



Operation

The sensor has three operation modes

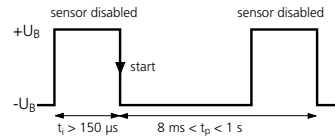
- Operation using one switching point
- Window mode
- Reflective barrier

Synchronisation

You can synchronize as many sensors as you like.

- Apply a square-wave signal to the sync-input
pulse width $t_i > 150 \mu s$,
repetition rate $t_p = 8 ms \dots 1 s$.

A high level on the synchro-input will deactivate the sensor.



External synchronisation signal

Maintenance

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

Checking operation mode

- In normal mode shortly press the pushbutton.

The green LED stops shining for one second, then it will show the current operating mode:

- 1 x flashing = operation with one switching point
- 2 x flashing = window mode
- 3 x flashing = reflective barrier

Operating Instructions

zws-15/CD/HV/QS
zws-15/CE/HV/QS

Ultrasonic proximity sensor with one switched output

Safety advice

- Read the operating instructions before starting operation.
- Connection, assembly and settings only by competent technicians.
- Not a safety device in accordance with EU machine guidelines.

Proper use

zws ultrasonic sensors are used for non-contact detection of objects.

Mounting

- Install sensor on the fitting place.
- Connect cable to M8 connector.

Starting operation

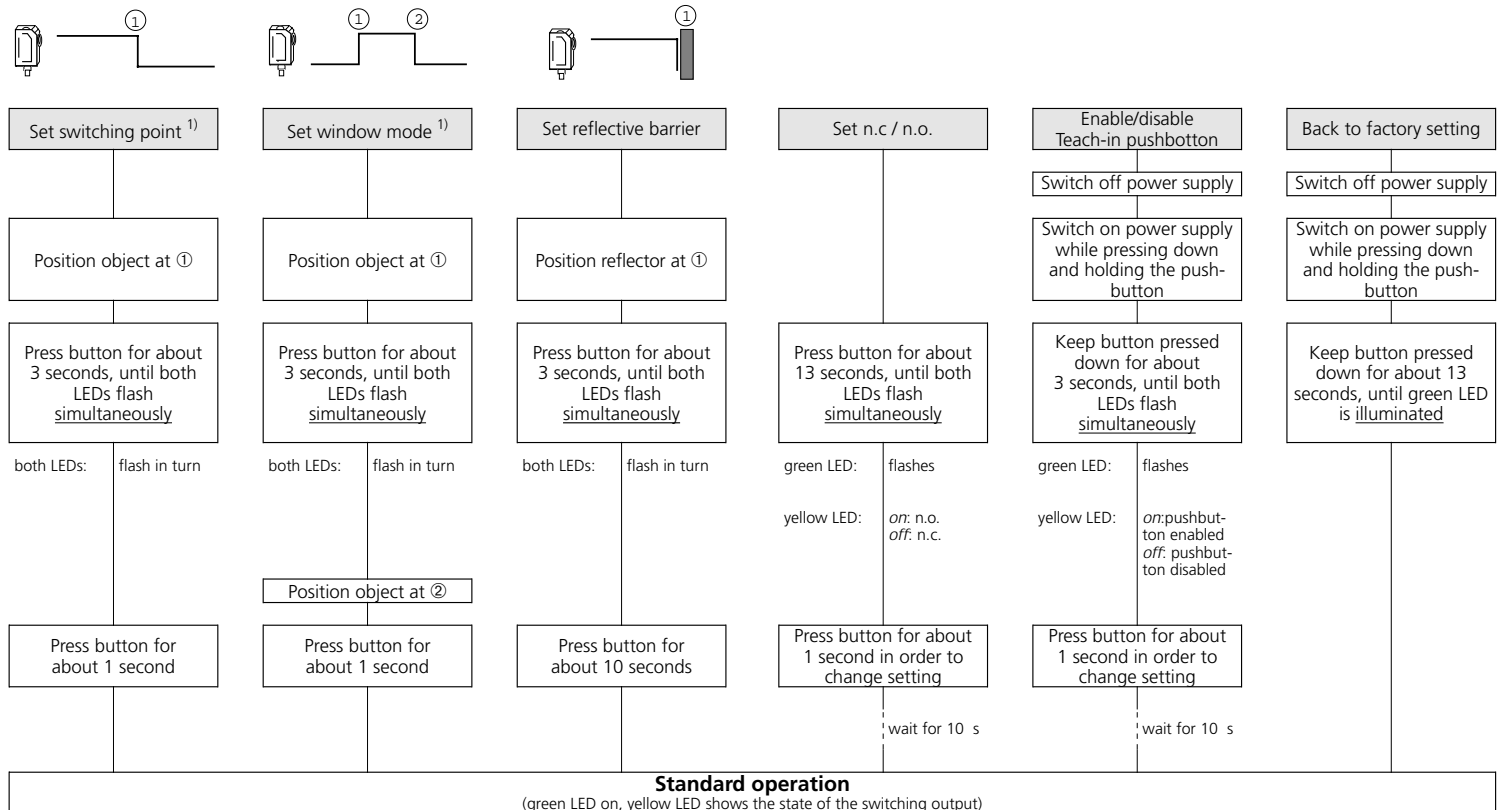
- Switch on power supply.
- Adjustment according to diagram.

Blind zone	20 mm
Operating range	150 mm
Maximum range	250 mm
Angle of beam spread	See detection zone
Transducer frequency	380 kHz
Resolution, sampling rate	0,20 mm
Reproducibility	$\pm 0,15 \%$
Accuracy	Temperature drift 0,17 %/°C ¹⁾
Operating voltage U_B	20 - 30 V DC, reverse polarity protection
Voltage ripple	$\pm 10 \%$
No-load current consumption	< 25 mA
Housing	ABS, ultrasonic sensor: polyurethane foam, epoxide resin with portions of glass
Class of protection acc. to EN 60 529	IP 67
Type of connection	4-pin M8 initiator plug
Controls	Teach-in pushbutton
Indicators	LED green (working) LED yellow (state of output)
Programmable	No
Synchronization	Yes, external
Operating temperature	-20°C to +70°C
Storage temperature	-40°C to +85°C
Weight	10 g
Switched output	pnp, $U_B - 2 V$ npn, $-U_B + 2 V$ $I_{max} = 200 mA$ switchable NOC/NCC, short-circuit-proof
Switching hysteresis	2 mm
Switching frequency	25 Hz
Response time	40 ms
Time delay before availability	< 300 ms
Norm conformity	EN 60947-5-2
Order no.	zws-15/CD/HV/QS zws-15/CE/HV/QS

1) Keep in mind the temperature drift of the switching point, e.g. for each change in temperature amounting to 10° C, teach a 1.7 % higher switching point.

After a break of 3 s the green LED shows the **output function**:
1 x flashing = make function
2 x flashing = brake function

CE 89/336/EEC



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