

Ultrasonic sensor

UB2000-30GM-H3-Y48481

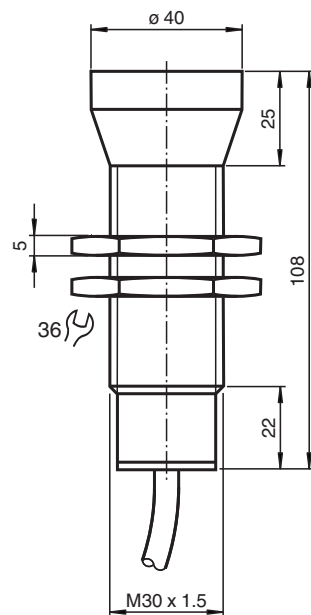


- Separate evaluation
- Direct detection mode

Single head system



Dimensions



Technical Data

General specifications

Sensing range	200 ... 2000 mm
Dead band	0 ... 200 mm
Standard target plate	100 mm x 100 mm
Transducer frequency	approx. 175 kHz

Electrical specifications

Operating voltage	U_B	10 ... 30 V DC , ripple 10 % _{SS}
No-load supply current	I_0	≤ 30 mA

Input

Release date: 2023-02-15 Date of issue: 2023-02-15 Filename: 048481_eng.pdf

Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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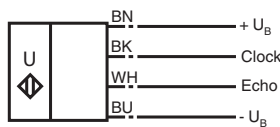
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Technical Data

Input type	1 pulse input for transmitter pulse, activation through open collector npn < 1 V: emitter active, > 4 V: emitter inactive	
Pulse length		20 ... 200 µs
Pause length		≥ 50 x pulse length
Output		
Output type	1 pulse output for echo propagation time, high-active, short-circuit proof	
Signal level		1-level: ≥ U _B - 3 V ; ≤ 10 mA level 0: ≤ 1 V ; ≤ 0,1 mA
Temperature influence	the echo propagation time: 0.17 % / K	
Compliance with standards and directives		
Standard conformity		
Standards		EN IEC 60947-5-2:2020 IEC 60947-5-2:2019
Approvals and certificates		
UL approval		cULus Listed, General Purpose
CCC approval		CCC approval / marking not required for products rated ≤36 V
Ambient conditions		
Ambient temperature		-25 ... 70 °C (-13 ... 158 °F)
Storage temperature		-40 ... 85 °C (-40 ... 185 °F)
Mechanical specifications		
Housing diameter		30 mm
Degree of protection		IP65
Connection		2 m PVC cable 0.75 mm ²
Material		
Housing		nickel plated brass; plastic components: PBT
Transducer		epoxy resin/hollow glass sphere mixture; polyurethane foam
Mass		300 g

Connection

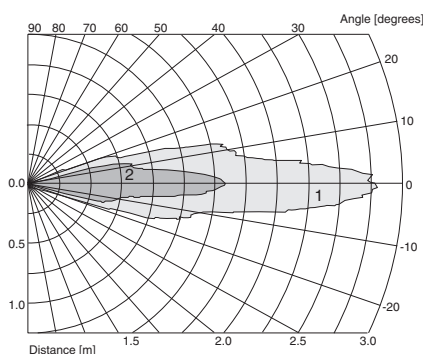
Standard symbol/Connection:
(Transceiver)



BK = Emitter pulse input
WH = Echo propagation time output

Characteristic Curve

Characteristic response curves



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

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

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Accessories

	BF 30	Mounting flange, 30 mm
	BF 30-F	Plastic mounting adapter, 30 mm
	BF 5-30	Universal mounting bracket for cylindrical sensors with a diameter of 5 ... 30 mm
	UVW90-M30	Ultrasonic -deflector
	UVW90-K30	Ultrasonic -deflector
	M30K-VE	Plastic nuts with centering ring for the vibration-free mounting of cylindrical sensors

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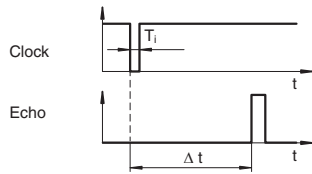
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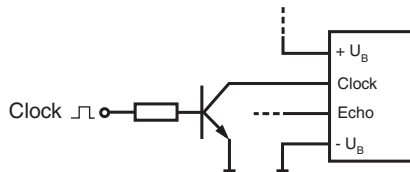
Commissioning

The sensing range is determined in the downstream evaluation electronics such as PLC modules or other existing evaluation units.

The object distance in pulse-echo mode is obtained from the echo time Δt . The emission of an ultrasonic pulse starts simultaneously with the falling slope of the clock input signal.



We recommend the usage of a npn-transistor to trigger the sensors clock input. The sensors clock input is connected to the +5 V potential internally by means of a pull up resistor.



- 1) The unusable area (blind range) BR depends on the pulse duration T_i .
The unusable area reaches a minimum with the shortest pulse duration.
- 2) The sensors detection range depends on the pulse duration T_i .
With a pulse shorter than the typical pulse duration, the sensors detection range may be reduced.