

## ASM 124S & 134S: Actuators with Sauter Universal Technology (SUT)

For controllers with continuous output (0...10 V) or switched output (two- or three-point control). For the operation of air dampers, cut-off dampers and multi-louvre dampers.

Two-piece housing of fire-retardant plastic, black lower part, yellow upper part. With stepping motor, SUT electronic control unit and maintenance-free gearbox. Self-centring spindle adaptor for fitting to the damper spindle. Direction of operation can be changed at the cable. Electronic, torque-based cut-out via stops on either the actuator or the air damper. Coding switch for choosing the running time and initialising function. Gearbox can be de-coupled in order to position the damper or to make manual adjustments. Power cable is 1.2 metre long,  $5 \times 0.75 \text{ mm}^2$ , fixed to the housing. Fixing bracket, which functions as an anti-torsion device, has two metal screws. Suitable for fitting in any position. M5 thread holes for fitting to fixing bracket.



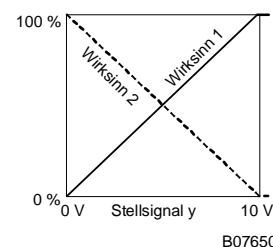
T09656



Y07552

Type	Torque [Nm]	Holding torque [Nm]	Running time <sup>1)</sup> for 90° [s]	Power	Weight [kg]
<b>ASM 124S F132</b>	15	15	60, 120	24 V~	1.2
<b>ASM 134S F132</b>	30	30	120, 240	24 V~	1.2

<b>Positioner</b> <sup>1)</sup>		Starting point U0	0 or 10V
Control signal	0...10V, R <sub>i</sub> > 100 kΩ	Control span ΔU	10V
Positional feedback signal	0...10V, load >10 kΩ	Switching range Xsh	200 mV
Power supply	24V ± 20 %, 50...60 Hz 24V = <sup>2)</sup> ± 20 %	Permissible ambient temperature	-20...55 °C
		Permissible ambient humidity	< 95 %rh without condensation
Power consumption running at a standstill	approx. 5 VA approx. 1.5 VA	Degree of protection	IP 54 as per EN 60529
		Protection class	III as per EN 60730
		Running noise	< 30 dB(A)
		Response time <sup>1)</sup>	200 ms
Angle of rotation	90° <sup>3)</sup>	Connection diagram	<a href="#">A09681</a>
Damper spindle	∅ 12...20 mm; □ 10...16 mm	Dimension drawing	<a href="#">M05671</a>
Damper spindle (hardness)	max. 300 HV	Fitting instructions ASM124S	<a href="#">MV 505792</a>
		ASM134S	<a href="#">MV 505771</a>



B07650

### Accessories

- [370059 000\\*](#) Clamp-on lever for shafts of d=8-18 mm
- [370990 001\\*](#) Auxiliary change-over contacts <sup>3)</sup> single; [MV 505446](#)
- [370990 002\\*](#) Auxiliary change-over contacts <sup>3)</sup>, double; [MV 505446](#)
- [370992 001\\*](#) Potentiometer, 2000 Ω, 1 W; [MV 505446](#)
- [370992 002\\*](#) Potentiometer, 130 Ω, 1 W; [MV 505446](#)
- [372200 001](#) Fixing bracket; [MV 505676](#)
- [372201 001](#) Spindle extension with coupling; [MV 505676](#)
- [372202 001](#) Lever & tape; [MV 505676](#)
- [372203 001](#) Spindle for clamp-on lever 370059; [MV 505676](#)
- [372204 001](#) Connecting piece for 370990; [MV 505676](#)
- [372145 001](#) Auxiliary change-over contacts <sup>4)</sup>, single; [MV505795](#)
- [313529 001\\*](#) Split-range unit, 0...10 V, for setting sequences; to be fitted and connected in separate distribution box

- 1) Also for 2-point or 3-point depending on type the of connection
- 2) 24 = for input signal 0...10V only
- 3) Maximum angle of rotation: 95° (without stops)
- 4) Fully variable from 0...90°; max. loading 5 (2) A, 24...250 V

### Operation

Depending on how it is connected (see wiring diagram), the actuator can be used as a continuous 0...10 V, as a 2-point (open/close) or as a 3-point drive (open/stop/close) with intermediate position.

The running time can be matched to requirements using switches S1 and S2. Manual adjustment by turning the spindle adaptor after de-coupling the gears (button on housing cover)

### Connected as a 2-point control unit

Open/close activation can be effected via two wires. Power is applied to the drive via the blue and black wires. On connecting power to the brown wire (2a), the damper drive moves to the end position. When power is switched off, the drive goes to the opposite end position (clockwise direction to 100 % angle of rotation).

The unused red and grey wires should not be connected, nor should they come into contact with other wires. We recommend that you insulate them.

**Connected as a 3-point control unit**

By connecting power to the wires (2a or 2b), the damper drive can be moved to any position. Angle of rotation (as viewed from the actuator towards the spindle adaptor):-

- The spindle adaptor turns in a clockwise direction if power is applied to the brown wire (2a).
- The spindle adaptor turns in an anti-clockwise direction if power is applied to the black wire (2b).

In the end positions (the damper's end position; the end position due to the angle-of-rotation limit; on reaching the maximum angle of rotation of 92°) or in the event of an overload, the electronic motor cut-off responds (no end switches). The direction of rotation can be changed by transposing the connections.

The unused red and grey wires should not be connected or come into contact with other wires. We recommend that they be insulated.

**Connections for control voltage 0...10V**

The integrated positioner controls the drive as a function of the controller's positioning signal  $y$ .

Angle of rotation (as viewed from the actuator towards the spindle adaptor):-

- Direction of operation 1 (mains power at brown wire, internal connection 2a): the spindle adaptor turns in a clockwise direction as the positioning signal rises.
- Direction of operation 2 (mains power at black wire, internal connection 2b): the spindle adaptor turns in an anti-clockwise direction as the positioning signal rises.

The starting point and the control span are both pre-set.

After power has been applied, the stepping motor moves to both stops one after the other and determines its effective angle of rotation. Thanks to the electronics unit, no steps are lost, and the drive needs no periodical re-adjustment. After manual adjustments have been made, or when there is a power failure lasting longer than 5 minutes, the drive re-adjusts itself automatically. Whenever the angle of rotation is altered, a re-adjustment must be initiated (by manual adjustment) so that the drive, the control voltage and the feedback signal can adapt themselves to the new angle of rotation. Initialisation can be switched off using switch S3. The actuator then always uses the stops that were last saved. If it detects a new stop, it saves it, and the feedback signal is adapted accordingly. After an interruption to the power supply lasting longer than 5 minutes, the actuator works (without initialisation) from the current position. The current positioning value is issued as a feedback signal, until the drive moves to a stop and the current position can be calculated and issued.

**Coding switch**

ASM 124S Running time [sec]	ASM 134S Running time [sec]	S1	S2	S3
120s	240s	off	on	–
120s	120s	on	on	–
60s	120s	on	off	–
60s	240s	off	off	–
Initialisation on		–	–	on
Initialisation off		–	–	off
Ex-works position		on	on	on

**Split-range unit, accessory 361529 001**

The starting point  $U_0$  and the control span  $\Delta U$  can be set using the potentiometer. This makes it possible to activate several regulating units in sequence or in cascade using the controller's control signal. The input signal (partial range) is amplified into an output signal of 0...10 V. This accessory cannot be fitted in the drive, but should be located externally in an electric distribution box.

**Engineering and fitting notes**

The combination of stepping motor and electronics allows several air dampers with different torque levels to be run in parallel, if drives of the same SUT type are used. The actuator can be mounted in any position, can be inserted directly onto the damper shaft and is fixed using the self-centring clamp. The damper spindle is turned by the self-centring spindle adaptor, which reduces the stress on the bearings.

N.B.: The housing should not be opened.

The coding switches are accessible via an opening with black lid in the housing cover.

The following accessories can be fitted to each actuator: one set of single auxiliary contacts or one set of double auxiliary contacts or one potentiometer. By re-positioning a disc under the coupling piece, the angle of rotation can be limited between 0 and 90° in steps of 5°. The coupling piece is suitable for damper spindles of  $\varnothing$  10...20 mm and  $\square$  8...16 mm.

**Additional technical data**

The upper part of the housing, with the lid, manual-adjustment knob and the cap, contains the stepping motor and the SUT electronic control unit. The lower part contains the maintenance-free gears and the spindle adaptor.

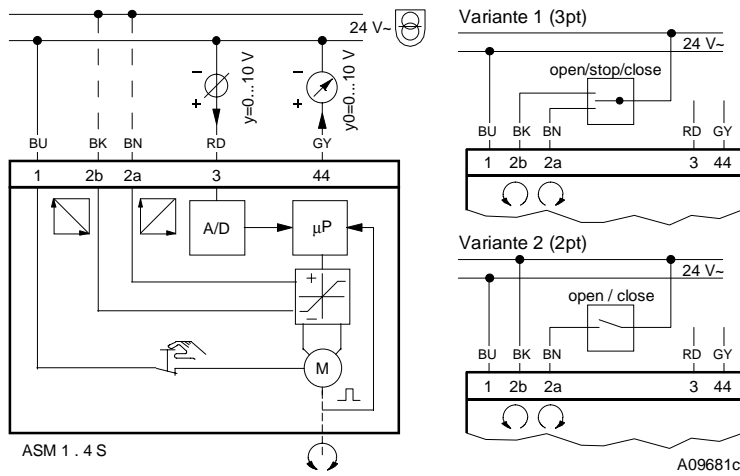
Auxiliary change-over contacts

Switch rating: max. 250 V a.c.; min. current 20 mA at 20 V  
 Switch rating: max. 30 V d.c.; min. current 1 mA at 4 V d.c.

**CE conformity**

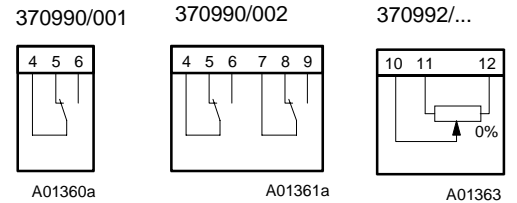
EMC directive 89/336/EWG	Machine directive 98/37/EWG (II B)	Low-voltage directive 73/23 EWG
EN 61000-6-1	EN 1050	EN 60730 1
EN 50081-1	EN 292	EN 60730-2-14
EN 61000-6-2		Excess-voltage category III
EN 50082-1		Degree of contamination III

**Wiring diagram**

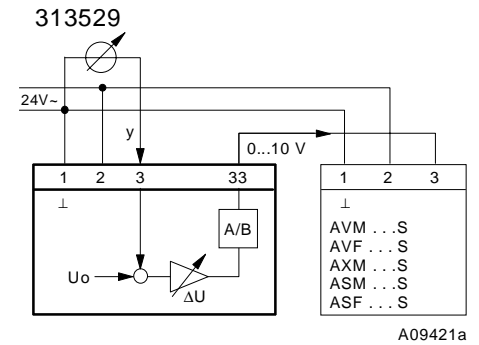
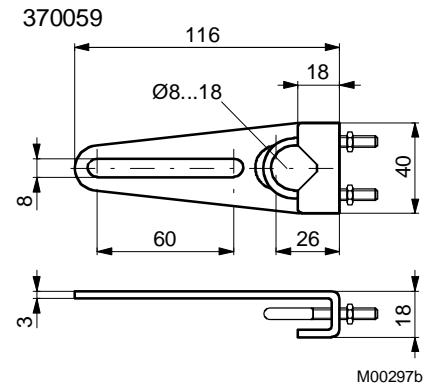
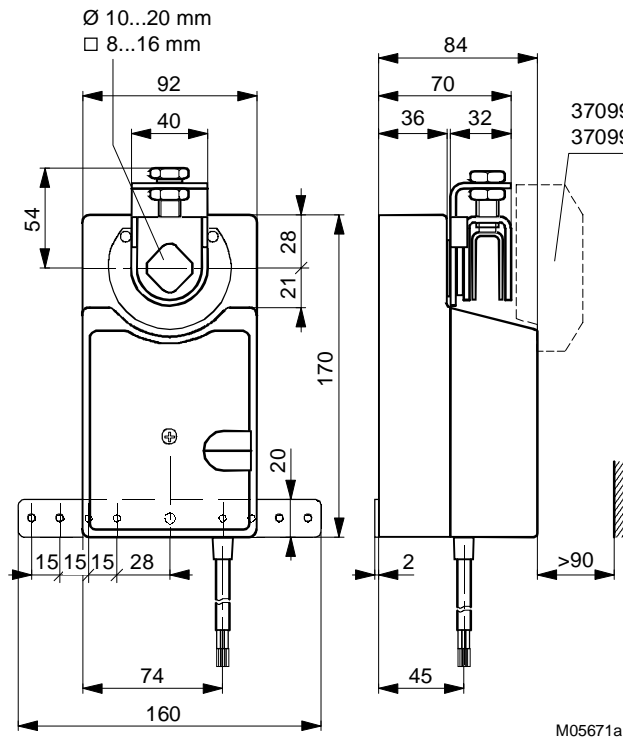


RD = red  
 BN = brown  
 BK = black  
 BU = blue  
 GY = grey

**Accessories**



**Dimension drawing**



Printed in Switzerland  
 Right of amendment reserved  
 N.B.: A comma between cardinal numbers denotes a decimal point  
 © Fr. Sauter AG, CH-4016 Basle  
 7 151023 003 P7