TECHNICAL DATA SHEET

Multi-turn actuator
ELEPHANT MT-N-xEM-O1-x-U1

+34 900 433 073, sales@valveelephant.com
Carrer d'Aragó,264,3-1,08007 Barcelona, Spain

1. GENERAL PRODUCT INFORMATION

1.1. Product name: Multi-turn actuator ELEPHANT MT-N-xEM-O1-x-U1.

1.2 Purpose: The multi-turn actuator is designed for control of shut-off industrial pipeline valves, e.g. cast iron and steel gate valves, gate valves, etc.

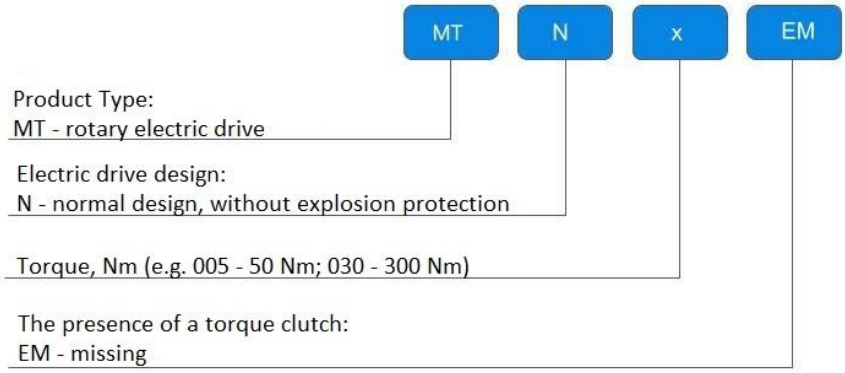
1.3 Application: electric actuator allows to use the valve in automatic control systems of heat and water supply of civil and industrial facilities.

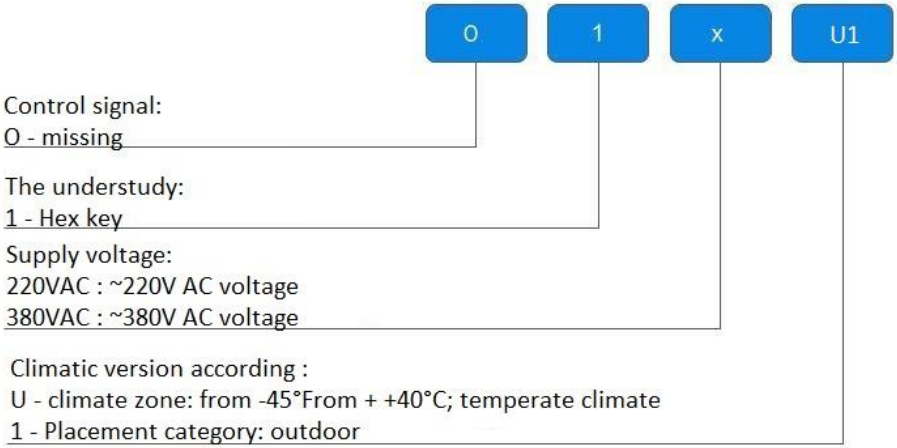
1.4. Operating principle: the actuator is applicable in repeated-short-time mode S2 with switching-on time of 10 minutes. Depending on the version, the actuators are powered from the AC network 50Hz 220V 1 phase or 380V 3 phases.

Electric multi-turn actuators allow to carry out:

- closing and opening of shut-off valves from the dispatcher control panel;
- manual operation of the shut-off valve by means of a handwheel;
- stopping of the valve shut-off valve in any intermediate position;
- on/off signaling of valve end positions (on/off) on the control panel;
- automatic shutdown by limit switches when the valve gate reaches the set position.

1.5. Deciphering of the designation:





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2. BASIC TECHNICAL DATA AND CHARACTERISTICS

Table 1: Characteristics

Degree of protection of the housing	IP67
Supply voltage, V	220AC/380AC
Maximum drive speed	50
Ambient temperature, ° C	-28 to +60
Internal thermal protection tripping temperature, ° C	+110
Doubler	hexagon
Installation angle	arbitrary
Body material	aluminum alloy
ISO flange type	F10/F12
Speed, rpm	5
Weight, kg	10

3. OVERALL AND CONNECTION DIMENSIONS

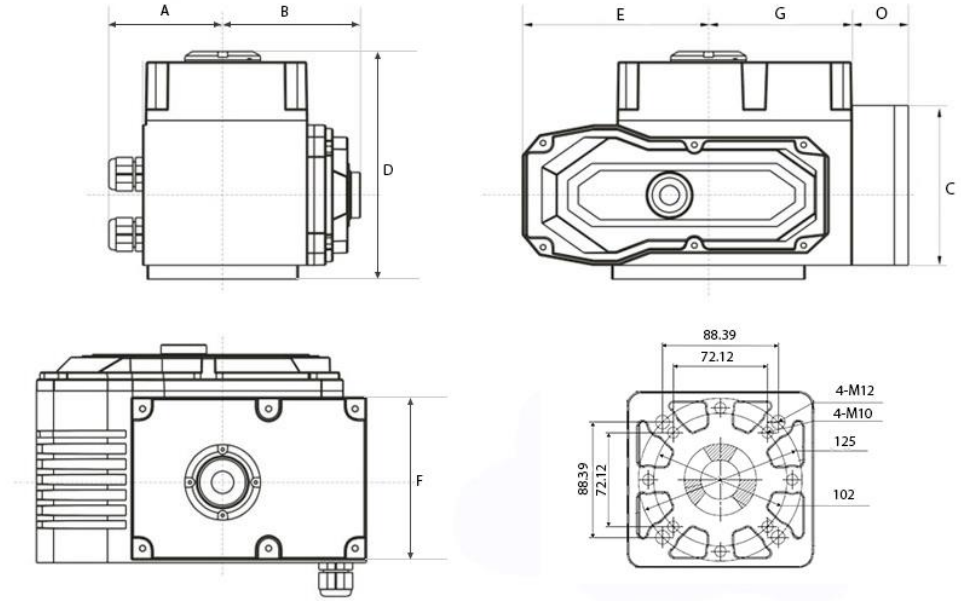

Figure 1 – Dimensions

Table 2. Dimensional characteristics

Model	O	A	B	C	D	E	F	G
	mm							
MT-N-xEM-O1-x-U1	40	149	119	114	200	151	105	117

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4. TECHNICAL PARAMETERS OF THE DRIVE MT-N-xEM-O1-x-U1

Table 3: Electromechanical parameters

Model	Torque, Nm	Maximum valve stem diameter, mm	Motor power, W	Rated current, A at voltage	
				220 V	380 V
MT-N-005EM-O1-x-U1	50	16	100	0.8	0.48
MT-N-010EM-O1-x-U1	100	18	100	1	0.8
MT-N-020EM-O1-x-U1	200	22	120	1.5	1
MT-N-030EM-O1-x-U1	300	25	150	1.8	1.2

5. DRIVE WIRING DIAGRAMS MT-N-xEM-O1-x-U1

5.1. 220VAC

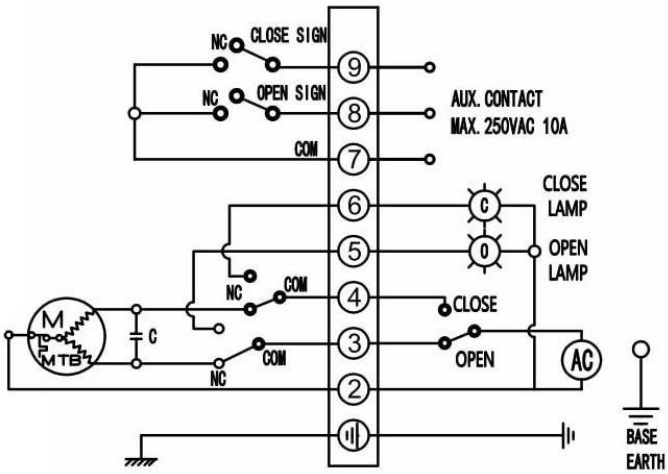

Figure 2 - Connection diagram of the actuator for 220V

5.2. 380VAC

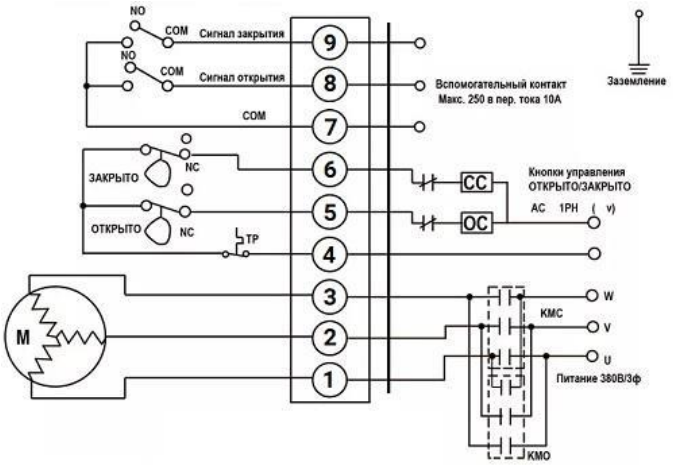

Figure 3 - Connection diagram of the electric actuator for 380V

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6. INSTALLATION AND OPERATING INSTRUCTIONS

6.1. The multi-turn actuator MT-N-xEM-O1-x-U1 is not equipped with torque switches, therefore, when using the actuator as an actuating control element on valves conveying contaminated and/or abrasive media with solid inclusions, in order to avoid actuator and/or valve failure, it is necessary to exclude the possibility of jamming of the valve shut-off body due to solid particles/body between the shut-off body and the valve body and/or seal or to provide for electrical protection and current tripping of the valve.
6.2 Before starting the actuator it is necessary to perform several cycles of test opening-closing of the gate valve by means of the actuator's handwheel. If the valve opens and closes normally when opened by the manual override, it is necessary to connect it to the supply and control networks and perform several cycles of test opening-closing by means of the actuator.
6.3 The actuator may be installed by personnel who have studied the actuator design, safety rules and requirements of this data sheet.
6.4 When installing the actuator it is necessary to provide space for cable repair and manual work.
6.5 Before starting the actuator operation it is necessary to make sure that the manual mode is switched off (the socket of the manual doubler is fully depressed).
6.6 Mounting of the actuator is performed directly on the shut-off valve. During mounting, attention should be paid to correct alignment of the actuator seating flange and the mating seating flange on the actuator. Tight fit, backlash, clearances between actuator and shut-off valve are not allowed. This leads to increased load on the actuator units and parts, accelerated wear and rapid failure of the actuator.
6.7 The actuator should have its own supports in case of its installation on the valve in a position other than horizontal. The actuator housing must be grounded.
6.8 Before starting the actuator, several cycles of valve opening-closing test operation should be performed using the actuator's handwheel. If the valve opens-closes normally when opened by the manual override, the valve should be connected to the supply and control networks and a number of test opening-closing cycles should be performed with the actuator.
ATTENTION! It is strictly forbidden to use the handwheel while the supply voltage is applied. Failure to observe this regulation may result in personal injury and damage to parts.
6.9. The drive must be maintained and operated in accordance with the established “Rules of technical operation of electrical installations of consumers”.

7. POSSIBLE MALFUNCTIONS AND REMEDIES

Table 4: Faults and their correction

Fault	Possible cause	Remedial action
The drive doesn't work	No power supply	Check the connection to the power supply
	Damaged wire, weak terminal fastening	Replace the wire, tighten the terminal fastener
	Supply voltage does not match the required drive voltage	Match the applied voltage to the drive characteristics
	Overheating protection has been triggered	Eliminate the reasons why the protection was triggered
	Incorrect operation of the limit switch	Replace the limit switch
	Destruction of the start capacitor	Replace the start capacitor and check the drive operating temperature
Drive does not stop	Incorrect supply voltage	Check and adjust the applied voltage according to the actuator specifications
	Potentiometer fastening is loose	Check and tighten potentiometer screws

8. TRANSPORTATION AND STORAGE

8.1. The actuators can be transported by any type of transport in a way that prevents damage to the actuator in accordance with the procedure established at the enterprise.
8.2 The actuators are stored in the manufacturer's packaging in warehouses ensuring safety and serviceability of the actuators in accordance with the procedure established at the enterprise.

9. UTILIZATION

9.1. The product is disposed of in accordance with the procedure established at the enterprise (remelting, burial, resale).

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10. WARRANTY OBLIGATIONS

10.1. Warranty period - 12 months from the date of commissioning, but not more than 18 months from the date of sale.
10.2. The warranty applies to equipment installed and used in accordance with the installation instructions and product specifications described in this data sheet.
10.3. The manufacturer guarantees compliance of the product with safety requirements, provided that the consumer complies with the rules of transport, storage, installation and operation.
10.4. The warranty covers all defects caused by the fault of the manufacturer.
10.5. The warranty does not apply:

- parts and materials of the product subject to wear and tear;
- for cases of damage caused by:
    - modifications to the original design of the product;
    - violation of general installation recommendations;
    - faults caused by improper maintenance and storage; improper operation and use of the equipment.

11. WARRANTY TERMS

11.1. Claims to the quality of the goods may be made during the warranty period.
11.2. Defective products are repaired or exchanged for new ones free of charge during the warranty period. ELEPHANT decides whether to replace or repair the product. The replaced product or its parts resulting from the repair shall become the property of 'ELEPHANT'.
11.3. Costs related to dismantling, installation and transport of the defective product during the warranty period shall not be reimbursed to the Buyer.
11.4. If the claim is unfounded, the Buyer shall pay the costs of diagnostics and expertise of the product.
11.5. Products are accepted for warranty repair (as well as for return) fully assembled.

WARRANTY CARD №____

№	Product Name	Packs

Name and address of the trading organisation

_____

Date of sale _____ Seller's signature _____

Stamp or seal of the trading organisation Acceptance stamp

I agree with the terms and conditions of the warranty:
Buyer _____ (signature)

Warranty period - 12 months from the date of commissioning, but not more than 18 months from the date of sale.

For warranty repairs, complaints and product quality claims, please contact ELEPHANT at: Carrer d'Aragó,264,3-1,08007 Barcelona, Spain E-mail address: sales@valveelephant.com.

When making a complaint about the quality of goods, the buyer shall present the following documents:

1. A free-form application, which shall specify:
   - name of the organisation or full name of the buyer, actual address, contact telephone numbers;
   - name and address of the organisation that carried out the installation;
   - basic parameters of the system in which the product was used;
   - a brief description of the defect.
2. Document confirming the purchase of the product (delivery note, receipt)..
3. Act of hydraulic test of the system in which the product was installed.
4. This completed warranty card.

A note on the return or exchange of goods _____

Date: «___»_____202__yr. Caption _____

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