Data sheet

Modulating controlled actuators
AME 10, AME 20, AME 30
AME 13, AME 23, AME 33 - with DIN EN 14597 certified safety function (spring down)

Description

AME 10	*AME 13*	*AME 20, AME 30*	*AME 23, AME 33*

Actuators with safety function (AME 13, AME 23 or AME 33) and actuators without safety function (AME 10, AME 20 or AME 30) are mainly used with VS, VM, VB, or AVQM valves.
Safety version is activated automatically in case of power failure or if the power supply is switched off by the safety thermostat.
Actuators automatically adapt stroke to valve end positions which reduces commissioning time.

Actuators have some special features:
- The advanced design incorporates load related 'switch-off' to ensure that actuators and valves are not exposed to overload.
- Digital feedback end position indication signal for valve end position is available by terminal 4 or 5.
- Low weight and robust.
- The advanced design incorporates a diagnostic LED and operational data capture,
- DIN EN 14597 certified safety function

Main data:
- 24 V version
- Force:
  - AME 10, 13 ....300 N
  - AME 20, 23, 30, 33 ....450 N
- Speed:
  - AME 10, 13 ....14 s/mm
  - AME 20, 23 ....15 s/mm
  - AME 30, 33 ....3 s/mm
- Max. medium temperature:
  - AME 10, 13 ....130 °C
  - AME 20, 23, 30, 33 ....150 °C
- End-position signals

Note:
The use of AME actuators together with VS2 DN 15 is not recommendable. Linear characteristics as in VS2 DN 15 valves is not recommendable in DHW production.

Ordering

Actuators

Type	Supply voltage	Code No.
AME 10		**082G3005**
AME 20	24 V	**082G3015**
AME 30		**082G3017**

Actuators with safety function - EN 14597

Type	Supply voltage	Code No.
AME 13		**082G3006**
AME 23	24 V	**082G3016**
AME 33		**082G3018**

Technical data

Type			AME 10	AME 13	AME 20	AME 23	AME 30	AME 33
Power supply		V	24; +10 to –15 %; AC					
Power consumption		VA	4	9	4	9	9	14
Frequency		Hz	50/60					
Safety function			-	x	-	x	-	x
Safety function runtime	5 mm stroke	s	-	6	-	-	-	-
	10 mm stroke			-		8		8
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	300		450			
Max. stroke		mm	5		10			
Speed		s/mm	14		15		3	
Max. medium temperature		°C	130		150			
Ambient temperature			0 … 55					
Humidity		RH	5-95 % no condensing					
Storage and transport temperature		°C	–40 … 70					
Protection Class			II		I (230V); III(24V)			
Grade of enclosure			IP 54					
Weight		kg	0,6	0,8	1,45	1,5	1,45	1,5
CE - marking in accordance with standards			Low voltage directive (LVD) 2006/95/EC: EN 60730-1, EN 60730-2-14 EMC Directive 2004/108/EC: EN 61000-6-2, EN 61000-6-3					

Installation

AME 10

AME 20, AME 30

AME 13

AME 23, AME 33
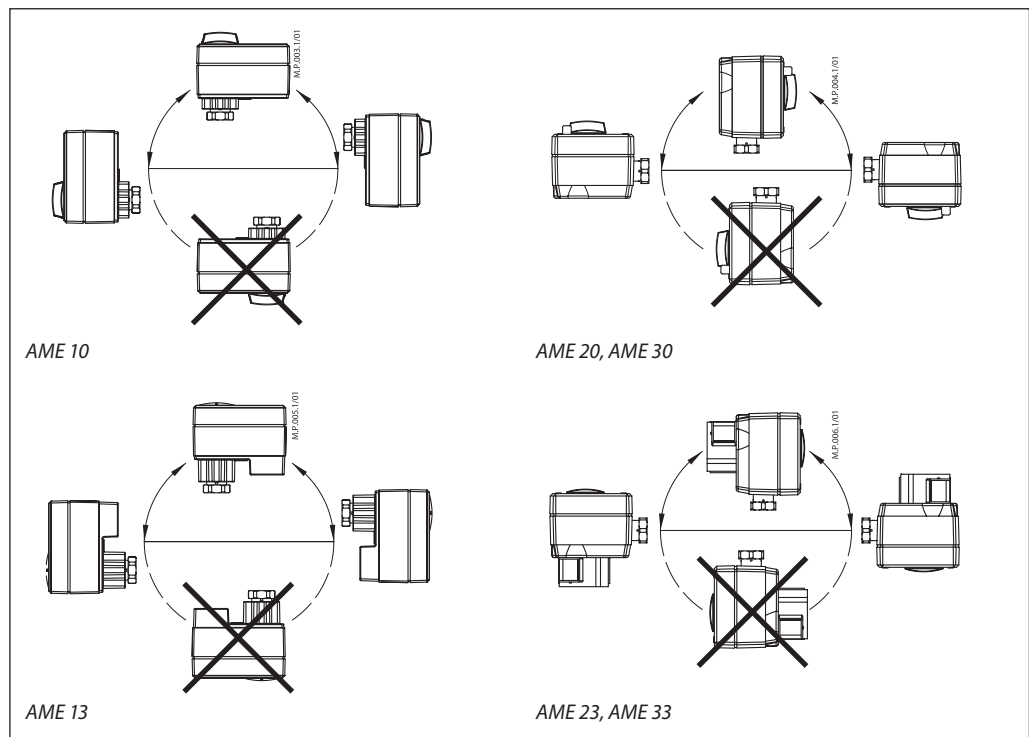
Safety function

The safety function will fully open or close the valve by power failure, depending upon the chosen safety action (SD).

Valve selection will also affect the safety action. The safety function unit is factory fitted to the rear of the actuator.

| Valve type | Spring action selection will | |
	Close port A-AB	Open port A-AB
VS	SD [1]	-
VM (DN 15-50)	SD [1]	-
VB (DN 15-50)	SD [1]	-
AVQM (DN 15-50)	SD [1]	-
VMV	-	SD

1)   *in compliance with DIN EN 14597*

VS, VM, VB, AVQM   VMV

AME 13

AME 23, AMV 33
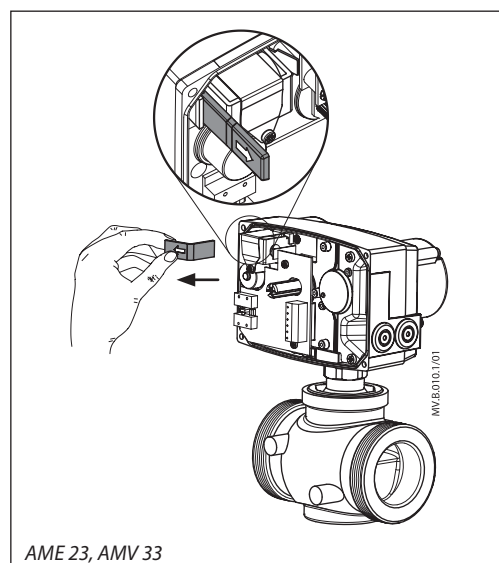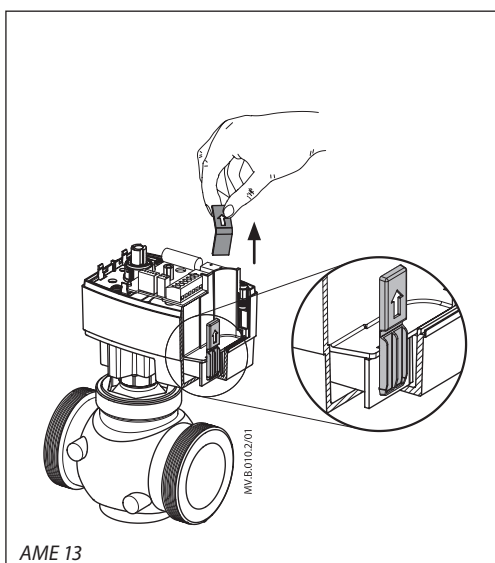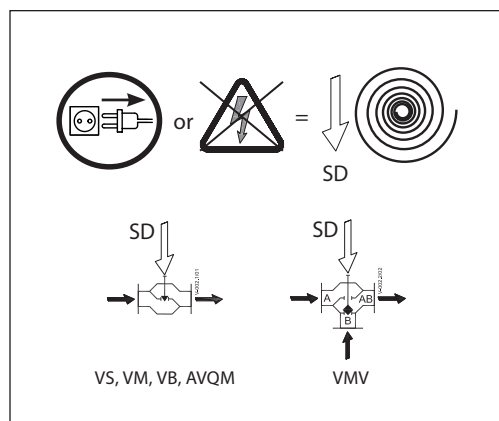
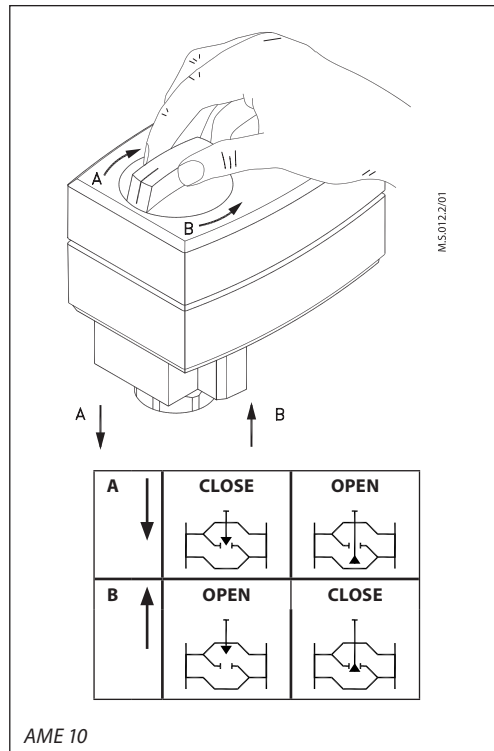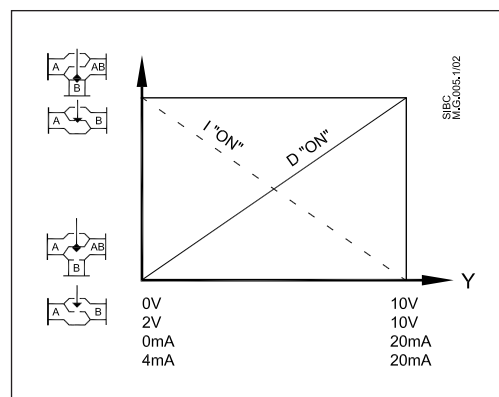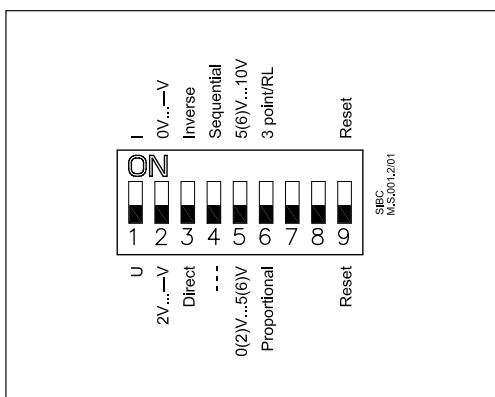**Disposal**

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

Manual Override

A ↓	CLOSE	OPEN
B ↑	OPEN	CLOSE

AME 10

A ↓	CLOSE	OPEN
B ↑	OPEN	CLOSE

AME 20, AME 30

B ↑	OPEN	CLOSE

AME 13

B ↑	OPEN	CLOSE

AME 23, AME 33
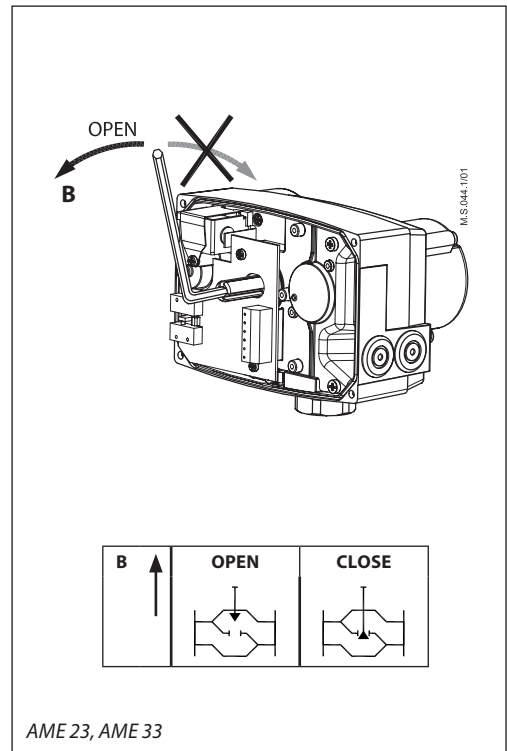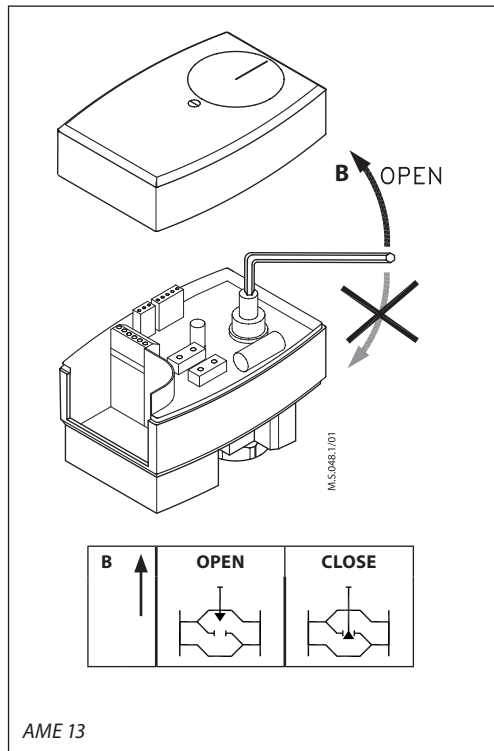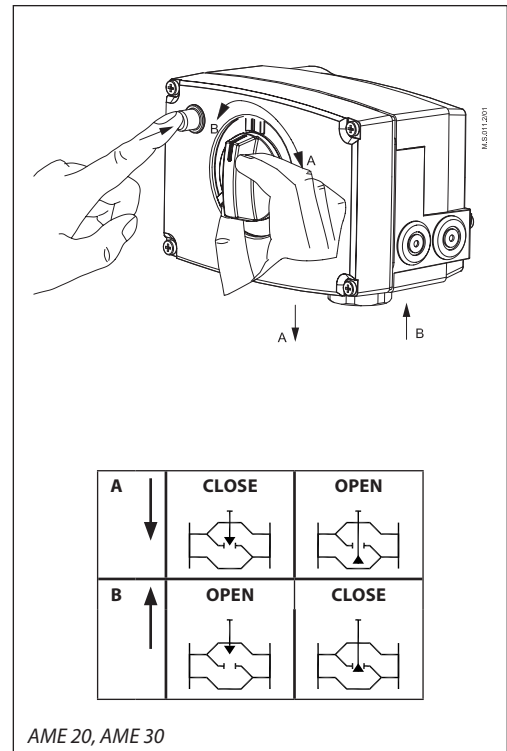
DIP switch setting

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 voltage input is selected.
If set to ON current input is selected.

• SW2: 0/2 - Input signal range selector:
If set to OFF the input signal is in the range from 2-10 V (voltage input) or from 4-20 mA (current input).
If set to ON the input signal is in the range from 0-10 V (voltage input) or from 0-20 mA (current input).

• SW3: D/I - Direct or inverse acting selector:
If set to OFF the actuator is direct acting (stem lowers as voltage increases).
If actuator is set to ON the actuator is inverse acting (stem raises as voltage increases).

• SW4: —/Seq - Normal or sequential mode selector:
If set to OFF the actuator is working in range 0(2)-10 V or 0(4)-20 mA.
If set to ON 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 the actuator is working in sequential range 0(2)-5(6) V or 0(4)-10(12) mA.
If set to ON 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 the actuator is working normally according to control signal.
If set to ON the actuator is working as 3-point actuator.

• SW7: LOG/LIN - Not in use.

• SW8: 100 % k_{vs}/Reduced k_{vs} - Not in use.

• SW9: Reset:
Changing this switch position will cause the actuator to go through a self calibration cycle.

Wiring

⚠️

24 V AC only.

DIP 6 = OFF *Wiring for modulating mode*

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

DIP 6 = ON *Wiring for 3-point floating mode Controller with relay output*

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

DIP 6 = ON *Wiring for 3-point floatig mode Controller with triacs output*

* R1, R2 = 0,5 W

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

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.
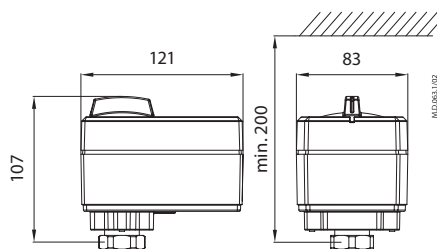
Wiring length	Recommended square of the wiring
0-50 m	0,75 mm²
> 50 m	1,5 mm²

Diagnostic LED
The red diagnostic LED is located on the pcb under the cover. It provides indication of three operational states:
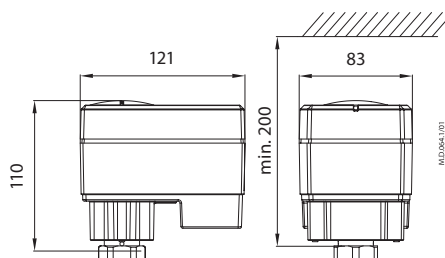• Actuator Healthy (Permanently ON),
• Self Stroking (Flashes once per second),
• Error (Flashes 3 times per second - seek technical assistance).
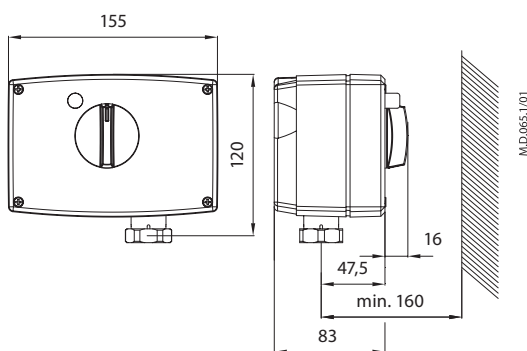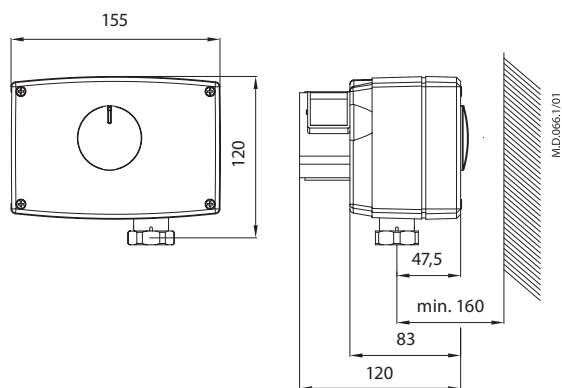
Dimensions

AME 10

AME 13

AME 20, AME 30

AME 23, AME 33

Actuator - valve combinations

AME 10, AME 13 +
VM2 (DN 15 - 25)
VS2 (DN 20* - 25)

AME 10, AME 13 +
VB2 (DN 15 - 20)

AME 10 +
VMV (DN 15 - 40)

AME 10, AME 13 +
AVQM (see AVQM data sheet)

AME 20/30, AME 23/33 +
VM2 (DN 15 - 50)
VS2 (DN 20* - 25)

AME 20/30, AME 23/33 +
VB2 (DN 15 - 50)

AME 20/30, AME 23/33 +
AVQM (DN 15 - 50)

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