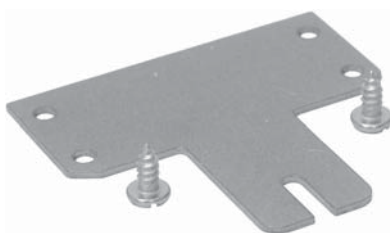
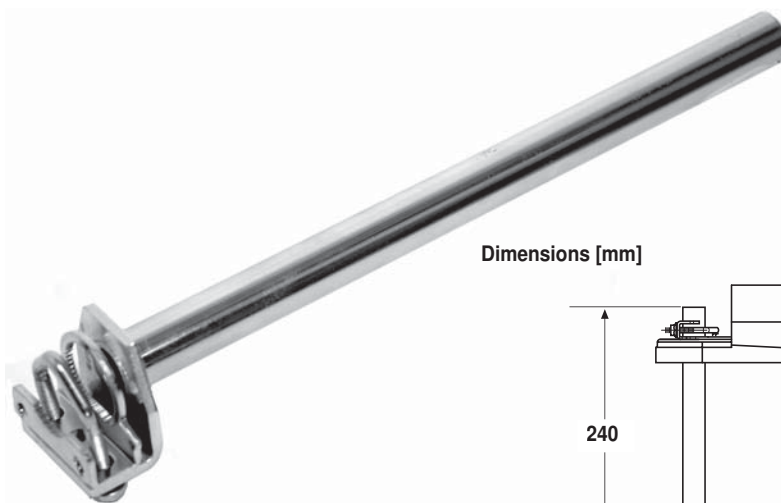
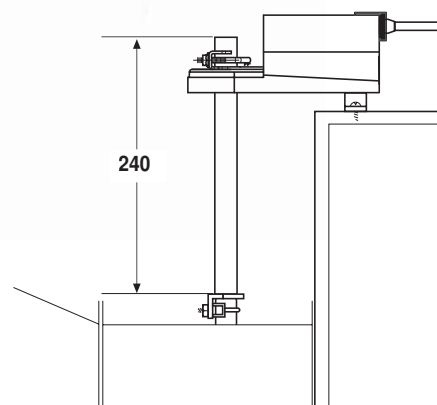


Extension for ground plate Z-SMA

- Extension from SM.. or AM.. to SM..A..
- Galvanized steel


Shaft extension AV8-25

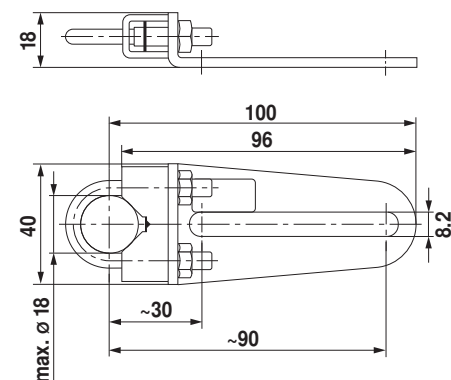
- Length approx. 250 mm
- For damper spindles \varnothing 8 ... 25 mm
- Extension \varnothing 20 mm


Dimensions [mm]

Reversible spindle clamp K-SA

- For damper spindles \varnothing 10 ... 20 mm


Damper crank arm KH8

- For damper spindles
- Galvanized steel
- Clamping range \varnothing 10 ... 18 mm
- Slot width 8.2 mm

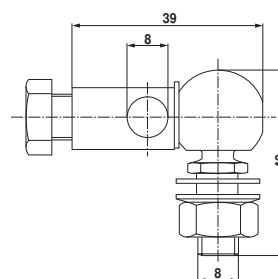

Dimensions [mm]


Ball joint KG8

- Suitable for KH8 damper crank arms
- For round steel rod with \varnothing 8 mm
- Galvanized steel



Dimensions [mm]

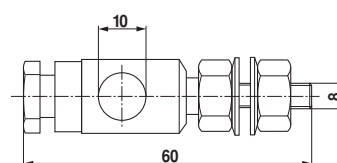


Ball joint KG10A

- Suitable for KH8 damper crank arms
- For round steel rod with \varnothing 10 mm
- Galvanized steel

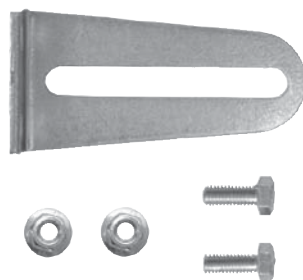


Dimensions [mm]



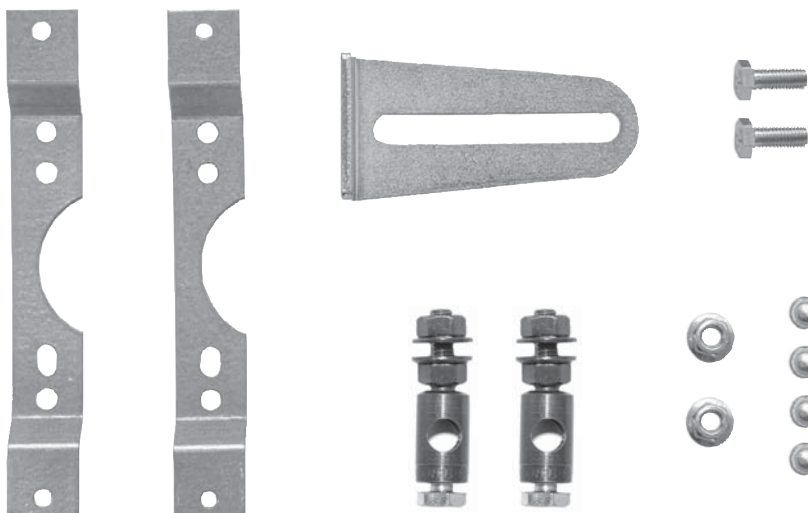
Actuator arm AH-20

- For standard clamp (on one side)
- Slot width 8.2 mm
- Galvanized steel



Mounting kit for damper linkage ZG-SMA

- For flat and side mounting



Range controller, suitable for
modulating actuators LM24A-SR,
NM24A-SR, SM24A-SR and GM24A-SR



Technical data

Electrical data	Nominal voltage	AC 24 V, 50/60 Hz
	Nominal voltage range	AC 21.6 ... 27.6 V
	Power consumption	1 W + connected actuators
	For wire sizing	1.5 VA + connected actuators
	Connection	Terminals
Functional data	Control signal Y	Y1: DC 0 ... 10 V Y2: 0 ... 20 V phasecut
	Input impedance	Y ₁ : 100 kΩ (0,1 mA) Y ₂ : 8 kΩ (50 mW)
	Operating range	Y1: DC 2 ... 10 V Y2: 2 ... 10 V phasecut
	Direction of rotation	Reversible (direct / reverse acting)
	Positioning range	Adjustable Max. = 0.2 ... 1 (~20 ... 90° rotation ↺) Min. = 0 ... 80% of Max.
	Override control	↓ to terminal 6 = position 0 (closed) ~ to terminal 6 = position 1 (open)
	Measuring voltage U	DC 2 ... 10 V (max. 0.5 mA) for position 0 ... 1
	Output actuator	Terminal 3: DC 2 ... 10 V (max. 0.5 mA)
	Safety	
	Protection class	III Safety extra-low voltage
Dimensions / Weight	Degree of protection	IP40
	EMC	CE according to 89/336/EWG
	Mode of operation	Type 1 (to EN 60730-1)
	Ambient temperature	-20 ... +50 °C
	Humidity test	To EN 60730-1
	Maintenance	Maintenance free
	Dimensions	See «Dimensions» on page 2
	Weight	Approx. 400 g

Safety notes



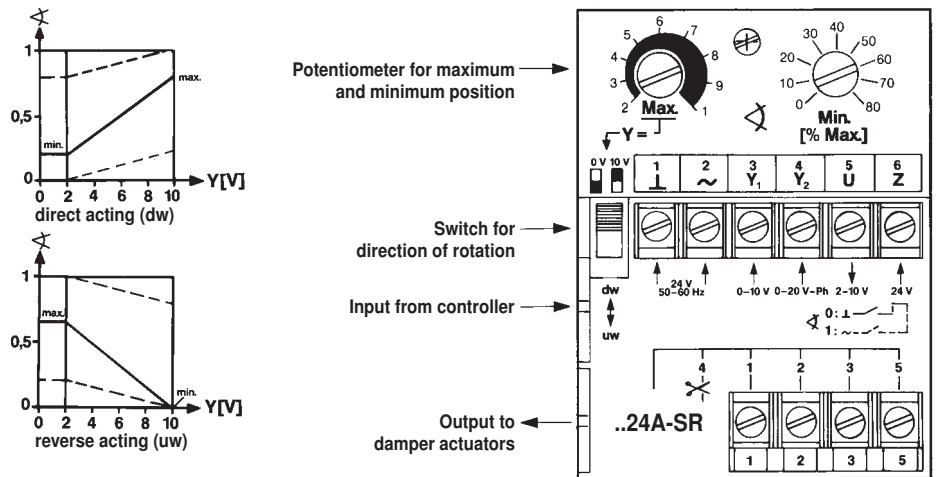
- The range controller is not allowed to be used outside the specified field of application, especially not in aircraft or any other form of air transport.
- Assembly must be carried out by trained personnel. Any legal regulations or regulations issued by authorities must be observed during assembly.
- The device may only be opened at the manufacturer's site. It does not contain any parts that can be replaced or repaired by the user.
- The device contains electrical and electronic components and is not allowed to be disposed of as household refuse. All locally valid regulations and requirements must be observed.

Product features

Application

In central air handling units and other ducted systems, multiblade-dampers are mainly used as control and mixing dampers. The control characteristics of dampers, however, depend upon many factors. Even with correctly sized dampers and fans it is only possible to adjust the air volume with a universal adjustment kit. With the range controller SBG24, this is easily achieved, since the working range (I) of the dampers can be defined by the Min.-Max. setting potentiometer. The SBG24 is usually installed close to the damper actuator (and at the same time used as connection box).

Device description

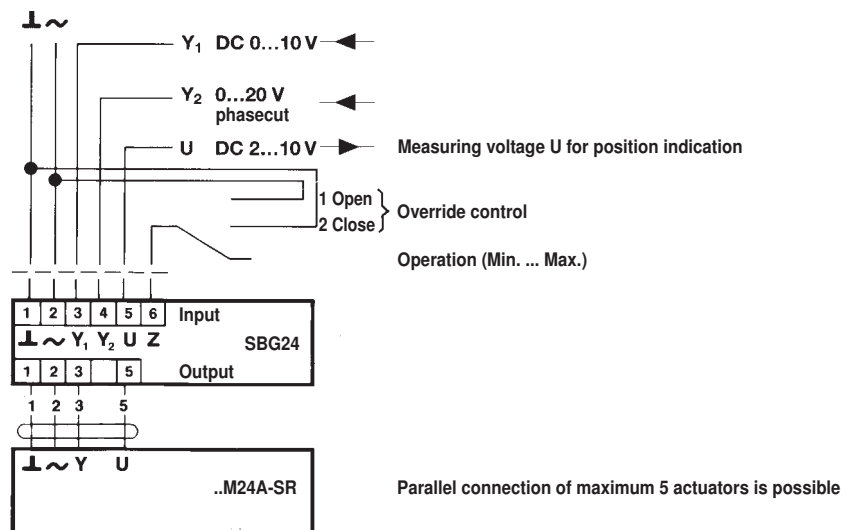


Electrical installation

Wiring diagram

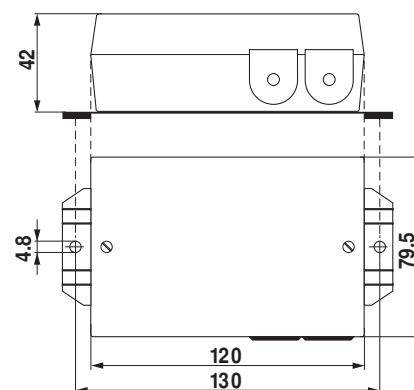
Note

Connection via safety isolating transformer.



Dimensions [mm]

Dimensional drawings



Positioner, suitable for modulating damper actuators LM..A-SR, NM..A-SR, SM..A-SR and GM..A-SR

- For surface mounting



Technical data

Electrical data	Nominal voltage	AC 24 V, 50/60 Hz DC 24 V Vcc from ..M230ASR
	Nominal voltage range	AC/DC 19.2 ... 28.8 V
	Power consumption	0.3 W
	For wire sizing	1 VA
	Power output	For max. 10 actuators
	Connection	Terminals (for max. 1.5 mm ²)
Functional data	Control signal Y	DC 2 ... 10 V @ max. 1 mA (DC 0 ... 10 V switchable by slide switch)
	Scale	0 ... 100% (mechanical rotation limit by knob)
Safety	Protection class	III Safety extra-low voltage
	Degree of protection	IP40 (IP54 with conduit connector)
	EMC	CE according to 89/336/EWG
	Mode of operation	Type 1.B (to EN 60730-1)
	Ambient temperature range	-20 ... +50 °C
	Non-operating temperature	-40 ... +80 °C
	Humidity test	To EN 60730-1
Dimensions / Weight	Maintenance	Maintenance free
	Dimensions	See «Dimensions» on page 2
	Weight	Approx. 150 g

Safety notes



- The positioner is not allowed to be used outside the specified field of application, especially not in aircraft or any other form of air transport.
- Assembly must be carried out by trained personnel. Any legal regulations or regulations issued by authorities must be observed during assembly.
- The device may only be opened at the manufacturer's site. It does not contain any parts that can be replaced or repaired by the user.
- The device contains electrical and electronic components and is not allowed to be disposed of as household refuse. All locally valid regulations and requirements must be observed.

Product features

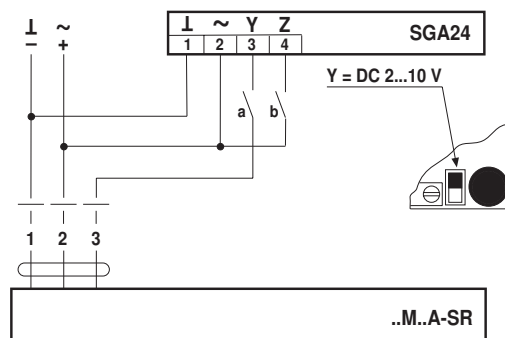
Application	The positioner is intended for the remote control of modulating actuators or for use as a minimum positioner (providing a bottom limit for the output signals from modulating controllers). The control range is 0 ... 100% of the angle of rotation of the actuator.
Wide setting range	The positioner 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 ... 10 V or DC 0 ... 10 V 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.
Simple changeover	The changeover from DC 2 ... 10 V to DC 0 ... 10 V is selected by means of a slide switch on the printed circuit board.

Electrical installation

Wiring diagram

Note

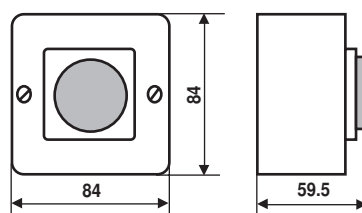
Connection via safety isolating transformer.



a	b	Y
		0 %
		0 %
		0...100 %
		100 %

Dimensions [mm]

Dimensional drawings



Positioner, suitable for modulating damper actuators LM..A-SR, NM..A-SR, SM..A-SR and GM..A-SR

- For cubicle mounting



Technical data

Electrical data	Nominal voltage	AC 24 V, 50/60 Hz DC 24 V Vcc from ..M230ASR
	Nominal voltage range	AC/DC 19.2 ... 28.8 V
	Power consumption	0.3 W
	For wire sizing	1 VA
	Power output	For max. 10 actuators
	Connection	Terminals (for max. 4 mm ²)
Functional data	Control signal Y	DC 2 ... 10 V @ max. 1 mA (DC 0 ... 10 V switchable by jumper, terminals 5 / 6))
	Scale	0 ... 100%
Safety	Protection class	III Safety extra-low voltage
	Degree of protection	IP20
	EMC	CE according to 89/336/EWG
	Mode of operation	Type 1.B (to EN 60730-1)
	Ambient temperature range	-20 ... +50 °C
	Non-operating temperature	-40 ... +80 °C
	Humidity test	To EN 60730-1
Dimensions / Weight	Maintenance	Maintenance free
	Dimensions	See «Dimensions» on page 2
	Weight	Approx. 70 g

Safety notes



- The positioner is not allowed to be used outside the specified field of application, especially not in aircraft or any other form of air transport.
- Assembly must be carried out by trained personnel. Any legal regulations or regulations issued by authorities must be observed during assembly.
- The device may only be opened at the manufacturer's site. It does not contain any parts that can be replaced or repaired by the user.
- The device contains electrical and electronic components and is not allowed to be disposed of as household refuse. All locally valid regulations and requirements must be observed.

Product features

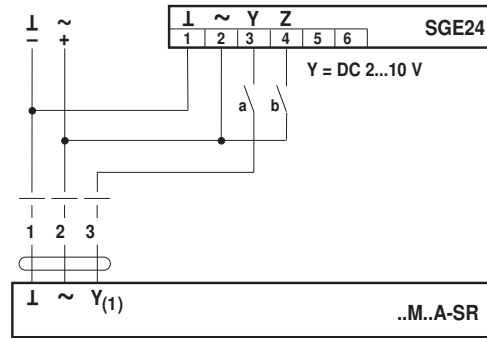
Application	The positioner is intended for the remote control of modulating actuators or for use as a minimum positioner (providing a bottom limit for the output signals from modulating controllers). The control range is 0 ... 100% of the angle of rotation of the actuator.
Wide setting range	The positioner 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 ... 10 V or DC 0 ... 10V and thus a proportional change in the position of the actuator between 0 and 100%.
Simple changeover	The changeover from DC 2 ... 10 V to DC 0 ... 10 V is selected by means of a wire link between the two terminals 5 and 6.
Simple mounting	The SGE24 is designed for clipping on to a 35mm DIN rail top hat profile.









Electrical installation

Wiring diagram

Note

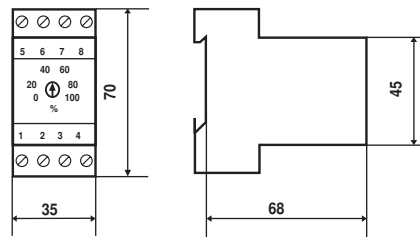
Connection via safety isolating transformer.



a	b	Y
		0 %
		0 %
		0...100 %
		100 %

Dimensions [mm]

Dimensional drawings



Positioner, suitable for modulating damper actuators LM..A-SR, NM..A-SR, SM..A-SR and GM..A-SR

- For flush mounting



Technical data

Electrical data	Nominal voltage	AC 24 V, 50/60 Hz DC 24 V Vcc from ..M230ASR
	Nominal voltage range	AC/DC 19.2 ... 28.8 V
	Power consumption	0.3 W
	For wire sizing	1 VA
	Power output	For max. 10 actuators
	Connection	Terminals (for max. 1.5 mm ²)
Functional data	Control signal Y	DC 2 ... 10 V @ max. 1 mA (DC 0 ... 10 V switchable by slide switch)
	Scale	0 ... 100% (mechanical rotation limit by knob)
Safety	Protection class	III Safety extra-low voltage
	Degree of protection	IP40 (IP54 with conduit connector)
	EMC	CE according to 89/336/EEG
	Mode of operation	Type 1.B (to EN 60730-1)
	Ambient temperature range	-20 ... +50 °C
	Non-operating temperature	-40 ... +80 °C
Dimensions / Weight	Humidity test	To EN 60730-1
	Maintenance	Maintenance free
	Dimensions	See «Dimensions» on page 2
	Weight	Approx. 50 g

Safety notes



- The positioner is not allowed to be used outside the specified field of application, especially not in aircraft or any other form of air transport.
- Assembly must be carried out by trained personnel. Any legal regulations or regulations issued by authorities must be observed during assembly.
- The device may only be opened at the manufacturer's site. It does not contain any parts that can be replaced or repaired by the user.
- The device contains electrical and electronic components and is not allowed to be disposed of as household refuse. All locally valid regulations and requirements must be observed.

Product features

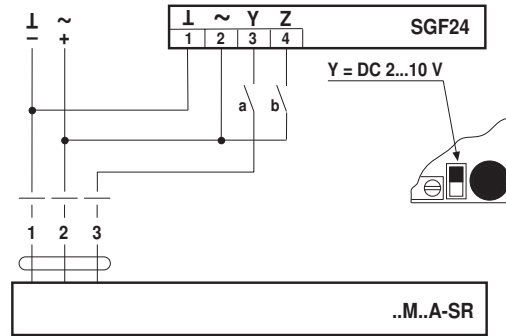
Application	The positioner is intended for the remote control of modulating actuators or for use as a minimum positioner (providing a bottom limit for the output signals from modulating controllers). The control range is 0 ... 100% of the angle of rotation of the actuator.
Wide setting range	The positioner 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 ... 10 V or DC 0 ... 10 V 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.
Simple changeover	The changeover from DC 2 ... 10 V to DC 0 ... 10 V is selected by means of a slide switch on the printed circuit board.

Electrical installation

Wiring diagram

Note

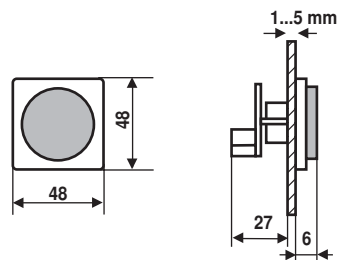
Connection via safety isolating transformer.



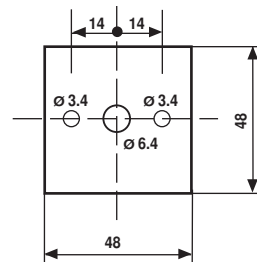
a	b	Y
		0 %
		0 %
		0...100 %
		100 %

Dimensions [mm]

Dimensional drawings



Drilling template



Digital position indicator, suitable for modulating damper actuators LM24A-SR, NM24A-SR, SM24A-SR, GM24A-SR, AF24-SR and LF24-SR

- For flush mounting



Technical data





Electrical data	Nominal voltage	AC 24 V, 50/60 Hz
	Nominal voltage range	AC 19.2 ... 28.8 V
	Power consumption	4 VA
	Connection	4-pole plug
Functional data	indication signal U/I	DC 2 ... 10 V (from actuator)
	Input resistance	>100 kΩ
	Starting point U_0	DC 0 ... 12 V
	Span ΔU	DC 3 ... 12 V
	Factory setting	$U_0 = \text{DC } 0 \text{ V}$, $\Delta U = \text{DC } 10 \text{ V}$
	Position indication	0 ... 99%
	Measuring accuracy	0.5% ± 1 digit
Safety	Direction of rotation	selected by wiring
	Protection class	III Safety extra-low voltage
	Degree of protection	IP20
	EMC	CE according to 89/336/EEG
	Mode of operation	Type 1 (to EN 60730-1)
	Ambient temperature range	-0 ... +50 °C
	Humidity test	To EN 60730-1
Dimensions / Weight	Dimensions	See «Dimensions» on page 2
	Weight	Approx. 240 g

Safety notes



- The position indicator is not allowed to be used outside the specified field of application, especially not in aircraft or any other form of air transport.
- Assembly must be carried out by trained personnel. Any legal regulations or regulations issued by authorities must be observed during assembly.
- The device may only be opened at the manufacturer's site. It does not contain any parts that can be replaced or repaired by the user.
- The device contains electrical and electronic components and is not allowed to be disposed of as household refuse. All locally valid regulations and requirements must be observed.

Product features

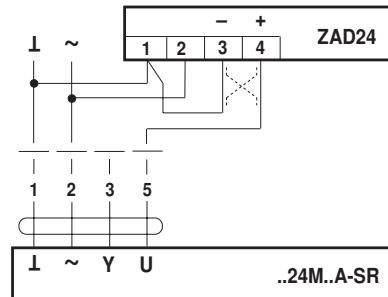
Application	The digital position indicator allows the remote indication of damper position from damper actuators.
Setting the indicator	<p>Remove the snap-fit front plate to give access to the two trimmer potentiometers U_0 and ΔU and also the indicator LEDs.</p> <ol style="list-style-type: none"> 1. 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_0 clockwise  until 0% is indicated. If the right-hand LED or indicator is on, turn the trimmer U_0 anti-clockwise . 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  until 99% is indicated. If less than 99% is being indicated, turn the trimmer ΔU clock-wise . <p>The ZAD24 position indicator is supplied fitted with a link between terminals 1 and 3, i.e. the direction of rotation is dw (direct acting).</p>

Electrical installation

Wiring diagram

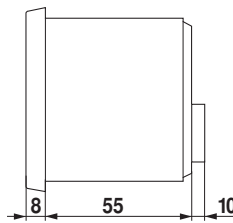
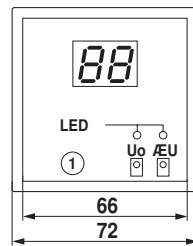
Note

Connection via safety isolating transformer.



Dimensions [mm]

Dimensional drawings



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

① Trimmer potentiometer