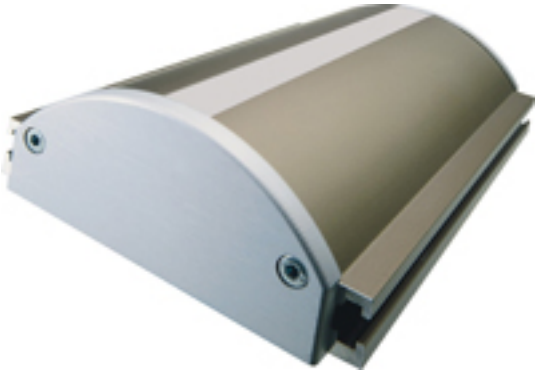
Next-Generation Microwave Sensor for Non-Contact Vehicle Measurements



Kistler has announced the introduction of the Corrsys-Datron Microstar II, the next-generation of the company's best-selling microwave sensor. The Microstar II is designed to offer highly accurate and repeatable measurements of vehicle dynamics parameters such as driving performance, longitudinal determinations, fuel consumption and off-road vehicle speed and distance measurements on jeeps, quads and ATVs, as well as industrial utility, military transport and agricultural vehicles.

The unique design of the Corrsys-Datron Microstar II incorporates use of Doppler radar effect technology within a planar antenna system, which projects two radar beams at 45° angles to measure relative movement between the sensor and test surface. The non-contact system consists of the sensor head antenna and a new Corrsys-Datron sensor electronics unit with 2.0B CANbus, RS-232 serial port and a full-speed USB 2.0 port.

Upon striking the test surface, beams are reflected back to the sensor antenna. The resultant double frequency, which is equal to the difference of sent and received frequencies, is directly proportional to speed. The gained signal is then converted to desired dimension via a high-performance onboard RISC digital signal processor and sent to corresponding analog (-10 to 10 V) or digital (1 to 1,000 Pulse/m) TTL outputs, with automatic compensation for both mounting and pitch-angle errors.

With a wide working distance range of 300 to 1200 mm and a speed range of 0.5 to 400 km/h at a measurement frequency of 250 Hz, the Microstar II can be used in utility and off-road vehicle applications requiring larger stand-off distances without sacrificing accuracy.

It can also be successfully used within more challenging environmental conditions, such as in wooded, mountainous or other heavy terrain areas, where use of traditional GPS and optical sensing technologies are simply not possible. The sensor can also accommodate additional connections, such as an interface for fuel flow-measurement systems (for fuel consumption tests) and trigger inputs for light barriers or brake switches, for exceptional testing power and flexibility within a highly compact and cost-effective package.

When used with supplied CeCalWin Pro Software, the Microstar II functions as a complete vehicle data acquisition and evaluation system. Associated software functions enable test parameters and definitions to be permanently saved, along with charts, plots and other online displays and evaluations. In addition, all measured signals can be saved and evaluated off-line.

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