

Sensors

Remote Road Sensor DSC211

The spectroscopic measuring principle of DSC211 enables accurate measurement of the amounts of water, ice, and snow. In addition, DSC211 provides a calculated value of slipperiness, grip, to indicate the condition of the road.



DSC211 is a very sensitive instrument providing an accurate measurement of the presence of ice crystals well before they cause the road to become slippery. Therefore, the winter maintenance engineer is able to react to all those weather elements that create a hazardous driving surface and require appropriate remedy.

In addition, the optional visibility measurement offers a useful, compact, and extremely cost-effective way to measure the meteorological optical range (MOR). The visibility measurement extends the capabilities of DSC211 to detect low visibility conditions – without any external hardware.

General Specifications

Operating temperature	-40 ... +60 °C (-40 ... +140 °F)
Storage temperature	-55 ... +60 °C (-67 ... +140 °F)
Operating humidity	0 ... 100 %RH
Communication interface	RS-485
Dimensions (H x W x D)	210 x 133 x 448 mm (8.3 x 5.2 x 17.6 in)
Weight	3.4 kg (7.5 lb)

OPTICAL SPECIFICATIONS

Light source	Near-infrared laser diodes
Detection of window contamination	Contamination level of the receiver window is measured
Eye safety	Eye safety in accordance with EN/IEC 60825-1

MATERIALS

Cover	Plastic ABS
Mounting bracket	POM-C
Other parts	Aluminum

COMPLIANCE

EMC (industrial environment)	EN/IEC 61326-1
Vibration	IEC 60068-2-6
IP rating	IP65

Measuring Specifications

MEASURING DISTANCE	
With visibility observation disabled	2 ... 15 m (7 ... 50 ft)
With visibility observation enabled	8 ... 15 m (26 ... 50 ft)
Installation angle from the horizontal line	30 ... 80° (35 ... 65° recommended)
LAYER THICKNESS	
Water layer observation range	0.00 ... 2 mm (0.06 in)
Ice layer observation range	0.00 ... 2 mm (0.06 in)
Snow coverage	0.00 ... 10 mm (0.40 in)
Water equivalent	0.00 ... 1 mm (0.04 in)
Resolution	0.01 mm
Accuracy (water and ice layer)	±0.1 mm in the range of 0 ... 1 mm
LEVEL OF GRIP	
Observation range	0.01 ... 1.00
Reporting range	0.09 ... 0.82
Resolution	0.01 units
REPORTED SURFACE STATES	
Vaisala classes	Dry, Moist, Wet, Frost ¹⁾ , Snow, Ice, Slush
EN 15518-3 classes	Dry, Moist, Wet, Streaming water, Slippery
VISIBILITY (OPTIONAL)	
Observation range (MOR)	10 ... 2000 m (33 ... 6572 ft)
Resolution	1 m
Accuracy (fog and snowfall)	±20 % (average)
Response time	60 s

¹⁾ Frost is only reported when dewpoint and road temperature information is available.

Item	Part Number
DSC211 sensor	DSC211RWS
CABLE OPTIONS	
10 m (32 ft 10 in)	216546
25 m (82 ft 3 in)	216547
50 m (164 ft 1 in)	DR221741Z50MSP
100 m (328 ft 1 in)	DR221741Z100MSP
150 m (492 ft 2 in)	DR221741Z250MSP
Visibility measurement	DSCVIS
Spare hood	DRW217593SP

