CE IO-Link

Model Number

UC1000-18GM90A-E2-IO-V1

Single head system

Features

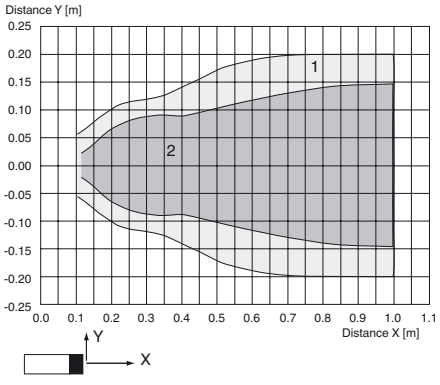
- **IO-link interface for service and process data**
- **Switch output**
- **Temperature compensation**

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.

Diagrams

Characteristic response curve



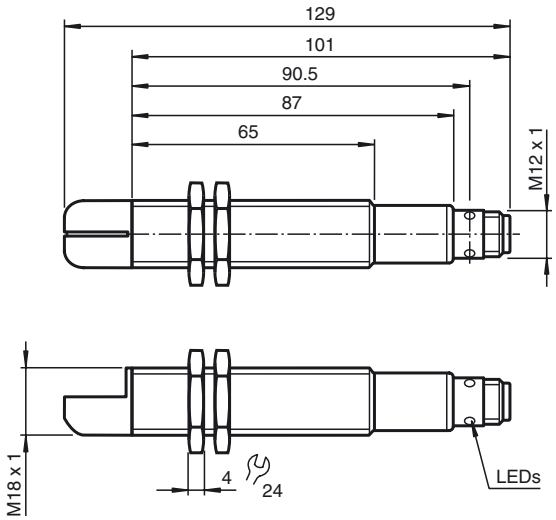
Curve 1: flat surface 100 mm x 100 mm
Curve 2: round bar, Ø 25 mm

Technical data

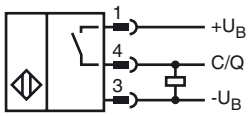
General specifications	
Sensing range	100 ... 1000 mm
Adjustment range	110 ... 1000 mm
Dead band	0 ... 100 mm
Standard target plate	100 mm x 100 mm
Transducer frequency	approx. 200 kHz
Response delay	approx. 100 ms
Linearity	lateral
Nominal ratings	
Linearity error	≤ ± 2 mm
Temperature drift	≤ ± 2.5 %
Time delay before availability t_v	≤ 120 ms
Limit data	
Permissible cable length	max. 20 m
Indicators/operating means	
LED green	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	brass, nickel-plated
Transducer	epoxy resin/hollow glass sphere mixture; foam polyurethane, cover PBT
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

Release date: 2016-02-16 08:16 Date of issue: 2016-02-16 228396_eng.xml

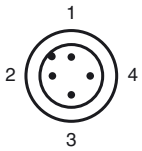
Dimensions



Electrical Connection



Pinout

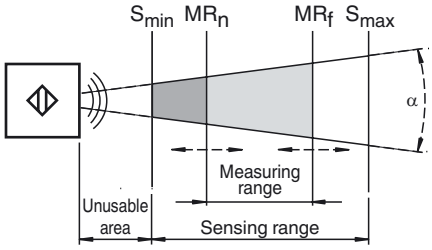


Wire colors in accordance with EN 60947-5-2

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

Additional Information

Area definitions



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Refer to “General Notes Relating to Pepperl+Fuchs Product Information”.
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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 ≤ object distance< 100
-1	100 ≤ object distance < 110
-2	110 ≤ object distance < MR_n
Object distance [mm]	MR_n ≤ object distance < MR_f
-3	MR_f ≤ 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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