

Ultrasonic sensor 2370-00000306

Operating Instructions following EMC Directive 2014/30/EU

EN

Product description

The ultrasonic sensors described:

- measure the distance to the medium without contacting it and according to their detection area.
- have a blind zone from which distance measuring is not possible.
- Indicate whether an object is inside or outside of the pre-set limits (see table Display of the switching states)
- have an internal temperature compensation. Due to the self-heating of the ultrasonic sensors the temperature compensation reaches its optimum operating point after an operating time of about 30 minutes.
- The related switching outputs are set depending on the preset switch points.

Regulatory notes

Electrical equipment according to EMC 2014/30/EU



no safety components acc. to machinery directive 2006/42/EC



Enclosure type 1
For use in industrial machinery
NFPA 79 applications only

Intended use

Non-contact distance measurement of lubrication oils and greases in the frame of the technical data.

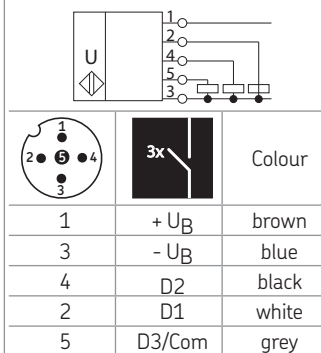
Safety instructions

Read these operating instructions before the installation and commissioning.
Installation and electrical connection by authorized qualified personnel only.

Installation and commissioning

- Clean the installation surface. When doing so make sure that no dirt enters the reservoir.
- Mount the ultrasonic sensor with the sensor surface (white area) centrally above the bore (Ø 20 mm) into the reservoir lid.
- Connect the connection cable to the M12 plug.
- Switch the power supply on.

Electrical connection



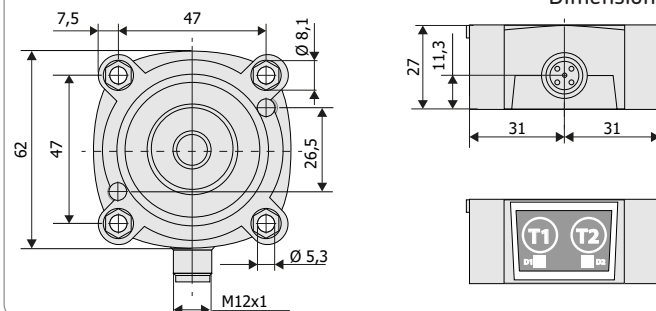
Cleaning

Clean the sensor surface (white area), if it is contaminated.

Maintenance

The ultrasonic sensors do not require any maintenance.

Dimensions



Technical data

Order number	2370-00000306	
Blind zone	0 - 120 mm	
Scanning range limit	1300 mm	
Opening angle of the sound beam	see detection zones	
Ultrasonic frequency	approx. 200 kHz	
Resolution	0, 18 mm	
Repeatability	±0.15 %	
Detection zone in centimetres		
The dark grey areas indicate the zone in which the standard reflector (pipe) is reliably detected. This is the typical operating range of the sensors. The light grey areas indicate the zone in which a big reflector – like, e.g. a plate or a lubricant surface – is still detected – provided it is optimally positioned to the sensor. Outside the light grey area an evaluation is not possible any more.		
Accuracy	±1 %	
Operating voltage U _B	9 - 30 V DC protected against reverse polarity	
Residual ripple	±10 %	
No-load current consumption	≤ 60 mA	
Housing material	PBT, polyester, ultrasonic transducer: PUR, epoxy resin with glass contents	
Type of connection	5-pole M12 circular socket connector	
Type of protection following EN 60529	IP 65/ 67 (depending on the cable socket used)	
Display elements	LED red / LED green Switching output not set/ set	
Range of operating temperatures	-40 °C to + 70 °C	
Weight	120 g	
Response delay	340 ms	
Readiness delay	< 300 ms	
Compliance with standards	EN 60947-5-2	
Setting elements	2 pushbuttons (locked)	
Switching output	3x pnp; U _B -2V; I _{max} = 3x 200 mA; NO/ NC contact, short-circuit resistant	
Factory setting	High-level indication	120 mm
	Pre-low-level indication	710 mm
	Low level indication	760 mm

