Model Number

UMB800-18H40-E4-2M-FA

Single head system

Features

- **Front of transducer and housing manufactured entirely from stainless steel**
- **Hygienic design, easy to clean**
- **Degree of protection IP68 / IP69K**
- **Short version: 55 mm**
- **Mounting bracket MH-18H-01-FA included in delivery**
- **Program input**
- **Temperature compensation**

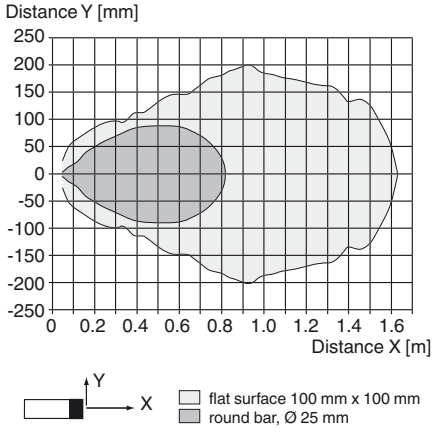
Description

Functional description

The enclosure and transducer of this ultrasonic sensor form a hermetically sealed unit. Due to its special design, this sensor is EHEDG compliant, and together with an appropriate fixture are especially suitable for applications where there are increased hygiene requirements, such as in the manufacture and handling of food.
For reliable operation, due to the special design of this sensor, solely the enclosed mounting accessories must be used, even in applications without special hygiene requirements.

Diagrams

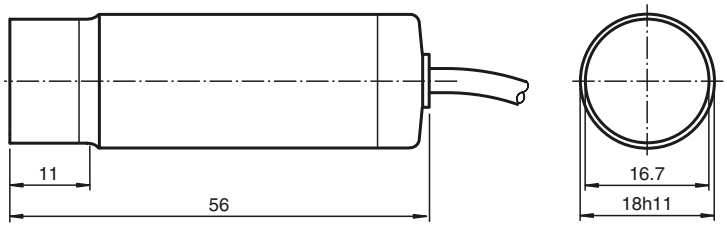
Characteristic response curve



Technical data

General specifications	
Sensing range	70 ... 800 mm
Adjustment range	90 ... 800 mm
Dead band	0 ... 70 mm
Standard target plate	100 mm x 100 mm
Transducer frequency	approx. 170 kHz
Response delay	approx. 100 ms
Electrical specifications	
Operating voltage U_B	10 ... 30 V DC
No-load supply current I_0	≤ 15 mA
Input	
Input type	1 program input operating distance 1: -U_B ... +1 V, operating distance 2: +6 V ... +U_B input impedance: > 4,7 kΩ program pulse: ≥ 1 s
Output	
Output type	1 switching output E4, NPN, NO/NC, programmable
Rated operating current I_e	200 mA , short-circuit/overload protected
Voltage drop U_d	≤ 3 V
Repeat accuracy	± 0.5 % of full-scale value
Switching frequency f	≤ 4 Hz
Range hysteresis H	1 % of the set operating distance
Temperature influence	± 1.5 % of full-scale value
Ambient conditions	
Ambient temperature	-25 ... 85 °C (-13 ... 185 °F)
Storage temperature	-40 ... 85 °C (-40 ... 185 °F)
Mechanical specifications	
Connection type	cable PUR , 2 m , Polyether based
Core cross-section	4 x 0.19 mm^2
Degree of protection	IP68 / IP69K
Material	
Housing	stainless steel 1.4404 / AISI 316L
Transducer	Stainless steel 1.4435 / AISI 316L
Seal	Cable seal : TPU , Elastollan 1185 A10 (FDA)
Mass	90 g
Factory settings	
Output	Switch point A1: 90 mm Switch point A2: 800 mm Output mode: Window mode Output logic: normally open
General information	
Supplementary information	FDA: All materials used for the sensor comply with CFR, title 21, §177.2600 (FDA)
Compliance with standards and directives	
Standard conformity	
Standards	EN 60947-5-2:2007+A1:2012 IEC 60947-5-2:2007 + A1:2012
Approvals and certificates	
CCC approval	CCC approval / marking not required for products rated ≤36 V
EHEDG	Type EL Class I AUX
ECOLAB	yes

Dimensions



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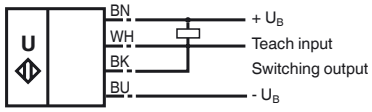
Electrical Connection



Accessories

MH-18H-01-FA
Mounting aid, 18 mm in accordance with EHEDG

Installation

Due to the unique design of this sensor, only the mounting accessories included with the sensor must be used in order to ensure reliable operation, even in applications without specific hygiene requirements.

Cleaning the Sensor in Areas with Hygiene Requirements

The sensor may only be used with the mounting aid included in the scope of delivery as the fixture. Please note the information in the enclosed package insert for the mounting aid with regard to the correct position of the seals and the correct process for tightening the screw connections.

If the sensor as a whole is located in an area subject to hygiene requirements, the sensor must be accessible from all sides for cleaning purposes. If the sensor is fitted with only the front in an area subject to hygiene requirements, the front must be accessible from all sides accordingly.

The sensor and corresponding fixture are certified by ECOLAB. The components were subjected to the cleaning agents listed in the certificate and are resistant to these agents. Use of other cleaning agents and chemicals is also possible. However, to ensure the sensor and fixture offer resistance to these substances, corresponding tests must be performed by the user.

For cleaning purposes, as a general rule you can completely cover the sensor including the fixture with foam and clean using a water jet. Cleaning at elevated temperatures of up to 85 °C is possible. It is not permitted to use high-pressure cleaning equipment for cleaning purposes in areas subject to hygiene requirements.

Adjusting the switch points

The ultrasonic sensor features a switching output with two teachable switch points. These are set by applying the supply voltage $-U_B$ or $+U_B$ to the TEACH-IN input. The supply voltage must be applied to the TEACH-IN input for at least 1 s. switch point A1 is taught with $-U_B$, A2 with $+U_B$.

Five different output functions can be set
1. Window mode, normally-open function
2. Window mode, normally-closed function
3. one switch point, normally-open function
4. one switch point, normally-closed function
5. Detection of object presence

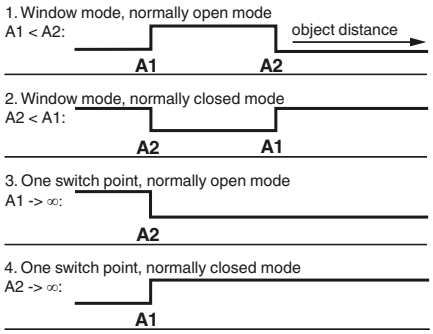
TEACH-IN window mode, normally-open function
- Set target to near switch point
- TEACH-IN switch point A1 with $-U_B$
- Set target to far switch point
- TEACH-IN switch point A2 with $+U_B$

TEACH-IN window mode, normally-closed function
- Set target to near switch point
- TEACH-IN switch point A2 with $+U_B$
- Set target to far switch point
- TEACH-IN switch point A1 with $-U_B$

TEACH-IN switch point, normally-open function
- Set target to near switch point
- TEACH-IN switch point A2 with $+U_B$
- Cover sensor with hand or remove all objects from sensing range

Additional Information

Programmable output modes



5. A1 -> ∞, A2 -> ∞: Object presence detection mode
Object detected: Switch output closed
No object detected: Switch output open

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Refer to "General Notes Relating to Pepperl+Fuchs Product Information".
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- TEACH-IN switch point A1 with $-U_B$

TEACH-IN switch point, normally-closed function
- Set target to near switch point
- TEACH-IN switch point A1 with $-U_B$
- Cover sensor with hand or remove all objects from sensing range
- TEACH-IN switch point A2 with $+U_B$

TEACH-IN detection of objects presence
- Cover sensor with hand or remove all objects from sensing range
- TEACH-IN switch point A1 with $-U_B$
- TEACH-IN switch point A2 with $+U_B$

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