Vaisala Remote Road Surface Temperature Sensor DST111

Features and Benefits

- Remote temperature measurement

- Unique correction of the error caused by the emissivity of the road surface, negating the need for emissivity adjustment

- Easy installation and service

- Low maintenance costs

- No internal moving parts

- Stable measurement results even with intense traffic

- Weather-proof, durable design

- Reports air temperature and humidity

- Easy integration with Vaisala ROSA Road Weather Station

- Capability to act as stand-alone device in remote locations with solar/gsm options

The unique DST111 sensor provides a remote alternative to measuring road surface temperature. By measuring the infrared radiation emitted by the surface and applying intelligent signal processing, DST111 provides a reliable remote surface temperature measurement.

DST111 provides reliable results in conditions where most of the commercially available infrared sensors fail. At night time, when the road surface is cooling under a clear sky, conventional infrared sensors provide an error of up to -3¡C due to emissivity conditions of the road surface. DST111 compensates for this error by its unique design.

Installation of DST111 is easy, requiring no slot cutting or closure of the road. Supplied with solar/gsm options, the sensor is ideal for stand-alone operation in remote or in-fill locations and on bridge decks. The sensor is simply installed on a mast, or existing structure beside the road.

DST111 can also be installed alongside an existing Vaisala ROSA Road Weather Station.

Together with DSC111, which measures surface state, DST111 forms a versatile stand-alone weather station.

Technical data

Electrical

Power supply	9 ... 30 VDC
Power consumption	33 mW
Interface	
DST111	Isolated RS-485
DST111R	RS-232
Connector	M12 (5 pins)
DST111	RS-485 and power, male
DST111R	RS-232 and power, male
Cables	3 m, 10 m, 25 m
	One end without connector
	0.6 m extension cable to the DSC111

Environmental

Operating temperature	-40 ... +60 ¡C
Operating humidity	0 ... 100 %RH
CE Compliant	IEC(EN) 61326-1,
For use in industrial locations	
Vibration	IEC 60068-2-6, level 2g

Installation

Measuring distance	2 ... 15 m
Measuring area	Diam. 80 cm at 10 m
Installation angle from the horizontal line	30 ... 85¡
Fits onto the standard sensor arm DM32ARM	
(cross-section of 40 mm x 40 mm)	

Measuring Range

Resolution	0.1 ¡C
Surface temperature	-40 ... +60 ¡C
Time constant	1 min
Data refresh time	30 s

Mechanical

Dimensions (mm)	320 x 125 x 100
Weight	1.6 kg

DST111 Remote Road Surface Temperature presented with the DSC111 Remote Road Surface State Sensor.