



MICROSTAR

Non-Contact 1-Axis Microwave Sensor

for

Acquisition of Vehicle Speed and Distance Traveled

Applications

- Speed measurement
- Vehicle performance testing
- Longitudinal dynamics
- Fuel consumption testing

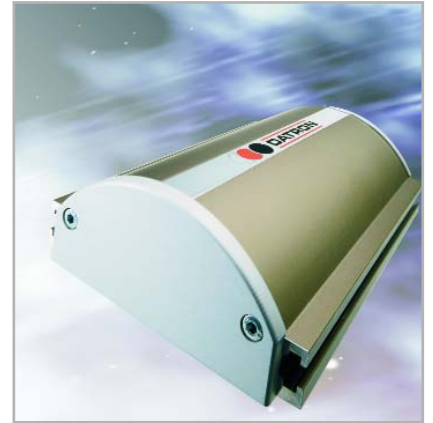
Concept

The Microstar Sensor provides accurate, reliable non-contact speed and distance measurement using technology based on the Doppler principle.

The unit senses the relative movement between itself and the test surface using a planar antenna, which projects two radar beams at 45° angles. Upon striking the test surface, the beams are reflected back to the sensor antenna. The resulting double frequency (equal to the difference of sent and received frequencies) is directly speed-proportional. The two-beam planar system increases accuracy by automatically compensating for mounting- and pitch-angle errors. The gained signal is converted to the desired dimension via an onboard RISC processor and then sent to the corresponding outputs. Featuring an effective operating range of 300 mm to 1200 mm, the Microstar Sensor can be used in applications demanding larger standoff distances without loss of accuracy.

The Microstar Sensor consists of sensor head and sensor electronics and accommodates additional connections, such as an interface for flow-measurement systems (for consumption tests), or trigger inputs for light barriers or brake switches, providing exceptional testing power and flexibility in a highly compact package.

When used with the CeCalWin Pro Software, the Microstar Sensor functions as a complete data acquisition and evaluation system. The software functions enable test parameters and definitions to be permanently saved, along with online displays and evaluations, e.g. charts and plots. All measured signals can be saved and evaluated off-line.



Typical Technical Specifications

Measurement ranges

Test range	0.5 to 400 km/h
Offset	300 to 1200 mm
Speed accuracy	<1% of test value <0.5 km/h under 50 kph (each due to integration time of 200 ms)
Distance accuracy	<0.5% (>200m)
Reproducibility	<0.25% (distance test 200 m)

Inputs/Outputs

Pulse output	TTL compatible
Analog output	0 ... 10 V, speed proportional Resolution 12 bit (equivalent to 2.5 mV)
Serial interface	PC compatible, RS 232, 115 kBaud
Pulse inputs	TTL compatible, e.g. for direct connection of DFL-1/2/3
Transmitter frequency	24.125 Ghz (± 50 mhz)
Transmitter performance	< +25 dbm, (source power 5mW)
Radiation angle	2 x 45° $\pm 10^\circ$ longitudinal
Radiation angle	90° $\pm 7.5^\circ$ latitudinal
Power supply	9 to 32 V DC, 10 W

Operating parameters

Temperature range	-20°C to +60°C
Protection	Sensor head IP65
Shock	50 g half sine, 6 ms
Vibration	10 g, 10 ... 150 hz

Dimensions

Sensor	166 mm x 44 mm x 108 mm
Electronics	170 mm x 45 mm x 125 mm

Weight

Sensor	550 g
Electronics	800 g
Cable length	5 m between sensor and electronics

Delivered accessories

Practical transport case
 Operation manual
 Supply cable, 2 m
 Signal cable, 5m
 Signal output cable analog, digital (BNC)
 PC connection cable, 3m
 Mounting screws, 2 x M6

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top view



sensor electronics



bottom view

In a continuous effort to improve our products, CORRSYS-DATRON reserves the right to change specifications without prior notice.

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