





Operating manual

Ultrasonic proximity switch with two switched outputs

lcs+100/DD lcs+340/DD lcs+600/DD

Product description

The lcs+ sensor offers a non-contact measurement of the distance to an object which must be positioned within the sensor's detection zone. The switched outputs are set conditional upon the adjusted detect distances.

distances and operating modes can be adjusted. Two LEDs indicate operation and the state of the switched **Installation** outputs.

Optionally all Teach-in and additional sensor parameter settings can be made using the LinkControl Adapter LCA-2 (optional accessory) and the LinkControl software for windows.

Safety instructions

■ Read the operating instructions prior to start-up.

- Connection, installation and adiustments may only be carried out by qualified staff.
- No safety component in accordance with the FU Machine Directive

Use for intended purpose only Via the Teach-in procedure, the detect lcs+ultrasonic sensors are used for

non-contact detection of objects.

- Mount the sensor at the place of
- Connect a connection cable to the M12 device plug.

Start-up

- Connect the power supply.
- Carry out sensor adjustment in accordance with the diagram.

2 • • 1 3 • 5 • 4	11	colour
1	+U _B	brown
3	-U _B	blue
4	D2	black
2	D1	white
5	Sync/Com	grey

Fig. 1: Pin assignment with view onto sensor plug and colour coding of the microsonic connection cables

Factory setting

- Switched output on NOC.
- Detect distance at operating range and half operating range.

Synchronisation

If under multiple sensor operation the assembly distance falls below the values shown in Fig. 2, the internal synchronisation should be used. For this purpose interconnect each pin 5 of max. 10 sensors.

		D∸a
	≥ 0.70 m	≥ 4.00 m
	≥ 2.00 m	≥ 18.00 m
DIIII))	≥ 2.00 m	≥ 30.00 m

Fig. 2: Assembly distances

Maintenance

microsonic sensors are maintenancefree. In case of excess caked-on dirt we recommend cleaning the white sensor surface

Notes

- The sensors of the lcs+ family have a blind zone, within which a distance measurement is not possible.
- The lcs+ sensors are equipped with an internal temperature compensation. Due to the sensor's self heating, the temperature compensation reaches its optimum working-point after approx. 30 minutes of operation.
- During normal operation a yellow LED signals that the corresponding output has connected.
- If no push-buttons are pressed for 20 seconds during parameter setting mode the made changes are stored and the sensor returns to

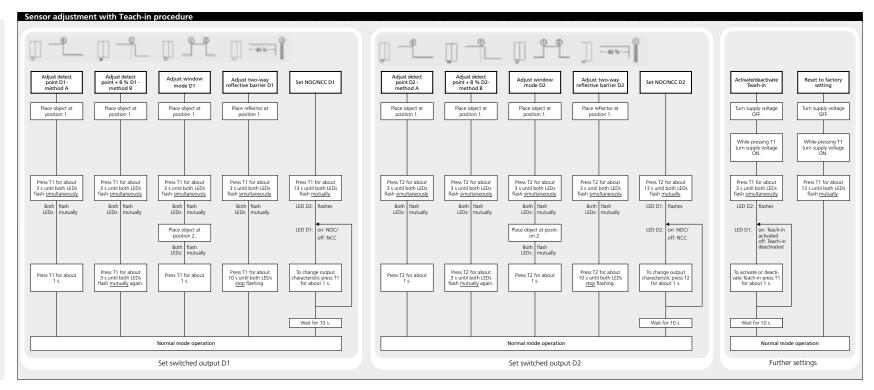
Contact

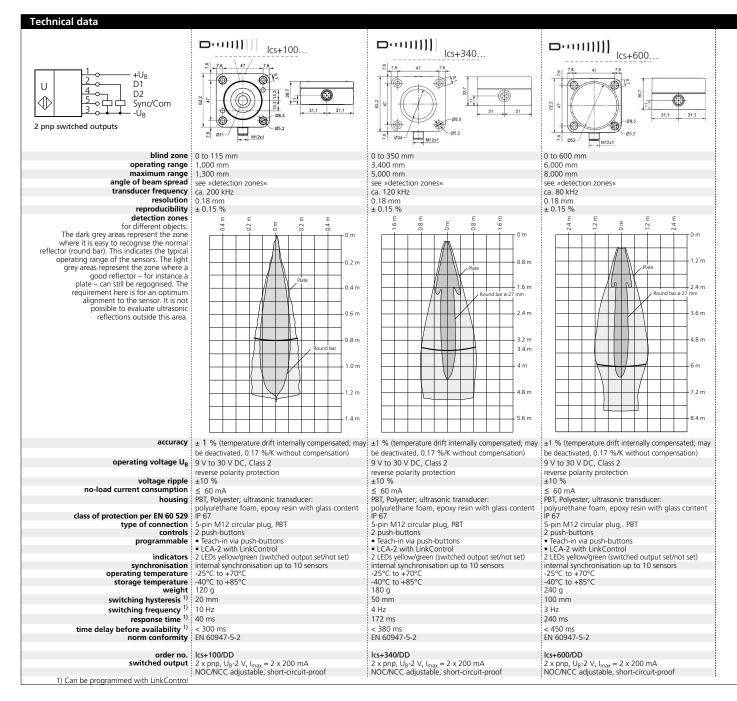
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- normal mode operation.
 In the »Two-way reflective
- In the »Two-way reflective barrier« operating mode, the object has to be within the range of 0-85 % of the set distance.
- In the Teach-in procedure »Set detect point method A« the actual distance to the object is taught to the sensor as the detect point. If the object moves towards the sensor (e.g. with level control) then the taught distance is the level at which the sensor has to switch the output.
- If the object to be scanned moves into the detection area from the side, the Teach-in procedure »Set detect point +8 % method B« should be used. In this way the switching distance is set 8 % further than the actual measured distance to the object. This ensures a reliable switching distance even if the height of the objects varies slightly.

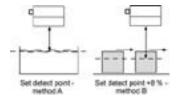


Fig. 3: Setting the detect point for different directions of movement of the object

- The sensor can be reset to its factory setting (see »Sensor adjustment with Teach-in procedure«).
- Optionally all Teach-in and additional sensor parameter settings can be made using the LinkControl adapter (optional accessory) and the LinkControl software for windows.



Enclosure Type 1 For use only in industrial machinery NFPA 79 applications.

The proximity switches shall be used with a Listed (CYJV/T) cable/connector assembly rated minimum 32 Vdc, minimum 290 mA, in the final installation.

