

# MD20 SR



## Spring Return Damper Actuator Modulating and Two-Position Control 20Nm

The MD20 SR is a series of spring return damper actuators for the operation of dampers in up to 4m<sup>2</sup> on ventilation systems in building services installations.

A universal voltage type, operational from 24-240V AC and 24V-120V DC is available on the two position control. Two Position control types are available with and without end switches.

### Specifications

Motor Torque . . . . .Min. 20Nm @ Nominal Voltage  
Spring Return . . . . . Min. 20Nm

#### Nominal Voltage

24V AC/DC units . . . . . AC 50/60Hz 19.2-28.8 V  
DC 21.6-28.8 V

Universal Voltage units . . AC 50/60Hz: 19,2-264 V  
DC 21,6 -137,5 V

#### Running Time

Motor  
Two Position (Open/Close) . . . . . ≤75 s/90°  
Modulating . . . . . ≤150 s/90°  
Spring Return . . . . . ≤20 s@ -20...50°C  
max. 60s@ -30°C

#### Control Signal

Range of Operation (X) . . . . . 2-10V DC  
Input Resistance . . . . . 100 kΩ  
Position Feedback (Y) . . . . . 2-10V DC, max 0.5mA  
Position accuracy . . . . . +/- 5%

#### Functional Data

Direction of Rotation  
Motor (mod.) . . . . . Reversible with Switch Y=0  
Motor (two pos.) . . . . . via mounting orientation, L/R  
Spring return . . . . . via mounting orientation, L/R  
Manual Override . . . . . 5mm Hex key crank, supplied,  
plus interlocking switch  
Angle of Rotation . . . . . Max 95°,  
. . . . . limited by an adjustable end stop  
Position indication . . . . . Mechanical  
Power consumption . . . . . see ordering table

#### Environment

Operation Temperature . . . . . -30°C to + 50°C  
Storage (non operation). . . . . -40°C to + 80°C  
Ambient Humidity . . . . . 95% r.h. Non condensing

Sound power level, Motor . . . . . ≤40 dB (mod.)  
≤45 dB (two position)  
Spring return . . . . . ≤62 dB

#### Integrated Auxiliary Switch

2xSPDT . . . . . 1 mA..3(0.5)A AC 250V  
(1 x fix 10% / 1 x adjustable 10...90%)

#### Safety

##### Protection Class

24V Types . . . . . III Extra low Voltage /  
. . . . . UL class 2 Supply  
230V Types . . . . . II Totally Insulated  
Degree of Protection . . . . . IP54  
. . . . . NEMA2, UL Enclosure Type 2  
Service Life . . . . . Min. 60,000 emergency positions

Maintenance . . . . . Maintenance free

##### Mode of Operation (EN 60730)

Actuators with Switch . . . . . Type 1.AA.B  
Actuators without Switch . . . . . Type 1.AA  
Control Pollution Degree . . . . . 3

#### Rated Impulse Voltage

Universal voltage units . . . . . 4 kV  
24V AC/DC units . . . . . 0.8 kV  
Aux. Switch . . . . . 2.5 kV

Weight . . . . . approx. 2.1Kg

#### Standards Conformity

EMC . . . . . CE according to 2004/108/EC  
Low Voltage Directive CE according to 2006/95/EC  
Certification . . . . . cULus to UL60730-1A and  
UL60730-2-14  
. . . . . and CAN/CSA E60730-1:02  
. . . . . IEC/EN 60730-1 and IEC/EN 60730-2-14

**FUNCTION**

**Mode of operation**

The Actuator is controlled with either an on/off signal or a standard control signal 2-10V DC moving to the operating position at the same time as tensioning the spring. If the supply voltage is interrupted the damper is mechanically returned back to the emergency rest position by the internal spring force tension.

The Spring Return rotational Direction is selected by the mounting of the actuator 'left' or 'right' facing. Additionally, for modulating actuators, the direction of rotation for the motor is selectable by switch.

**FEATURES**

**Simple Direct mounting**

Simple Direct mounting on the damper spindle with a universal spindle clamp, supplied with an anti-rotation strap to anchor the actuator body from rotating.

**Manual Override**

Manual operation of the damper with the hand crank, locking in any position with the interlocking switch. Release of the locking mechanism can be achieved manually, or automatically by applying the supply voltage.

**Adjustable angle of rotation**

All units have an adjustable angle of rotation with mechanical end stop

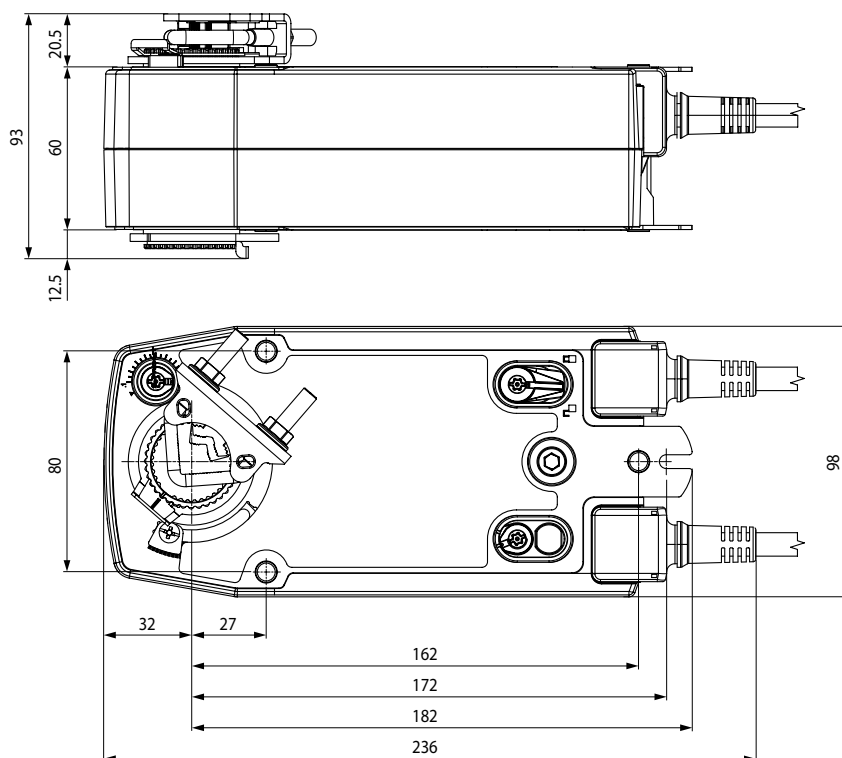
**High functional reliability**

The actuator is overload -proof, requiring no limit switches and automatically stopping when the end point is reached.

**Flexible Auxiliary Switch**

For the actuators with integrated auxiliary switches, one switch has a fixed setting at 10%, and the other switch can be adjusted between 10-90%.

**Dimensions (mm)**



**Spindle Clamp**





Damper Spindle Attachment		Spindle Length	Spindle Diameter		
			●	■	◆
Clamp on Top	With Insert	≥85 mm	10 - 22mm	10 mm	14 - 25.4 mm
	Without Insert		19 - 25.4 mm	12-18 mm	
Clamp on Bottom	With Insert	≥15 mm	10 - 22mm	10 mm	14 - 25.4 mm
	Without Insert		19-25.4 mm	12-18 mm	

**PART NUMBER ORDERING**

Part Number	Type Designation	Power Supply		Power Consumption			Control Signal	Cable Size
		V AC	V DC	Operation	Rest	Wire Sizing		1m, 0.75mm <sup>2</sup>
MD20SR-T	MD20SR-24/230T 1M 5400	24-240	24-125	6.5W	3.3W	18VA	2 Pos. / (Open/Close)	2 x 0.75mm <sup>2</sup>
MD20SR-TS	MD20SR-24/230TS 1M 5400	24-240	24-125	6.5W	3.3W	18VA	2 Pos. / (Open/Close)	2 x 0.75mm <sup>2</sup>
MD20SR-24T	MD20SR-24T 1M 5400	24	24	5W	2.5W	7.5VA	2 Pos. / (Open/Close)	2 x 0.75mm <sup>2</sup>
MD20SR-24TS	MD20SR-24TS 1M 5400	24	24	5W	2.5W	7.5VA	2 Pos. / (Open/Close)	2+6 x 0.75mm <sup>2</sup>
MD20SR-24M	MD20SR-24M 1M 5400	24	24	5W	3W	7VA	Modulating	4 x 0.75mm <sup>2</sup>

See Type Designation Guide, doc. 02-00047 for explanation on build up code.

**ACCESSORIES**

Item	Description	Part No.
 AV8-25	Shaft extension 250mm long Spindle: 8-25mm dia. / 10-25mm sq.	914-1023-010
 KH8	Universal crank arm. Spindle: 10-18mm dia. / 10-14mm sq. Slot width 8.2mm	914-1021-000
 ZG-MDSR	Mounting kit for flat and side installations	914-1046-000
 Z-AF	AF. Retrofit mounting plate. Retains anti rotation strap mounting on AF installations when retrofitting to the MD10 SR Damper	914-1047-000

**SAFETY NOTES**



- The Actuator must not be used outside the specified field of application.

- It may only be installed by a suitably trained or supervised personnel. Any legal regulations or other regulation issued by authorities must be observed during assembly

- The Device may only be opened at the manufacturers . It does not contain any serviceable or replaceable parts by the user.



- The cable and connector must not be removed from the device

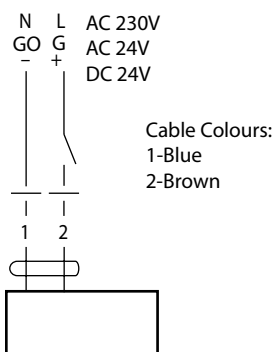
- When calculating the required torque, the specifications supplied by the damper manufacturer (cross-section, design, installation site), and the airflow conditions must be observed.

- 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.

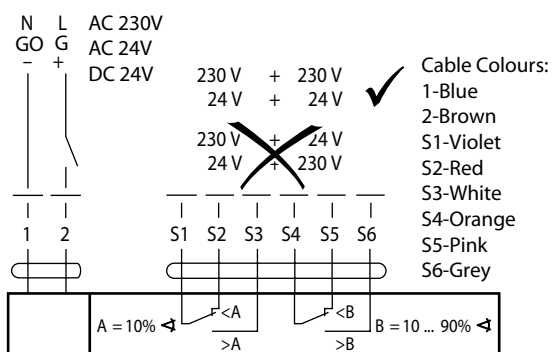
- The integrated switches of this actuator have to be connected either to Power supply voltage or safety extra low voltage. The combination Power supply voltage and safety extra low voltage is not allowed.

WIRING DIAGRAMS

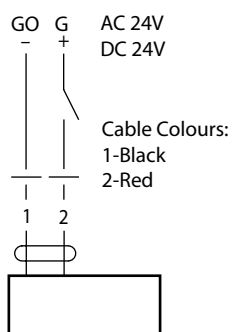
MD20 SR-T



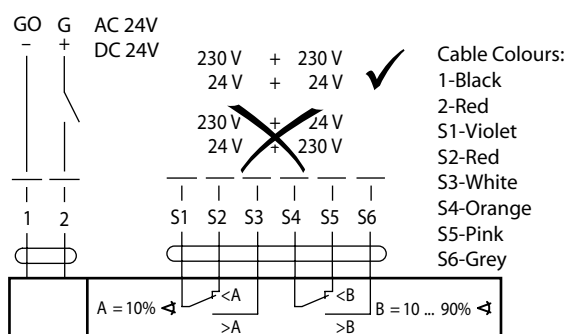
MD20 SR-TS



MD20 SR-24T



MD20 SR-24TS



MD20 SR-24M

