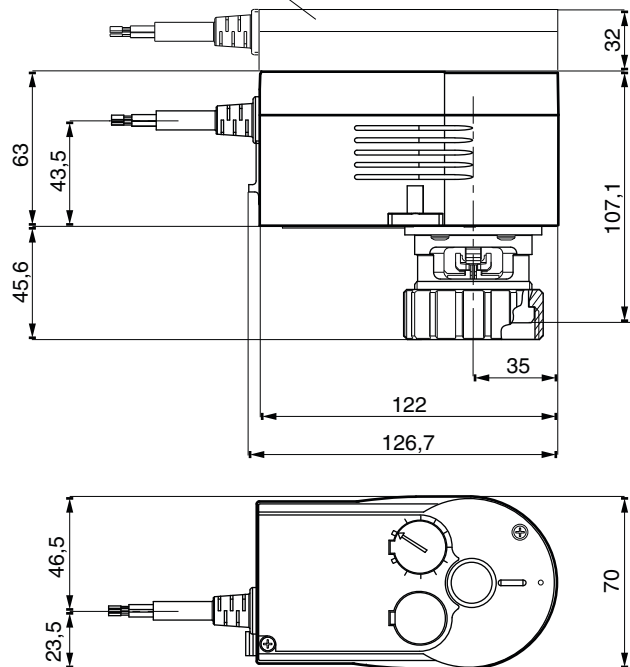


3-Pt: F..0 = 230V~  
F..2 = 24V~



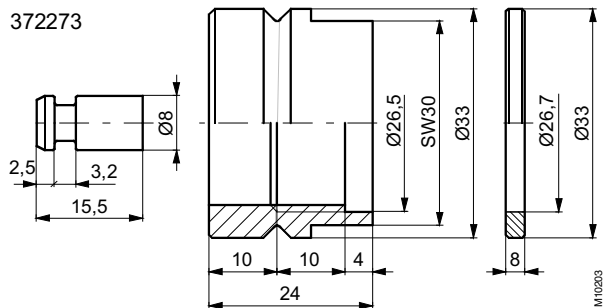
**Dimension drawing**

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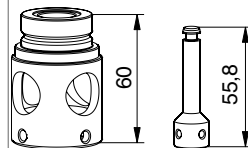


**Accessories**

372273



0372249 001



0372249 002

