

# Vaisala Remote Road Surface State Sensor DSC111



The unique DSC111 sensor eliminates the service disruption which was previously associated with the installation of a road weather station. The remote installation means that there is no requirement to slot-cut the surface or close the road. The sensor may be installed in a remote location on a pole adjacent to the road, or as an addition to the Vaisala ROSA Road Weather Station.

The spectroscopic measuring principle enables accurate measurement of the amounts of water, ice, and snow. Water and ice are measured independently of each other, enabling DSC111 to accurately report the surface state.

## Features and Benefits

- Remote surface state sensing
- Spectroscopic measuring principle, individually identifying the presence of:
  - Water
  - Ice
  - Slush
  - Snow or Frost
- Unique measurement of grip
- Accurate and stable measurement results even with intense traffic
- Eye-safe laser technology
- Easy installation and service
- Low maintenance costs
- Weather-proof, durable design
- Easy integration with Vaisala ROSA Road Weather Station, or can operate as a stand-alone solution with solar/gsm options

DSC111 provides an accurate measure of the presence of ice crystals well before they cause the road to become slippery. The Winter Service engineer is therefore able to carefully monitor all of the weather elements which create a hazardous driving surface in order to take the appropriate remedial action.

The water reading is useful for advanced warning of aquaplaning.

DSC111 has proven its capabilities during two years of intensive field testing in collaboration with Vaisala customers.

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

## TECHNICAL DATA

### ELECTRICAL

Power supply	9 ... 30 VDC
Power consumption for operation	1.2 W above -10°C max 1.9 W below -10°C
Power consumption for lens heaters	0 ... 4 W user adjustable
Interfaces	RS-485 isolated, RS-232
Connectors	3 x M12 (5 pins)
1:	RS-485 and power, male
2:	RS-232, male
3:	RS-485 and power, female
	Extension connector for the DST111
Cables	3 m, 10 m, 25 m One end without connector 0,6 m extension cable to the DST111

### ENVIRONMENTAL

Operating temperature	-40 ... +60 °C
Operating humidity	0 ... 100 % RH
CE Compliant	IEC(EN)-61326
Safety	Eye-safe, Laser class 1
Vibration	IEC 60721-3-3

### INSTALLATION

Measuring distance	2 ... 15 m
Measuring area	Diam. 20 cm at 10 m
Installation angle from the horizontal line	30 ... 85°
Fits onto the standard sensor arm DM32ARM with cross-section of 40 mm x 40 mm	

### MEASURING RANGE

Layer thickness	
Water	0.00 ... 2 mm
Ice	0.00 ... 2 mm
Snow	0.00 .. 10 mm
Resolution	0.01 mm
Level of Grip	0.01 ... 1.00
Resolution	0.01 units
Surface states	Dry, Moist, Wet, Snow/Frost, Ice, Slush

### MECHANICAL

Dimensions (cm)	46 x 21 x 14
Weight	3.7 kg

