Ultrasonic sensor
UB6000-FP-H3
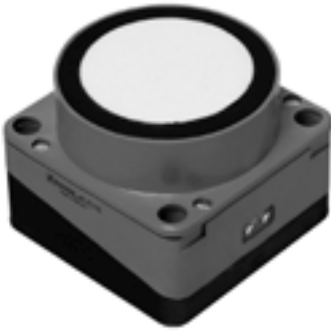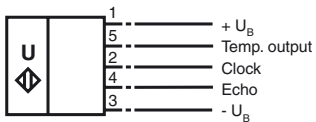

Features

- Separate evaluation
- With temperature sensor
- Direct detection mode

Dimensions

Technical data $C\epsilon$

General specifications
Sensing range	800 ... 6000 mm
Unusable area	0 ... 800 mm [1]
Standard target plate	100 mm x 100 mm
Transducer frequency	approx. 65 kHz

Electrical specifications
Operating voltage	20 ... 30 V DC , ripple 10 %$_{SS}$
No-load supply current I_0	$\leq$ 30 mA

Input
Input type	1 pulse input for transmitter pulse, activation through open collector npn < 1 V: emitter active, > 4 V: emitter inactive
Pulse length	50 ... 700 μs (typ. 500 μs) [2]
Pause length	$\geq$ 50 x pulse length

Output
Output type	1 pulse output for temperature 1-level: > 4 V (100 μA), 0-level: < 0.5 V (100 μA) 1 pulse output for echo propagation time 1-level: $\geq$ U_B -3 V (< 10 mA), 0-level: $\leq$ 1 V (100 μA)
Pulse length	10 μs/K + timer pulse, synchronisation with the timer pulse
Temperature influence	the echo propagation time: $\leq$ 0,17 % / K

Standard conformity
Standards	EN 60947-5-2

Ambient conditions
Ambient temperature	-25 ... 70 °C (248 ... 343 K)
Storage temperature	-40 ... 85 °C (233 ... 358 K)

Mechanical specifications
Protection degree	IP65
Connection	terminal compartment, $\leq$ 2.5 mm^2 conductor csa
Material	
Housing	PBT
Transducer	epoxy resin/hollow glass sphere mixture; polyurethane foam
Mass	320 g

Electrical connection

Standard symbol/Connection:

1	+ U_B
5	Temp. output
2	Clock
4	Echo
3	- U_B

Notes	**Model number**

Description of the sensor functions

The sensing range is determined in the downstream evaluation electronics (e. g. the units UH3-KHD2-4E5, or UH3-KHD2-4I).
The sensing range is determined on the basis of the echo time of a transmitted pulse in pulse-echo mode.

Temperature compensation

A temperature pulse is available at the temperature output for external temperature compensation. It is synchronous to the externally applied clock pulse and has the length T_{Temp}, calculated as follows:

$$T_{Temp}[\mu s] = T_{Takt}[\mu s] + T[K] \times 10\,\mu s/K$$

Put into the formula the temperature in Kelvin and the clock time in the unit μs.

[1] The unusable area (blind range) BR depends on the pulse duration.
The unusable area reaches a minimum with the shortest pulse duration.

[2] The sensors detection range depends on the pulse duration.
With pulse duration < typical pulse duration, the sensors detection range may be reduced.

UB6000-FP-H3
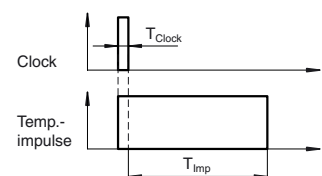
Characteristic curves/additional information

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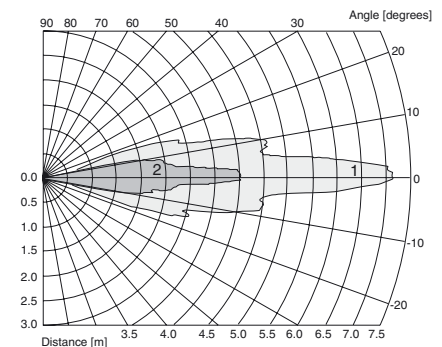
Curve 1: flat surface 100 mm x 100 mm
Curve 2: round bar, Ø 25 mm

T_{Imp} = T [K] x 10 μs/K
T_{Temp} = T_{Clock} + T_{Imp}

Accessories

Mounting aid
MH 04-3505
MHW11

Evaluation units
UH3-KHD2-4E5
UH3-KHD2-4I
UH3-T1-KT

Subject to reasonable modifications due to technical advances.   Printed in Germany

Sensotronik AB • Tel.: +46 44 200 800 • Fax +46 44 200 899 • E-mail info@sensotronik.se • Internet http://www.sensotronik.se   **2**