

# 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 <sup>1)</sup>	%FSO	<±0,5	
Measurement frequency	Hz	250	
Working distance and range	mm	200 ±70	

### Signal Outputs

Output Dig1 – V <sub>i</sub>	pulses/m	1 ... 1 000
Output Ana1 – V <sub>i</sub>	V	0 ... 10

### Interfaces

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

<sup>1)</sup> determined on test surface with distance >200 m

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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) <sup>2)</sup>	mm	118x28x40	118x33x45
Electronics	mm	130x86x33	130x86x33
Weight			
Sensor head	grams	180	250
Electronics	grams	490	490
Shock	g ms	50 half-sine 6	
Vibration	g Hz	10 10 ... 150	
Illumination		LED-IR 850 nm laser class 1	

<sup>2)</sup> without connector: LFII = 100x28x40 mm, LFII-P = 100x33x45 mm

**Dimensions**

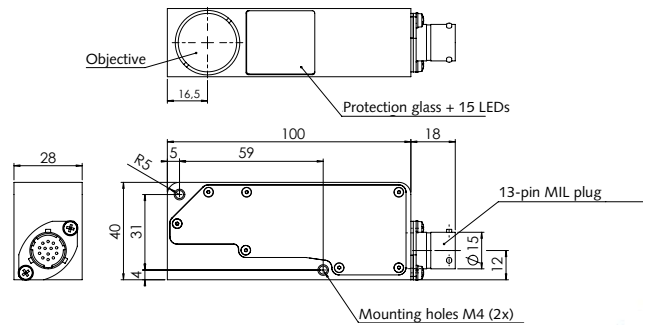


Fig. 1: Dimensions Correxit® LFII Sensor

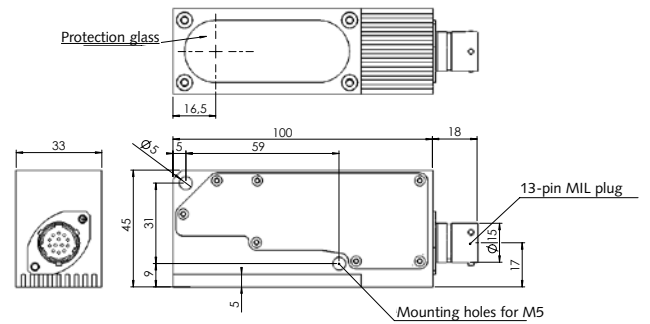


Fig. 2: Dimensions Correxit® LFII-P Sensor

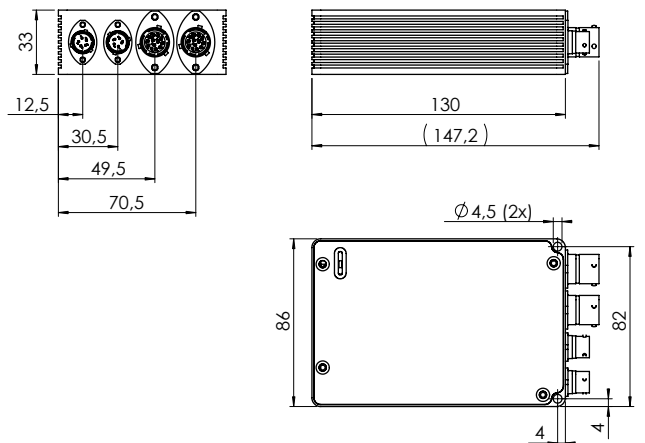


Fig. 3: Dimensions LFII Electronics

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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).

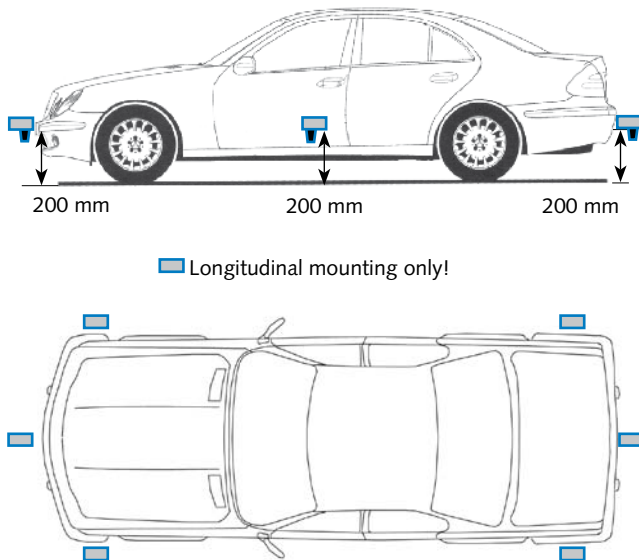


Fig. 4: Possible mounting positions

### 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
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### Interface

±10 V*	1
±5 V	2

### Mounting direction

Longitudinal*	1
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## Ordering Example

Type CLF2A12111

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

\* Standard configuration