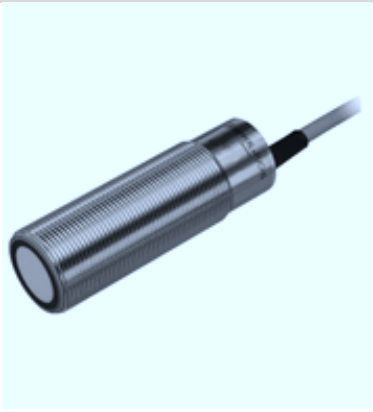


Model Number

UB2000-30GM-H3-Y221102

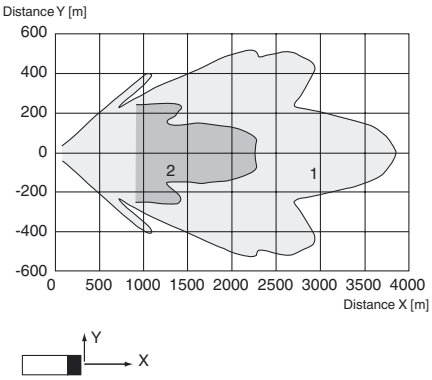
Single head system

Features

- **Separate evaluation**
- **Direct detection mode**
- **With clock pulse output**

Diagrams

Characteristic response curve



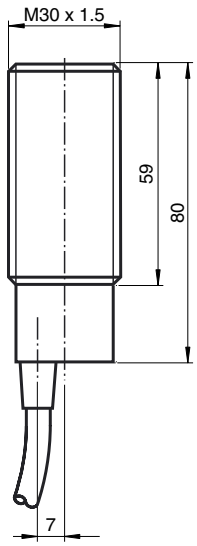
Curve 1: flat surface 10 mm x 10 mm
Curve 2: round bar, Ø 8 mm

Technical data

General specifications	
Sensing range	80 ... 2000 mm
Adjustment range	120 ... 2000 mm
Unusable area	0 ... 80 mm [1]
Standard target plate	100 mm x 100 mm
Transducer frequency	approx. 180 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	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 operating 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 (-13 ... 185 °F)
Storage temperature	-40 ... 85 °C (-40 ... 185 °F)
Mechanical specifications	
Protection degree	IP67
Connection	2 m PVC cable 0.34 mm^2
Material	
Housing	nickel plated brass; plastic components: PBT
Transducer	epoxy resin/hollow glass sphere mixture; polyurethane foam
Mass	300 g

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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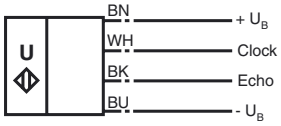
Electrical Connection

Standard symbol/Connection:
(Transceiver)



WH = Emitter pulse input
BK = Echo propagation time output

Accessories

BF 30
Mounting flange, 30 mm

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

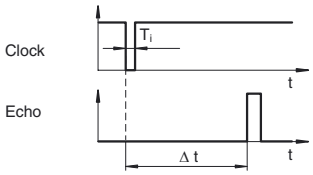
BF 5-30
Universal mounting bracket for cylindrical sensors with a diameter of 5 ... 30 mm

UVW90-M30
Ultrasonic -deflector

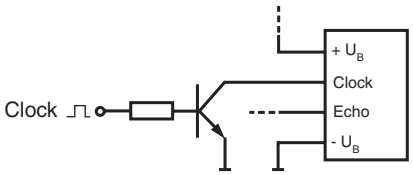
UVW90-K30
Ultrasonic -deflector

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.



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.

Installation notes

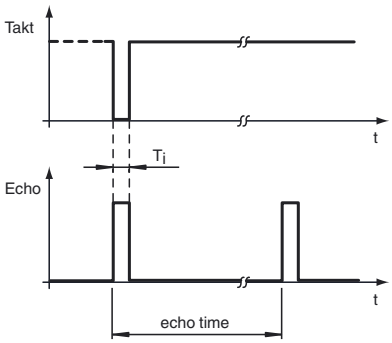
The teflon film is glued at the ultrasonic transducer. In addition it has to be pressed against the transducer by means of the o-ring which is in the scope of delivery, permanently and in a suitable way. Only this provides a permanent sealing against penetrating humidity.

Mounting conditions

If the sensor is installed in places where the operating temperature can fall below 0 °C, the BF30, BF30-F or BF 5-30 fixing clamp must be used.

Additional Information

Timing Diagram



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