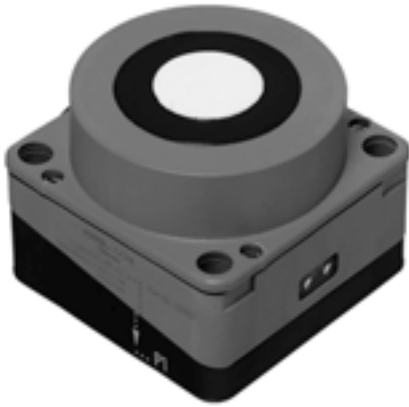


## Ultrasonic sensor UJ4000-FP-E2-P1

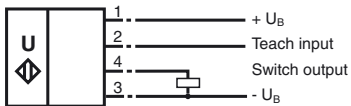


## Features

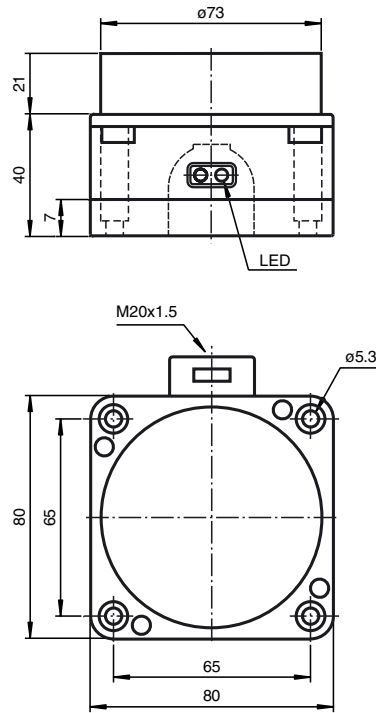
- Absolute polarity reversal protection
- 1 switch output
- TEACH-IN input
- Reflex sensor function

## Electrical connection

Standard symbol/Connection:



## Dimensions



## Technical data



### General specifications

Sensing range	1000 ... 4000 mm
Operating range	0 ... reflector distance $s_R$ - 6 %
Standard target plate	100 mm x 100 mm
Transducer frequency	approx. 85 kHz
Response delay	≤ 900 ms, for TEACH-IN with +U <sub>e</sub> ≤ 150 ms for TEACH-IN with -U <sub>e</sub>

### Indicators/operating means

LED yellow	switching state switch output
LED red/green	green LED: Power on red LED, flashing at 2 Hz: error (reflector incorrectly positioned)

### Electrical specifications

Operating voltage	20 ... 30 V DC, ripple 10 % <sub>SS</sub>
No-load supply current I <sub>0</sub>	≤ 90 mA

### Input

Input type	1 TEACH-IN input, operating distance 1: -U <sub>B</sub> ... (-U <sub>B</sub> + 2 V), operating distance 2: (+U <sub>B</sub> - 2 V) ... +U <sub>B</sub>
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### Output

Output type	1 switch output, NO pnp
Rated operational current I <sub>e</sub>	200 mA, short-circuit/overload protected
Voltage drop U <sub>d</sub>	≤ 3 V

### Standard conformity

Standards	EN 60947-5-2
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### Ambient conditions

Ambient temperature	-10 ... 50 °C (263 ... 323 K)
Storage temperature	-40 ... 85 °C (233 ... 358 K)

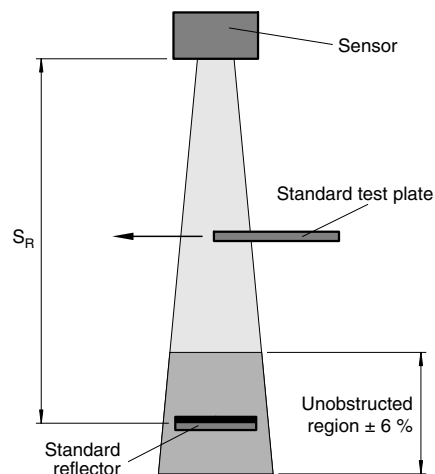
### Mechanical specifications

Protection degree	IP65
Connection	terminal compartment, ≤ 2.5 mm <sup>2</sup> conductor csa
Material	PBT
Housing	epoxy resin/hollow glass sphere mixture; polyurethane foam
Transducer	320 g
Mass	

### Description of the sensor functions

The measurement of the distance is realised using the echo time of ultrasonic pulses. After installation, the transmitter is taught with the distance to a stationary reflector and stores this value by shorting the TEACH-IN input with  $-U_B$  or  $+U_B$  (see Electrical Connection). The distance determined in this manner is retained for as long as required when the power supply is shut off. If an interruption of the barrier by an object is determined during operation, switch output is closed.

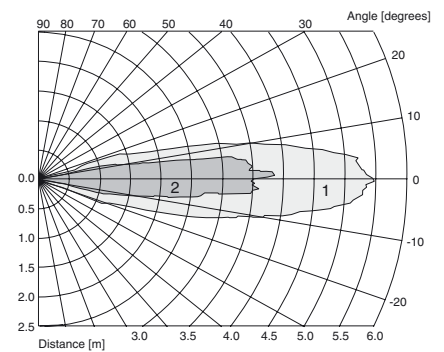
If objects smaller than the standard measuring plate are to be detected, the reflector must also be reduced in size accordingly. This may result in a reduction of range.



**UJ4000-FP-E2-P1**

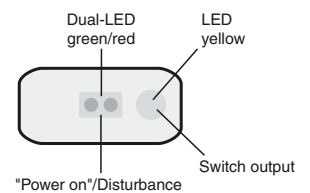
### Characteristic curves/additional information

#### Characteristic response curves



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

### LED-Window



### Accessories

#### Mounting aid

MH 04-3505  
MHW 11