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extract from our online catalogue:

# *Ics+600/IU*

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# lcs+

The lcs+ ultrasonic sensors come in a very compact square-shaped housing - with analogue or switching output + IO-Link.

## Highlights

- Very compact housing dimensions › only 62 mm x 62 mm x 37.2 mm
- IO-Link interface › for support of the new industry standard
- Smart Sensor Profiles › more transparency between IO-Link Devices
- Synchronisation and multiplex mode › for simultaneous operation of up to ten sensors in close quarters
- 8 m maximum detection range
- UL Listed to Canadian and US safety standards

## Basics

- 1 Push-Pull switching output, or 2 pnp switching outputs
- Analogue output 4–20 mA and 0–10 V › with automatic switching between current and voltage outputs
- microsonic Teach-in by using button T1 and T2
- 0.18 mm to 2.4 mm resolution
- Temperature compensation
- 9–30 V operating voltage
- LinkControl › for configuration of sensors from a PC

# The Ics+ ultrasonic sensors

have a block-like plastic housing with a base area of only 62 × 62 mm and four fastening bores.
The sensors are Listed to applicable UL Standards and requirements by UL for Canada and the US.

### Two dual colour LEDs

show all operating statuses.

### Using the two Teach-in buttons T1 and T2

the Ics+ sensors can be easily set (Teach-in).

### Three output stages are available for selection:



1 Push-Pull switching output with pnp or npn switching technology with IO-Link interface



2 pnp switching outputs



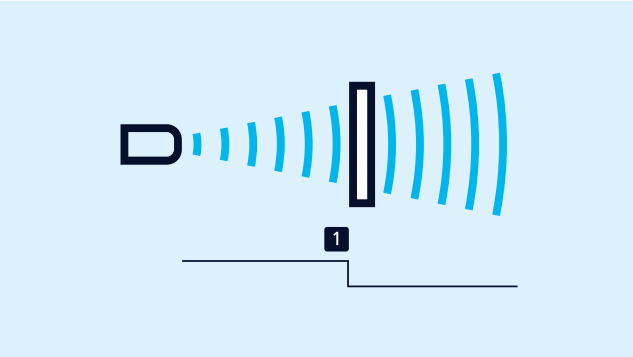
1 analogue output 4–20 mA or 0–10 V

### The Ics+ sensors with switching output have three operating modes:

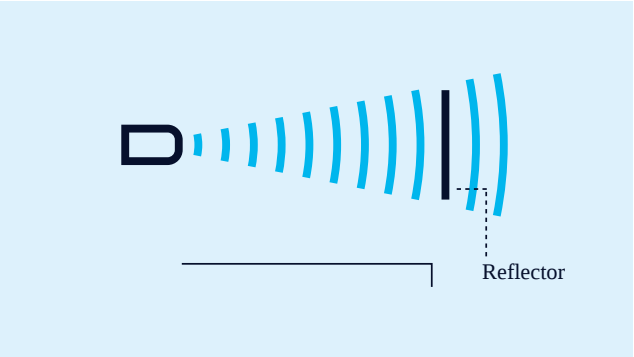
- Single switching point
- Two-way reflective barrier
- Window mode

### Teach-in of a single switching point

- Place object to be detected (1) at the desired distance
- Push button T2 for about 3 seconds
- Then push button T2 again for about 1 second




*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 mounted reflector

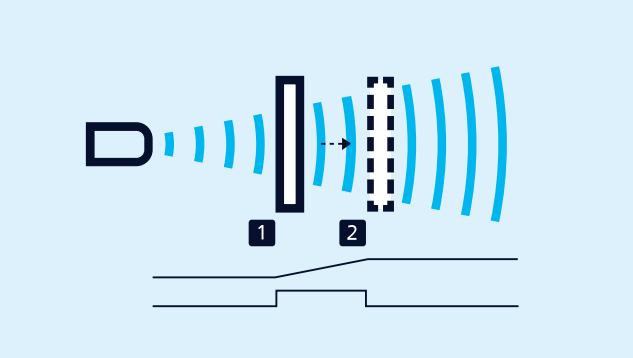
- Push button T1 for about 3 seconds
- Then push button T1 again for about 10 seconds

### For setting the analogue output

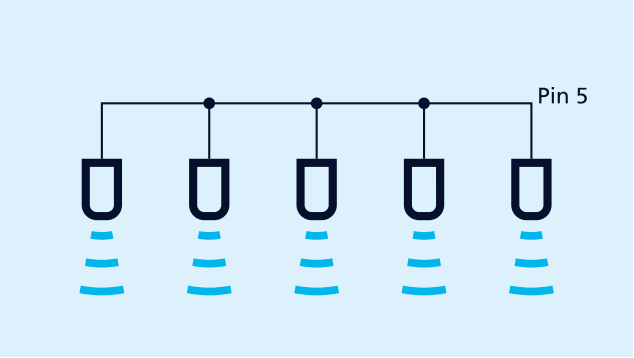
- Initially position the object to be detected to the sensor-close window limit (1)
- Push button T1 for about 3 seconds
- Then move the object to the sensor-distant window limit (2)
- Then push button T1 again for about 1 second

### For configuration of a window

with two switching points on a single switched output, the procedure is the same as setting the analogue.




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




*Synchronisation using pin 5*

### *Easy to synchronise*

If several Ics+ ultrasonic sensors are operated in one application, the can be synchronised via pin 5 to prevent.
If more than 10 sensors must be synchronised, this can be carried out with the SyncBox1 , which is available as an accessory. Synchronisation via pin 5 is also possible in IO-Link mode.

### *Analogue sensors*

check the connected working resistance at the output and automatically switch to 4–20 mA current output or 0–10 V voltage output.

### *NCC/NOC*

and rising/falling analogue characteristics can also be set via the buttons.

### *LinkControl*

permits comprehensive parameterisation of Ics+ ultrasonic sensors via the LinkControl adapter LCA-2 which connects the sensors to the PC.




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

### IO-Link

Ultrasonic sensors Ics+340/F/A and Ics+600/F/A have a Push-Pull switching output and support IO-Link in version 1.1 as well as the Smart Sensor profile.

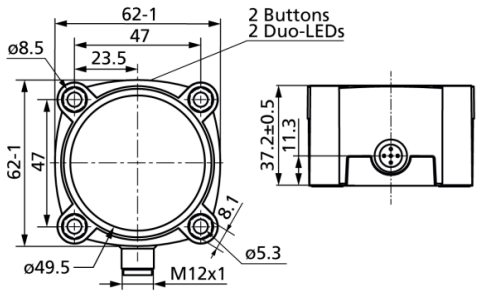
## You have special requirements?

Nothing as simple as that.

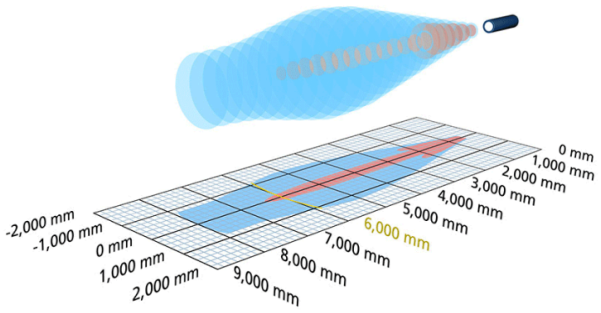
With us, you can easily find an individual solution. Let us talk about your application: +49 231 97 51 51-82.

# lcs+600/IU

## scale drawing




## detection zone




1 x analogue 4-20 mA + 0-10 V

8,000 mm

| | |
|---|---|
| design | cuboidal |
| operating mode | analogue distance measurements |
| particularities | UL Listed |

## Ultrasonic-Specific

| | |
|---|---|
| means of measurement | echo propagation time measurement |
| transducer frequency | 80 kHz |
| blind zone | 600 mm |
| operating range | 6.000 mm |
| max. range | 8,000 mm |
| resolution | 0.18 mm to 2.4 mm, depending on the analogue window |
| reproducibility | ± 0.15 % |
| accuracy | ± 1 % (temperature drift internally compensated) |

## Electrical Data

| | |
|---|---|
| operating voltage $U_B$ | 9 - 30 V d.c., reverse polarity protection |
| voltage ripple | ± 10 % |
| no-load current consumption | ≤ 60 mA |
| type of connection | 5-pin M12 initiator plug |

## 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 | 240 ms |
| delay prior to availability | < 450 ms |

## Inputs

| | |
|---|---|
| input 1 | com input<br>synchronisation input |

## Housing

| | |
|---|---|
| material | 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 | 240 g |

## Technical Features/Characteristics

| | |
|---|---|
| temperature compensation | yes |
| controls | 2 push-buttons |
| scope for settings | Teach-in via push-button<br>LCA-2 with LinkControl |
| synchronization | yes |
| multiplex | yes |

## Accessories

| | |
|---|---|
| deployable accessory | KST5A-2/M12<br>KST5A-5/M12<br>KST5G-2/M12<br>KST5G-5/M12<br>LCA-2<br>LCA-2 Koffer |

## pin assignment

