

switching state switch output yellow: object in evaluation range green: Teach-In switch output adjustable 20 ... 30 V DC (including ripple) point-to-point connection 1 synchronization connection, bidirectional (Factory setting: synchronized mode) / Teach-In input typ. 900 Ω 1 switch output PNP, NO (NC contact programmable 50 ... 500 mm (adjustable via potentiometer) 300 mA , short-circuit/overload protected 5 mm (programmable) 1 voltage output 0 ... 10 V , ascending/descending programmable rising slope ; evaluation limit A1: 50 mm ; evaluation limit A2: -25 ... 70 °C (-13 ... 158 °F) -40 ... 85 °C (-40 ... 185 °F) 30 g, 11 ms period 10 ... 55 Hz , Amplitude ± 1 mm

Connector M12 x 1 , 5-pin

brass, nickel-plated epoxy resin/hollow glass sphere mixture; polyurethane foam any position Cylindrical

EN 60947-5-2:2007 IEC 60947-5-2:2007

cULus Listed, General Purpose cCSAus Listed, General Purpose CCC approval / marking not required for products rated



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Refer to "General Notes Relating to Pepperl+Fuchs Product Information" Pepperl+Fuchs Group

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M30 x 1.5

M12 x 1

<u></u>

10.5

74.7

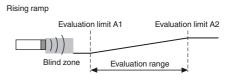
88.8

UC500-30GM70-UE2R2-V15

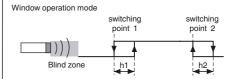
Dimensions

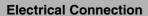
Additional Information

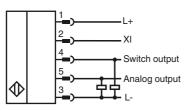
Analog output operating mode



Switching output operating mode







Pinout



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)
5	GY	(gray)

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Accessories

BF 30

Mounting flange, 30 mm

BF 5-30

Universal mounting bracket for cylindrical sensors with a diameter of 5 ... 30 mm

V15-G-2M-PUR Female cordset, M12, 5-pin, PUR cable

V15-W-2M-PUR

Female cordset, M12, 5-pin, PUR cable

UC-18/30GM-IR Interface cable

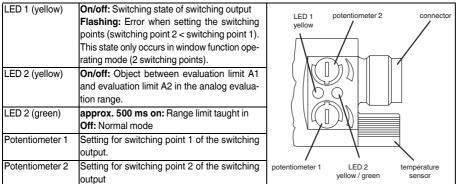
ULTRA-PROG-IR

Configuration software for ultrasonic sensors

Description of Sensor Functions

Displays and Controls

The sensor has two potentiometers and two display LEDs.



The potentiometer function described illustrates the default function. The function of the potentiometer can be altered using the ULTRA-PROG-IR software. As soon as a configuration has been changed, the potentiometer function selected using ULTRA-PROG-IR is activated.

Setting the Sensor Using the Potentiometers

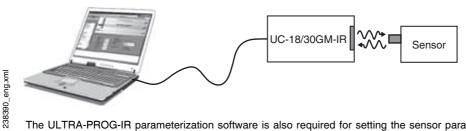
The sensor is equipped with two potentiometers. These potentiometers are assigned to the switching output by default. The switching output operates in window mode by default (2 switching points). Potentiometer 1 is used to set the near switching point of the switching window. Potentiometer 2 is used to set the distant switching point of the switching window.

Note:

The function of the potentiometer can be altered using the ULTRA-PROG-IR software. As soon as a configuration has been changed, the potentiometer function selected using ULTRA-PROG-IR is activated.

Parameterization via ULTRA-PROG-IR

In order to be able to set the sensor parameters and adjust the sensor to the respective application, the sensor is able to communicate with a PC via the integrated infrared interface. The UC-18/30GM-IR interface cable is required to allow communication via this method. This cable is connected to an unused USB port on the PC.



The ULTRA-PROG-IR parameterization software is also required for setting the sensor parameters. The ULTRA-PROG-IR software can be downloaded for free from the www.pepperl-fuchs.com website. The software allows all open parameters to be set, including:

- All trip points and switching hystereses
- Output modes and behaviors
- Delay times

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Release

- Settings and setting ranges of the potentiometer
- Settings for teach-in and synchronization
- Definition of blind zones
- Sensor modes and measurement methods
- Filtering measurement values
- The following service functions are also available:
- Observing and recording measurement values
- **Diagnosing interference reflections**

Teach-in

The sensor is equipped with a function input (XI). In order to teach in a limit value, this sensor must be parameterized as the Teach-in input using the ULTRA-PROG-IR parameterization software. This parameterization software allows you to specify what limit value is taught in.

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Note:

The Teach-in function is not activated when the sensor is delivered.

Description of the Teach-in process: 1. Position an object at the required distance.

- 2. Connect the Teach-in input to L-.
- - The green LED lights up briefly after approx. 3 seconds. This indicates that the required distance has been successfully saved.
- Disconnect the Teach-in input from L-. З.

Note:

If the Teach-in input remains connected to L-, the Teach-in process is repeated every 3 seconds.

Synchronization

The sensor features a function input (XI). Using the ULTRA-PROG-IR parameterization software, this function input can be configured as a synchronization input to suppress mutual interference from external ultrasonic signals. This is illustrated in the following description. If the synchronization input is not connected, the sensor operates with internally generated cycle pulses.

External synchronization

The sensor can be synchronized by applying external rectangular pulses. The pulse duration must be ≥ 100 µs. Each rising pulse edge sends an individual ultrasonic pulse. If the signal at the synchronization input is high, the sensor reverts to the normal, unsynchronized operating mode. If a low signal is applied to the synchronization input, the sensor switches to standby. In this operating mode, the last recorded output statuses are retained.

Internal synchronization

Common mode operation

Up to ten sensors can be synchronized with each other. To do this, the synchronization inputs of the individual sensors are connected to each other. When configured in this state, all of the sensors send the ultrasonic signals together at the same time. The cycle rate corresponds to the cycle rate of the sensor with the lowest rate.

Multiplex mode

Up to ten sensors can work in multiplex mode; i.e. the sensors send their ultrasonic signals in succession. This prevents the sensor signals interfering with each other. In multiplex mode, the synchronization inputs of all sensors are connected to each other. An address must also be assigned to each sensor using the ULTRA-PROG-IR parameterization software, and the number of sensors to be synchronized must be determined. To start multiplex mode, all sensors are commissioned together by switching on the power supply.

