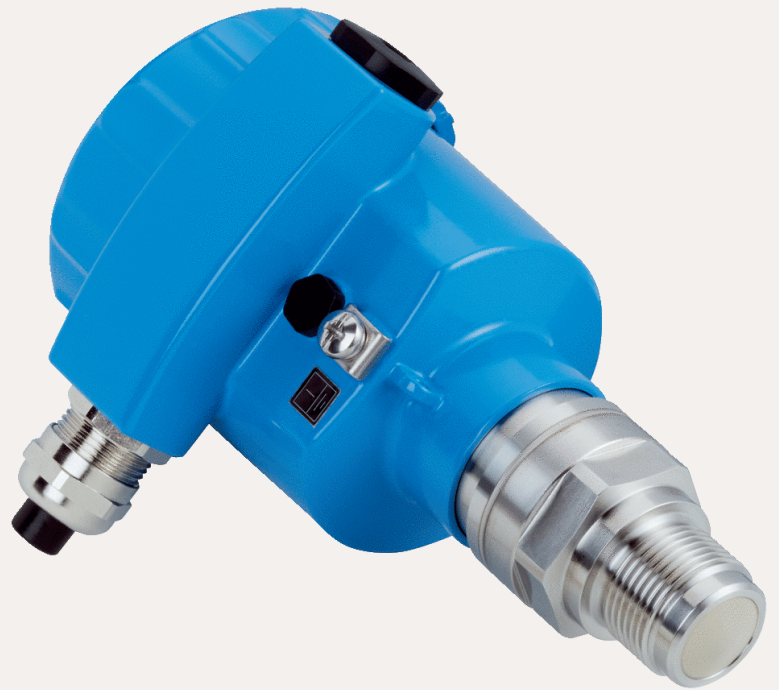


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DATA SHEET

# LFR-XXTTCBMHAKX

LFR SicWave  
Level sensors

**SICK** Sensor Intelligence

## LEVEL SENSORS

## LFR-XXTTCBMHAHX

## ORDERING INFORMATION

Type	part no.
LFR-XXTTCBMHAHX	6081356

Further device versions and accessories at [www.sick.com/LFR\\_SicWave](http://www.sick.com/LFR_SicWave)



Illustration may differ

## DETAILED TECHNICAL DATA

## FEATURES

Medium	Fluids
Measurement	Continuous
Probe type	Thread with integrated horn antenna made from PEEK
Frequency band	W-band (within 75 ... 85 GHz)
Measuring range	Up to 20 m (65.62 ft)
Angle of dispersion	7° <sup>1)</sup>
Process pressure	-1 bar ... 20 bar (-100 kPa ... 2,000 kPa / -14.5 psig ... 290.1 psig)
Process temperature	-40 °C ... +200 °C
RoHS certificate	✓
HART	✓
Display	Installed
Control element	Bluetooth Magnet pin operation
Bluetooth	✓

<sup>1)</sup> Outside the specified aperture angle, the level of the radar signal energy is lowered by 50% (-3 dB).

**PERFORMANCE**

Accuracy of sensor element	≤ 1 mm <sup>1)</sup>
Non-repeatability	≤ 1 mm
Digital measurement resolution	< 1 mm
Analog measurement resolution	0.3 μA
Digital output temperature drift	≤ 3 mm / 10 K, max. 10 mm
Current output temperature drift	≤ 0.03% / 10 K relating to the 16 mA span or ≤ 0.3%
Deviation on current output due to digital-analog conversion	< 15 μA
Measurement cycle time	Approx. 700 ms
Step response time	≤ 3 s <sup>2)</sup>
MTBF	3,37*10 <sup>6</sup> h
Display	✓

<sup>1)</sup> Measurement distance > 0.25 m / 0.8202 ft.

<sup>2)</sup> Time span after abrupt change to the measurement distance by max. 2 m for bulk material applications until the output signal has assumed 90% of its steady-state value for the first time (IEC 61298-2).

**ELECTRONICS**

Communication interface	HART
Supply voltage	12 V DC ... 35 V DC, 18 V DC ... 35 V DC with illumination switched on <sup>1)</sup>
Protection class	III (IEC 61010-1)
Connection type	M20 x 1.5 / cable gland PA black (ø 5 mm - 9 mm)
Output signal	4 mA ... 20 mA / HART <sup>2)</sup>
Contamination rating	4
Enclosure rating	IP66 / IP68
EMC	EN 61326-1
Start-up current	< 3.6 mA
Overvoltage category	III (IEC 61010-1)
Short-circuit protection	✓

<sup>1)</sup> All connections are polarity protected. All outputs are overload and short-circuit protected.

<sup>2)</sup> Range of the output signal: 3.8 mA ... 20.5 mA / HART (factory setting); fault current < 3.6 mA or 22 mA.

**MECHANICS**

Process connection	Thread G 1 ½ PN20, DIN3852-A / 316L
Housing material	Aluminum
Housing design	Single-chamber housing
Sealing material	FKM (SHS FPM 70C3 GLT)
Antenna material	PEEK
Second line of defense	Not integrated

**AMBIENT DATA**

Ambient operating temperature	-40 °C ... +80 °C
Ambient temperature, storage	-40 °C ... +80 °C

Further information as well as suitable accessories, example applications and downloads such as CAD dimensional models, operating instructions and software can be found at [www.sick.com/6081356](http://www.sick.com/6081356)



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SICK combines sensor intelligence with industry expertise and certified consulting services. We provide the ideal foundation for scalable as well as tailor-made automation solutions and create added value along the entire value chain. Our close partnerships with our customers are more than just a promise: Together, we optimize productivity, improve quality, protect health and safety, and help build a sustainable future. All with empathy and trust.

Since 1946, we have been developing innovative technologies with passion and a pioneering spirit. With a global network in around 40 countries, SICK has a global presence and is always close by. The company's headquarters are located in Waldkirch near Freiburg, Germany. Our customers benefit from our understanding of both local and global requirements, which enables us to deliver tailor-made solutions

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