Model Number

UB500-30GM-H3-V1

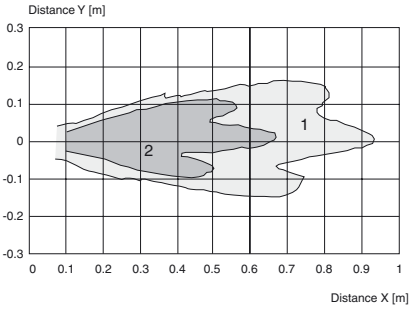
Single head system

Features

- **Separate evaluation**
- **Direct detection mode**

Diagrams

Characteristic response curves

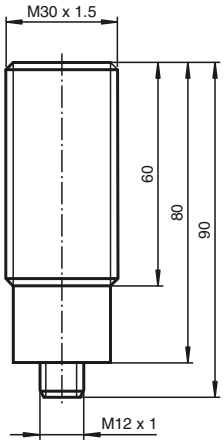


Curve 1: flat surface 100 mm x 100 mm
Curve 2: round bar, Ø 25 mm

Technical data

General specifications	
Sensing range	30 ... 500 mm
Adjustment range	50 ... 500 mm
Dead band	0 ... 30 mm [1)]
Standard target plate	100 mm x 100 mm
Transducer frequency	approx. 380 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 (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	5 ... 100 µs (typ. 50 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 operating current I_e	15 mA , short-circuit/overload protected
Temperature influence	the echo propagation time: 0.17 % / K
Ambient conditions	
Ambient temperature	-25 ... 85 °C (-13 ... 185 °F)
Storage temperature	-40 ... 85 °C (-40 ... 185 °F)
Mechanical specifications	
Connection type	Connector M12 x 1 , 4-pin
Degree of protection	IP67
Material	
Housing	nickel plated brass; plastic components: PBT
Transducer	epoxy resin/hollow glass sphere mixture; polyurethane foam
Mass	140 g
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 ≤36 V

Dimensions



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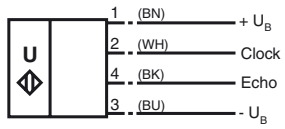
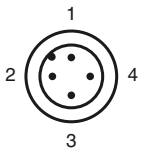
Electrical Connection

Standard symbol/Connection:



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

Pinout



Wire colors in accordance with EN 60947-5-2

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

Accessories

BF 30
Mounting flange, 30 mm

BF 30-F
Mounting flange with dead stop, 30 mm

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

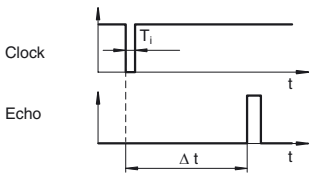
UVW90-M30
Ultrasonic -deflector

UVW90-K30
Ultrasonic -deflector

V1-G-2M-PVC
Female cordset, M12, 4-pin, PVC cable

Function

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 $+U_B$ potential internally by means of a pull up resistor.

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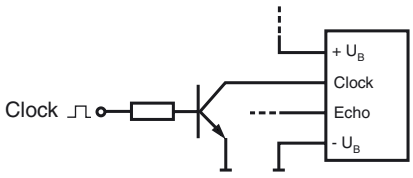

1) The unusable area (blind range) BR depends on the pulse duration T_i .
The unusable area reaches a minimum with the shortest pulse duration.

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.

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