

Road Surface Temperature Sensor RTS411SA



Road Surface Temperature Sensor RTS411SA is a stand-alone surface temperature sensor of Road Condition Monitor RCM411.

The sensor has been designed to be used with any vehicle to record surface temperature in real time and to report the data to the Mobile Surface Condition Map (<https://keliapu.net/map>).

The RTS411SA 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 temperature. 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:

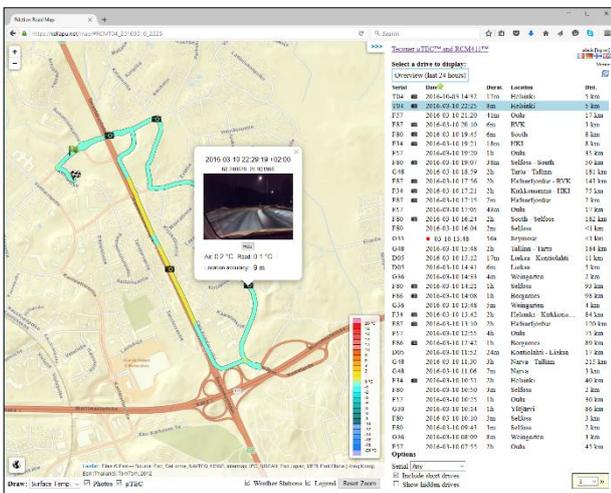
- mobile temperature measurement with an optical remote sensor
- high accuracy and resolution
- solid state design
 - no moving nor wearing parts
- easy installation
- output
 - serial RS-232 or Bluetooth
- power input 9-30 VDC
- data communication to a cell phone, PC or other systems
- photographs of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



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



Photograph of the user interface with temperature measurements and the Bluetooth communication enclosure inside the vehicle.



Temperature values measured by RTS411SA on 10.3.2016 in Helsinki as displayed at keliapu.net/map. 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.

RTS411SA Specifications:

- Sensor type: Road Surface Temperature Sensor RTS411SA
- Temperature range: -30 ... 50 °C
- Power supply: 9 ... 30 VDC, power from cigarette lighter
- Power consumption: about 1 W
- Measures: length 270 mm, diameter 40 mm, weight 700 g (sensor part only)
- Accuracy of measurement: Estimated absolute accuracy is 0.3 °C (0.6 °F), when the difference between the surface temperature and the ambient temperature is less than 5 °C
- Resolution of measurement: 0.1 °C (0.2 °F)
- Internal noise level: about 0.3 °C (0.6 °F) with 1 second response time
- System parts: RTS411 sensor, box including Bluetooth module and electronics, cabling, mobile phone as user interface
- Installation: magnetic fixing on steel surfaces of a vehicle or by using an 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://keliapu.net/map> and/or to a local server.

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