

# Vaisala Remote Road Surface Temperature Sensor DST111



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  $-3^{\circ}\text{C}$  due to emissivity conditions of the road surface. DST111 compensates for this error by its unique design.

## 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

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/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
Vibration	IEC 60721-3-3

### 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 (cm)	32 x 13 x 10
Weight	1.6 kg

The accuracy and measuring range of air temperature and relative humidity can be found in the data sheet of the Vaisala Miniature Humidity and Temperature Probe HMP50.

