**Product description**

The sks sensor offers a non-contact measurement of the distance to an object which must be positioned within the sensor’s detection zone. The switched output is set in dependence of the adjusted detect distance.

Via the push-button, the distance and operating mode can be adjusted (Teach-in). Two LEDs indicate operation and the state of the switched output. The output function is changeable from NOC to NCC.

**IO-Link**

The sks sensor is IO-Link-capable in accordance with IO-Link specification V1.1 and supports Smart Sensor Profile like Digital Measuring Sensor.

**Safety notes**

- Read operating instructions prior to start-up.
- Connection, installation and adjustment works may only be carried out by expert personnel.
- No safety component according to EU Machinery Directive.

**Proper use**

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

**Mounting**

- Mount the sensor at installation site, Maximum torque: 0.5 Nm
- Connect a connection cable to the M8 device plug

**Start-Up**

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

**Notes**

- 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 45 seconds.
- If the sensor was switched off for at least 30 minutes and after powering on the switched output is not set for 30 minutes a new adjustment of the internal temperature compensation to the actual mounting conditions takes place.
- The sks sensor has a blind zone within which distance measurements are not possible.
- In the normal operating mode, an illuminated yellow LED signals the switched output is switched through.
- In the Set detect point – method A: Teach-in procedure the actual distance to the object is taught to the sensor as the detect point. If the object moves towards the sensor (e.g. with level control) then the taught distance is the level at which the sensor has to switch the output.
- If the object to be scanned moves into the detection area from the side, the Set detect point +8 % – method B: Teach-in procedure should be used. In this way the switching distance is set 8% further than the actual measured distance to the object. This ensures a reliable switching distance even if the height of the objects varies slightly, see fig. 2.
- In the two-way reflective barrier operating mode, the object has to be within the range of 0-85% of the set distance.

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### Sensor adjustment with Teach-in procedure

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### Factory setting

- Operating with one detect point
- Switched output on NOC
- Detect points at operating range
- Filter F01
- Filter strength P00

### Operating modes

Three operating modes are available for the switches output:

- Normal operating mode, shortly press the push-button.
- в Normal mode shortly press the push-button.
- в Normal mode shortly press the push-button.

### Checking operation mode

The green LED stops shining for one second, then it will show the current operating mode:

1 x flashing = operation with one switching point
2 x flashing = window mode
3 x flashing = reflective barrier

After a break of three seconds, the green LED shows the output function:

1 x flashing = NOC
2 x flashing = NCC

### Maintenance

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

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### Operating manual

sks-15/CF/A

Ultrasonic proximity switch with one switching output and IO-Link interface

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### Technical data

**blind zone**

- Operating range: 20 mm
- Maximum range: 250 mm

**resolution, sampling rate**

- Maximum angle of beam spread: 380 kHz
- Resolution: ±0.15 mm

**detection zones**

For different objects:
- The dark grey areas are determined with a thin round bar (10 mm dia.)
- 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.

**accuracy**

- ± 1% (Temperature drift internal compensated)

**operating voltage U_{B}**

- 10 - 30 V DC, reverse polarity protection

**no-load current consumption**

- ±10 %
- < 30 mA

**housing**

- ABS
- Ultrasonic transducer: polyurethane foam, epoxy resin with glass content

**class of protection to EN 60 529**

- IP 67

**type of connection**

- 4-pin M8 initiator plug

**controls**

- Teach-in push-button

**indicators**

- LED green (operation)
- LED yellow (state of output)

**programmable**

- IO-Link

**operating temperature**

- 25°C to +70°C

**storage temperature**

- -40°C to +85°C

**weight**

- 8 g

**switching hysteresis**

- 2 mm

**switching frequency**

- 25 Hz

**response time**

- ≤ 32 ms

**time delay before availability**

- ≤ 300 ms

**norm conformity**

- EN 60947-5-2

**order no.**

- sks-15/CIV

- Push-Pull, U_{B} = 3 V, U_{B} + 3 V, I_{max} = 100 mA

- Switchable NC/NCC, short-circuit-proof

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For further information on IO-Link, please contact microsonic sales.

The current IODD library and information on commissioning with IO-Link are available on the Internet at www.microsonic.de/sks.