



## Model Number

**UB4000-30GM-H3-4DT04**

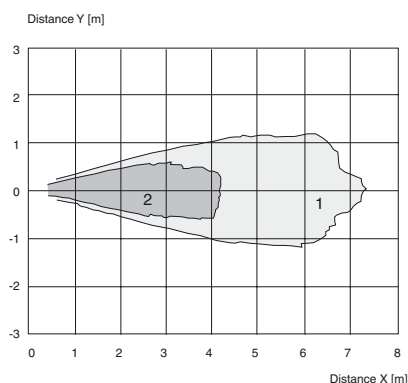
Single head system

## Features

- Separate evaluation
- Direct detection mode

## Diagrams

### Characteristic response curves



## Technical data

### General specifications

Sensing range	200 ... 4000 mm
Adjustment range	240 ... 4000 mm
Dead band	0 ... 200 mm <sup>1)</sup>
Standard target plate	100 mm x 100 mm
Transducer frequency	approx. 85 kHz

### Electrical specifications

Operating voltage $U_B$	10 ... 30 V DC, ripple 10 % <sub>SS</sub>
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	40 ... 600 μs (typ. 500 μs) <sup>2)</sup>
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

Degree of protection	IP67
Connection	Deutsch connector, 4-pin DT-04-4P with 300 mm (1 ft) cable
Material	
Housing	stainless steel (1.4305 / AISI 303) PBT plastic parts
Transducer	epoxy resin/hollow glass sphere mixture; polyurethane foam
Mass	210 g

### General information

Supplementary information	Only the sensor has UL approval.
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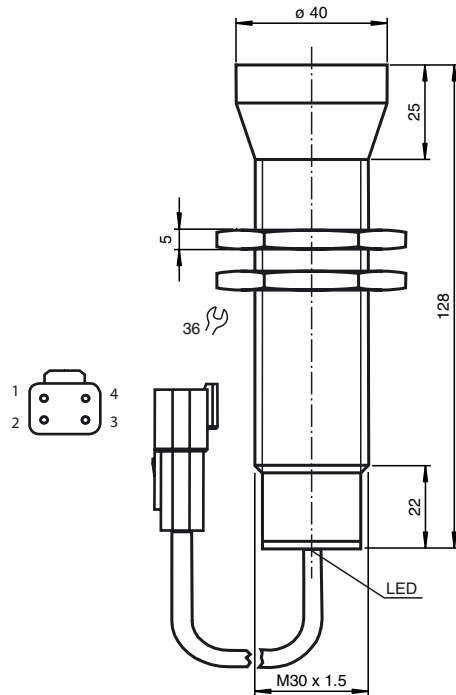
### Compliance with standards and directives

Standard conformity	
Standards	EN 60947-5-2:2007 IEC 60947-5-2:2007

### Approvals and certificates

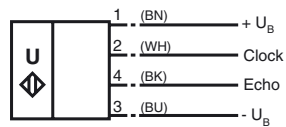
UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose

## Dimensions



## Electrical Connection

**Standard symbol/Connection:**



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

## Pinout

## Connector 4DT04



## Accessories

**BF 30**  
Mounting flange, 30 mm

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

**UH3-KHD2-4E5**

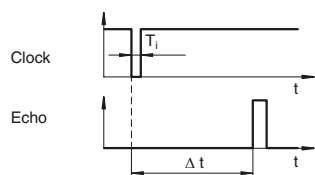
UH3-KHD2-4I

UH3-T1-KT

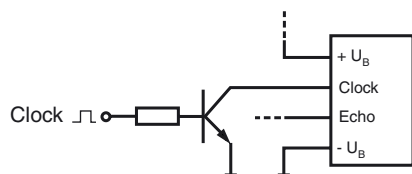
## Function

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  $\Delta t$ . 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  $+U_B$  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.