

Ultrasonic sensor

UB2000-30GM-H3-Y48481

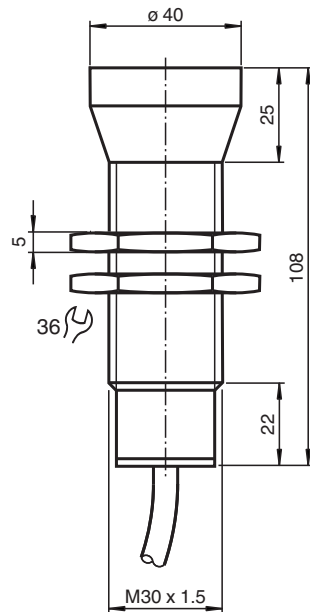


- Separate evaluation
- Direct detection mode

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

Input type	1 pulse input for transmitter pulse, activation through open collector npn < 1 V: emitter active, > 4 V: emitter inactive
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Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

Pepperl+Fuchs Group
www.pepperl-fuchs.com

USA: +1 330 486 0001
fa-info@us.pepperl-fuchs.com

Germany: +49 621 776 1111
fa-info@de.pepperl-fuchs.com

Singapore: +65 6779 9091
fa-info@sg.pepperl-fuchs.com

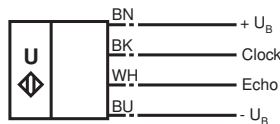
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Technical Data

Pulse length	20 ... 200 μ s
Pause length	$\geq 50 \times$ pulse length
Output	
Output type	1 pulse output for echo propagation time, high-active, short-circuit proof
Signal level	1-level: $\geq U_B - 3 \text{ V}$; $\leq 10 \text{ mA}$ level 0: $\leq 1 \text{ V}$; $\leq 0,1 \text{ mA}$
Temperature influence	the echo propagation time: 0.17 % / K
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	
UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose
CCC approval	CCC approval / marking not required for products rated $\leq 36 \text{ V}$
Ambient conditions	
Ambient temperature	-25 ... 70 $^{\circ}\text{C}$ (-13 ... 158 $^{\circ}\text{F}$)
Storage temperature	-40 ... 85 $^{\circ}\text{C}$ (-40 ... 185 $^{\circ}\text{F}$)
Mechanical specifications	
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

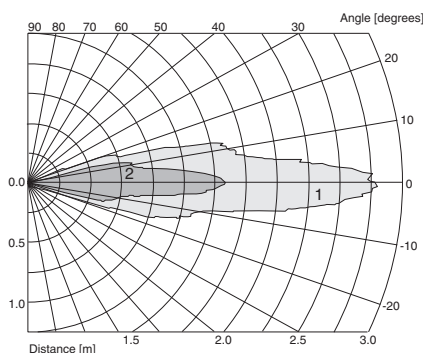
Standard symbol/Connection:
(Transceiver)



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, \varnothing 25 mm

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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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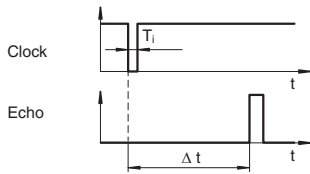
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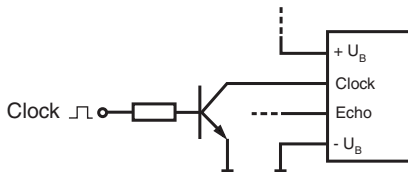
Commissioning

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.