

Correvit® L-350 Aqua

Non-Contact Optical Sensors

Type CL350A...

Patent No. DE 43 13 497 C2

Correvit L-350 Aqua sensors are designed for application under extreme testing conditions, e.g. measuring longitudinal dynamics on snow and ice as well as wet surfaces.

- Correvit L-350 Aqua with working range of 350 ± 130 mm, applicable from 0,3 ... 250 km/h, optional 400 km/h
- Excellent distance measurement accuracy: $\pm 0,2$ %
- Adjustable filter time (unfiltered, moving average 8 ... 512 ms, FIR-Filter 2 ... 100 Hz)
- Direct connection to PC or various evaluation systems
- Signal outputs: Analog, Digital, CAN-Bus, USB or RS-232C
- Negligible service and maintenance requirements

Description

Correvit L-350 Aqua sensors produce outstanding accuracy on all standard test surfaces – wet or dry. Designed for applications such as aquaplaning testing, the L-350 Aqua sensors mark a major step in the evolution of the proven Correvit optical measurement principle. L-350 Aqua sensors adapt automatically to smooth, static water-covered surfaces, as well as to areas of moving or turbulent water, or sprayed surfaces.

State-of-the-art optical elements combined with optoelectronic components and digital signal processing remove spurious signals created by moving water. The working range of 220 ... 480 mm make the L-350 Aqua sensors also suitable for application with SUVs and trucks.

Speed and distance information is updated at 250 Hz to track every highly dynamic maneuver.

Application

High-precision, slip-free measurement of distance, longitudinal speed and acceleration for vehicle dynamics testing, e.g. ISO 70028 brake path measurement with straightforward ABS braking, ISO 14512 braking on one-sided slippery track surface when driving straight-ahead.



Technical Data

Performance Specifications

Speed range ¹⁾	km/h	0,3 ... 250
Distance resolution	mm	1,5
Measurement accuracy ²⁾	%FSO	< $\pm 0,2$
Measurement frequency	Hz	250
Working distance and range	mm	350 \pm 130

Signal Outputs

Digital output 1 - V _L	Pulses/m	1 ... 1 000/TTL
Analog output 1 - V _L	V	0 ... 10

Signal Inputs

Trigger input calibration		yes
Analog input 1+2	V	-10 ... 10
Counter input	kHz	0 ... 100

Interfaces

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

¹⁾ optional: calibrated up to 400 km/h

²⁾ determined on test surface with distance >200 m

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Technical Data (Continuation)

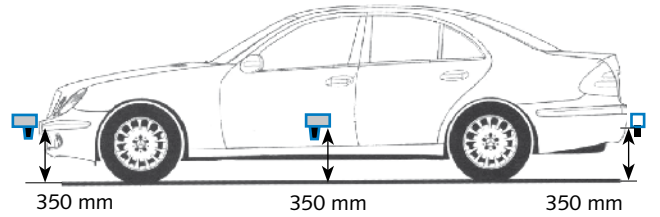
System Specifications

Power supply	V	10 ... 28
Power consumption at 12 V	W	33
Temperature range		
Operation (ambient temperature)	°C	-25 ... 50
Storage	°C	-40 ... 85
Relative humidity (non-condensing)	%	5 ... 80
Protection standard		
Sensor head (cable mounted)		IP67
Electronics (cable mounted)		IP30
Dimensions (LxWxH)		
Sensor head	mm	125x70x45
Electronics	mm	180x125x95
Weight		
Sensor head	grams	500
Electronics	grams	1 100
Shock	g	50 half-sine
	ms	6
Vibration	g	10
	Hz	10 ... 150
Illumination		Halogen

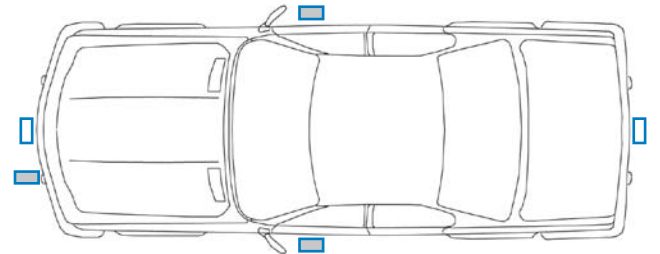
Mounting

With Kistler mounting equipment L-350, 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 of 350 ±130 mm.



■ longitudinal mounting ■ transversal mounting



Dimensions

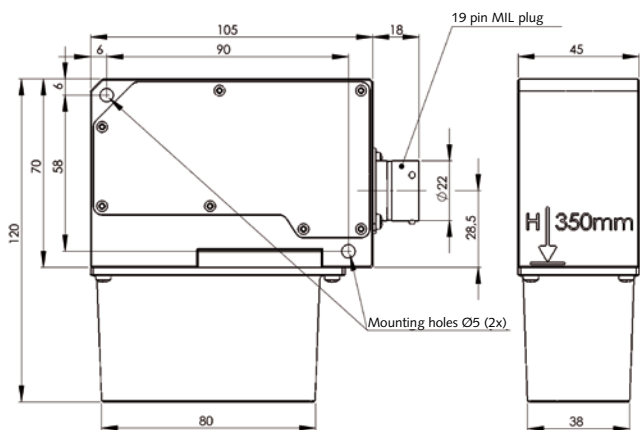


Fig. 1: Dimensions Correvit® L-350 Aqua sensor

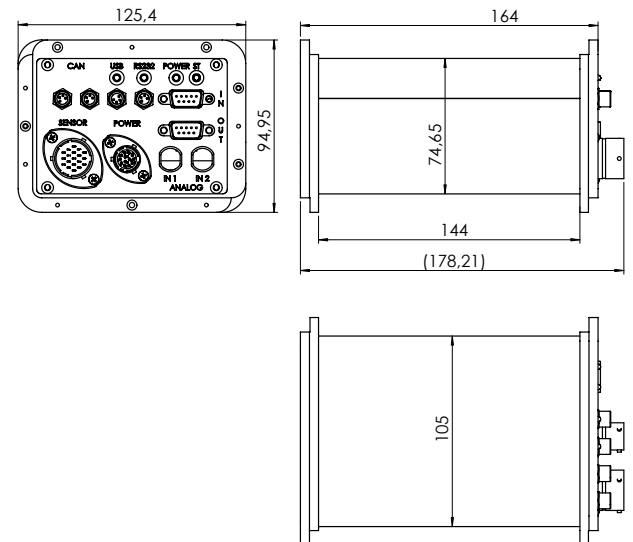


Fig. 2: Dimensions Correvit® L-350 Aqua electronics

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Included Accessories

	Type/Art. No.
• Sensor cable, l = 5 m	KCD17202
• Power cable, MIL, 6 pin Banana, l = 2 m	KCD17360
• Connection cable CAN, l = 2 m	KCD13946
• Connection cable RS-232C, l = 2 m	KCD13425
• Connection cable USB, l = 2 m	KCD13947
• Distribution cable, D-Sub, 2 x BNC, l = 1 m	KCD10523
• Mini folding rule	KCD14643
• Multimedia-CD incl. software & manuals	KCD11343
• Sensor calibration (DIN EN ISO 9001)	KCD11428
• Halogen lamp 20 W/12 V	KCD14893
• Tool to exchange the sensor halogen lamp	KCD15437
• Screw driver Torx T10	KCD15887
• Hexagon wrench 6 kt 4 mm	KCD14283
• Screw set for L-350	KCD17193

Additional for L-350 Aqua without holder

	Type/Art. No.
• Transport case, complete	KCD17198

Additional for L-350 Aqua with magnet holder

	Type/Art. No.
• Magnet holder L-350	KCD15213
• Transport case, complete	KCD17201

Additional for L-350 Aqua with suction holder

	Type/Art. No.
• Suction holder L-350	KCD15408
• Transport case, complete	KCD17200

Optional Accessories

	Type/Art. No.
• Light barrier	KCD11357
• Brake switch	KCD11199

Ordering Key

Type CL350A		
Sensor Head		
Halogen*	2	↑
Sensor Cable		
2 m	1	↑
5 m*	2	↑
10 m	3	↑
15 m	4	↑
20 m	5	↑
Electronics		
Standard*	1	↑
Interface Outputs		
±10 V*	1	↑
±5 V	2	↑
Mounting Direction		
Longitudinal*	1	↑
Transversal	2	↑
Interface Inputs		
±10 V*	1	↑
0 ... 5 V	2	↑

Ordering Example*

Type CL350A221111

L-350 Aqua sensor, standard halogen illumination, 5 m cable, standard electronics, ±10 V, longitudinal mounting direction

* Standard configuration