



## LFR SicWave

SIMPLY BRILLIANT – LEVEL MEASUREMENT IN LIQUIDS  
WITH 80 GHZ RADAR

Level sensors

**SICK**  
Sensor Intelligence.

# SIMPLY BRILLIANT - LEVEL MEASUREMENT IN LIQUIDS WITH 80 GHZ RADAR



## 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, Ex ia, WHG, shipbuilding

## Your benefits

- One device for all continuous level measurements in liquids, simplifies spare part logistics
- Increased system 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
- Resistant to external interference for high system availability
- Insensitive to foam and deposits, preventing unexpected system downtime
- Ex-certificates available
- Simplified service and diagnostic via HART or WPAN



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→ [www.sick.com/LFR\\_SicWave](http://www.sick.com/LFR_SicWave)

For more information, simply enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.



## Detailed technical data

## Features

Medium	Fluids
Measurement	Continuous
Probe type	Plastic horn antenna Hygiene connection with encapsulated antenna system Thread with integrated horn antenna (depending on type)
Frequency band	W-band (within 75 ... 85 GHz)
Measuring range	Up to 30 m (98.43 ft) Up to 25 m (82.02 ft) Up to 10 m (32.81 ft) Up to 20 m (65.62 ft) (depending on type)
Angle of dispersion	3° <sup>1)</sup> 6° <sup>1)</sup> 14° <sup>1)</sup> 7° <sup>1)</sup> (depending on type)
Process pressure	-1 bar 2 bar (-100 kPa ... 200 kPa / -14.5 psig ... 29.1 psig) -1 bar 16 bar (-100 kPa ... 1,600 kPa / -14.5 psig ... 232 psig) -1 bar 20 bar (-100 kPa ... 2,000 kPa / -14.5 psig ... 290.1 psig) In combination with process temperature -196 °C ... +200 °C, -1 bar ... 25 bar (-100 kPa ... 2,500 kPa / -14.5 psig ... 362.6 psig) are possible -1 bar 16 bar (-100 kPa ... 1,600 kPa / -14.5 psig ... 232 psig) -1 bar 6 bar (-100 kPa ... 600 kPa / -14.5 psig ... 87 psig) (depending on type)
Process temperature	-196 °C ... +200 °C (depending on type)
EX approval	ATEX II 1G, 1/2G, 2G Ex ia IIC T6...T1, Ga, Ga/Gb, Gb ATEX II 1/2G, 2G Ex db IIC T6...T1, Ga/Gb, Gb IEC Ex ia IIC T6...T1, Ga, Ga/Gb, Gb IEC Ex db IIC T6...T1, Ga/Gb, Gb (depending on type)
RoHS certificate	✓
HART	✓
WHG (overfill protection)	✓ (depending on type)
DNVGL (ship approval)	✓ (depending on type)
Indication	Without Installed (depending on type)
Control element	Bluetooth Magnet pin operation Key operation

<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

<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).

<b>Step response time</b>	≤ 3 s <sup>2)</sup>
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<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).

## Mechanics

<b>Process connection</b>	Without process connection Mounting clamp, length: 170 mm / 316L Mounting clamp, length: 300 mm / 316L Clamp 2" PN16 (diameter 64 mm) DIN32676, ISO2825 / 316L Thread G ¾ PN20, DIN3852-A / 316L Thread ¾" NPT PN20, ASME B1.20.1 / 316L Flange DN 50 PN 40 form C, DIN 2501 / 316L Thread G 1 ½ PN20, DIN3852-A / 316L Thread 1 ½" NPT PN20, ASME B1.20.1 / 316L Flange DN 80 PN 40 form C, DIN 2501 / 316L Flange DN100 PN16 Form C, DIN2501 / 316L Flange DN150 PN16 Form C, DIN2501 / 316L Flange 2" 150 lb RF, ASME B16.5 / 316L Flange 3" 150 lb RF, ASME B16.5 / 316L Flange 4" 150 lb RF, ASME B16.5 / 316L Milk pipe connection DN50 PN16 DIN11851 / 316L (depending on type)
<b>Housing material</b>	Plastic Stainless steel (electropolished) Aluminum (depending on type)
<b>Housing design</b>	Single-chamber housing
<b>Sealing material</b>	PP PTFE FKM (SHS FPM 70C3 GLT) (depending on type)
<b>Antenna material</b>	PP PTFE PEEK (depending on type)
<b>Second line of defense</b>	Not integrated / integrated (depending on type)

## Electronics

<b>Supply voltage</b>	12 V DC ... 35 V DC, 18 V DC ... 35 V DC with illumination switched on <sup>1)</sup>
<b>Protection class</b>	III (IEC 61010-1)
<b>Connection type</b>	M20 x 1.5 / plug connector M12 x 1 pin assignment B M20 x 1.5 / cable gland PA (ø 5 mm - 9 mm) ½" NPT / cable gland PA (ø 5 mm - 9 mm) M20 x 1.5 / cable gland nickel-plated brass (ø5 mm - 9 mm) M20 x 1.5 / cable gland nickel-plated brass (ø 6 mm - 12 mm) ½" NPT / cable gland nickel-plated brass (ø 6 mm - 12 mm) (depending on type)
<b>Output signal</b>	4 mA ... 20 mA / HART <sup>2)</sup>
<b>Contamination rating</b>	4
<b>Enclosure rating</b>	IP66 / IP67 IP66 / IP68 / IP69 IP66 / IP68 (depending on type)
<b>EMC</b>	EN 61326-1
<b>Start-up current</b>	< 3.6 mA
<b>Overvoltage category</b>	III (IEC 61010-1)
<b>Short-circuit protection</b>	✓

<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.

Ambient data

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

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 approval
A	DNVGL (ship approval)
K	WHG (overfill protection)



Not all variants of the type code can be combined!

Ordering information

Enclosure rating	Process connection	Process temperature	Process pressure	Housing material	Housing design	Electrical connection	ATEX	Type	Part no.
IP66 / IP68	Flange DN 50 PN 40 form C, DIN 2501 / 316L	-40 °C ... +200 °C	In combination with process temperature -196 °C ... +200 °C, -1 bar ... 25 bar (-100 kPa ... 2,500 kPa / -14.5 psig ... 362.6 psig) are possible -1 bar ... 16 bar, (-100 kPa ... 1,600 kPa / -14.5 psig ... 232 psig)	Aluminum	Single-chamber housing	M20 x 1.5 / cable gland nickel-plated brass (ø 6 mm - 12 mm)	✓	LFR-ACGFBJO-HAAS	6072205
	Flange DN 80 PN 40 form C, DIN 2501 / 316L	-40 °C ... +200 °C		Aluminum	Single-chamber housing		✓	LFR-ACGFHJO-HAAS	6072206
	Flange DN100 PN16 Form C, DIN2501 / 316L	-40 °C ... +200 °C		Aluminum	Single-chamber housing		✓	LFR-ACGFLJO-HAAS	6072207
	Flange DN150 PN16 Form C, DIN2501 / 316L	-40 °C ... +200 °C		Aluminum	Single-chamber housing		✓	LFR-ACGFSJO-HAAS	6072208

Enclosure rating	Process connection	Process temperature	Process pressure	Housing material	Housing design	Electrical connection	ATEX	Type	Part no.
IP66 / IP68	Flange 2" 150 lb RF, ASME B16.5 / 316L	-196 °C ... +200 °C	-1 bar ... 6 bar, (-100 kPa ... 600 kPa / -14.5 psig ... 87 psig)	Aluminum	Single-chamber housing	½" NPT / cable gland nickel-plated brass (ø 6 mm - 12 mm)	✓	LFR-ACGGIW-PHAAS	6072209
	Flange 3" 150 lb RF, ASME B16.5 / 316L	-196 °C ... +200 °C		Aluminum	Single-chamber housing		✓	LFR-ACGGM-WPHAAS	6072210
	Flange 4" 150 lb RF, ASME B16.5 / 316L	-196 °C ... +200 °C		Aluminum	Single-chamber housing		✓	LFR-ACGGPW-PHAAS	6072211

Enclosure rating	Process connection	Process temperature	Process pressure	Housing material	Housing design	Electrical connection	ATEX	Type	Part no.
IP66 / IP67	Thread G ¾ PN20, DIN3852-A / 316L	-40 °C ... +130 °C	-1 bar ... 20 bar, (-100 kPa ... 2,000 kPa / -14.5 psig ... 290.1 psig)	Plastic	Single-chamber housing	M20 x 1.5 / cable gland PA (ø 5 mm - 9 mm)	✓	LFR-AHTTAAM-HKAW	6072203
								LFR-AHTTAAM-HKAX	6072199
	Thread G 1 ½ PN20, DIN3852-A / 316L	-40 °C ... +130 °C		Plastic	Single-chamber housing			LFR-AHTTCAM-HKAW	6072204
								LFR-AHTTCAM-HKAX	6072200

Enclosure rating	Process connection	Process temperature	Process pressure	Housing material	Housing design	Electrical connection	ATEX	Type	Part no.
IP66 / IP67	Thread ¾" NPT PN20, ASME B1.20.1 / 316L	-40 °C ... +130 °C	-1 bar ... 20 bar, (-100 kPa ... 2,000 kPa / -14.5 psig ... 290.1 psig)	Plastic	Single-chamber housing	½" NPT / cable gland PA (ø 5 mm - 9 mm)	✓	LFR-AHTTBAJHKAX	6072201
	Thread 1 ½" NPT PN20, ASME B1.20.1 / 316L	-40 °C ... +130 °C		Plastic	Single-chamber housing		✓	LFR-AHTTDAJHKAX	6072202

Enclosure rating	Process connection	Process temperature	Process pressure	Housing material	Housing design	Electrical connection	ATEX	Type	Part no.
IP66 / IP67	Mounting clamp, length: 170 mm / 316L	-40 °C ... +80 °C	-1 bar ... 2 bar, (-100 kPa ... 200 kPa / -14.5 psig ... 29.1 psig)	Plastic	Single-chamber housing	M20 x 1.5 / plug connector M12 x 1 pin assignment B	-	LFR-XXBXCCBHKXX	6072197
	Mounting clamp, length: 300 mm / 316L	-40 °C ... +80 °C		Plastic	Single-chamber housing		-	LFR-XXBXDCBHKXX	6072198
	Without process connection	-40 °C ... +80 °C		Plastic	Single-chamber housing		-	LFR-XXBXXCBHKXX	6072663
				Plastic	Single-chamber housing		-	LFR-XXBXXCBHKXX	6072196

Enclosure rating	Process connection	Process temperature	Process pressure	Housing material	Housing design	Electrical connection	Type	Part no.
IP66 / IP68	Flange DN 50 PN 40 form C, DIN 2501 / 316L	-40 °C ... +200 °C	In combination with process temperature -196 °C ... +200 °C, -1 bar ... 25 bar (-100 kPa ... 2,500 kPa / -14.5 psig ... 362.6 psig) are possible -1 bar ... 16 bar, (-100 kPa ... 1,600 kPa / -14.5 psig ... 232 psig)	Aluminum	Single-chamber housing	M20 x 1.5 / cable gland nickel-plated brass (ø5 mm - 9 mm)	LFR-XXFFBJ2HAAX	6072215

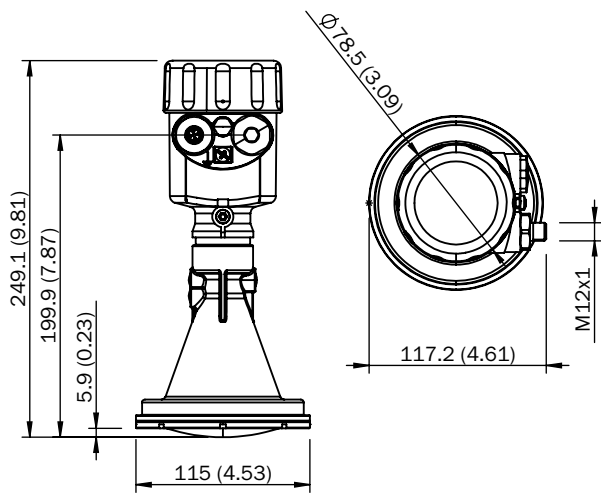
Enclosure rating	Process connection	Process temperature	Process pressure	Housing material	Housing design	Electrical connection	Type	Part no.
IP66 / IP68 / IP69	Clamp 2" PN16 (diameter 64 mm) DIN32676, ISO2825 / 316L	-40 °C ... +130 °C	-1 bar ... 16 bar, (-100 kPa ... 1,600 kPa / -14.5 psig ... 232 psig)	Stainless steel (electropolished)	Single-chamber housing	M20 x 1.5 / plug connector M12 x 1 pin assignment B	LFR-XXHCAIBHZAX	6072212

Enclosure rating	Process connection	Process temperature	Process pressure	Housing material	Housing design	Electrical connection	Type	Part no.
IP66 / IP68	Thread G 3/4 PN20, DIN3852-A / 316L	-40 °C ... +130 °C	-1 bar ... 20 bar, (-100 kPa ... 2,000 kPa / -14.5 psig ... 290.1 psig)	Aluminum	Single-chamber housing	M20 x 1.5 / cable gland PA (ø 5 mm - 9 mm)	LFR-XXUTAAMHAAX	6072213

Enclosure rating	Process connection	Process temperature	Process pressure	Housing material	Housing design	Electrical connection	Type	Part no.
IP66 / IP68	Thread 3/4" NPT PN20, ASME B1.20.1 / 316L	-40 °C ... +200 °C	-1 bar ... 20 bar, (-100 kPa ... 2,000 kPa / -14.5 psig ... 290.1 psig)	Aluminum	Single-chamber housing	1/2" NPT / cable gland PA (ø 5 mm - 9 mm)	LFR-XXUTBBJHAAX	6072214

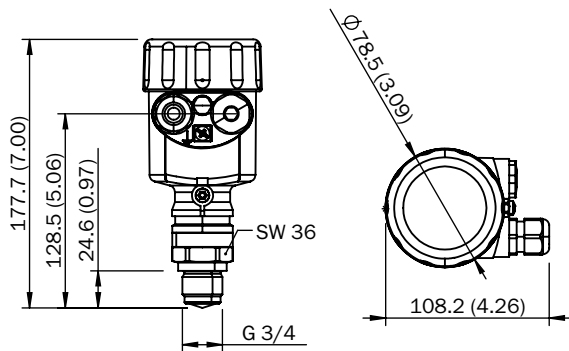
## Dimensional drawings (Dimensions in mm (inch))

Unit: mm (inch), decimal separator: period



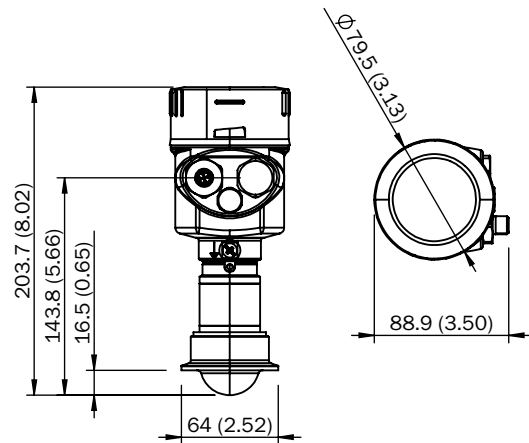
LFR-xxBXXCBHKXX

Unit: mm (inch), decimal separator: period



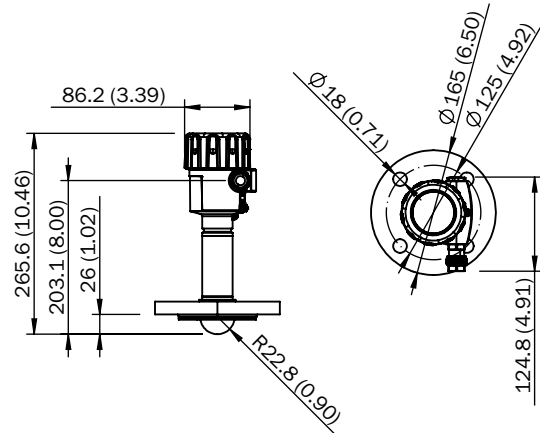
LFR-xxTTAAMHKAX

Unit: mm (inch), decimal separator: period



LFR-xxHCAIBHZAX

Unit: mm (inch), decimal separator: period



LFR-xxGFBJOHAAS







## Accessories

## Connection systems

## Plug connectors and cables

## Connecting cables

	Brief description	Length of cable	Type	Part no.
	Head A: female connector, M12, 4-pin, straight Head B: Flying leads Cable: PP, unshielded, 4.6 mm <sup>1)</sup>	2 m	DOL-1204-G02MRN	6058291
		5 m	DOL-1204-G05MRN	6058476
		10 m	DOL-1204-G10MRN	6058478
		15 m	DOL-1204-G15MRN	2092884
		25 m	DOL-1204-G25MRN	6058480
	Head A: female connector, M12, 4-pin, angled with LED Head B: Flying leads Cable: PP, unshielded, 4.6 mm <sup>1)</sup>	2 m	DOL-1204-L02MRN	6058482
		5 m	DOL-1204-L05MRN	6058483
		10 m	DOL-1204-L10MRN	6058484
		25 m	DOL-1204-L25MRN	6058485
	Head A: female connector, M12, 4-pin, angled Head B: Flying leads Cable: PVC, unshielded, 5 mm <sup>2) 3)</sup>	2 m	DOL-1204-W02MNI	6052614
	Head A: female connector, M12, 4-pin, angled Head B: Flying leads Cable: PP, unshielded, 4.6 mm <sup>1)</sup>	2 m	DOL-1204-W02MRN	6058474
	Head A: female connector, M12, 4-pin, angled Head B: Flying leads Cable: PVC, unshielded, 5 mm <sup>2) 3)</sup>	5 m	DOL-1204-W05MNI	6052616
	Head A: female connector, M12, 4-pin, angled Head B: Flying leads Cable: PP, unshielded, 4.6 mm <sup>1)</sup>	5 m	DOL-1204-W05MRN	6058477
	Head A: female connector, M12, 4-pin, angled Head B: Flying leads Cable: PVC, unshielded, 5 mm <sup>2) 3)</sup>	10 m	DOL-1204-W10MNI	6052618
	Head A: female connector, M12, 4-pin, angled Head B: Flying leads Cable: PP, unshielded, 4.6 mm <sup>1)</sup>	10 m	DOL-1204-W10MRN	6058479
		25 m	DOL-1204-W25MRN	6058481
	Head A: female connector, M12, 4-pin, straight Head B: Flying leads Cable: PUR, halogen-free, unshielded, 5.9 mm	2 m	DOL-1204G02MC75KM0	2079290
		5 m	DOL-1204G05MC75KM0	2079291
		10 m	DOL-1204G10MC75KM0	2079292
		20 m	DOL-1204G20MC75KM0	2089703
	Head A: female connector, M12, 4-pin, angled Head B: Flying leads Cable: PUR, halogen-free, unshielded, 5.9 mm	2 m	DOL-1204W02MC75KM0	2079293
		5 m	DOL-1204W05MC75KM0	2079294
		10 m	DOL-1204W10MC75KM0	2079295
		20 m	DOL-1204W20MC75KM0	2089704

<sup>1)</sup> Tested detergent: P3-topactive DES, P3-topactive 200, P3-topax 52, P3-topax 66 und P3-topax 91.

<sup>2)</sup> Tested detergent: P3-topactive DES, P3-topax 19, P3-topax 56, P3-topax 66 and P3-topax 99; Insulating material group: Cat I.

<sup>3)</sup> Insulating material group: Cat I.

	Brief description	Length of cable	Type	Part no.
	Head A: female connector, M12, 4-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PUR, halogen-free, unshielded, 0.34 mm <sup>2</sup> , 4.5 mm	2 m	YF2A14-020UB3X-LEAX	2095607
	Head A: female connector, M12, 4-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 0.34 mm <sup>2</sup> , 5 mm	2 m	YF2A14-020VB3X-LEAX	2096234
	Head A: female connector, M12, 4-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PUR, halogen-free, unshielded, 0.34 mm <sup>2</sup> , 4.5 mm	5 m	YF2A14-050UB3X-LEAX	2095608
	Head A: female connector, M12, 4-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 0.34 mm <sup>2</sup> , 5 mm	5 m	YF2A14-050VB3X-LEAX	2096235
	Head A: female connector, M12, 4-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PUR, halogen-free, unshielded, 0.34 mm <sup>2</sup> , 4.5 mm	10 m	YF2A14-100UB3X-LEAX	2095609
	Head A: female connector, M12, 4-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 0.34 mm <sup>2</sup> , 5 mm	10 m	YF2A14-100VB3X-LEAX	2096236
	Head A: female connector, M12, 4-pin, angled, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 0.34 mm <sup>2</sup> , 5 mm	2 m	YG2A14-020VB3X-LEAX	2095895
		5 m	YG2A14-050VB3X-LEAX	2095897
		10 m	YG2A14-100VB3X-LEAX	2095898
		15 m	YG2A14-150VB3X-LEAX	2096213
		20 m	YG2A14-200VB3X-LEAX	2096214

<sup>1)</sup> Tested detergent: P3-topactive DES, P3-topactive 200, P3-topax 52, P3-topax 66 und P3-topax 91.

<sup>2)</sup> Tested detergent: P3-topactive DES, P3-topax 19, P3-topax 56, P3-topax 66 and P3-topax 99; Insulating material group: Cat I.

<sup>3)</sup> Insulating material group: Cat I.

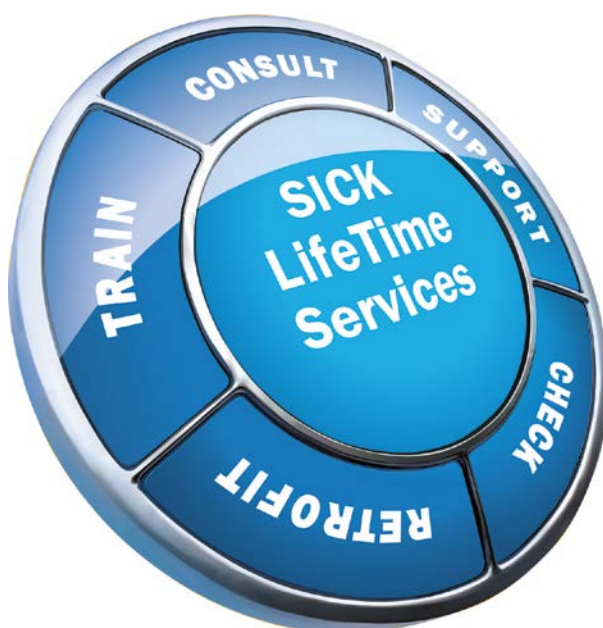
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- 
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 Easy, safe, and economical
- 
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 Practical, focused, and professional

## SICK AT A GLANCE

SICK is a leading manufacturer of intelligent sensors and sensor solutions for industrial applications. With more than 10,400 employees and over 50 subsidiaries and equity investments as well as numerous agencies worldwide, SICK is always close to its customers. 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.

SICK has extensive experience in various industries and understands their processes and requirements. With intelligent sensors, SICK delivers exactly what the 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 SICK a reliable supplier and development partner.

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

**That is “Sensor Intelligence.”**

### **Worldwide presence:**

Australia, Austria, Belgium, Brazil, Canada, Chile, China, Czech Republic, Denmark, Finland, France, Germany, Great Britain, Hungary, Hong Kong, India, Israel, Italy, Japan, Malaysia, Mexico, Netherlands, New Zealand, Norway, Poland, Romania, Russia, Singapore, Slovakia, Slovenia, South Africa, South Korea, Spain, Sweden, Switzerland, Taiwan, Thailand, Turkey, United Arab Emirates, USA, Vietnam.

Detailed addresses and further locations → [www.sick.com](http://www.sick.com)