MD40 ER

Specifications

Part Number. . . . . MD40ER-24M (Modulating)
MD40ER-24T (Two-Position)
Nominal Torque . . . . . Min. 40 Nm

Running Time

Motor Driven. . . . . 150 s/90°
Capacitor Driven. . . . . .35 s/90°

Control Signal

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

Functional Data

Electronic Return position. 0
100% of max. angle or rotation (POP dial)

Direction of Rotation

Motor (mod.). . . . . Reversible with Switch 0/1
Electronic Return (SuperCap) Position 0-100%
(any position between, as set by POP dial)
Angle of Rotation . . . . . Max. 95°,
limited both ends, adjustable end stops
Position Indication . . . . . .Mechanical

Power Consumption

In operation . . . . . 11 W @ nominal torque
At rest. . . . . <3 W
for wire sizing . . . . . .≤21 VA

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 . . . . . .≤52 dB
Electronic Return (SuperCap Driven). . . . . .≤61 dB
Weight . . . . . approx. 1.8 kg

Electronic Return (SuperCap) Damper Actuator

Modulating and Two-Position Control 40Nm

The MD40 ER is a powerful rotary damper actuator with super capacitor technology for positional electronic drive return in the event of a power failure.

- Air Dampers up to 8m^2
- 24 V AC/DC
- 2-10V Position Feedback
- Long Life Supercaps

Safety

Protection Class . . . . . III Safety Extra Low Voltage /
UL Class 2 Supply
Degree of Protection. IP54
NEMA2, UL Enclosure Type 2
Maintenance. . . . . Maintenance free
Control Pollution Degree. 3
Mode of Operation . . . . . .Type 1.AA
Rated Impulse Voltage . . . . . 0.8 kV

Standards Conformity

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

Schneider Electric

FUNCTION

Mode of operation

The modulating actuator is positioned and controlled with a standard 2-10V DC control signal. If the supply voltage is interrupted the damper is returned by the electrical charge of the internal super capacitors to the position indicated by the POP dial.

The direction of rotation switch changes the running direction of the actuator against the control signal. The direction of rotation switch has no influence on the power off position as set by the POP switch.

The two-position actuator (MD40ER-24T) is driven fully On by a 24 V ac or dc supply and is returned by the super capacitors when the 24 V supply is switched off.

Power Off Position (POP) setting [green header]

The Power Off Position (POP) is an electronic position return feature in the MD40 ER actuator.

The position can be determined from the POP setting dial on the top of the actuator.

This position can be anywhere from 0 to 100% of mechanical angle position (95°). In most applications the damper actuator will be desired to return to either angle limit (0 or 1 position on the set dial) but it is possible to return the actuator to any position in between.

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.

There is no internal mechanical spring on the MD40 ER, the usual practice of reversing the mounting orientation as on traditional spring return damper actuators is not needed as the direction of closing is governed by the setting of the POP dial.

Manual override

The actuator position can be manually set by hand by disengaging the gearing latch using the top push button.

Adjustable angle of rotation

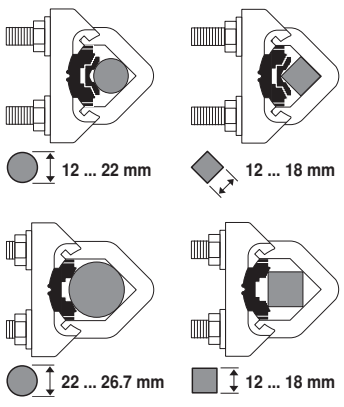
All units have an adjustable angle of rotation up to 95° with mechanical limit stops adjustable from each end.

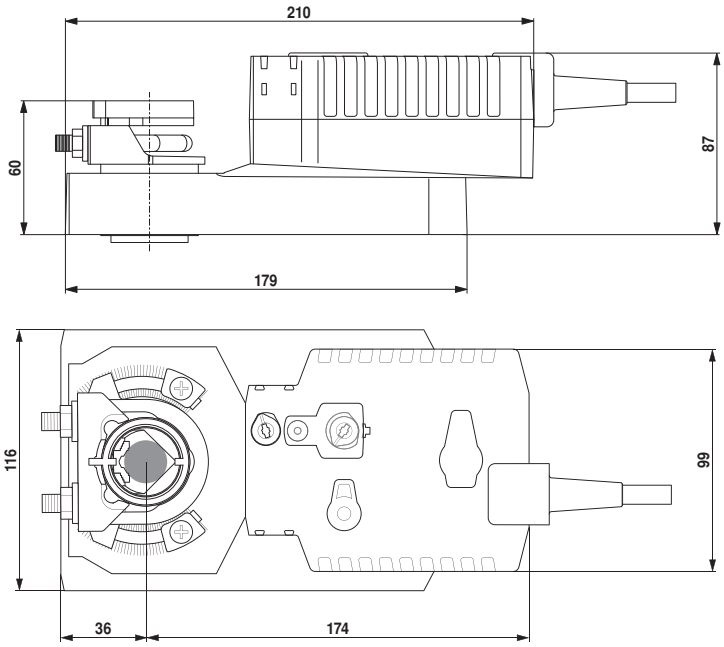
High functional reliability

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

DIMENSIONS mm

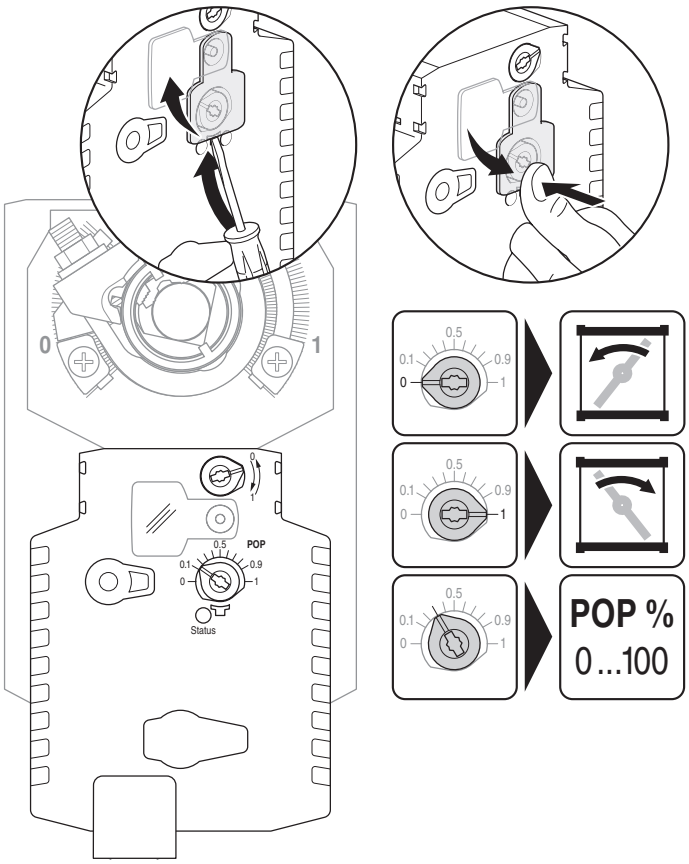
Damper Spindle	Length			
	≥52	12 ... 26,7	≥12	≤25,5

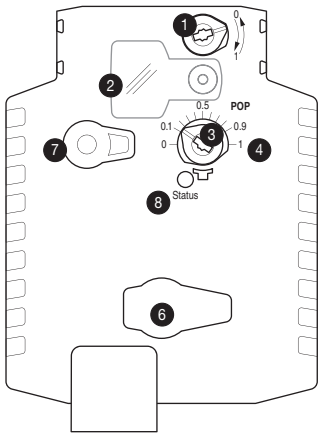




OPERATING CONTROLS AND INDICATORS

Power Off Position (POP)





1. Direction of rotation switch
2. Cover, POP setting dial
3. POP setting dial
4. Scale for manual adjustment

6. No function
7. Disengagement button

LED display 8 green	Meaning/Function
Illuminated	Operation OK / without fault
Blinking	POP-Function active
Off	– Not in Operation – Pre-charging time SuperCap – SuperCap

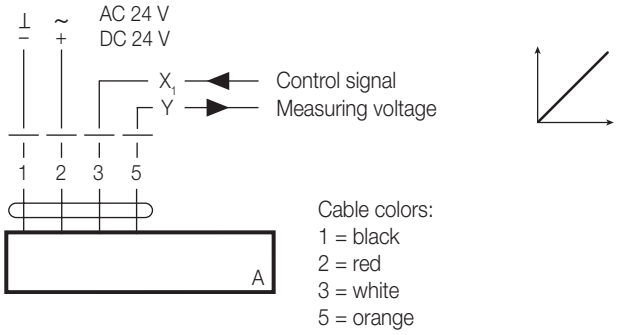
SAFETY NOTES

- 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 actuator 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 must not be disposed of as household refuse. All locally valid regulations and requirements must be observed.

WIRING DIAGRAMS

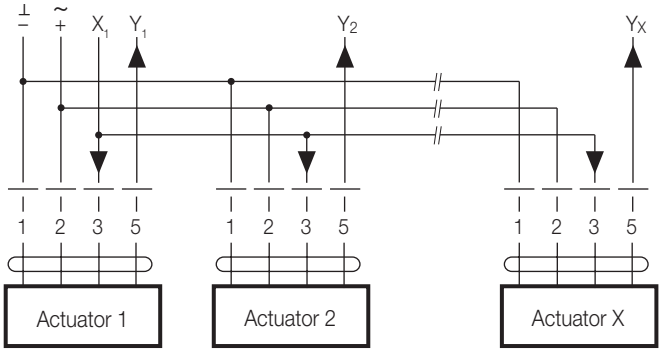
MD40 ER-24M

Note
Connect via safety isolation transformer.



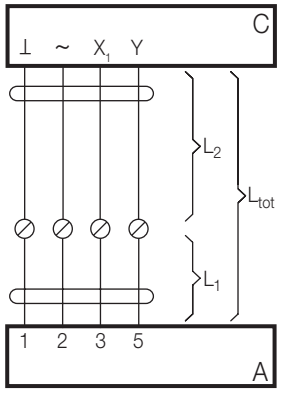
Cable colors:
1 = black
2 = red
3 = white
5 = orange

Wiring diagram for parallel operation



Notes
- A maximum of eight actuators can be connected in parallel.
- Parallel operation is permitted only for separated axes.
- It is imperative that the performance data is observed with parallel operation.

Cable lengths



A = Actuator
C = Control unit
L_1 = Attached connecting cable, 1 m (4 x 0,75 mm²)
L_2 = Customer cable
L_{tot} = Maximum cable length

Note
When several actuators are connected in parallel, the maximum cable length must be divided by the number of actuators.

Cross-section L_2 ⊥ / ~	Max. Cable length $L_{tot} = L_1 + L_2$		Example for DC
	AC	DC	
0,75 mm²	≤40 m	≤20 m	1 m (L_1) + 19 m (L_2)
1,00 mm²	≤50 m	≤30 m	1 m (L_1) + 29 m (L_2)
1,50 mm²	≤80 m	≤45 m	1 m (L_1) + 44 m (L_2)
2,50 mm²	≤130 m	≤80 m	1 m (L_1) + 79 m (L_2)

MD40 ER-24T

Note
Connect via safety isolation transformer.