Operating Instructions

Ultrasonic proximity switch with one switched output

Product Description
The zws sensor offers a non-contact measurement of the distance to an object which must be positioned within the sensor’s detection zone. The switched output is set in dependence of the adjusted detect distance. Via the push-button, the detect distance and operating mode can be adjusted (teach-in). Two LEDs indicate operation and the state of the switched output.

Safety Notes
- Read the operating instructions prior to start-up.
- Connection, installation and adjustment works may only be carried out by skilled personnel.
- No safety component in accordance with the EU Machine Directive.

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

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Operating modes
Three operating modes are available for the switched output:
- Operation with one detect point
  - The switched output is set if the object falls below the set detect point.
- Window mode
  - The switched output is set if the object is within the window margins.
- Two-way reflective barrier
  - The switched output is set if the object is between sensor and reflector.

Synchronization
You can synchronize as many sensors as you like.
- Apply a square-wave signal to the sync-input with pulse width t\(_i\) and repetition rate t\(_p\) (Fig. 3 and technical data).
- A high level on the sync-input will deactivate the sensor.

Checking operation mode
- In normal mode shortly press the push-button.

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

After a break of 3 s the green LED shows the output function:
- 1 x flashing = NOC
- 2 x flashing = NCC

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

Notes
- The zws sensor has a blind zone, within which distance measurements are not possible.
- In the normal operating mode, an illuminated yellow LED signals the switched output is switched through.
- The standard sensor has no temperature compensation.
The sensor can be reset to its factory setting. If the object to be sensed moves to the detection area from the side, the switching distance should be set 8-10% further than the desired switch point to obtain a reliable object detection. If the object moves towards the sensor (e.g., level control) the detect point can be taught to the actual distance at which the sensor has to switch the output, s. Fig. 4. In the “Two-way reflective barrier” operating mode, the object has to be within the range of 0-85% of the set distance.

If the push-button is not pressed for 10 minutes during the teach-in setting, the settings made hitherto are deleted.

The sensor can be reset to its factory setting.