Electric multiturn actuators type EAMT

Product description

The EAMT electric multiturn actuator opens and closes the diaphragm valve fully automatic. Therefore with the EAMT actuator, volume flows are automatically controlled, closed and regulated via a diaphragm valve.

Applications

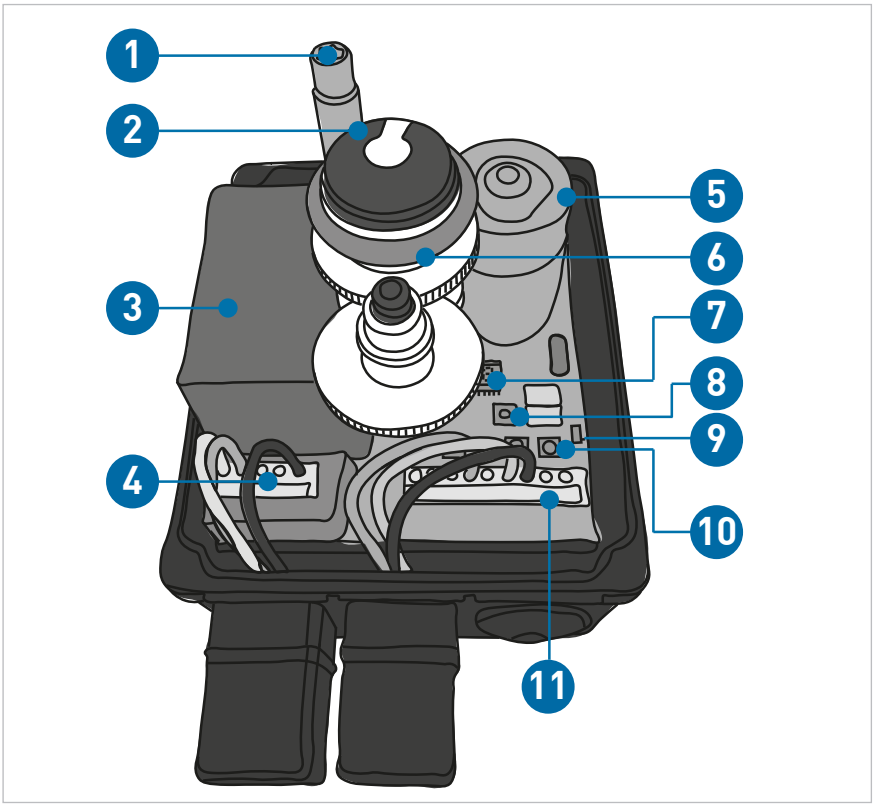
- Chemical process industry
- Microelectronics
- Water treatment
- Cooling
- Control applications

Benefits/features

- Multiturn actuator
- Adjustable integrated heating
- 7-segment error display
- Position feedback (open/close)
- Fully automatic end position teach-in
- Integrated emergency manual override
- Retrofit set includes: Conversion kit with drive, half shells and screws

Technical data

The standard version of the EAMT electric actuator consists of the following elements:



1 Shaft for emergency manual override
2 Power supply with cover
3 Control power for OPEN/CLOSED position
4 Optical position indicator
5 DC motor
6 Light tube for LED status feedback
7 7-segment error display
8 Heating element (temperature threshold regulator)
9 Switch for diaphragm material
10 Buttons for end position adjustment
11 Terminal block to connect position feedback

Specification EAMT	
Power input max.	65 VA
Current (calculated)	0.55A at 100V 0.24A at 230V
	2.5A at 24V
Power Supply	AC: 100 – 230 V, 50/60 Hz
	AC/DC: 24 V, 50/60 Hz
Supply voltage toler-ance	-10%...+15%
Mechanical interface	F05* (WS 11/14)
Duty cycle	50 %
Cycle time open/close	DN25: ≈ 85 sec. DN50: ≈ 130 sec.
Tested cycles (at 20 °C and Mdn)	5'000
Weight	2.2 kg / 4.85 lbs
Actuating angle	Multiturn
Protection class	IP 65 (IP67)[1)] per EN 60529 Designed for wet & dry locations (NEC), designed for indoor use (UV light may cause discoloration)
Pollution degree	Operation: Pollution Level 3 Commissioning (open housing cover): Only in controlled environments of pollution level 2
Overload protection	Current/time dependent, resetting

Specification EAMT	
Overvoltage category	II
Fuse	Internal: SMD fuse 2 A, not replaceable. Req. external breakers on all live wires: Rated Current: max. 16A Trip Curve: C, Standards Compliance: UL489, CSA C22.2 No. 5.1, IEC 60947-2
Ambient temp.	-10 °C to +50 °C (14°F to 122°F)
Max. installation altitude	2'000m above sea level (AMSL)
Feedback relays	Mono-stable change-over contacts Either max 6A @ 230VAC or 24VDC, no mixed voltage potentials allowed!
Recommended connecting cable	AWG 18-16, UL/cUL AWM 4'486 min. 125°C 1000V , outside diameter 8-13mm (cable glands), 4-9mm (DIN-connectors)
Allowable humidity	Max. 90 % relative humidity, non-condensing
Housing material	Housing: PP-GF (POLYFLAM, RPP 4225 CS1) Inspection glass: Udel P-1700 (CL2611) Assembly shells and intermediate elements: PPGF 30

[1)] When used with cable glands and vertical installation.

Technical basics

Operation

The electric actuators are available in 24 V AC/DC versions as well as versions equipped with a 100 to 230 V DC universal power supply. Since everything is transformed to 24 V within the device, accessories are equally suited for all actuators. The end positions are teached-in fully automatic.

Overload protection

The power supply unit for the EAMT is equipped with overload protection to protect the DC motor and the power supply circuit board from overheating. The overload protection is activated as soon as the load exceeds the torque range. As soon as the load returns to the allowable torque range and the temperature has dropped, the actuator returns to operation.

Heating element

The integrated heating element prevents condensation or icing inside the housing. It starts heating from a preset value depends on the ambient temperature, at which the actuator is operated, and can be set manually.

By default the heating element starts heating from a device temperature of 0°C and switches off at 5 °C. The switch-on threshold can be set within steps of 5 °C up to 40 °C. Then the heating switches off again at 45 °C.

Safety position

In the event of power outage, the actuator remains in whatever position it is in at the time. If in this case the actuator is equipped with the „failsafe return unit“ accessory, it automatically returns to a previously defined safe position (OPEN/CLOSE).

Handling

Installation notes

- If the actuator is connected directly to the power supply, an isolating switch must be installed on site (do not disconnect the ground cable). The wire gauge of the supply line must be between 0.75mm² and 1.5 mm². To prevent water from penetrating into the actuator, make sure that the cable entry is not facing upward.
- The EAMT actuators are equipped with healthy monitoring (ready-to-operate signal).
- When the actuator is first swiched on, the power supply capacitor charging may cause current surges for a few microseconds.
- Don't switch power off in end positions. Use e.g. changeover contacts.
- Actuators must be permanently powered to maintain feedback (otherwise feedback relay will be de-engergized).

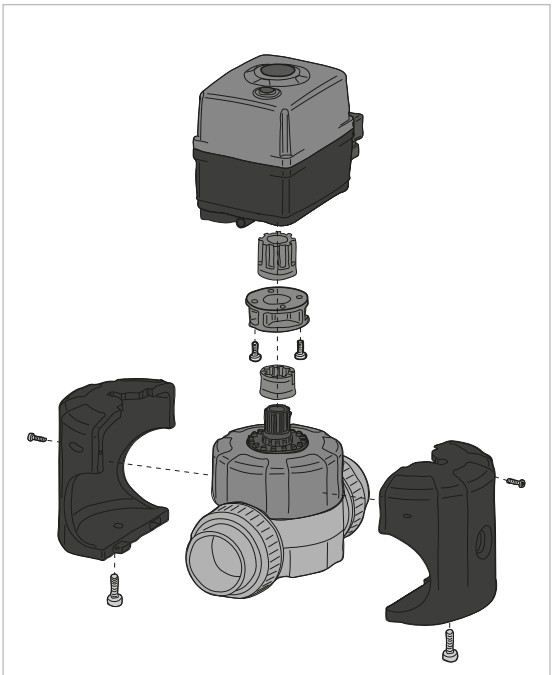
Maintenance notes

- Inspect regularly to ensure all housing screws are properly installed.
- Ensure that the emergency override cover is installed.
- Check whether the control signal and the visual display match, if not, readjust the end positions.

! Installation and maintenance must be performed as specified in the installation manual. The document is provided with the product, see also the online catalog at www.gfps.com

Installation tips

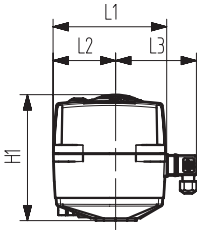
- Max. connection wire gauge: 1.5 mm^2; Min. connection wire gauge 0.75mm^2
- Fuse rating: > 6 A
- Install control and signal lines in separate cable conduits

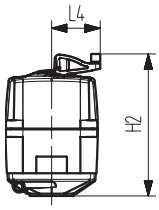


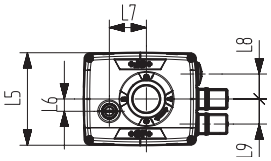
Kit with actuator, half shells and screws

Dimensions

Actuator dimensions

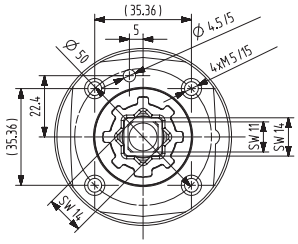






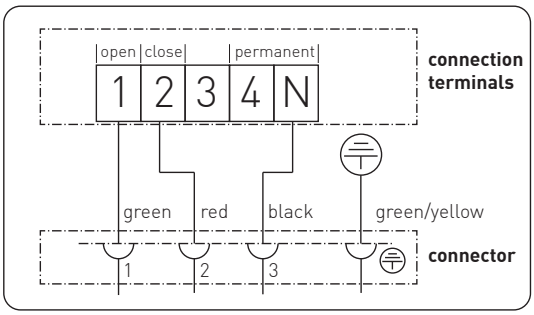
	L1 (mm)	L2 (mm)	L3 (mm)	L4 (mm)	L5 (mm)	L6 (mm)	L7 (mm)	L8 (mm)	L9 (mm)	H1 (mm)	H2 (mm)
EAMT	150	83	108	64	122	16	49	33	33	167	189

Interface dimensions

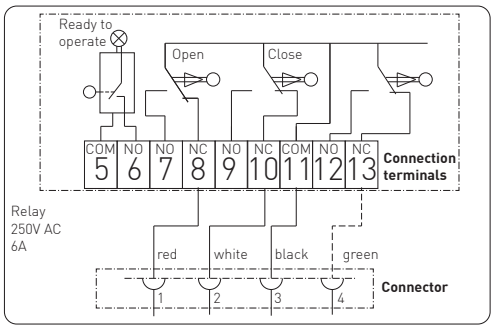


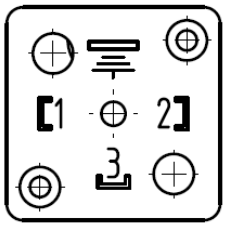
Connection diagram

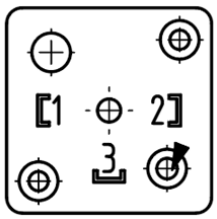
Connector 1: supply and control



Connector 2: position feedback



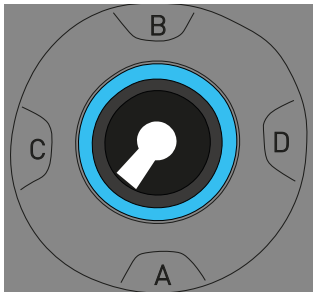




LED status feedback

The LED status feedback shows the valve positions and the current status of the actuator.

The following table shows the colour assignment of the LED:



Color	Meaning
Red	OPEN position*
Green	CLOSE position*
Flashes white	Actuator moves
Flashes yellow	Fault
Green/yellow	Setpoint value reached (at positioner)
Turquoise	Adjustment run / operation of color in-version
Blue/red	Teach OPEN position
Blue/green	Teach CLOSE position

*Factory color settings.

Accessories

- Fail-safe return unit with integrated battery pack
- External fail-safe return unit
- Positioner 4-20 mA
- EA Demo Box

i For further information on accessories, refer to the online product catalog at www.gfps.com

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