

Reflex Sensor with Analog Output

UMD402U035

Part Number



- Digital and analog output
- Stainless steel housing
- Synchronous 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. 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	5 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)	< 30 mA
Switching Frequency	20 Hz
Response Time	25 ms
Temperature Range	-25...60 °C
Number of Switching Outputs	1
Switching Output Voltage Drop	< 2,5 V
PNP Switching Output/Switching Current	100 mA
Analog Output	0...10 V
Synchronous Mode	up to 40 sensors
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Overload Protection	yes
Lockable	yes
Interface	IO-Link V1.0
Protection Class	III

Mechanical Data

Setting Method	Teach-In
Housing Material	Stainless Steel
Full Encapsulation	yes
Degree of Protection	IP67
Connection	M12 × 1; 4/5-pin

Safety-relevant Data

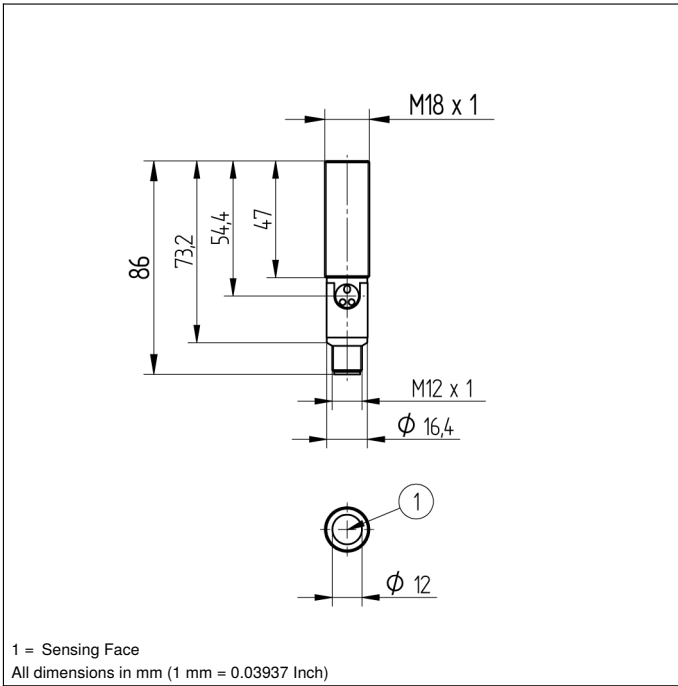
MTTFd (EN ISO 13849-1)	828,67 a
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PNP NO/NC switchable	●
Analog Output	●
IO-Link	●

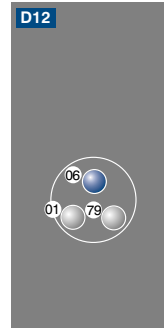
Connection Diagram No.	182
Control Panel No.	D12
Suitable Connection Equipment No.	2 35
Suitable Mounting Technology No.	150

Complementary Products

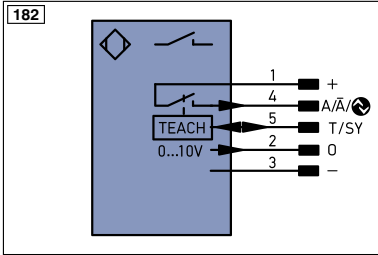
Analog Evaluation Unit AW02
Baffle Plate Z0021, Z0022
IO-Link Master
PNP-NPN Converter BG2V1P-N-2M
Software



Ctrl. Panel



- 01 = Switching Status Indicator
- 06 = Teach Button
- 79 = Run/Error Indicator

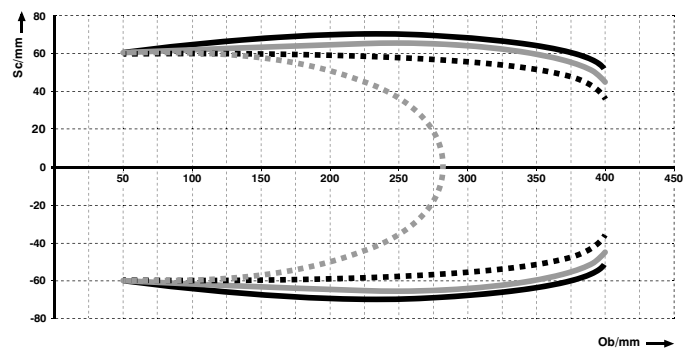


Legend			
+	Supply Voltage +	PT	Platinum measuring resistor
-	Supply Voltage 0 V	nc	not connected
~	Supply Voltage (AC Voltage)	U	Test Input
A	Switching Output (NO)	Ū	Test Input inverted
Ā	Switching Output (NC)	W	Trigger Input
V	Contamination/Error Output (NO)	W-	Ground for the Trigger Input
ṽ	Contamination/Error Output (NC)	O	Analog Output
E	Input (analog or digital)	O-	Ground for the Analog Output
T	Teach Input	BZ	Block Discharge
Z	Time Delay (activation)	AWV	Valve Output
S	Shielding	a	Valve Control Output +
RxD	Interface Receive Path	b	Valve Control Output 0 V
TxD	Interface Send Path	SY	Synchronization
RDY	Ready	SY-	Ground for the Synchronization
GND	Ground	E+	Receiver-Line
CL	Clock	S+	Emitter-Line
E/A	Output/Input programmable	⊕	Grounding
	IO-Link	SnR	Switching Distance Reduction
PoE	Power over Ethernet	Rx+/-	Ethernet Receive Path
IN	Safety Input	Tx+/-	Ethernet Send Path
OSSD	Safety Output	Bus	Interfaces-Bus A(+)/B(-)
Signal	Signal Output	La	Emitted Light disengageable
Bl_D+/-	Ethernet Gigabit bidirect. data line (A-D)	Mag	Magnet activation
EN0_6542	Encoder 0-pulse 0-0 (TTL)	RES	Input confirmation
		EDM	Contactor Monitoring
		EN_A6542	Encoder A/Ā (TTL)
		EN_B6542	Encoder B/B̄ (TTL)
		EN_A	Encoder A
		EN_B	Encoder B
		A_MIN	Digital output MIN
		A_MAX	Digital output MAX
		A_OK	Digital output OK
		SY_in	Synchronization In
		SY_OUT	Synchronization OUT
		OLT	Brightness output
		M	Maintenance reserved
		rsv	reserved
		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
		GNVE	Green/Yellow

Characteristic response curve

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

UMD402U035



- Ob = Object
- Sc = Sonic cone width
- Standard
- Medium-width
- - - Narrow
- · · Extra-narrow

