PEGASEM GSS Series

Microwave Ground Speed Sensors

PEGASEM Messtechnik GmbH

Features

- Non-contact measurement of speed over ground
- 24 GHz Radar Doppler Technology
- Flat Panel Antenna Design
- Works on Plain and Rough Terrain
- Single and Dual Channel Versions
- Direction sensing
- Vehicle Pitch Compens. (GSS24)
- Low-Noise Speed Signal
- Low Signal Latency (< 10ms)
- Working Range from 0.1-300 km/h
- Compact and Lightweight
- Robust
- Pulse Output
- Analogue Speed Output
- RS232 Data Interface
- Excellent Price/Performance Ratio

GSS24 (left) and GSS14 microwave Doppler sensors for speed over ground

Applications

- Speed Sensing Over Ground
- Distance Measurement
- Brake Test
- Fuel Consumption Test
- Vehicle Sound Analysis
- Interval Marking
- Off-Road Test
- Vehicle Homologation

The PEGASEM Radar Sensors allow carefree non-contact speed sensing over ground at a very competitive price. The road surface is scanned with a 24 GHz Radar beam. The internal processor creates a TTL-output signal with 100 pulses per metre and an analogue speed voltage from the raw Doppler signals. For high precision measurements, the GSS24 has internal vehicle pitch compensation using a dual antenna design while the GSS14 is targeted for applications where vehicle pitching does normally not occur e.g. tramways, trains, forklifts etc. High gain narrow beam antennas create a Doppler signal with good noise margin allowing measurements even in the very low speed range. Both models come in a weatherproof aluminium housing with 5, 10 or 20m meters of cable and a rugged push-pull connector on the sensor side.

GSS14 with magnetic holder on the tailgate of a van.

The digital frequency and analogue speed output offer an easy connection to most data acquisition units. The speed and distance information is also available on the sensor's RS232 interface for linking it to a mobile computer by an optional SB2 or SB3 (USB) interface box that come with BNC sockets for speed pulses, analogue speed output and direction signal.

SB2 and SB3 Interconnection Box

The Windows based PEGAVIEW evaluation software can display a graphical speed curve and record distance travelled from the sensor's serial data interface.

GSS24

Technical Data

	GSS14	GSS24	Unit
Size	70x70x60	100x72x70	mm
Weight (sensor only)	250	400	g
Power supply voltage	8 … 32	8 … 32	VDC
Power supply current	150	200	mA @12V
Pulse output	5V, TTL	5V, TTL	
Pulse rate	100	100	per m
Transmission Frequency	24.125±0.003	24.125±0.003	GHz
Microwave Output Power	<5	<5	mW
Analogue Speed Output	1	1	V per 100 km/h
Speed Range	0.1 to 300	0.1 to 300	km/h
Mounting Height	0.2 to 1	0.2 to 1	m
Error Rate	<0.5	<0.5	%
Pitch Compensation	no	yes	
Serial Interface	yes	yes	USB through SB3
Optional Accessories			
Interconnection Box SB2	120x33x28	mm	3x BNC, Power In, RS232 I/O
Interconnection Box SB3	84x55x40	mm	3x BNC, Power In, USB I/O
Magnetic Holder H4M1-GSS1424			
Transport Case GSS1424	46x38x12	cm	Black with red shutters

Ordering Information

GSS	Comment
GSS14-5-OE [3]	5m Interface cable, open wire ends
GSS14-5-B712 [1] [3]	5m Interface cable, Binder connector B712-8
GSS14-5-DSUB [2] [3]	5m Interface cable, SUB-D connector
GSS24-5-OE [3]	5m Interface cable, open wire ends
GSS24-5-B712 [1] [3]	5m Interface cable, Binder connector B712-8
GSS24-5-DSUB [2] [3]	5m Interface cable, SUB-D connector

Optional Accessories	
SB2-xx-x [4]	Signal box, RS232 I/F. Applicable for GSS with DSUB cable
SB3-xx-x [4]	Signal box, USB I/F. Applicable for GSS with B712 cable
H4M1-GSS1424	Magnetic holder for GSS14 or GSS24
CASE-GSS1424	Transport case for the sensor and accessories

[1] Order this version, if the GSS14/24 is used with interconnection box SB3.
[2] Order this version, if the GSS14/24 is used with interconnection box SB2.
[3] For a non-standard cable length substitute -5- by the required length in metres.
[4] For details and power cable options see SPLITBOX product sheet.