**Operating Manual**

**Ultrasonic proximity switch with analogue output**

*nero-15/WK/CU  nero-15/CU  nero-15/CI*
*nero-25/WK/CU  nero-25/CU  nero-25/CI*
*nero-35/WK/CU  nero-35/CU  nero-35/CI*
*nero-100/WK/CU  nero-100/CU  nero-100/CI*

**Product Description**

The nero sensor offers a non-contact measurement of the distance to an object that has to be positioned within the sensor's detection zone. Depending on the set window limits, a distance-proportional analogue signal is output. The window limits of the analogue output and its characteristic can be adjusted with the Teach-in procedure. Two LEDs indicate operation and the state of the analogue output.

**Safety Notes**

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

**Proper Use**

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

**Installation**

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

The assembly distances shown in fig. 2 for two or more sensors should not be fallen below in order to avoid mutual interference.

**Start-Up**

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

**Factory Setting**

- Rising analogue characteristic curve between the blind zone and the operating range
- »Teach-in« active

**Notes**

- The sensors of the nero family have a blind zone. Within this zone a distance measurement is not possible.
- In the normal operating mode, an illuminated yellow LED signals the object is within the adjusted window limits.
- The sensor can be reset to its factory setting (see »Further settings«).

**Maintenance**

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

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**Senso adjustment with Teach-in procedure**

1. **Set window margins**
   - Place object at position 1
   - Connect Teach-in for about 3 s to +U, until both LEDs flash simultaneously
   - Both LEDs: flash alternately

2. **Set rising / falling output characteristic curve**
   - Place object at position 2
   - Connect Teach-in for about 1 s to +U, until both LEDs flash alternately

3. **Further Settings**
   - Disconnect Teach-in from +U before switching off power supply
   - To change output characteristic connect Teach-in for about 1 s to +U
   - Wait for about 10 s

**Factory Setting**

- Enable/disable Teach-in

**Maintenance**

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The content of this document is subject to technical changes. Specifications in this document are presented in a descriptive way only. They do not warrant any product features.