

# Correvit S-350 Racing

## Non-contact optical sensors

Type CM350A...

Patent No. DE 43 13 497 C2

Correvit S-350 Racing sensors are designed for direct, slip-free measurement of longitudinal and transverse vehicle dynamics at high speed.

- Working range 350 ±50 mm
- Applicable from 0,5 ... 400 km/h
- High measurement accuracy
- Adjustable filter time (unfiltered, moving average 8 ... 512 ms, FIR 2 ... 100 Hz)
- All measured values directly available



### Description

Correvit S-350 Racing sensors produce unparalleled accuracy on all standard testing surfaces, even under the most challenging conditions, for example wet surfaces.

Compact and lightweight, Correvit S-350 Racing sensors can be easily operated. Versatile mounting equipment enables quick and easy sensor installation.

This sensor generation feature high-quality optical elements, the newest optoelectronic components and state-of-the-art high-performance signal processing based on DSP and FPGA's. Speed and distance information is updated at 250 Hz to track every highly dynamic maneuver.

Programmable, standardized signal outputs and interfaces allow direct connection to PC and virtually all data acquisition systems, making all measured values directly available.

Durable technology guarantees negligible service and maintenance requirements.

### Application

High-precision, slip-free measurement of distance, speed (longitudinal/transverse) and angle for dynamic vehicle testing at high speeds.

### Technical data

#### Performance specifications

Speed range	km/h	0.5 ... 400
Distance resolution	mm	2.47
Measurement accuracy <sup>1)</sup>	%FSO	<±0.2
Angle range	°	±40
Angle resolution <sup>2)</sup>	°	<±0.1
Angle measurement accuracy <sup>3)</sup>	°	<±0.2
Measurement frequency	Hz	250
Working distance and range	mm	350 ±50

#### Signal outputs

Output Dig1 –  V  or V <sub>I</sub> <sup>4)</sup>	pulses/m	1 ... 1,000/TTL
Output Dig2 – V <sub>q</sub> or angle <sup>4)</sup>	kHz	0 ... 46/TTL
Output Ana1 –  V  or V <sub>I</sub> <sup>4)</sup>	V	0 ... 10
Output Ana2 – V <sub>q</sub> or angle <sup>4)</sup>	V	-10 ... 10

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

<sup>2)</sup> Determined at 50 km/h and default settings

<sup>3)</sup> Determined on test surface with distance >200 m in the range of ±30 °

<sup>4)</sup> switching-over between the respective measured variables via KiCenter possible

**Technical data (continuation)**

**Interfaces**

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

**System specifications**

Power supply	V	10 ... 28
Power consumption max. (at 12 V)	W	52
Temperature range		
Operation	°C	-25 ... 50
Storage	°C	-40 ... 85
Relative humidity (non-condensing)	%	5 ... 80
Degree of protection (cable mounted)		
Sensor head		IP67
Electronics		IP50
Dimensions (LxBxH)		
Sensor head (approx.)	mm	122x70x45
Electronics	mm	145x107x37
Weight		
Sensor head	grams	500
Electronics	grams	555
Shock	g	50 half-sine
	ms	6
Vibration	g	10
	Hz	10 ... 150
Illumination		LED-IR, 850 nm laser class 1

**Mounting**

With S-350 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).

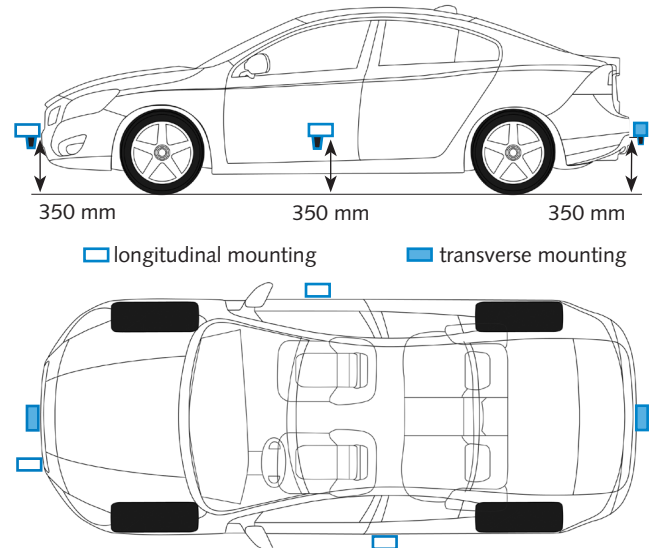


Fig. 1: Possible mounting options

**Dimensions**

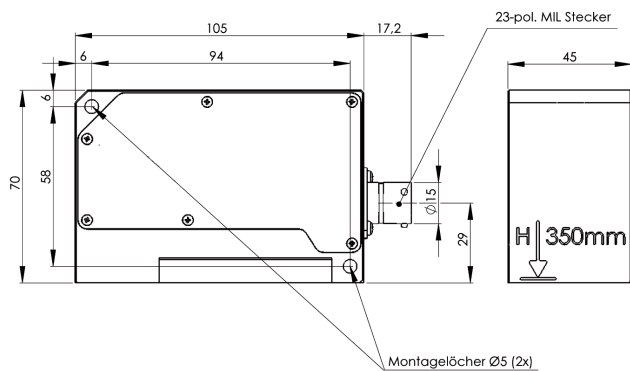


Fig. 2: Correvit S-350 Racing sensor dimensions

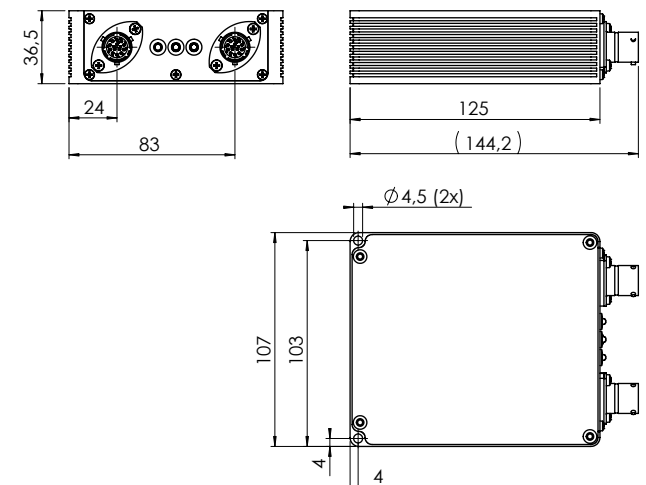


Fig. 3: Correvit S-350 Racing electronics dimensions

CM350A\_003-148e-06.20

### Included accessories

- Combined power and data cable, l = 2 m
- USB Adapter (USB 2.0 to RS-232C)
- Mini folding rule
- USB stick software and manuals
- Hexagon wrench key, 6 kt 4 mm
- **Allen wrench**
- Screw set for S-350
- Transport case complete

### Optional accessories

- **Suction holder S-350**
- **Magnet holder S-350**
- Brake switch
- Light barrier

### Ordering no.

55065217  
 18012484  
 55064207  
 55158846  
 55063983  
**55065078**  
 55082183  
 55066877

### Ordering no.

**18012551**  
**18012545**  
 18012409  
 18012428

### Ordering Key

		Type CM350A	
<b>Sensor head</b>			
S-350 Racing (Infrarot)	1		
<b>Sensor cable</b>			
2 m	1		
<b>Electronics</b>			
Racing	2		
<b>Interface outputs</b>			
±10 V	1		
<b>Mounting direction</b>			
Longitudinal	1		
Transverse	2		
<b>Interface outputs</b>			
±10 V	1		

### Ordering example

**Type CM350A112111**

S-350 Racing Sensor, 2 m cable, Racing electronics, ±10 V interface outputs, longitudinal mounting direction, ±10 V interface inputs



Presently, our product range includes two types: S-350 Racing sensor for longitudinal mounting (art no. 18012342) and S-350 Racing sensor for transverse mounting (art. no. 18012343).

Further types on request!