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HF Sensors

Type CHFA...

Optical Laser Height-Sensors

HF laser height-sensors are designed for non-contact distance measurement for vehicle dynamics testing.

- HF sensors with working ranges of 100 ... 900 mm, depending on Type (HF-250C: 100 ... 350 mm, HF-500C: 125 ... 625 mm, HF-750C: 150 ... 900 mm)
- Compact design
- For static and dynamic measurements
- Signal outputs: Analog, CAN and RS-232C
- Negligible service and maintenance requirements

Description

Kistler laser height-sensors of the HF series use the principle of optical triangulation. A visible red laser is focused onto the road surface. Reflected light is collimated onto a linear CCD array. The distance to the object is calculated from the position of the light spot on the CCD array. The output of the sensor is directly proportional to the measured height.

HF sensors can be mounted together with a Correvit® SFII-P at the same holder, thus enabeling simultaneous measurement of sideslip angle and vehicle ride height relative to spring travel.

HF sensors are configured with the Kistler Software CeCalWin Pro via the serial port (RS-232C).

Application

Height-sensors for measuring e.g. pitch and roll angle according to ISO 4138 (steady-state circular-course drive).
Further fields of application are for instance uplift measurements, spring deflection, dynamic tire flat spotting, tire lift-off (Fishhook Test).

Two HF sensors mounted at the wheel enable dynamic camber angle measurement (refer to Kistler DCA System).

Technical Data

Performance Specifications		HF-250C	HF-500C	HF-750C
Measuring range	mm	100 ... 350	125 ... 625	150 ... 900
Resolution	mm	0,1	0,2	0,3
Linearity	%	±0,2	±0,2	±0,3
Sampling rate[1)]	kHz	0,3 ... 8		
Light source		Laser		
Laser class		3R (IEC608251)		
Laser power	mW	<5		
Wave length	nm	660		
Spot size (approx.)	mm	1x2		

Signal Outputs		
Analog output	V	0 ... 10

Interfaces		
CAN (Motorola/Intel) [2)]		2.0B
RS-232C		yes

System Specifications		
Power supply	V	9 ... 18
Power consumption at 12 V	W	1,5
Temperature range		
Operation	°C	–5 ... 60
Storage	°C	–10 ... 70
Relative humidity (non-condensing)	%	5 ... 80
Protection standard (cable mounted)		IP67
Dimensions (LxWxH) (without spray guard)	mm	100x20x40
Weight (without cable)	grams	155
Housing		aluminum, anodized

[1)] a sampling rate up to 8 kHz is possible on surfaces with high reflection
[2)] output rate CAN max. 250 Hz

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Dimensions

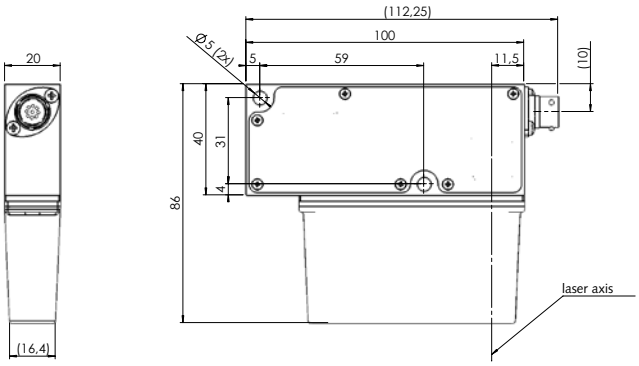
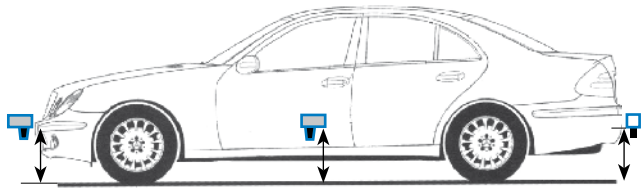


Fig. 1: Dimensions HF sensors

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).



Mounting distance HF-250C: 100 ... 350 mm
HF-500C: 125 ... 625 mm
HF-750C: 150 ... 900 mm

longitudinal mounting transversal mounting

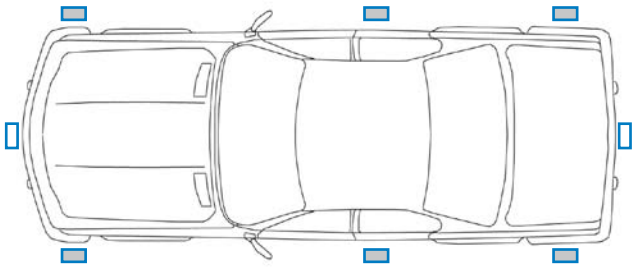


Fig. 2: Possible mounting positions

Included Accessories	Type/Art. No.
• Signal cable HF 1xBNC, 2xbunch, l = 1 m	KCD14992
• Signal cable HF 6 pin. Lemo, l = 1 m	KCD14993
• Connection cable CAN, l = 1 m	KCD15622
• Connection cable RS-232C, l = 1 m	KCD14991
• USB Adapter	KCD13971
• Mini folding rule	KCD14643
• Multimedia-CD incl. software & manuals	KCD11343
• Sensor calibration HF sensors	KCD17166
• Screw driver Torx T10	KCD15887
• Hexagon wrench 6 kt 4 mm	KCD14283
• Screw set for HF	KCD17195
• Transport case, complete	KCD17196

Optional Accessories	Type/Art. No.
• 4-point magnetic holder	KCD15694
• 8-point magnetic holder	KCD14091
• 3-point suction holder	KCD16049
• Wheel mounting system	KCD14178

Ordering Key

Type CHFA □□

Working Distance

250 mm (HF-250C)	1
500 mm (HF-500C)	2
750 mm (HF-750C)	3

Signal Cable

2 m	1
5 m*	2
10 m	3

Ordering Example

Type CHFA22

HF-500C Sensor, working distance 500 mm, 5 m cable

* Standard configuration

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