



LFR-XXUTAAMHAAX

LFR SicWave

LEVEL SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

Type	Part no.
LFR-XXUTAAMHAAX	6072213

Other models and accessories → www.sick.com/LFR_SicWave

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 10 m (32.81 ft)
Angle of dispersion	14° ¹⁾
Process pressure	-1 bar ... 20 bar (-100 kPa ... 2,000 kPa / -14.5 psig ... 290.1 psig)
Process temperature	-40 °C ... +130 °C
RoHS certificate	✓
HART	✓
Indication	Installed
Control element	Pushbutton operation

¹⁾ 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 ¹⁾
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 ²⁾

¹⁾ Measurement distance > 0.25 m / 0.8202 ft.

²⁾ 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

Supply voltage	12 V DC ... 35 V DC, 18 V DC ... 35 V DC with illumination switched on ¹⁾
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 ²⁾
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	✓

¹⁾ All connections are polarity protected. All outputs are overload and short-circuit protected.

²⁾ 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 ¾ PN20, DIN3852-A / 316L
Housing material	Aluminum
Housing design	Single-chamber housing
Sealing material	PTFE
Antenna material	PEEK
Second line of defense	Integrated

Ambient data

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

Classifications

ECI@ss 5.0	27200505
ECI@ss 5.1.4	27200505
ECI@ss 6.0	27200505
ECI@ss 6.2	27200505
ECI@ss 7.0	27200505
ECI@ss 8.0	27200505
ECI@ss 8.1	27200505
ECI@ss 9.0	27200505
ECI@ss 10.0	27270807
ECI@ss 11.0	27270807
ETIM 5.0	EC001447
ETIM 6.0	EC001447
ETIM 7.0	EC001447
ETIM 8.0	EC001447
UNSPSC 16.0901	41111950

Type code

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Certification

XX	Without certification
AC	ATEX II 1G, 1/2G, 2G Ex ia IIC T6...T1, Ga, Ga/Gb, Gb, EU-type examination no.: KIWA 20ATEX0039 X
AE	ATEX II 1/2G, 2G Ex db IIC T6...T1, Ga/Gb, Gb, EU-type examination no.: KIWA 20ATEX0040 X
IC	IEC Ex ia IIC T6...T1, Ga, Ga/Gb, Gb, EU-type examination no.: IECEx KIWA 20.0014X
IE	IEC Ex db IIC T6...T1, Ga/Gb, Gb, EU-type examination no.: IECEx KIWA 20.0015X

Antenna version/second line of defense

B	With plastic horn antenna
T	Thread with integrated horn antenna
U	Thread with integrated horn antenna with second line of defense
F	Flange with encapsulated antenna system
G	Flange with encapsulated antenna system with second line of defense
H	Hygiene connection with encapsulated antenna system

Process connection/Material

XX	Without process connection
XC	Mounting clamp, length: 170 mm / 316L
XD	Mounting clamp, length: 300 mm / 316L
TA	Thread G ¾ PN20, DIN3852-A / 316L
TB	Thread ¾" NPT PN20, ASME B1.20.1/316L
TC	Thread G 1½, PN20, DIN3852-A / 316L
TD	Thread 1½ NPT, PN20, ASME B1.20.1/316L
FB	Flange DN 50 PN40 Form C, DIN2501/316/316L
FH	Flange DN 80 PN40 Form C, DIN2501/316/316L
FL	Flange DN 100 PN16 Form C, DIN2501/316/316L
FS	Flange DN 150 PN16 Form C, DIN2501/316/316L
GI	Flange 2" 150 lb RF, ASME B16.5/316/316L
GM	Flange 3" 150 lb RF, ASME B16.5/316/316L
GP	Flange 4" 150 lb RF, ASME B16.5/316/316L
CA	Clamp 2" PN16 (Ø 64 mm) DIN32676, ISO2825/316L
RA	DN50; PN16; DIN11851; 316L

Material/seal/process temperature

C	Antenna material PP, seal PP, process temperature -40 ... +80 °C
I	Antenna material PTFE, seal PTFE, process temperature -40 ... +130 °C
J	Antenna material PTFE, seal PTFE, process temperature -40 ... +200 °C
W	Antenna material PTFE, seal PTFE, process temperature -196 ... +200 °C
A	Antenna material PEEK, seal FKM (SHS FPM 70C3 GLT) and PP, process temperature -40 ... +130 °C
B	Antenna material PEEK, seal FKM (SHS FPM 70C3 GLT) and PP, process temperature -40 ... +200 °C

Cable entry/Connection

B	Round connector, M12x1 pin assignment B
M	M20x1.5 / cable gland, PA black (Ø 5-9 mm), standard
2	M20x1.5 / cable gland, nickel-plated brass (Ø 5-9 mm)
O	M20x1.5 / cable gland, nickel-plated brass (Ø 6-12 mm)
J	½ NPT/cable gland, PA black (Ø 5-9 mm)
P	½ NPT/cable gland, nickel-plated brass (Ø 6-12 mm)

Electronics

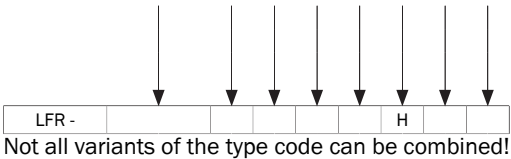
H	Two-wire, 4 ... 20 mA/HART
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Housing/Enclosure rating

K	Plastic single chamber/IP67 / IP67
A	Aluminum single chamber/IP66 / IP68
Z	Stainless steel single chamber (electropolished) / IP66 / IP68 / IP69

Display/Control module

X	Without display
A	Integrated display
K	Enclosed display; with WPAN, magnetic pen operation



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