

GM24-SR US



Proportional damper actuator, non-spring return, direct coupled,
24 V for 2 to 10 VDC and 4 to 20 mA control signal.



Torque min. 266 in-lb, for control of air dampers

Application

For proportional modulation of dampers in HVAC systems. Actuator sizing should be done in accordance with the damper manufacturer's specifications.



The actuator mounts directly to the damper operating shaft with a universal V-bolt clamp assembly.

Operation

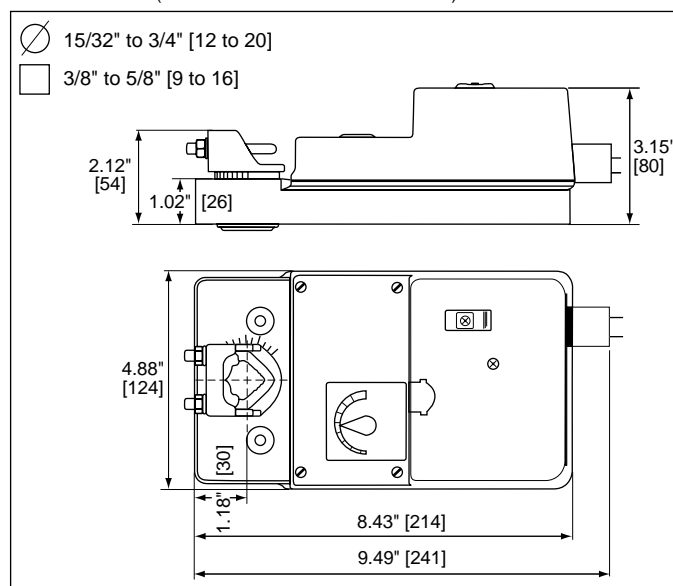
The actuator operates in response to a 2 to 10 VDC or, with the addition of a 500Ω resistor, a 4 to 20 mA control input from an electronic controller or positioner. A 2 to 10 VDC feedback signal is provided for position indication or master-slave applications.

The anti-rotation strap supplied with the actuator will prevent lateral movement of the actuator. The angle of rotation is mechanically limited to 95°. When reaching the damper or actuator end position, the motor stops automatically. The gears can be manually disengaged by simply pressing down the spring loaded button on the actuator cover. When this button is pressed down, the damper blades can be adjusted by hand. The position of the actuator is indicated by means of a scale reading 0 to 1.

The GM uses a brushless DC motor which is controlled by an Application Specific Integrated Circuit (ASIC). The ASIC monitors and controls the actuator's rotation and provides a digital rotation sensing function to prevent damage to the actuator in a stall condition. The actuator may be stalled anywhere in its normal rotation without the need of mechanical end switches.

Technical Data	GM24-SR US
Power supply	24 VAC \pm 20% 50/60 Hz 24 VDC \pm 10%
Power consumption	3 W
Transformer sizing	7 VA (class 2 power source)
Electrical connection	3 ft, 18 GA appliance cable 1/2" conduit connector
Overload protection	Electronic throughout 0 to 95° rotation
Operating range Y	2 to 10 VDC, 4 to 20 mA
Input impedance	100 kΩ (0.1 mA), 500Ω
Feedback output U	2 to 10 VDC, 0.5 mA max
Angle of rotation	mechanically limited to 95°
Torque	min 266 in-lb [30 Nm]
Direction of rotation	reversible with switch A/B   A = CW with an increase in voltage B = CCW with an increase in voltage
Position indication	0 to 1 and reversible indicator
Running time	135 sec. independent of load
Humidity	5 to 95% RH, non-condensing
Ambient temperature	-22°F to +122°F [-30°C to +50°C]
Storage temperature	-40°F to +176°F [-40°C to +80°C]
Housing	NEMA type 2
Housing rating	UL94V-0 (flammability rating)
Agency listings	UL 873 listed, CSA C22.2 No.24 certified, CE
Noise level	max. 45 dB (A)
Servicing	maintenance free
Quality standard	ISO 9001
Weight	4.2 lbs (1.9 kg.)

Dimensions (All numbers in brackets are metric.)



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Accessories

IRM-100	Input scaling module
KH8	Universal crankarm
KG10	Ball Joint
NSV24	Battery back-up module
P...	Feedback potentiometer
PTA-250	Pulse width modulation interface
SGA24	Min. and/or manual positioner in NEMA 4 housing
SGF24	Min. and/or man. positioner for flush panel mount
S1,S2	Auxiliary switch
Tool-01	10mm wrench
ZAD24	Digital position indication
ZDB-GM	Angle of rotation limiter (Series 2)
ZG-H2	Actuator operator handle
ZG-GM2	Crankarm adaptor kit
ZG-R01	500Ω resistor for 4 to 20 mA
ZG-100	Universal mounting bracket
ZG-101	Universal mounting bracket
ZG-102	Multiple actuator mounting bracket
ZG-103	Universal mounting bracket
ZG-104	Universal mounting bracket
ZS-100	Weather shield (metal)
ZS-150	Weather shield (polycarbonate)
ZS-260	Explosion-proof housing
ZS-300	NEMA 4X housing

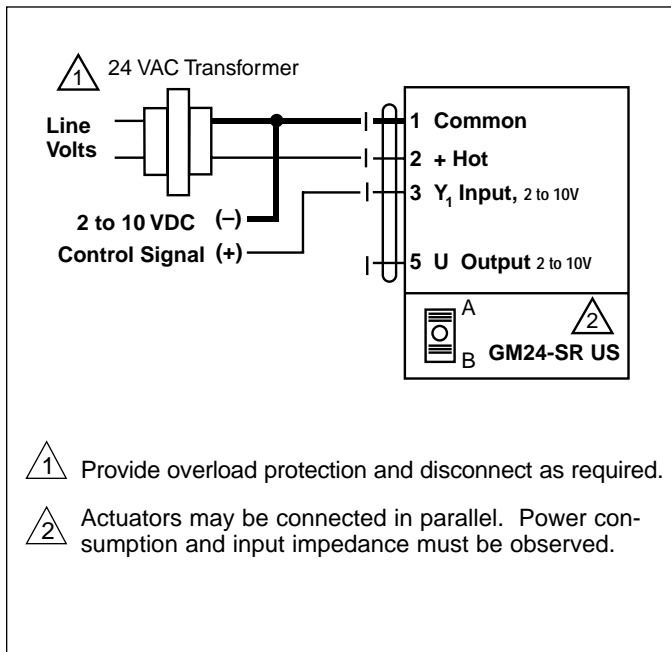
NOTE: When using GM24-SR US actuators, use only the accessories listed on this page.

GM24-SR US - Typical Specification:

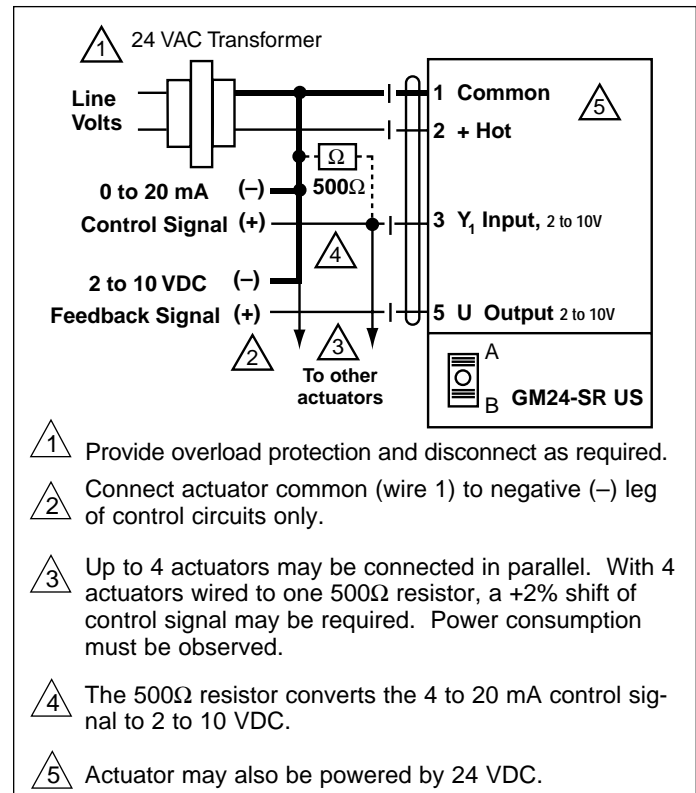
Control damper actuators shall be electronic direct coupled type which require no crankarm and linkage. Actuators shall be UL listed and CSA certified, have a 2 year warranty, and be manufactured under ISO 9001 International Quality Control Standards. Actuators shall have reversing switch and gear disengagement button on the cover. Actuators shall use a brushless DC motor and be protected from overload at all angles of rotation. Run time shall be constant and independent of torque. The actuator must provide proportional damper control in response to a 2 to 10 VDC or, with the addition of a 500Ω resistor, a 4 to 20 mA control input from an electronic controller or positioner. A 2 to 10 VDC feedback signal shall be provided for position indication or master-slave applications. Actuators shall be as manufactured by Belimo.

Multiple actuators mounted to shaft	
Model	Maximum quantity per shaft
GM24 US	2
GM24-SR US	2

Wiring diagrams



0 to 10 VDC control of GM24-SR US



4 to 20 mA control of GM24-SR US with 2 to 10 VDC feedback output.