



**Model Number**

**UB500-F54-H3-V1**

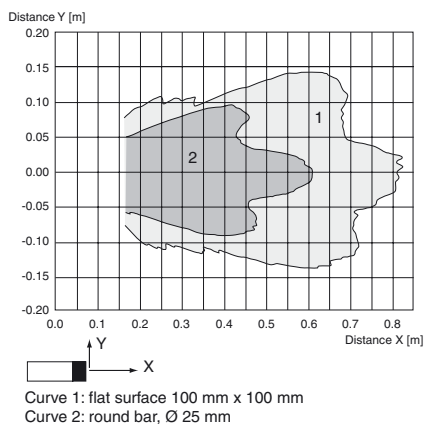
Single head system

**Features**

- Separate evaluation
- Direct detection mode

**Diagrams**

**Characteristic response curve**



**Technical data**

**General specifications**

Sensing range	60 ... 500 mm
Unusable area	0 ... 60 mm <sup>1)</sup>
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 % <sub>SS</sub>
No-load supply current $I_0$	≤ 30 mA (typ. 20 mA)

**Input**

Input type	1 pulse input for transmission pulse (clock) level 0 (active): < 1.5 V level 1 (inactive): 3.5 V ... + $U_B$
Pulse length	5 ... 100 $\mu$ s (typ. 50 $\mu$ s) <sup>2)</sup>
Pause length	≥ 100 x pulse length
Impedance	5 kOhm

**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)
Output rated operating current	15 mA

**Ambient conditions**

Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Storage temperature	-40 ... 85 °C (-40 ... 185 °F)

**Mechanical specifications**

Connection type	Connector M12 x 1 , 4-pin
Protection degree	IP65
Material	
Housing	ABS
Transducer	epoxy resin/hollow glass sphere mixture; polyurethane foam
Mass	110 g

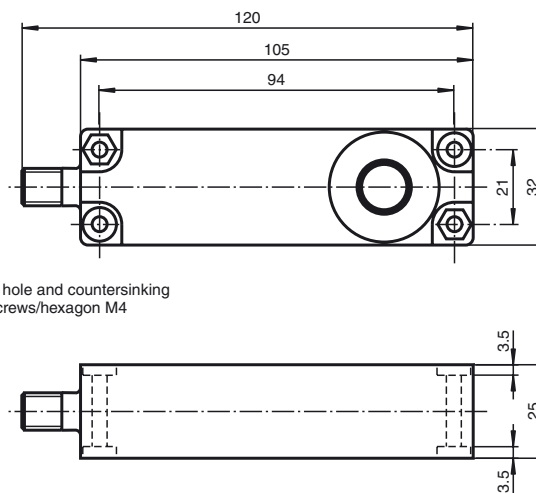
**Compliance with standards and directives**

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

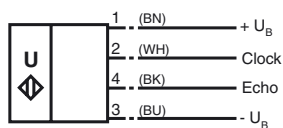
**Dimensions**



Release date: 2013-02-26 15:31 Date of issue: 2013-02-26 102725\_eng.xml

**Electrical Connection**

Standard symbol/Connection:



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

**Pinout**

**Connector V1**



**Accessories**

**UH3-KHD2-4E5**

**UH3-KHD2-4I**

**UH3-T1-KT**

**V1-G-2M-PVC**

Cable socket, M12, 4-pin, PVC cable

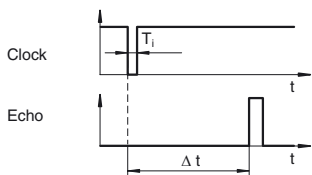
**V1-W-2M-PVC**

Cable socket, M12, 4-pin, PVC cable

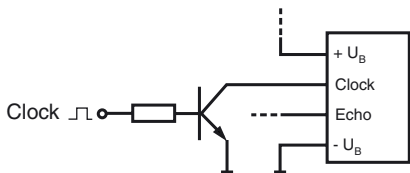
**Function**

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  $\Delta t$ . 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.