Ultrasonic sensors

To effectively measure the fill level in lubricant reservoirs bigger than five litres

SKF's Ultrasonic sensors – available in analogue and digital versions – help improve fill-level monitoring on pump reservoirs with lubricant capacities over five litres.

Maintaining the correct amount of lubricant in the reservoir helps to avoid under-lubrication and possible equipment damage. It also prevents overfilling – which reduces waste and protects the environment. Traditionally, lubricant is monitored by checking the fill level visually or with a float switch.

Using a sensor is more reliable and convenient. Both types of sensors measure the distance to the medium (oil or grease) without contacting it. Thanks to their internal temperature compensation, temperature fluctuations do not affect the accuracy of the measurements. The sensors indicate the lubricant level using two flashing LEDs.

The original analogue sensor provides continuous level messages for optimum operation to display all measuring points. The exact fill level can be transmitted live onto a screen. The newer digital version can select three switching points corresponding to 'full', 'pre-warning' and 'low level'. This solution provides affordable total fill-level monitoring.

The SKF ultrasonic sensor improves the reliability of monitoring the pump's function. It is suitable for mining, rail, heavy industry, food and beverage applications, and any industry that uses large lubricant reservoirs.

Benefits:

- Reliable fill-level monitoring
- Easier maintenance
- Improved monitoring of pump function

Features:

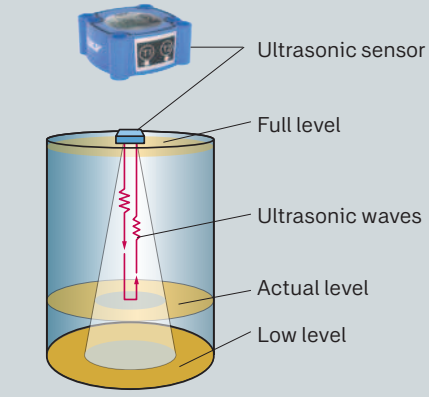
- Reduced reservoir blind zones
- Analogue or digital output
- Internal temperature compensation

How it works

The sensor uses ultrasonic waves to provide non-contact measurement of the distance to the lubricant surface. This makes it virtually maintenance-free.

For the analogue sensor, a distance-proportional analogue signal is output. A two-colour LED indicates the operation and the status of the analogue output.

The digital version uses the same two-colour LED system. For instance, flashing green-green means 'full', while permanent green-orange means 'between pre-warning and low level'.



Features per model

Sensor type	Analogue	Analogue	Analogue	Digital	Digital	Digital
Order number	**2370-00000314**	**2370-00000312**	**2370-00000308**	**2370-00000315**	**2370-00000311**	**2370-00000307**
Blind zone	0–30 mm	0–65 mm	0–115 mm	0–30 mm	0–65 mm	0–120 mm
Scanning range limit	250 mm	500 mm	1000 mm	400 mm	600 mm	1300 mm
Ultrasonic frequency	600 kHz	400 kHz	200 kHz	320 kHz	400 kHz	200 kHz
Response delay	300 ms	272 ms	340 ms	300 ms	272 ms	340 ms
LED signals						
Full level	Orange/orange	Green/green (flashing)	Green/green (flashing)	Green/green (flashing)	Orange/orange	Orange/orange
Between full level and pre-empty	Green/green	Green/green	Green/green	Green/green	Green/green	Green/green
Pre-empty	–	Orange/green	Orange/green	Orange/green	–	–
Low-level	Orange/orange	Orange/orange	Orange/orange	Orange/orange	Orange/orange	Orange/orange

Features of all models

Resolution	0.18 mm *(0.007 in)*
Accuracy	±1 %
Readiness delay	<300 ms
Operating voltage UB	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
Protection type	IP65 / IP67 (depending on the cable socket used)
Temperature range	–40 to +70 °C *(–40 to +158 °F)*
Weight	120 g *(0.26 lb)*
Size	*62.2*×62.2×26.7 mm *(2.45×2.45×1.05 in)*
Compliance with standards	DIN EN 60947-5-2
Display elements	LED orange / LED green; switching output not set / set

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