## Model Number

**UB2000-30GM-H3**

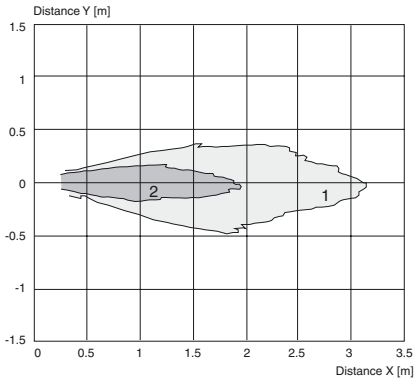
Single head system

## Features

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

## Diagrams

### Characteristic response curves

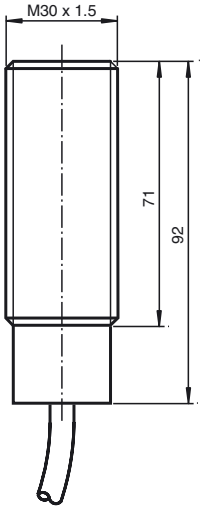



Curve 1: flat surface 100 mm x 100 mm
Curve 2: round bar, Ø 25 mm

## Technical data

| | |
|---|---|
| **General specifications** | |
| Sensing range | 80 ... 2000 mm |
| Adjustment range | 120 ... 2000 mm |
| Dead band | 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)<br>0-level (active): < 5 V ($U_B$ > 15 V)<br>1-level (inactive): > 10 V ... +$U_B$ ($U_B$ > 15 V)<br>0-level (active): < 1/3 $U_B$ (10 V < $U_B$ < 15 V)<br>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<br>open collector PNP with pulldown resistor = 22 kOhm<br>level 0 (no echo): -$U_B$<br>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** | |
| Degree of protection | IP67 |
| 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 |
| **Compliance with standards and directives** | |
| Standard conformity | |
| Standards | EN 60947-5-2:2007 + A1:2012<br>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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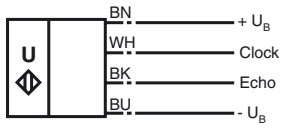
## Electrical Connection

**Standard symbol/Connection:**
(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

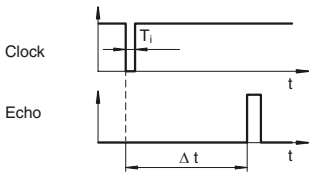
**UH3-KHD2-4E5**

**UH3-KHD2-4I**

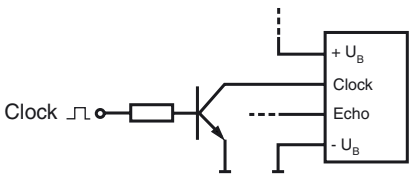
**UH3-T1-KT**

### 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.

### 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.

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