

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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### Industrial Area Applications

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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).

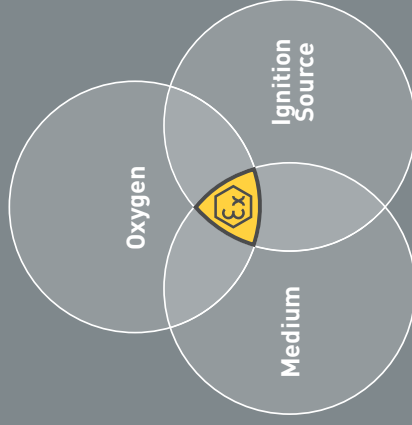
## Secondary Explosion Protection

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

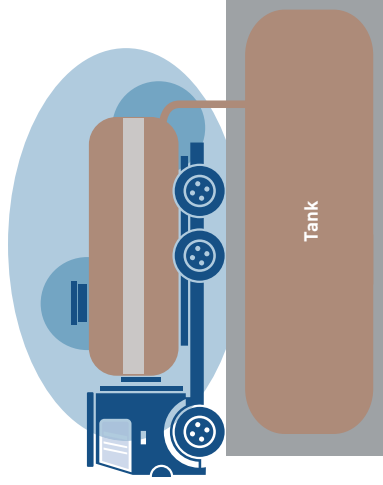
A dangerous, explosive atmosphere as a mixture of air, combustible gases, vapors or mists is constantly, for long periods of time or frequently present.

### 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 labelling:



Operator Identification Ex-Area

Manufacturer Identification Ex-device





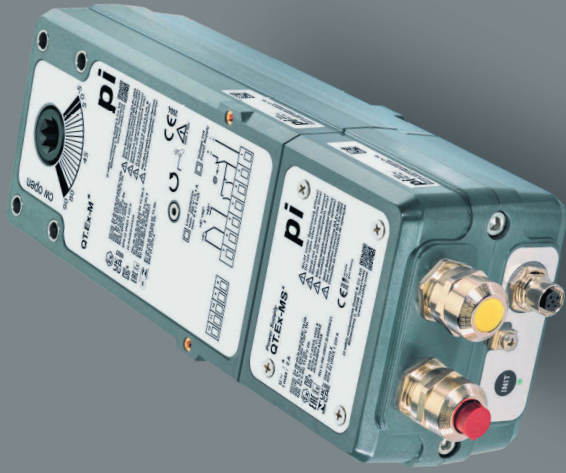




# HAZARDOUS AREA APPLICATIONS

made  
in  
germany





QT.Ex-M,  
electric Actuator,  
explosion protected

- ATEX / IECEx / UKEx / KC / INMETRO / EAC certified
- Integrated junction box
- Ambient temperature -40...+70 °C
- Optional control / feedback 0...10 V, 4...20 mA
- IP66
- For mounting in zone 1, 2, 21, 22
- Stainless steel / polymer compound material for maximum corrosion resistance
- Optional safety position/spring return

Technical data

Specification: ..... I2(1)G Ex db eb mb [ia] IIC T4 Gb  
I2(1)G Ex tb [ia] IIIC T130°C Db  
I2 G Ex h IIC T4 Gb  
I2 D Ex h IIIC T130 °C Db  
Manufacturer: ..... pi safety components  
Auxiliary Switches: ..... 5° / 80° Switching points  
250 V / 0,1 A min. 5 V / 5 mA  
Angle of rotation: ..... 95° [5° Preload]  
Hollow shaft: ..... 12 x 12 mm [Double squar]  
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

| Spring return | Control                 | Motor running time 90° | Spring time | Torque | Firetriggerer | Power supply | Actuator type  |
|---------------|-------------------------|------------------------|-------------|--------|---------------|--------------|----------------|
| ➤             | 3-Position / Open-Close | ca. 15s                | ca. 10 s    | 18 Nm  | —             | 24 V         | QT.Ex-MF10-SL  |
|               |                         |                        |             |        |               |              | QT.Ex-MFD10-SL |
|               |                         |                        |             |        |               |              | QT.Ex-MF10-SH  |
|               |                         |                        |             |        |               |              | QT.Ex-MFD10-SH |
|               |                         |                        |             |        |               |              | QT.Ex-MF03-SL  |
|               |                         |                        |             |        |               |              | QT.Ex-MFD03-SL |
|               |                         |                        |             |        |               |              | QT.Ex-MF03-SH  |
|               |                         |                        |             |        |               |              | QT.Ex-MFD03-SH |
|               |                         |                        |             |        |               |              | QT.Ex-MF02-SL  |
|               |                         |                        |             |        |               |              | QT.Ex-MFD02-SL |
|               |                         |                        |             |        |               |              | QT.Ex-MF02-SH  |
|               |                         |                        |             |        |               |              | QT.Ex-MFD02-SH |
| ✗             | 0...10 V / 4...20 mA    | ca. 15 s               | ca. 10 s    | 18 Nm  | —             | 24 V         | QT.Ex-MF10Y-SL |
|               |                         |                        |             |        |               |              | QT.Ex-MF10Y-SH |
|               |                         |                        |             |        |               |              | QT.Ex-M-SL     |
|               |                         |                        |             |        |               |              | QT.Ex-M-SH     |
|               |                         |                        |             |        |               |              | QT.Ex-MY-SL    |
|               |                         |                        |             |        |               |              | QT.Ex-MY-SH    |
|               |                         |                        |             |        |               |              | QT.Ex-MYQ-SL   |
|               |                         |                        |             |        |               |              | QT.Ex-MYQ-SH   |
|               |                         |                        |             |        |               |              | QT.Ex-MYSQ-SL  |
|               |                         |                        |             |        |               |              | QT.Ex-MYSQ-SH  |
|               |                         |                        |             |        |               |              | QT.Ex-MYSQ-SL  |
|               |                         |                        |             |        |               |              | QT.Ex-MYSQ-SH  |

\* Ta -40...+50°C

\*\* Firetriggerer FT.Ex is required





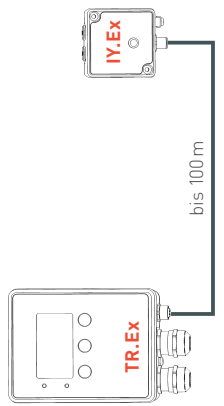
TR.Ex Transducer

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



IY.Ex Sensors

- Specification:
  - II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb
  - II 2D Ex ia IIIC T75°C-T145°C Db
- Intelligent sensor concept for connection IM12 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



| Measurand              | Sensor Design | Measurin<br>range          | min.<br>Measuring span | Length | Sensor type   |
|------------------------|---------------|----------------------------|------------------------|--------|---------------|
| Temperature            | Room sensor   | -40...+125°C               | 25°C                   | –      | IY.Ex-RT      |
|                        | Duct sensor   |                            |                        | 50 mm  | IY.Ex-DT-050  |
|                        |               |                            |                        | 100 mm | IY.Ex-DT-100  |
|                        |               |                            |                        | 200 mm | IY.Ex-DT-200  |
|                        |               |                            |                        | 370 mm | IY.Ex-DT-370  |
| Temperature / Humidity | Room sensor   | -40...+125°C<br>0...100 rF | 25°C<br>15 rF          | –      | IY.Ex-RTH     |
|                        | Duct sensor   |                            |                        | 50 mm  | IY.Ex-DTH-050 |
|                        |               |                            |                        | 100 mm | IY.Ex-DTH-100 |
|                        |               |                            |                        | 200 mm | IY.Ex-DTH-200 |
|                        |               |                            |                        | 370 mm | IY.Ex-DTH-370 |

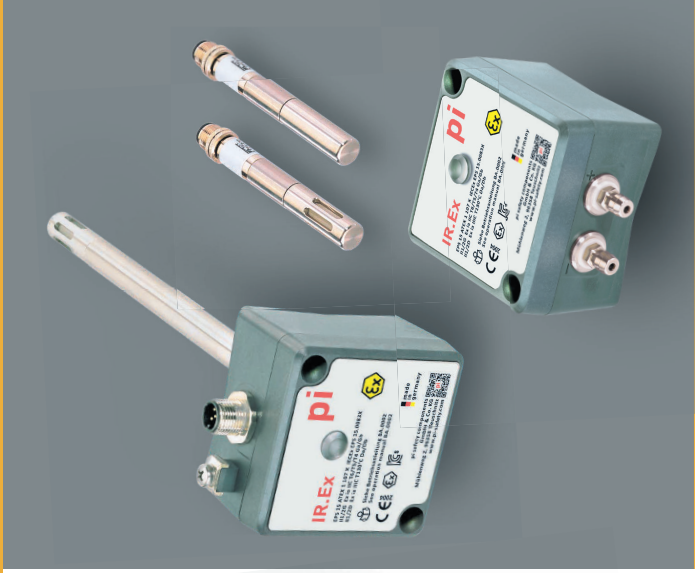
|                                     |             |                      |         |  |               |
|-------------------------------------|-------------|----------------------|---------|--|---------------|
| Differential pressure / Volume flow | Duct sensor | -60 ... +60 Pa       | 18 Pa   |  | IY.Ex-P-0060  |
|                                     |             | -100 ... +100 Pa     | 30 Pa   |  | IY.Ex-P-0100  |
|                                     |             | -250 ... +250 Pa     | 75 Pa   |  | IY.Ex-P-0250  |
|                                     |             | -600 ... +600 Pa     | 180 Pa  |  | IY.Ex-P-0600  |
|                                     |             | -1000 ... +1000 Pa   | 300 Pa  |  | IY.Ex-P-1000  |
|                                     |             | -2500 ... +2500 Pa   | 750 Pa  |  | IY.Ex-P-2500  |
|                                     |             | -4000 ... +4000 Pa   | 1200 Pa |  | IY.Ex-P-4000  |
|                                     |             | -10000 ... +10000 Pa | 3000 Pa |  | IY.Ex-P-10000 |





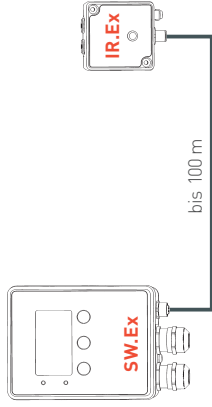
## SW.Ex Switching Relais

- Specification:
  - II 211G Ex eb mb ib [ia Ga] IIC T4 Gb
  - II 211D Ex tb ib [ia Da] IIIC T130°C Db
- Universal Transducer for mounting
  - in zone 1 / 2 / 21 / 22
- Two adjustable, potential free relay outputs
- Ambient temperature -40...+70°C
- 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 IY.Ex-Sensors



## IR.Ex Sensors

- Specification:
  - II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb
  - II 2D Ex ia IIIC T75°C-T145°C Db
- Intelligent sensor concept for connection
  - (M12 connector) to SW.Ex universal Ex-transducer
- 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 Transducer



| Measurand                           | Sensor Design | Measurin<br>range          | min.<br>Measurin<br>span | Length | Sensor type   |  |
|-------------------------------------|---------------|----------------------------|--------------------------|--------|---------------|--|
| Temperature                         | Room sensor   | -40...+125°C               | 25°C                     | —      | IR.Ex-RT      |  |
|                                     | Duct sensor   |                            |                          | 50 mm  | IR.Ex-DT-050  |  |
|                                     |               |                            |                          | 100 mm | IR.Ex-DT-100  |  |
|                                     |               |                            |                          | 200 mm | IR.Ex-DT-200  |  |
| Humidity                            | Room sensor   | -40...+125°C<br>0...100 rF | 25°C<br>15 rF            | —      | IR.Ex-RH      |  |
|                                     | Duct sensor   |                            |                          | 50 mm  | IR.Ex-DH-050  |  |
|                                     |               |                            |                          | 100 mm | IR.Ex-DH-100  |  |
|                                     |               |                            |                          | 200 mm | IR.Ex-DH-200  |  |
| Differential pressure / Volume flow | Duct sensor   | -60...+60 Pa               | 18 Pa                    |        | IR.Ex-P-0060  |  |
|                                     |               | -100...+100 Pa             | 30 Pa                    |        | IR.Ex-P-0100  |  |
|                                     |               | -250...+250 Pa             | 75 Pa                    |        | IR.Ex-P-0250  |  |
|                                     |               | -600...+600 Pa             | 180 Pa                   |        | IR.Ex-P-0600  |  |
|                                     |               | -1000...+1000 Pa           | 300 Pa                   |        | IR.Ex-P-1000  |  |
|                                     |               | -2500...+2500 Pa           | 750 Pa                   |        | IR.Ex-P-2500  |  |
|                                     |               | -4000...+4000 Pa           | 1200 Pa                  |        | IR.Ex-P-4000  |  |
|                                     |               | -10000...+10000 Pa         | 3000 Pa                  |        | IR.Ex-P-10000 |  |
|                                     |               |                            |                          |        |               |  |
|                                     |               |                            |                          |        |               |  |



AC.Ex,  
Volume Flow Controller,  
explosion protected

- Specification:
  - II2(I)G Ex eb mb Ib [ia Ga] IIC T4 Gb
  - II2(I)D Ex tb Ib [ia Da] IIC T130°C Db
- in zone 1 / 2 / 21 / 22
- Ambient temperature -40...+58°C
- IP66
- Temperature class T4 for all gases and dusts
- Adjustable on site
- Integrated, lighted display for measured value indication
- Stainless steel / polymer compound material for maximum corrosion resistance

related components



QT.Ex und IY.Ex

- Feedback: 0...10 V oder 4...20mA
- No further barrier required in the control cabinet
- LED status indication
- 24 VAC / DC
- For use with IY.Ex-Sensors
- Setpoint specification: 0...10 V oder 4...20mA
- Low power consumption < 3 W
- Measured value recording in zone 0
- Cable length from transmitter to sensor up to 100 m
- Integrated Ex e terminal box
- Alarm contact potential-loaded

| Spring return | Control              | Motor running time 90° | Spring time | Torque | Power supply | Actuator type  |
|---------------|----------------------|------------------------|-------------|--------|--------------|----------------|
| ✓             | 0...10 V / 4...20 mA | ca. 15s                | ca. 10 s    | 18 Nm  | 24 V         | QT.Ex-MF10Y-SL |
|               |                      |                        |             |        | 230 V        | QT.Ex-MF10Y-SH |
| ✗             | 0...10 V / 4...20 mA | ca. 15 s               | –           | 40 Nm  | 24 V         | QT.Ex-MY-SL    |
|               |                      |                        |             |        | 230 V        | QT.Ex-MY-SH    |

| Measurand                             | Sensor Design | Measuring range | min. Measuring span | Length | Sensor type  |
|---------------------------------------|---------------|-----------------|---------------------|--------|--------------|
| Differential pressure/<br>Volume flow | Duct sensor   | -60...+60 Pa    | 18 Pa               |        | IY.Ex-P-0060 |
|                                       |               | -100...+100 Pa  | 30 Pa               |        | IY.Ex-P-0100 |
|                                       |               | -250...+250 Pa  | 75 Pa               |        | IY.Ex-P-0250 |
|                                       |               | -600...+600 Pa  | 180 Pa              |        | IY.Ex-P-0600 |



made  
in  
germany

pi  
safety components

# INDUSTRIAL AREA APPLICATIONS







### 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
- Highest corrosion resistance

### Technical data

Manufacturer: ..... pi safety components

Auxiliary Switches: ..... 5° / 80° Switching points  
max. 250 V / 0,1 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: ..... non-halogen, silicone-free

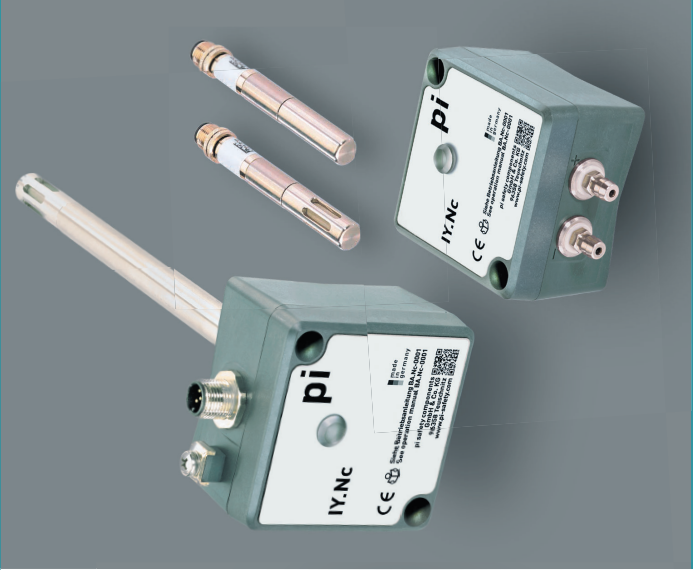
Protection class : ..... IP66

Dimensions: ..... approx. 320 x 120 x 85 mm

| Spring return | Control                 | Motor running time 90° | Spring time | Torque | Firetrigger | Power supply | Actuator type  |
|---------------|-------------------------|------------------------|-------------|--------|-------------|--------------|----------------|
| ➤             | 3-Position / Open-Close | ca. 15 s               | ca. 10 s    | 18 Nm  | -           | 24 V         | QT.Nc-MF10-SL  |
|               |                         |                        |             |        | ✓**         | 24 V         | QT.Nc-MFD10-SL |
|               |                         |                        |             |        | -           | 230 V        | QT.Nc-MF10-SH  |
|               |                         |                        |             |        | ✓**         | 230 V        | QT.Nc-MFD10-SH |
|               |                         |                        | ca. 3s      | 15 Nm  | -           | 24 V         | QT.Nc-MF03-SL  |
|               |                         |                        |             |        | ✓**         | 24 V         | QT.Nc-MFD03-SL |
|               |                         |                        |             |        | -           | 230 V        | QT.Nc-MF03-SH  |
|               |                         |                        |             |        | ✓**         | 230 V        | QT.Nc-MFD03-SH |
|               |                         |                        | ca. 2s*     | 12 Nm  | -           | 24 V         | QT.Nc-MF02-SL  |
|               |                         |                        |             |        | ✓**         | 24 V         | QT.Nc-MFD02-SL |
|               |                         |                        |             |        | -           | 230 V        | QT.Nc-MF02-SH  |
|               |                         |                        |             |        | ✓**         | 230 V        | QT.Nc-MFD02-SH |
|               | 0...10 V / 4...20 mA    | ca. 15 s               | ca. 10 s    | 18 Nm  | -           | 24 V         | QT.Nc-MF10Y-SL |
|               |                         |                        |             |        |             | 230 V        | QT.Nc-MF10Y-SH |
|               |                         |                        |             |        |             |              |                |
|               |                         |                        |             |        |             |              |                |

|   |                            |          |   |       |   |       |               |               |  |  |
|---|----------------------------|----------|---|-------|---|-------|---------------|---------------|--|--|
| X | 3-Position /<br>Open-Close | ca. 15 s | - | 50 Nm | - | 24 V  | QT.Nc-M-SL    |               |  |  |
|   |                            |          |   |       |   | 230 V | QT.Nc-M-SH    |               |  |  |
|   | 0...10 V / 4...20 mA       | ca. 15 s | - | 40 Nm |   | 24 V  | QT.Nc-MY-SL   |               |  |  |
|   |                            |          |   |       |   |       | 230 V         | QT.Nc-MY-SH   |  |  |
|   |                            | ca. 5 s  |   | 15 Nm |   | 24 V  | QT.Nc-MYQ-SL  |               |  |  |
|   |                            |          |   |       |   |       | 230 V         | QT.Nc-MYQ-SH  |  |  |
|   |                            | ca. 3 s  |   | 5 Nm  |   | 24 V  | QT.Nc-MYSQ-SL |               |  |  |
|   |                            |          |   |       |   |       | 230 V         | QT.Nc-MYSQ-SH |  |  |
|   |                            |          |   |       |   |       |               |               |  |  |
|   |                            |          |   |       |   |       |               |               |  |  |
|   |                            |          |   |       |   |       |               |               |  |  |
|   |                            |          |   |       |   |       |               |               |  |  |

\* Ta -40...+50°C  
\*\* Firetrigger FT.Ex is required



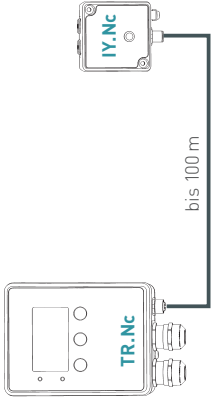
IY.Nc Sensors

- Intelligent sensor concept for connection IM12 connector to TR.Nc universal switching relay
- Highest 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



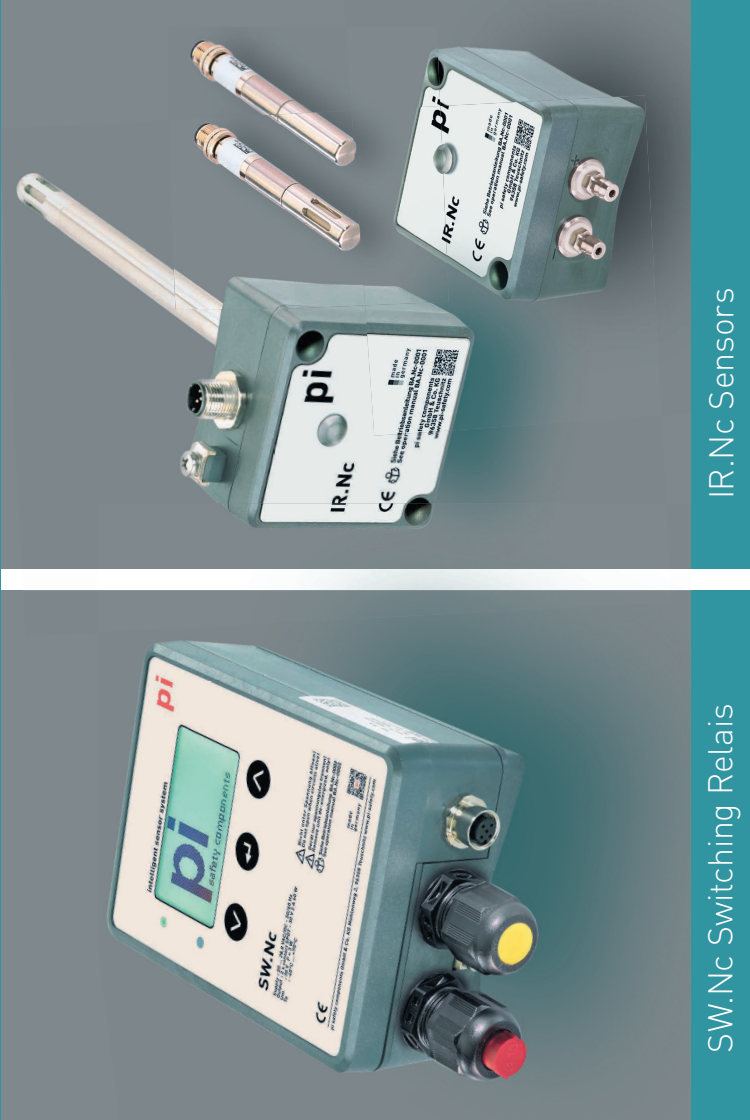
TR.Nc Transducer

- Universal Transducer
- Ambient temperature -40...+70°C
- IP66
- Adjustable on site, display
- Highest corrosion resistance
- Feedback: 0... V oder 4...20 mA
- LED status indication
- Smart installation
- 24 VAC / DC
- For use with IY.NC-Sensors
- Integrated junction box



| Measurand                           | Sensor Design | Measuring range             | min. Measuring span | Length | Sensor type   |
|-------------------------------------|---------------|-----------------------------|---------------------|--------|---------------|
| Temperature                         | Room sensor   | -40 ...+125°C               | 25°C                | –      | IY.Nc-RT      |
|                                     | Duct sensor   |                             |                     | 50 mm  | IY.Nc-DT-050  |
|                                     |               |                             |                     | 100 mm | IY.Nc-DT-100  |
|                                     |               |                             |                     | 200 mm | IY.Nc-DT-200  |
|                                     |               |                             |                     | 370 mm | IY.Nc-DT-370  |
| Temperature / Humidity              | Room sensor   | -40 ...+125°C<br>0...100 rF | 25°C<br>15 rF       | –      | IY.Nc-RTH     |
|                                     | Duct sensor   |                             |                     | 50 mm  | IY.Nc-DTH-050 |
|                                     |               |                             |                     | 100 mm | IY.Nc-DTH-100 |
|                                     |               |                             |                     | 200 mm | IY.Nc-DTH-200 |
|                                     |               |                             |                     | 370 mm | IY.Nc-DTH-370 |
| Differential pressure / Volume flow | Duct sensor   | -60 ...+60 Pa               | 18                  | –      | IY.Nc-P-0060  |
|                                     |               | -100 ...+100 Pa             | 30                  |        | IY.Nc-P-0100  |
|                                     |               | -250 ...+250 Pa             | 75                  |        | IY.Nc-P-0250  |
|                                     |               | -600 ...+600 Pa             | 180                 |        | IY.Nc-P-0600  |
|                                     |               | -1000 ...+1000 Pa           | 300                 |        | IY.Nc-P-1000  |
|                                     |               | -2500 ...+2500 Pa           | 750                 |        | IY.Nc-P-2500  |
|                                     |               | -4000 ...+4000 Pa           | 1200                |        | IY.Nc-P-4000  |
|                                     |               | -10000 ...+10000 Pa         | 3000                |        | IY.Nc-P-10000 |



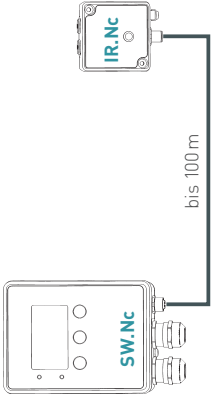


SW.Nc Switching Relais

- Universal Switching Relay
- Two adjustable potential free relay outputs
- Ambient temperature -40...+70 °C
- IP66
- Adjustable on site, display
- Highest corrosion resistance
- Adjustable hysteresis
- LED status indication
- einfache Montage
- 24 VAC / DC
- For use with IR.Nc-Sensors

IR.Nc Sensors

- Intelligent sensor concept for connection (M12 connector) to SW.Nc universal switching relay
- Highest 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



| Measurand   | Sensor Design | Measuring range            | min. Measuring span | Length | Sensor type   |
|-------------|---------------|----------------------------|---------------------|--------|---------------|
| Temperature | Room sensor   | -40...+125°C               | 25°C                | –      | IR.Nc-RT      |
|             | Duct sensor   |                            |                     | 50 mm  | IR.Nc-DT-050  |
|             | Duct sensor   |                            |                     | 100 mm | IR.Nc-DT-100  |
|             | Duct sensor   | 200 mm                     | IR.Nc-DT-200        |        |               |
| Humidity    | Room sensor   | -40...+125°C<br>0...100 rF | 25°C<br>15 rF       | –      | IR.Nc-RH      |
|             | Kanalsensor   |                            |                     | 50 mm  | IR.Nc-DTH-050 |
|             |               |                            |                     | 100 mm | IR.Nc-DTH-100 |
|             |               |                            |                     | 200 mm | IR.Nc-DH-200  |

| Differential pressure / Volume flow | Duct sensor | -60...+60 Pa       | 18 Pa   | – | IR.Nc-P-0060  |
|-------------------------------------|-------------|--------------------|---------|---|---------------|
|                                     |             | -100...+100 Pa     | 30 Pa   |   | IR.Nc-P-0100  |
|                                     |             | -250...+250 Pa     | 75 Pa   |   | IR.Nc-P-0250  |
|                                     |             | -600...+600 Pa     | 180 Pa  |   | IR.Nc-P-0600  |
|                                     |             | -1000...+1000 Pa   | 300 Pa  |   | IR.Nc-P-1000  |
|                                     |             | -2500...+2500 Pa   | 750 Pa  |   | IR.Nc-P-2500  |
|                                     |             | -4000...+4000 Pa   | 1200 Pa |   | IR.Nc-P-4000  |
|                                     |             | -10000...+10000 Pa | 3000 Pa |   | IR.Nc-P-10000 |



AC.Nc,  
Volume Flow Controller

- Ambient temperature -40...+58°C
- IP66
- Adjustable on site
- Integrated, lighted display for measured value indication
- Highest corrosion resistance
- Feedback: 0...10 V oder 4...20mA

related components



QT.Nc und IY.Nc

- LED status indication
- 24 VAC / DC
- For use with IYEx-Sensors
- Setpoint specification: 0...10 V oder 4...20mA
- Low power consumption < 3 W
- Cable length from transmitter to sensor up to 100 m
- Integrated Ex e terminal box

| Spring return | Control              | Motor running time 90° | Spring time | Torque | Power supply | Actuator type  |
|---------------|----------------------|------------------------|-------------|--------|--------------|----------------|
| ✓             | 0...10 V / 4...20 mA | ca. 15 s               | ca. 10 s    | 18 Nm  | 24 V         | QT.Nc-MF10Y-SL |
|               |                      |                        |             |        | 230 V        | QT.Nc-MF10Y-SH |
| X             | 0...10 V / 4...20 mA | ca. 15 s               | —           | 18 Nm  | 24 V         | QT.Nc-MY-SL    |
|               |                      |                        |             |        | 230 V        | QT.Nc-MY-SH    |

| Measurand                             | Sensor Design | Measuring range | min. Measuring span | Length       | Sensor type  |
|---------------------------------------|---------------|-----------------|---------------------|--------------|--------------|
| Differential pressure/<br>Volume flow | Duct sensor   | -60...+60 Pa    | 18 Pa               | -            | IV.Nc-P-0060 |
|                                       |               | -100...+100 Pa  | 30 Pa               |              | IV.Nc-P-0100 |
|                                       |               | -250...+250 Pa  | 75 Pa               |              | IV.Nc-P-0250 |
|                                       |               | -600...+600 Pa  | 180 Pa              | IV.Nc-P-0600 |              |



**pi**  
safety components

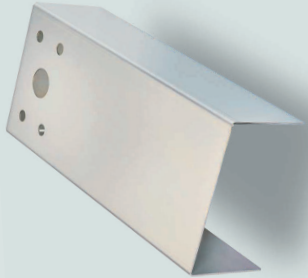
ACCESSORIES

made  
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Accessoires for actuators

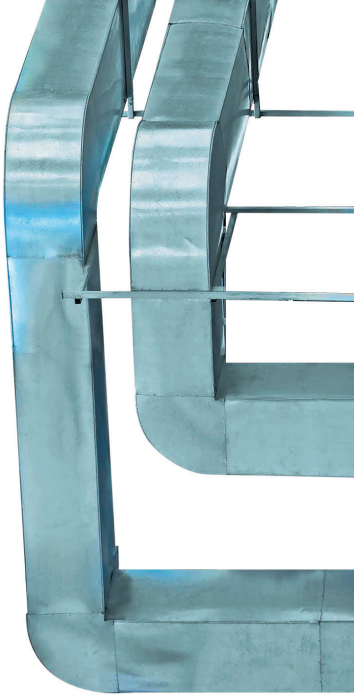
|                                                                                                                               |                                                                                       |
|-------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| <b>WS.Va-M</b>                                                                                                                |    |
| Stainless steel protection against harsh ambient conditions, vandalism etc.                                                   |                                                                                       |
| <b>T.J.Va-M</b>                                                                                                               |    |
| Insulation Housing for ambient temperature -60...+40 °C                                                                       |                                                                                       |
| <b>KR.Vz-12</b>                                                                                                               |   |
| Clamping adapter and anti-rotation device for mounting on round shafts (10-20 mm) and square square (VK 10-16 mm), galvanized |                                                                                       |
| <b>AH-12-08</b>                                                                                                               |  |
| Adapter 12mm square to 8 mm square                                                                                            |                                                                                       |
| <b>AH-12-10</b>                                                                                                               |  |
| Adapter 12mm square to 10 mm square                                                                                           |                                                                                       |
| <b>AH-12-11</b>                                                                                                               |  |
| Adapter 12mm square to 11 mm square                                                                                           |                                                                                       |

Ex i sensors and switching amplifiers

|                                                                                                                                    |                                                                                   |
|------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| <b>CPEx-FR0ST3</b>                                                                                                                 |  |
| Capillary frost protection, adjustable from -10°C - +15°C, length 3 meters, incl. fixing material, in conjunction with CPEx-DT1361 |                                                                                   |
| <b>CPEx-FR0ST6</b>                                                                                                                 |  |
| Capillary frost protection, adjustable from -10°C - +15°C, length 6 meters, incl. fixing material, in conjunction with CPEx-DT1361 |                                                                                   |
| <b>CPEx-DT1361</b>                                                                                                                 |  |
| Barrier for control cabinet mounting for CPEx-FR0ST*                                                                               |                                                                                   |



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Accessoires for 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 1/2", 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

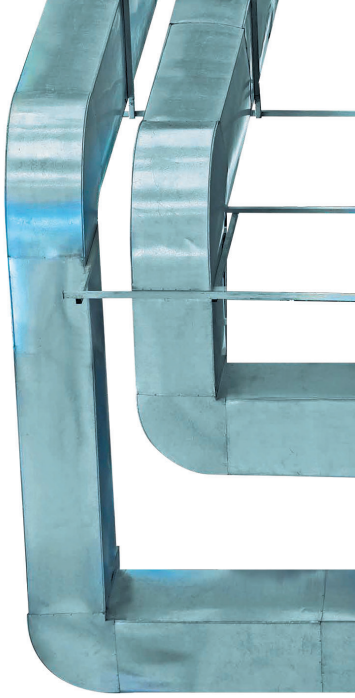


Zubehör Kalibrierung

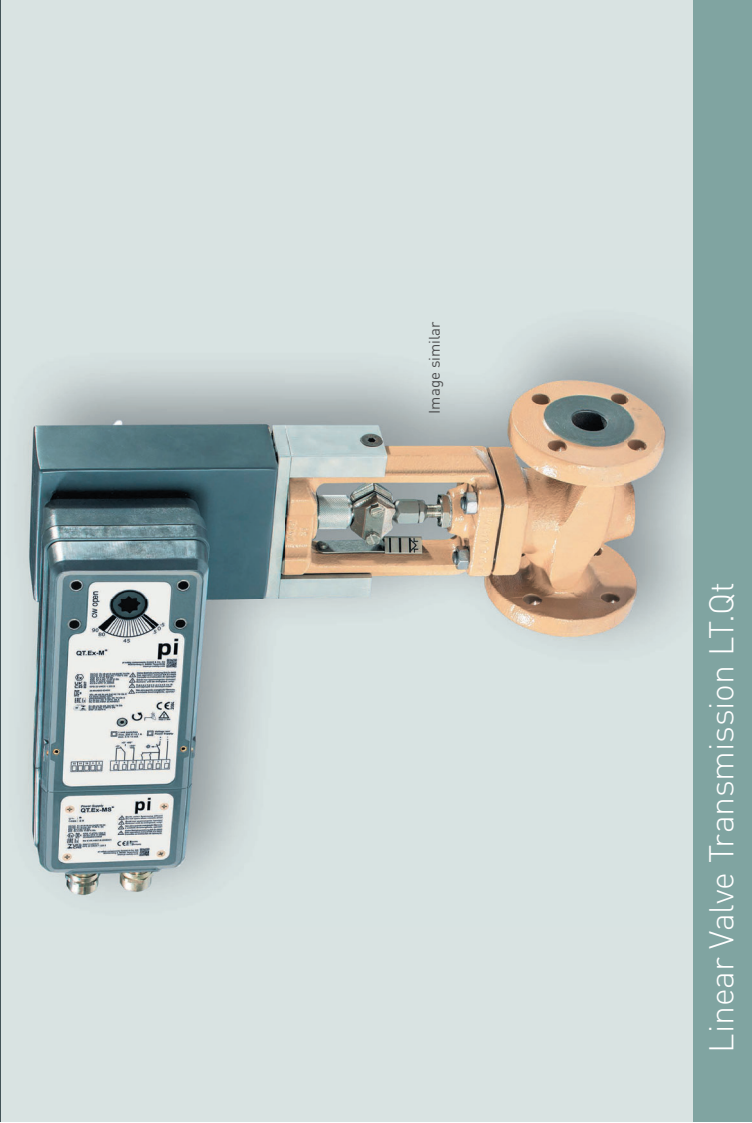
KA.Pi

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

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Linear Valve Transmission LT.Qt

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

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

| TYPE         | LT.Qt-10                                                 | LT.Qt-15                                                 | LT.Qt-20                                                 | LT.Qt-30                              | LT.Qt-42 |
|--------------|----------------------------------------------------------|----------------------------------------------------------|----------------------------------------------------------|---------------------------------------|----------|
| Hub<br>Kraft | 10 mm                                                    | 15 mm                                                    | 20 mm                                                    | 30 mm                                 | 42 mm    |
| 500 N        | QT.Ex-MF02-S...<br>QT.Ex-MF10(Y)-S...<br>QT.Ex-MF03-S... | QT.Ex-MF02-S...<br>QT.Ex-MF10(Y)-S...<br>QT.Ex-MF03-S... | QT.Ex-MF02-S...<br>QT.Ex-MF10(Y)-S...<br>QT.Ex-MF03-S... | QT.Ex-MF10(Y)-S...<br>QT.Ex-MF03-S... | -        |
| 800 N        | QT.Ex-MF10(Y)-S...<br>QT.Ex-MF03-S...                    | QT.Ex-MF10(Y)-S...<br>QT.Ex-MF03-S...                    | QT.Ex-MF10(Y)-S...<br>QT.Ex-MF03-S...                    | -                                     | -        |
| 1.000 N      | QT.Ex-MF10(Y)-S...<br>QT.Ex-MF03-S...                    | QT.Ex-MF10(Y)-S...<br>QT.Ex-MF03-S...                    | -                                                        | -                                     | -        |
| 1.500 N      | QT.Ex-MF10(Y)-S...<br>QT.Ex-MF03-S...                    | -                                                        | -                                                        | -                                     | -        |
| 2.000 N      | -                                                        | -                                                        | -                                                        | -                                     | -        |
| 2.500 N      | -                                                        | -                                                        | -                                                        | -                                     | -        |
| 3.000 N      | -                                                        | -                                                        | -                                                        | -                                     | -        |

| TYPE         | LT.Qt-10        | LT.Qt-15        | LT.Qt-20        | LT.Qt-30        | LT.Qt-42        |
|--------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Hub<br>Kraft | 10 mm           | 15 mm           | 20 mm           | 30 mm           | 42 mm           |
| 500 N        | QT.Ex-MYQ-S...  | QT.Ex-MYQ-S...  | QT.Ex-MYQ-S...  | QT.Ex-M(Y)-S... | QT.Ex-M(Y)-S... |
| 800 N        | QT.Ex-MYQ-S...  | QT.Ex-MYQ-S...  | QT.Ex-M(Y)-S... | QT.Ex-M(Y)-S... | QT.Ex-M-S...    |
| 1.000 N      | QT.Ex-M(Y)-S... | QT.Ex-M(Y)-S... | QT.Ex-M-S...    | QT.Ex-M-S...    | -               |
| 1.500 N      | QT.Ex-M(Y)-S... | QT.Ex-M-S...    | QT.Ex-M-S...    | -               | -               |
| 2.000 N      | QT.Ex-M(Y)-S... | QT.Ex-M-S...    | -               | -               | -               |
| 2.500 N      | QT.Ex-M-S...    | QT.Ex-M-S...    | -               | -               | -               |
| 3.000 N      | QT.Ex-M-S...    | QT.Ex-M-S...    | -               | -               | -               |

THINK GLOBAL - ACT CONCENTRATED



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