

GPS sensors

Compact travel sensors

CGPSSA...

For speed, position, and distance traveled measurements via GPS.

- For speed measurement from 0,1 ... 1,600 km/h
- Measuring accuracy of distance traveled up to 0.05 %
- Update rate up to 100 Hz
- Fast and easy mounting (compact, magnetic antenna)
- Direct connection to laptop, tablet PC or any CAN data acquisition
- High position accuracy



Description

GPS sensors from Kistler have a high sampling rate of up to 100 Hz which makes the sensors very dynamic, allowing for precise measurements in open areas independent of the track surface and mounting height. Supplemental software from Kistler allows for easy setting of the sensor and its interfaces. The GPS sensors are equipped with USB compatible connections for quick sensor setup. The status LED on the front plate provides an overview of the available number of satellites. Analog and digital inputs may be used to connect additional sensors like accelerometers (i.e. SAA) or fuel flow meters (i.e. DFL), for example. The output of speed and distance is effected via the analog and the digital output. Output of speed, distance traveled, position, track, time (UTC), date, number of satellites and quality signal via integrated CAN interface provides test data for use with all current map services. Capable of a maximum input voltage range of 10 ... 28 V, the GPS sensors are well-suited for car and truck applications.

Application

For high-precision measurement of distance, longitudinal speed and acceleration in vehicle driving dynamics tests like straight-ahead braking on surfaces with split coefficient of friction (ISO 14512) or stopping distance at straight-line braking with ABS (DIN 70028).

Technical data

Performance specifications		CGPSSA1	CGPSSA2	CGPSSA3
		10 Hz	20 Hz	100 Hz
Speed range	km/h	0.1 ... 1,600		
Resolution ¹⁾	km/h	0.036		
Measurement accuracy	km/h	0.1		
Measurement frequency	Hz	10	20	100
Absolute positioning				
Accuracy (95 % CEP)	m	2.5	2.5	3
Resolution	cm	11		
Heading				
Accuracy ²⁾	°	0.1		
Resolution	°	0.01		
Distance				
Accuracy ³⁾	%	0.05		
Resolution	cm	<1		
Height accuracy	m (RMS)	<2		

Signal outputs

Analog	V	0 ... 10
Digital	pulses/m	1 ... 1,000 TTL

Signal inputs

Analog channels	number	2
Resolution	bit	16
Input voltage	V	±10
Overvoltage (max.)	V	24
Counter channel	number	1

¹⁾ CAN signal

²⁾ valid for velocity >30 km/h

³⁾ <50 cm per km

Technical data (continuation)

Frequency limit	kHz	100
Level		TTL
Overvoltage (max.)	V	24
Trigger input	number	1
Level		TTL
Resolution	µs	1
Overvoltage (max.)	V	24

Interfaces

CAN (Motorola/Intel)		2.0B
USB (Full Speed)		2.0

System specifications

Power supply	V	10 ... 28
Power consumption	W	<6
Temperature range		
Operation	°C	-25 ... 50
Storage	°C	-40 ... 85
Degree of protection		
Antenna		IP67
Electronics		IP40
Dimensions	mm	164x125x65
Weight	grams	790
Shock	g	50 half-sine
	ms	6
Vibration	g	10
	Hz	10 ... 150

Included accessories

- Power cable, l = 2 m
- Connection cable USB, l = 2 m
- Connection cable CAN, l = 2 m
- Signal cable outputs
- Signal cable inputs
- Screw set
- USB stick software + manuals
- Transport case

Ordering No.

- 18012367
- 18012483
- 18012482
- 55120759
- 55120760
- 55123001
- 55158846
- 55091649

Optional accessories

- Fastening bracket for electronics unit

Ordering No.

- 55066763

Ordering key

Measurement frequency

10 Hz	1
20 Hz	2
100 Hz	3

Type CGPSSA

Ordering example

Type CGPSSA1

GPS sensor, 10 Hz measurement frequency

Dimensions

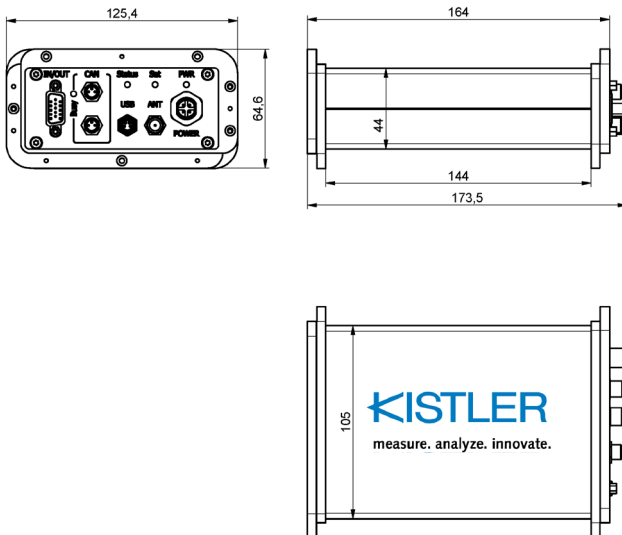


Fig. 1: GPS sensors electronics dimensions

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