



**Model Number**

**UB2000-30GM-H3-Y221102**

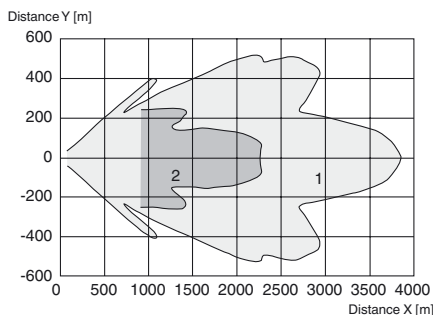
Single head system

**Features**

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

**Diagrams**

**Characteristic response curve**

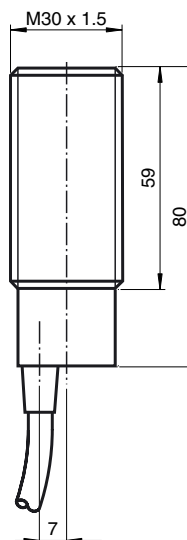


Curve 1: flat surface 10 mm x 10 mm  
Curve 2: round bar, Ø 8 mm

**Technical data**

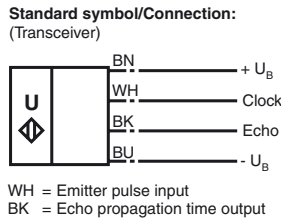
<b>General specifications</b>	
Sensing range	80 ... 2000 mm
Adjustment range	120 ... 2000 mm
Dead band	0 ... 80 mm <sup>1)</sup>
Standard target plate	100 mm x 100 mm
Transducer frequency	approx. 180 kHz
<b>Electrical specifications</b>	
Operating voltage $U_B$	10 ... 30 V DC, ripple 10 % <sub>SS</sub>
No-load supply current $I_0$	≤ 30 mA
<b>Input</b>	
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) <sup>2)</sup>
Pause length	≥ 50 x pulse length
Impedance	10 kOhm internal connected to $+U_B$
<b>Output</b>	
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
<b>Ambient conditions</b>	
Ambient temperature	-25 ... 85 °C (-13 ... 185 °F)
Storage temperature	-40 ... 85 °C (-40 ... 185 °F)
<b>Mechanical specifications</b>	
Degree of protection	IP67
Connection	2 m PVC cable 0.34 mm <sup>2</sup>
<b>Material</b>	
Housing	nickel plated brass; plastic components: PBT
Transducer	epoxy resin/hollow glass sphere mixture; polyurethane foam
Mass	195 g
<b>Compliance with standards and directives</b>	
<b>Standard conformity</b>	
Standards	EN 60947-5-2:2007+A1:2012 IEC 60947-5-2:2007 + A1:2012
<b>Approvals and certificates</b>	
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**

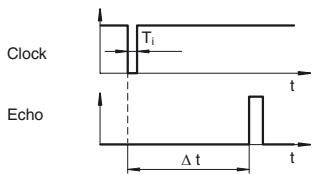


**Accessories**

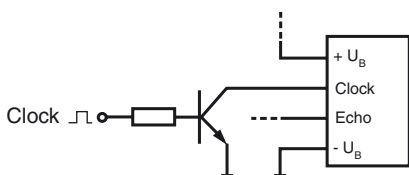
- BF 30**  
Mounting flange, 30 mm
- BF 30-F**  
Mounting flange with dead stop, 30 mm
- BF 5-30**  
Universal mounting bracket for cylindrical sensors with a diameter of 5 ... 30 mm
- UVW90-M30**  
Ultrasonic -deflector
- UVW90-K30**  
Ultrasonic -deflector

**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  $\Delta t$ . 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<sub>B</sub> 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**

