Vaisala Surface Patrol Pavement Temperature Sensor DSP100 Series is a mobile temperature sensor for detecting possible freezing temperatures on the pavement. DSP100 features a non-contact infrared sensor for measuring pavement temperature, and it also measures air temperature. The easy-to-use DSP100 is valuable for large agencies, such as Departments of Transportation, airport operations, as well as smaller companies with only a few trucks.

**Features**
- Measures both air and pavement temperatures
- Easy-to-read, dash-mounted digital display
- Patented cone design to protect sensor lens
- Separate air sensor for improved accuracy
- Quick and easy to install
- Field calibration with no need to return unit to manufacturer
- Integrates with other vehicle equipment such as spreaders
- Optional RS-232 output to connect to a computer or analog output for other applications

**Benefits**
- Mobile sensor provides pavement data for your entire route
- Real-time pavement and air temperature readings
- Inexpensive compared to other pavement monitoring methods
- Knowledge of surface pavement temperature makes winter decision making easier

**Accurate Real-Time Data**
DSP100 is mounted outside your vehicle and continuously monitors road surface temperatures, providing instant feedback on road surface conditions. DSP100 has a separate air temperature sensor and cabling so that it can be placed away from direct sunlight for accurate readings. The data retrieved from DSP100 is accurate and real-time, making it a reliable method for collecting pavement information.

**Ease of Use**
DSP100 can be calibrated in the field, ensuring you are always getting the most accurate readings. In addition, the pavement probe features a cone design to protect the sensor from spray and winter elements that can decrease the accuracy of the readings.
DSP100 Series Technical Data

Measurement Performance

Accuracy of surface temperature

1) ±0.28 °C at 0 °C (±0.5 °F at +32 °F)

Field calibration

Adjustable ±2.8 °C at 0 °C (±5.0 °F at +32 °F)

Measurement units

°C or °F (user selectable)

1) For DSP111:
EN 61000-4-6 Conducted RF immunity test specification within EN 61326-1:2013 is 3 Vemf. Within frequency range 25 ... 30 MHz, DSP111 may invalidate RS-232 output message with levels above 2 Vemf.

2) For DSP113:
EN 61000-4-3 Electromagnetic RF immunity test specification within EN 61326-1:2013 is 3 V/m. Within frequency ranges 80 ... 200 MHz, 750 MHz, and 1600 MHz, DSP113 may show ± 1.2 °C deviation in surface temperature readings with levels above 1 V/m.

EN 61000-4-6 Conducted RF immunity test specification within EN 61326-1:2013 is 3 Vemf. Within frequency ranges 2.4 ... 60 MHz, DSP113 may show invalid ambient temperature readings with levels above 1 Vemf.

Operating Environment

Operating temperature

-40 ... +71 °C (−40 ... +160 °F)

Storage temperature

-40 ... +71 °C (−40 ... +160 °F)

Inputs and Outputs

Input voltage

12 or 24 VDC unregulated

Digital output (optional)

RS-232; ASCII output

Analog output (optional)

4 ... 20 mA; 1 ... 5 V

Connections

Compression terminals for input voltage and signals quick disconnect connector for sensor head

Mechanical Specifications

Cable length, both sensors

5.5 m (18 ft) standard

Infrared Surface Temperature Sensor

Weight

57 g (2.01 oz)

Weight, with cables and connectors

284 g (10.02 oz)

Housing/Optical assembly

Injected molded housing with lens protecting cone

Optics

Precision crystal (germanium lens)

Display Unit

Dimensions (H × W × L)

50.8 × 88.9 × 139.7 mm (2.00 × 3.50 × 5.50 in)

Temperature indicators

User selectable audio and visual temperature indicators

Dual digital meter

High-brightness red LED, showing both ambient air and pavement temperature

Spreader Control

Dimensions (H × W × L)

36.0 × 117.6 × 133.0 mm (1.42 × 4.63 × 5.24 in)

Applications

Winter maintenance operations (snow plows, supervisor vehicles, and so on)

Other fleet vehicles to increase your AVL network

Runway temperature monitoring for airport operations

DSP100 Series Products

DSP110
Surface Patrol with display

DSP111
Surface Patrol with display and digital output

DSP112
Surface Patrol with display and analog output

DSP113
Surface Patrol with spreader interface and DB9 connector

DSP114
Surface Patrol with spreader interface and FA connector

Compliance

CE compliance (product models DSP110, DSP111, DSP113)

Directive 2014/30/EU

EMC standard EN61326-1, immunity test requirements for equipment intended to be used in a basic electromagnetic environment

Shock

50 Gs

Vibration

10 Gs in any axis

Published by Vaisala | B211422EN-C © Vaisala 2018

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