Road Weather Station RWS200

Vaisala Road Weather Station RWS200 is designed for the future of road weather systems and Intelligent Transportation Systems (ITS). RWS200 provides a complete road weather solution to improve road, rail, or runway winter maintenance activities in your organization.

Reliable Data
The primary requirement of a road weather station is that data is reliable and it flows from the station continuously. Road maintenance decision makers must be able to trust the information every time they make a critical decision.

RWS200 contains a local database which greatly improves data reliability by storing observation data. The data is not lost even if the external communication network is down for a long period of time.

Advanced communication options, such as Ethernet and 3G/4G, add reliability to the entire system and ensure continuous data flow to external systems. These options also allow remote access to the weather station for monitoring and maintenance.

Advanced Algorithms
In addition to road weather sensors, the standard sensor options for RWS200 include a number of atmospheric sensors. Atmospheric observations greatly increase the accuracy of road weather observations, especially for embedded road sensors.

Data Management Unit DMU703 contains the algorithms that further calculate the observations, such as the road surface state. DMU703 also handles the storage, analysis, and reporting of observation data.

Power Control
Power Management Unit PMU701 makes sure that the sensors receive continuous and steady power. PMU701 also protects the sensors from power surges and switches on sensor heating power when needed.

Features
- Reliable and quality data for educated decision making
- Increased system reliability through centralized power management
- Local database for data storage
- Battery backup
- Fast return of investment through operational savings
- Built-in web user interface
- On-site wireless network access to ease annual maintenance
- Easy upgrade and sensor retrofit from previous versions

Cost-Effective Maintenance
Timely and routine maintenance is important to the health of your road weather network and to the safety of the road users.

Some maintenance tasks, such as sensor cleaning, you cannot perform without visiting the site. For other tasks that can be performed remotely, RWS200 offers a web user interface. In addition to maintenance tasks, such as software updates, you can use the web user interface to view the observation data and the station setup.

Looking Ahead
The flexible, modular design of RWS200 means that a unit purchased today can be updated either remotely or in the field to support new features and functions as they are designed by Vaisala. Vaisala continuously develops RWS200 based on customer feedback.

Integration to Vaisala-hosted information services expands the possibilities to profit from the current data view of your road weather network, the winter index, and forecast services, among others.
Technical Data

Operating Environment

- **Operating temperature** 1) -40 °C to +60 °C (-40 °F to +140 °F)
- **Storage temperature** 2) -60 °C to +80 °C (-76 °F to +176 °F)
- **Operating humidity** 3) 5% to 100% RH

1) Excluding WR21 cellular router, DRD11A, RG13H, AQT420, Mobotix, and AXIS PTZ camera. See the manufacturer documentation.
2) Excluding backup battery. See the manufacturer documentation.
3) Excluding WR21 cellular router and AQT420. See the manufacturer documentation.

Compliance

- **Vibration**: EN 60668-2-6
- **Rough handling**: EN 60668-2-31
- **Shock**: EN 60668-2-1
- **Cold**: EN 60668-2-2
- **Dry heat**: EN 60668-2-78
- **Corrosion and salt mist**: VDA 621-415
- **EMC (industrial environment)**: IEC 61326-1 (EN 61326-1)
- **Conducted emissions**: CISPR 32 Class B (EN 55032) 1)
- **Radiated emissions**: CISPR 32 Class B (EN 55032) 1)
- **Electrical safety**: EN/UL/IEC 60950-1/-22

1) AXIS PTZ camera and Wavetronix traffic sensor emissions: Class A

Data Reporting

- **Polls interfaces**: DATEX II, NTCP, Vaisala DTO XML, Vaisala MES 14, Vaisala MES 16
- **Pushed interfaces**: Images, Vaisala DTO XML, Vaisala MES 14, Vaisala MES 16
- **Station reports**: Station summary report, Event log
- **Road surface state**: Vaisala classes, EN 15518-3 classes

Communication Options

- **Standard communication options**: 2G/3G/4G cellular, WLAN, and Ethernet
- **Customer-provided communication options**: Cellular, Ethernet, and serial
- **User interface**: Browser-based Web UI

Powering Specifications

- **Mains fuse (nominal)**: 10 A
- **AC (mains) power**: 100 – 240 VAC (90 – 264 VAC), 50 – 60 Hz (45 – 65 Hz), 5.6 A maximum (120 VAC)
- **AC (mains) surge protection**: Type 3, 1.5 kV / 3 kA, Max. continuous voltage: 264 VAC
- **External power**: 12 – 32 VDC (minimum 10 VDC), 15 A maximum

- **Internal Backup Battery**
  - **Standard backplate (BOX652, BOXALU-US, BOXSS-US)**: 26 Ah / 12 V
  - **Slim backplate (BOX722)**: 2.6 Ah / 12 V

- **Average Operating Power Consumption**
  - **Without sensor heating**: 18 W
  - **At -10 °C (+14 °F) with sensor heating on**: 102 W

1) With the following configuration: WR21 cellular router, DSC211, DST111, WMT700, PWD22, two DRS511s, and HMP155E
2) DSC211 lens heating (5 W), WMT700 transducer heating (22 W), and PWD22 lens heating and hood heating (57 W).
## Standard Sensor Options

<table>
<thead>
<tr>
<th>Sensor Type</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road state, remote</td>
<td>DSC211</td>
</tr>
<tr>
<td>Road temperature, remote</td>
<td>DST111</td>
</tr>
<tr>
<td>Road state and temperature, embedded</td>
<td>DRS51</td>
</tr>
<tr>
<td>Subsurface temperature</td>
<td>DT312G</td>
</tr>
<tr>
<td>Subsurface temperature multidepth</td>
<td>TPS10</td>
</tr>
<tr>
<td>Humidity and temperature</td>
<td>HMP155E</td>
</tr>
<tr>
<td>Visibility and present weather</td>
<td>PWD12/PWD22</td>
</tr>
<tr>
<td>Rain</td>
<td>DRD11A</td>
</tr>
<tr>
<td>Tipping bucket</td>
<td>RG13H</td>
</tr>
<tr>
<td>Wind speed and direction (ultrasonic)</td>
<td>WMT700</td>
</tr>
<tr>
<td>Wind speed and direction (mechanical)</td>
<td>WA15 (WAC155)</td>
</tr>
<tr>
<td>Pressure</td>
<td>PTB110</td>
</tr>
<tr>
<td>Multiparameter</td>
<td>WXT536</td>
</tr>
<tr>
<td>Water level</td>
<td>SR50A</td>
</tr>
<tr>
<td>Snow depth</td>
<td>SR50A</td>
</tr>
<tr>
<td>Global radiation</td>
<td>SP Lite2</td>
</tr>
<tr>
<td>Fixed camera</td>
<td>Mobotix M16</td>
</tr>
<tr>
<td>Pan-tilt-zoom (PTZ) camera</td>
<td>Axis Q6124-E</td>
</tr>
</tbody>
</table>

## Other Supported Sensors

<table>
<thead>
<tr>
<th>Sensor Type</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air quality</td>
<td>AQT420</td>
</tr>
<tr>
<td>Road state and temperature, embedded</td>
<td>FP2000</td>
</tr>
<tr>
<td>Subsurface temperature</td>
<td>DT5210</td>
</tr>
<tr>
<td>Multiparameter</td>
<td>WXT520</td>
</tr>
<tr>
<td>Fixed camera</td>
<td>Mobotix M12, M15</td>
</tr>
<tr>
<td>PTZ camera</td>
<td>Axis Q6032-E, Q6042-E, Q6052-E</td>
</tr>
<tr>
<td>Traffic sensor</td>
<td>Wavetronix SmartSensor HD</td>
</tr>
</tbody>
</table>

## Enclosure Options

### BOX652
- **IP rating**: IP66
- **Shock/Vibration**: IEC 6008-2-27/IEC 60068-2-6
- **Size (H × W × D), incl. mounting frame, radiation shield, and cabling box**: 787 × 581 × 270 mm (30.98 × 22.87 × 10.62 in)
- **Weight after installation**: Approx. 46 kg (101 lb)

### BOX722
- **IP rating**: IP66
- **Shock/Vibration**: IEC 6008-2-27/IEC 60068-2-6
- **Size (H × W × D), incl. mounting frame, radiation shield, and cabling box**: 887 × 322 × 270 mm (34.92 × 12.67 × 10.62 in)
- **Weight after installation**: Approx. 29 kg (64 lb)

### BOXALU-US, BOXSS-US (North America Only)
- **IP rating**: NEMA Certified Type 4X
- **Size (H × W × D), enclosure only**: 838 × 610 × 330 mm (33.00 × 24.00 × 13.00 in)
- **Weight after installation**: BOXALU-US: Approx. 35.3 kg (77.8 lb)  
  BOXSS-US: Approx. 55.5 kg (122.3 lb)

### Backplate Only
- **Shock/Vibration**: IEC 6008-2-27/IEC 60068-2-6
- **Size (H × W × D)**: 555 × 455 × 42 mm (21.85 × 17.91 × 1.65 in)
- **Weight after installation**: Approx. 12.8 kg (28.2 lb)

---

All rights reserved. Any logos and/or product names are trademarks of Vaisala or its individual partners. Any reproduction, transfer, distribution or storage of information contained in this document is strictly prohibited. All specifications — technical included — are subject to change without notice.