

## AXM 217S: Motorised actuator for unit valves, with positioner

### How energy efficiency is improved

Automatic valve adjustment and intelligent cut-off for maximum energy efficiency.

### Areas of use

Actuation of through and three-way unit valves of the VUL, BUL, VXL, BXL, VCL and VDL series. For controllers with continuous output in conjunction with single-room control systems.

### Features

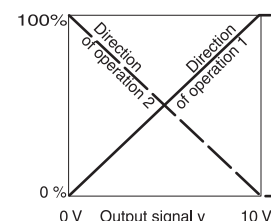
- Pushing force 120 N
- Fitted to valve with M30 × 1.5 thread
- Stepping motor with electronic activation and cut-out
- Versions with direction of operation 1 (Direct Acting) or 2 (Reverse Acting) (settable)
- Adjustable valve strokes
- Maintenance-free gear unit
- Suitable for retrofitting existing installations using the appropriate adaptors
- Status and diagnostic indicator via integrated bi-colour LED

### Technical description

- Two-piece plastic housing, light grey RAL7035
- Nickel-plated brass nut
- Plug-in cable, light grey, standard 1.50 m long, 3×0.35 mm<sup>2</sup>, exchangeable
- Running time 8 s/mm
- Fitting position vertically upright to horizontal, not upside down



T11100



Type	Direction of operation <sup>1)</sup>	Running time	Stroke	Pushing force	Power supply	Weight
		s	mm	N		kg
<b>AXM 217S F402</b>	1 or 2 <sup>2)</sup>	26...44 <sup>3)</sup>	3.2 <sup>3)</sup>	120 <sup>1)</sup>	24 V=/~	0.15
Power supply 24 V=/~	±15%, 50...60 Hz	Perm. ambient temperature		0...50 °C		
Power consumption	2.5 VA	Perm. ambient humidity		< 75% rh		
Control signal	0(2)...10 V; 0...5 V; 5...10 V 0(4)...20 mA	Ingress protection		IP 43 (EN 60529)		
Max. operating temperature	90 °C at the valve	Protection class		III (IEC 60730)		
Noise level	< 30 dB(A)	Fitting instructions		P100011418		
		Dimension drawing		<a href="#">M11488</a>		
		Wiring diagram		<a href="#">A10711</a>		

### Accessories

- 0550603 009** Cable 24 V, PVC, plug-in, 3 m long
- 0550603 010** Cable 24 V, PVC, plug-in, 7 m long
- 0550603 011** Cable: 24 V, halogen-free, plug-in, 3 m long
- 0550603 012** Cable: 24 V, halogen-free, plug-in, 7 m long
- 0371235 001** Adaptor for fitting to Oventrop valves (M30×1)
- 0550393 001** Danfoss RA2000 adaptor, 22 mm
- 0371356 001** Adaptor for fitting to Beulco or Tobler underfloor-heating distributors (M30×1)
- 0550393 002** Danfoss RAVL adaptor, 26 mm
- 0550393 003** Danfoss RAV adaptor, 34 mm
- 0371361 001** Adaptor for fitting to Herz valves, type Herz-TS'90 (M28×1.5)
- 0371363 001** Adaptor for fitting to Tour and Andersson valves, type TA/RVT (M28×1.5)

1) Pushing force min. 100 N, max. 150 N

2) The direction of operation and the control voltage can be set using DIP switches; factory setting '2' (RA)  
 Direction of action 1: control signal increasing = actuator extends (VXL, VUL, VCL, VDL, BUL valves closes, BXL valve control passage opens)  
 Direction of action 2: control signal increasing = actuator retracts (VXL, VUL, VCL, VDL BUL valves opens, BXL valve control passage closes)

3) Adjustable stroke 3.2 mm, 4.3 mm, 5.5 mm

### Operation

When being put into service (with valve fitted), the actuator moves to both end positions and stores the associated increments. The range of the control signal is then assigned to this effective stroke. The motor positions the valve and cuts out as soon as the stroke position matches the controller's output signal. In the end positions or in the event of an overload, the motor cuts out after 2 minutes at the latest. If the control voltage has not changed after 2 hours (in the range of 0...0.5 V), the motor briefly runs to the end position and corrects its position memory (if necessary). The LED lights up if power is applied and flashes as long as the motor is running.

Direction of operation 1: As the positioning signal increases, the actuator spindle extends and the VUL, VXL, VCL, VDL through valves and the BUL three-way valve (control passage) close. On the BXL three-way valve, the control passage opens.

Direction of operation 2: As the positioning signal increases, the actuator spindle retracts and the VUL, VXL, VCL, VDL through valves and the BUL three-way valve (control passage) open. On the BXL three-way valve, the control passage closes.

After removing the cap on the cover, the following settings can be made using jumpers:

- The input signal can be set to 0...10 V, 5.2...10 V or 0...4.8 V.
- The direction of operation 1 or 2 can be selected; the factory setting is 2 (RA).

Put the cap back on after making the settings.

### LED status indicator

Status	Description
OFF	No power applied
Flashing green	Actuator moving to position or end position reached
Continuous green light	Position reached
Flashing red	Calibration cycle
Continuous red light	No input signal

### Engineering and fitting notes

Do not use tools to fit the actuator to the valve. In the event of a power failure, the valve can be opened by taking off the actuator. When connecting or changing the power cables, the mains power must be switched off. The actuator should be fitted to the valve only when the actuator spindle is not fully (100%) extended. It is delivered ex works at 0% stroke

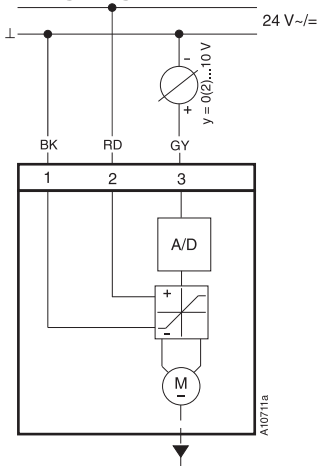
**Outdoor installation** We recommend protecting the devices from the weather if they are installed outside of buildings.

### Standards and directives

The relevant EU standards have been met:

EMC Directive: CE as per EN 61000-6-1, 61000-6-2, 61000-6-3 and EN 61000-6-4

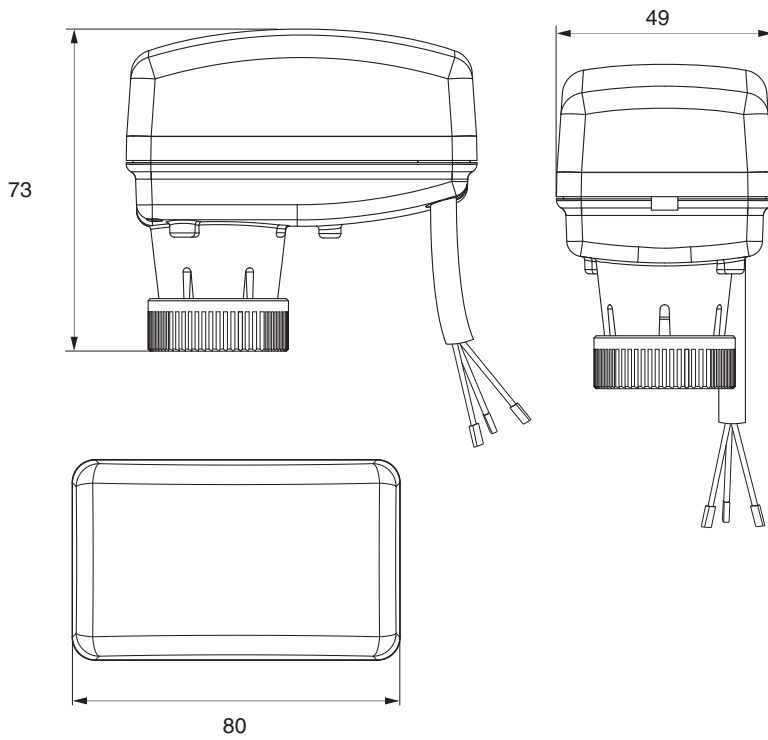
**Wiring diagram**



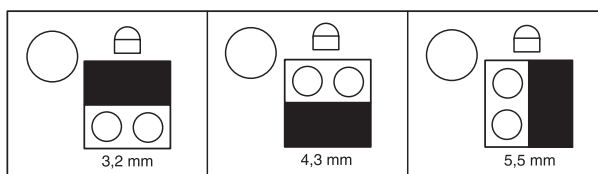
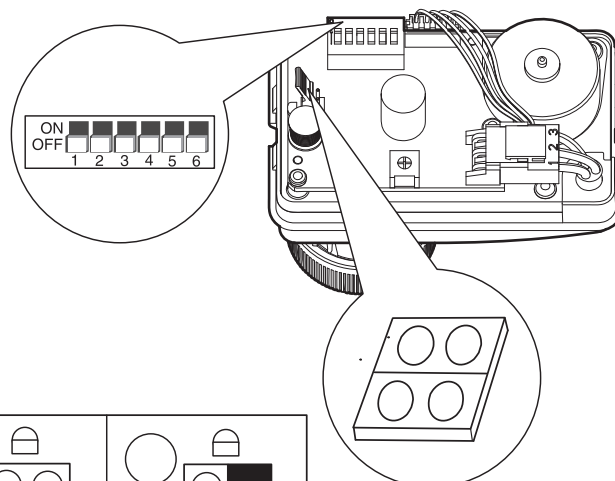
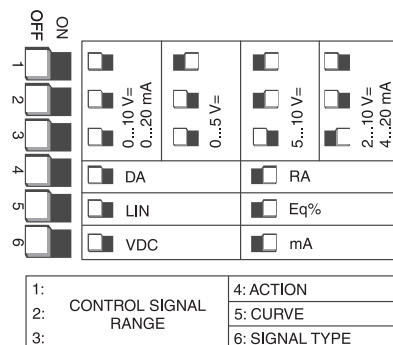
1	BK (black)
2	RD (red)
3	GY (grey)

**Dimension drawing**

F402



M11488a

**DIP switch setting****DIP switches 1-2-3-6**

The DIP switches 1-2-3 are used for setting the control signal range. The voltage (VDC) or current (mA) is set with DIP switch 6.

Condition ex works: DIP switch 1-2-3-6 in OFF position

**DIP switch 4**

The direction of operation of the actuator is set with DIP switch 4:

Direction of operation 1: DA (Direct Acting)

Direction of operation 2: RA (Reverse Acting)

Condition ex works: DIP switch 4 in ON position

**DIP switch 5**

This switch can set the actuator so that the characteristic of the combination of valve with actuator corresponds to a linear or equal-percentage characteristic.

DIP switch 5 in OFF(LINE) position

Use this setting if the valve has a linear or equal-percentage characteristic.

DIP switch 5 in ON (Eq%) position

Use this setting with an open/close or a high-speed valve.

Condition ex works: DIP switch 5 in OFF position

**Setting the stroke**

The stroke can be set using a jumper.

Condition ex works: 3.2 mm