



Order Code

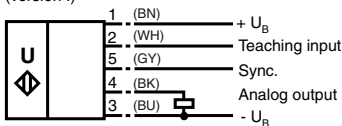
UB4000-F42-I-V15

Features

- Analogue output 4 mA ... 20 mA
- Extremely small unusable area
- TEACH-IN
- Interference suppression (adjustable width of sound cone in close range)
- Temperature compensation
- Synchronisation options
- Mode of operation adjustable

Electrical Connection

Standard symbol/Connections:
(version I)

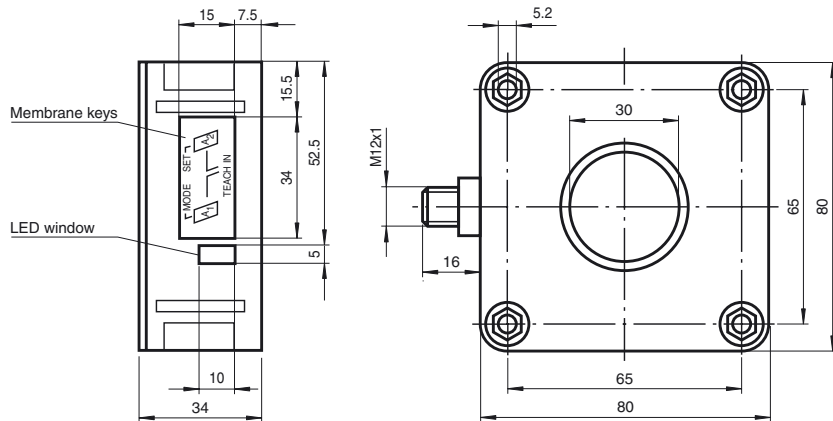


Core colours in accordance with EN 60947-5-2.

Connector V15



Dimensions



Technical Data

General specifications

Sensing range	200 ... 4000 mm
Adjustment range	240 ... 4000 mm
Unusable area	0 ... 200 mm
Standard target plate	100 mm x 100 mm
Transducer frequency	approx. 85 kHz
Response delay	approx. 325 ms

Indicators/operating means

LED green	permanently green: Power on
LED yellow	permanent: object in evaluation range flashing: TEACH-IN function
LED red	normal operation: "fault" TEACH-IN function: no object detected

Electrical specifications

Operating voltage	10 ... 30 V DC , ripple 10 % _{SS}
No-load supply current I ₀	≤ 60 mA

Input/output

Synchronisation	bi-directional 0 level -U _B ...+1 V 1 level: +4 V...+U _B input impedance: > 12 KOhm synchronisation pulse: ≥ 100 μs, synchronisation interpulse period: ≥ 2 ms
Synchronisation frequency	
Common mode operation	≤ 13 Hz
Multiplex operation	≤ 13/n Hz, n = number of sensors

Output

Output type	1 analogue output 4 ... 20 mA
Default setting	evaluation limit A1: 240 mm , evaluation limit A2: 4000 mm , wide sound lobe
Resolution	0.7 mm

Deviation of the characteristic curve	± 1 % of full-scale value
Repeat accuracy	± 0.1 % of full-scale value
Load impedance	0 ... 300 Ohm
Temperature influence	± 1 % of full-scale value

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	IP54
Connection	connector V15 (M12 x 1), 5 pin
Material	
Housing	ABS
Transducer	epoxy resin/hollow glass sphere mixture; foam polyurethane, cover PBT
Mass	150 g

Step 2, parameterisation of the ultrasound beam width

Via Step 2, the ultrasound beam width may be adapted to the requirements of the corresponding application.

The beam width parameterised last is displayed first. Available beam width settings may be selected via consecutive, brief strokes of the A2 key. These strokes are visualised via the flash sequence of the red LED.

Beam width	Flash sequence of the red LED	A2 key
Small beam		
Medium beam		
Large beam		

Hold down the A1 key for 2 seconds to save the selected beam shape, terminate the parameterisation and ensure that the sensor returns to normal mode. Briefly press the A1 key to return to Step 1 (parameterisation of the output function).

If the parameterisation mode is not terminated within 5 minutes (hold down the A1 key for 2 seconds), the sensor aborts this mode without modifying the settings.

Synchronisation

The sensor provides a synchronisation port to suppress mutual influencing. If this port has not been connected, the sensor works at an internally generated cycle rate. Several sensors may be synchronised via the following options.

External synchronisation:

The sensor may be synchronised via the external application of a square wave voltage. A synchronisation pulse on the synchronisation input initiates a measuring cycle. The pulse width must be greater than 100 µs. The measuring cycle is started with the falling edge. A low level > 1 s or an open synchronisation input initiate the transition to normal sensor mode. A high level on the synchronisation input deactivates the sensor.

Two modes are possible:

- Several sensors are controlled via the same synchronisation signal. The sensors work in common mode.
- The synchronisation pulses are forwarded at cyclic intervals to respectively one single sensor. The sensors work in multiplex mode.

Self-synchronisation:

The synchronisation ports of up to 5 sensors suitable for self-synchronisation are connected to each other. These sensors work in multiplex mode after Power on. The On delay increases depending on the number of sensors to be synchronised. While the learn mode is active, no synchronisation is possible (and vice-versa). To specify the switching points, the sensors must be operated in non-synchronised mode.

Note:

If the synchronisation option is not used, the synchronisation input must be connected to ground (0V) or the sensor must be operated with a (4-pole) V1 connecting cable.