

Road Sensor DRS511

Precise, reliable measurements to ensure safety and mobility for roadways and airports



Key benefits

Highly accurate and extremely reliable

DRS511 sensors take measurements right where vehicle or aircraft tires interact with road or runway surfaces for greater accuracy. The passive sensor technology is also designed to maximize data capture without altering the surface where it is embedded, which minimizes the risk of failure.

Multiple measurements to guide decision-making

The embedded DRS511 sensor not only provides the pavement temperature, ground temperature, and amount of chemicals on the surface, it goes one step further by simultaneously detecting the presence of moisture on the road surface to determine if the road state is dry, wet, icy, and/or covered with snow.

Tried and true technology

The sensor has been meticulously tested by authorities and institutions for years, helping road maintenance crews determine, with confidence, the chemical effectiveness in a wide range of weather conditions.

Collect real-time surface data that can be used to monitor road and runway conditions, optimize maintenance operations, and increase the effectiveness of surface treatments.

Embedded directly into the pavement, the DRS511 sensor measures a combination of the current amount of chemical, water layer, and surface and ground temperatures to ascertain whether there is enough salt on the road to prevent the pavement from icing over during inclement weather.

The DRS511 uses passive road sensor technology to continuously calculate the freezing temperatures from the conductivity measurement and the thickness of the solution on the sensor. This proven technology makes it less vulnerable to disturbances and easier to remove irregular values.

It's used widely and globally because it can provide measurements from the most interesting spot on the road — the wheel track. The durable, molded structure of the sensor allows it to wear with the road surface to minimize the need for maintenance work over time. There is also a specialized version available to use in places where lower sensor depth is necessary (e.g., on bridges).

What's more, it links to an RWS station where the road state is calculated and the data is converted into a viewable format.

DRS511 at a glance

Applications

- Continuous monitoring determines if there is enough de-icing chemical residual on the pavement to ensure driver and passenger safety.
- A versatile indicator for informed decision-making in road surface treatment options.
- Monitoring for changes in surface temperature and state to indicate the potential development of ice or frost.

Key features

High-performance passive road sensors provide the most relevant information in changing winter weather conditions with accurate, uninterrupted data measurements and reporting.

Multi-measurement data access points measure temperatures and the amount of chemicals on the pavement, making it easier and faster to determine if the current chemical layer is thick enough to tolerate variances in driving conditions to treat roads before it's too late to make a big difference.

Gain actionable insights into road surface conditions:

- Amount of de-icing chemical measurement
- Road condition identification
- Water amount measurement
- Surface temperature measurement
- Ground temperature measurement -6cm (-2.36in)
- Freeze point
- Hoar frost detection

Why Vaisala?

The ground transportation industry's most coveted road sensors

Recognized widely and globally, road authorities, DOTs, and other maintenance crews consistently choose Vaisala's proven technology to guarantee the safest possible driving conditions because it's easy to deploy, adaptable, and can withstand any kind of weather.

Unwavering customer support

With decades of experience providing sophisticated technology in road transportation, Vaisala partners with road authorities — anywhere and any size — for long-term success.

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