

# Bühler Condition Monitor BCM-LS

## Continuous condition and liquid level monitor for lubricating and hydraulic oils

Continuously monitoring and condition and liquid level of the respective fluid in hydraulic and lubricating systems is essential. Failing to continuously monitor the condition can result in considerable system damage.

The Bühler condition monitoring liquid level sensor (BCM-LS) was designed specifically to continuously monitor the relative humidity, temperature, permittivity, conductivity and liquid level in oil tanks. By continuously monitoring the fluid, sudden and subtle level changes, deterioration or changes in oil quality can be accurately detected and the oil change intervals extended or planned accurately. Maintenance costs can be reduced significantly. This makes the Bühler condition monitoring liquid level sensor an essential part of your condition monitoring system.

The BCM-LS capacitively measures the relative humidity in the medium to ensure reliable information about the saturation level of the oil.

The conductivity and permittivity can be used to obtain substantiated information about oil ageing, replenishment and mixing with other oils or foreign objects. Since conductivity as well as permittivity are greatly affected by the temperature, the actual temperature is always determined as well.

The additional liquid level measurement function makes the BCM-LS an comprehensive multifunctional sensor.

### BCM-LS200

4-20 mA and CAN bus

High pressure resistance of up to 725 psi (50 bar)

Continuously logs relative humidity, temperature, conductivity, permittivity and liquid level

Compact, tough housing also suitable for demanding applications

Easy system connection directly inside the tank

Evaluates and saves actual data

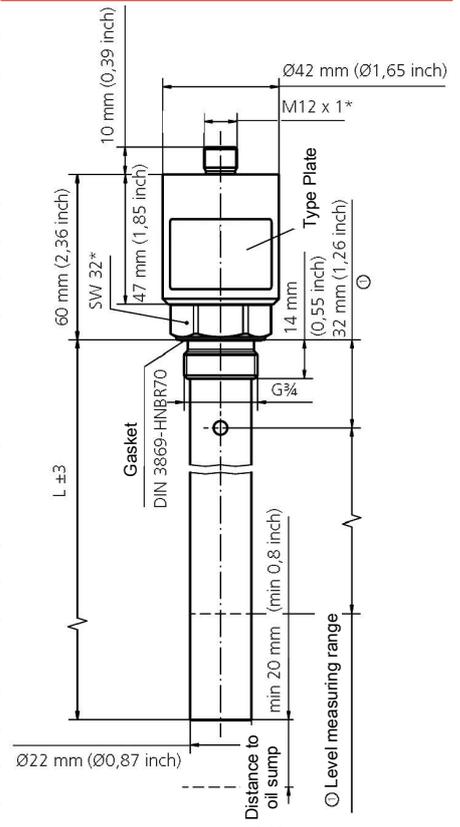
Multifunction sensor



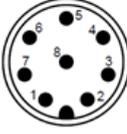
BCM-LS Technical Data

BCM-LS200-1DC2A/xxx	1DC2A
Version:	Compact unit
Process connection:	G3/4
Material in contact with media:	aluminium, HNBR, polyurethane resin, epoxy resin, electroless nickel immersion gold (ENIG), solder, aluminium oxide, glass, gold, silver palladium
Medium temperature:	-4 °F to 185 °F (-20 °C to +85 °C)
Ambient temperature:	-4 °F to 185 °F (-20 °C to +85 °C)
Pressure resistance:	725 psi (50 bar)
Compatible fluids:	mineral oils (H, HL, HLP, HLPD, HVLP), synthetic esters (HETG, HEPG, HEES, HEPR), polyalkylene glycol (PAG), zinc- and ash-free oils (ZAF), poly-alpha-olefins (PAO)
Weight:	0.37 lb (170 g) for 7.87 in (200 mm) version 0.46 lb (210 g) for 14.76 in (375 mm) version 0.55 lb (250 g) for 24.21 in (615 mm) version
Operating voltage (U <sub>B</sub> ):	9 – 33 V DC
Power input:	max. 0.2 A
<b>Measuring range</b>	
Temperature:	-4 °F...185 °F (-20 °C...85 °C)
Rel. humidity:	0...100 %
Rel. permittivity:	1...7
Conductivity:	100...800,000 pS/m
Liquid Level	4.52 in (115 mm) for 7.87 in (200 mm) version 11.34 in (288 mm) for 14.76 in (375 mm) version 20.27 in (515 mm) for 24.21 in (615 mm) version see scale drawing
<b>Measuring accuracy</b>	
Temperature:	±2 K
Rel. humidity:	±3 %
Rel. permittivity:	±0.015
Conductivity (100...2,000 pS/m):	±200 pS/m
Conductivity (2,000...800,000 pS/m):	<±10 %
Liquid Level	<±5 %
1DC output:	RS232/CANopen/SAE J1939
2A output:	2x 4-20 mA (assigned to one measurand or sequential output of all values)

Dimensions



**Standard pin assignment**

Plug connection	M12 (base)
Number of pins	8-pin
Voltage	max. 33 V DC
IP rating with IP67 cable box attached	IP67
Version	1DC2A
Connection schematic	
1	L+
2	L-
3	TxD, CAN low [OUT]
4	RxD, CAN high [IN]
5	-
6	Analog output, 4...20 mA
7	Analog output, 4...20 mA
8	Signal earth
Shield	-

**BCM-LS model key**
**BCM - LS200 - 1DC2A / xxx**

<b>Type designation</b>		<b>Length</b>
BCM Bühler Condition Monitor		200 mm (7.87 in)
L Multisensor incl. liquid level measurement		375 mm (14.76 in)
S Sensor		615 mm (24.21 in)
<b>Process connection</b>		<b>Outputs</b>
0 G3/4"		1DC2A 1x CANopen/2x analog

Item no.	Model
1550002200	BCM-LS200-1DC2A/200
1550002375	BCM-LS200-1DC2A/375
1550002615	BCM-LS200-1DC2A/615

**Accessories BCM-LS**

Item no.	Description
1590001001	RS232 data cable
1590001002	USB/RS232 adapter
1590001003	Power supply