



Model Number

UCC1000-18GH90-E2-IO-V1

Single head system

Features

- **IO-link interface for service and process data**
- **Switch output**
- **Temperature compensation**
- **Stainless steel version**

Description

This ultrasonic sensor is a contactless distance sensor based on the echo run time principle. It is suitable for the detection of solid, liquid or powder sound-reflecting objects. The IO-Link interface makes it ideally suited to applications in which the consistent communication of process, parameter and diagnostic data through to sensor level plays an important role.

Technical data

General specifications

| | |
|-----------------------|-----------------|
| Sensing range | 100 ... 1000 mm |
| Adjustment range | 110 ... 1000 mm |
| Dead band | 0 ... 100 mm |
| Standard target plate | 20 mm x 20 mm |
| Transducer frequency | approx. 200 kHz |
| Response delay | approx. 100 ms |
| Linearity | frontal |

Nominal ratings

| | |
|--------------------------------------|-----------|
| Linearity error | ≤ ± 2 mm |
| Temperature drift | ≤ ± 2.5 % |
| Time delay before availability t_v | ≤ 120 ms |

Limit data

| | |
|--------------------------|-----------|
| Permissible cable length | max. 20 m |
|--------------------------|-----------|

Indicators/operating means

| | |
|------------|--|
| LED green | solid green: Power on flashes: IO-Link ON |
| LED yellow | on: object within measuring range |

Electrical specifications

| | |
|-------------------------------|-----------------------------------|
| Rated operating voltage U_e | 24 V DC |
| Operating voltage U_B | 12 ... 30 V DC (including ripple) |
| Ripple | ≤ 10 % |
| No-load supply current I_0 | ≤ 50 mA |

Interface

| | |
|----------------|---------|
| Interface type | IO-Link |
|----------------|---------|

Switching output

| | |
|-------------------------|---|
| Output type | 1 switch output PNP, NO SIO mode |
| Operating current I_L | ≤ 200 mA , short-circuit/overload protected |
| Switching frequency | 5 Hz |
| Voltage drop | ≤ 2 V |
| Off-state current | ≤ 0.01 mA |
| Switch-on delay | ≤ 100 ms |

Ambient conditions

| | |
|----------------------|---------------------------------|
| Ambient temperature | -25 ... 70 °C (-13 ... 158 °F) |
| Storage temperature | -40 ... 85 °C (-40 ... 185 °F) |
| Shock resistance | 30 g , 11 ms period |
| Vibration resistance | 10 ... 55 Hz , Amplitude ± 1 mm |

Mechanical specifications

| | |
|-----------------------|---|
| Connection type | Connector M12 x 1 , 4-pin |
| Degree of protection | IP67 |
| Material | |
| Housing | High grade stainless steel |
| Transducer | PTFE coated; epoxy resin/hollow glass sphere mixture; polyurethane foam |
| Installation position | any position |
| Mass | 90 g |
| Mounting | max. tightening torque: : 60 Nm |

Compliance with standards and directives

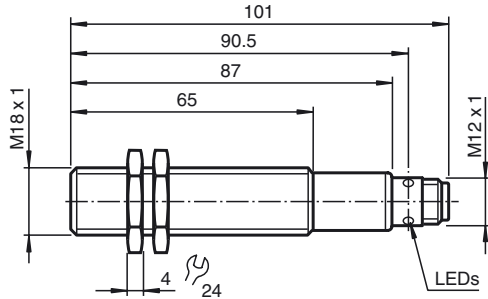
| | |
|---------------------|---|
| Standard conformity | |
| Standards | EN 60947-5-2:2007 + A1:2012 IEC 60947-5-2:2007 + A1:2012 |

Approvals and certificates

| | |
|--------------|--|
| CCC approval | CCC approval / marking not required for products rated ≤36 V |
|--------------|--|

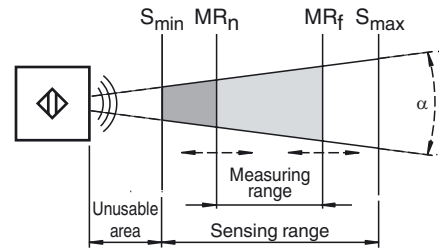
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Dimensions

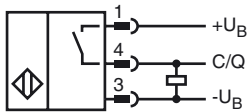


Additional Information

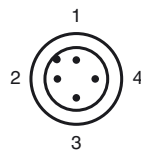
Area definitions



Electrical Connection



Pinout



Wire colors in accordance with EN 60947-5-2

| | | |
|---|----|---------|
| 1 | BN | (brown) |
| 2 | WH | (white) |
| 3 | BU | (blue) |
| 4 | BK | (black) |

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Accessories

OMH-04

Mounting aid for round steel ø 12 mm or sheet 1.5 mm ... 3 mm

BF 18

Mounting flange, 18 mm

BF 18-F

Mounting flange with dead stop, 18 mm

BF 5-30

Universal mounting bracket for cylindrical sensors with a diameter of 5 ... 30 mm

UVW90-K18

Ultrasonic -deflector

V1-G-2M-PVC

Female cordset, M12, 4-pin, PVC cable

V1-G-2M-PUR

Female cordset, M12, 4-pin, PUR cable

V1-W-2M-PUR

Female cordset, M12, 4-pin, PUR cable

Description of the sensor functions

The C/Q connection of this sensor provides double function. If the sensor recognizes a connected IO-Link master and receives a communication protocol directly after power on, the sensor turns into IO-Link communication mode. If the communication protocol is missing after power on, the sensor turns into SIO mode. In this case at this pin a conventional switching signal is provided.

SIO Mode (standard switching output)

| Object position | Output state |
|---|--------------|
| Object in unusable area | undefined |
| Object in sensing range but not in programmed measuring range | off |
| Object in programmed measuring range | on |

Communication in IO-Link mode

Example parametrization for variable parameters

| Process data | Object position [mm] |
|----------------------|---|
| undefined | $0 \leq \text{object distance} < 100$ |
| -1 | $100 \leq \text{object distance} < 110$ |
| -2 | $110 \leq \text{object distance} < MR_n$ |
| Object distance [mm] | $MR_n \leq \text{object distance} < MR_f$ |
| -3 | $MR_f \leq \text{object distance} < 1000$ |
| -4 | unknown object distance |

| Device ID | M18 | 30 02 00 hex | |
|---------------------------------|----------------------|--------------|---------------|
| Informational data (read only) | Value range | Sub-index | |
| Interne Temperatur: | -25 °C ... 105 °C | 1 | |
| Parameter data (read / write) | Value range | Sub-index | Default value |
| Start of measuring range MB_n | 110 mm ... MR_f | 7/8 | 110 mm |
| end of measuring range MB_f | $> MR_n$... 1000 mm | 9/10 | 1000 mm |
| Filter depth for averaging | 0 ... 255 | 2 | 3 |

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