**Tigron TR-M30X - TR-M1000X Range Electric Multi-Turn Actuators.**

**Non intrusive multi-turn actuators for on-off operation with integrated intelligent control unit for Oil & Gas applications.**

* Operating mode generally designed for operating classes according to EN 15714-2:
* Class A or on/off mode S2 - 15min / 30 min
* Class B or inching / positioning operation S2 - 15min / 30 min
* Torque range independent of the output speed of the actuator; six sizes 30 Nm to 1,000 Nm
* Torque measured by a strain gauge via the worm shaft, accuracy ±2%.
* Torque setting & indication for 10 – 100% of torque range
* Electronic absolute encoder for position detection & limits.
* Speed ​​ranges [rpm]: 4 – 180 by 50Hz, 4,8 – 216 by 60Hz.
* Standard ambient temperature range: –30° C to +60° C, optional –50° C to +75° C
* Internally powered Anti-condensate heating in the control compartment
* Enclosure protection IP68, double sealed version (NEMA 6)
* Corrosion protection C5, optional CX acc. to EN ISO 12944-2:
* Surface coating: two-layer powder coating, color: silver gray (RAL 7037)
* Actuator is suitable for Mechanical and Electrical Interlocks.
* Supply voltages: three-phase 50/60 Hz, maximum mains voltage 690 V.
* Three-phase motor, insulation class F, embedded PTC thermistors & certified tripping device
* Motor without terminal box, connection internally via plug connector
* Flameproof housing enclosure Ex d, Ex de; all flameproof joints conical type
* All housing elements can be arranged in four different positions, shifted by 90 degrees.
* Explosion protection:
	+ II2G Ex db h IIC T4 or T3 Gb
	+ II2G Ex db eb h IIC T4 or T3 Gb
* Handwheel stands still during motor operation, activation via push button, low rimpul force.
* Valve connection as per EN ISO 5210, DIN 3210, DIN 3338
* Operation and settings via Combi-Switch (optional via Magnetic Pen): User-friendly even when wearing gloves (PSE / Personal Safety Equipment).
* Graphic LCD - Display with multiple languages (over 30), plain text information for status, parameterization, position, data logging and asset management.
* Actuator settings guided via commissioning assistant (user friendly)
* Five clearly visible indication lights (LED’s) with easy recognizable icons (can be programmed to user specifications) example: colours and blinking behavior.
* Commands: 4 digital inputs: OPEN, STOP, CLOSE, EMERGENCY (via opto-coupler), with one common, standard 24VDC.
* Status signals: 6 programmable output contacts, 5 potential-free NO contacts with one common, max. 250 V AC, 1 A and 1 potential-free change-over contact, max. 250 V AC, 5 A
* Output voltage: 24 V DC: max. 100 mA for supply of control inputs.
* Bluetooth interface for settings, diagnostics and firmware-update via mobile device (Andoid/IOS/Windows), Software free-of-charge (CDT)
* Ex-proof plug-connector with min. four cable entries supplied with blind plugs, optional with certified plugs and/or glands.

**Options:**

* Continuous, mechanical position indicator
* Operation via a non-proprietary remote control systems such as: Profibus, Profinet,

Modbus RTU, Modbus TCP, Foundation Fieldbus and HART.

* SIL 2 (1 oo 1) and SIL 3 (1 oo 2) version.
* Internal power backup via battery for settings and status indications: Transmission to DCS and indication on the display in case of power failure
* Control unit can be separate mounted from the Actuator to have a better access or safe position to operate the valve in local mode, cable lengths up to 100 m.
* Park plug connector for safe and easy disconnection of the actuator / MOV without disconnecting any wires and keep BUS communication alive.

More option upon request.