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instruments

Datasheet

StaRWIS-UMB - Stationary Road Weather Information Sensor

For stationary operations we further developed mobile road weather sensor MARWIS - this is StaRWIS!

StaRWIS is the first non-invasive road weather sensor detecting road and runway surface conditions, surface temperature, relative humidity, dew & freezing temperatures, ice percentages as well as friction non-invasively and based on innovative LED Technology with 4 lenses.

Measurements

- Dry, damp, wet, ice, ice/snow, water/ice, chemical wet
- Road surface, freezing, ambient and dew point temperature
- Water film height
- Relative humidity at road surface temperature
- Ice percentage
- De-icer density
- Friction (grip)

Examples to use the StaRWIS

- Decision support for winter maintenance operators on roads, motorways, highways (municipalities, federal states and provinces)
- Decision support for the de-icing of runways (higher efficiency)
- As important part of the IDS (Ice Detection System) in form of a RCC (Runway Condition Code), water film height (aqua-planning risk) and friction detector
- For smart city applications
- For weather data collection and weather forecast model improvements

Features

- No moving parts due to innovative LED technology
- Non-invasive measurement principle
- Data transfer via bluetooth, RS485 or CAN-bus
- Measurements both on the ground and in the ambient air
- Easy to install and to clean

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DATA SUMMARY

GENERAL

- Dimensions: H. ca 110 mm, W. approx. 200 mm, D. approx. 100 mm
- Weight: 1.7 kg
- Storage temp.: -40°C … 70°C
- Operating rel. humidity: < 95% relative humidity, non condensing
- Operating voltage: 10 - 28 VDC
- Power consumption: Approx. 3VA without heating, 50VA with heating
- Operating temperature: -40°C … 60°C
- Operating rel. humidity: 0...100% RH
- Protection type: IP68
- Mounting height: 4 a 5 m
- Interface: RS485, 2 wire, half duplex, Bluetooth, CAN

AMBIENT TEMPERATURE

- Measuring range: 50°C … 70°C
- Unit: °C (°F switchable)
- Resolution: 0.1°C

ROAD SURFACE TEMPERATURE

- Principle: Optical
- Measuring range: 40°C … 70°C
- Accuracy: ±0.8°C @ 0°C
- Resolution: 0.1°C

RELATIVE HUMIDITY ABOVE ROAD SURFACE

- Measurement range: 0 … 100% relative humidity
- Resolution: 0.1%
- Principle: passive, calculated out of air temperature and humidity above road surface

DEW POINT TEMPERATURE

- Measurement range: -50°C … 60°C
- Resolution: 0.1°C
- Principle: passive, calculated out of air temperature and humidity

DE-ICER DENSITY

- Principle: Optical

DEW POINT TEMPERATURE

- Measurement range: -50°C … 60°C
- Resolution: 0.1°C

WATERFILM HEIGHT

- Measurement range: 0 ... 6000 µm
- Resolution: 1 µm
- Principle: Optical

ICE PERCENTAGE

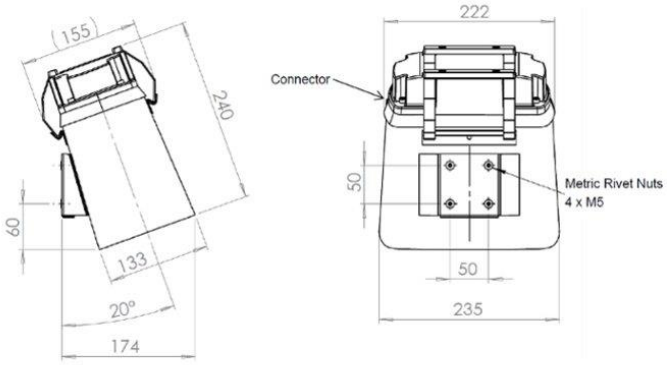
- Measurement range: 0 … 100%
- Resolution: 1%

FRICTION

- Measurement range: 0 … 1
- Resolution: 0.01

ROAD CONDITION

Dry, damp, wet, ice, snow, ice-snow, water-ice, chemically wet



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