microsonic

EVERY THING ULTRA SONIC

Extract from our online catalogue:

ucs ultrasonic sensors

Current to: 2024-04-19

microsonic GmbH / Phoenixseestraße 7 / 44263 Dortmund / Germany / **T** +49 231 975151-0 / **F** +49 231 975151-51 / **E** info@microsonic.de
microsonic® is a registered trademark of microsonic GmbH. All rights reserved.

The ucs sensors in a sturdy metal housing are mechanically compatible with the industrial standard of opto sensors.

HIGHLIGHTS

- Robust metal housing › for harsh usage conditions
- Dovetail design › for fast installation
- Mechanically compatible with the industry standard › a true alternative to the optical sensor
- IO-Link interface › for support of the new industry standard
- Automatic synchronisation › for simultaneous operation of up to ten sensors in close quarters
- UL Listed to Canadian and US safety standards

BASICS

- 2 Push-Pull switching outputs › pnp or npn basis
- Antivalent switching output F1
- microsonic Teach-in using a button
- 0.1 mm resolution
- Temperature compensation
- 10–30 V operating voltage
- LinkControl › for configuration of sensors from a PC

Description

The sturdy metal housing

of the ucs sensors is mechanically compatible with the industrial standard of optical sensors.

The rotatable circular connector

allows for flexible selection of the mounting location and facilitates flexible wiring.

The ucs sensors

are available with 2 Push-Pull switching outputs in pnp- or npn-circuitry with IO-Link interface.

By default, switching output F1 works antivalent to switching output F2. Using LinkControl or IO-Link, the antivalence of switching output F1 can be canceled.

The Teach-in button

on the sensor´s top allows for a convenient setting of the desired detection distance and operating mode.

A dual LED

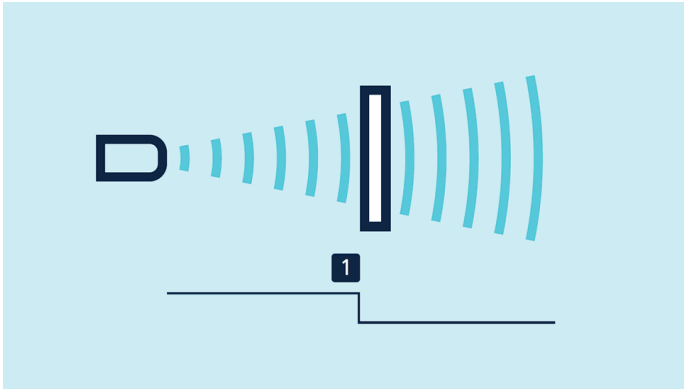
indicates the switching status of the two switching outputs.

The ucs sensors have three operating modes:

- Single switching point
- Two-way reflective barrier
- Window mode

The switched output is set

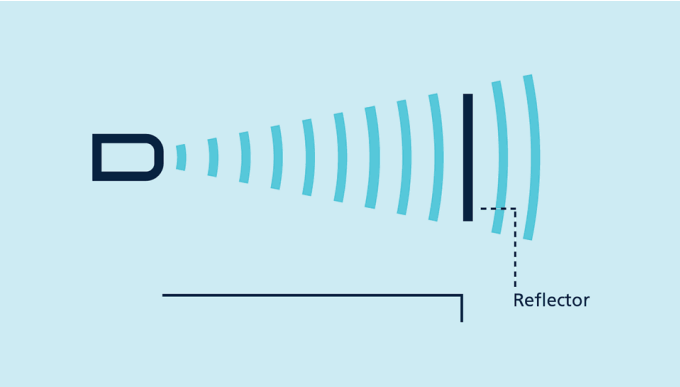
by positioning the object to be detected within the desired distance (1) to the sensor, pressing the button for approx. 3 seconds and then pressing it once more for approx. 1 second. Ready.



Teach-in of a switching point

A two-way reflective barrier

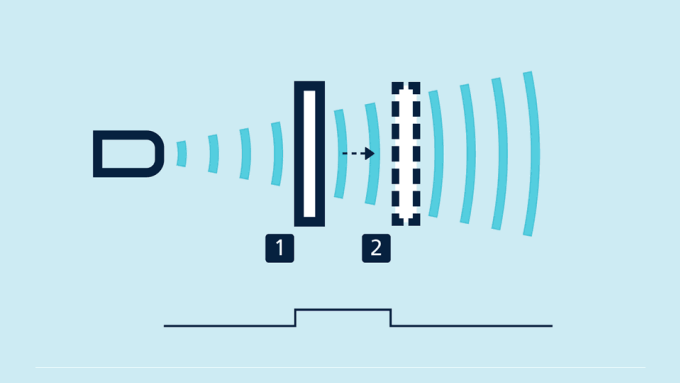
can be set up with the help of a permanently mounted reflector by mounting the ucs sensor and the reflector, then pressing the button for approx. 3 seconds and then pressing it once more for approx. 10 seconds. Now, the two-way reflective barrier has been set.



Teach-in of a two-way reflective barrier

Set a window

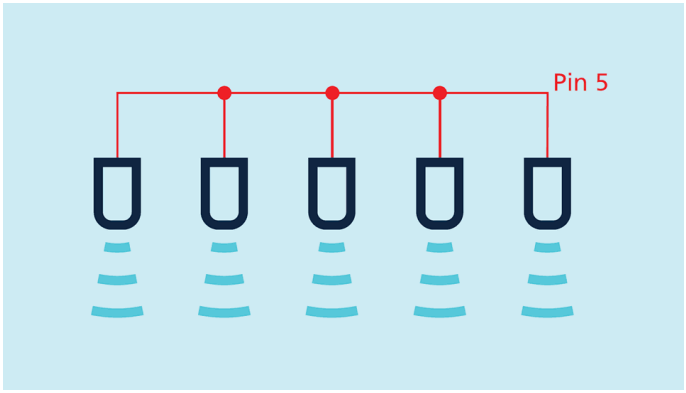
by initially positioning the object to be detected on the sensor-close window limit (1), pressing the button for approx. 3 seconds, shifting the object to the sensor-distant window limit (2) and pressing the button once more for approx. 1 second. Ready.



Teach-in of a window with two switching points

Up to ten sensors

can be synchronised with one another. To do this, all the sensors are electrically connected on pin 5 on the M12 circular connector.

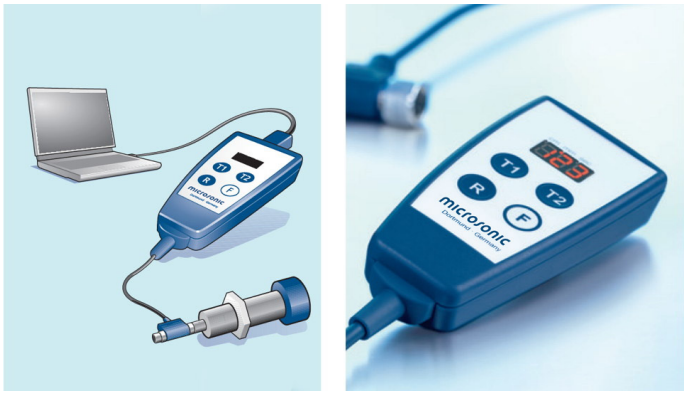


Synchronisation using pin 5

If more than 10 sensors must be synchronised, this can be carried out with the SyncBox1 , which is available as an accessory.

LinkControl

optionally permits the extensive parameterisation of ucs sensors. The LCA-2 LinkControl adapter, which is available as an accessory, can be used to connect ucs sensors to the PC.



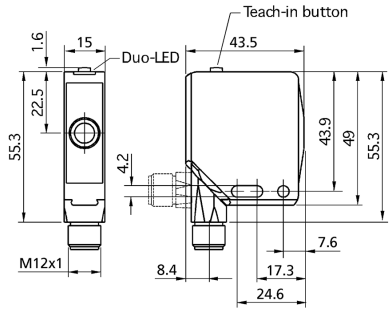
Sensor connected to the PC via LCA-2 for programming

IO-Link integrated

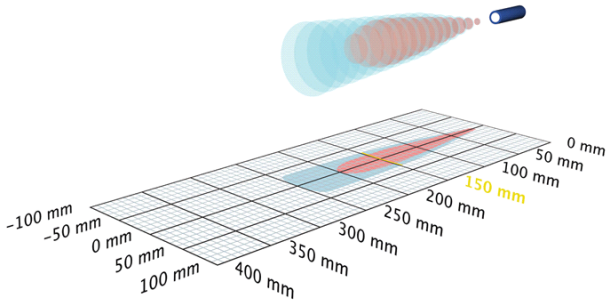
in version 1.1. The ucs ultrasonic sensors are equipped with Smart Sensor Profile, which creates more transparency between IO-Link devices.

ucs-15/CFF

scale drawing



detection zone



2 x Push-Pull

250 mm

measuring range	20 - 250 mm
design	cuboidal
operating mode	IO-Link proximity switch/reflective mode reflective barrier window mode
particularities	quaderförmig schlankes Schallfeld IO-Link Version 1.1 Smart Sensor Profile UL Listed

ultrasonic-specific

means of measurement	echo propagation time measurement
transducer frequency	380 kHz
blind zone	20 mm
operating range	150 mm
maximum range	250 mm
resolution	0.10 mm
reproducibility	± 0.15 %
accuracy	± 1 % (temperature drift internally compensated)

electrical data

operating voltage U_B	10 - 30 V d.c., reverse polarity protection
voltage ripple	± 10 %
no-load current consumption	≤ 60 mA
type of connection	5-pin M12 initiator plug

ucs-15/CFF

ucs-15/CFF

outputs	
output 1	switching output Push-Pull, U_B-3 V, -U_B+3 V,I_{max} = 100 mA NOC/NCC adjustable, short-circuit-proof
output 2	switching output Push-Pull, U_B-3 V, -U_B+3 V,I_{max} = 100 mA NOC/NCC adjustable, short-circuit-proof
switching hysteresis	2.0 mm
switching frequency	25 Hz
response time	32 ms
delay prior to availability	< 300 ms

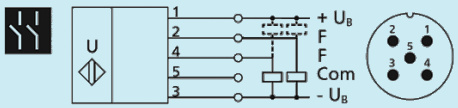
inputs	
input 1	com input synchronisation input teach-in input

IO-Link	
product name	ucs-15/CFF
product ID	19005
SIO mode support	yes
COM mode	COM2 (38,4 kBaud)
min. cycle time	8 ms
format of process data	16 Bit, R, UNI16
content of process data	Bit 0: Q1 switch status; Bit 1-15: distance value with a resolution of 0,1 mm
ISDU paramter	Identification, measuring configuration, switched output, filter, temperature compensation, operation
system commands	SP1 Teach-in, SP2 Teach-in, factory settings
Smart Sensor Profile	Ja
IODD version	IODD version 1.1

housing	
material	zinc die-casting, plastic parts, PBT
ultrasonic transducer	polyurethane foam, epoxy resin with glass contents
class of protection to EN 60529	IP 67
operating temperature	-25°C to +70°C
storage temperature	-40°C to +85°C
weight	65 g

ucs-15/CFF

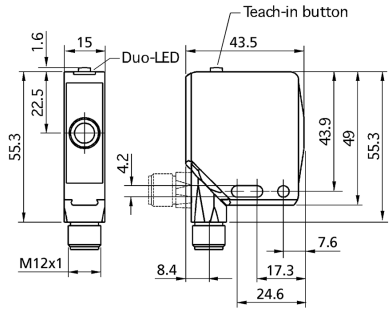
technical features/characteristics	
temperature compensation	yes
controls	1 push-button com input
scope for settings	Teach-in via push-button LCA-2 with LinkControl IO-Link
Synchronisation	yes
multiplex	yes
indicators	Duo-LED green/yellow
particularities	quaderförmig schlankes Schallfeld IO-Link Version 1.1 Smart Sensor Profile UL Listed

pin assignment	
order no.	**ucs-15/CFF**

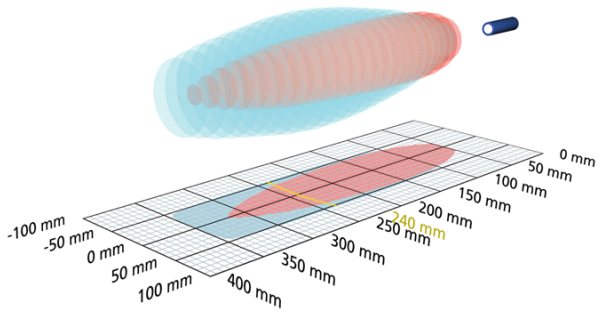
The content of this document is subject to technical changes. Specifications in this document are presented in a descriptive way only. They do not warrant any product features.

ucs-24/CFF

scale drawing



detection zone



2 x Push-Pull

350 mm

measuring range	55 - 350 mm
design	cuboidal
operating mode	IO-Link proximity switch/reflective mode reflective barrier window mode
particularities	quaderförmig IO-Link Version 1.1 Smart Sensor Profile UL Listed

ultrasonic-specific

means of measurement	echo propagation time measurement
transducer frequency	500 kHz
blind zone	55 mm
operating range	240 mm
maximum range	350 mm
resolution	0.10 mm
reproducibility	± 0.15 %
accuracy	± 1 % (temperature drift internally compensated)

electrical data

operating voltage U_B	10 - 30 V d.c., reverse polarity protection
voltage ripple	± 10 %
no-load current consumption	≤ 60 mA
type of connection	5-pin M12 initiator plug

ucs-24/CFF

outputs	
output 1	switching output Push-Pull, U_B-3 V, -U_B+3 V,I_{max} = 100 mA NOC/NCC adjustable, short-circuit-proof
output 2	switching output Push-Pull, U_B-3 V, -U_B+3 V,I_{max} = 100 mA NOC/NCC adjustable, short-circuit-proof
switching hysteresis	2.0 mm
switching frequency	20 Hz
response time	40 ms
delay prior to availability	< 300 ms

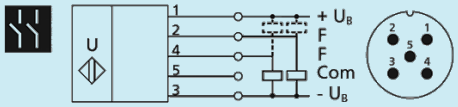
inputs	
input 1	com input synchronisation input teach-in input

IO-Link	
product name	ucs-24/CFF
product ID	19006
SIO mode support	yes
COM mode	COM2 (38,4 kBaud)
min. cycle time	10 ms
format of process data	16 Bit, R, UNI16
content of process data	Bit 0: Q1 switch status; Bit 1-15: distance value with a resolution of 0,1 mm
ISDU paramter	Identification, measuring configuration, switched output, filter, temperature compensation, operation
system commands	SP1 Teach-in, SP2 Teach-in, factory settings
Smart Sensor Profile	Ja
IODD version	IODD version 1.1

housing	
material	zinc die-casting, plastic parts, PBT
ultrasonic transducer	polyurethane foam, epoxy resin with glass contents
class of protection to EN 60529	IP 67
operating temperature	-25°C to +70°C
storage temperature	-40°C to +85°C
weight	65 g

ucs-24/CFF

technical features/characteristics	
temperature compensation	yes
controls	1 push-button com input
scope for settings	Teach-in via push-button LCA-2 with LinkControl IO-Link
Synchronisation	yes
multiplex	yes
indicators	Duo-LED green/yellow
particularities	quaderförmig IO-Link Version 1.1 Smart Sensor Profile UL Listed

pin assignment	
order no.	**ucs-24/CFF**

The content of this document is subject to technical changes. Specifications in this document are presented in a descriptive way only. They do not warrant any product features.