



- *ATEX / IECEx certified for gases and dusts*
- *Easy plug-in mounting*
- *Quick and safe installation*
- *Axis mount 12 x 12 mm*
- *Terminal box Ex e integrated*
- *Temperature range -40 ... +70 ° C*
- *Heating including thermostat integrated*
- *Protection class IP66*
- *Blocking resistant by electronic disconnection*
- *LED status indication*
- *Low power consumption in holding mode*
- *High corrosion resistance by using high tech polymer and stainless steel*
- *Long life by using brushless motors*
- *Maintenance-free*
- *Optional Y-modulating version (analog inputs and outputs mA and V short-circuit-proof)*
- *Electrically isolated circuits for optimum interference immunity*

QT.Ex Manual

BA.0003.01.EN
BA.0004.01.EN

*Assembly and installation instructions for safe use of explosion-proof actuator
QT...-M... with / without spring return Fail Safe function*

 made
in
Germany

 
safety components

ATEX

D Alle Betriebsanleitungen für ATEX Ex bezogene Produkte stehen in den Sprachen Englisch, Deutsch und Französisch zur Verfügung. Sollten Sie die Betriebsanleitungen für Ex-Produkte in Ihrer Landessprache benötigen, setzen Sie sich bitte mit Ihrem örtlichen Vertreter in Verbindung.

GB All instruction manuals for ATEX Ex related products are available in English, German and French. Should you require Ex related instructions in your local language, you are to contact your nearest office or representative.

F Tous les manuels d'instruction des produits ATEX Ex sont disponibles en langue anglaise, allemande et française. Si vous nécessitez des instructions relatives aux produits Ex dans votre langue, veuillez bien contacter votre représentant le plus proche.

P Todos os manuais de instruções referentes aos produtos Ex da ATEX estão disponíveis em Inglês, Alemão e Francês. Se necessitar de instruções na sua língua relacionadas com produtos Ex, deverá entrar em contacto com a delegação mais próxima ou com um representante.

DK Alle brugervejledninger for produkter relateret til ATEX Ex er tilgængelige på engelsk, tysk og fransk. Skulle De ønske yderligere oplysninger om håndtering af Ex produkter på eget sprog, kan De rette henvendelse herom til den nærmeste afdeling eller forhandler.

SF Kaikkien ATEX Ex -tyyppisten tuotteiden käyttöohjeet ovat saatavilla englannin-, saksan- ja ranskankielisinä. Mikäli tarvitsette Ex -tyyppisten tuotteiden ohjeita omalla paikallisella kielellänne, ottakaa yhteyttä lähimpään toimistoon tai edustajaan.

I Tutti i manuali operativi di prodotti ATEX contrassegnati con Ex sono disponibili in inglese, tedesco e francese. Se si desidera ricevere i manuali operativi di prodotti Ex in lingua locale, mettersi in contatto con l'ufficio più vicino o con un rappresentante.

E Todos los manuales de instrucciones para los productos antiexplosivos de ATEX están disponibles en inglés, alemán y francés. Si desea solicitar las instrucciones de estos artículos antiexplosivos en su idioma local, deberá ponerse en contacto con la oficina o el representante de más cercano.

S Alla instruktionsböcker för ATEX Ex (explosionssäkra) produkter är tillgängliga på engelska, tyska och franska. Om Ni behöver instruktioner för dessa explosionssäkra produkter på annat språk, skall Ni kontakta närmaste eller representant.

NL Alle handleidingen voor producten die te maken hebben met ATEX explosiebeveiliging (Ex) zijn verkrijgbaar in het Engels, Duits en Frans. Neem, indien u aanwijzingen op het gebied van explosiebeveiliging nodig hebt in uw eigen taal, contact op met de dichtstbijzijnde vestiging van of met een vertegenwoordiger

GR Όλα τα χειρίδια λειτουργιαζ τω προιουττω με ATEX Ex διατιθευται στα Αγγλικά, Γερμαυικά και Γαλλικά. Σε περιπτωση

που χρειαζετε οδηγιεζ σχετικα με Ex στηυ τοπικη γλωσσα παρακαλουμε επικουωηστε με το πλησιεστερο γραφειο τηζ η αντυπροσωπο τηζ

PL Wszystkie instrukcje obsługi dla urządzeń w wykonaniu przeciwwybuchowym Ex, zgodnych z wymaganiami ATEX, dostępne są w języku angielskim, niemieckim i francuskim. Jeżeli wymagana jest instrukcja obsługi w Państwa lokalnym języku, prosimy o kontakt z lokalnym przedstawicielem.

SK Všetky návody na obsluhu pre prístroje s ATEX Ex sú k dispozícii v jazyku anglickom, nemeckom a francúzskom. V prípade potreby návodu pre Ex- prístroje vo Vašom národnom jazyku, skontaktujte prosím miestnu kanceláriu firmy.

SLO Vsi predpisi in navodila za ATEX Ex sorodni pridelki so pri roki v angljšèini, nemšèini ter francošèini. Èe so Ex sorodna navodila potrebna v vašem tukejnem jeziku, kontaktirajte vaš najbliži office ili predstavnika.

CZ Všechny uživatelské příručky pro výrobky, na něž se vztahuje nevýbušné schválení ATEX Ex, jsou dostupné v angličtině, němčině a francouzštině. Požadujete-li pokyny týkající se výrobků s nevýbušným schválením ve vašem lokálním jazyku, kontaktujte prosím vaši nejbližší reprezentační kancelář

H Az ATEX Ex műszerek gépkönyveit angol, német és francia nyelven adjuk ki. Amennyiben helyi nyelven kérik az Ex eszközök leírásait, kérjük keressék fel a legközelebbi irodát, vagy képviselőt.

BG Всички упътвания за продукти от серията ATEX Ex се предлагат на английски, немски и френски език. Ако се нуждате от упътвания за продукти от серията Ex на родния ви език, се свържете с най-близкия офис или представителство на фирма

LT Visos gaminių ATEX Ex kategorijos Eksploatavimo instrukcijos teikiami anglų, vokiečių ir prancūzų kalbomis. Norėdami gauti prietaisų Ex dokumentaciją kitomis kalbomis susisiekite su artimiausiu bendrovės biuru arba atstovu.

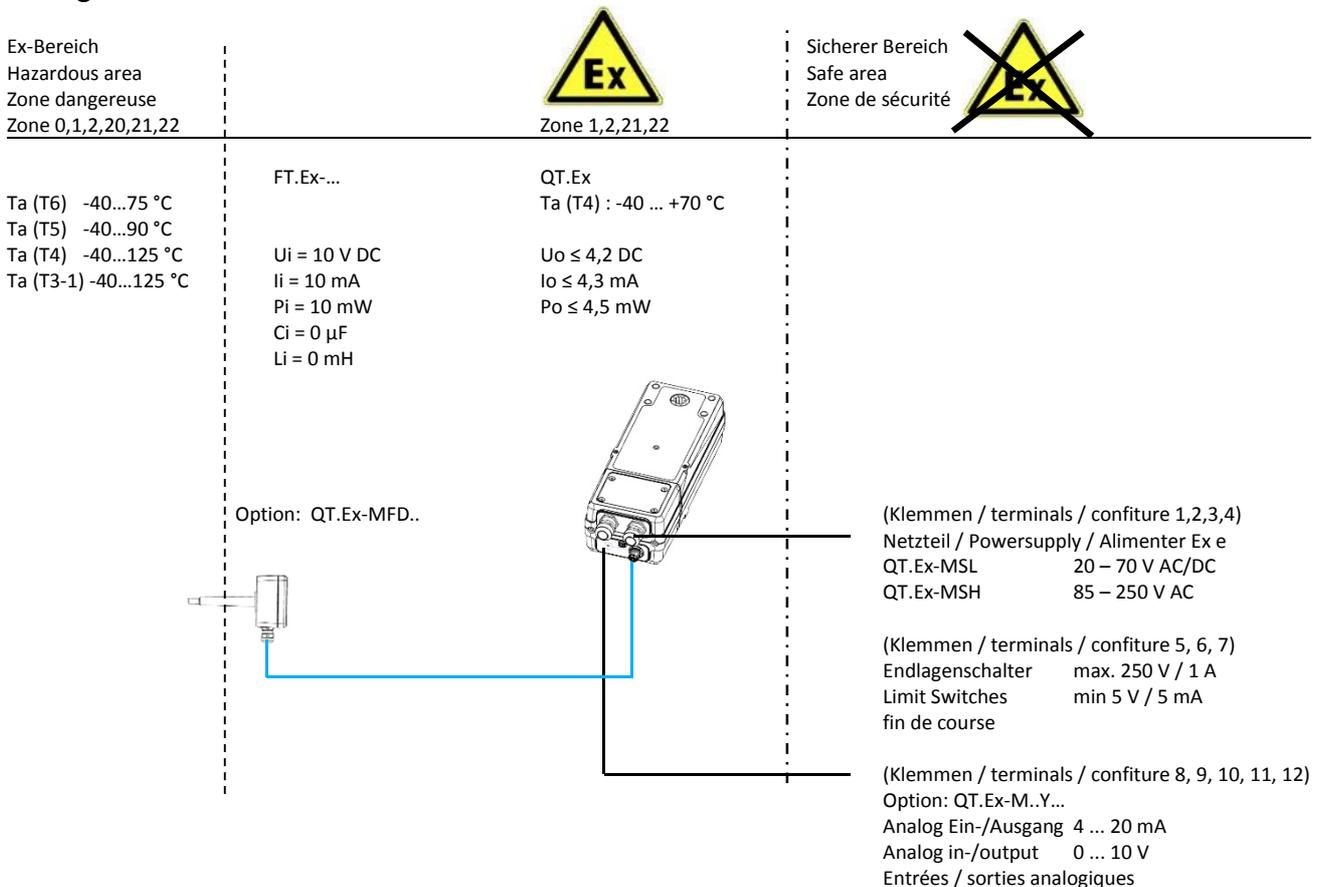
RO Toate manualele de instructiuni pentru produsele ATEX Ex sunt in limba engleza, germana si franceza. In cazul in care doriti instructiunile in limba locala, trebuie sa contactati cel mai apropiat birou sau reprezentant

LV Visas ATEX Ex kategorijas izstrādājumu Lietošanas instrukcijas tiek piegādātas angļu, vācu un franču valodās. Ja vēlaties saņemt Ex ierīšu dokumentāciju citā valodā, Jums ir jāsazinās ar firmas Jokogava tuvāko ofisu vai pārstāvi

M Il-manwali kollha ta' l-istruzzjonijiet għal prodotti marbuta ma' ATEX Ex huma disponibbli bi-Ingliż, bi-Ġermaniż u bi-Franċiż. Jekk tkun teħtieg struzzjonijiet marbuta ma' Ex fil-lingwa lokali tiegħek, għandek tikkuntattja lill-eqreb rappreżentant jew ufficċju ta'

EST Kõik ATEX Ex toodete kasutamishendid on esitatud inglise, saksa ja prantsuse keeles. Ex seadmete muukeelse dokumentatsiooni saamiseks pöörduge lähima lokagava kontori või esindaja poole

Sicherheitshinweise Safety Notes Consignes de Sécurité



- Installieren Sie gemäß Herstellerangaben und für Sie gültigen Normen und Regeln.
 - Das Entriegeln des Gerätes oder öffnen des Klemmkastens ist nur im spannungslosen Zustand gestattet.
 - Beim Einbau des Gerätes ist darauf zu achten, dass die Gehäuseschutzart IP66 nach EN 60529 eingehalten wird.
 - Dieses Betriebsmittel kann nach Herstellerangaben in der Zone 1, 21 (II 2GD) bzw. Zone 2, 22 (II 3GD) eingesetzt werden.
 - Der Sensorstromkreis (Option QT.Ex-MF..D) darf in die Zone 0, 20 (II 1GD) eingeführt werden.
 - Die Geräte dürfen nur in Messstoffen eingesetzt werden, gegen welche die prozessberührenden Materialien beständig sind.
 - Das Gerät ist an den Potenzialausgleich (PA) anzuschließen, dazu steht ein äußerer Anschluss zu Verfügung.
 - Das Gerät ist vor mechanischer Belastung zu schützen.
- Install in accordance with manufacturer's instructions and valid standards and rules.
 - Unlocking the device or open the terminal box is only permitted with the power off.
 - When installing the unit, make sure that the housing IP66 degree of protection is maintained in accordance with EN 60529.
 - This equipment can be used according to manufacturers' instructions in Zone 1, 21 (II 2GD) and 2, 22. (II 3GD).
 - The sensor circuit (Option QT.Ex-MF..D) can be installed into the zone 0, 20 (II 1GD).
 - The device may only be used in such conditions, against which the process-contacting materials are resistant.
 - The unit must be connected to the potential equalization (PA), an external terminal is available.
 - The unit must be protected against mechanical impact.
- Installer conformément aux instructions et aux normes et règles en vigueur du fabricant.
 - Libérer l'appareil ou ouvrir la boîte à bornes ne est autorisée qu'avec l'appareil hors tension.
 - Lors de l'installation, assurez-vous que le degré de protection IP66 boîtier est maintenu conformément à la norme EN 60529.
 - Cet équipement peut être utilisé selon les instructions du fabricant dans la zone 1, 21 (II 2 GD) et 2, 22 (II 3GD).
 - Le circuit de capteur (Option QT.Ex-MF..D) peut être introduit dans la zone 0, 20 (II 1GD).
 - Le dispositif ne peut être utilisé dans de tels liquides, contre lequel les matériaux de traitement contact sont résistants.
 - L'appareil est connecté à la liaison équipotentielle (PA) pour rejoindre, ceci est une borne externe à votre disposition.
 - L'appareil doit être protégé contre les chocs mécaniques.

Inhalt

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1. General

The manual is included in the delivery and serves to ensure proper handling and optimum functioning of the device. The manufacturer offers no guarantee for this publication and is not liable for any improper handling of the products described. For this reason, the manual has to be read before operation. In addition, all personnel who are involved in the transport, setup, operation, maintenance and repair are to be familiar with this manual. This manual may not, without the prior written consent of the manufacturer be used for competition purposes and will not be passed on to third parties. Copies for personal use are permitted. This documentation may contain technical inaccuracies or typographical errors. The information shall be revised periodically and is subject to modifications. The manufacturer reserves the right to modify or alter the product described at any given time.

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SYMBOLS



**This sign shows
Safety notes.**

Safety notes must be followed. Failure to observe may result in personal injury or property damage. The manufacturer assumes no liability.

SAFETY NOTES



Installation, electrical connection, maintenance and commissioning may only be performed by trained specialist.



Avoid excessive mechanical loads and improper use.



Switch off power when mounting and dismounting



The spring return times are approximate and may vary depending on the conditions of use.

2. Product description

The quarter turn actuator QT.Ex-M.. consists of a supply unit and a gear unit. Through the modular concept separation of electronics and transmission is a simple, safe assembly and commissioning. The integrated terminal box with type of protection Ex e ensures a direct electrical connection in the Ex zone.

The following actuators are available

- 90 ° rotary actuators with spring return 10 s
- 90 ° rotary actuators with fast spring return 3
- Modulating actuators
- Modulating actuators Quick
- Fire damper actuators

FUNCTION

The QT.Ex-M .. can be installed in hazardous areas of categories 2, 3, G and D. If the actuator is controlled OPEN / CLOSE, it performs a 90° rotation movement and opens / closes (fire protection) dampers and fittings. An optional spring moves the actuator into the safety position in the event of a power failure. A terminal box is integrated into the drive. A LED and push button are used as an indication or initialization.

An intrinsically safe interface M12 socket / connector is used for the option QT.Ex-MF..D ... as a connection for a thermal release FT.Ex- .. which can be installed into category 1 (zone 0 / zone 20).



Depending on the external load and low temperatures, the spring return times may be extended.

APPLICATIONS

QT.Ex-MF10.. Fail Safe actuator

The actuator has the control On / Off / 3Pos. In case of power fail the actuator moves into the safety position by an internal spring within 10 s.

QT.Ex-MF03.. Fail Safe actuator fast

The actuator has the control On / Off / 3Pos. In case of power fail the actuator moves into the safety position by an internal spring within 3 s.

QT.Ex-M.. 3 Pos actuator

Universal non spring return actuator. Control On / Off / 3Pos. Up to 50 Nm load.

QT.Ex-MFY.. Modulating control with spring return

Modulating control 0-10 V or 4-20 mA and feedback signal 0-10 V and 4-20 mA. In case of power fail the actuator moves into the safety position by an internal spring.

QT.Ex-MFD.. Fire damper actuator

The actuator and associated thermal release FT.Ex- ... sensor. If the sensor is trips, the actuator moves into the safety position.

3. Technical data

QT.Ex-M SUPPLY-UNIT

TYPES

QT.Ex-MSL	20 ... 70	V AC/DC
QT.Ex-MSH	85 ... 250	V AC

QT.Ex-M... GEAR-UNIT

SPRING RETURN (FAILSAFE) TYPES

QT.Ex-MF10	Motor	18 Nm	15 s	Spring	18 Nm	10 s	Nm/s/90°
QT.Ex-MF03	Motor	18 Nm	15 s	Spring	18 Nm	≈ 3 s	Nm/s/90°
QT.Ex-MF10Y	Motor	18 Nm	15 s	Spring	18 Nm	10 s	Nm/s/90°
QT.Ex-MFD10	Motor	18 Nm	15 s	Spring	18 Nm	10 s	Nm/s/90°
QT.Ex-MFD03	Motor	18 Nm	15 s	Spring	18 Nm	3 s*	Nm/s/90°

*closing time by using thermal fire trigger

NON SPRING RETURN TYPES

QT.Ex-M	Motor	50 Nm	15 s				Nm/s/90°
QT.Ex-MY	Motor	40 Nm	15 s				Nm/s/90°
QT.Ex-MYQ	Motor	15 Nm	5 s				Nm/s/90°

SUPPLY

Voltage	See type list	
Frequency	50 – 60	Hz
Power consumption holding mode	5 / 7	W / VA
Power consumption motor mode	30 / 50	W / VA
Dimensionierung bei 24 V Versorgung	30 / 50	W / VA
Protection class	III	insulated

ELECTRICAL CONNECTION

Terminal clamps	0,08 – 2,5	mm	without sleeve
ATEX/IECEx Ex e	0,25 – 1,5	mm	with sleeve
Cable glands M20x1,5 ATEX/IECEx Ex e	6 - 13		∅ mm

AUXILIARY SWITCHES

Voltage	5 ... 250	V
Current	5 ... 100	mA
Switch limit	5 / 80	°

IN-/OUTPUTS MODULATION (OPTION Y)

Voltage / Current	0 – 10 / 4 – 20	V DC / mA
Accuracy	0,1	% FS
Temperature influence	< 0,01	%/K
Burden influence	0,1/100	%/Ohm
Position accuracy	0,2	°
Duty cycle	S1 - 80	%

HOUSING

High Tech Polymer	halogene-, silicone-, PVC	free
Housing protection	IP66	

GENERAL

Dimensions H x B x T	320 x 120 x 85	mm
Weight	4,1	kg

MATERIAL

Housing	High Tech Polymer	electrostatically conductive
Front plate, screws	Stainless steel	
Seals	EPDM	
Cable glands	Brass plated	
Sensor connection M12	Brass plated	
Gear wheels	Steel / Sinter steel heat treatment	
Output shaft double square	12 x 12, Steel surface treatment	mm
Spring	Spring steel	

APPLICATION AREA

Ambient temperature and storage	-40 ... +70	°C
Humidity, without condensation	0 ... 95	%r.F.
Mounting position	any	
Maintenance	Maintenance free, time lubrication	
Corrosion resistance	On-/offshore	with high salt load

FT.Ex-72-... THERMAL TRIGGER UNIT

TYPES AND TEMPERATUR RELEASE

FT.Ex-72	Fire Trigger	72	°C
----------	--------------	----	----

SUPPLY EX I

Voltage	Ui	4,2	V
Current	Ii	4,3	mA
Power	Pi	4,5	mW
Capacity	Ci	0	µF
Inductivity	Li	0	H

MATERIAL

High Tech Polymer	halogene-, silicon-, PVC	free
Cable	FRNC	
Seal	EPDM	
Sensor connection M12	brass plated	

APPLICATION AREA

Ambient temperature*	-40 ... +125	°C
Storage temperature	-40 ... +60	°C
Humidity, without condensation	0 ... 95	%RH

* The ambient temperature refers to the application area. The temperature fuses can already trigger at 60°C.

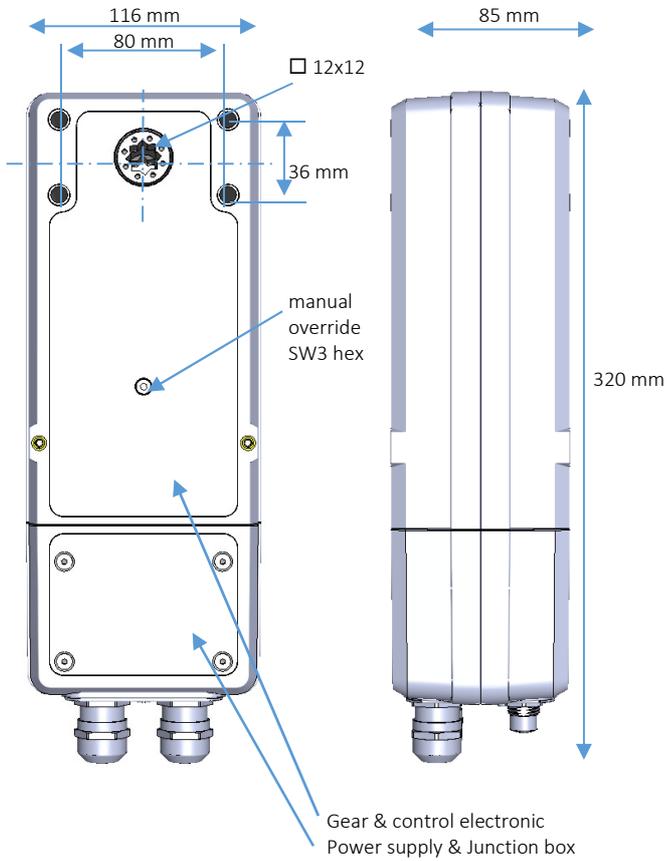


Certificate

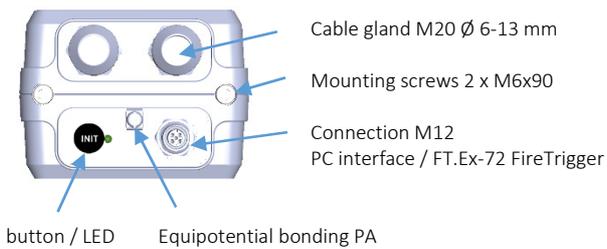
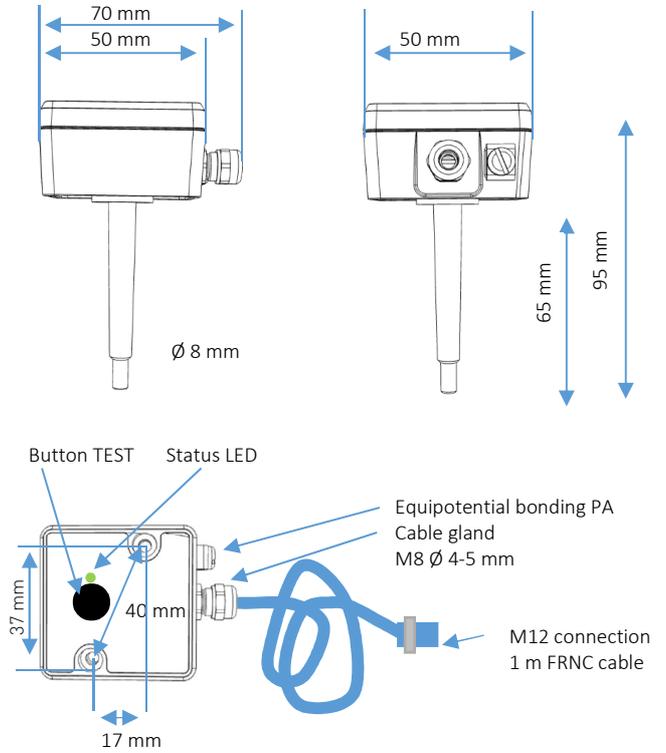
QT.Ex-M...	ATEX IECEX	EPS 17 ATEX 1 020 X IECEX EPS 17.0009X	II2 G II2 D	Ex db eb mb ib Ex tb ib	IIC T4 IIIC T130 °C	Gb Db
FT.Ex-..	ATEX IECEX	EPS 17 ATEX 1 020 X IECEX EPS 17.0009X	II1/2 G II1/2 D	Ex ia IIC T6/T5/T4 Ex ia IIIC T130 °C		Ga/Gb Da/Db

4. Dimensions

QT.Ex (ACTUATOR)



FT.Ex-.... (THERMAL FIRE TRIGGER)



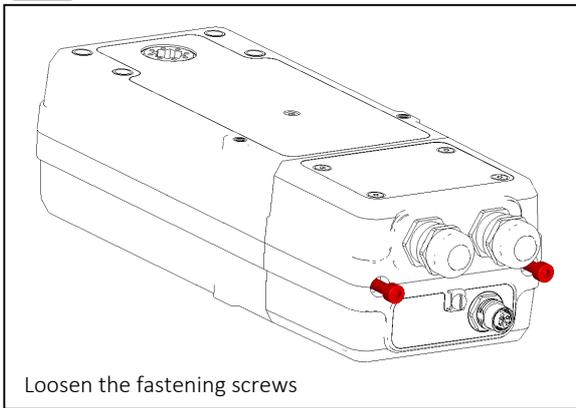
5. Mounting / Installation

In the delivery state, the power supply unit is installed (terminal box cover at the top), that the acutator runs clockwise UP and the counterclockwise CLOSE. By rotating the gear unit, the rotational direction / spring return direction of e.g. left (counterclockwise) to the right (clockwise). If this is necessary, proceed according to the next step, otherwise the installation follows.

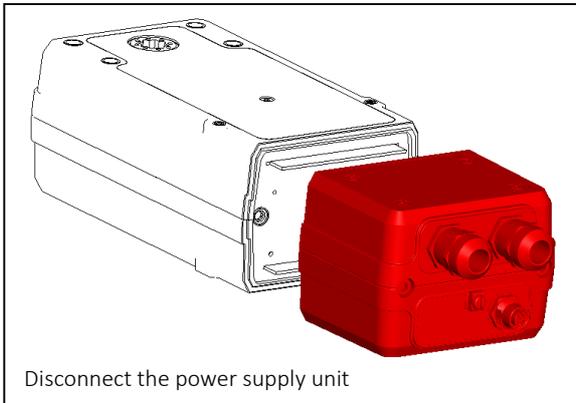
ELEKTRONIC UNLOC



Disconnect and check the voltage

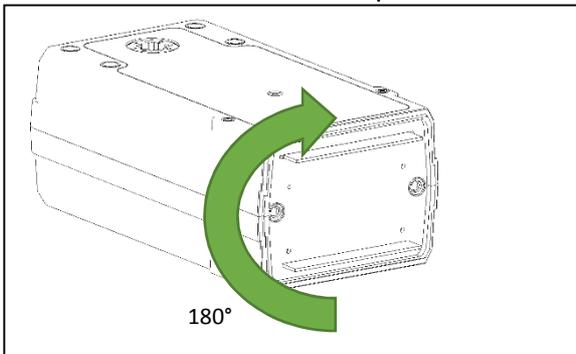


Loosen the fastening screws



Disconnect the power supply unit

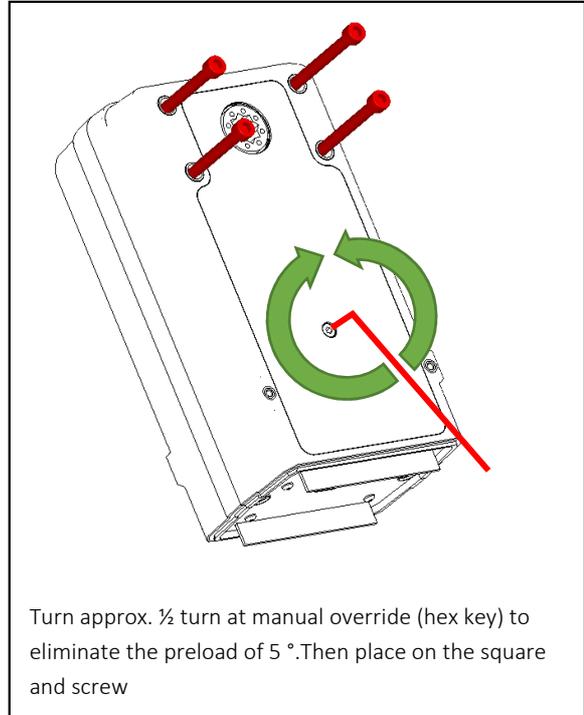
ROTATION OF ACTUATOR CW / CCW



180°

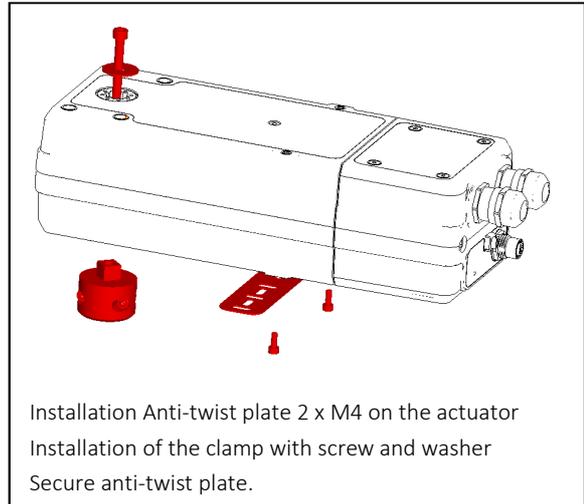
DIRECT MOUNTING

Regard the rotation of the actuator and the valve / valve during assembly.



Turn approx. ½ turn at manual override (hex key) to eliminate the preload of 5 °.Then place on the square and screw

CLAMP ASSEMBLY



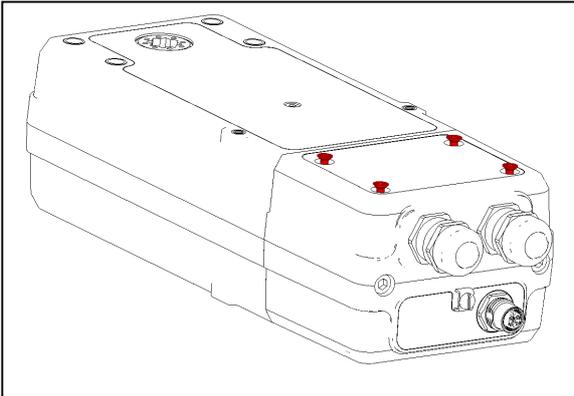
Installation Anti-twist plate 2 x M4 on the actuator
Installation of the clamp with screw and washer
Secure anti-twist plate.

ELECTRICAL CONNECTION

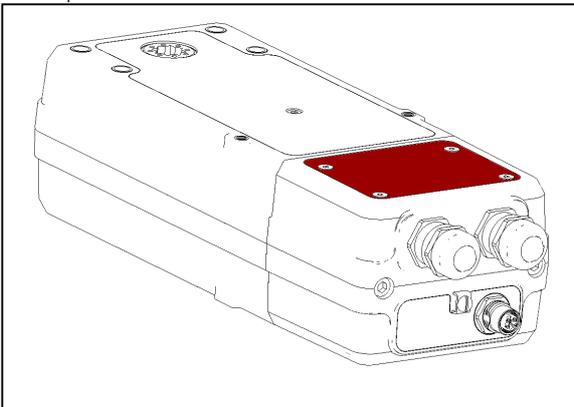
The integrated, electrical terminal box in the type of protection Ex e allows direct connection of the supply and the analog outputs. In accordance with IEC 61010-1, the supply circuit must be fused with <10 A.



- Disconnect and check the voltage
- Check the power supply voltage, which corresponds to the power supply label
- Loosen the screws M4 of the cover



- Open cover

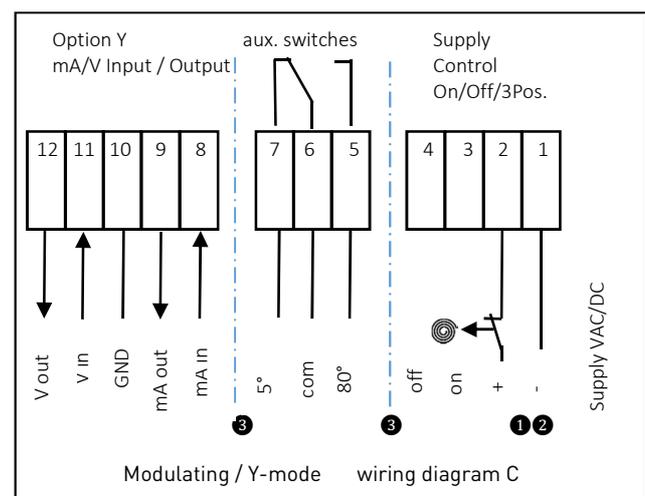
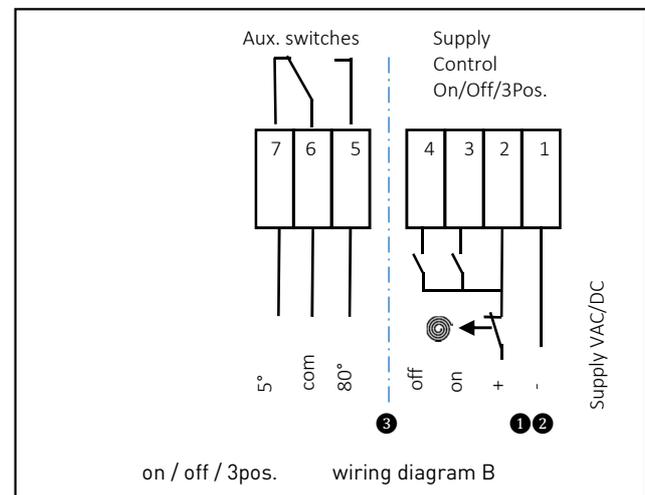
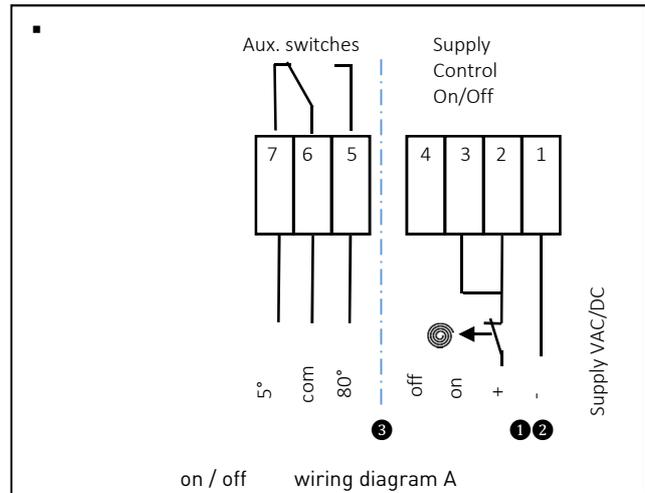


- Remove the cable gland protection
- Insert the cable
- Strip insulation (6 mm)
- Open the clamp by pressing with a screwdriver
- Insert the wire (s)
- Remove the screwdriver
- Close the cover
- An Tighten the cable glands
- Close unused opening with blind plugs



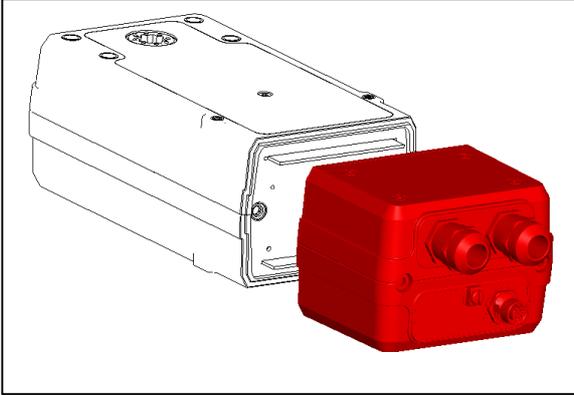
The supply, auxiliary switches and outputs are galvanically isolated, which offers a high degree of interference immunity. However, exchanging the connections can destroy the electronics.

WIRING DIAGRAMS

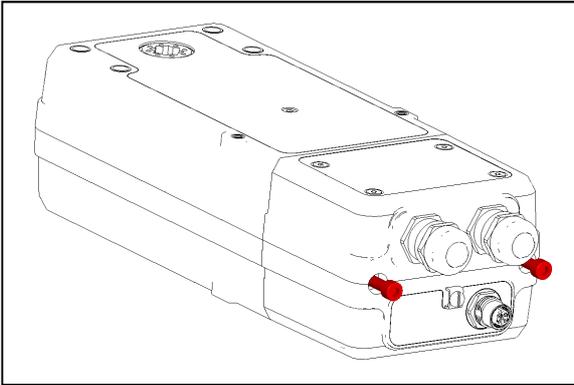


ELEKTRONIC LOOK

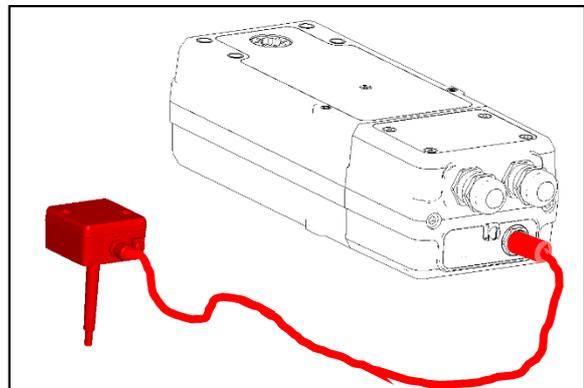
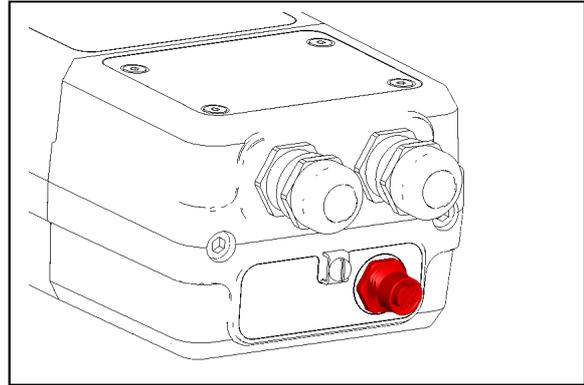
- attach the electronics carefully
- lock it together



- Tighten the fastening screws. max. 3 Nm



MOUNTING THERMO TRIGGER FT.EX...



6. Maintenance

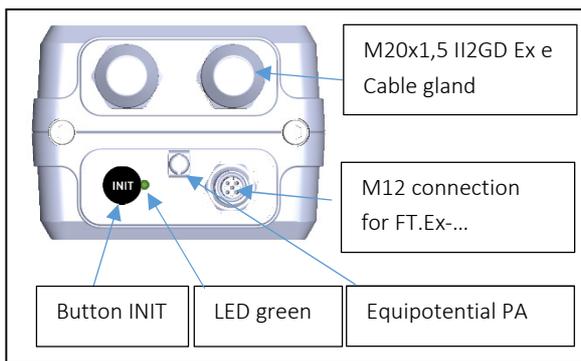
Ensure that the unit has been properly installed and connected in accordance with the chapters before, and that the voltage supply matches the specifications on the nameplate.

Switch on the power supply, the LED lights green, the device is ready for operation.

When the unit is installed for the first time on the damper / valve, a setting angle adjustment must be carried out by pressing the button for 3 seconds (INIT). This results in gentle motor start-up or braking in the spring return in the end positions. In the case of Y mode, the outputs are also calibrated to the angle of rotation.

 When operating at low temperatures (- 20 ° C ... -40 ° C), the actuator requires up to 30 minutes to heat up. If the actuator is then under continuous voltage, the heating automatically regulates the power. An integrated thermostat switches off the heating.

7. Operation



8. Demounting

- Disconnect and check the voltage
- Open the screw terminal box cover 4x
- Remove the cable
- Loosen screws of gear unit
- Remove the gearbox assembly

10. Parameterization

	ACTION		FUNCTION	DESCRIPTION
ADJUSTMENT				
		QT.Ex-M...	Adjustment drive	Soft motor start, soft stopp in end position
		QT.Ex-M...Y	Adjustment drive	Soft motor start, soft stopp in end position 0-10V / 4-20mA output signal calibrated to angle of rotation

11. Error Message

No green LED

- Check power supply
- Check the power supply module with the gear module has been properly installed

No rotary movement of the output shaft

- Check the direction of rotation of the valve / fitting and that of the actuator
- Check the wiring diagram. The actuator requires a contact for the run command.
Bridge from 2 to 3 OPEN
Bridge from 2 to 4 CLOSE

12. Maintenance

The device is maintenance free annual function testing and regular cleaning of dust and dirt with a damp cloth is recommended.

13. Repair

Return of a device to claim services. The installation and operation of the QT.Ex in accordance with this manual are very unproblematic. Should the unlikely event occur that a device has to be returned for repair or testing to our service department, a return form is provided under "service address" on the last page.

14. Disposal

Every year, thousands of tons of polluting electronic components land on landfills around the world. To ensure the best possible disposal or recovery of electronic components, the European Union has adopted the WEEE Directive. (Waste Electrical and Electronic Equipment) Please return these products directly to us at the end of their lifecycle so that we can dispose of them properly. The WEEE is an important contribution to the environment and we are happy to help protect the environment with this disposal concept.

15. Accessories

TITLE

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

Revision

VERSION	DATE	SUPPLEMENT / CHANGE / REMARK
01		First edition

EU Konformitätserklärung
 EU Declaration of Conformity
 Déclaration de Conformité UE

petz industries GmbH & Co. KG ▪ Mühlenweg 2 ▪ 96358 Teuschnitz / Haßlach ▪ Germany

erklärt als Hersteller in alleiniger Verantwortung, dass das Produkt
 declares as manufacturer under sole responsibility, that the product
 déclare sous sa seule responsabilité en qualité de fabricant que le produit

QT.Ex-M...

FT.Ex-...

den Vorschriften folgender Europäischer Richtlinien durch Anwendung harmonisierter Normen entspricht:
 conforms with the provisions of the following European Directives by applying the harmonised standards:
 est conforme aux prescriptions des Directives Européennes suivantes par l'application des normes harmonisées :

Richtlinien/Directives/Directives	Normen/Standards/Normes	Ex-Normen/Ex-Standards/Normes Ex
2014/35/EU (LVD)	EN 61010-1 (2010)	EN 60079-0 (2012 + A11 : 2013)
2014/30/EU (EMC)	EN 60529 (2013)	EN 60079-1 (2014)
2014/34/EU (ATEX)	EN 61326-1 (2013)	EN 60079-7 (2015)
2012/19/EU (WEEE)	EN 61326-2-3 (2013)	EN 60079-11 (2012)
2011/65/EU (RoHs)		EN 60079-18 (2015)
		EN 60079-31 (2014)
		EN 80079-36 (2016)
		EN 80079-37 (2016)

EG-Baumusterprüfbescheinigung Nr:
 EC-Type Examination Certificate No:
 Numéro de l'attestation d'examen CE de type:

EPS 17 ATEX 1 020 X

Kennzeichnung Identification Marquage

QT.Ex-M...

II 2G Ex db eb mb ib IIC T4 (Gb)
 II 2D Ex tb ib IIIC 130 °C (Db)

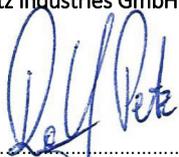
FT.Ex-...

II 1/2G Ex ia IIC T6/T5/T4 (Ga/Gb)
 II 1/2D Ex ia IIIC 130 °C (Da/Db)

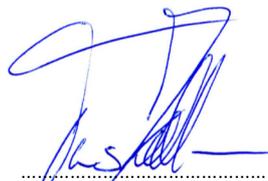
Benannte Stelle Qualitätssicherung
 Notified Body Quality assurance
 Organisme Notifié Système d'assurance qualité

Bureau Veritas / 2004

petz industries GmbH & Co. KG



Rolf Petz
 Geschäftsführer
 Managing director
 Le Directeur



Thomas Kellermann
 Explosionsschutzbeauftragter
 Explosion Protection Supervisor
 Contrôleur de la protection Explosion

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