

Reflex Sensor with Analog Output

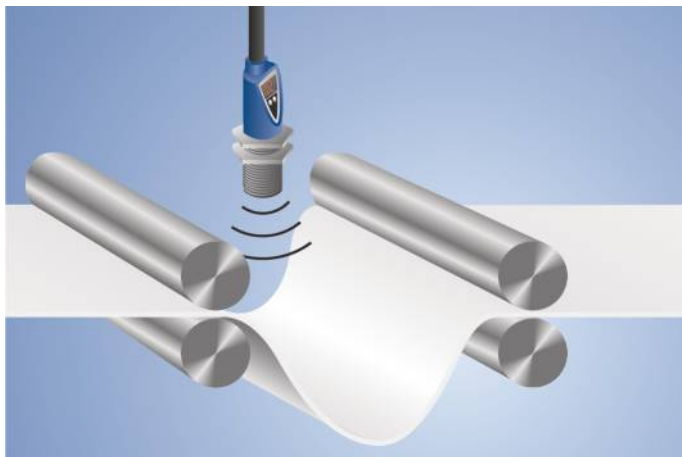
UMF402U035

Part Number



- Digital and analog output
- Stainless steel housing
- Synchronous and multiplex mode
- Temperature drift eliminable

These ultrasonic sensors evaluate the sound reflected by the object. They detect almost every object and are suited especially for the filling level monitoring of fluids or bulk material or the detection of transparent objects. The sensor detects objects independent from their material, aggregate state, color or transparency. The sensors can be adjusted easily by the 4-digit 7-segment display. Convenient programming and quick diagnosis is possible via the IO-Link interface.



Technical Data

Ultrasonic Data	
Working Range	50...400 mm
Measuring Range	350 mm
Reproducibility maximum	1 mm
Linearity Deviation	3 mm
Resolution	0,1 mm
Ultrasonic Frequency	300 kHz
Opening Angle	< 12 °
Service Life (T = +25 °C)	100000 h
Switching Hysteresis	2 mm

Electrical Data	
Supply Voltage	18...30 V DC
Current Consumption (U _b = 24 V)	< 40 mA
Switching Frequency	20 Hz
Response Time	25 ms
Temperature Range	-25...60 °C
Switching Outputs	1
Switching Output Voltage Drop	< 2,5 V
PNP Switching Output/Switching Current	100 mA
Analog Output	0...10 V/4...20 mA
Synchronous Mode	up to 40 sensors
Multiplex Mode	up to 16 sensors
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Overload Protection	yes
Lockable	yes
Interface	IO-Link
IO-Link Version	1.0
Protection Class	III

Mechanical Data	
Setting Method	Teach-In
Housing Material	Stainless Steel; Plastic
Degree of Protection	IP67
Connection	M12 × 1; 4/5-pin

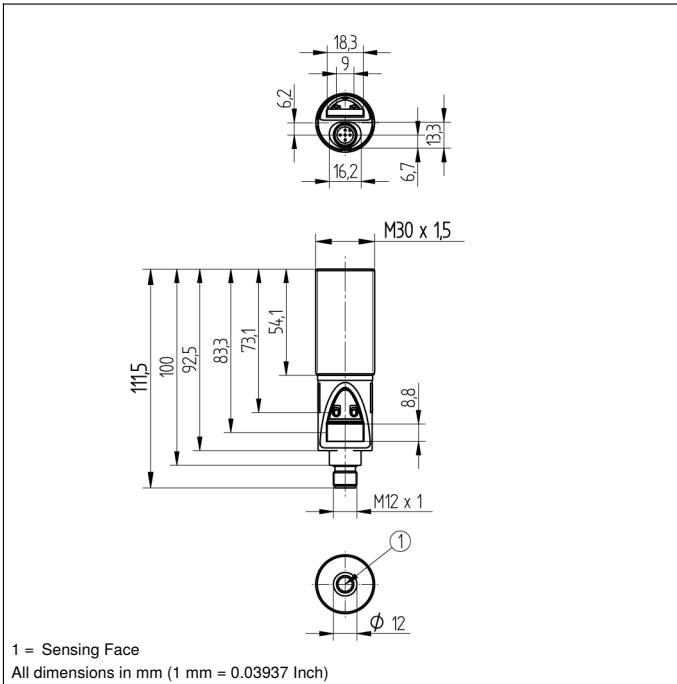
Safety-relevant Data	
MTTFd (EN ISO 13849-1)	727,87 a

Error Output	●
PNP NO/NC switchable	●
Analog Output	●
IO-Link	●

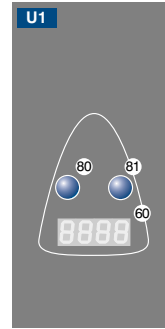
Connection Diagram No.	184
Control Panel No.	U1
Suitable Connection Technology No.	2 35
Suitable Mounting Technology No.	130

Complementary Products

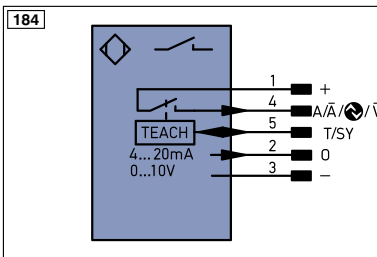
Analog Evaluation Unit AW02	
Deflection plate Z0023, Z0024	
IO-Link Master	
PNP-NPN Converter BG2V1P-N-2M	



Ctrl. Panel



60 = Display
 80 = Mode Button/Switching Status Indicator
 81 = Plus Button/Error Warning



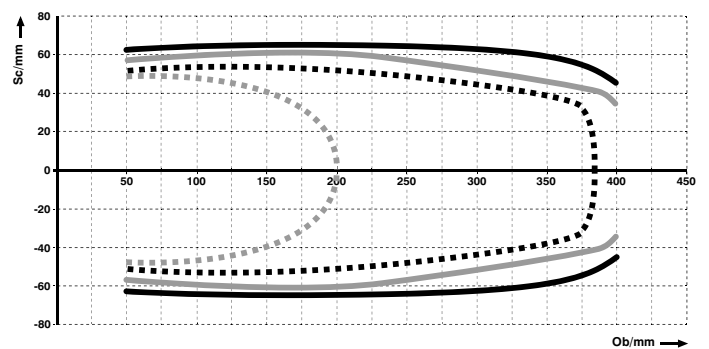
Legend		Legend		Legend	
+	Supply Voltage +	PT	Platinum measuring resistor	ENa	Encoder A
-	Supply Voltage 0 V	nc	not connected	ENb	Encoder B
~	Supply Voltage (AC Voltage)	U	Test Input	AMIN	Digital output MIN
A	Switching Output (NO)	U	Test Input inverted	AMAX	Digital output MAX
Ā	Switching Output (NC)	W	Trigger Input	AOK	Digital output OK
V	Contamination/Error Output (NO)	O	Analog Output	SY In	Synchronization In
ṽ	Contamination/Error Output (NC)	O-	Ground for the Analog Output	SY OUT	Synchronization OUT
E	Input (analog or digital)	BZ	Block Discharge	OLt	Brightness output
T	Teach Input	AWv	Valve Output	M	Maintenance
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	E+	Receiver-Line		
RDY	Ready	S+	Emitter-Line		
GND	Ground	≡	Grounding		
CL	Clock	SnR	Switching Distance Reduction		
E/A	Output/Input programmable	Rx+/-	Ethernet Receive Path		
	IO-Link	Tx+/-	Ethernet Send Path		
PoE	Power over Ethernet	Bus	Interfaces-Bus A(+)/B(-)		
IN	Safety Input	La	Emitted Light disengageable		
OSSD	Safety Output	Mag	Magnet activation		
Signal	Signal Output	RES	Input confirmation		
Bl_D+/-	Ethernet Gigabit bidirect. data line (A-D)	EDM	Contactur Monitoring		
EN0_0542	Encoder 0-pulse 0-0 (TTL)	ENa_0542	Encoder A/Ā (TTL)		
		ENb_0542	Encoder B/B̄ (TTL)		

Wire Colors according to DIN IEC 757	
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 × 100 mm plate

UMF402U035



Ob = Object

Sc = Sonic cone width

- Standard
- Medium-width
- Narrow
- Extra-narrow

