

microsonic

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THING  
ULTRA  
SONIC

Extract from our online catalogue:

ucs ultrasonic sensors

Current to: 2021-12-16



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
- › Automatic synchronisation › for simultaneous operation of up to ten sensors in close quarters

## BASICS

- › 2 anti-valent switching outputs in pnp or npn variant
- › 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 anti-valent pnp or npn switching outputs.

With the anti-valent switching behaviour of the two switching outputs, the first output works as an NO contact and the second works complementarily as an NC contact.

## 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

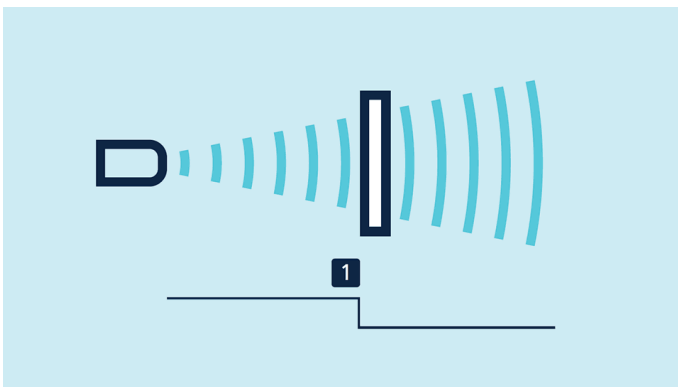
indicates the switching status of the two anti-valent switching outputs.

## The ucs sensors have three operating modes:

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

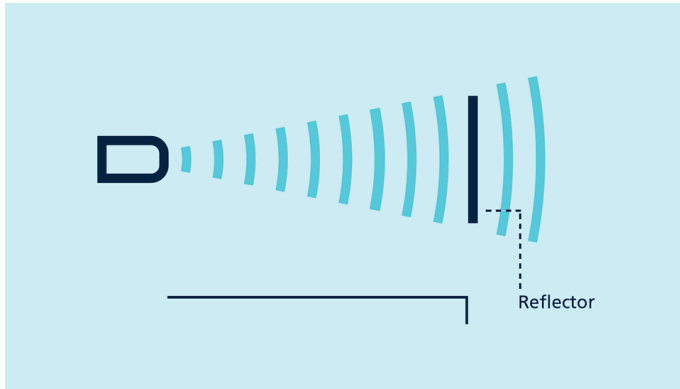
## The switched output is set

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.



### A two-way reflective barrier

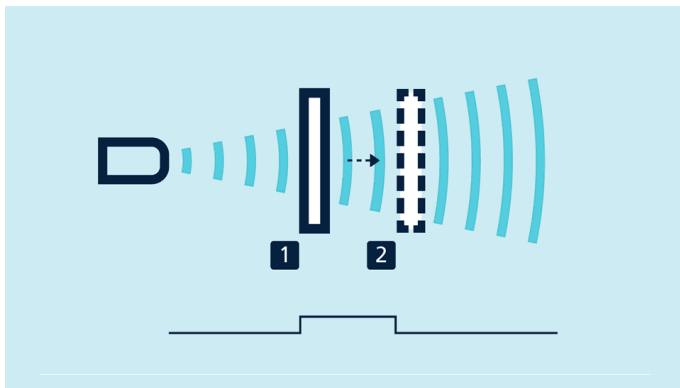
can be set up with the help of a permanently mounted reflector by mounting the ucs sensor and the reflector, then pressing the button for approx. 3 seconds and then pressing it once more for approx. 10 seconds. Now, the two-way reflective barrier has been set.



Teach-in of a two-way reflective barrier

### Set a window

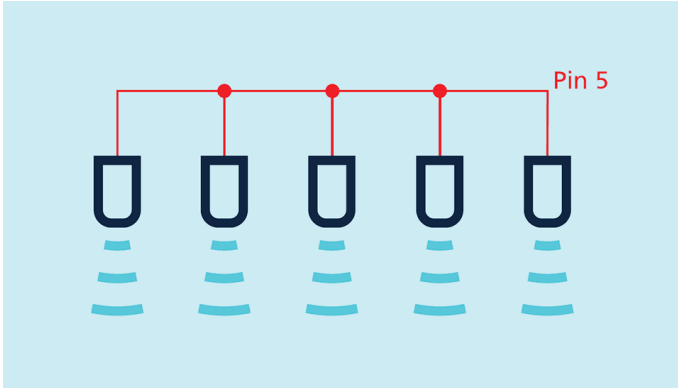
by initially positioning the object to be detected on the sensor-close window limit (1), pressing the button for approx. 3 seconds, shifting the object to the sensor-distant window limit (2) and pressing the button once more for approx. 1 second. Ready.



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.

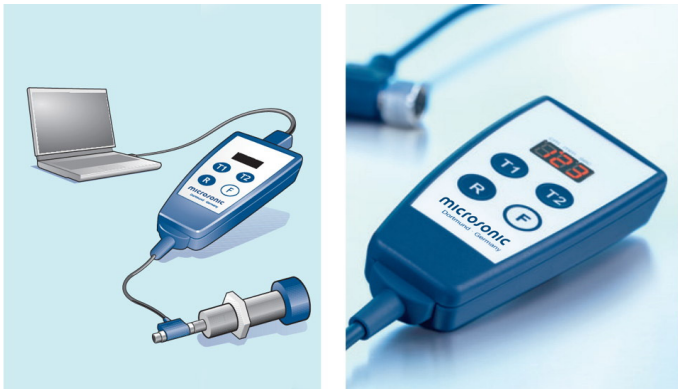


*Synchronisation using pin 5*

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

### LinkControl

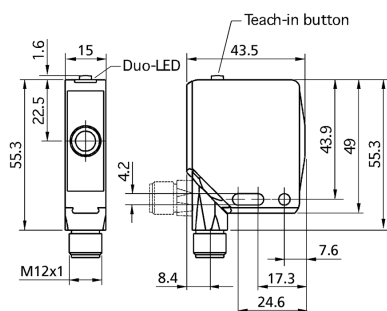
optionally permits the extensive parameterisation of ucs sensors. The LCA-2 **LinkControl adapter**, which is available as an accessory, can be used to connect ucs sensors to the PC.



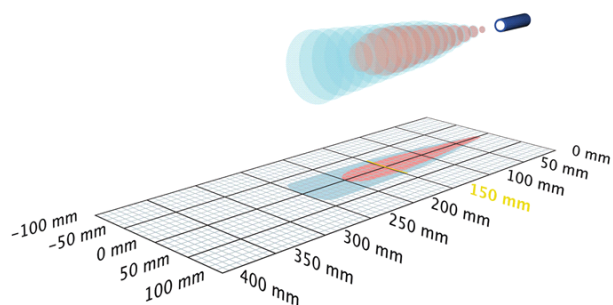
*Sensor connected to the PC via LCA-2 for programming*

# ucs-15/CDD/QM

## scale drawing



## detection zone



2 x pnp



250 mm

measuring range	20 - 250 mm
design	cuboidal
operating mode	proximity switch/reflective mode reflective barrier window mode
particularities	quaderförmig schlankes Schallfeld

## 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	≤ 40 mA
type of connection	5-pin M12 initiator plug

# ucs-15/CDD/QM

## outputs

output 1	switching output pnp: $I_{\max} = 200 \text{ mA}$ ( $U_B = 2\text{V}$ ) NOC/NCC adjustable, short-circuit-proof
output 2	switching output pnp: $I_{\max} = 200 \text{ mA}$ ( $U_B = 2\text{V}$ ) NOC/NCC adjustable, short-circuit-proof
switching hysteresis	2.0 mm
switching frequency	25 Hz
response time	24 ms
delay prior to availability	< 300 ms

## inputs

input 1	com input
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## housing

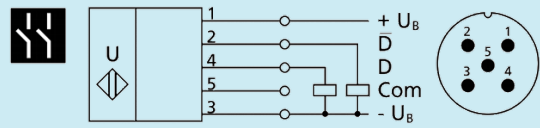
material	zinc die-casting, plastic parts, PBT
ultrasonic transducer	polyurethane foam, epoxy resin with glass contents
class of protection to EN 60529	IP 67
operating temperature	-25°C to +70°C
storage temperature	-40°C to +85°C
weight	75 g

## technical features/characteristics

temperature compensation	yes
controls	1 push-button com input
scope for settings	Teach-in via push-button LCA-2 with LinkControl
Synchronisation	yes
multiplex	no
indicators	1 x Duo-LED; green: working / yellow: switch status
particularities	quaderförmig schlankes Schallfeld

# ucs-15/CDD/QM

## pin assignment



order no.

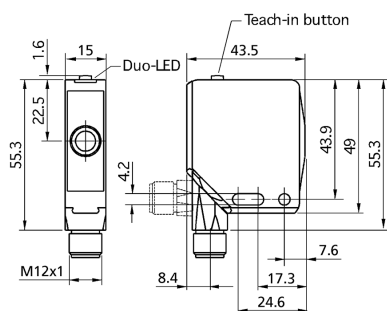
ucs-15/CDD/QM

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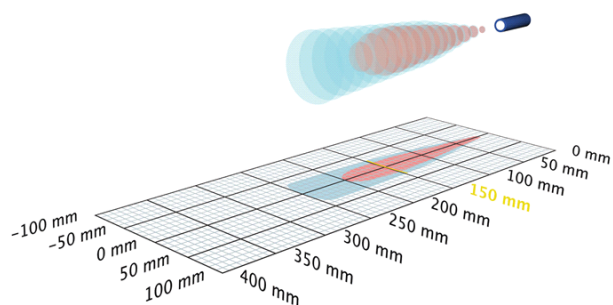


# ucs-15/CEE/QM

## scale drawing



## detection zone



2 x npn



250 mm

measuring range	20 - 250 mm
design	cuboidal
operating mode	proximity switch/reflective mode reflective barrier window mode
particularities	quaderförmig schlankes Schallfeld

## 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	≤ 40 mA
type of connection	5-pin M12 initiator plug

# ucs-15/CEE/QM

## outputs

output 1	switching output npn: $I_{\max} = 200 \text{ mA}$ ( $-U_B+2V$ ) NOC/NCC adjustable, short-circuit-proof
output 2	switching output npn: $I_{\max} = 200 \text{ mA}$ ( $-U_B+2V$ ) NOC/NCC adjustable, short-circuit-proof
switching hysteresis	2.0 mm
switching frequency	25 Hz
response time	24 ms
delay prior to availability	< 300 ms

## inputs

input 1	com input
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## housing

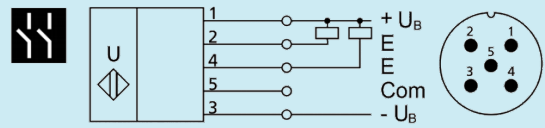
material	zinc die-casting, plastic parts, PBT
ultrasonic transducer	polyurethane foam, epoxy resin with glass contents
class of protection to EN 60529	IP 67
operating temperature	-25°C to +70°C
storage temperature	-40°C to +85°C
weight	75 g

## technical features/characteristics

temperature compensation	yes
controls	1 push-button com input
scope for settings	Teach-in via push-button LCA-2 with LinkControl
Synchronisation	yes
multiplex	no
indicators	1 x Duo-LED; green: working / yellow: switch status
particularities	quaderförmig schlankes Schallfeld

# ucs-15/CEE/QM

## pin assignment



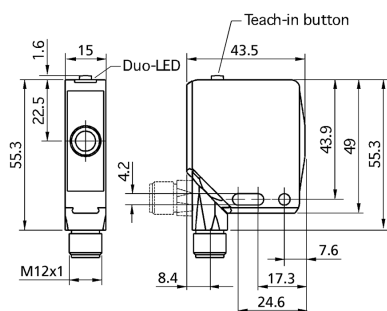
order no.

ucs-15/CEE/QM

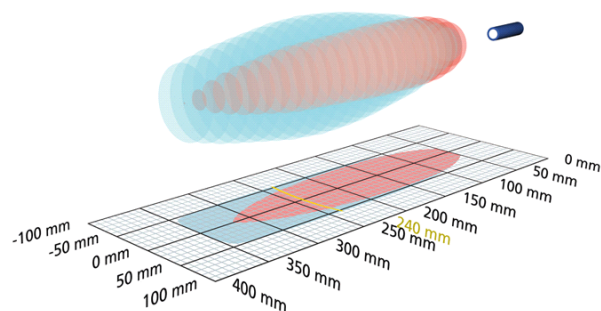
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# ucs-24/CDD/QM

## scale drawing



## detection zone



2 x pnp



measuring range	55 - 350 mm
design	cuboidal
operating mode	proximity switch/reflective mode reflective barrier window mode
particularities	cuboidal

## 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	$\pm 0.15 \%$
accuracy	$\pm 1 \%$ (temperature drift internally compensated)

## electrical data

operating voltage $U_B$	10 - 30 V d.c., reverse polarity protection
voltage ripple	$\pm 10 \%$
no-load current consumption	$\leq 45$ mA
type of connection	5-pin M12 initiator plug

# ucs-24/CDD/QM

## outputs

output 1	switching output pnp: $I_{\max} = 200 \text{ mA}$ ( $U_B = 2\text{V}$ ) NOC/NCC adjustable, short-circuit-proof
output 2	switching output pnp: $I_{\max} = 200 \text{ mA}$ ( $U_B = 2\text{V}$ ) NOC/NCC adjustable, short-circuit-proof
switching hysteresis	2.0 mm
switching frequency	25 Hz
response time	24 ms
delay prior to availability	< 300 ms

## inputs

input 1	com input
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## housing

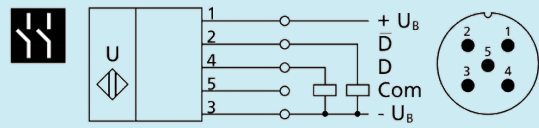
material	zinc die-casting, plastic parts, PBT
ultrasonic transducer	polyurethane foam, epoxy resin with glass contents
class of protection to EN 60529	IP 67
operating temperature	-25°C to +70°C
storage temperature	-40°C to +85°C
weight	75 g

## technical features/characteristics

temperature compensation	yes
controls	1 push-button com input
scope for settings	Teach-in via push-button LCA-2 with LinkControl
Synchronisation	yes
multiplex	no
indicators	1 x Duo-LED; green: working / yellow: switch status
particularities	cuboidal

# ucs-24/CDD/QM

## pin assignment



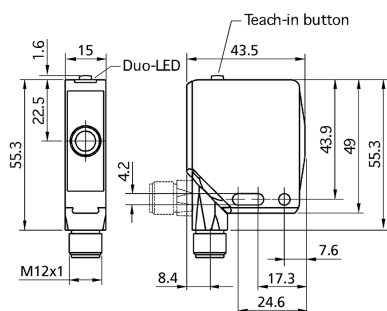
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ucs-24/CDD/QM

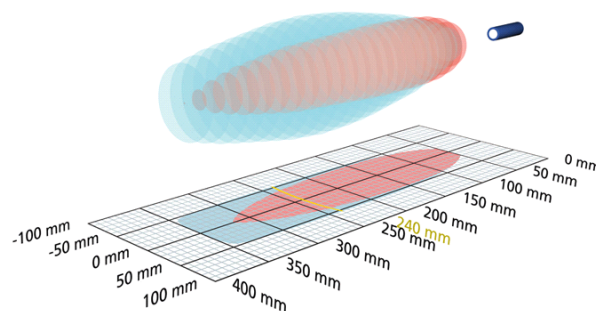
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# ucs-24/CEE/QM

## scale drawing



## detection zone



2 x npn



350 mm

measuring range	55 - 350 mm
design	cuboidal
operating mode	proximity switch/reflective mode reflective barrier window mode
particularities	cuboidal

## 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	≤ 40 mA
type of connection	5-pin M12 initiator plug

# ucs-24/CEE/QM

## outputs

output 1	switching output npn: $I_{\max} = 200 \text{ mA}$ ( $-U_B+2V$ ) NOC/NCC adjustable, short-circuit-proof
output 2	switching output npn: $I_{\max} = 200 \text{ mA}$ ( $-U_B+2V$ ) NOC/NCC adjustable, short-circuit-proof
switching hysteresis	2.0 mm
switching frequency	25 Hz
response time	24 ms
delay prior to availability	< 300 ms

## inputs

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## housing

material	zinc die-casting, plastic parts, PBT
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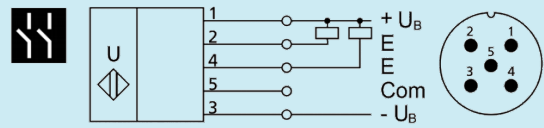
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controls	1 push-button com input
scope for settings	Teach-in via push-button LCA-2 with LinkControl
Synchronisation	yes
multiplex	no
indicators	1 x Duo-LED; green: working / yellow: switch status
particularities	cuboidal



# ucs-24/CEE/QM

## pin assignment



order no.

ucs-24/CEE/QM

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