**Ultrasonic Proximity Switch with Two Antivalent Switched Outputs**

**Product Description**

The ucs sensor offers a non-contact measurement of the distance to an object which must be positioned within the sensor’s detection zone. Both switched outputs are set antivalent in dependence of the adjusted detection distance. Via a button, the detect distance and the operating mode can be adjusted (teach-in). One LED indicates the state of the switched outputs. With the LinkControl adapter, which is available as accessory, all sensor parameters can optionally be set via a PC.

**Safety Notes**

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

**Installation**

- Mount the sensor at the installation site.
- Connect a connection cable to the M12 device plug.

**Start-Up**

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

**Factory Setting**

- Synchronous mode deactivated
- D1 = NCC, D2 = NOC
- Detect points on operating range

**Operation**

- Three operating modes are available for both switched outputs:
  - Operation with one detect point
  - Window mode
  - Two-way reflective barrier
- Both switched outputs are antivalent switching outputs.

**Synchronisation**

With the synchronous mode activated and an electrical interconnection of the Sync/Com inputs (pin 5), up to 10 sensors can be synchronised.

**Maintenance**

microsonic sensors are maintenance-free. With heavy dirt deposits, we recommend a cleaning of the white sensor surface.

**Note**

- The ucs sensor has a blind zone, within which distance measurements are not possible.
- The ucs sensor is equipped with an internal temperature compensation. Due to the sensor’s self-heating, the temperature compensation reaches its optimum working point after approximately 30 minutes of operation.
- In the normal operating mode, a yellow LED signal that the switched output D2 is switched through.
- In the teach-in mode, the hystereses are reset to the factory setting.
- In the “Two-way reflective barrier” operating mode, the reflector is surrounded by a symmetrical window of ±8 % of the distance value.
- If the button is not pressed for 30 seconds during the teach-in setting, the setting made hitherto is deleted.
- The sensor can be reset to its factory setting.

**Technical data**

- **Blind zone**
  - 55 mm
- **Operating range**
  - 240 mm
- **Maximum range**
  - 350 mm
- **Angle of beam spread**
  - 30 °
- **Transducer frequency**
  - 500 kHz
- **Resolution, sampling rate**
  - 0.08 mm
- **Accuracy**
  - ± 0.15 %
- **Operating voltage Uₘₐₓ**
  - ± 10 %
- **No-load current consumption**
  - < 45 mA
- **Temperature drift internal compensated, ± 2 %** may be deactivated ¹
- **Housing**
  - 10 - 30 °C, reverse polarity protection
- **Class of protection to EN 60529**
  - IP 67
- **Type of connection**
  - 5-pin M12 initiator plug
- **Type of indicator**
  - Yes, Teach-in button
- **Indicators**
  - Yes, with LinkControl
- **Programmable**
  - Yes, with LinkControl
- **Synchronisation**
  - Yes, internal
- **Operating temperature**
  - -25 °C to +70 °C
- **Storage temperature**
  - -40 °C to +85 °C
- **Weight**
  - 65 g
- **Switched output**
  - 2 x npn, Uᵦ = 2 V, antimagnetic switchable, short-circuit-proof
  - 2 x pnp, -Uᵦ + 2 V, 2 x 200 mA, antimagnetic switchable, short-circuit-proof
- **Switching frequency**
  - 25 Hz
- **Response time**
  - 30 ms
- **Time delay before availability**
  - < 300 ms
- **Norm conformity**
  - EN 60947-5-2

¹ Can be programmed with LinkControl

**Sensor adjustment with Teach-in procedure**

1. **Set switched output**
2. **Set window mode**
3. **Set two way reflective barrier**
4. **Set NOC/NCC**

1. **Place object at position**
2. **Press button for about 3 seconds, until LED flashes yellow**
3. **Press button for about 13 seconds, until LED flashes yellow-green in turn**
4. **Press button for about 1 second in order to change setting**

**Normal operating mode**

1. Press button for about 1 second
2. Press button for about 10 seconds
3. Press button for about 1 second in order to change setting

**Wait for 10 s**

**Further settings**

1. **Reset to factory setting**
2. **Switch off power supply**
3. **Switch on power supply while pressing down and holding the pushbutton**
4. **Keep button pressed down for about 3 seconds, until LED flashes yellow**
5. **Keep button pressed down for about 13 seconds, until LED stops flashing**

**Enable/disable Teach-in pushbutton**

1. **Enable/disable Teach-in pushbutton**
2. **Press button for about 10 s**
3. **Press button for about 1 second in order to change setting**

**Normal operating mode**

1. **Close teach-in setting**
2. **Keep button pressed down for about 3 seconds, until LED flashes yellow**
3. **Keep button pressed down for about 13 seconds, until LED stops flashing**
4. **Keep button pressed down for about 1 second in order to change setting**

**Wait for 10 s**

**Set antivalent switched output D1 and D2**