



Manufacturer of shut-off and control valves

TECHNICAL DATA SHEET

**Quarter-turn actuator
ELEPHANT QT-N-xEM-x1-x-U1 with feedback sensor and
input control signal 4-20mA/0-10V**



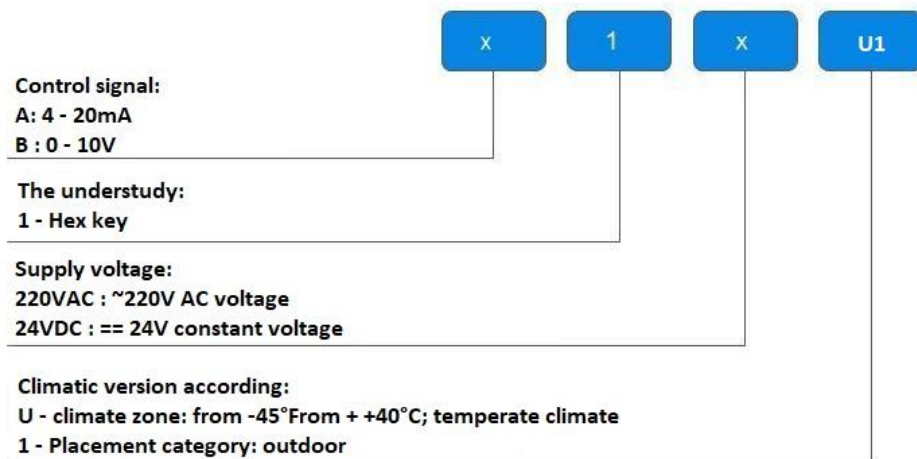
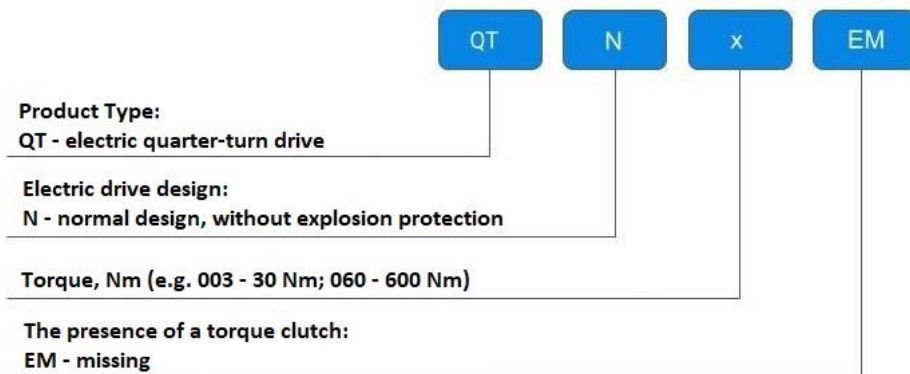
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1. GENERAL INFORMATION ABOUT THE PRODUCT

- 1.1. Product name: Quarter-turn actuator ELEPHANT QT-N-xEM-x1-x-U1 with feedback sensor and input control signal 4-20mA/0-10V.
- 1.2. 1.2 Purpose: Electric quarter-turn actuators ELEPHANT series QT are designed for remote and local control of $0^{\circ} \sim 270^{\circ}$ rotation of a shut-off valve of such types as ball valves, etc.
- 1.3. Application: widely used in various branches of national economy: in gas, oil, metallurgical, food industry, housing and communal services, etc.
- 1.4. Principle of operation: electric actuators are mounted directly on pipeline valves. The mounting dimensions comply with international standard ISO 05211 / DIN3337. Four microswitches are used to limit the travel of the output shaft to the end positions of the valve actuator. The actuators are designed for operation in nominal short-time mode S2.



1.5. Deciphering the designation:



BASIC PARAMETERS

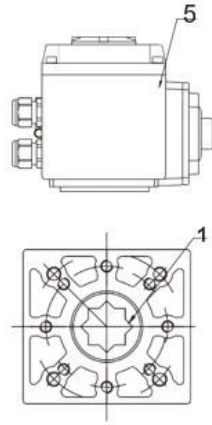
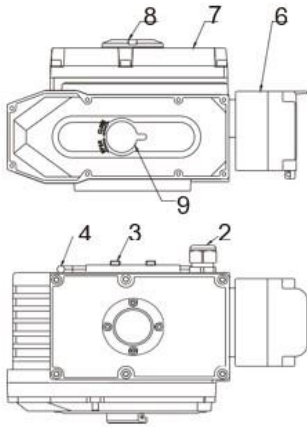
Power supply	220 V, 50 Hz, 1 phase 24 V, DC
Limit switches	2-Open/Closed 250V 10A
Additional limit switches	2-Open/Closed 250V 10A
Output shaft rotation angle	Standard: 90°, on request 90°-270° ±10°
Overheat protection/ Motor operating temperature	Integrated thermal protection, opening at 120° C ± 5° C / closing at 97° C ± 5° C
Operating temperature range, ° C	-20 ...+40
Ambient temperature, ° C	-20 ...+70
Manual override	Hexagon (included)
Self-locking device	Self-locking worm and worm gear transmission
Mechanical limiter	2 external adjustable stops
Cable glands	2 pcs, M18
External coating	Dry powdered. Epoxy polyester

BASIC TECHNICAL DATA AND CHARACTERISTICS QT003-QT060

	QT-003	QT-005	QT-008	QT-010	QT-015	QT-030	QT-040	QT-060
Supply voltage	220 B	220/	220 B	220/	220 B			
Motor power, W	8	10	10	15	15	45	60	90
Motor current, A	0,15	0,25	0,25	0,35	0,33	0,31	0,33	0,33
Torque, Nm	30	50	80	100	150	300	400	600
Cycle time, sec. (90° rotation)	20	30	30	30	30	30	30	30
Maximum valve stem diameter, mm	11x11	14x14	14x14	17x17	17x17	22x22	22x22	27x27
Degree of protection	IP67 (IP68 on request)							
Material	steel, aluminum alloy, aluminum bronze, polycarbonate							
Height of connecting protrusion, mm	74	89	-	107	104	152	152	-
ISO flange type	F04/ F05	F05/ F07	F05/ F07	F05/ F07	F05/ F07	F10/ F12	F10/ F12	F10/ F12
Weight, kg	2,1	3,6	3,6	4,6	4,6	13,4	13,8	14,3



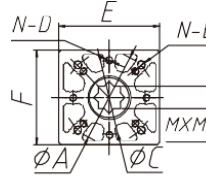
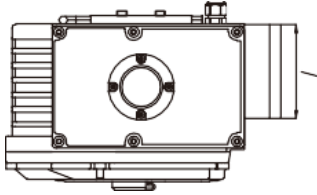
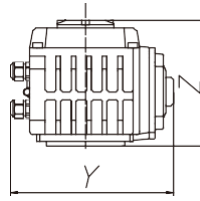
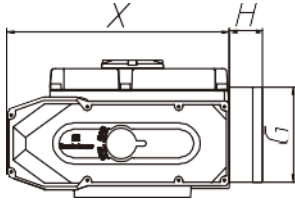
DRIVE DESIGN



Nº	Name	Nº	Name
1	Output shaft	6	Modular box
2	Cable lock	7	Lid
3	Mechanical stop	8	Viewing window
4	Manual wrench	9	Dust protection
5	Housing		



ACTUATOR OVERALL DIMENSIONS QT003-QT060



	QT-003	QT-005	QT-008	QT-010	QT-015	QT-030	QT-040	QT-060
X	123	160	188	189	189	268	268	268
Y	123	146	145	163	163	212	212	255
Z	113	121	127	129	129	164	164	164
ØA	Ø50	Ø70	Ø70	Ø70	Ø70	Ø125	Ø125	Ø125
N-B	4-M6	4-M8	4-M8	4-M8	4-M8	4-M12	4-M12	4-M12
ØC	Ø42	Ø50	Ø50	Ø50	Ø50	Ø102	Ø102	Ø102
N-D	8-M5	4-M6	4-M6	4-M6	4-M6	8-M10	8-M10	4-M10
E	50	66	100	100	100	140	140	140
F	50	66	90	90	90	130	130	130
G	-	114	114	114	114	114	114	114
H	-	40	40	40	40	40	40	40
I	-	100	150	100	100	100	100	150
M x M	11 x 11	14 x 14	14 x 14	17 x 17	17 x 17	22 x 22	22 x 22	27 x 27

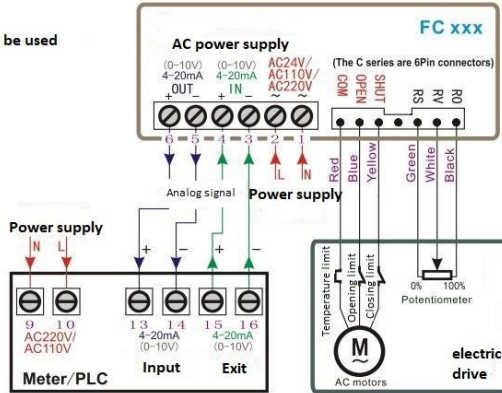
* unit of measurement: mm



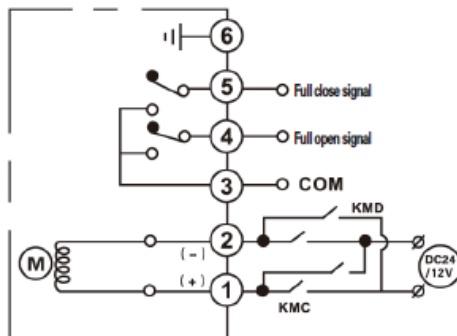
WIRING DIAGRAM QT-XXX-220-4-20MA and QT-XXX-220-0-10V

The connection diagram can be used for the following products:

- FC11A
- FC11C
- FC13A
- FC13C
- FC14A
- ...



ELECTRICAL CONNECTION SCHEME QT-XXX-24-4-20MA and QT-XXX-24-0-10V



INSTALLATION AND OPERATION

1. This actuator 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 ingress of solid particles/body between the shut-off body and the valve body and/or seal, or to provide electrical protection and disconnection by current consumption of the electric actuator.
2. Do not install non-explosion-proof products in areas where there is a risk of gas explosion.
3. Provide space for cable repair, manual labor.
4. Check or adjust limit switches before connecting the actuator to avoid damage to the valve.
5. When mounting the actuator to a gate valve in any position other than vertical, the actuator must have its own supports.
6. Before starting the actuator, perform several trial open-close cycles of the gate valve using the actuator's handwheel. If the valve opens-closes normally when opened by the manual override, connect it to the power and control networks and perform several test opening-closing cycles with the actuator..



INSTRUCTIONS FOR ACTUATOR CALIBRATION AND MENU OPERATION

Step 1. Install the actuator, connect the power supply line, input signal line.

Step 2. Change the input signal current to 4 mA and turn the actuator to the closed position. (Note: it should be turned to the open position up to 20 mA).

Step 3. Press the A/M button to switch to manual mode. In this case, the Chinese characters “manual” will flash. Press the ▲ key to turn the actuator in the direction of turn-on. When ▼ button is pressed, the key will operate the actuator in the closing direction.

Step 4: To automatically calibrate to the actuator position: press the A/M button and the ▼ button simultaneously. When the cycle icon appears, the system will start the automatic calibration of the closed/open position. After successful calibration, the display will show “100.0”. Press A/M to confirm.

If the display shows “2”, enter the menu and continue the manual calibration to verify that the data range is correct.

Step 5. The data is skewed, so enter the menu, press A/M button to go to U5, then press ▲ and ▼ button to change the password to 3888. Press the A/M button to confirm.

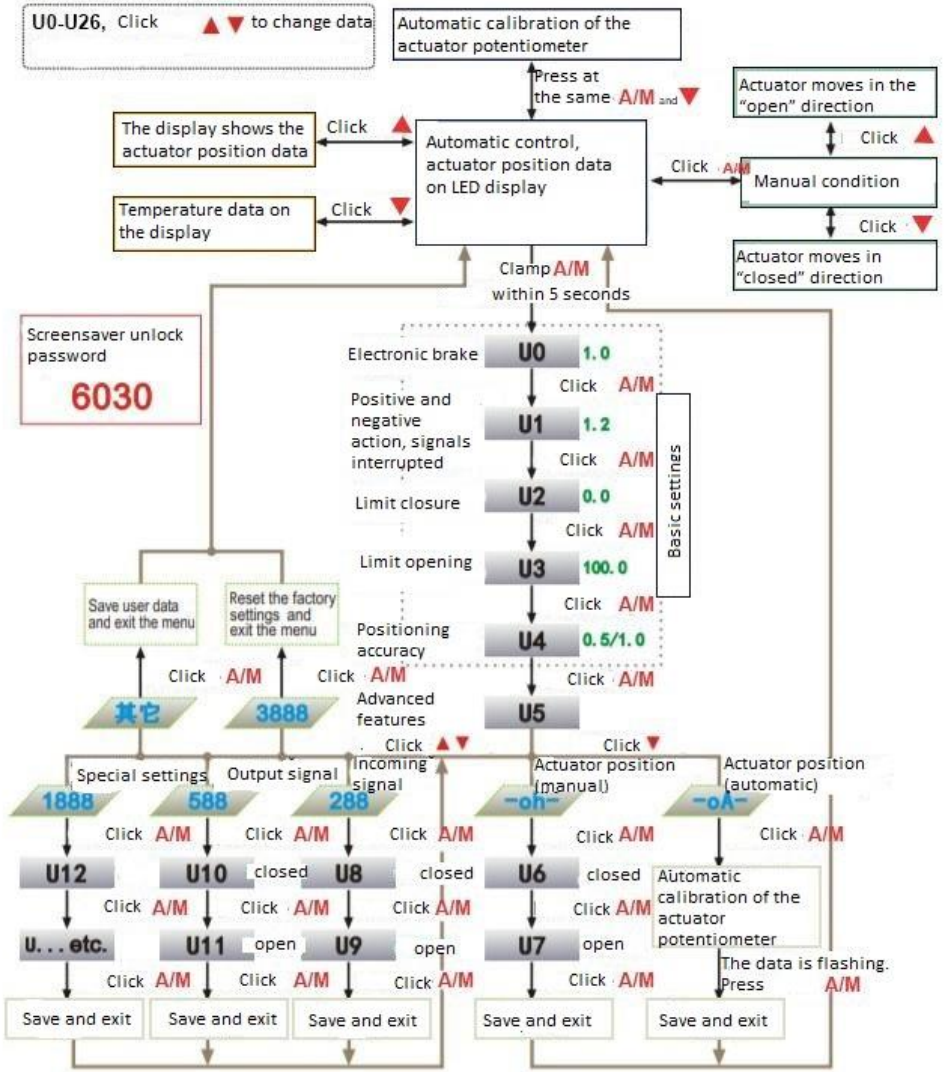
Step 6: By default, the screen saver takes 10 minutes. After the screen saver, press the A/M button to confirm the shift, then press ▲ and ▼ keys to change the password to 6030, and finally delete the screen saver. Thus, when the drive is used in manual mode, the screen saver will not appear, and in automatic mode, the screen saver will appear after the key is left untouched for more than 10 minutes. To set the duration of the screen saver or cancel it, you can enter the advanced settings menu.

Step 7: In the menu, set the required functions according to the operation manual, such as: positioning accuracy, signal interruption, deceleration, position limitation, hysteresis, and other frequently used functions. In the advanced settings, you must specify additional sub-settings for the specified functions.

Note: When calibrating manually, the actuator position data should be within the range of 50 to 970 (or 200 to 3900) for optimum performance.



SOFTWARE BLOCK DIAGRAM



WARRANTY PERIOD

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

The warranty does not apply:

- parts and materials of the product subject to wear and tear
- for cases of damage caused by:
 - violations of the product storage, installation, testing, operation and maintenance specifications;
 - improper transportation and handling operations;
 - the presence of traces of exposure to substances aggressive to the product materials;
 - presence of damage caused by fire, elements, force majeure circumstances;
 - damage caused by incorrect actions of the consumer;
 - traces of tampering with the design of the product.

SALES MARK

No	Product Name	Packs

Date of sale: _____

L.S.

