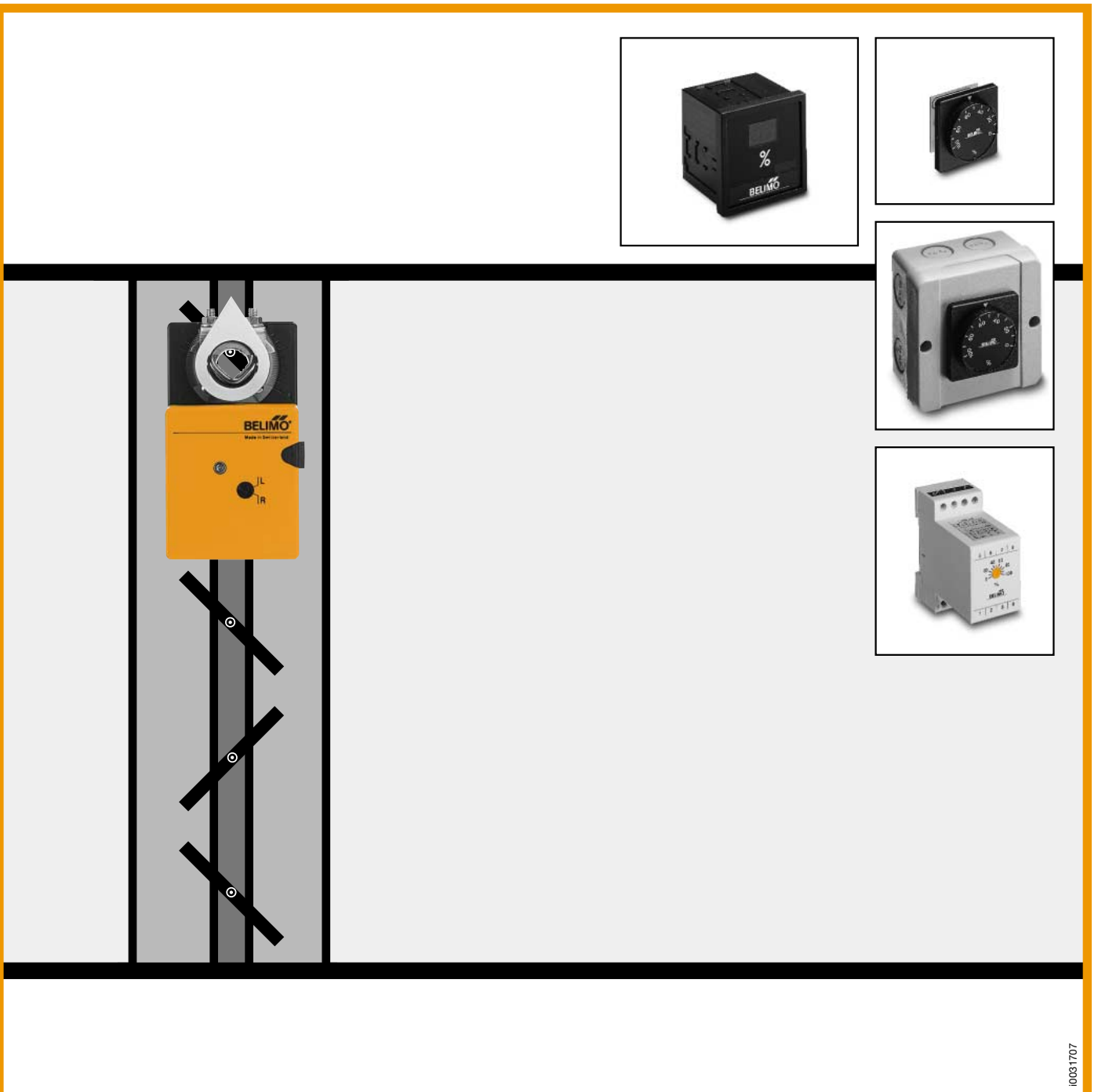


2. Z-4 Product Information

Electrical accessories for damper actuators LM, NM, SM, AM, GM, LF, AF and AFR



The complete range of damper actuators for general use in HVAC systems

Type	LM	NM	SM	AM	GM	LF	AF(R)
Torque	4 Nm	8 Nm	15 Nm	18 Nm	30 Nm	4 Nm	15 Nm
Spring return function	-	-	-	-	-		
For dampers up to approx.	0.8 m ²	1.5 m ²	3 m ²	3.6 m ²	6 m ²	0.8 m ²	3 m ²

10102805

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- Variable air-volume control (VAV-Control)
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Selection table

See on page

4

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6

7

7

Damper actuators:

	ZAD220 Digital position indicator	ZAD24 Digital position indicator	SGE24 Positioner	SGA, SGF Positioners
LM24-SR	•	•	•	
NM24-SR	•	•	•	
NM24-SRS			•	
SM24-SR	•	•	•	
SM24-SRP			•	
SM220-SR	•			•
AM24-SR	•	•	•	
AM230-SR	•	•		
GM24-SR	•	•	•	
LF24-SR	•	•	•	
AF24-SR	•	•	•	
AFR24-SR	•	•	•	



SGA

SGF

p0020707

For damper actuator SM220-SR

For surface mounting (SGA)

For flush mounting (SGF)

Application

For the remote control of the type SM220-SR modulating damper actuator.

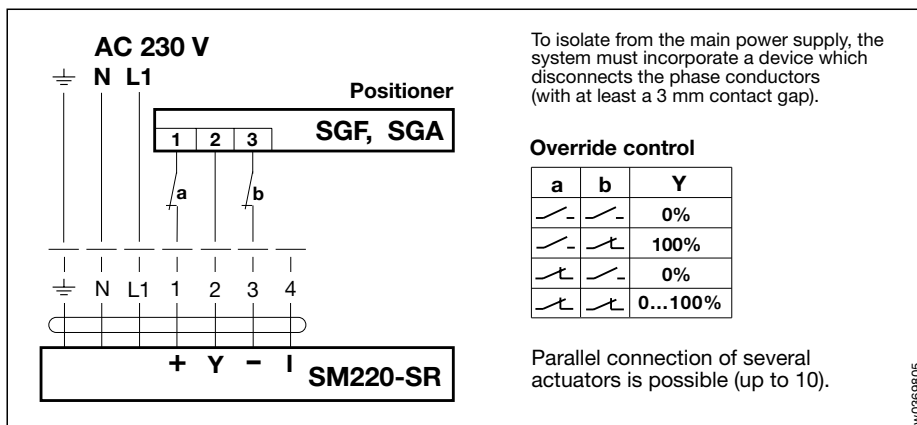
Wide setting range (0...100%)

The position to which the rotary knob is turned produces a proportional control signal (at terminal 2) of DC 1.5...7.5 V which results in positioning of the damper between 0...100%. The angle of rotation of the knob can be limited mechanically.

Notes

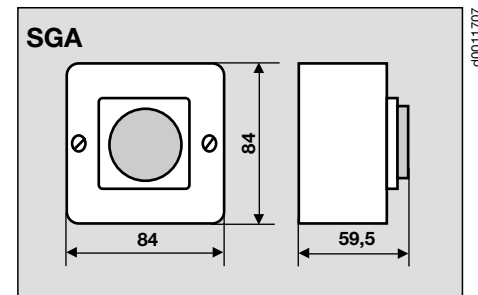
If the direction of rotation of the damper does not match the scale on the positioner, reverse it with switch A-B on the damper actuator SM220-SR.

Wiring diagram

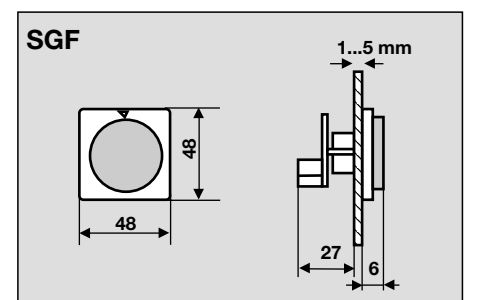


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Dimensions

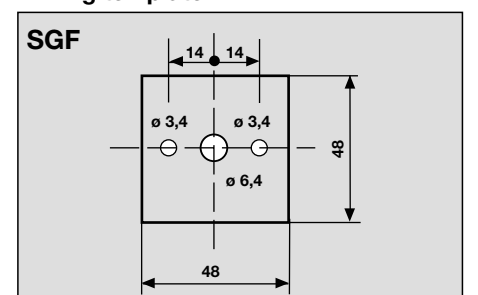


d0011707



Technical data	SGA, SGF
Nominal voltage	DC 9 V (from actuator SM220-SR)
For wire sizing	0.1 VA
Power consumption	0.1 W
Connection	Terminals (for max. 1.5 mm ²)
Control signal Y	DC 1.5...7.5 V \cong 0...100% on scale
Scale	0...100% (mechanical rotation limit by knob)
Degree of protection	IP 54 (only type SGA, with conduit connector)
Ambient temperature range	-20... +50 °C
Non-operating temperature	-40... +80 °C
Humidity test	to EN 60335-1
EMC	CE according to 89/336/EEC, 92/31/EEC, 93/68/EEC
Maintenance	maintenance free
Weight	SGA: 150 g; SGF: 50 g

Drilling template





SGA24

SGF24

p0020707

For modulating actuators with a working range of DC 2...10 V or DC 0...10 V

For surface mounting (SGA24)

For flush mounting (SGF24)

Application

The SGA24 and SGF24 positioners are intended for the remote control of modulating actuators or for use as a minimum positioner (providing a bottom limit for the output signals from modulating controllers).

The control range is 0...100% of the angle of rotation of the actuator.

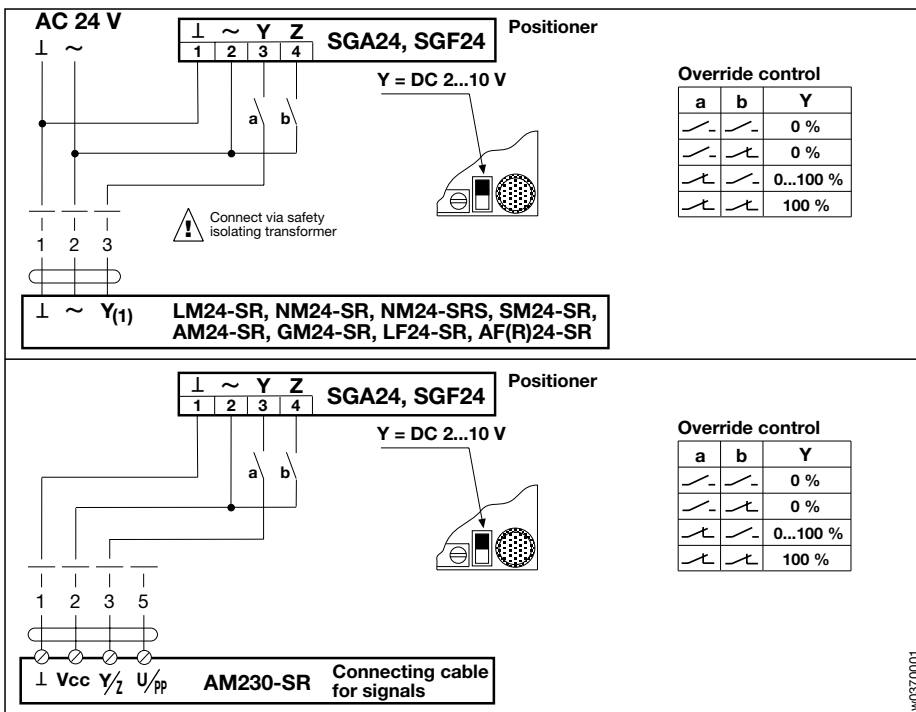
Wide setting range (0...100%)

The positioner receives its power supply through terminals 1 and 2. The position to which the rotary knob is turned produces a proportional control signal Y of either DC 2...10V or DC 0...10V and thus a proportional change in the position of the actuator between 0 and 100%. The angle of rotation of the knob can be limited mechanically.

Note

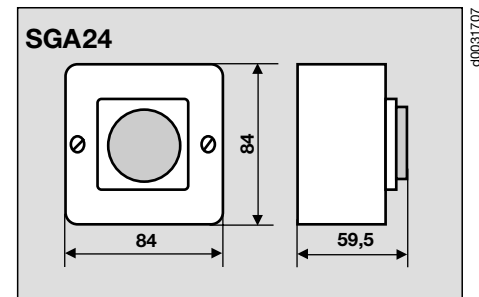
The changeover from DC 2...10V to DC 0...10V is selected by means of a slide switch on the printed circuit board.

Wiring diagram



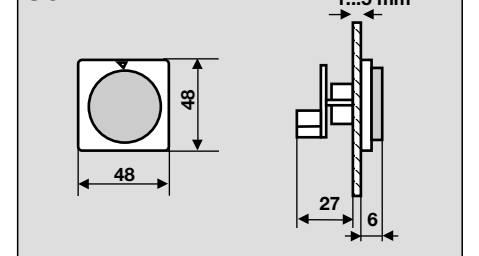
w0370001

Dimensions



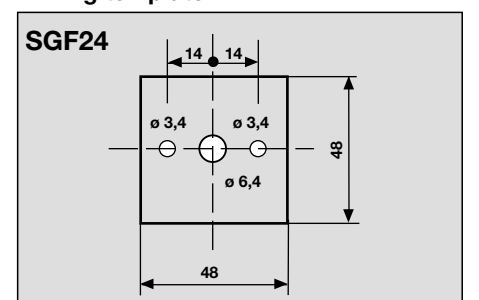
d0031707

SGF24



Technical data	SGA24, SGF24
Nominal voltage	AC 24 V 50/60 Hz, resp. Vcc from AM230-SR
Nominal voltage range	AC 19.2...28.8 V
For wire sizing	1.0 VA
Power consumption	0.3 W
Power output	for up to 10 actuators (max. 4 AM...-SR)
Connection	Terminals (for max. 1.5 mm ²)
Control signal Y	DC 2...10V @ max. 0.5 mA (DC 0...10V switchable by slide switch)
Scale	0...100% (mechanical rotation limit by knob)
Degree of protection	IP 54 (only type SGA24, with conduit connector)
Ambient temperature range	-20... +50 °C
Non-operating temperature	-40... +80 °C
Humidity test	to EN 60335-1
EMC	CE according to 89/336/EEC, 92/31/EEC, 93/68/EEC
Maintenance	maintenance free
Weight	SGA24: 150 g; SGF24: 50 g

Drilling template





p0021707

For modulating actuators with a working range of DC 2...10V or DC 0...10V

For cubicle mounting

Application

The positioner SGE24 is intended for the remote control of modulating actuators or for use as a minimum positioner (providing a bottom limit for the output signals from modulating controllers). The control range is 0...100% of the angle of rotation of the actuator.

Wide setting range (0...100%)

The positioner receives its power supply through terminals 1 and 2.

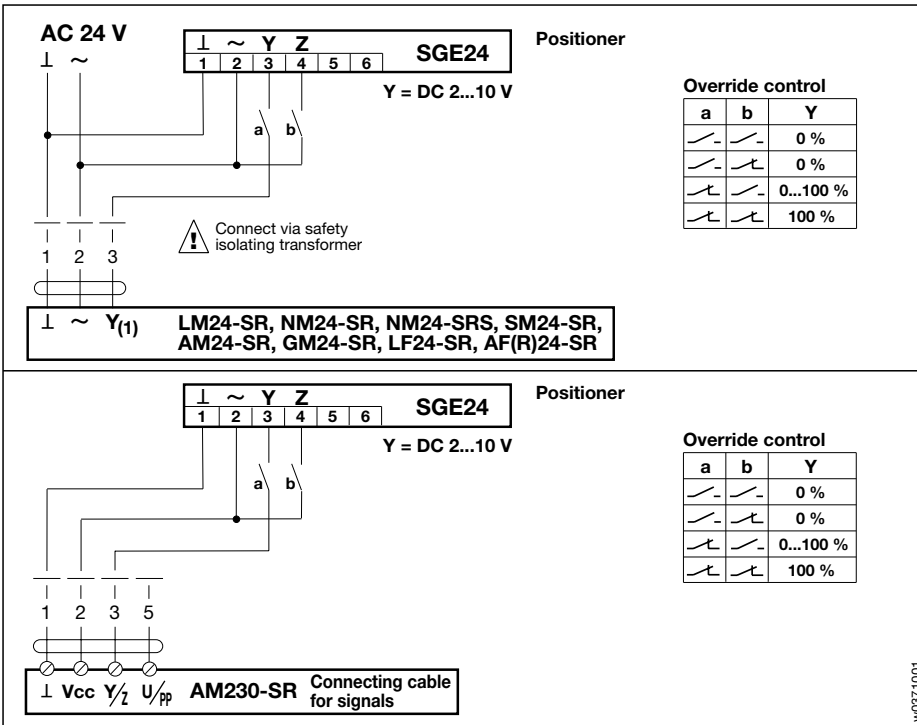
The position to which the rotary knob is turned produces a proportional control signal Y of either DC 2...10V or DC 0...10V and thus a proportional change in the position of the actuator between 0 and 100%.

The changeover from DC 2...10V to DC 0...10V is selected by means of a wire link between the two terminals 5 and 6.

Simple installation

The SGE24 is designed for clipping on to a 35 mm DIN rail top hat profile.

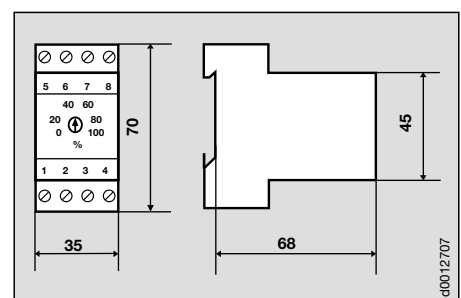
Wiring diagram



w0371001

Technical data	SGE24
Nominal voltage	AC 24 V 50/60 Hz, resp. Vcc from AM230-SR
Nominal voltage range	AC 19.2...28.8 V
For wire sizing	1.0 VA
Power consumption	0.3 W
Power output	for up to 10 actuators (max. 4 AM...-SR)
Connection	Terminals (for max. 4 mm ²)
Control signal Y	DC 2...10V @ max. 0.5 mA (DC 0...10V switchable by jumper, terminals 5/6)
Scale	0...100%
Degree of protection	IP 40
Ambient temperature range	-20... +50 °C
Non-operating temperature	-40... +80 °C
Humidity test	to EN 60335-1
EMC	CE according to 89/336/EEC, 92/31/EEC, 93/68/EEC
Maintenance	maintenance free
Weight	70 g

Dimensions



d0012707



ZAD24 suitable for **LM24-SR**
NM24-SR
NM24-SRS
SM24-SR
AM24-SR
GM24-SR
LF24-SR
AF24-SR
AFR24-SR

ZAD220 suitable for **SM220-SR**

Application

The digital position indicator allows the remote indication of damper position from damper actuators.

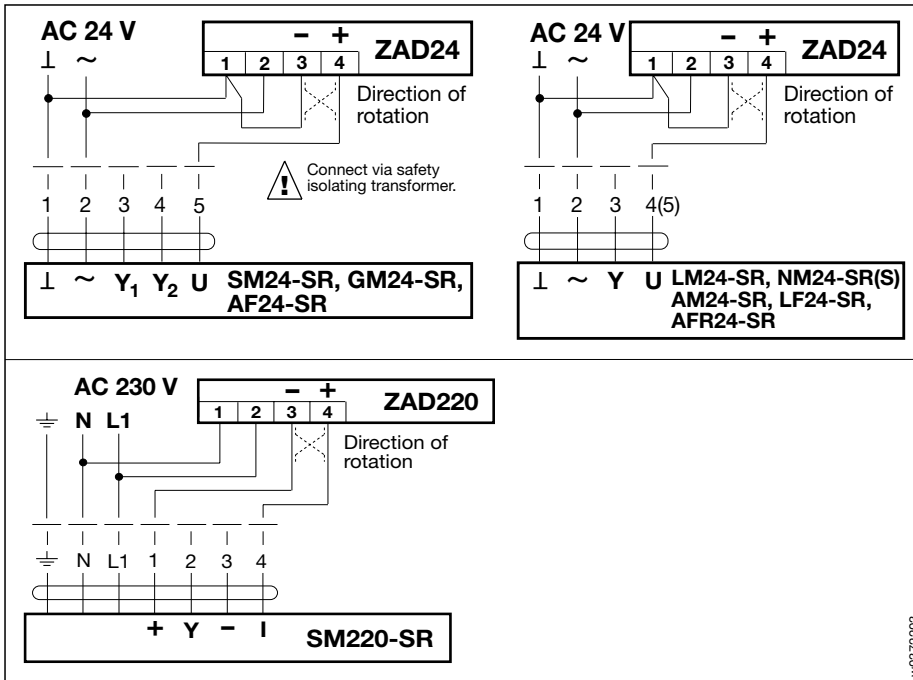
Setting the indicator

Remove the snap-fit front plate to give access to the two trimmer potentiometers U_o and ΔU and also the indicator LEDs.

1. Check the wiring and energize the power supply.
2. Move the damper/actuator to the «Closed» position.
3. Setting the zero: If the left-hand LED is on, turn the trimmer U_o clockwise \curvearrowright until 0% is indicated. If the right-hand LED or indicator is on, turn the trimmer U_o anti-clockwise \curvearrowleft .
4. Move the damper/actuator to the «Open» position.
5. Setting the working range: If the right-hand LED is on, turn the trimmer ΔU anticlockwise \curvearrowleft until 99% is indicated. If less than 99% is being indicated, turn the trimmer ΔU clockwise \curvearrowright .

The ZAD24 position indicator is supplied fitted with a link between terminals 1 and 3, i.e. the direction of rotation is DA (direct-acting).

Wiring diagram

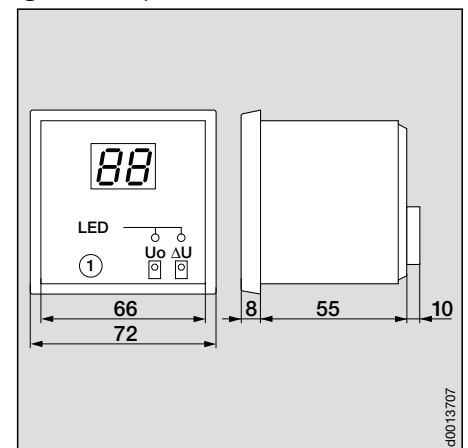


Technical data	ZAD24	ZAD220
Nominal voltage	AC 24 V 50/60Hz	AC 230 V 50 Hz
Nominal voltage range	AC 19.2...28.8 V	AC 198...264 V
Power consumption	4 VA	
Connection	4-pole plug	
Indication signal U/I	DC 2...10 V (from actuator ...24-SR)	0...100 μ A (from actuator SM220-SR)
Input resistance	> 100 k Ω	< 1.5 k Ω
Starting point U_o	DC 0...12 V	0...120 μ A
Span ΔU	DC 3...12 V	30...120 μ A
Factory setting	$U_o = DC 0V, \Delta U = DC 10V$	$U_o = 0 \mu A, \Delta U = 100 \mu A$
Position indication	0...99%	
Measuring accuracy	0.5% \pm 1 digit	
Direction of rotation	selected by wiring	
Protection class	\diamond (safety extra-low voltage)	II (all-insulated)
Ambient temp. range	0... + 50 $^{\circ}$ C	
Weight	240 g	

Dimensions

Front 72 x 72 mm
 Front cutout 68 x 68 mm
 Mounting depth approx. 80 mm

① Trimmer potentiometer



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