microsonic



extract from our online catalogue:

# *Ics-30/IU/HV/QP/K10*

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# Ics

Ultrasonic sensors in the Ics series are available in three device variants with three different detection ranges.

## Highlights

## Basics

- Up to 3 pnp switching outputs
- Automatic synchronisation › for simultaneous operation of up to ten sensors in close quarters
- 2 or 3 switching outputs in pnp variant
- Analogue output 4–20 mA and 0–10 V › with automatic switching between current and voltage outputs
- 3 detection ranges with a measurement range of 30 mm to 2 m
- microsonic Teach-in on pin 5
- 0.18 mm resolution
- Temperature compensation
- 9–30 V operating voltage
- LinkControl › for configuration of sensors from a PC

# The lcs sensors

have a block-like plastic housing with four fixation bores, two of which are already equipped with M4 threaded bushings for eased mounting.

### Two or three LEDs

indicate all operating statuses.

### Three detection ranges and two output stages are available for selection:

- 2 pnp switching outputs
- 3 pnp switching outputs
- 1 analogue output 4–20 mA and 0–10 V

### Via pin 5 at the M12 circular connector

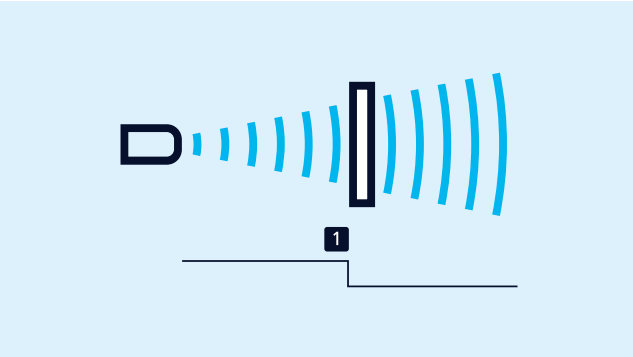
(Com input), the lcs sensors are set (Teach-in): Switching output D1 is set by connecting pin 5 to +UB, while switching output D2 is set by connecting pin 5 to –UB. Also the sensors with analogue output are set via pin 5.

### The lcs sensors with switching output offer three operating modes:

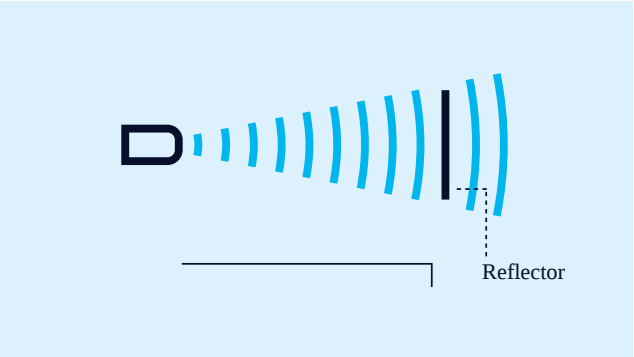
- Single switching point
- Two-way reflective barrier
- Window mode

### Teach-in of a single switching point

- Place object to be detected (1) at the desired distance
- Apply +$U_B$ to pin 5 for about 3 seconds
- Then apply +$U_B$ to pin 5 again for about 1 seconds




*Teach-in of a switching point*




*Teach-in of a two-way reflective barrier*

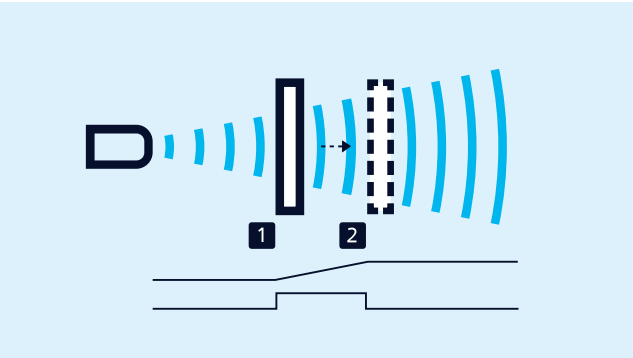
### Teach-in of a two-way reflective barrier

with a fixed reflector

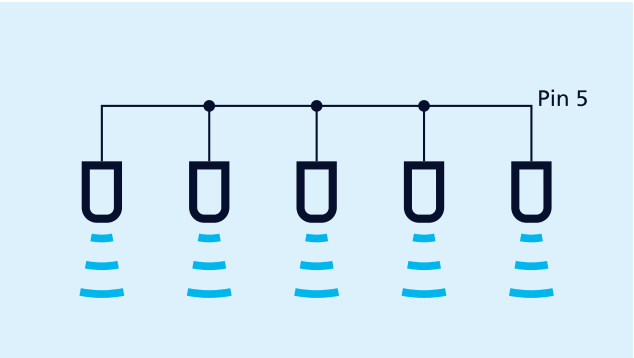
- Apply +$U_B$ to pin 5 for about 3 seconds
- Then apply +$U_B$ to pin 5 again for about 10 seconds

### For configuration of a window

- Place object at the near edge of the window (1)
- Apply +$U_B$ to pin 5 for about 3 seconds
- Then move the object to the far edge of the window (2)
- Then apply +$U_B$ to pin 5 again for about 1 seconds




*Teach-in of an analogue characteristic or a window with two switching points*




*Synchronisation via pin 5*

### Synchronisation

permits the simultaneous use of multiple mic sensors in an application. To avoid mutual interference, the sensors can be synchronised with one another. To do this, all the sensors are electrically connected on pin 5.

### NCC/NOC

and rising/falling analogue characteristic curve can also be set via pin 5.

### The analogue sensor

checks the load connected to the output and then automatically switch to 4–20 mA current output or 0–10 V voltage output to ensure maximum ease of handling.

### The Ics-25/DDD is equipped with three pnp switching outputs

which are set with the help of the Link-Control adapter LCA-2. In addition to this “offline” programming, all Ics sensors can also be parameterised on the PC with the LCA-2 and the Link-Control software .




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

# *You have special requirements?*

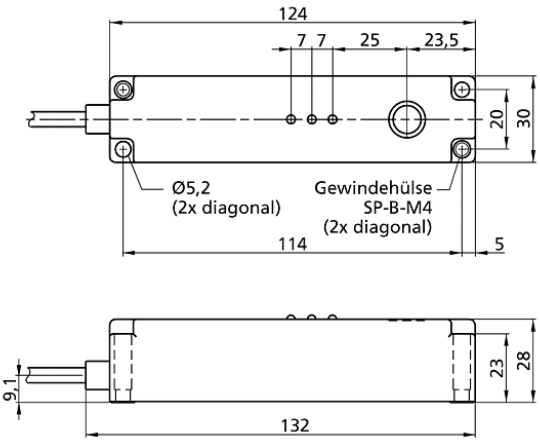
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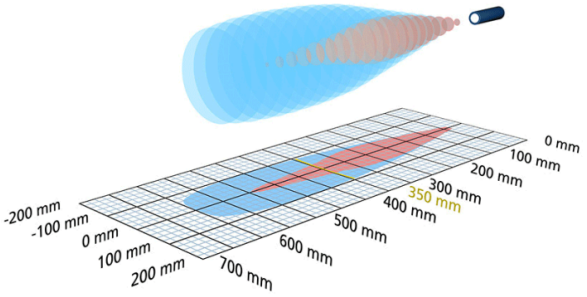
**Archivsensor**

# lcs-30/IU/HV/QP/K10

## scale drawing




## detection zone




| Successor model available | please inquire |
|---|---|
| 1 x analogue 4-20 mA + 0-10 V | 600 mm |
| design | cuboidal |
| operating mode | analogue distance measurements |
| particularities | archive sensor<br>flat housing<br>lateral sound exit<br>cable connection |

## Ultrasonic-Specific

| | |
|---|---|
| means of measurement | echo propagation time measurement |
| transducer frequency | 400 kHz |
| blind zone | 60 mm |
| operating range | 350 mm |
| max. range | 600 mm |
| resolution | 0.36 mm |
| reproducibility | ± 0.15 % |
| accuracy | ± 1 % (temperature drift internally compensated) |

## Electrical Data

| | |
|---|---|
| operating voltage $U_B$ | 12 - 30 V d.c., reverse polarity protection |
| voltage ripple | ± 10 % |
| no-load current consumption | ≤ 70 mA |
| type of connection | 10 m PUR cable, 5 × 0.25 mm$^2$ |

## outputs

| | |
|---|---|
| output 1 | analogue output<br>current: 4-20 mA / voltage: 0-10 V (at $U_B \geq 15$ V), short-circuit-proof<br>switchable rising/falling |
| response delay | 70 ms |
| delay prior to availability | < 300 ms |

## Inputs

| | |
|---|---|
| input 1 | com input |

## housing

| | |
|---|---|
| material | PBT |
| ultrasonic transducer | polyurethane foam, epoxy resin with glass contents |
| class of protection to EN 60529 | IP 65 |
| operating temperature | -20°C to +70°C |
| storage temperature | -40°C to +85°C |
| weight | |

## Technical Features/Characteristics

| | |
|---|---|
| temperature compensation | yes |
| controls | no |
| scope for settings | LCA-2 with LinkControl |
| synchronization | no |
| multiplex | no |
| indicators | 2 x three-colour LED |

## Accessories

| | |
|---|---|
| deployable accessory | LCA-2<br>LCA-2 Koffer |