**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 Com-channel (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 M12 connector, see fig. 1.

**Synchronisation**

If the assembly distances shown in fig. 2 for two or more sensors are exceeded the integrated synchronisation should be used. Connect Sync/Com channels (pin 5 at the units recepable) 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 operation.
- 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 »Reset to factory setting«.

**Set the mic-sensor using the Teach-in procedure**

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**Change Teach-in / Synchronisation**

- Turn supply voltage OFF
- While Com is connected to +U, turn supply voltage ON
- Keep Com connected to +U for about 3 s
- Disconnect Com from +U before switching-off supply voltage

**Reset to factory setting**

- Turn supply voltage OFF
- While connecting Com to -U, turn supply voltage ON
- Keep Com connected to -U for about 13 s

**Further Settings**

**Normal mode operation**

- Teach-in switched output
- Change operation mode Teach-in and synchronisation Com connect for about 1 s to -U

**Normal mode operation**

- Disconnect Com from -U before switching-off supply voltage

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

**Fig. 2: Minimum assembly distance**

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**Enclosure Type 1**

For use only in industrial machinery NFPA 79 applications.

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.
Technical data

Operating voltage $U_B$
- pnp, $UB - 2V$, $I_{max} = 200mA$

Class of protection to EN 60529
- EN 60947-5-2
- IP 67

Ultrasonic transducer: polyurethane foam, epoxy resin with glass content
- Brass, nickel-plated

Plastic parts: PBT;
- Switchable NOC/NCC, short-circuit-proof

No-load supply current
- ≤ 80 mA

Housing
- Brass sleeve, nickel-plated

Type of connection
- 5-pin initiator plug,
- Yes, via Com-channel

Programmable
- No, with Teach-in and LinkControl

Switching frequency
- 9 V to 30 V DC, reverse polarity protection (Class 2)
- ≤ 10 %
- ≤ 80 mA
- Yes, via Com-channel
- No
- No
- Yes, with Teach-in and LinkControl

Operating temperature
- -25°C bis +70°C
- -20°C bis +85°C

Storage temperature
- 200°C

Weight
- 30 mm

Switching hysteresis
- 3 mm

Switching frequency
- 11 Hz

Response time
- 64 ms

Time delay before availability
- ≤ 300 ms

Order No.
- mic-25/D/M
- mic-35/D/M
- mic-130/D/M
- mic-340/D/M
- mic-600/D/M

Switched output
- pnp, $U_B - 2V$, $I_{max} = 200mA$
- switchable NOC/NCC, short-circuit-proof

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.