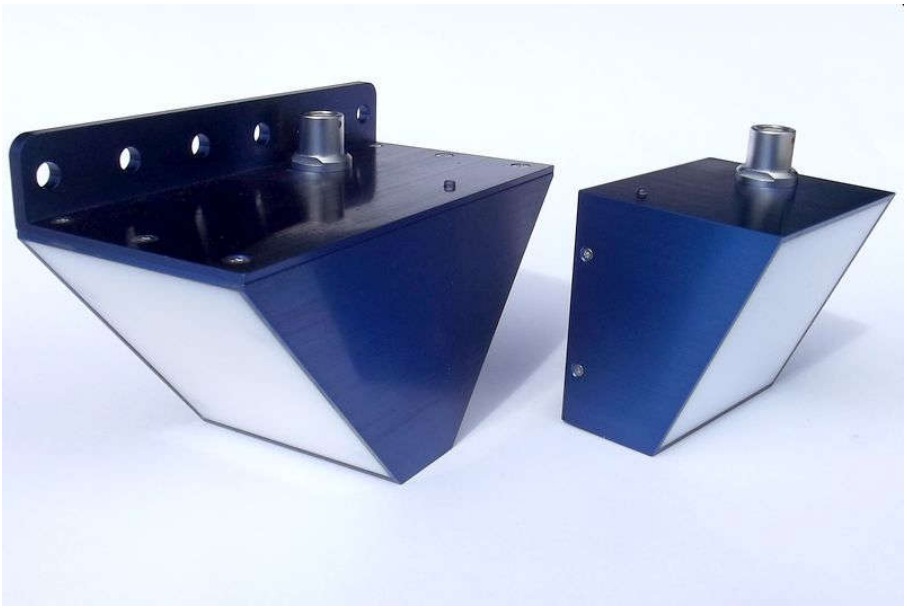
PEGASEM GSS Series

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.(GSS25C)
- Low-Noise Speed Signal
- Low Signal Latency (< 10ms)
- Working Range from 0.2-400 km/h
- Compact and Lightweight
- Robust
- Pulse Output
- Analogue Speed Output
- RS232 Data Interface
- Excellent Price/Performance Ratio



GSS25C (left) and GSS15C microwave Doppler sensors for speed over ground

Applications

- Speed Sensing Over Ground
- Distance Measurement
- Brake Test
- Fuel Consumption Test
- Vehicle Sound Analysis
- Interval Marking
- 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 GSS25 has internal vehicle pitch compensation using a dual antenna design while the GSS15 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.

GSS25C with magnetic holder on the side of a van

The digital frequency and analogue speed output are electrically isolated from the power section of the sensor and 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 SB2-USB inter-connection box that comes with BNC sockets for speed pulses, analogue speed output and the direction signal.

SB2 and SB2-USB 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.

GSS15C mounted on a vehicle tail

Technical Data

	GSS15C	GSS25C	Unit
Size	75x70x70	140x72x70	mm
Weight (sensor only)	240	375	g
Power Supply Voltage	8 … 32	8 … 32	VDC
Power Supply Current	80	150	mA @12V
Transmission Frequency	24.125±0.003	24.125±0.003	GHz
Microwave Output Power EIRP	+18 ±2	+18 ±2	dBm
Measuring Angle (hor.)	40	40	deg.
Speed Range	0.2 to 400	0.2 to 400	km/h
Pulse Output	5V, TTL	5V, TTL	
Pulse Rate	100	100	per m
Direction Output	5V, TTL	5V, TTL	
Analogue Speed Output	1	1	V per 100 km/h [1]
Serial RS232 Interface	yes	yes	USB through SB2-USB
Signal Latency	<10	<10	ms
Speed Error Rate	<1	<1	% [2]
Sealing per	IP67	IP67	
Operating Temperature Range	-30 to +70	-30 to +70	°C
Pitch Compensation	no	yes	
Recommended Mounting Height	0.2 to 0.8	0.2 to 0.8	m

Optional Accessories	Dimensions	Comments
SB2	120x33x28 mm	Interconnection Box, 3x BNC, Power In, RS232 I/O
SB2-USB	110x33x28 mm	Interconnection Box, 3x BNC, Power In, USB I/O
A-GSS1525-4M		Magnetic Holder, four magnetic feet
A-GSS1525-4S		Suction Cup Holder, four suction cup feet
Case-GSS1525	46x38x12 cm	Black Transport Case with blue shutters

1) Rate can be configured through the serial interface by PEGAVIEW software. Max. output 5 VDC.
2) On dry asphalt, gravel, ballast.

Ordering Information

GSS	Comment
GSS15C-5-OE	5m Interface cable, bare wire ends
GSS15C-5-DSUB [1]	5m Interface cable, SUB-D connector
GSS15C-10-OE	10m Interface cable, bare wire ends
GSS15C-10-DSUB [1]	10m Interface cable, SUB-D connector
GSS15C-20-OE	20m Interface cable, bare wire ends
GSS15C-20-DSUB [1]	20m Interface cable, SUB-D connector
GSS25C-5-OE	5m Interface cable, bare wire ends
GSS25C-5-DSUB [1]	5m Interface cable, SUB-D connector
GSS25C-10-OE	10m Interface cable, bare wire ends
GSS25C-10-DSUB [1]	10m Interface cable, SUB-D connector
GSS25C-20-OE	20m Interface cable, bare wire ends
GSS25C-20-DSUB [1]	20m Interface cable, SUB-D connector

Optional Accessories	
SB2-BAN-2 [2]	Signal distribution box, Banana type power cable
SB2-USB-BAN-2 [2]	Signal distribution box, Banana type power cable
A-GSS1525-4M	Magnetic holder for GSS15C and GSS25C
A-GSS1525-4S	Suction cup holder for GSS15C and GSS25C
CASE-GSS1525	Transport case for sensor and accessories

[1] Order this version, if the GSS15C/25C is used with interconnection box SB2.
[2] For details and power cable options see SPLITBOX product sheet.