



TGSS Sensors

Catalog MSG33-5005/US



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Application

The True Ground Speed Sensor (TGSS) belongs to the Parker family of accessories provided to complement electronic control systems. The sensor determines true ground speed using Doppler beam technology and reports the information using a frequency signal. The TGSS is intended for vehicle and other applications with a steady voltage of less than or equal to 16 Vdc. The general market versions of the sensor have a short cable with either an attached AMP Superseal or a Deutsch DT series connector. To make the sensor suitable for mobile equipment, we have focused upon properties such as reliability and ease of installation.

Properties

Features

The TGSS has an ABS plastic construction for sturdiness and corrosion resistance. The sensor uses planar antenna, Doppler effect technology for trouble free operation. A microwave signal transmitted out of the sensor is reflected off the target and received by the sensor. The ground speed is calculated by measuring the change in frequency. The sensor can be specified with one of 2 microwave carrier frequencies, either the standard frequency, or one suitable for the United Kingdom.

The TGSS mounts to a bracket on the underside of the vehicle where the sensor may be pointed in either the forward or reverse direction. Built to meet stringent SAE J1455/EP455 environmental standards, the sensor is very robust and able to withstand rugged applications.

Reliability

The TGSS is well designed for the mobile equipment industry. The connectors are weatherproof, AMP Superseal or Deutsch DT type, designed for automotive use. The connector, combined with potted electronics, gives the sensor protection for exposed outdoor applications. The 3 point, shock absorbing mounting pattern in the base simplifies alignment. These features provide for easy installation and removal, even in field conditions.

TGSS users appreciate the sensor's robust design as well as its adherence to industry standards for the environment (ANSI/ASAE EP455). The TGSS passes all the requirements of the European EMC directive and has CE approval and e-mark approval. All of these features make the True Ground Speed Sensor easy to integrate into any agricultural equipment or off-highway vehicle.

General

Weight	460 g
Temperature range	
Operating, ambient	-40 to +85 °C
Storage, ambient	-55 to +125 °C
Protection	IPX6 equivalent
Speed range	0.3-44 mph [0.5-70 kph]
Uncalibrated accuracy	± 5%
Calibrated accuracy	
2.0 to 44 MPH	± 1%
0.20 to 2.0 MPH	± 3%
Velocity change detection	
dv/dt ≤ 4 mph	200 ms

Mechanical characteristics

Case	ABS plastic
Mount	3 x M6 bolts
Cable, length	200 mm

Connector

-A	AMP Superseal 1.5
-D	Deutsch (DT04)

Electrical characteristics

Voltage supply	9 - 16 Vdc
Current draw	
Doppler signal only	30 mA @ 12 Vdc
Microwave frequency	
Standard	24.125 GHz +/- 50 MHz
United Kingdom (-UK)	24.300 GHz +/- 50 MHz
Scaling factor	
-A	1.0 scaling
-D	0.75 scaling
Digital output (sensor present)	
-A	0
-D	1
Max load	100 mA

Compliances

Industry Canada	RSS-210
FCC	Part 15
FCC ID	MGR740030A

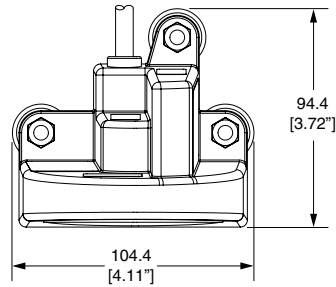
Ordering part numbers

TGSS, -A	0740059ECD
TGSS, -A, -UK	0740078ECD
TGSS, -D	0740051ECD
TGSS, -D, -UK	0740072ECD

Environmental protection

EMI

- EP455 (Jul 1991) Section 5.10.3, Reverse polarity
- EP455 (Jul 1991) Section 5.10.4, Short circuit
- EP455 (Jul 1991) Section 5.11, Electrical transients
- EP455 (Jul 1991) Section 5.16.3, EMC emissions
- EP455 (Jul 1991) Section 5.16.1, EMC immunity to radiated EM field

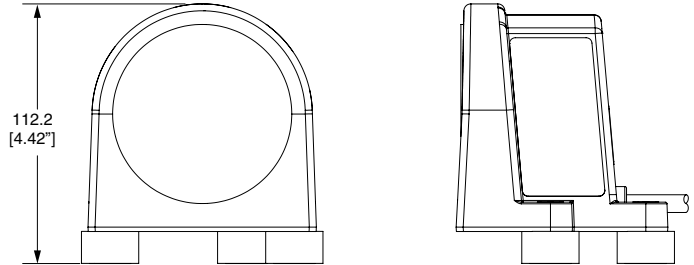


ESD

- EP455 (Jul 1991) Section 5.12 Level-2, ESD

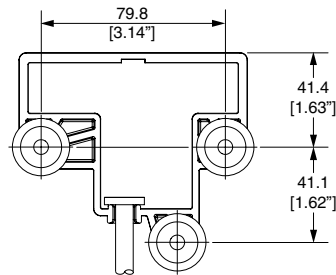
Mechanical environment

- EP455 (Jul 1991) Section 5.15.1, Random vibration
- EP455 (Jul 1991) Section 5.14.1, Mechanical shock
- EP455 (Jul 1991) Section 5.14.2.2 Level-1, Mechanical handling shock



Climate environment

- EP455 (Jul 1991) Section 5.6 Level-1 and Level-2, Wash
- EP455 (Jul 1991) Section 5.13.1, Humidity exposure
- EP455 (Jul 1991) Section 5.13.2, Humidity soak
- EP455 (Jul 1991) Section 5.1.1 Level-2, Operating temperature
- EP455 (Jul 1991) Section 5.1.2 Level-2, Storage temperature
- EP455 (Jul 1991) Section 5.1.3, Thermal shock



Chemical environment

- EP455 (Jul 1991) Section 5.9 Level-2, Salt exposure

units=mm
[inch]



WARNING - USER RESPONSIBILITY

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

- This document and other information from Parker-Hannifin Corporation, its subsidiaries and authorized distributors provide product or system options for further investigation by users having technical expertise.
- The user, through its own analysis and testing, is solely responsible for making the final selection of the system and components and assuring that all performance, endurance, maintenance, safety and warning requirements of the application are met. The user must analyze all aspects of the application, follow applicable industry standards, and follow the information concerning the product in the current product catalog and in any other materials provided from Parker or its subsidiaries or authorized distributors.
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WARNING - California Proposition 65

This product can expose you to chemicals including 4,4'-(PROPANE-2,2-DIYL)DIPHENOL, BPA, P,P'-ISOPROPYLIDENEBISPHENOL, which is known to the State of California to cause birth defects or other reproductive harm.
For more information go to www.P65Warnings.ca.gov

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