



# BE SAFE.



## Product Overview 2024

Sensors & Actuators



## Explosion protection from pi-safety – safety made in Germany

### Actuators, sensors and system solutions for applications in potentially explosive areas

pi safety develops and manufactures innovative, high-quality products and solutions for explosion protection. Customers all over the world – **e.g. planners, installation companies or system operators** – value the obvious benefits of our devices which far surpass the performance of standard solutions. Renowned companies in the fields of pharmaceutical and

chemicals, onshore and offshore as well as the oil and gas sectors have been relying on the quality of our products **for decades**. As your development and system partner for all aspects of explosion protection – we find suitable solutions even for challenging tasks. Benefit from the diverse advantages of our products as well as our comprehensive service.



### EASY – easy as pie

pi safety products make your life easy. Right from the start with the **fast and easy set-up and commissioning**. Our devices offer a **universal interface** which renders the integration into new or existing systems very straightforward. Installed like standard components for process or building automation, they require no additional intrinsically-safe circuit or barriers. The intuitive configuration of our components as well as the maintenance-free design **save time and money**. So EASY !

### SAFE – no question

Safety is an integral part of all pi products. The foundation for that lies in our **unique two-component design**: the functional part can be separated simply and quickly from the junction box. This avoids short-term additional explosion hazards, e.g. during maintenance, and ensures continuous protection. All pi safety devices are developed and **manufactured in Germany to the highest quality standards**. It goes without saying that we comply with all the latest applicable standards. Sales are carried out exclusively by experienced regional partners who will also **support you with tailored services** after purchase. There is no question about it – Safety is paramount for us. Consistently SAFE..



### SMART – pretty clever

The intelligent sensor system from pi safety offers you **maximum flexibility**. Our transducers and switching amplifiers can be combined with all of the sensors we offer. The control unit recognizes the type of sensor and is **automatically configured** for it. Having a smart universal device eliminates the need for variants, which in turn offers **savings on procurement** and **warehousing**. Now that is really SMART.



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## What are the Causes for an Explosion

Basically there are three factors that must be encountered when creating a potentially explosive area. Presence of oxygen, an explosive medium and an ignition source. The absence or avoidance of one of the three factors prevents an explosion.

Based on this fact, the three possible strategies to avoid an explosion:

### Primary Explosion Protection

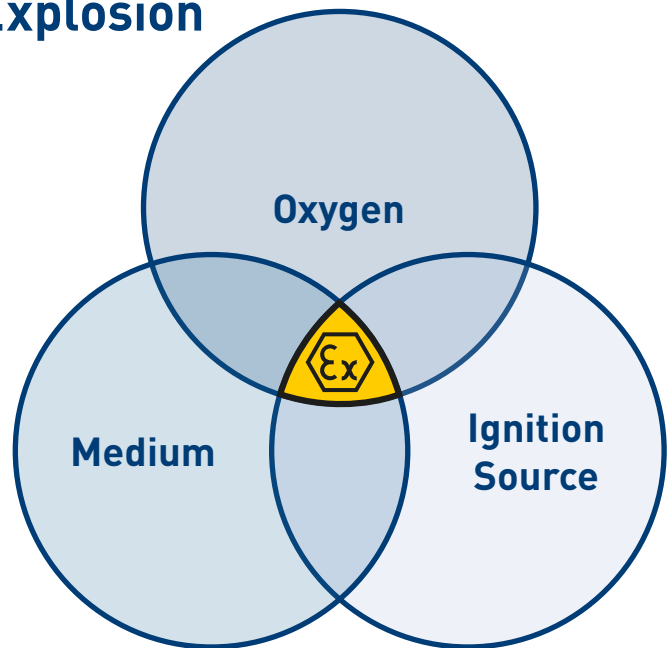
Measures which prevent or limit the formation of a potentially explosive atmosphere (avoiding explosive atmospheres).

### Secondary Explosion Protection

Measures which prevent the ignition in a dangerous explosive atmosphere (avoiding of ignition sources).

### Tertiary Explosion Protection

Measures limiting the effects of an explosion to a safe level (constructional explosion protection).



Thus, the components put on the market by **pi** are protected to be no sources of ignition and thus are a measure of secondary explosion protection.

## Zones – Explanation and Classification

Hazardous areas in which potentially explosive environments can form are classified in zones according to the duration of the potential formation of a dangerous explosive environment

For gases, these are zones 0, 1 and 2.

In the case of dusts, a distinction is made between zones 20, 21 and 22.

### Classification of Zones for Gases:

#### Zone 0

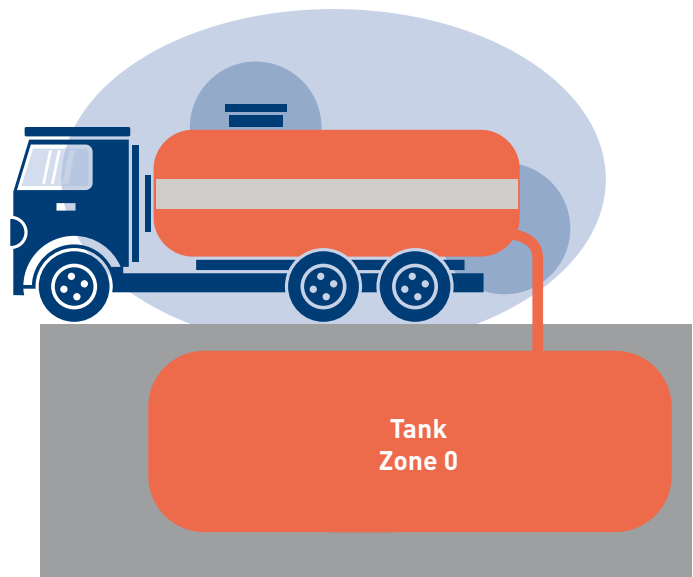
A dangerous, explosive atmosphere as a mixture of air, combustible gases, vapors or mists is constantly, for long periods of time or frequently present.

#### Zone 1

A hazardous, explosive atmosphere as a mixture of air, combustible gases, vapors or mists is occasionally present during normal operation.

#### Zone 2

A dangerous, explosive atmosphere as a mixture of air, flammable gases, vapors or mists is usually not available or only for a short time.



### To clarify the principle gas station:

Division of danger zones into zones:

■ Zone 0: constant or frequent ...

■ Zone 1: occasional ...

■ Zone 2: rare ...

... presence of EX atmosphere

## Classification of Zones for Dusts:

### Zone 20

A dangerous, explosive atmosphere in the form of a cloud of combustible dust is constantly, for long periods or frequently present.

### Zone 21

A dangerous, explosive atmosphere in the form of a cloud of combustible dust is occasionally present during normal operation.

### Zone 22

A dangerous, explosive atmosphere in the form of a cloud of combustible dust is usually not available or only for a short time.

## Legal Basis

As a legal basis for the area of explosion protection, the following norms and regulations apply in addition to the usual standards:

### ATEX Directive 2014/34/EU

### EU Explosion Protection Ordinance ExVo

### Ordinance on Industrial Health and Safety

Also, a distinction is made between operator and manufacturer. Accordingly, the different labeling:



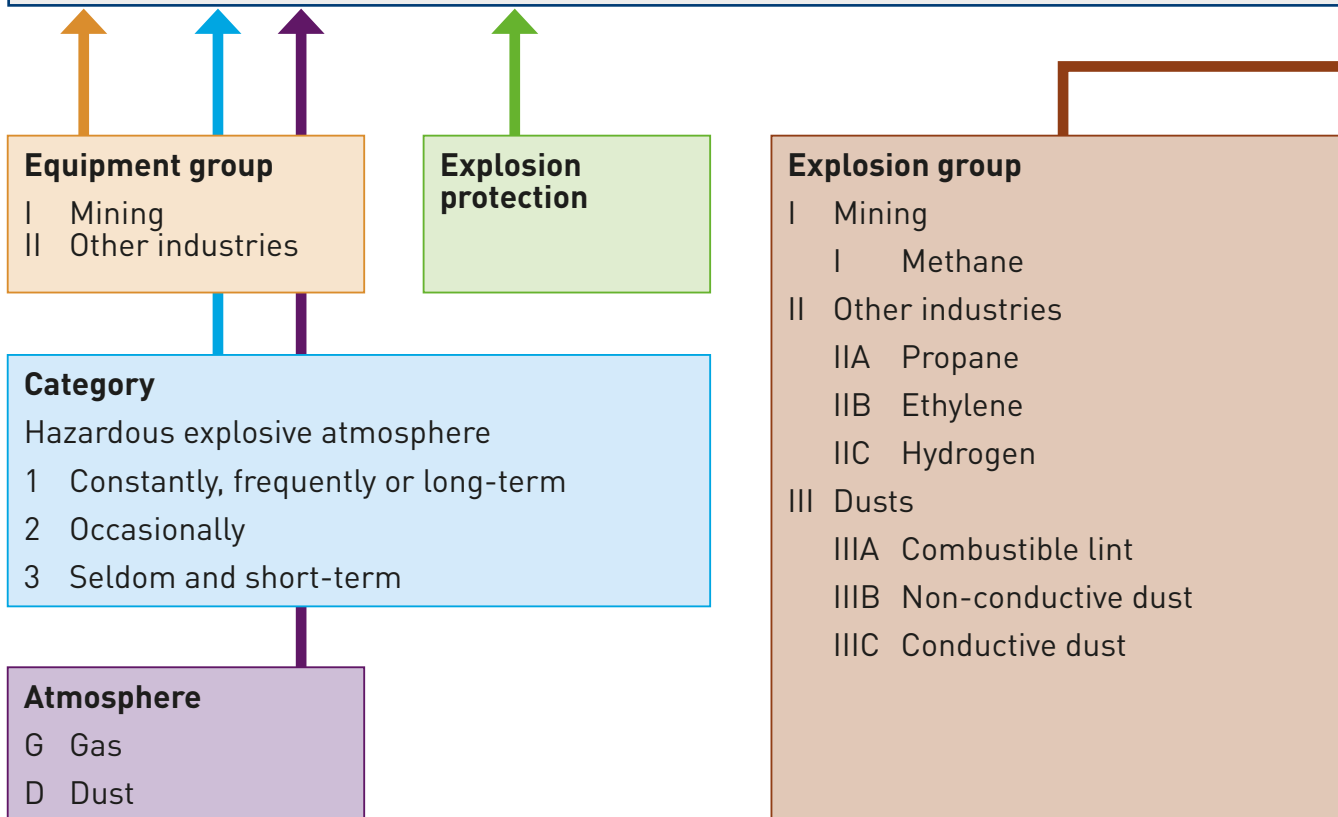
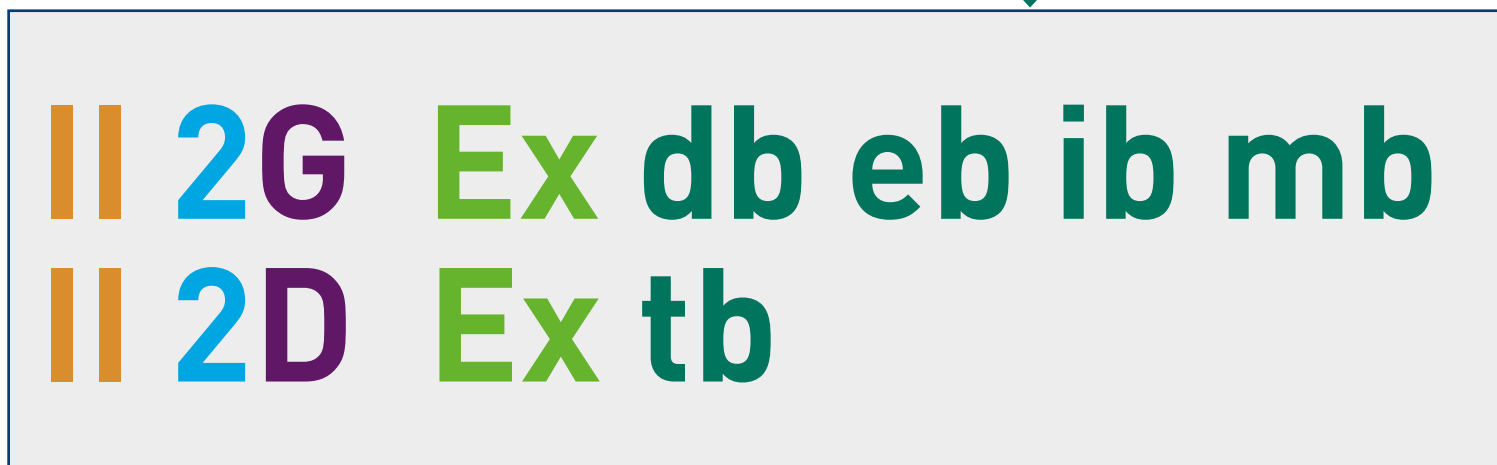
Operator Identification Ex-Area



Manufacturer Identification Ex-device

## Marking of explosion-proof electrical devices

Type of protection				
	Legal basis			EN 60079-0
"e"	Increased safety	eb, ec	Zone 1, 2	EN 60079-7
"d"	Flameproof enclosure	da, db, dc	Zone 0, 1, 2	EN 60079-1
"m"	Encapsulation	ma, mb, mc	Zone 0, 1, 2, 20, 21, 22	EN 60079-18
"i"	Intrinsic safety	ia, ib, ic	Zone 0, 1, 2, 20, 21, 22	EN 60079-11
"h"	Non-electrical	h	Zone 0, 1, 2, 20, 21, 22	EN 80079-36/-37
"t"	Protected by housing	ta, tb, tc	Zone 20, 21, 22	EN 60079-31



# MARKING

## Temperatur class

T6	85 °C	Sulfur hydrocarbon
T5	100 °C	None
T4	135 °C	E.g. Ethyl ether
T3	200 °C	E.g. Diesel, Hydrogen sulfide
T2	300 °C	E.g. Butane, Butyl alcohol
T1	450 °C	E.g. Hydrogen, Ammonia
T	XXX °C	Max. surface temperature dust explosion hazardous areas

**IIC T6**

**Gb**

**IIIC T130 °C IP66 Db**

### IP Protection – protected against:

Fig. 1 (ingress solid objects)	Fig. 2 (ingress liquids)
0 No protection	0 No protection
1 Solid objects over 50 mm	1 Vertically falling drops of water
2 Solid objects over 12.5 mm	2 Falling drops of water
3 Solid objects over 2.5 mm	3 Sprays of water
4 Solid objects over 1.0 mm	4 Splash water
5 Limited protection against dust ingress.	5 Low pressure water jets
6 Totally protected against dust ingress.	6 High pressure water jets
	7 Short periods of immersion in water
	8 Long periods of immersion in water

### Equipment protection level EPL

Ga	Gas: Constantly, frequently or long-term zone 0
Gb	Gas: Occasionally zone 1
Gc	Gas: Seldom and short-term zone 2
Da	Dust: Constantly, frequently or long-term zone 20
Db	Dust: Occasionally zone 21
Dc	Dust: Seldom and short-term zone 22
Ma	Mining: Operation in the event of an explosion hazard
Mb	Mining: Shutdown in the event of an explosion hazard

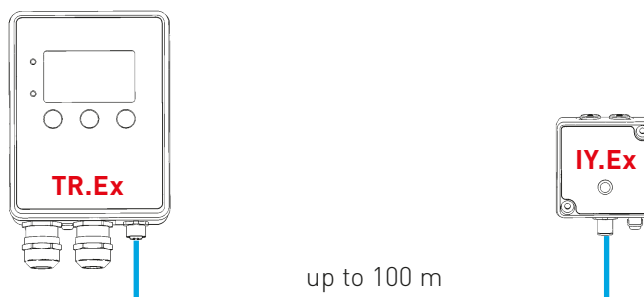


## TR.Ex Transducer

- Specification:  
II2(1)G Ex eb mb ib [ia Ga] IIC T4 Gb  
II2(1)D Ex tb ib [ia Da] IIIC T130°C Db
- Universal Transducer for mounting in zone 1 / 2 / 21 / 22
- Ambient temperature -40...+70 °C
- Protection class IP66
- Temperature class T4 for all gases and dusts
- Adjustable on site; display
- Stainless steel / polymer compound material for maximum corrosion resistance
- 0...10 V or 4...20 mA feedback
- No further barrier required in the control cabinet
- LED status indication
- Smart installation
- 24 VAC / DC
- For use with IR.Ex-Sensors

## IY.Ex-Sensor Range

- Specification:  
II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb  
II 1/2D Ex ia IIIC T130°C Da/Db
- Intelligent sensor concept for connection (M12 connector) to TR.Ex universal Ex-transducer
- Stainless steel / polymer compound material for maximum corrosion resistance
- Fast sampling rate up to 125 ms for pressure sensors
- Room sensor for direct connection
- For measuring in zone 0, 1, 2, 21, 22
- Other sensors with M12 sensor cable (1 Meter included, other lengths available)
- For use with Tr.Ex Transducer





## TR.Ex – Transducer

PRODUCT	DESCRIPTION
TR.Ex	Ex-Transducer 0...10 V or 4...20 mA

## IY.Ex – Temperature / Temperature-Humidity-Dew Point

PRODUCT	DESCRIPTION
IY.Ex-RT	Ex-Sensor Room Temperature; Measuring range -40...+125 °C
IY.Ex-RTH	Ex-Sensor Room Temperature / Humidity; Measuring range -40...+125 °C; 0...100% rH
IY.Ex-DT-050	Ex-Sensor Duct Temperature; l = 50 mm; Measuring range -40...+125 °C
IY.Ex-DTH-050	Ex-Sensor Room Temperature / Humidity; l = 50 mm; Measuring range -40...+125 °C; 0...100% rH
IY.Ex-DT-100	Ex-Sensor Duct Temperature; l = 100 mm; Measuring range -40...+125 °C
IY.Ex-DTH-100	Ex-Sensor Duct Temperature / Humidity; l = 100 mm; Measuring range -40...+125 °C; 0...100% rH
IY.Ex-DT-200	Ex-Sensor Duct Temperature; l = 200 mm; Measuring range -40...+125 °C
IY.Ex-DTH-200	Ex-Sensor Duct Temperature / Humidity; l = 200 mm; Measuring range -40...+125 °C; 0...100% rH
IY.Ex-DT-370	Ex-Sensor Duct Temperature; l = 370 mm; Measuring range -40...+125 °C
IY.Ex-DTH-370	Ex-Sensor Duct Temperature / Humidity; l = 370 mm; Measuring range -40...+125 °C; 0...100% rH

## IY.Ex – Differential Pressure / Flow Rate\*

PRODUCT	DESCRIPTION
IY.Ex-P-0060	Ex-Differential Pressure Sensor -60...+60 Pa
IY.Ex-P-0100	Ex-Differential Pressure Sensor -100...+100 Pa
IY.Ex-P-0250	Ex-Differential Pressure Sensor -250...+250 Pa
IY.Ex-P-0600	Ex-Differential Pressure Sensor -600...+600 Pa
IY.Ex-P-1000	Ex-Differential Pressure Sensor -1000...+1000 Pa
IY.Ex-P-2500	Ex-Differential Pressure Sensor -2500...+2500 Pa
IY.Ex-P-4000	Ex-Differential Pressure Sensor -4000...+4000 Pa
IY.Ex-P-10000	Ex-Differential Pressure Sensor -10000...+10000 Pa

\* Please note: For flow rate measurement an additional measuring device may be required

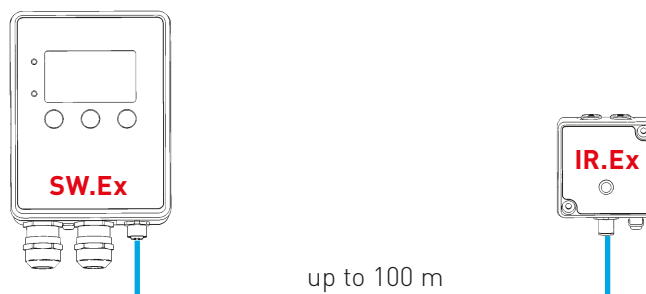


## SW.Ex Switching Relais

- Specification:  
II2(1)G Ex eb mb ib [ia Ga] IIC T4 Gb  
II2(1) D Ex tb ib [ia Da] IIIC T130°C Db
- Universal switching relay for mounting in zone 1 / 2 / 21 / 22
- Two adjustable, potential free relay outputs
- Ambient temperature -40...+70 °C
- Protection class IP66
- Temperature class T4 for all gases and dusts
- Adjustable hysteresis
- Adjustable on site; display
- Stainless steel / polymer compound material for maximum corrosion resistance
- No further barrier required in the control cabinet
- LED status indication
- Smart installation
- 24 VAC / DC
- For use with IR.Ex-Sensors

## IR.Ex Sensor Range

- Specification:  
II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb  
II 1/2D Ex ia IIIC T130°C Da/Db
- Intelligent sensor concept for connection (M12 connector) to SW.Ex universal Ex-switching relay
- Stainless steel / polymer compound material for maximum corrosion resistance
- Room sensor for direct connection
- For measuring in zone 0, 1, 2, 21, 22
- Other sensors with M12 sensor cable (1 Meter included, other lengths available)
- For use with SW.Ex universal Ex-switching relay



## SW.Ex – Switching relais

PRODUCT	DESCRIPTION
SW.Ex	Ex-Switching Relais

## IR.Ex – Temperature / Humidity

PRODUCT	DESCRIPTION
IR.Ex-RT	Ex-Room Sensor Temperature; Measuring range -40...+125 °C
IR.Ex-RH	Ex-Sensor Room Humidity; Measuring range; 0...100% rH
IR.Ex-DT-050	Ex-Sensor Duct Temperature; l = 50 mm; Measuring range -40...+125 °C
IR.Ex-DH-050	Ex-Sensor Duct Humidity; l = 50 mm; Measuring range; 0...100% rH
IR.Ex-DT-100	Ex-Sensor Duct Temperature; l = 100 mm; Measuring range -40...+125 °C
IR.Ex-DH-100	Ex-Sensor Duct Humidity; l = 100 mm; Measuring range; 0...100% rH
IR.Ex-DT-200	Ex-Sensor Duct Temperature; l = 200 mm; Measuring range -40...+125 °C
IR.Ex-DH-200	Ex-Sensor Duct Humidity; l = 200 mm; Measuring range; 0...100% rH

## IR.Ex – Differential Pressure

PRODUCT	DESCRIPTION
IR.Ex-P-0060	Ex-Differential Pressure Sensor -60...+60 Pa
IR.Ex-P-0100	Ex-Differential Pressure Sensor -100...+100 Pa
IR.Ex-P-0250	Ex-Differential Pressure Sensor -250...+250 Pa
IR.Ex-P-0600	Ex-Differential Pressure Sensor -600...+600 Pa
IR.Ex-P-1000	Ex-Differential Pressure Sensor -1000...+1000 Pa
IR.Ex-P-2500	Ex-Differential Pressure Sensor -2500...+2500 Pa
IR.Ex-P-4000	Ex-Differential Pressure Sensor -4000...+4000 Pa
IR.Ex-P-10000	Ex-Differential Pressure Sensor -10000...+10000 Pa

## IR.Ex – Flow Rate\*

PRODUCT	DESCRIPTION
IR.Ex-V-0100	Ex-Differential Pressure Sensor -100...+100 Pa
IR.Ex-V-0250	Ex-Differential Pressure Sensor -250...+250 Pa
IR.Ex-V-0600	Ex-Differential Pressure Sensor -600...+600 Pa
IR.Ex-V-1000	Ex-Differential Pressure Sensor -1000...+1000 Pa
IR.Ex-V-2500	Ex-Differential Pressure Sensor -2500...+2500 Pa

\* Please note: For flow rate measurement an additional measuring device may be required

Other types available



## QT.Ex-M, electric Actuator, explosion protected ATEX / IECEx

- ATEX / IECEx certified
- Integrated junction box
- Ambient temperature -40...+70 °C
- Fail safe / spring return
- Optional control / feedback 0...10 V; 4...20 mA
- IP66, maximum corrosion resistance, weatherproof
- For mounting in zone 1, 2, 21, 22

## Technical Data

Specification:	II2 G Ex h IIC T4 Gb II2 D Ex h IIC T130 °C Db
Manufacturer:	pi safety components
Auxiliary Switches:	5° / 80° Switching points max. 250 V / 1 A min. 5 V / 5 mA
Angle of rotation:	95° (5° Preload)
Hollow shaft:	12 x 12 mm (Double square)
Power consumption:	5 W / 7 VA In holding position 20 W / 30 VA Motor 30 VA / 2 A Layout
Permissible humidity:	0...95% r.F without condensation
Ambient temperature:	-40...+70 °C
Housing material:	High-tech polymer non-halogen, silicone-free
Protection class:	IP66
Dimensions:	Approx. 320 x 120 x 85 mm



## Ex Actuators with Spring Return

### 3-Position / Open-Close Actuator; 20...70 VAC / DC

<b>QT.Ex-MF10-SL</b>	Supply Power: 20...70 VAC / DC 50-60 Hz Control: 3-Position / Open-Close Spring Return: approx. 10 s Torque: 18 Nm; Motor: approx. 15 s / 90°
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### 3-Position / Open-Close Actuator; 10 Seconds Spring Return; 85...250 VAC

<b>QT.Ex-MF10-SH</b>	Supply Power: 85...250 VAC 50-60 Hz Control: 3-Position / Open-Close Spring Return: approx. 10 s Torque: 18 Nm; Motor: approx. 15 s / 90°
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### 3-Position / Open-Close Actuator; 3 Seconds Spring Return; 20...70 VAC / DC

<b>QT.Ex-MF03-SL</b>	Supply Power: 20...70 VAC / DC 50-60 Hz Control: 3-Position / Open-Close Spring Return: approx. 3 s Torque: 18 Nm; Motor: approx. 15 s / 90°
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### 3-Position / Open-Close Actuator; 3 Seconds Spring Return; 85...250 VAC

<b>QT.Ex-MF03-SH</b>	Supply Power: 85...250 VAC 50-60 Hz Control: 3-Position / Open-Close Spring Return: approx. 3 s Torque: 18 Nm; Motor: approx. 15 s / 90°
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### 3-Position / Open-Close Actuator; 2 Seconds Spring Return; 20...70 VAC / DC

<b>QT.Ex-MF02-SL</b>	Supply Power: 20...70 VAC / DC 50-60 Hz Control: 3-Position / Open-Close Spring Return: approx. 2 s; -40...+50 °C Torque: 12 Nm; Motor: approx. 15 s / 90°
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### 3-Position / Open-Close Actuator; 2 Seconds Spring Return; 85...250 VAC

<b>QT.Ex-MF02-SH</b>	Supply Power: 85...250 VAC 50-60 Hz Control: 3-Position / Open-Close Spring Return: approx. 2 s; -40...+50 °C Torque: 12 Nm; Motor: approx. 15 s / 90°
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### Control Actuator; 10 Seconds Spring Return; 20...70 VAC / DC

<b>QT.Ex-MF10Y-SL</b>	Supply Power: 20...70 VAC / DC 50-60 Hz Control: 0...10 V / 4...20 mA Spring Return: approx. 10 s Torque: 18 Nm; Motor: approx. 15 s / 90°
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### Control Actuator; 10 Seconds Spring Return; 85...250 VAC

<b>QT.Ex-MF10Y-SH</b>	Supply Power: 85...250 VAC 50-60 Hz Control: 0...10 V / 4...20 mA Spring Return: approx. 10 s Torque: 18 Nm; Motor: approx. 15 s / 90°
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## QT.Ex-M, electric Actuator, explosion protected ATEX / IECEx

- ATEX / IECEx certified
- Integrated junction box
- Ambient temperature -40...+70 °C
- Without fail safe / spring return
- Optional control / feedback 0...10 V; 4...20 mA
- IP66, maximum corrosion resistance, weatherproof
- For mounting in zone 1, 2, 21, 22

## Technical Data

Specification:	II2 G Ex h IIC T4 Gb II2 D Ex h IIIC T130 °C Db
Manufacturer:	pi safety components
Auxiliary Switches:	5° / 80° Switching points max. 250 V / 1 A min. 5 V / 5 mA
Angle of rotation:	95° (5° Preload)
Hollow shaft:	12 x 12 mm (Double square)
Power consumption:	5 W / 7 VA In holding position 20 W / 30 VA Motor 30 VA / 2 A Layout
Permissible humidity:	0...95% r.F without condensation
Ambient temperature:	-40...+70 °C
Housing material:	High-tech polymer non-halogen, silicone-free
Protection class:	IP66
Dimensions:	Approx. 320 x 120 x 85 mm

## Ex Actuators without Spring Return

### 3-Position / Open-Close Actuator; 20...70 VAC / DC

<b>QT.Ex-M-SL</b>	Supply Power: 20...70 VAC / DC 50-60 Hz Control: 3-Position / Open-Close Spring Return: none Torque: 50 Nm Motor: approx. 15 s / 90°
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### 3-Position / Open-Close Actuator; 85...250 VAC

<b>QT.Ex-M-SH</b>	Supply Power: 85...250 VAC 50-60 Hz Control: 3-Position / Open-Close Spring Return: none Torque: 50 Nm Motor: approx. 15 s / 90°
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### Control Actuator; 20...70 VAC / DC

<b>QT.Ex-MY-SL</b>	Supply Power: 20...70 VAC / DC 50-60 Hz Control / Feedback: 0...10 V / 4...20 mA Spring Return: none Torque: 40 Nm Motor: approx. 15 s / 90°
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### Control Actuator; 85...250 VAC

<b>QT.Ex-MY-SH</b>	Supply Power: 85...250 VAC 50-60 Hz Control / Feedback: 0...10 V / 4...20 mA Spring Return: none Torque: 40 Nm Motor: approx. 15 s / 90°
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### Control Actuator Quick; 5 Seconds 90° ; 20...70 VAC / DC

<b>QT.Ex-MYQ-SL</b>	Supply Power: 20...70 VAC / DC 50-60 Hz Control / Feedback: 0...10 V / 4...20 mA Spring Return: none Torque: 15 Nm Motor: approx. 5 s / 90°
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### Control Actuator Quick; 5 Seconds 90°; 85...250 VAC

<b>QT.Ex-MYQ-SH</b>	Supply Power: 85...250 VAC 50-60 Hz Control / Feedback: 0...10V / 4...20 mA Spring Return: none Torque: 15 Nm Motor: approx. 5 s / 90°
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### Control Actuator Super Quick; 3 Seconds 90°; 20...70 VAC / DC

<b>QT.Ex-MYSQ-SL</b>	Supply Power: 20...70 VAC / DC 50-60 Hz Control / Feedback: 0...10 V / 4...20 mA Spring Return: none Torque: 5 Nm Motor: approx. 3 s / 90°
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### Control Actuator Super Quick; 3 Seconds 90°; 85...250 VAC

<b>QT.Ex-MYSQ-SH</b>	Supply Power: 85...250 VAC 50-60 Hz Control / Feedback: 0...10V / 4...20 mA Spring Return: none Torque: 5 Nm Motor: approx. 3 s / 90°
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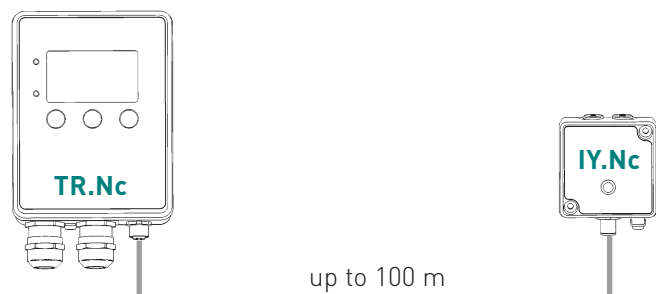


## TR.Nc Transducer

- Universal Transducer
- Ambient temperature  $-40...+70^{\circ}\text{C}$
- Protection Class IP66
- Adjustable on site, display
- Stainless steel / polymer compound material for maximum corrosion resistance
- 0...10 V or 4...20 mA Feedback
- LED status indication
- Smart installation
- 24 VAC / DC
- For use with IY.NC-Sensors
- Integrated junction box

## IY.Nc Sensor Range

- Intelligent sensor concept for connection (M12 connector) to SW.Nc universal switching relay
- Stainless steel / polymer compound material for maximum corrosion resistance
- Fast sampling rate up to 125 ms for pressure sensors
- Room sensor for direct connection
- Other sensors with M12 sensor cable (1 Meter included, other lengths available)
- For use with TR.Nc transducer





**TR.Nc – Transducer**

PRODUCT	DESCRIPTION
TR.Nc	Transducer 0...10 V or 4...20 mA

**IY.Nc – Temperature / Temperature-Humidity-Dew Point**

PRODUCT	DESCRIPTION
IY.Nc-RT	Sensor Room Temperature; Measuring range -40...+125 °C
IY.Nc-RTH	Sensor Room Temperature / Humidity Measuring range -40...+125 °C; 0...100% rH
IY.Nc-DT-050	Sensor Duct Temperature; l = 50 mm; Measuring range -40...+125 °C
IY.Nc-DTH-050	Sensor Duct Temperature / Humidity; l = 50 mm Measuring range -40...+125 °C; 0...100% rH
IY.Nc-DT-100	Sensor Duct Temperature; l = 100 mm; Measuring range -40...+125 °C
IY.Nc-DTH-100	Sensor Duct Temperature / Humidity; l = 100 mm Measuring range -40...+125 °C; 0...100% rH
IY.Nc-DT-200	Sensor Duct Temperature; l = 200 mm; Measuring range -40...+125 °C
IY.Nc-DTH-200	Sensor Duct Temperature / Humidity; l = 200 mm Measuring range -40...+125 °C; 0...100% rH
IY.Nc-DT-370	Sensor Duct Temperature; l = 370 mm; Measuring range -40...+125 °C
IY.Nc-DTH-370	Sensor Duct Temperature / Humidity; l = 370 mm Measuring range -40...+125 °C; 0...100% rH

**IY.Nc – Differential Pressure / Flow Rate\***

PRODUCT	DESCRIPTION
IY.Nc-P-0060	Differential Pressure Sensor -60...+60 Pa
IY.Nc-P-0100	Differential Pressure Sensor -100...+100 Pa
IY.Nc-P-0250	Differential Pressure Sensor -250...+250 Pa
IY.Nc-P-0600	Differential Pressure Sensor -600...+600 Pa
IY.Nc-P-1000	Differential Pressure Sensor -1000...+1000 Pa
IY.Nc-P-2500	Differential Pressure Sensor -2500...+2500 Pa
IY.Nc-P-4000	Differential Pressure Sensor -4000...+4000 Pa
IY.Nc-P-10000	Differential Pressure Sensor -10000...+10000 Pa

\* Please note: For flow rate measurement an additional measuring device may be required

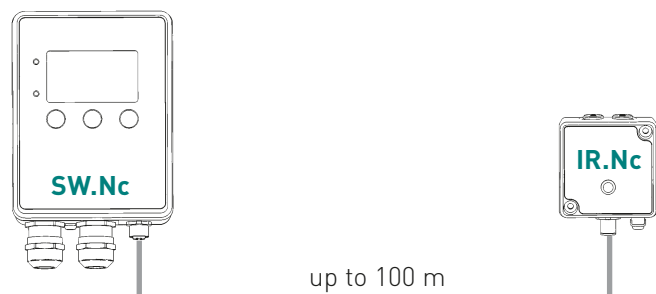


## SW.Nc Switching Relais

- Universal Switching Relay
- Two adjustable potential free relay outputs
- Ambient temperature  $-40...+70\text{ }^{\circ}\text{C}$
- IP66
- Adjustable on site, display
- Stainless steel / polymer compound material for maximum corrosion resistance
- Adjustable hysteresis
- LED status indication
- Smart installation
- 24 VAC / DC
- For use with IR.Nc-Sensors

## IR.Nc Sensor Range

- Intelligent sensor concept for connection (M12 connector) to SW.Nc universal switching relay
- Stainless steel / polymer compound material for maximum corrosion resistance
- Room sensor for direct connection
- Other sensors for M12 sensor cable (1 meter included, other lengths available)
- For use with SW.Nc universal switching relay



## SW.Nc – Switching relais

PRODUCT	DESCRIPTION
SW.Nc	Switching relais

## IR.Nc – Temperature / Humidity

PRODUCT	DESCRIPTION
IR.Nc-RT	Sensor Room Temperature; Measuring range -40...+125 °C
IR.Nc-RH	Sensor Room Humidity; Measuring range; 0...100% rH
IR.Nc-DT-050	Sensor Duct Temperature; l = 50 mm; Measuring range -40...+125 °C
IR.Nc-DH-050	Sensor Duct Humidity; l = 50 mm; Measuring range; 0...100% rH
IR.Nc-DT-100	Sensor Duct Temperature; l = 100 mm; Measuring range -40...+125 °C
IR.Nc-DH-100	Sensor Duct Humidity; l = 100 mm; Measuring range; 0...100% rH
IR.Nc-DT-200	Sensor Duct Temperature; l = 200 mm; Measuring range -40...+125 °C
IR.Nc-DH-200	Sensor Duct Humidity; l = 200 mm; Measuring range; 0...100% rH

## IR.Nc – Differential Pressure

PRODUCT	DESCRIPTION
IR.Nc-P-0060	Differential Pressure Sensor -60...+60 Pa
IR.Nc-P-0100	Differential Pressure Sensor -100...+100 Pa
IR.Nc-P-0250	Differential Pressure Sensor -250...+250 Pa
IR.Nc-P-0600	Differential Pressure Sensor -600...+600 Pa
IR.Nc-P-1000	Differential Pressure Sensor -1000...+1000 Pa
IR.Nc-P-2500	Differential Pressure Sensor -2500...+2500 Pa
IR.Nc-P-4000	Differential Pressure Sensor -4000...+4000 Pa
IR.Nc-P-10000	Differential Pressure Sensor -10000...+10000 Pa

## IR.Nc – Flow Rate\*

PRODUCT	DESCRIPTION
IR.Nc-V-0100	Differential Pressure Sensor -100...+100 Pa
IR.Nc-V-0250	Differential Pressure Sensor -250...+250 Pa
IR.Nc-V-0600	Differential Pressure Sensor -600...+600 Pa
IR.Nc-V-1000	Differential Pressure Sensor -1000...+1000 Pa
IR.Nc-V-2500	Differential Pressure Sensor -2500...+2500 Pa

\* Please note: For flow rate measurement an additional measuring device may be required

Other types available





## QT.Nc-M, Electric Actuator

- Integrated junction box
- Ambient temperature -40...+70 °C
- Optional fail safe / spring return
- Optional control / feedback 0...10 V; 4...20 mA
- IP66, maximum corrosion resistance, weatherproof

## Technical Data

Manufacturer:	pi safety components
Auxiliary Switches:	5° / 80° Switching points max. 250 V / 1 A min. 5 V / 5 mA
Angle of rotation:	95° [5° Preload]
Hollow shaft:	12 x 12 mm [Double square]
Power consumption:	5 W / 7 VA In holding position 20 W / 30 VA Motor 30 VA / 2 A Layout
Permissible humidity:	0...95% r.F without condensation
Ambient temperature:	-40...+70°C
Housing material:	High-tech polymer non-halogen, silicone-free
Protection class:	IP66
Dimensions:	approx. 320 x 120 x 85 mm



## Nc Actuators with Spring Return

### 3-Position / Open-Close Actuator; 10 Seconds Spring Return; 20...70 VAC / DC

<b>QT.Nc-MF10-SL</b>	Supply Power: 20...70 VAC / DC 50-60 Hz Control: 3-Position / Open-Close Spring Return: approx. 10 s Torque: 18 Nm; Motor: approx. 15 s / 90°
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### 3-Position / Open-Close Actuator; 10 Seconds Spring Return; 85...250 VAC

<b>QT.Nc-MF10-SH</b>	Supply Power: 85...250 VAC 50-60 Hz Control: 3-Position / Open-Close Spring Return: approx. 10 s Torque: 18 Nm; Motor: approx. 15 s / 90°
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### 3-Position / Open-Close Actuator; 3 Seconds Spring Return; 20...70 VAC / DC

<b>QT.Nc-MF03-SL</b>	Supply Power: 20...70 VAC / DC 50-60 Hz Control: 3-Position / Open-Close Spring Return: approx. 3 s Torque: 18 Nm; Motor: approx. 15 s / 90°
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### 3-Position / Open-Close Actuator; 3 Seconds Spring Return; 85...250 VAC

<b>QT.Nc-MF03-SH</b>	Supply Power: 85...250 VAC 50-60 Hz Control: 3-Position / Open-Close Spring Return: approx. 3 s Torque: 18 Nm; Motor: approx. 15 s / 90°
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### 3-Position / Open-Close Actuator; 2 Seconds Spring Return; 20...70 VAC / DC

<b>QT.Nc-MF02-SL</b>	Supply Power: 20...70 VAC / DC 50-60 Hz Control: 3-Position / Open-Close Spring Return: approx. 2 s; -40...+50 °C Torque: 12 Nm; Motor: approx. 15 s / 90°
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### 3-Position / Open-Close Actuator; 2 Seconds Spring Return; 85...250 VAC

<b>QT.Nc-MF02-SH</b>	Supply Power: 85...250 VAC 50-60 Hz Control: 3-Position / Open-Close Spring Return: approx. 2 s; -40...+50 °C Torque: 12 Nm; Motor: ca. 15 s / 90°
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### Control Actuator; 10 Seconds Spring Return; 20...70 VAC / DC

<b>QT.Nc-MF10Y-SL</b>	Supply Power: 20...70 VAC / DC 50-60 Hz Control / Feedback: 0...10 V / 4...20 mA Spring Return: ca. 10 s Torque: 18 Nm; Motor: ca. 15 s / 90°
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### Control Actuator; 10 Seconds Spring Return; 85...250 VAC

<b>QT.Nc-MF10Y-SH</b>	Supply Power: 85...250 VAC 50-60 Hz Control / Feedback: 0...10 V / 4...20 mA Spring Return: approx. 10 s Torque: 18 Nm; Motor: approx. 15 s / 90°
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## QT.Nc-M, Electric Actuator

- Integrated junction box
- Ambient temperature -40...+70 °C
- Optional fail safe / spring return
- Optional control / feedback 0...10 V; 4...20 mA
- IP66, maximum corrosion resistance, weatherproof

## Technical Data

Manufacturer:	pi safety components
Auxiliary Switches:	5° / 80° Switching points max. 250 V / 1 A min. 5 V / 5 mA
Angle of rotation:	95° [5° Preload]
Hollow shaft:	12 x 12 mm [Double square]
Power consumption:	5 W / 7 VA In holding position 20 W / 30 VA Motor 30 VA / 2 A Layout
Permissible humidity:	0...95% r.F without condensation
Ambient temperature:	-40...+70°C
Housing material:	High-tech polymer non-halogen, silicone-free
Protection class:	IP66
Dimensions:	approx. 320 x 120 x 85 mm

## Nc Actuators without Spring Return

### 3-Position / Open-Close Actuator; 20...70 VAC / DC

<b>QT.Nc-M-SL</b>	Supply Power: 20...70 VAC / DC 50-60 Hz Control: 3-Position / Open-Close Spring Return: none Torque: 50 Nm Motor: approx. 15 s / 90°
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### 3-Position / Open-Close Actuator; 85...250 VAC

<b>QT.Nc-M-SH</b>	Supply Power: 85...250 VAC 50-60 Hz Control: 3-Position / Open-Close Spring Return: none Torque: 50 Nm Motor: approx. 15 s / 90°
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### Control Actuator; 20...70 VAC / DC

<b>QT.Nc-MY-SL</b>	Supply Power: 20...70 VAC / DC 50-60 Hz Control / Feedback: 0...10 V / 4...20 mA Spring Return: none Torque: 40 Nm Motor: approx. 15 s / 90°
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### Control Actuator; 85...250 VAC

<b>QT.Nc-MY-SH</b>	Supply Power: 85...250 VAC 50-60 Hz Control / Feedback: 0...10 V / 4...20 mA Spring Return: none Torque: 40 Nm Motor: approx. 15 s / 90°
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### Control Actuator Quick; 5 Seconds 90°; 20...70 VAC / DC

<b>QT.Nc-MYQ-SL</b>	Supply Power: 20...70 VAC / DC 50-60 Hz Control / Feedback: 0...10 V / 4...20 mA Spring Return: none Torque: 15 Nm Motor: approx. 5 s / 90°
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### Control Actuator Quick; 5 Seconds 90°; 85...250 VAC

<b>QT.Nc-MYQ-SH</b>	Supply Power: 85...250 VAC 50-60 Hz Control / Feedback: 0...10V / 4...20 mA Spring Return: none Torque: 15 Nm Motor: approx. 5 s / 90°
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### Control Actuator Super Quick; 3 Seconds 90°; 20...70 VAC / DC

<b>QT.Nc-MYSQ-SL</b>	Supply Power: 20...70 VAC / DC 50-60 Hz Control / Feedback: 0...10 V / 4...20 mA Spring Return: none Torque: 5 Nm Motor: approx. 3 s / 90°
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### Control Actuator Super Quick; 3 Seconds 90°; 85...250 VAC

<b>QT.Nc-MYSQ-SH</b>	Supply Power: 85...250 VAC 50-60 Hz Control / Feedback: 0...10V / 4...20 mA Spring Return: none Torque: 5 Nm Motor: approx. 3 s / 90°
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# ACCESSORIES

## Accessories Actuators

### WS.Va-M

Stainless steel protection against harsh ambient conditions, vandalism etc.

### TJ.Va-M

Insulation Housing for ambient temperature -60...+40 °C

### KR.Vz-12

Clamping adapter and anti-rotation device for mounting on round shafts (10-20 mm) and square square (VK 10-16 mm), galvanized

### AH-12-08

Adapter 12mm square to 8mm square

### AH-12-10

Adapter 12mm square to 10mm square

### AH.-12-11

Adapter 12mm square to 11mm square

### LV.Qt-....

Linkage to quarter turn valves on request

### LT.Qt-....

Linear transmission for QT-actuators on request

### LV.Lt-....

Linkage to linear valves on request

## Frost protection ATEX

### FS.Ex.03

Capillary frost protection, adjustable, length 3 meters, including installation material, for use with BS.Ex

### FS.Ex.06

Capillary frost protection, adjustable, length 6 meters, including installation material, for use with BS.Ex

### BS.Ex

Barrier for installation in the cabinet for use with e.g. FS.Es

## Accessories Sensors

### MA.Pa-06

Installation set for pressure sensors, incl. duct connectors, pressure hose and fixing screws for IY.Nc-P..., IY.Ex-P..., IR.Nc-P... und IR.Ex-P...

### TH.VA-....

Thermowell, stainless steel, G ½", different lengths available

### SC.Pu-01

M12 sensor cable, 5-wire, shielded, 1 meter

### SC.Pu-05

M12 sensor cable, 5-wire, shielded, 5 meter

### SC.Pu-10

M12 sensor cable, 5-wire, shielded, 10 meter

### LK.Pa

Level sensor kit for pressure sensors

### SR.Va-200

Pitot tube for measuring flow rate, l=200 mm

### CS.Ms-M12

M12 connector set for on-site cables 5-wire, shielded, one set = 2 connectors

## Calibration Service

### KA.Pi

Calibration of humidity, temperature, pressure sensors in our in-house calibration laboratory including factory certificate (on request)



Our general terms of trade can be downloaded on our website [www.pi-safety.com](http://www.pi-safety.com)





Image similar

## Linear Valve Transmission LT.QT

The pi solution for globe and linear valves consists of three parts.

- Actuator QT.Ex-... / QT.Nc-....
- Linear transmission LT.Qt-...
- Linkage valve to linear transmission parts LV.Lt-.....

## Linkage to Valve for Linear Transmission

For proper LV.Lt-... please contact us for support.



## Force table spring return type QT.Ex-Actuator

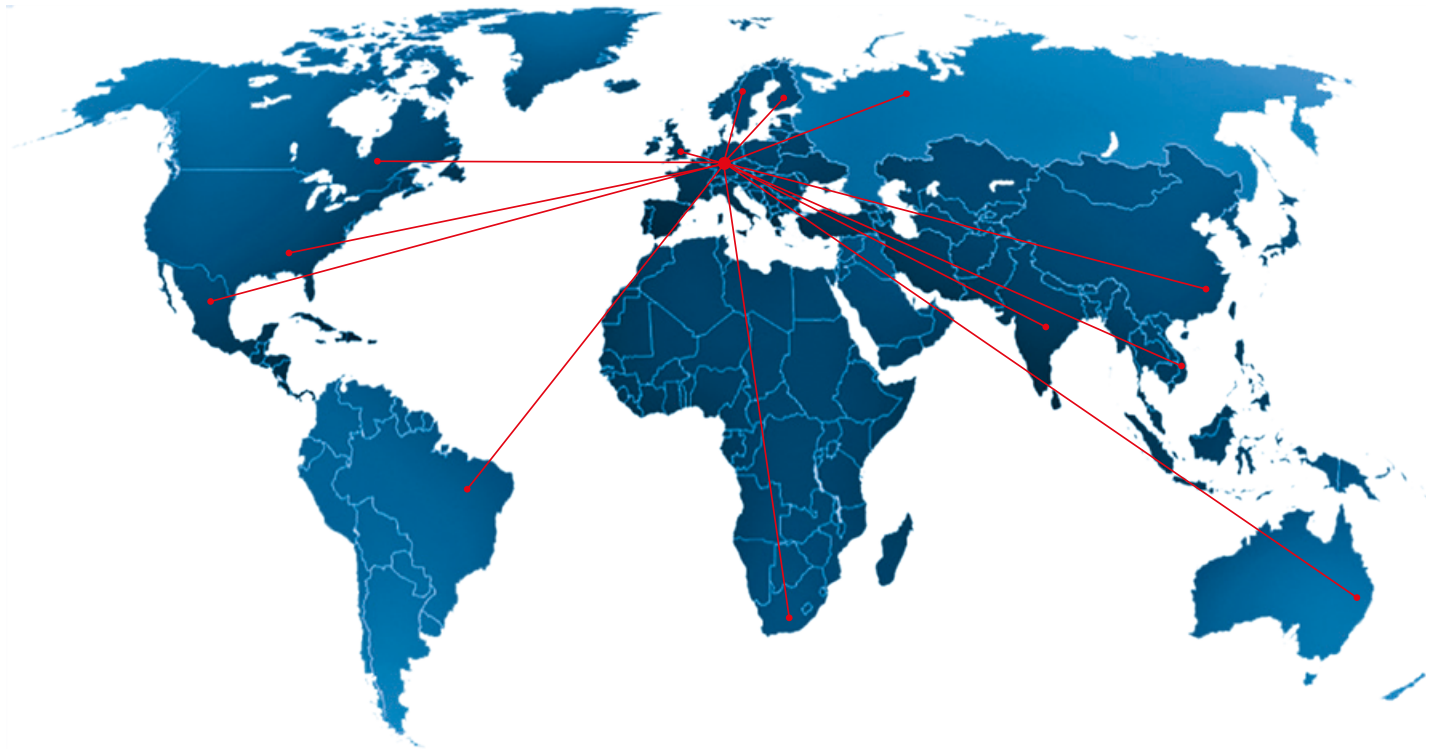
TYPE	LT.QT-10	LT.Qt-15	LT.Qt-20	LT.Qt-30	LT.Qt-42
Stroke	10 mm	15 mm	20 mm	30 mm	42 mm
Force					
500 N	QT.Ex-MF02(Y)-S... QT.Ex-MF10(Y)-S... QT.Ex-MF03(Y)-S...	QT.Ex-MF02(Y)-S... QT.Ex-MF10(Y)-S... QT.Ex-MF03(Y)-S...	QT.Ex-MF02(Y)-S... QT.Ex-MF10(Y)-S... QT.Ex-MF03(Y)-S...	QT.Ex-MF10(Y)-S... QT.Ex-MF03(Y)-S...	-
800 N			QT.Ex-MF10(Y)-S... QT.Ex-MF03(Y)-S...	-	-
1,000 N		QT.Ex-MF10(Y)-S... QT.Ex-MF03(Y)-S...	-	-	-
1,500 N	QT.Ex-MF10(Y)-S... QT.Ex-MF03(Y)-S...	-	-	-	-
2,000 N	-	-	-	-	-
2,500 N	-	-	-	-	-
3,000 N	-	-	-	-	-

## Force table non spring return type QT.Ex-Actuator

TYPE	LT.QT-10	LT.Qt-15	LT.Qt-20	LT.Qt-30	LT.Qt-42
Stroke	10 mm	15 mm	20 mm	30 mm	42 mm
Force					
500 N	QT.Ex-MQY-S...	QT.Ex-MQY-S...	QT.Ex-MQY-S...	QT.Ex-M(Y)-S...	QT.Ex-M(Y)-S...
800 N			QT.Ex-M(Y)-S...		QT.Ex-M-S...
1,000 N		QT.Ex-M(Y)-S...	QT.Ex-M-S...	-	
1,500 N	QT.Ex-M(Y)-S...	QT.Ex-M-S...	QT.Ex-M-S...	-	-
2,000 N			-	-	
2,500 N		QT.Ex-M-S...	-	-	-
3,000 N	-	-	-	-	

\* Option Y : Modulating (0...10V and 4...20mA)

THINK GLOBAL - ACT CONCENTRATED



Your **pi**-Partner



**pi safety components GmbH & Co. KG**  
Mühlenweg 2 | 96358 Teuschnitz/Haslach | Germany  
Phone +49 9268 971-14 | Fax +49 9268 67-60  
info@pi-safety.com | www.pi-safety.com

