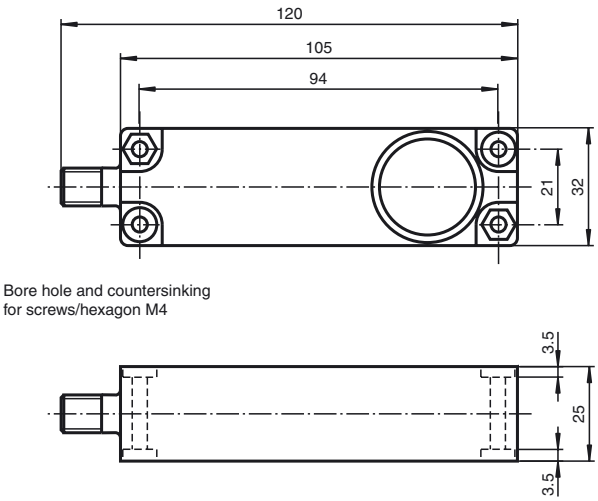
Ultrasonic sensor
UB2000-F54-H3-V1

Features

- Separate evaluation
- Direct detection mode

Dimensions

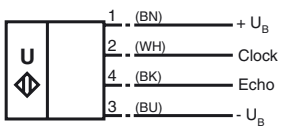


Technical data

General specifications	
Sensing range	80 ... 2000 mm
Adjustment range	100 ... 2000 mm
Unusable area	0 ... 80 mm [1]
Standard target plate	100 mm x 100 mm
Transducer frequency	approx. 175 kHz
Electrical specifications	
Operating voltage	10 ... 30 V DC , ripple 10 $\%_{SS}$
No-load supply current I_0	≤ 30 mA
Input	
Input type	1 pulse input for transmitter pulse (clock) 0-level (active): < 5 V (U_B > 15 V) 1-level (inactive): > 10 V ... +U_B (U_B > 15 V) 0-level (active): < 1/3 U_B (10 V < U_B < 15 V) 1-level (inactive): > 2/3 U_B ... +U_B (10 V < U_B < 15 V)
Pulse length	20 ... 300 µs (typ. 200 µs) [2]
Pause length	≥ 50 x pulse length
Impedance	10 kOhm internal connected to +U_B
Output	
Output type	1 pulse output for echo run time, short-circuit proof open collector pnp with pulldown resistor = 22 kOhm level 0 (no echo): -U_B level 1 (echo detected): ≥ (+U_B-2 V)
Rated operational current I_e	15 mA , short-circuit/overload protected
Temperature influence	the echo propagation time: 0,17 % / K
Standard conformity	
Standards	EN 60947-5-2
Ambient conditions	
Ambient temperature	-25 ... 85 °C (248 ... 358 K)
Storage temperature	-40 ... 85 °C (233 ... 358 K)
Mechanical specifications	
Protection degree	IP67
Connection	V1 connector (M12 x 1), 4-pin
Material	
Housing	ABS
Transducer	epoxy resin/hollow glass sphere mixture; polyurethane foam
Mass	110 g

Electrical connection

Standard symbol/Connection:



2 = Emitter pulse input
4 = Echo propagation time output
Core colours in accordance with EN 60947-5-2.

Connector V1

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Notes

Function

The sensing range is determined in the downstream evaluation electronics (e. g. the units UH3-KHD2-4E5, UH3-KHD2-4I or UH3-T1-KT). PLC modules or other existing evaluation units can also be substituted for these units offered by Pepperl+Fuchs.
The object distance in pulse-echo mode is obtained from the echo time.

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 pulse duration < typical pulse duration, the sensors detection range may be reduced.

Model number

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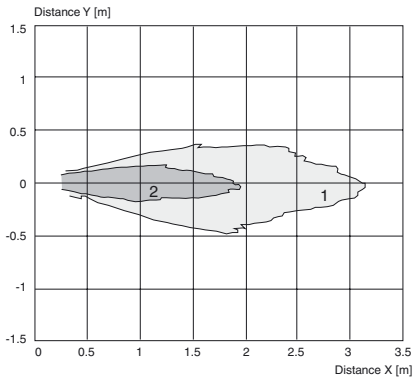
Characteristic curves/additional information

Characteristic response curves



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

Accessories

Evaluation units

UH3-KHD2-4E5
UH3-KHD2-4I
UH3-T1-KT

Cable sockets *)

V1-G-2M-PVC
V1-W-2M-PVC

*) For additional cable sockets see section „Accessories“.