



LFR SicWave

Simply brilliant - level measurement in liquids with 80 GHz radar

LEVEL SENSORS

SICK
Sensor Intelligence.



Technical data overview

Measurement principle	Free-space radar
Detection principle	Non contact
Medium	Fluids
Measurement	Continuous
Process temperature	–196 °C ... +200 °C (depending on type) (depending on type)
Process pressure	–1 bar ... 20 bar (depending on type) (depending on type)
Accuracy of sensor element	≤ 1 mm

Product description

The LFR SicWave free-space radar makes continuous level measurements and works with all liquids. It is highly resistant to external interference, foam or deposits. Thanks to its non-contact 80 GHz radar technology, the LFR SicWave can be put into operation easily and is maintenance-free. A wide range of options for antenna design, process connections and housing ensure ideal connection to any application. HART communication and WPAN connection simplify service and diagnostics on the device and prepare it optimally for Industry 4.0 applications.

At a glance

- 80 GHz free-space radar with various antennas
- Measuring range: up to 30 m
- Process temperature: –196 °C ... +200 °C
- Process pressure: –1 bar ... 25 bar
- Process connection: thread, flange, clamp
- Housing: plastic (IP66 / IP67), aluminum (IP66 / IP68) or stainless steel (IP69)
- With or without display and WPAN
- Certificates: Ex d and Ex ia, WHG, shipbuilding

Your benefits

- One device for all continuous level measurements in liquids, simplifies spare part logistics
- Increased plant availability due to non-contact, continuous level measurement
- Quick to commission, saving time and costs
- Low costs and time expenditure as it is maintenance-free
- Rugged to external interference for high plant availability
- Insensitive to foam and deposits, preventing unexpected plant downtime
- Ex-certificates available
- Simplified service and diagnostic via HART or WPAN

Fields of application

- Chemical industry: large tank storage, storage and buffer tanks, reaction and transport containers
- Oil and gas industry: mud pits, trip tanks, shakers and waste water containers
- Food and beverage industry: large, stirring and preparation tanks, thickener and filling tanks
- Water industry: storage tanks for flocculants, coarse and fine screens

Type code

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

Type code

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	Milk pipe connection 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

Additional approvals

X	Without certification
S	DNVGL (shipbuilding approval)
W	WHG (overfill protection)

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Not all variants of the type code can be combined!

SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

WORLDWIDE PRESENCE:

Contacts and other locations –www.sick.com