

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
		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 / Weight	Dimensions	See «Dimensions» on page 2	
	Weight	Approx. 400 g	

Safety notes

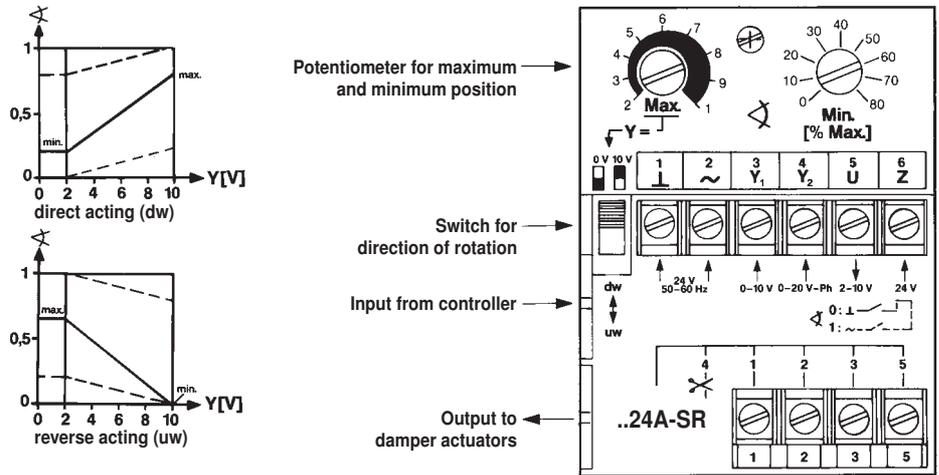


- The range controller is not allowed to be used outside the specified field of application, especially not in aircraft or any other form of air transport.
- Assembly must be carried out by trained personnel. Any legal regulations or regulations issued by authorities must be observed during assembly.
- 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).

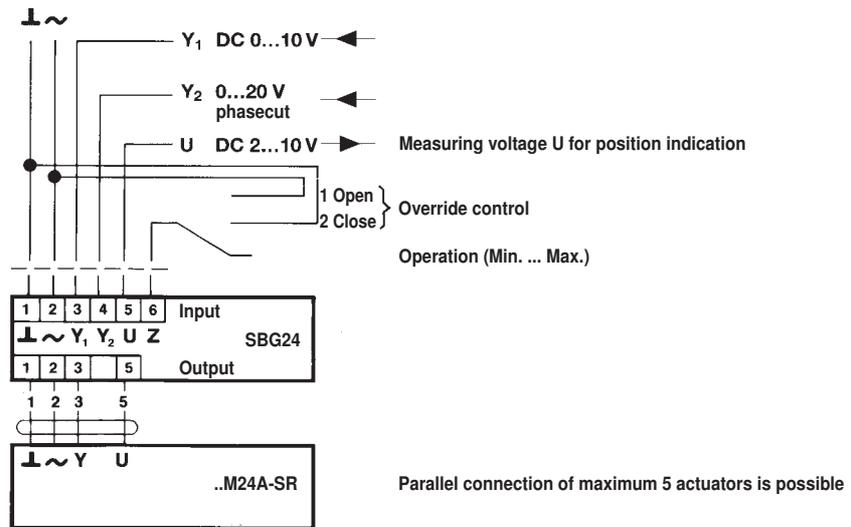
Device description



Electrical installation

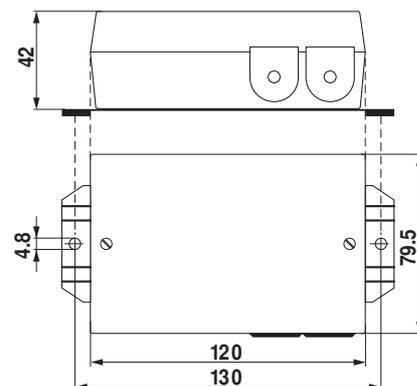
Wiring diagram

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 2004/108/EC
	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
	Maintenance	Maintenance free
Dimensions / Weight	Dimensions	See «Dimensions» on page 2
	Weight	Approx. 150 g

Safety notes


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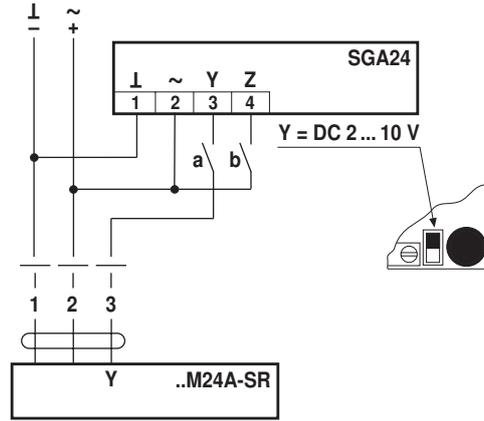
Product features

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

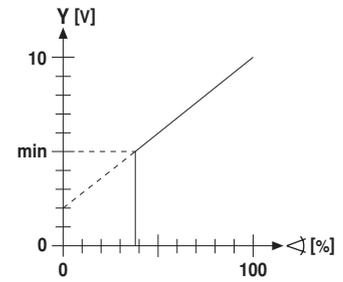
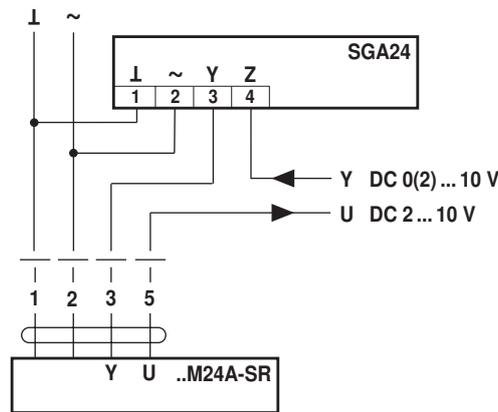
Wiring diagram

Note
Connection via safety isolating transformer.



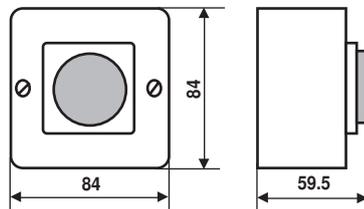
a	b	Y
		0%
		0%
		0 ... 100%
		100%

Minimum limit



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
Scale		0 ... 100%
Safety		Protection class
	Degree of protection	IP20
	EMC	CE according to 2004/108/EC
	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
	Maintenance	Maintenance free
Dimensions / Weight	Dimensions	See «Dimensions» on page 2
	Weight	Approx. 70 g

Safety notes


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- 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.

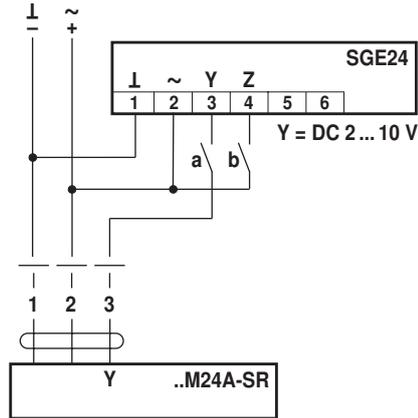
Product features

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

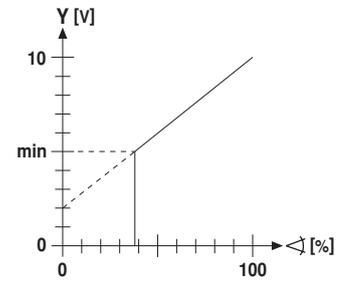
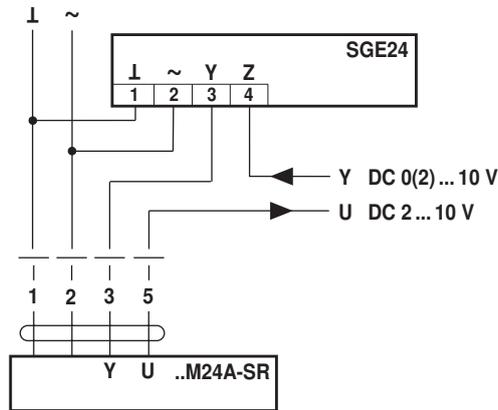
Wiring diagram

Note
Connection via safety isolating transformer.



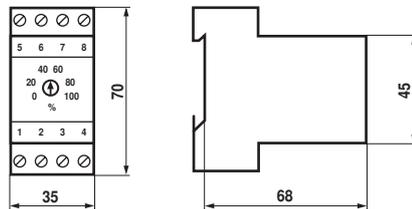
a	b	Y
		0%
		0%
		0 ... 100%
		100%

Minimum limit



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 2004/108/EC
	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
Maintenance	Maintenance free	
Dimensions / Weight	Dimensions	See «Dimensions» on page 2
	Weight	Approx. 50 g

Safety notes


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- 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.

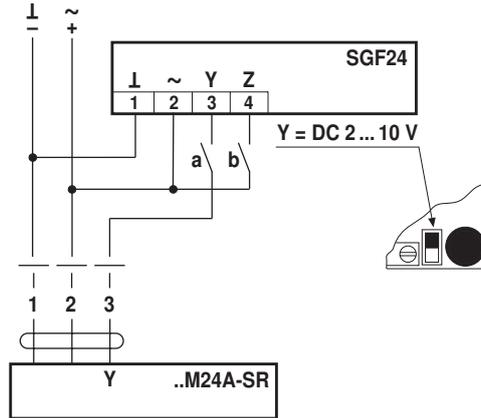
Product features

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

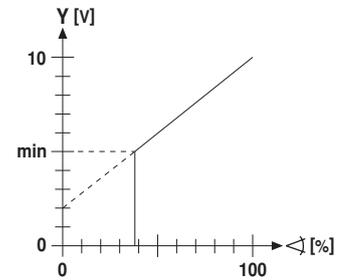
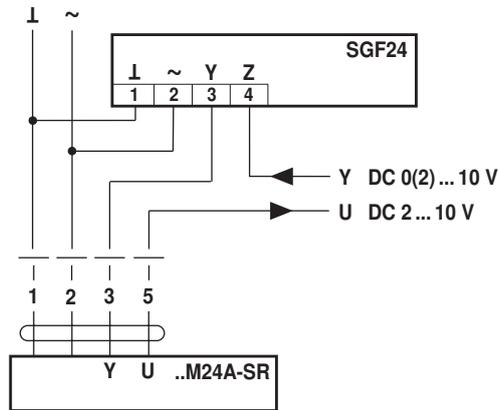
Wiring diagram

Note
Connection via safety isolating transformer.



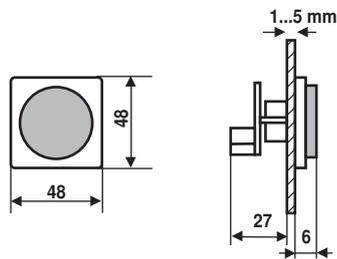
a	b	Y
		0%
		0%
		0 ... 100%
		100%

Minimum limit

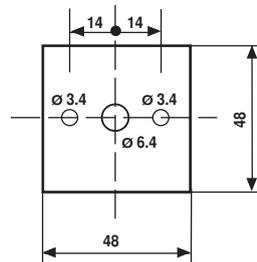


Dimensions [mm]

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	$U_0 = DC 0 V$, $\Delta U = DC 10 V$
	Position indication	0 ... 99%
	Measuring accuracy	0.5% ± 1 digit
	Direction of rotation	selected by wiring
Safety	Protection class	III Safety extra-low voltage
	Degree of protection	IP20
	EMC	CE according to 89/336/EWG
	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

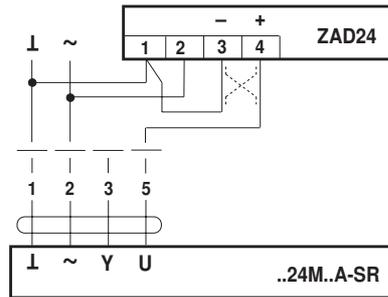
Application	The digital position indicator allows the remote indication of damper position from damper actuators.
Setting the indicator	<p>Remove the snap-fit front plate to give access to the two trimmer potentiometers U_0 and ΔU and also the indicator LEDs.</p> <ol style="list-style-type: none"> 1. 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

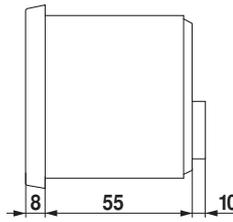
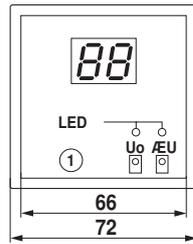
Note

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