

actuator 90° ■ explosion proof ■ spring return/non spring return ■ on/off/3pos/modulating

## Picture



## Highlights

- Electric explosion proof quarter turn actuator
- ATEX / IECEx approved for gases and dusts, latest edition
- Torque spring return actuator up to 18 Nm
- Torque without spring standard actuator up to 50 Nm
- Junction box Ex e integrated, no further accessories required
- Heating including thermostat integrated
- Internal auxiliary switches 5° / 80° integrated
- Life time 20.000 cycles
- Easy assembly by plugging the components
- Temperature range -40 ... + 70 ° C
- IP66 protection
- LED status indication
- Low power consumption < 5 W to keep the actuator in position.
- Brushless DC motor for long life
- High corrosion resistance by using polymer and stainless steel
- Galvanic isolated circuits for high immunity to interference
- Maintenance free

Spring return	types**	Voltage	Spring	Motor	Control	Feedback
<b>Universal spring return</b>	QT.Ex-MF10-SL	20 - 70 VAC/DC	18 Nm / 10 s	18 Nm / 15 s	On/Off/3P	Switches 5° / 80°
10 s closing time	QT.Ex-MF10-SH	85 - 250 VAC	18 Nm / 10 s	18 Nm / 15 s	On/Off/3P	Switches 5° / 80°
<b>Fast spring return</b>	QT.Ex-MF03-SL	20 - 70 VAC/DC	18 Nm / 3 s	18 Nm / 15 s	On/Off/3P	Switches 5° / 80°
3 s closing time	QT.Ex-MF03-SH	85 - 250 VAC	18 Nm / 3 s	18 Nm / 15 s	On/Off/3P	Switches 5° / 80°
<b>Modulating control</b>	QT.Ex-MF10Y-SL	20 - 70 VAC/DC	18 Nm / 10 s	18 Nm / 15 s	0-10 V / 4-20 mA	Switches 5° / 80° / 0-10 V / 4-20 mA
10 s closing time	QT.Ex-MF10Y-SH	85 - 250 VAC	18 Nm / 10 s	18 Nm / 15 s	0-10 V / 4-20 mA	Switches 5° / 80° / 0-10 V / 4-20 mA
<b>Fire Damper actuator</b>	QT.Ex-MFD10-SL	20 - 70 VAC/DC	18 Nm / 10 s	18 Nm / 15 s	On/Off Firetrigger	Switches 5° / 80°
10 s closing time	QT.Ex-MFD10-SH	85 - 250 VAC	18 Nm / 10 s	18 Nm / 15 s	On/Off Firetrigger	Switches 5° / 80°
<b>Fast Fire Damper actuator</b>	QT.Ex-MFD03-SL	20 - 70 VAC/DC	18 Nm / 3 s	18 Nm / 15 s	On/Off Firetrigger	Switches 5° / 80°
3 s closing time *	QT.Ex-MFD03-SH	85 - 250 VAC	18 Nm / 3 s	18 Nm / 15 s	On/Off Firetrigger	Switches 5° / 80°

\*Spring return time by triggering FT.Ex-... (FireTrigger)

Non spring return	types**	Voltage	Spring	Motor	Control	Feedback
<b>Universal</b>	QT.Ex-M-SL	20 - 70 VAC/DC	without	50 Nm / 15 s	On/Off/3P	Switches 5° / 80°
	QT.Ex-M-SH	85 - 250 VAC	without	50 Nm / 15 s	On/Off/3P	Switches 5° / 80°
<b>Modulating control</b>	QT.Ex-MY-SL	20 - 70 VAC/DC	without	40 Nm / 15 s	0-10 V / 4-20 mA	Switches 5° / 80° / 0-10 V / 4-20 mA
	QT.Ex-MY-SH	85 - 250 VAC	without	40 Nm / 15 s	0-10 V / 4-20 mA	Switches 5° / 80° / 0-10 V / 4-20 mA
<b>Modulating control</b>	QT.Ex-MYQ-SL	20 - 70 VAC/DC	without	15 Nm / 5 s	0-10 V / 4-20 mA	Switches 5° / 80° / 0-10 V / 4-20 mA
quick	QT.Ex-MYQ-SH	85 - 250 VAC	without	15 Nm / 5 s	0-10 V / 4-20 mA	Switches 5° / 80° / 0-10 V / 4-20 mA

\*\*Others on request

## Technical data

Spring torque/time	see type list
Motor torque/time	see type list
Angle of rotation	95° incl. 5° pre tension
Torsion spring	cw / ccw gear modul symmetrically
Manual adjustment	shaft with hex 3 mm
Square	12 x 12 mm hollow shaft
Life time	20.000 cycles
Power supply	see type list
Power consumption	5 W / 7 VA Hold 20 W / 30 VA Motor 30 VA / 2 A @ 24 V sizing of supply
Junction box	terminal box Ex e integrated
Terminal size	0,08 - 2,5 mm <sup>2</sup> without end sleeve
ATEX/IECEx Ex e	0,25 - 1,5 mm <sup>2</sup> with end sleeve
Aux. switches	5° / 80° limits switches max. 250 V / 0,1 A min. 5 V / 5 mA
Accuracy	0,2° measured by absolute encoder
Humidity	0 ... 95%RH without condensation
Temperature range	-40 ... +70°C

Housing material	high tech polymer halogen-, silicon-, PVC free
Front plate, Screws	stainless steel
Corrosion resistance	on- and offshore areas
Housing protection	IP66
Seals	EPDM, TPE
Maintenance	free
Dimensions H x B x T	320 x 120 x 85 mm
Weight	4,2 kg
Cable glands	M20 brass plated Ø 6-13 mm ATEX Ex e
Sensor connection	M12 5 pol shielded brass plated
Certification	ATEX EPS 17 ATEX 1 020 X
Explosion protection	IECEx IECEx EPS 17.0009X
Marking	II 2G Ex db eb mb ib IIC T4 Gb II 2D Ex tb ib IIIC T130°C Db
ATEX	2014/34/EU
EMC	2004/108/EU Industry class A
LVD	2014/35/EU IEC/EN 61010
Quality Standards	ISO9001, ISO14001, ATEX, IECEx, ISO/TS16949

# TECHNICAL INFORMATION

# QT.Ex-M

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## Application

The quarter turn (90° rotary) actuator QT.Ex stands for maximum safety and fast closing times. The explosion-proof housing ensures robustness, tightness with high corrosion protection. A lifetime of 20,000 full cycles ensures reserves for safety functions. The gearbox, completely made of metal, guarantees reliability over a very wide temperature range.

The range of applications extends from ventilation technology through fire / shut-off / smoke / louver dampers, to rotary valves in HVAC, Building, on-offshore, petrochemical, chemical and pharmaceutical industries.

The modular design of the power supply and electronics / gearbox ensures simple, safe assembly and commissioning. The integrated terminal box in the Ex e type of protection allows a direct local connection without additional installation modules.

## Function

Each actuator has the function open / close as well as 3 point. When the supply voltage is interrupted, the drive moves into the safety position by means of an internal spring (QT.Ex-MF...),. Modulation actuators (QT.Ex-MY ....), control by 0-10 V / 4-20 mA, as well as analogue output signals 0-10 V / 4-20 mA are available

Integrated auxiliary switches are installed for indicating the damper position <5° / >80°. An external LED serves as a local indication. The button enables the setting of a soft block.

The integrated terminal box in the explosion protection type Ex e allows a direct electrical connection in the Ex zone.

The gearbox and the power supply unit can be exchanged separately or modularly.

## Accessories / Spare parts

FT.Ex-72	Thermal Fire Trigger 72°C for Fire Damper Actuators (QT.Ex-MFD..)
WS.Va-M	Weather shield as additional protection under adverse conditions made of stainless steel
KR.Vz-12	Clamping block for axles Ø 10-20 mm □ 10-16 mm incl. anti-twist lock plate steel galvanized

## Explosion proof



### ATTENTION!

- Install according to valid directives, standards and rules.
- Unlocking the device or opening the terminal box is only permitted in the de-energized state.
- When installing the device, ensure that the enclosure protection rating IP66 according to EN 60529
- This equipment may be used in accordance with the manufacturer 's specifications Zone 1, 21 (II 2GD) and Zone 2, 22 (II 3GD)
- ⓐ The device must be connected to the potential equalization (PA), for this purpose an external connection is available.
- The device must be protected against mechanical stress.

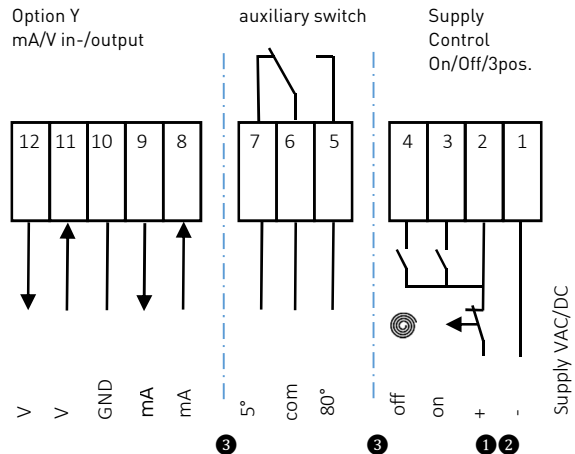
## Safety Notes



- Installation, electrical connection, maintenance and commissioning may only be carried out by specially trained personnel.
- Avoid excessive mechanical and improper stress.
- The voltage must be switched off during assembly and disassembly.
- ⓑ For initial start-up on the damper / valve, a setting angle adjustment must be carried out by pressing the button for 3 s (INIT). This results in a gentle motor running in the spring return in the end positions. In the case of Y modulating actuators, the analog outputs are also calibrated to the angle of rotation.
- The motor / spring return times are approximate and can vary depending on the conditions of use and external load; with increasing cold times extended.
- The internal heater switches on automatically at -20 ° C. The heating works only when the actuator is under continuous voltage.

## Electrical Wiring

- Disconnect the power supply before opening / disconnecting the device. Matches the power supply voltage with the label of the power supply
- Install an overcurrent protection element <10 A according to IEC61010-1
- Supply, auxiliary switches and outputs are galvanically isolated. Interchanging the connectors can damage the electronics.
- Unused cable glands must be sealed IP66



## Dimensions

