

Electric Actuator Linear CAL M301 & M302

with manual override and 2-point or 3-point control and analog I/O signals

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APPLICATION

The Electric valve actuator type CAL is specifically designed to meet the demands of the powerful low frequency vibration environments in marine installations as well as in other demanding environments.

The main applications are heating, cooling, ventilation and industrial systems where the medium is water, steam or oil. The actuator is designed to be used with Clorius 2-way and 3-way linear control valves.

DESIGN

Linear actuator with manual override, power supply with direct connection for 24 VAC/DC.

Also available with a wide range power supply module (100 - 240 VAC) Gearbox made of high quality aluminum die casting, powder-coated (60 µm thickness).

FUNCTION

Brushless DC motor (BLDC) driving the gear system. This turning is converted into an upward and downward motion via the crank mechanism.

FEATURES

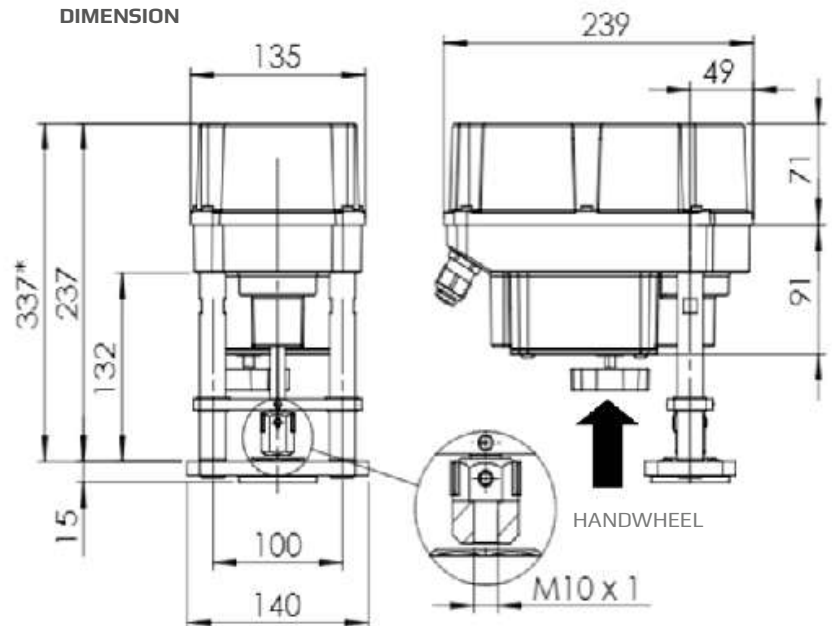
- Robust and compact design
- Low installation height
- Easy valve mounting
- Contactless, non-wearing travel detection with Hall sensor for exact positioning
- Durable aluminum gearbox
- Brushless DC motor
- Manual operation with push buttons and handwheel

TECHNICAL DATA

Material - Body and cover:	Aluminum/polycarbonate RAL6018 green
Material - Pillar:	Steel. 1.4104
Material - Bracket:	Galv. steel 1.0037
Weight:	5.6 kg without accessories
Handwheel and positioner:	Integrated
Stroke:	from 5mm - max 40mm
Power supply:	24 VAC/DC, 100 - 240 VAC, ±10%
Control signals:	2 and 3-point control signals 24 AC/DC, 100 - 230 VAC. Analog I/O signals 0-20 mA, 4-20 mA, 0-10V, 2-10 V
Duty cycle according to IEC 60034-1.8	
Binary ON/OFF:	52 - 30 min 50% ED
Modulating:	54 - 1200 c/h 50% ED
Valve positioner function:	Integrated, dead band 0.6% of full signal range, shut-off minimum
Manual override:	Electrically via 2 push buttons and handwheel
Permitted ambient temp:	-20 to +60°C
Operating speed:	0.6 / 0.9 / 1.2 mm/s
Enclosure acc. to EN 60529:	IP65
Overvoltage category:	CAT III
Minimum force:	1 kN - Type M301 2 kN - Type M302
Power consumption:	Type M301 - 9 W Type M302 - 12 W

Subject to change without notice.

DIMENSION



*FOR TEMPERATURES UP TO 240°C

MOUNTING

Vertically upright to horizontal, but not upside down unless protected against dripping liquids

Delivered with cable glands for correct installation, M20 x 1.5 (x2) and M16 x 1.5 (x1)

Electrical connections (max. 2.5 mm² wire) with screw terminals

The instructions supplied with the actuator must be followed carefully for mounting and start-up

TABLE 1

PRODUCT NO.	TYPE	FORCE (kN)	STROKE (mm)
1-5231960	ACTUATOR CAL-M301 24 VAC/DC	1	40
1-5231962	ACTUATOR CAL-M301 WITH POWER MODULE 100-240 VAC	1	40
1-5231965	ACTUATOR CAL-M302 24 VAC/DC	2	40
1-5231967	ACTUATOR CAL-M302 WITH POWER MODULE 100-240 VAC	2	40

TABLE 2

PRODUCT NO.	ACCESSORIES	
1-0156919	MODULE 100-240 VAC FOR M301 AND M302	Module 100 - 240 VAC
1-0156955	TEMPERATURE ADAPTOR CAL M301 AND M302	Adapter for temperatures up to 240°C
1-0156957	POSITION SIGNAL SWITCHES	2 potential-free position switches, mechanical, with silver changeover contacts (0.1 A - 5 A switching current)
1-0156959	POSITION SIGNAL RELAYS	Switching points can be adjusted from 0 - 100% of the stroke using potentiometers 2 position signal relays with changeover contacts, calibrated automatically to valve stroke 24V to 230V AC/DC 0.1 A - 1 A

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