Model Number

UB500-F42-E6-V15-Y115738

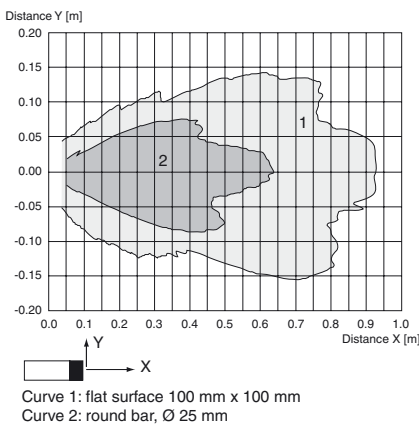Single head system

Features

- **2 switch outputs**
- **Extremly small unusable area**
- **TEACH-IN**
- **Interference suppression (adjustable divergence of sound cone in close range)**
- **Temperature compensation**
- **Synchronization options**
- **NO/NC selectable**

Diagrams

Characteristic response curve

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

115738_eng.xml

Technical data

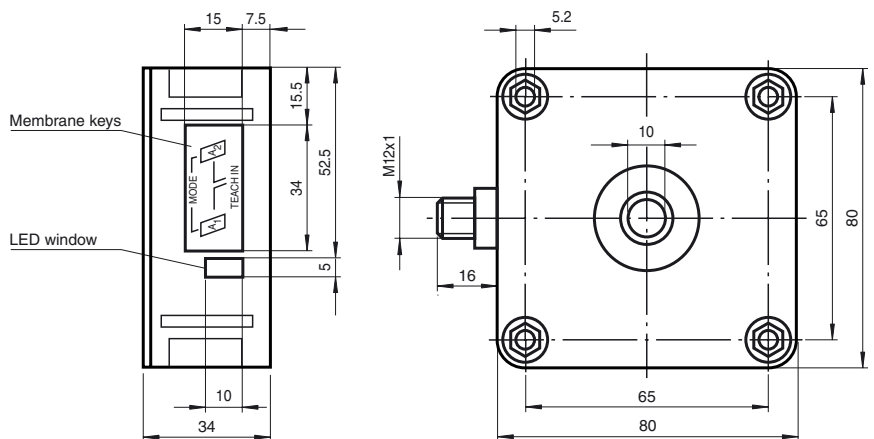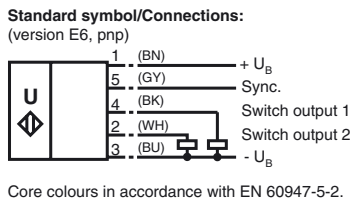| General specifications	
Sensing range	30 ... 500 mm
Adjustment range	50 ... 500 mm
Unusable area	0 ... 30 mm
Standard target plate	100 mm x 100 mm
Transducer frequency	approx. 390 kHz
Response delay	approx. 50 ms
Indicators/operating means	
LED yellow 1	switching state display for error output
LED yellow 2	switching state display for signal output flashing: teaching function object detected
LED red	"Error", object uncertain in program function: No object detected
Electrical specifications	
Operating voltage U_B	20 ... 30 V DC , ripple 10 %$_{SS}$
No-load supply current I_0	≤ 50 mA
Input/Output	
Synchronization frequency	
Common mode operation	≤ 95 Hz
Multiplex operation	≤ 95/n Hz, n = number of sensors
Output	
Output type	1 switching output PNP, normally open/normally closed selectable (error output) 1 switch output pnp, normally open (signal output)
Rated operating current I_e	2 x 200 mA , short-circuit/overload protected
Voltage drop U_d	≤ 2.5 V
Repeat accuracy	≤ 0.5 % of switching point
Switching frequency f	≤ 8 Hz
Range hysteresis H	5 mm (fixed)
Temperature influence	± 1 % of full-scale value
Standard conformity	
Standards	EN 60947-5-2
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 , 5-pin
Protection degree	IP54
Material	
Housing	PBT
Transducer	epoxy resin/hollow glass sphere mixture; foam polyurethane, cover PBT
Mass	60 g

Dimensions

Electrical Connection

Standard symbol/Connections:
(version E6, pnp)

1	(BN)	+ U_B
5	(GY)	Sync.
4	(BK)	Switch output 1
2	(WH)	Switch output 2
3	(BU)	- U_B

Core colours in accordance with EN 60947-5-2.

Pinout

Connector V15

Accessories

MH 04-3505
Mounting aid for FP sensors

MHW 11
Mounting brackets for sensors

V15-G-2M-PVC
Cable socket, M12, 5-pin, PVC cable

V15-W-2M-PUR
Cable socket, M12, 5-pin, PUR cable

Description of sensor functions

Programming the switching points

Parameters can be set for the sensor with two keys. Key A1 is used to start learning mode for switching point 1 (error output). Key A2 is used to start learning mode for switching point 2 (error output). If both keys (A1 and A2) are pressed simultaneously, the switching point can be programmed for the signal output. Parameters can only be set within 5 minutes after "power up" of the sensor. If the process of setting parameters is not complete after 5 minutes, it will be aborted. Then the last switching points to be programmed will be retained.

Teach-in of switching points for the error output

Teach-in of switching point A1 with the A1 key
- Press the A1 key for at least 2 seconds.
  The sensor goes into Teach-in mode for switching point 1 of the error output
- Set the target to the desired switching point.
  The sensor indicates with the LEDs whether the target is detected. If an object is detected, the yellow LED (A1) flashes. If no object is detected, the red LED flashes.
- Press the A1 briefly.
  The sensor terminates the teach-in procedure of switching point A1 and saves the value. If the object is not reliably detected, teach-in is not valid.

Teach-in of switching point A2 with the A2 key
- Press the A2 key for at least 2 seconds.
  The sensor goes into teach-in mode for switching point 2 of the error output
- Set the target to the desired switching point.
  The sensor indicates with the LEDs whether the target is detected. If an object is detected, the yellow LED (A1) flashes. If no object is detected, the red LED flashes.
- Press the A2 key briefly.
  The sensor terminates the teach-in procedure of switching point A2 and saves the value. If the object is not reliably detected, teach-in is not valid.
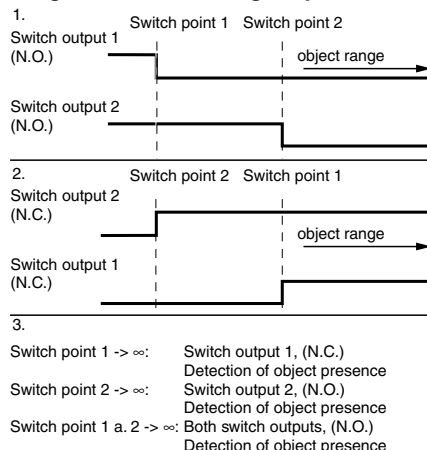 The program exits teach-in mode.

The normally open/normally closed contact function is programmed by exchanging switching points A1 and A2 during teach-in (see the graphic on programming switching outputs).

Teach-in of the switching point for the signal output

Additional Information

Programmed switching output function

1.
Switch output 1 (N.O.)
Switch output 2 (N.O.)

2.
Switch output 2 (N.C.)
Switch output 1 (N.C.)

3.
Switch point 1 -> ∞:   Switch output 1, (N.C.)
                         Detection of object presence
Switch point 2 -> ∞:   Switch output 2, (N.O.)
                         Detection of object presence
Switch point 1 a. 2 -> ∞: Both switch outputs, (N.O.)
                         Detection of object presence

Note Switch point -> ∞ means:
cover sensor with hand or remove all objects from sensing range

The signal output is designed as a normally open contact window with the limit away from the sensor corresponding to the greater distance of the error output. The limit close to the sensor can be programmed (see the illustration on programming switching outputs).

Teach-in of switching point of the limit close to the sensor with keys A1 and A2
- Press key A1 and A2 for at least 2 seconds.
  The sensor goes into teach-in mode for the switching point of the signal output close to the sensor.
- Set the target to the desired switching point.
  The sensor indicates with the LEDs whether the target is detected. If an object is detected, the yellow LEDs flash (A1 and A2). If no object is detected, the red LED flashes.
- Press key A1 and A2 briefly.
  The sensor terminates the teach-in procedure of switching point A2 and saves the value. If the object is not reliably detected, teach-in is not valid.
  The program exits teach-in mode.

Please note!

If input is not complete, the program will automatically exit teach-in mode after 5 minutes. The previously valid programmed values will be retained.