Distance Sensor

U1RT003

- **2 mutually independent switching outputs**
- **IO-Link version 1.1**
- **Reflex and through-beam operation mode are possible**
- **Temperature range: –30…60 °C**
- **Wireless settings via NFC**

These ultrasonic sensors evaluate the sound reflected from the object. They can detect almost any object and are especially well suited for monitoring fill levels of liquids and bulk goods and for detecting transparent objects, regardless of material, state of matter, color or degree of transparency. The measured value can be read out via IO-Link, and the sensor can be adapted as needed to the application. Its construction saves space when installed on conveyor lines. The sensor can be used in reflex mode operation and as an ultrasonic through-beam sensor.

| Ultrasonic Data	
Working range, reflex sensor	100...1200 mm
Working range, through-beam sensor	100...2000 mm
Reproducibility maximum	5 mm
Linearity Deviation	2 mm
Resolution	1 mm
Ultrasonic Frequency	240 kHz
Opening Angle	< 12 °
Service Life (T = +25 °C)	100000 h
Switching Hysteresis	1 % *
Electrical Data	
Supply Voltage	18...30 V DC
Current Consumption (Ub = 24 V)	< 30 mA
Switching frequency, reflex sensor	7 Hz
Switching frequency, through-beam sensor	7 Hz
Response time, reflex sensor	72 ms
Response time, through-beam sensor	72 ms
Temperature Range	-30...60 °C
Number of Switching Outputs	2
Switching Output Voltage Drop	< 2,5 V
Switching Output/Switching Current	100 mA
Synchronous Mode	up to 40 sensors
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Overload Protection	yes
Lockable	yes
Interface	IO-Link V1.1 Smart Sensor Profile/NFC
Data Storage	yes
Protection Class	III
Mechanical Data	
Setting Method	Teach-in/IO-Link/NFC
Housing Material	Brass, nickel-plated
Housing Material	Plastic, ABS
Housing Material	Plastic, PBT
Sensing face	Epoxy resin/glass bubble mixture
Sensing face	Plastic, PBT
Sensing face	Silicone
Degree of Protection	IP67/IP68
Connection	M12 × 1; 4/5-pin
Safety-relevant Data	
MTTFd (EN ISO 13849-1)	1558,4 a
NPN NO	●
IO-Link	●
Connection Diagram No.	243
Control Panel No.	A49
Suitable Connection Equipment No.	2 35
Suitable Mounting Technology No.	150 370

* Referring to the switching distance, at least 2 mm.

Complementary Products

IO-Link Master	

24 **14** **16**

26 **11,5**

M18 x 1

Ø 4,3

3,5

M12 x 1

19

18,6

243

PNP
NPN
PUSH-PULL
- - - -
NO/NC

1 +
4 E / A1 /
2 E / A2
5 E3
3 −

## Ctrl. Panel

A 49

NFC

5a 68 6a

06
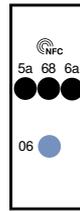
06 = Teach Button
5a = Switching Status Indicator, A1
68 = supply voltage indicator
6a = Switching Status Indicator, A2
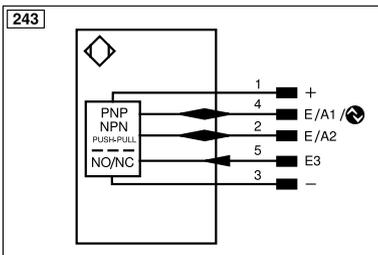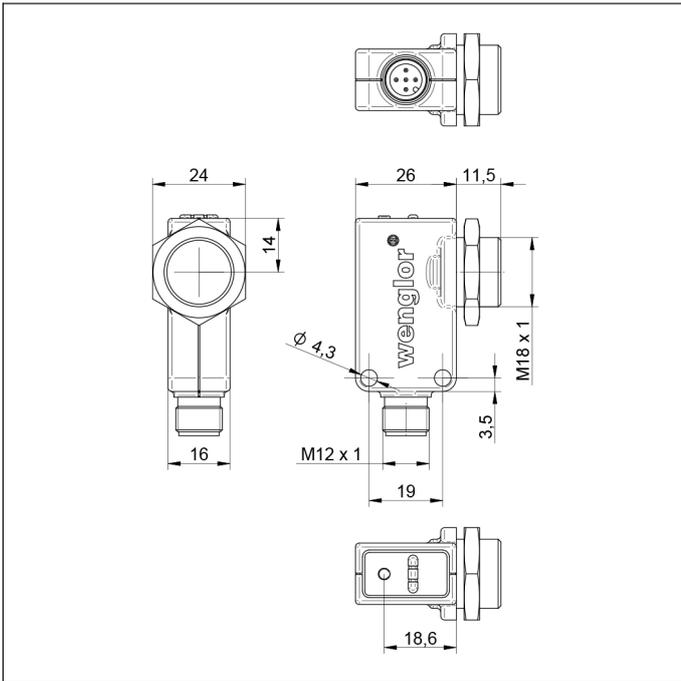
Characteristic response curve

Characteristic curves show the position of the center or the front edge of the measured object (100 × 100 mm plate) at the time of switching.

U1RT002/U1RT003
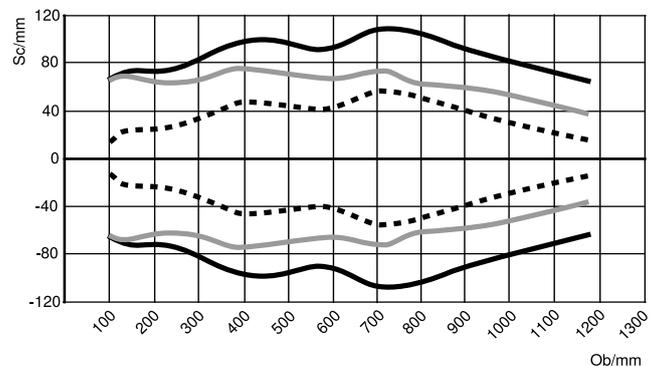
Ob = Object

Sc = Sonic cone width

— Standard sonic cone (center of the measured object)

— Extra-narrow sonic cone (center of the measured object)

▪▪▪ Standard sonic cone (front edge of the measured object)