Ultrasonic sensor
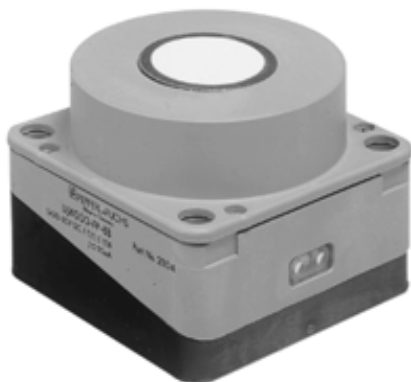## UJ4000-FP-8B
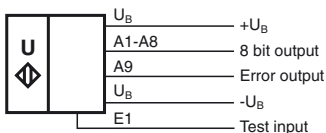
Features

- 8 bit output
- Absolute polarity reversal protection
- Test input
- Fault output

Dimensions
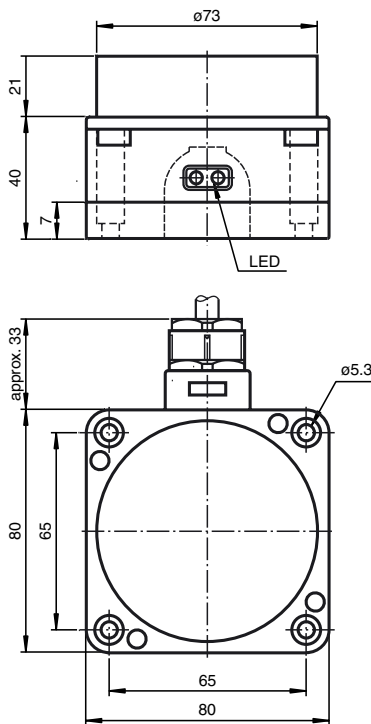

Technical data

$C\epsilon$

General specifications

Sensing range	500 ... 4000 mm
Unusable area	0 ... 500 mm
Standard target plate	100 mm x 100 mm
Transducer frequency	approx. 90 kHz
Response delay	$\leq$ 140 ms

Indicators/operating means

LED red/green	green LED: Power on
	red LED, flashing at 2 Hz: error (high level of external noise)

Electrical specifications

Operating voltage	20 ... 30 V DC , ripple 10 %$_{SS}$
No-load supply current I_0	$\leq$ 90 mA

Input

Input type	1 test input, $(-U_B + 5 V)$ up to $+U_B$, $\leq$100 kOhm

Output

Output type	8 bit output for outputting object distance, pnp
	1 fault output, pnp NC
Resolution	14 mm , (corresponding to 1 LSB)
Repeat accuracy	14 mm , (corresponding to 1 LSB)
Rated operational current I_e	20 mA , short-circuit/overload protected
Voltage drop U_d	$\leq$ 4 V
Range hysteresis H	14 mm , (corresponding to 1 LSB)
Temperature influence	0.17 % / K

Standard conformity

Standards	EN 60947-5-2

Ambient conditions

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

Mechanical specifications

Protection degree	IP65
Connection	2 m, cable, 12 x 0.14 mm^2, cast terminal compartment
Material	
Housing	PBT
Transducer	epoxy resin/hollow glass sphere mixture; polyurethane foam
Mass	430 g

Electrical connection

Standard symbol/Connection:

Legend:

U_B+	= Brown		A3	= Pink
U_B-	= Blue		A4	= Red
			A5	= Green
Test input			A6	= Grey
E1	= Grey/Pink		A7	= Black
			A8	= Violet
8 bit output				
A1	= White		Error output	
A2	= Yellow		A9	= Red/Blue

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UJ4000-FP-8B

Function

The measurement of the distance is realised using the echo time of the ultrasonic pulse. The µ processor calculates the distance on the basis of the echo time and the speed of sound. The distance is directly issued in parallel in the form of an 8-bit data word.

This data word can be used for subsequent evaluation by downstream program logic such as a PLC.

In the event of noise that the sensor cannot handle, the sensor goes into failure mode in that the failure output opens and the 8-bit output retains the most recent measuring value. The dual LED goes into the red flashing state.
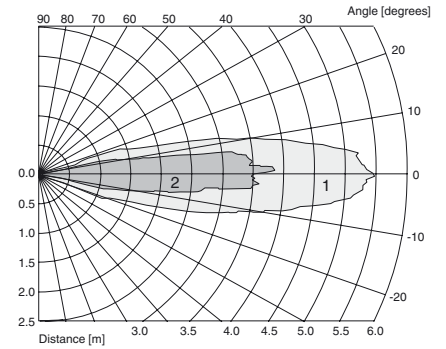
A 1 level at the test input causes the 8-bit output to switch from 00000000 to 11111111 and back every 200 ms.

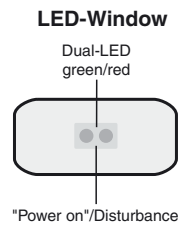## Characteristic curves/additional information

Characteristic response curves

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

LED-Window

Dual-LED green/red

"Power on"/Disturbance

Accessories

Mounting aid
MH 04-3505
MHW 11