

Road Surface Temperature and Dew Point Sensor RTD411SA



Road Surface Temperature and Dew Point Sensor RTD411SA is a stand-alone mobile surface and dew point temperature sensor. The measurements can be integrated into the measurements of the Road Condition Monitor RCM511 in the RCM Mobile application.

The sensor has been designed to be used with any vehicle to record surface temperature, relative humidity and dew point temperature in real time and to report the data to the Mobile Surface Condition Map at roadweather.online.

The RTD411SA sensor can be easily installed by a magnet on metallic parts of the vehicle or by using an M8 bolt. Plugging into a cigarette lighter socket and starting the RCM Mobile cell phone application is all that is needed to start measuring the surface and dew point temperatures. In the stand-alone use an Internet connection is used for data communication, either by mobile data (operator SIM) or WLAN connection. If there is no communication coverage, the data will be transmitted, when the connection is re-established.

Features and benefits:

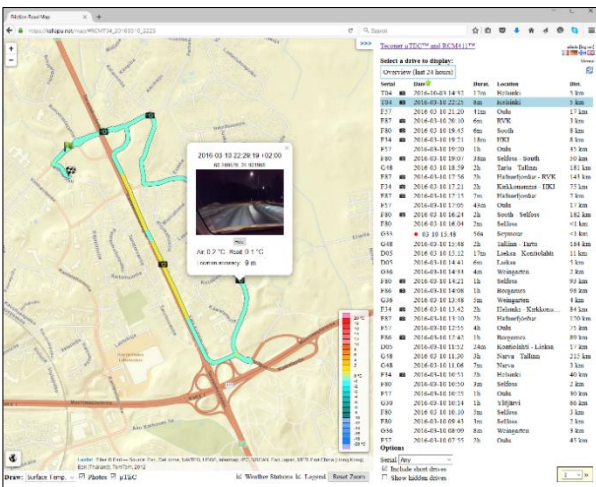
- mobile temperature and dew point measurement with an optical remote sensor
- high accuracy and resolution
- solid state design
 - no moving nor wearing parts
- easy installation
- output
 - serial RS-232 or Bluetooth
- power input 9-30 VDC
- data communication to a cell phone, PC or other systems
- photographs of the road surface taken manually, at preselected intervals or at preselected locations



Easy installation on the vehicle by magnetic mount on a metallic surface.



Screenshot of the mobile device user interface with temperature and road condition measurements.



Temperature values measured by RTD41ISA on 10.3.2016 in Helsinki as displayed at <http://roadweather.online>. The key to the temperature values is seen in the lower right corner of the map.

The photograph evidencing the surface condition is taken automatically with the cell phone application and can be clicked to get a bigger view shown on the map display.

RTD41ISA Specifications:

- Sensor type: Road Surface Temperature and Dew Point Sensor RTD41ISA
- Temperature range: -30 ... 50 °C
- Power supply: 9 ... 30 VDC, power from cigarette lighter
- Power consumption: about 1 W
- Measures: L/W/H 210/130/70 mm, weight 400 g and magnet 100 g
- Accuracy of measurement: Estimated accuracy of surface temperature is 0.3 °C (0.6 °F), when the difference of the target and the ambient temperature is less than 5 °C. Estimated accuracy of dew point is better than 1 °C.
- Resolution of measurement: 0.1 °C (0.2 °F)
- Internal noise level: about 0.3 °C (0.6 °F) of surface temperature with 1 second response time
- System parts: RTS411 and RTD411 sensors with an enclosure including Bluetooth module and electronics, cabling and mobile phone as a user interface
- Installation: Magnetic fixing on steel surfaces of a vehicle or by using and M8 bolt, power from cigarette lighter socket
- Data transmission: Using Bluetooth connection to a cell phone in the vehicle and further to Road Condition Map at <https://roadweather.online> or to a local server.