wictotolic



Operating manual

mic Ultrasonic Sensors with one switched output

mic-25/D/M mic-35/D/M mic-130/D/M mic-340/D/M mic-600/D/M

Product description

- The mic-sensor with one switched output measures the distance to an object within the detection zone contactless. Depending on the adjusted detect distance the switched output is set.
- The output functions are changeable from NOC to NCC.
- The sensors are adjustable using Teach-in processes via the Comchannel (Pin 5).
- Using the LinkControl adapter (optional accessory) all Teach-in and additional sensor parameter settings may be made by a Windows-Software.

Important instructions for assembly and application

All employee and plant safety-relevant measures must be taken prior to assembly, start-up, or maintenance work (see operation manual for the entire plant and the operator instruction of the plant).

The sensors are not considered as safety equipment and may not be used to ensure human or machine safety!

The mic-sensors indicate a **blind** zone, in which the distance cannot be measured. The operating range indicates the distance of the sensor that can be applied with normal reflectors with sufficient function reserve. When using good reflectors, such as a calm water surface, the sensor can also be used up to its maximum range. Objects that strongly absorb (e.g. plastic foam) or diffusely reflect sound (e.g. pebble stones) can also reduce the defined operating range.

Assembly instructions

- Assemble the sensor at the installation location.
- Plug in the connector cable to the M 12 connector, see fig. 1.

Synchronisation

If the assembly distances shown in fig. 2 for two or more sensors are ex-

ceeded the integrated synchronisation should be used. Connect Sync/Comchannels (pin 5 at the units receptable) of all sensors (10 maximum).

Start-up

mic-sensors are delivered factory made with the following settings:

- Switched output on NOC
- Detecting distance at operating range and half operating range
- Maximum detection range set to maximum range

Set the parameters of the sensor using the Teach-in procedure to adjust the detect points.

Operation

mic-sensors work maintenance free. Small amounts of dirt on the surface do not influence function. Thick layers of dirt and caked-on dirt affect sensor function and therefore must be removed.

Note

■ mic-sensors have internal temperature compensation. Because the

sensors heat up on their own, the temperature compensation reaches its optimum working point after approx. 30 minutes of opera-

- During Teach-in mode, the hysteresis loops are set back to factory settings.
- If no signal is detected for 20 seconds during teach-in procedure the made changes are stored and the sensor returns to normal mode operation.
- You can reset the factory settings at any time, see »Rese setting«.

| blue | .(II) | Enclosur |
|--------------------------------|-----------------------------------|----------|
| colour brown | (E 🗵 | 201 |
| | | |
| tory settings et to factory | Fig. 2: Minimum assembly distance | |

black white Com. grey

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

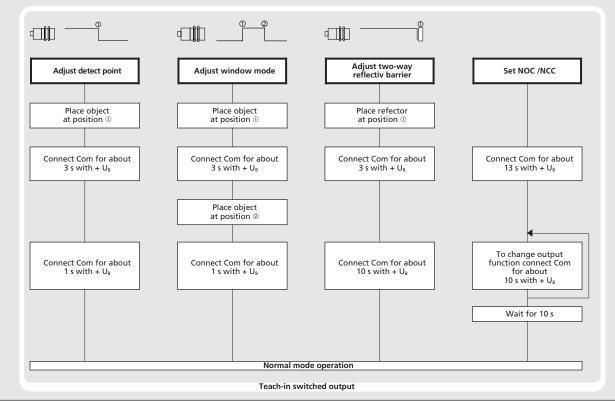
| | ∸ | D⊸a |
|----------|---------|----------|
| | ≥0.35 m | ≥2.50 m |
| D:::::11 | ≥0.40 m | ≥2.50 m |
| DIII | ≥1.10 m | ≥8.00 m |
| DIIII | ≥2.00 m | ≥18.00 m |
| DIIII | ≥4.00 m | ≥30.00 m |
| : | | : |

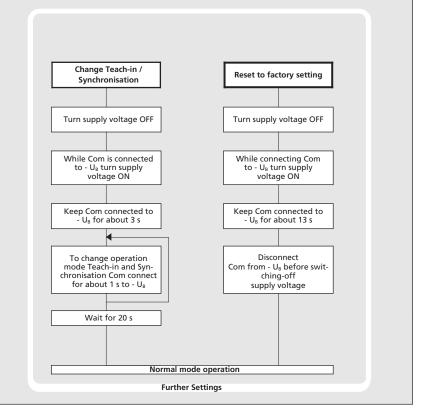
Enclosure Type 1 For use only in industrial machinery NFPA 79 applications.

2014/30/EU

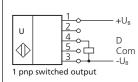
The proximity switches shall be used with a Listed (CYJV/7) cable/connector assembly rated minimum 32 Vdc, minimum 290 mA, in the final installation.

Set the mic-sensor using the Teach-in procedure





Technical data



Blind zone
Operating range
Maximum range
Angle of beam spread
Transducer frequency
Resolution, sampling rate
Reproducibility
Accuracy

Detection zones
for different objects:
The dark grey areas are determind
with a thin round bar (10 or 27 mm dia.)
and indicate the typical operating range
of a sensor. In order to obtain the light grey
areas, a plate (500 x 500 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.

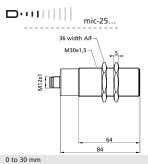
Operating voltage U_B
Voltage ripple
No-load supply current
Housing

Class of protection to EN 60529 Norm conformity Type of connection

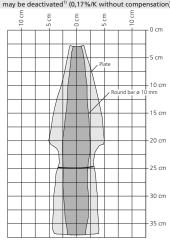
Controls Indicators Programmable Operating temperature Storage temperature Weight Switching hysteresis¹⁰ switching frequency¹⁰ Response time¹⁰ Time delay before availibility

> Order No. Switched output

1) Can be programmed with LinkControl



250 mm
350 mm
Please see detection zone
320 kHz
0,18 mm
± 0,15 %
± 1 %, Temperature drift internal compensated
may be deactivated" (0,17%/K without compensation)



9 V to 30 V DC, reverse polarity protection (Class 2) $\pm 10~\%$

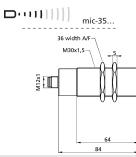
≤ 80 mA Brass sleeve, nickel-plated, plastic parts: PBT; Ultrasonic transducer: polyurethane foam, epoxy resin with glass content

EPOSY resint with glass con-IP 67 EN 60947-5-2 5-pin initiator plug, Brass, nickel-plated Yes, via Com-channel No

Yes, with Teach-in and LinkControl -25°C bis +70°C -40°C bis +85°C

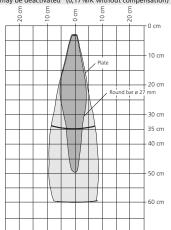
200 g 3 mm 11 Hz 32 ms < 300 ms

mic-25/D/M pnp, U_B - 2 V, I_{max} = 200 mA switchable NOC/NCC, short-circuit-proof



0 to 60 mm
350 mm
600 mm
Please see detection zone
400 kHz
0,18 mm
± 0,15 %
± 1 %, Temperature drift internal compensated

± 1 %, Temperature drift internal compensated
may be deactivated 1 (0,17%/K without compensation)



9 V to 30 V DC, reverse polarity protection (Class 2) ±10 % ≤ 80 mA

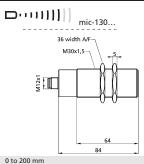
≤ 80 mA Brass sleeve, nickel-plated, plastic parts: PBT; Ultrasonic transducer: polyurethane foam, epoxy resin with glass content

IP 67 EN 60947-5-2 5-pin initiator plug, Brass, nickel-plated Yes, via Com-channel No Yes, with Teach-in and

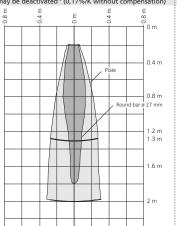
Yes, with Teach-in and LinkControl -25°C bis +70°C -40°C bis +85°C

200 g 5 mm 8 Hz 64 ms < 300 ms

mic-35/D/M pnp, U_B - 2 V, I_{max} = 200 mA switchable NOC/NCC, short-circuit-proof



1.300 mm
2.000 mm
Please see detection zone
200 kHz
0,18 mm
± 0,15 %
± 1 %, Temperature drift internal compensated
may be deactivated¹⁾ (0,17%/K without compensation)



9 V to 30 V DC, reverse polarity protection (Class 2) ±10 % ≤ 80 mA

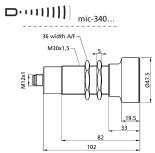
Brass sleeve, nickel-plated, plastic parts: PBT; Ultrasonic transducer: polyurethane foam, epoxy resin with glass content IP 67

EN 60947-5-2 5-pin initiator plug, Brass, nickel-plated Yes, via Com-channel

No
Yes, with Teach-in and LinkControl
-25°C bis +70°C
-40°C bis +85°C

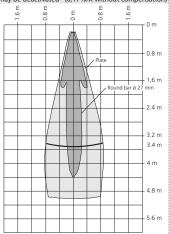
-40°C bis +85°C 200 g 20 mm 6 Hz 92 ms < 300 ms

mic-130/D/M pnp, U_B - 2 V, I_{max} = 200 mA switchable NOC/NCC, short-circuit-proof



0 to 350 mm 3.400 mm 5.000 mm Please see detection zone 120 kHz 0,18 mm

to, 18 mm
± 0,15 %
± 1 %, Temperature drift internal compensated
may be deactivated 10 (0.17 %/K without compensation



9 V to 30 V DC, reverse polarity protection (Class 2) $\pm 10 \%$ $\leq 80 \text{ mA}$

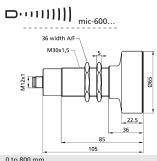
S 80 mA Brass sleeve, nickel-plated, plastic parts: PBT; Ultrasonic transducer: polyurethane foam, epoxy resin with glass content IP 67

EN 60947-5-2 5-pin initiator plug, Brass, nickel-plated Yes, via Com-channel No

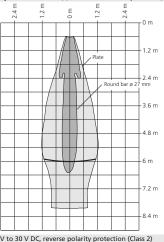
Yes, with Teach-in and LinkControl -25°C bis +70°C -40°C bis +85°C 260 q

260 g 50 mm 3 Hz 172 ms < 300 ms

mic-340/D/M pnp, U_B - 2 V, I_{max} = 200 mA switchable NOC/NCC, short-circuit-proof



0 to 800 mm
6.000 mm
8.000 mm
Please see detection zone
80 kHz
0,18 mm
± 0,15 %
± 1 %, Temperature drift internal compensated
may be deactivated" (0,17%/K without compensation)



9 V to 30 V DC, reverse polarity protection (Class 2) ±10 % 580 mA
Brass sleeve, nickel-plated, plastic parts: PBT;
Ultrasonic transducer: polyurethane foam, epoxy resin with glass content
IP 67
EN 60947-5-2
5-pin initiator plug,
Brass, nickel-plated

Brass, nickel-plated
Yes, via Com-channel
No
Yes, with Teach-in and LinkControl
-25°C bis +70°C
-40°C bis +85°C
320 g
100 mm
2 Hz
240 ms
< 3300 ms

mic-600/D/M pnp, U_B - 2 V, I_{max} = 200 mA switchable NOC/NCC, short-circuit-proof