



Operating Instructions

pico+15/I	pico+15/WK/I
pico+25/I	pico+25/WK/I
pico+35/I	pico+35/WK/I
pico+100/I	pico+100/WK/I
pico+15/U	pico+15/WK/U
pico+25/U	pico+25/WK/U
pico+35/U	pico+35/WK/U
pico+100/U	pico+100/WK/U

Ultrasonic sensor with one analogue output

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 window limits of the analogue output and its characteristic can be adjusted with the Teach-in procedure.

Two LEDs indicate operation and the state of the analogue output.

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

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

Installation

- Mount the sensor at the installation site.
- Connect a connection cable to the M12 device plug.

Start-Up

- Connect the power supply.
- Carry out the sensor adjustment in accordance with the diagram.

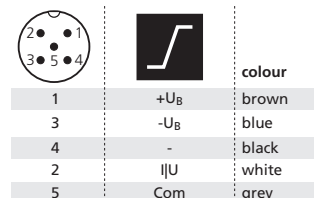


Fig. 1: Pin assignment with view onto sensor plug and colour coding of the microsonic connection cable

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.

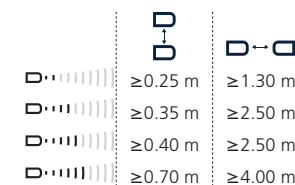


Fig. 2: Assembly distances, indicating synchronization

Maintenance

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

Notes

- The sensors of the pico+ family have a blind zone. Within this zone a distance measurement is not possible.
- The pico+ sensors are equipped with an internal temperature compensation. Due to the sensors self heating, the temperature compensation reaches its optimum working-point after approx. 20 minutes of operation.
- 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®.

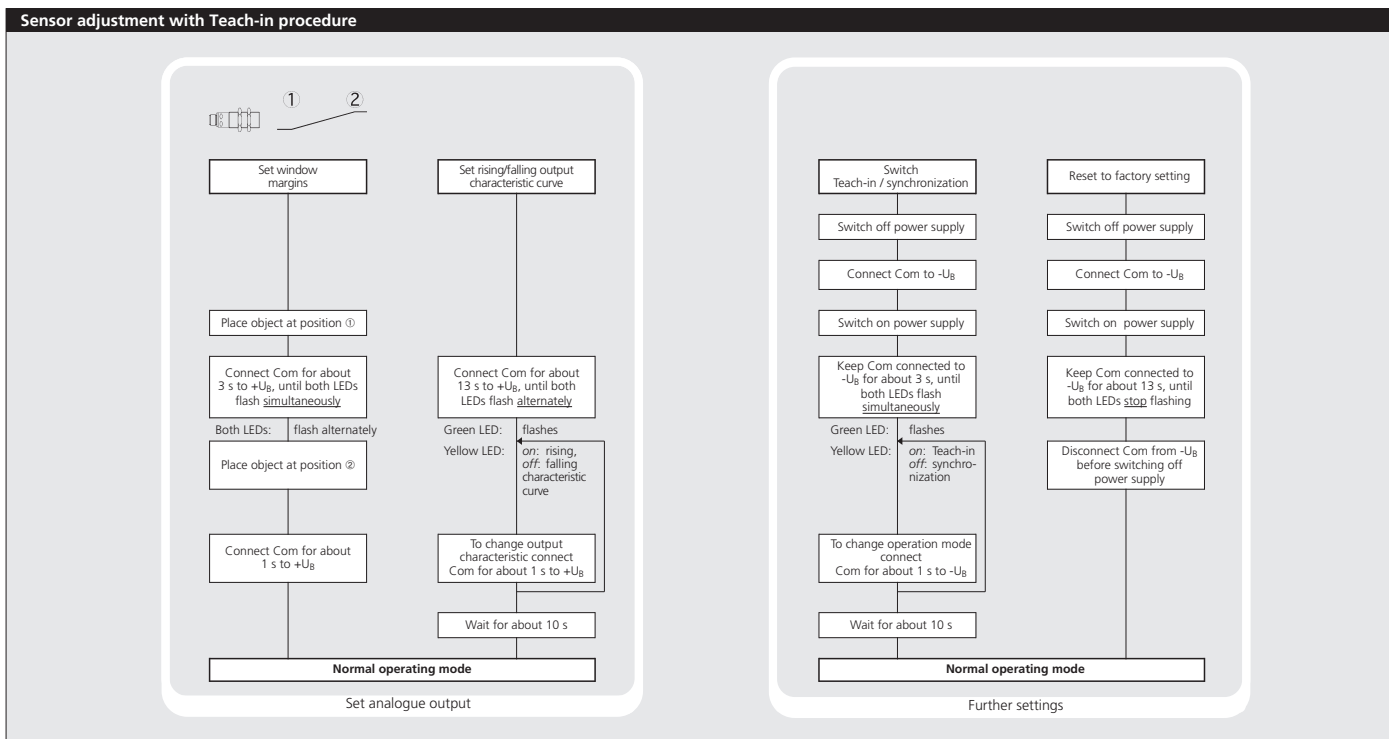
Contact

Sensor Partners BV

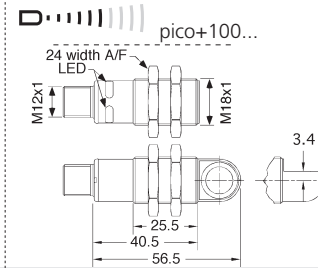
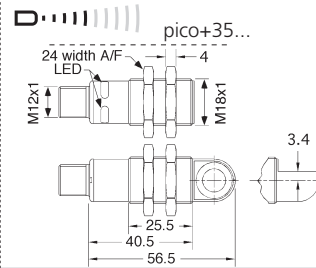
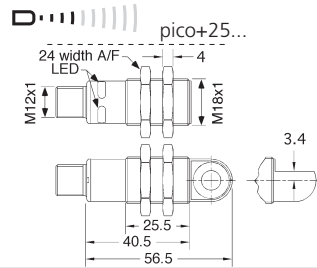
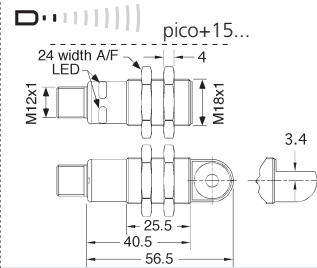
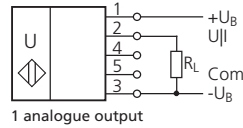
James Wattlaan 15
5151 DP Drunen
The Netherlands
+31 (0)416 - 37 82 39
info@sensorpartners.com
sensorpartners.com

Sensor Partners BVBA

Z.1 Researchpark 310
B-1731, Zellik
Belgium
+32 (0)2 - 464 96 90
info@sensorpartners.com
sensorpartners.com



Technical data



blind zone
operating range
maximum range
angle of beam spread
transducer frequency
resolution

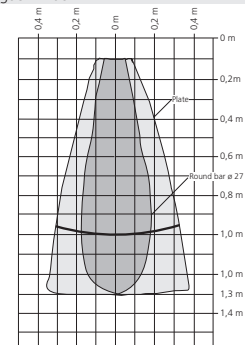
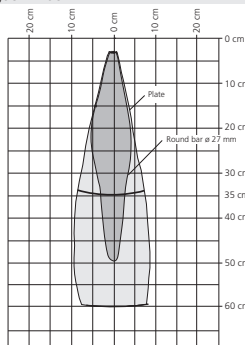
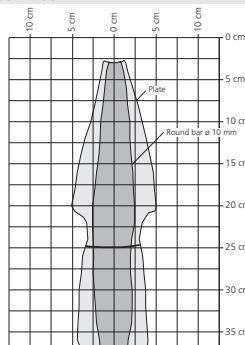
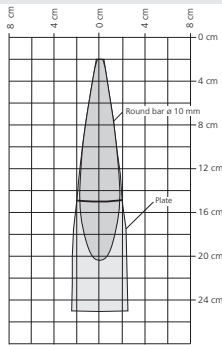
20 mm
150 mm
250 mm
See detection zone
380 kHz
0.069 mm

30 mm
250 mm
350 mm
See detection zone
320 kHz
0.069 mm bis 0.10 mm, depending on the analogue window

65 mm
350 mm
600 mm
See detection zone
400 kHz
0.069 mm bis 0.17 mm, depending on the analogue window

120 mm
1,000 mm
1,300 mm
See detection zone
200 kHz
0.069 mm bis 0.38 mm, depending on the analogue window

detection zones
for different objects:
The dark grey areas are determined with a round bar and indicate the typical operating range of a sensor. In order to obtain the light grey areas, a plate (100 x 100 mm) is introduced into the beam spread from the side. In doing so, the optimum angle between plate and sensor is always employed. This therefore indicates the maximum detection zone of the sensor. It is not possible to evaluate ultrasonic reflections outside this area.



reproducibility
accuracy
no-load current consumption
operating voltage ripple
housing

± 0.15 %
± 1 % (Temperature drift internal compensated)
< 40 mA
± 10 %
brass sleeve, nickel-plated, plastic parts: PBT; ultrasonic transducer: polyurethane foam, epoxy resin with glass content

± 0.15 %
± 1 % (Temperature drift internal compensated)
< 40 mA
± 10 %
brass sleeve, nickel-plated, plastic parts: PBT; ultrasonic transducer: polyurethane foam, epoxy resin with glass content

± 0.15 %
± 1 % (Temperature drift internal compensated)
< 40 mA
± 10 %
brass sleeve, nickel-plated, plastic parts: PBT; ultrasonic transducer: polyurethane foam, epoxy resin with glass content

± 0.15 %
± 1 % (Temperature drift internal compensated)
< 40 mA
± 10 %
brass sleeve, nickel-plated, plastic parts: PBT; ultrasonic transducer: polyurethane foam, epoxy resin with glass content

max. tightening torque of nuts
class of protection to EN 60 529
type of connection
controls
indicators

15 Nm
IP 67
5-pin M12 initiator plug
Teach-in via pin 5 (Com)
LED green (operation)
LED yellow (state of analogue output)

15 Nm
IP 67
5-pin M12 initiator plug
Teach-in via pin 5 (Com)
LED green (operation)
LED yellow (state of analogue output)

15 Nm
IP 67
5-pin M12 initiator plug
Teach-in via pin 5 (Com)
LED green (operation)
LED yellow (state of analogue output)

15 Nm
IP 67
5-pin M12 initiator plug
Teach-in via pin 5 (Com)
LED green (operation)
LED yellow (state of analogue output)

programmable synchronisation
operating temperature
storage temperature
response time¹⁾
time delay before availability¹⁾
norm conformity

internal synchronisation up to 10 sensors
-25°C to +70°C
-40°C to +85°C
32 ms
< 300 ms
EN 60947-5-2

internal synchronisation up to 10 sensors
-25°C to +70°C
-40°C to +85°C
32 ms
< 300 ms
EN 60947-5-2

internal synchronisation up to 10 sensors
-25°C to +70°C
-40°C to +85°C
64 ms
< 300 ms
EN 60947-5-2

internal synchronisation up to 10 sensors
-25°C to +70°C
-40°C to +85°C
80 ms
< 300 ms
EN 60947-5-2

analogue output 4-20 mA
operating voltage U_B

R_L ≤ 500 Ω, rising/falling characteristic
10 - 30 V DC for R_L ≤ 100 Ω,
20 - 30 V DC for R_L > 100 Ω,
terminal reverse polarity protected, Class 2

R_L ≤ 500 Ω, rising/falling characteristic
10 - 30 V DC for R_L ≤ 100 Ω,
20 - 30 V DC for R_L > 100 Ω,
terminal reverse polarity protected, Class 2

R_L ≤ 500 Ω, rising/falling characteristic
10 - 30 V DC for R_L ≤ 100 Ω,
20 - 30 V DC for R_L > 100 Ω,
terminal reverse polarity protected, Class 2

R_L ≤ 500 Ω, rising/falling characteristic
10 - 30 V DC for R_L ≤ 100 Ω,
20 - 30 V DC for R_L > 100 Ω,
terminal reverse polarity protected, Class 2

order no. directly radiating weight
order no. angular head weight
analogue output 0-10 V

pico+15/I
30 g
pico+15/WK/I
35 g
R_L ≥ 100 kΩ, short circuit proof, rising/falling characteristic

pico+25/I
30 g
pico+25/WK/I
35 g
R_L ≥ 100 kΩ, short circuit proof, rising/falling characteristic

pico+35/I
30 g
pico+35/WK/I
35 g
R_L ≥ 100 kΩ, short circuit proof, rising/falling characteristic

pico+100/I
30 g
pico+100/WK/I
35 g
R_L ≥ 100 kΩ, short circuit proof, rising/falling characteristic

operating voltage U_B
order no. directly radiating weight
order no. angular head weight

15 - 30 V DC, terminal reverse polarity protected, Cl. 2
pico+15/U
30 g
pico+15/WK/U
35 g

15 - 30 V DC, terminal reverse polarity protected, Cl. 2
pico+25/U
30 g
pico+25/WK/U
35 g

15 - 30 V DC, terminal reverse polarity protected, Cl. 2
pico+35/U
30 g
pico+35/WK/U
35 g

15 - 30 V DC, terminal reverse polarity protected, Cl. 2
pico+100/U
30 g
pico+100/WK/U
35 g

1) Can be programmed with LinkControl