

MD20 SR

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



Product Description

The MD20 SR is a series of spring return damper actuators for the operation of dampers in up to 4m² on ventilation systems in building services installations. A universal voltage type, operational from 24...240 Vac and 24V...120 Vdc 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	
24 Vac/Vdc units	
Vac	50/60Hz 19.2...28.8 V
Vdc	21.6...28.8 V
Universal Voltage units	
Vac	50/60Hz: 19.2...264 V
Vdc	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...10 Vdc
Input Resistance	100 kΩ
Position Feedback (Y)	2...10 Vdc, max 0.5mA
Position accuracy	+/- 5%
Direction of Rotation, Motor	
Modulating	Reversible with Switch Y=0
Two position	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	
Modulating	≤40 dB
Two position	≤45 dB
Spring return	≤62 dB

Features

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

Integrated Auxiliary Switch	
2xSPDT	1 mA..3(0.5)A AC 250V (1 x fix 10% / 1 x adjustable 10...90%)
Safety	
Protection Class	III Extra low Voltage /
24V Types	
UL class 2 Supply	II Totally Insulated
230V Types	
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
24 Vac/Vdc units	0.8 kV
Aux. Switch	2.5 kV
Weight	approx. 2.1Kg
Standards/Directives	
ElectroMagnetic Compatability [EMC]	2014/30/EU
Low voltage directive [LVD]	2014/35/EU
Restriction of Hazardous Substances [RoHS2]	2011/65/EC
UL	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



The Actuator is controlled with either an on/off signal or a standard control signal 2...10Vdc 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.

Available Products

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

Accessories

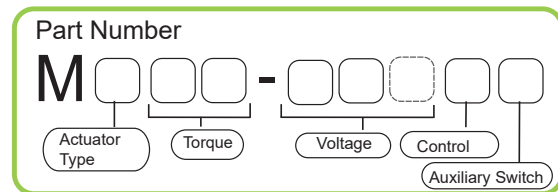
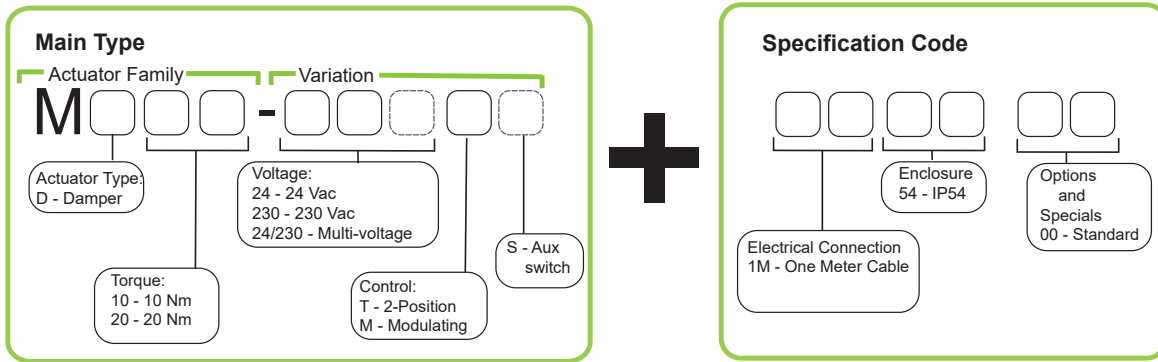
Item	Description	Part No.
	Shaft extension, 250 mm long, Spindle: 8...25 mm dia. / 10...25 mm sq.	914 1023 010
	Universal crank arm. Spindle: 10...18 mm dia. / 10...14mm sq. Slot width 8.2 mm	914 1021 000
	Mounting kit for flat and side installations	914 1046 000
	AF. Retrofit mounting plate. Retains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

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	

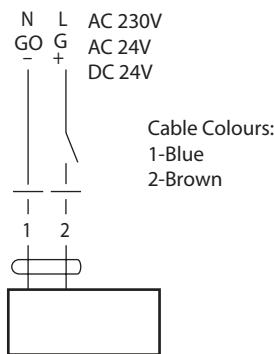
Refer to the Type Designation and Part Number section for details.

Type Designation and Part Number

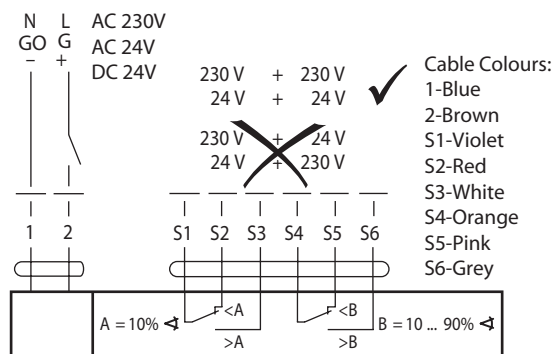


Wiring

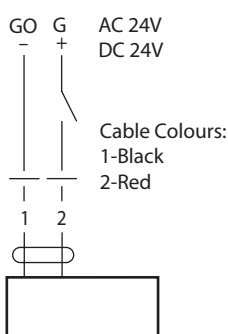
MD20 SR-T



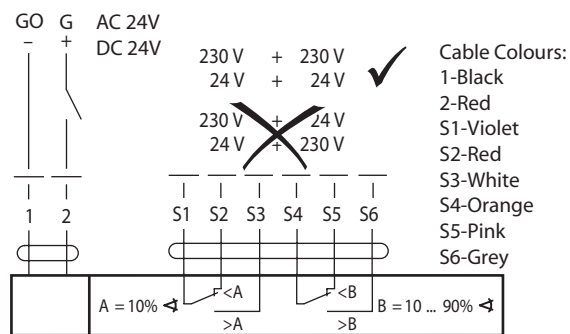
MD20 SR-TS



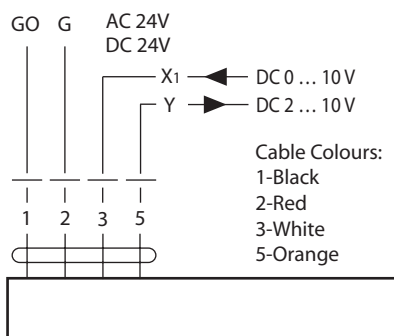
MD20 SR-24T



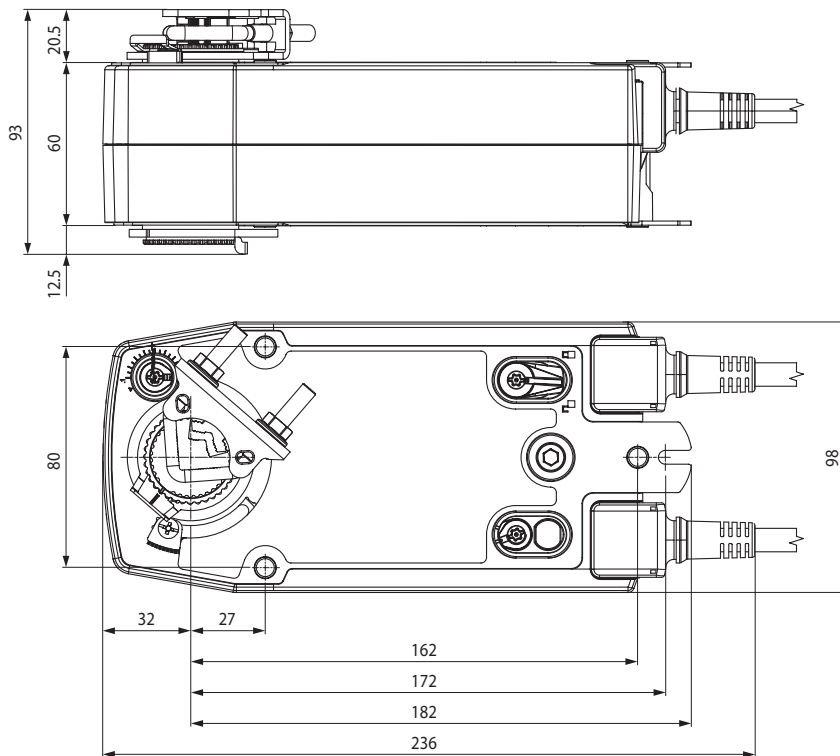
MD20 SR-24TS



MD20 SR-24M



Dimensions (mm)



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.