

## Ultrasonic sensor UC300-30GM-IU-V1

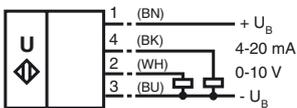


### Features

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

### Electrical connection

Standard symbol/Connection:  
(version IU)

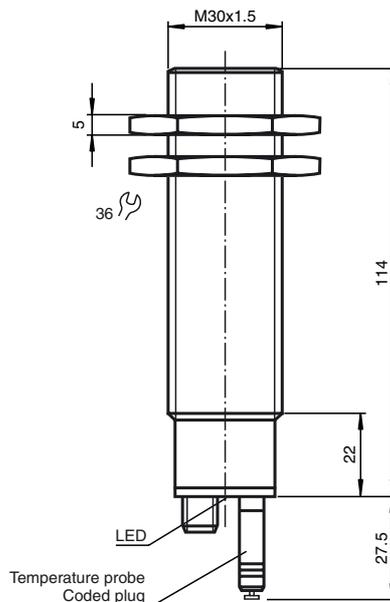


Core colours in accordance with EN 60947-5-2.

### Connector V1



### Dimensions



### Technical data



#### General specifications

Sensing range	15 ... 300 mm
Unusable area	0 ... 15 mm
Standard target plate	100 mm x 100 mm
Transducer frequency	approx. 380 kHz
Response delay	≤ 35 ms

#### Indicators/operating means

LED yellow

permanently yellow: object in the evaluation range  
yellow, flashing: TEACH-IN function evaluation limits, slope

LED red/green

permanently 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 for evaluation range, output function setting

#### Electrical specifications

Operating voltage	10 ... 30 V DC, ripple 10 % <sub>SS</sub>
Power consumption P <sub>0</sub>	≤ 800 mW

#### Output

Output type	1 current output 4 ... 20 mA 1 voltage output 0 ... 10 V
Resolution	0.172 mm

Deviation of the characteristic curve ≤ 0.2 % of full-scale value

Repeat accuracy ≤ 0.1 % of full-scale value

Load impedance  
current output: ≤ 500 Ohm  
Voltage output: ≥ 1000 Ohm  
< 2 % of full-scale value  
(≤ 0.2 % / K without temperature compensation)

Temperature influence

#### Standard conformity

Standards EN 60947-5-2

#### Ambient conditions

Ambient temperature 0 ... 50 °C (273 ... 323 K)  
Storage temperature -40 ... 85 °C (233 ... 358 K)

#### Mechanical specifications

Protection degree IP65  
Connection 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

## Notes

### Description of the sensor functions

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-IN evaluation limit A1
A2	TEACH-IN 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 or 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.

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

### Default setting

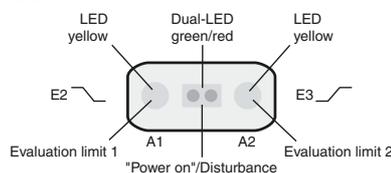
A1: unusable area  
A2: nominal sensing range  
Mode of operation: rising ramp

### LED Displays

Displays depending on position of temperature/TEACH-IN plug	Green dual LED	Red dual LED	Yellow LED A1/ ↖	Yellow LED A2/ ↗
TEACH-IN evaluation limit A1				
Object detected	flashes	off	flashes	off
No object detected	off	flashes	flashes	off
TEACH-IN evaluation limit A2				
Object detected	flashes	off	off	flashes
No object detected	off	flashes	off	flashes
TEACH-IN mode of operation				
rising ramp	on	off	flashes	off
falling ramp	on	off	off	flashes
Normal operation				
temperature compensated	on	off		
Plug pulled or shorted	off	on		
Interference (e.g. compressed air)	off	flashes	previous state	previous state

- 1) on, when object in evaluation range  
2) on, when object in detection range

### LED-Window

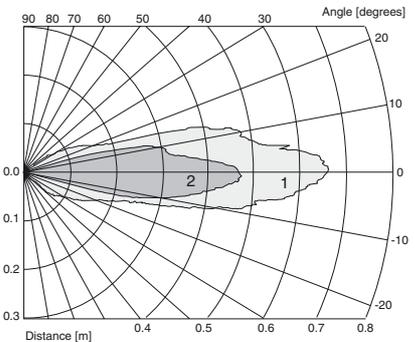


## Model number

**UC300-30GM-IU-V1**

## Characteristic curves/additional information

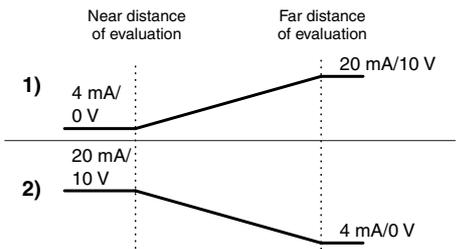
### Characteristic response curves



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

## Programmed analogue output function

### Analogue function



## Accessories

### Mounting aids

BF30  
BF30F  
BF5-30  
M-105

### Sound deflectors

UVW90-M30  
UVW90-K30

### External temperature probe

UC-30GM-TEMP

### Extension cable

UC-30GM-PROG

### Process indication- and control unit

DA5-IU-2K-V

### Cable sockets \*)

V1-G-2M-PVC