

Correvit® LFII Sensors

Non-Contact Optical Sensors

Type CLF2A...

Patent No. DE 43 13 497 C2

Presently, the LFII sensors are the smallest and most lightweight Correvit sensors for measurement of longitudinal dynamics.

- Working range of 200 ±70 mm, applicable from 0,3 ... 250 km/h
- Measurement accuracy <±0,5 %
- Adjustable filter time (unfiltered, moving average 8 ... 512 ms)
- Improved features by application of advanced DSP technology
- Illumination: long-life high-performance infrared LEDs
- Standardized signal outputs: Analog, digital, CAN-Bus, USB or RS-232C



Description

The implementation of the latest high-performance infrared LEDs has rendered a further miniaturization possible. Now, the exceptionally small and lightweight LFII sensors enable even more flexible mounting positions, for example under the vehicle's underbody.

Additionally, LED illumination technology provides a better resistance against shock and vibration. Compared with conventional sensors using halogen illumination, the power consumption of the LFII sensors could be significantly reduced which allows application of thinner cables.

Equipped with standardized interfaces (analog, digital, CAN, USB, RS-232C) the LFII sensors can be used with any current data acquisition system.

LFII-P sensors are complemented with an additional protection glass that prevents damage to the optics and the illumination source and can be easily replaced without use of special tools.

Application

High-precision, slip-free measurement of distance and longitudinal speed in dynamic vehicle testing, e.g. ISO 70028, brake path measurements during ABS braking straight forward, ISO 14512 braking when driving straight forward on one-sided slick lane.

Technical Data

Performance Specifications		LFII	LFII-P
Speed range	km/h	0,3 ... 250	
Distance resolution	mm	2,08	
Measurement accuracy ¹⁾	%FSO	<±0,5	
Measurement frequency	Hz	250	
Working distance and range	mm	200 ±70	

Signal Outputs

Output Dig1 – V _i	pulses/m	1 ... 1 000
Output Ana1 – V _i	V	0 ... 10

Interfaces

CAN (Motorola/Intel)		2.0B
USB (Full Speed)		1.1
RS-232C		yes

¹⁾ determined on test surface with distance >200 m

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This information corresponds to the current state of knowledge. Kistler reserves the right to make technical changes. Liability for consequential damage resulting from the use of Kistler products is excluded.

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Technical Data (Continuation)

System Specifications		LFII	LFII-P
Power supply	V	10,5 ... 24	
Power consumption at 12 V	W	28	
Temperature range			
Operation	°C	-25 ... 50	
Storage	°C	-40 ... 85	
Relative humidity (non-condensing)	%	5 ... 80	
Protection standard			
Sensor head (cable mounted)		IP67	
Electronics (cable mounted)		IP50	
Dimensions (LxWxH)			
Sensor head (with connector) ²⁾	mm	118x28x40	118x33x45
Electronics	mm	130x86x33	130x86x33
Weight			
Sensor head	grams	180	250
Electronics	grams	490	490
Shock			
	g	50 half-sine	
	ms	6	
Vibration			
	g	10	
	Hz	10 ... 150	
Illumination			
		LED-IR 850 nm laser class 1	

²⁾ without connector: LFII = 100x28x40 mm, LFII-P = 100x33x45 mm

Dimensions

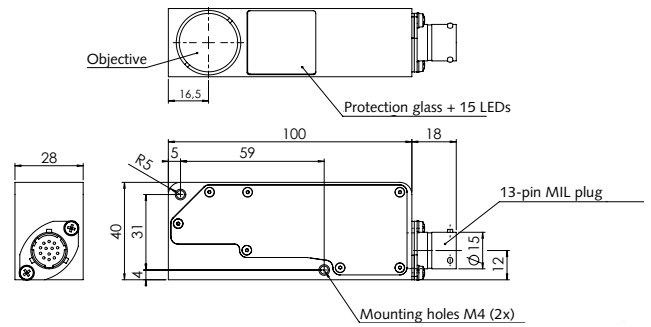


Fig. 1: Dimensions Correvit® LFII Sensor

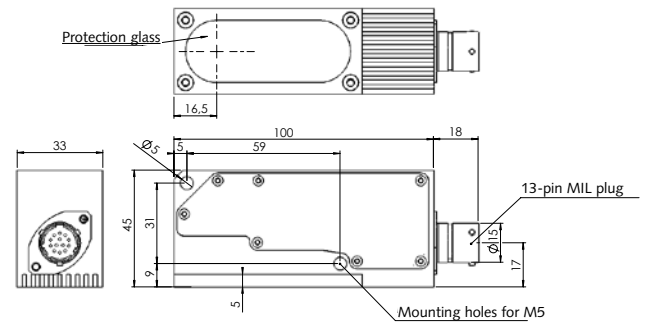


Fig. 2: Dimensions Correvit® LFII-P Sensor

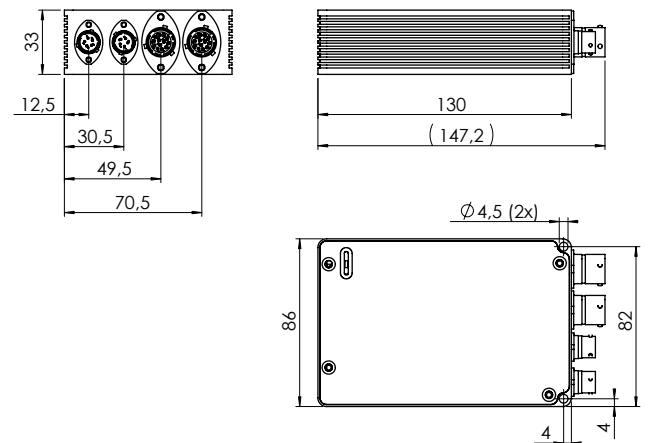


Fig. 3: Dimensions LFII Electronics

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Mounting

With Kistler mounting equipment (see optional accessories).

When mounting the sensor at the vehicle, the mounting distance from the lower surface of the sensor body (not including the spray guard) to the road must be within the specified range (see technical data, page 1).

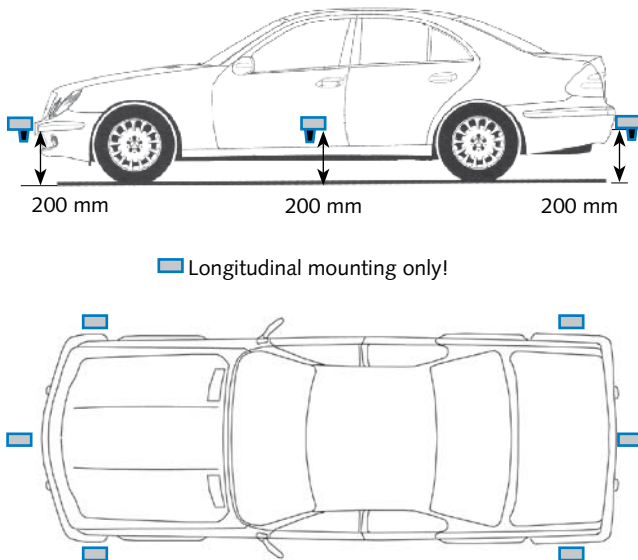


Fig. 4: Possible mounting positions

Included Accessories

- Power cable, l = 2 m
- Connection cable CAN, l = 2 m
- Connection cable RS-232C, l = 2 m
- Signal cable analog-digital, l = 2 m
- USB adapter
- Multimedia-CD incl. software & manuals
- Sensor calibration 1-axis sensors
- Cooling element left & right, black
- Screw set for LF
- Transport case, complete

Type/Art. No.

- KCD13854
- KCD13683
- KCD13682
- KCD15150
- KCD13971
- KCD11343
- KCD11428
- KCD14044
- KCD17194
- KCD17197

Optional Accessories

- 3-point suction holder
- 8-point magnetic holder

Type/Art. No.

- KCD16049
- KCD14091

Ordering Key

		Type CLF2A
		□ □ □ □ □
Sensor Head		
LFII-P (infrared with protection glass)*	1	↑
LFII (infrared without protection glass)	2	↑
Sensor Cable		
2 m	1	↑
5 m*	2	↑
Electronics		
Standard*	1	↑
Interface		
±10 V*	1	↑
±5 V	2	↑
Mounting direction		
Longitudinal*	1	↑

Ordering Example

Type CLF2A12111

LFII-P sensor, infrared with protection glass, 5 m cable, standard electronics, ±10 V, longitudinal mounting direction

* Standard configuration