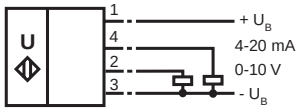
Single head system
UC300-30GM-IU-V1

Features

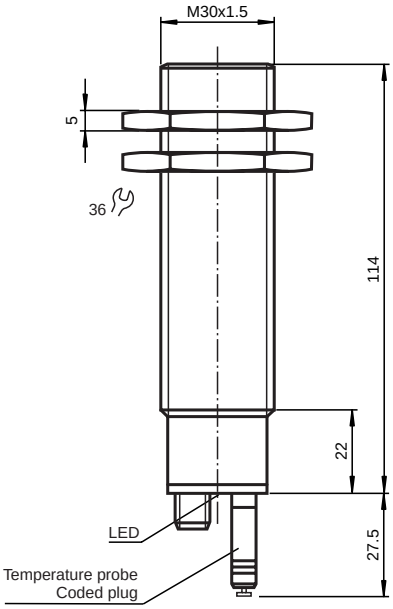
- Extremly small unusable area - only 15 mm
- Current and voltage output
- 12 bit D/A transducer
- Evaluation limits can be taught-in
- Temperature compensation
- Compact construction
- Plug connection

Electrical connection

Standard symbol/Connection:



Dimensions



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Technical data

General specifications	
Sensing range	15 ... 300 mm
Standard target plate	100 mm x 100 mm
Unusable area	0 ... 15 mm
Transducer frequency	approx. 380 kHz
Response delay	≤ 35 ms
Standard conformity	EN 60947-5-2
Indicating/Operating means	
LED yellow	permanently yellow: object in the evaluation range yellow, flashing: Teach-in function evaluation limits, slope
LED red/green	permanent green: Power on green, flashing: TEACH-IN function, object detected permanently red: Connector removed red, flashing: Error, teach-in function object not detected
Temperature/TEACH-IN connector	Temperature compensation, TEACH-IN of the switch points, output function change over
Electrical specifications	
Rated operational voltage U_e	10 ... 30 V DC, ripple 10 $\%_{SS}$
Power consumption P_0	≤ 800 mW
Output	
Output type	1 current output 4 ... 20 mA 1 voltage output 0 ... 10 V
Repeat accuracy	≤ 0.1 % of final value
Resolution	0.172 mm
Deviation of the characteristic curve	≤ 0.2 % of final value
Load impedance	current output: ≤ 500 Ohm Voltage output: ≥ 1000 Ohm
Temperature influence	< 2 % of full-scale value (≤ 0.2 % / K without temperature compensation)
Ambient conditions	
Ambient temperature	0 ... +50 °C (273 ... 323 K)
Storage temperature	-40 ... +85 °C (233 ... 358 K)
Mechanical specifications	
Protection degree	IP65 according to EN 60529
Connection type	V1 connector (M12 x 1), 4 pin
Material	
Housing	high grade steel (stainless)
Transducer	epoxy resin/hollow glass sphere mixture; foam polyurethane, cover PBT
Mass	175 g

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Note

Notes:

This ultrasonic sensor features a four-pole temperature/TEACH-IN plug that can be connected in four different positions. These have the following significance.

Plug position	Meaning
A1	Teach evaluation limit A1
A2	Teach evaluation limit A2
E2/E3	Switching: falling/rising ramp
T	Temperature compensation

Description of the TEACH-IN procedure:
- Remove temperature plug
- Cut and restore supply voltage (e.g. by removing and replacing unit plug)

TEACH-IN of evaluation limits A1 and A2:
- Set object to desired evaluation limit
- Connect TEACH-IN plug in pos. A1 or A2
- Green LED flashes when object detected, red LED flashes when no object detected
- Pull the plug (the current object position is taught and stored when the plug is removed!)

TEACH-IN of output function:
- Connect TEACH-IN plug in pos. E2/E3
- The yellow LED indicates the output function
  E2: falling ramp
  E3: rising ramp
- Pull the plug when the desired function is activated, otherwise reconnect the TEACH-IN plug in pos. E2/E3
- Pull plug

Completing the TEACH-IN procedure:
- Connect TEACH-IN plug in pos. T. Temperature compensation is now activated.

Note:
If the temperature plug has not been plugged in within 5 minutes, the sensor will return to normal mode without temperature compensation.

Displays depending on position of temperature/ TEACH-IN plug position	Green dual LED	Red dual LED	Yellow LED A1/ ⅂	Yellow LED A2/ ⅃
Teach switching point output A1 Object detected No object detected	 Flashing Off	 Off Flashing	 Flashing Flashing	 Off Off
Teach switching point output A2 Object detected No object detected	 Flashing Off	 Off Flashing	 Off Off	 Flashing Flashing
TEACH-IN of switch output functions: E2: 2 independent switching positions E3: window function	 On On	 Off Off	 Flashing Off	 Off Flashing
Normal mode, temperature compensated	On	Off	on/off [1)]	on/off [1)]
Plug pulled or shorted	Off	On	on/off [1)]	on/off [1)]
Interference (e.g. compressed air)	Off	Flashing	Previous state	Previous state

[1)] on: object within evaluation range; off: no object within evaluation range

Model number

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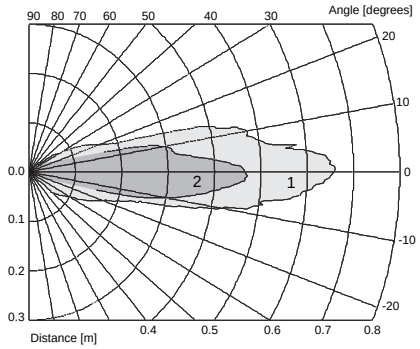
Characteristic curves/ Additional information

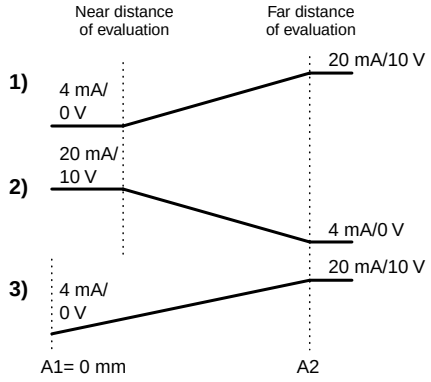
Characteristic response curves



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

Programmed analogue output function

Analogue function



LED-Window