

Distance Sensor

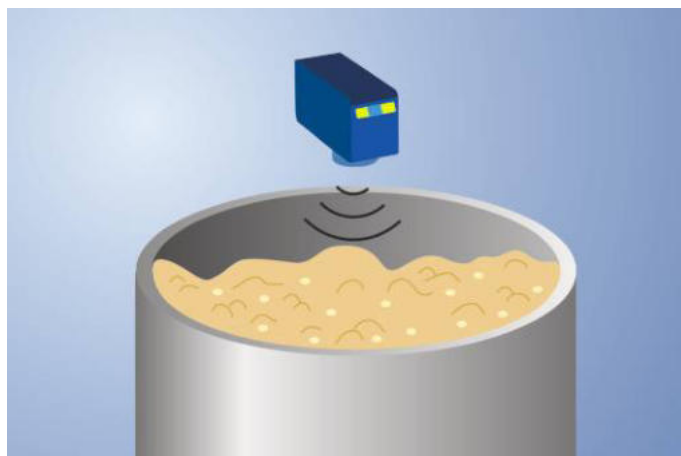
U1KT001

Part Number



- 2 mutually independent switching outputs
- Miniature design
- Ready for Industrie 4.0 with IO-Link version 1.1
- Reflex and through-beam operation mode are possible

These ultrasonic sensors evaluate the sound reflected from the object. They detect almost any object regardless of the material and its condition. They are therefore especially well suited for monitoring fill levels of liquids and bulk goods and for detecting transparent objects. The measured value can be read out via IO-Link, and the sensor can be optimally adapted to the application.



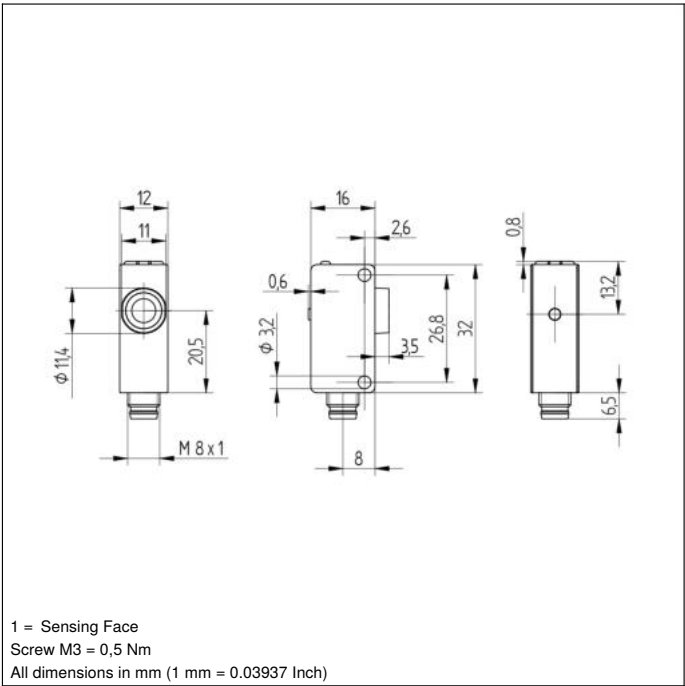
Technical Data

Ultrasonic Data		
Working range, reflex sensor		30...400 mm
Working range, through-beam sensor		1...800 mm
Adjustable Range		30...400 mm
Reproducibility maximum		4 mm
Linearity Deviation		4 mm
Resolution		0,5 mm
Ultrasonic Frequency		325 kHz
Opening Angle		< 12 °
Service Life (T = +25 °C)		100000 h
Switching Hysteresis		2 mm
Switching Hysteresis		1 % *
Electrical Data		
Supply Voltage		18...30 V DC
Current Consumption (U _b = 24 V)		< 20 mA
Switching frequency, reflex sensor		30 Hz
Switching frequency, through-beam sensor		70 Hz
Response time, reflex sensor		17 ms
Response time, through-beam sensor		8 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
Data Storage		yes
Protection Class		III
Mechanical Data		
Setting Method		Teach-In
Housing Material		Plastic
Degree of Protection		IP68
Connection		M8 × 1; 4-pin
Safety-relevant Data		
MTTFd (EN ISO 13849-1)		1106,71 a
PNP NO		●
Programmable error output		●
IO-Link		●
Connection Diagram No.		259
Control Panel No.		A23
Suitable Connection Equipment No.		7
Suitable Mounting Technology No.		400

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

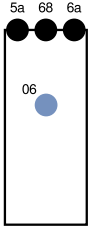
Complementary Products

IO-Link Master
Software

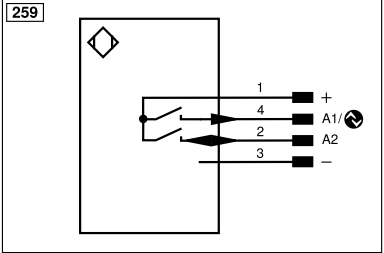


Ctrl. Panel

A 23



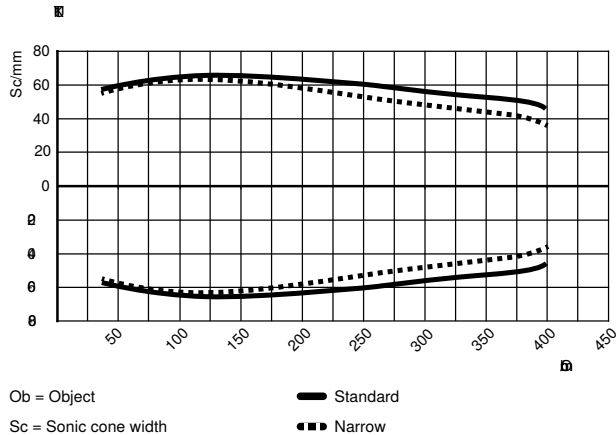
06 = Teach Button
5a = Switching Status Display, O1
68 = supply voltage indicator
6a = Switching Status Display, O2



Legend			
+	Supply Voltage +	nc	Not connected
-	Supply Voltage 0 V	U	Test Input
~	Supply Voltage (AC Voltage)	Ū	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
Ū	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/B̄ (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

Measurement of the sonic cone on a 100 x 100 mm plate



Specifications are subject to change without notice

