

Distance Sensor

UMD402U035

Part Number



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

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	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	-30...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
IO-Link Version	1.0
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
Diagnostic Coverage (DC)	0 %
Mission Time TM (EN ISO 13849-1)	11,42 a

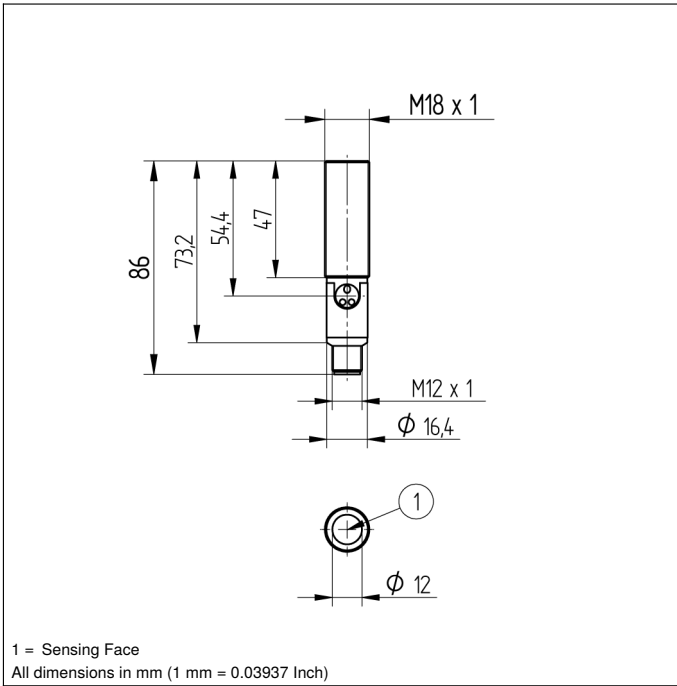
PNP NO/NC switchable	●
Analog Output	●

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

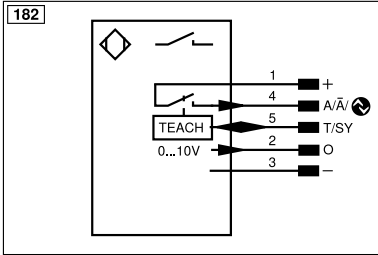
Complementary Products

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

Ctrl. Panel

D12


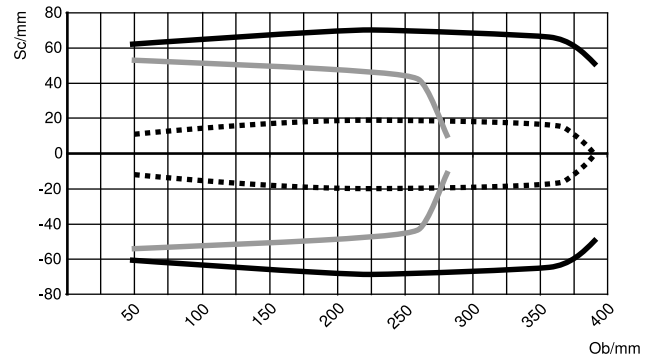
01 = Switching Status Indicator
 06 = Teach Button
 79 = Run/Error Indicator



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	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	ENAR5422	Encoder A/Ā (TTL)
			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

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.



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)

