

# MG350V

## Globe Valve SmartX Actuator



### Product Description

MG350V globe valve actuators are non-spring return electromechanical actuators for the control of two-way and three-way Globe Valves for fan coils, unit ventilators, reheat, cooling units, perimeter heating, and other applications.

Proportional, Floating, and Pulse Width Modulated (PWM) models are available for direct mounting on 1/2" ... 2" VB-7000 Globe Valves. The MG350V actuators are also compatible with older field installed 1/2" ... 1-1/4" VB-9000 Globe Valves as well as other valves (with the addition of AV-800 Globe Valve Adapters).

### Features

- Bi-color LED status indication for motion indication, auto calibration, and alarm notification
- Auto calibration provides precise control by scaling the input signal to match the exact travel of the valve stem
- Proportional models with and without a position output signal with field selectable 2 ... 10 Vdc and 0 ... 10 Vdc input signals and selectable input signal action (reverse or direct acting)
- Floating and two-position models available with and without a position output signal
- Pulse width modulated (PWM) models with field-selectable 0.59 ... 2.93 sec and 0.1 ... 25.5 sec input signal ranges with a position output signal
- Stall protected throughout stroke
- Manual override with automatic release
- Position feedback output signal models include field selectable 2 ... 10 Vdc or 0 ... 5 Vdc output signal
- Removable wiring screw terminal with 1/2" conduit opening
- Integral linkage and self-adjusting valve position indicator

### Specifications

#### Input Power and Ratings

Part Number	Input Signal	Position Feedback Output Signal	Approx. Timing in Seconds for 1/2" (12.7 mm) Stroke	Max. Stroke in inch (mm)	Force lbf (N)
MG350V-24F	Three-Wire Floating <sup>1</sup>	-	102	21/32 (16.5)	78 (350)
MGF350V-24FP	Three-Wire Floating, PWM <sup>1,2</sup>	2 ... 10 Vdc, 0 ... 5 Vdc <sup>3</sup>	51	21/32 (16.5)	67 (300)
MG350V-24M	2 ... 10 Vdc, 0 ... 10 Vdc <sup>4</sup>	-	102	21/32 (16.5)	78 (350)
MGF350V-24MP	2 ... 10 Vdc, 0 ... 10 Vdc, 4 ... 20 mA	2 ... 10 Vdc, 0 ... 5 Vdc <sup>3</sup>	51	21/32 (16.5)	67 (300)

<sup>1</sup> Also compatible with two-position Form A 24 Vac/Vdc input signals.

<sup>2</sup> Field-selectable 0.59 ... 2.93 sec and 0.1 ... 25.5 sec PWM ranges.

<sup>3</sup> Field selectable. The 2 ... 10 Vdc output signal range also includes an alarm signal (see the MGF350V-24FP, MG350V-24M, and MGF350V-24MP Alarm Operation table).

<sup>4</sup> Field Selectable.

\*The CE mark indicates RoHS2 compliance. Please refer to the CE Declaration of Conformity for additional details.

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## Electrical Connections

Power input, running with full load MGF350V-24FP, MG350V-24M, MGF350V-24MP	24 Vac, ±20% (Class 2 power supply), 50/60 Hz, 7.2VA, 20 ... 29 Vdc, 3.5 W
MG350V-24F	24 Vac, ±20% (Class 2 power supply), 50/60 Hz, 5VA, 20 ... 29 Vdc, 3.5 W
Power input, holding MGF350V-24FP, MG350V-24M, MGF350V-24MP	24 Vac, ±20% (Class 2 power supply), 50/60 Hz, 1.2 VA (24FP 0.7W, 24M 0.4W, 24MP 0.5W)
MG350V-24F	Actuator is unpowered when it is holding
Internal power supply type MGF350V-24FP, MG350V-24M, MGF350V-24MP	half wave
MG350V-24F	full wave
Input signal impedance MG350V-24M and MGF350V-24MP	2 ... 10 Vdc and 0 ... 10 Vdc >100 kOhms
MGF350V-24MP	4 ... 20 mA, 500 Ohms
Input Signal Auto Calibration (MGF350V-24FP, MG350V-24M, MGF350V-24MP)	Automatic span calibration to precisely match the stroke length of the valve (with a minimum stroke of 1/8" (3.2 mm) and a maximum stroke of 21/32" (16.5 mm).
Floating Control Signal (MG350V-24F, MGF350V-24FP)	SPST center off (floating) control contacts or one or two SPST control contacts, minimum rating of 250 mA at 24 V or one or two triacs must be able to switch 250 mA at 24 Vac, 1,100 Ohms input impedance
Floating Input Signal Minimum Pulse Width (MG350V-24F)	100 msec
Position Feedback Output Signal (MGF350V-24FP, MGF350V-24MP)	2 ... 10 Vdc and 0 ... 5 Vdc, 0.5 mA (field selectable)
Conduit Connection	Removable 1/2" conduit opening plate
Electrical Connections	Removable terminal block, AWG 12 ... 24, meets the requirements of cUL without the need of an electrical earth ground connection
Linkage	Linkage for 1/2" ... 2" VB-7000 and 1/2" ... 1-1/4" obsolete VB-9000 Globe Valves included with actuator
Manual Override	3 mm hex wrench (not included with actuator), "tee" handle style recommended

## Mechanical

Mechanical Valve Position Indicator	Graduated position indicator showing open to close with end point indicators
Electrical Valve Status Indication	Bi-color LED status indication for motion indication, calibration, and alarm notification. MG350V-24F does not include the calibration and alarm indication
Speed MG350V-24 and MG350V-24M	0.295" (7.5 mm) per minute
MG350-24FP and MGF350V-24MP	0.59" (15 mm) per minute
Force MG350V-24F and MG350V-24M	78 lbf (350 N) force
MG350-24FP and MGF350V-24MP	67 lbf (300 N) force
Enclosure	Plenum rated per UL 2043
Yoke	Rugged die cast aluminum
Weight	1.6 lbs

## Environmental

Operating Temperature Range	
For fluid up to 266 °F (130 °C):	23 ... 131 °F (-5 ... 55 °C)
For fluid up to 281 °F (138 °C):	23 ... 127 °F (-5 ... 53 °C)
For fluid up to 340 °F (171 °C):	23 ... 115 °F (-5 ... 46 °C)
For fluid up to 400 °F (204 °C):	23 ... 102 °F (-5 ... 39 °C)
Shipping / Storage Temp.	-40 ... 158 °F (-40 ... 70 °C)
Operating Humidity Range	5 ... 95% non condensing
Location	NEMA 2 (IP 53) with proper mounting orientation
Noise Level	≤30 dB (A) @ 1 meter

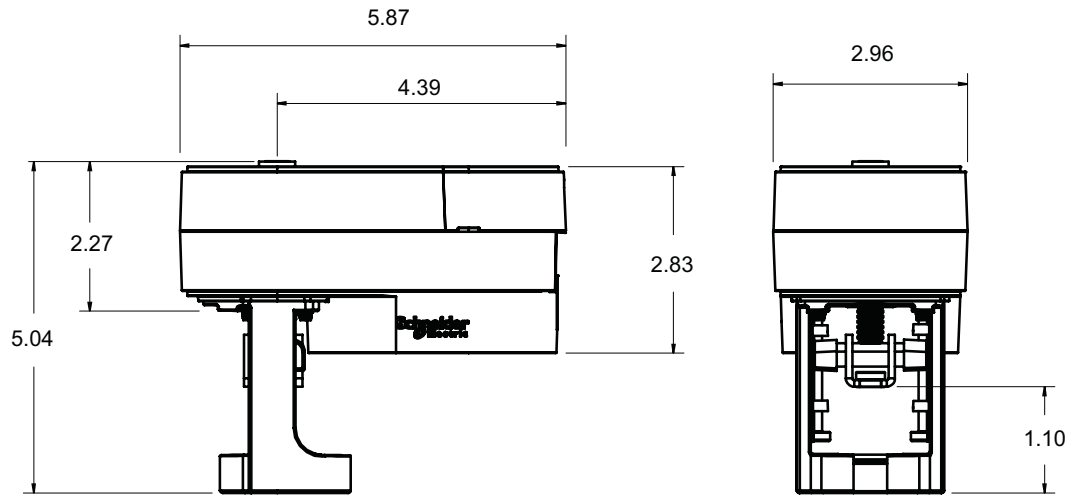
## Agency Listings

North America	cUL-us LISTED mark (xapx & xapx7), per UL 60730-1 and -2-14 and CAN/CSA E60730-1 and -2-14 Automatic Electric Controls, NEMA 2, NEC class 2 FCC part-15 class B, Canadian ICES-003, and ESA registered. Plenum rated per UL 2043.
European Community	CE mark, LVD directive [2014/35/EU] per EN IEC 60730-1 and -2-14 Automatic Electric Controls, protection class III SELV, EMC directive [2014/30/EU] per EN IEC 61000-6-2 and -6-3, IP53 Ingress Protection per EN IEC 60529 (properly mounted), RoHS2 directive [2011/65/EC] and REACH directive [2006/1907/EC].
Australia, New Zealand	RCM, Regulatory Conformance Mark, per ACMA (Australia) and RSM (New Zealand)..
Russia, Kazakhstan, Belarus	EAC, EurAsian Conformity Mark.

## Accessories

AM-708 500 Ohm resistor for connection to 4 ... 20 mA input signals for MG350V-24M (not required for MGF350V-24MP)

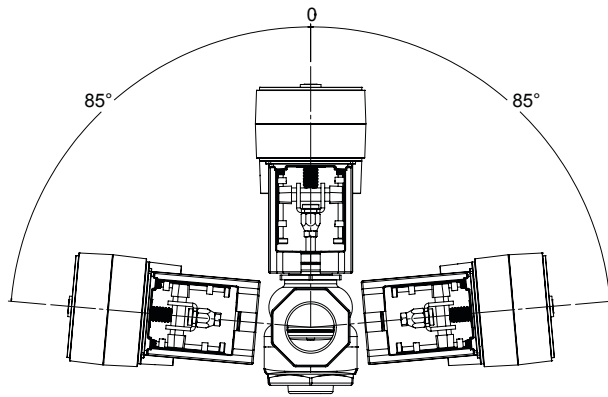
Dimensions



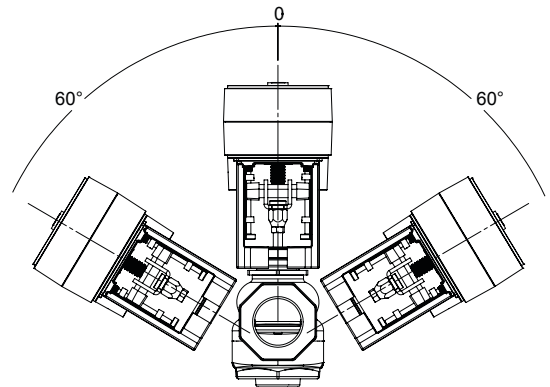
Mounting

The actuator enclosure is NEMA Type 2 rated in accordance with NEMA 250-2003 when mounted in any of the mounting orientations shown below. For IEC 60529 the actuator is IP51 compliant when mounted down to 85° from vertical or IP53 compliant when mounted down to 60° from vertical. Allow 8" (203 mm) minimum clearance above the actuator valve assembly for removal and reattachment of the actuator to the installed valve and for removal of the electrical access compartment cover.

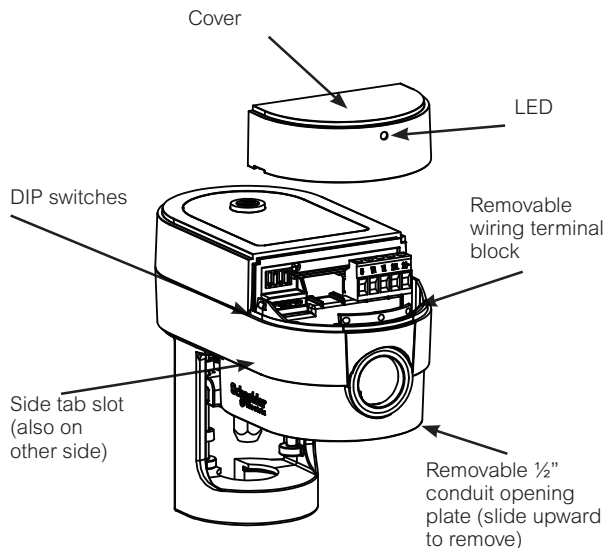
IP51 and NEMA Type 2 Allowable Mounting Orientation



IP53 and NEMA Type 2 Allowable Mounting Orientation



Actuator Diagram



MG350V Installed on a VB-7000 Globe Valve

