AS-Interface - Ultrasonic Sensors

- Integrated AS-Interface
- 0.3...6 m sensing range
- Three individually adjustable sensing ranges
- Alarm indication via bus in case of sensor failure
- Many programmable parameters

Operating Principle

Ultrasonic sensors use sound waves to detect the presence of an object: the sensor emits an ultrasonic pulse which reflects back from any object. From the time it takes for this echo to return, the sensor determines the distance to the object.

Sensing Ranges

With ultrasonic sensors, distinct ranges can be set within which an object generates a switching signal. Objects outside these ranges may be detected but do not switch the output.

Ultrasonic Sensors With Integrated AS-Interface

Ultrasonic sensors incorporating an AS-i chip have three sensing ranges. It is possible to program and adjust these sensing ranges with the ASI-PD01 programming device.

Data bit 0...2 indicate whether an object has entered one of the sensing ranges. Data bit 3 is utilized whenever the sensor is not working properly.

Programming

With the ASI-PD01 programming device, the following parameter adjustments can be made:

- end value of the three sensing ranges
- average value forming
- switching hysteresis
- Threaded metal barrel, M 30 x 1.5
- Conprox® connectors

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<thead>
<tr>
<th>Connection</th>
<th>Electrical version</th>
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<td>Conprox® DC</td>
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### Dimensions

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<tr>
<th></th>
<th>RU30-M30-ASIX3-</th>
<th>H1140</th>
<th>RU30-M3047-ASIX3-</th>
<th>H1140</th>
<th>RU600-M3065-ASIX3-</th>
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### Wiring diagram

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### Sensing range [cm]
- 6...30
- 20...130
- 40...300
- 60...600

### Blind zone [cm]
- 6
- 20
- 40
- 60

### Standard target [cm²]
- 1 x 1
- 2 x 2
- 10 x 10
- 10 x 10

### Adjustments
- Number of sensing ranges
  - see page 26
  - 3

### Supply voltage $U_0$ [VDC]
- 26.9...33.6
- 26.9...33.6
- 26.9...33.6

### No-load current [mA]
- 75
- 75
- 75

### AS-i profile
- Data bit 0: sensing range 1
- Data bit 1: sensing range 2
- Data bit 2: sensing range 3
- Data bit 3: alarm
- Parameter bits 0...3: see page 26

### Switching frequency [Hz]
- 8
- 4
- 2
- 1

### Switching hysteresis (programmable) [cm]
- 1
- 2
- 6

### Repeatability [mm]
- ± 0.45
- ± 2
- ± 5
- ± 9

### Temperature drift [°C]
- ± 1.5
- ± 1.5
- ± 1.5

### Material housing
- anodized aluminium
- anodized aluminium
- anodized aluminium

### Material sensing face
- Epoxy resin
- Epoxy resin
- Epoxy resin

### Material end cap
- -
- -
- -

### Degree of protection (IEC 60529/EN 60529)
- IP 65
- IP 65
- IP 65

### Operation temperature [°C]
- -25...+70
- -25...+70
- -25...+70

### Torque [Nm]
- 60
- 60
- 60

### Cable/clamping ability
- Conprox®
- Conprox®
- Conprox®

### Switching status indication
- LED
- 3 x yellow
- 3 x yellow
- 3 x yellow