Product Description

The pico+ sensor offers a non-contact measurement of the distance to an object that has to be present within the sensor’s detection zone. Depending on the set window limits, a distance-proportional analogue signal is output.

The ultrasonic transducer surface of the pico+ sensors is laminated with a PTFE film. The transducer itself is sealed against the housing by a joint ring. This composition permits measurement in up to 0.5 bar over pressure. The window limits of the analogue output and its characteristic can be adjusted with the Teach-in procedure.

Proper use

pico+ ultrasonic sensors are used for non-contact detection of objects.

Installation

- Mount the sensor at the installation site.
- For the pico+100/TF we recommend not to use for mounting the first 5 mm of the M22 thread on the side of the transducer.

Safety Notes

- Read the operating instructions prior to start-up.
- Connection, installation and adjustment works should be carried out by expert personnel only.
- No safety component in accordance with the EU Machine Directive.

Proper use

- Mont the sensor at the installation site.
- For the pico+100/TF we recommend not to use for mounting the first 5 mm of the M22 thread on the side of the transducer.

Factory Setting

- Rising analogue characteristic curve between the blind zone and the operating range.
- Multifunctional input «Com» set to «Teach-in».

Synchronization

If the assembly distance falls below the values shown in fig. 2, the internal synchronization should be used. For this purpose set the switched outputs of all sensors in accordance to the diagram «Sensor adjustment with Teach-in procedure» at first. Then set the multifunctional output «Com» to «synchronization» (see »Further settings«). Finally connect pin 5 of the sensors plug of all sensors.

Maintenance

microsonic sensors are maintenance-free. In case of excess caked-on dirt we recommend to clean the sensor surface.

Notes

- The sensors of the pico+ family have a blind zone. Within this zone a distance measurement is not possible.
- Every time the power supply is switched on, the sensor detects its actual operating temperature and transmits it to the internal temperature compensation. The adjusted value is taken over after 120 seconds.
- In the normal operating mode, an illuminated yellow LED signals the object is within the adjusted window limits.
- If synchronization is activated the Teach-in is disabled (see »Further settings«).
- The sensor can be reset to its factory setting (see »Further settings«).
- Optionally all Teach-in and additional sensor parameter settings can be made using the LinkControl adapter (optional accessory) and the LinkControl software for windows©.

Fig. 2: Assembly distances, indicating synchronization

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*Fig. 1: Pin assignment with view onto sensor plug and colour coding of the microsonic connection cable*
## Technical Data

### Detection Zones

| Type       | Detection Zone | Max. Tightening Torque of Nuts | Weight   | Class of Protection | Type of Connection | Controls                    | Programmable Synchronisation | Storage Temperature | Response Time | Time Delay Before Availability | Analogue Output 4-20 mA | Operating Voltage Ua | Order No       |
|------------|----------------|--------------------------------|----------|---------------------|--------------------|-----------------------------|-----------------------------|----------------------|--------------|-------------------------------|--------------------------|-----------------------|----------------|---------------------|
| pico+15/TF | 20 mm          | 30 g                           | 1 Nm     | IP 67               | 5-pin M12 Initiator Plug | Teach-in via pin 5 (Com)   | Internal Synchronisation Up to 10 Sensors | -40°C to +85°C | 32 ms            | ≤ 300 ms                     | ≤ 500 Q, Rising/Falling Characteristic | 10 - 30 V DC for R ≤ 100 Q | pico+15/TF/I |
| pico+25/TF | 30 mm          | 30 g                           | 1 Nm     | IP 67               | 5-pin M12 Initiator Plug | Teach-in via pin 5 (Com)   | Internal Synchronisation Up to 10 Sensors | -40°C to +85°C | 64 ms            | ≤ 300 ms                     | ≤ 500 Q, Rising/Falling Characteristic | 10 - 30 V DC for R ≤ 100 Q | pico+25/TF/I |
| pico+35/TF | 40 mm          | 30 g                           | 1 Nm     | IP 67               | 5-pin M12 Initiator Plug | Teach-in via pin 5 (Com)   | Internal Synchronisation Up to 10 Sensors | -40°C to +85°C | 80 ms            | ≤ 300 ms                     | ≤ 500 Q, Rising/Falling Characteristic | 10 - 30 V DC for R ≤ 100 Q | pico+35/TF/I |
| pico+100/TF| 120 mm         | 30 g                           | 1 Nm     | IP 67               | 5-pin M12 Initiator Plug | Teach-in via pin 5 (Com)   | Internal Synchronisation Up to 10 Sensors | -40°C to +85°C | 80 ms            | ≤ 300 ms                     | ≤ 500 Q, Rising/Falling Characteristic | 10 - 30 V DC for R ≤ 100 Q | pico+100/TF/I |

### Technical Specifications

- **Blind Zone**: 20 mm
- **Operating Range**: 150 mm
- **Maximum Range**: 250 mm
- **Angle of Beam Spread**: See detection zone
- **Transducer Frequency**: 380 kHz
- **Resolution**: 0.069 mm
- **Display**: Detection zone at 150 mm
- **Dark Grey Areas**: Determined with a round bar and indicate the typical operating detection zone of the sensor. It is not possible to evaluate ultrasonic reflections outside this area.

### Additional Details

- **Time Delay Before Availability**: ≤ 300 ms
- **Dimensions**: 323 mm x 242 mm x 69 mm
- **Weight**: 30 g
- **Temperature Drift**: Internal compensated ± 1 %
- **Housing**: Plastic parts: PVDF, PBT;
- **Ultrasonic Transducer**: PTFE, FFKM
- **Operating Voltage**: 10 - 30 V DC, Terminal reverse polarity protected
- **Operating Voltage Ripple**: ≤ 10 %
- **Synchronisation**: Internal or LinkControl
- **Teach-in**: Via pin 5 (Com)
- **LEDs**: Green (operation), Yellow (state of analogue output)
- **Degree of Protection**: IP 67
- **IP Rating**: 60 529
- **Protection Type**: EN 60947-5-2

The content of this document is subject to technical changes. Specifications in this document are presented in a descriptive way only. They do not warrant any product features.