

# Distance Sensor

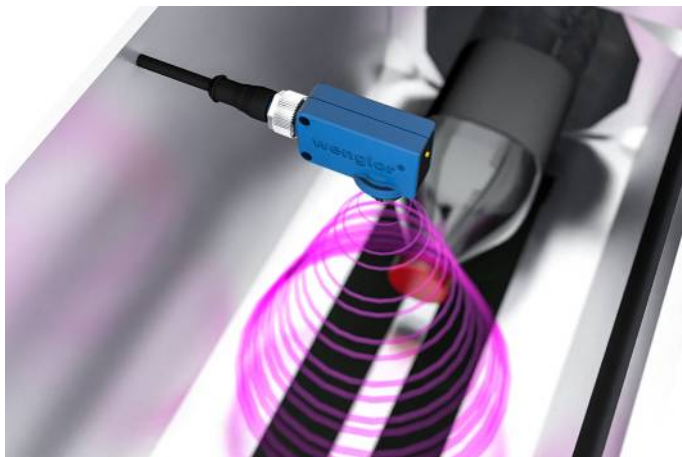
## U1RT004

Part Number



- External teach-in (tamper protection)
- IO-Link version 1.1
- Temperature range: -30...60 °C
- Wide sonic cone at close range

These ultrasonic sensors evaluate the sound reflected from the object. They detect almost any object regardless of the material and its condition. Thanks to the innovative transducer, this sensor has a particularly wide sonic cone at close range. This allows a very wide range of pieces to be reliably detected on conveyor belts. The sensor can only be used in reflex mode operation.



### Technical Data

#### Ultrasonic Data

Working range, reflex sensor	80...400 mm
Reproducibility maximum	1 mm
Linearity Deviation	3 mm
Resolution	0,5 mm
Ultrasonic Frequency	300 kHz
Opening Angle	< 14 °
Service Life (T = +25 °C)	100000 h
Switching Hysteresis	2 mm

#### Electrical Data

Supply Voltage	18...30 V DC
Current Consumption (U <sub>b</sub> = 24 V)	< 30 mA
Switching frequency, reflex sensor	20 Hz
Response time, reflex sensor	25 ms
Temperature Range	-30...60 °C
Number of Switching Outputs	1
Switching Output Voltage Drop	< 2,5 V
Switching Output/Switching Current	100 mA
Short Circuit Protection	yes
Reverse Polarity and Overload Protection	yes
Interface	IO-Link V1.1
Data Storage	yes
Protection Class	III

#### Mechanical Data

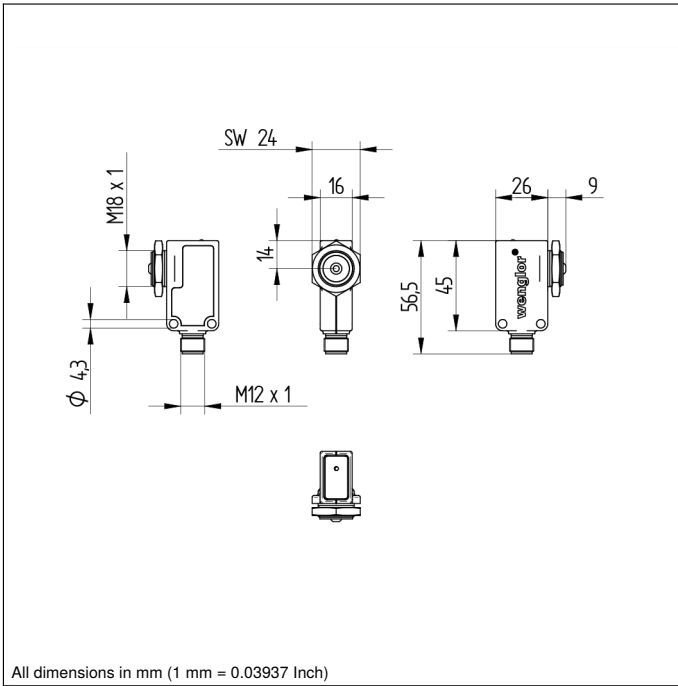
Setting Method	IO-Link
Housing Material	Plastic PBT
Degree of Protection	IP67/IP68
Connection	M12 × 1; 4-pin

#### Safety-relevant Data

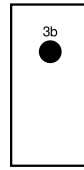
MTTFd (EN ISO 13849-1)	1369,42 a
PNP NO	●
IO-Link	●
Connection Diagram No.	1028
Control Panel No.	R3
Suitable Connection Equipment No.	2 35
Suitable Mounting Technology No.	150 370

### Complementary Products

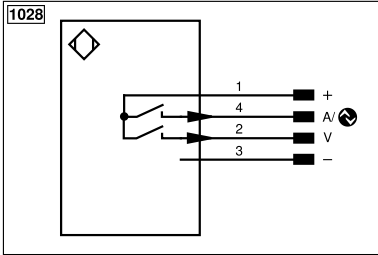
IO-Link Master



All dimensions in mm (1 mm = 0.03937 Inch)

**Ctrl. Panel**
**R3**


3b = switching status display/error display/function display

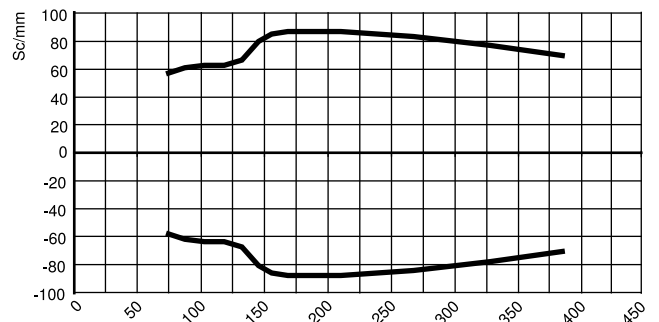


Legend			
+	Supply Voltage +	nc	Not connected
-	Supply Voltage 0 V	U	Test Input
~	Supply Voltage (AC Voltage)	Ü	Test Input inverted
A	Switching Output (NO)	W	Trigger Input
Ā	Switching Output (NC)	W-	Ground for the Trigger Input
V	Contamination/Error Output (NO)	O	Analog Output
ȳ	Contamination/Error Output (NC)	O-	Ground for the Analog Output
E	Input (analog or digital)	BZ	Block Discharge
T	Teach Input	Amv	Valve Output
Z	Time Delay (activation)	a	Valve Control Output +
S	Shielding	b	Valve Control Output 0 V
RxD	Interface Receive Path	SY	Synchronization
TxD	Interface Send Path	SY-	Ground for the Synchronization
RDY	Ready	E+	Receiver-Line
GND	Ground	S+	Emitter-Line
CL	Clock	±	Grounding
E/A	Output/Input programmable	SnR	Switching Distance Reduction
IO-Link	IO-Link	Rx+/-	Ethernet Receive Path
PoE	Power over Ethernet	Tx+/-	Ethernet Send Path
IN	Safety Input	Bus	Interfaces-Bus A(+)/B(-)
OSSD	Safety Output	La	Emitted Light disengageable
Signal	Signal Output	Mag	Magnet activation
BI_D+/-	Ethernet Gigabit bidirect. data line (A-D)	RES	Input confirmation
ENo RS422	Encoder 0-pulse 0/0 (TTL)	EDM	Contact Monitoring
PT	Platinum measuring resistor	ENARs422	Encoder A/Ā (TTL)
		ENBRs422	Encoder B/Ī (TTL)
		ENA	Encoder A
		ENb	Encoder B
		AMIN	Digital output MIN
		AMAX	Digital output MAX
		AOK	Digital output OK
		SY In	Synchronization In
		SY OUT	Synchronization OUT
		OLT	Brightness output
		M	Maintenance
		rsv	Reserved
		Wire Colors according to DIN IEC 60757	
		BK	Black
		BN	Brown
		RD	Red
		OG	Orange
		YE	Yellow
		GN	Green
		BU	Blue
		VT	Violet
		GY	Grey
		WH	White
		PK	Pink
		GNYE	Green/Yellow

**Characteristic response curve**

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

U1RT004



Ob = Object

Sc = Sonic cone width

Standard

Ob/mm

