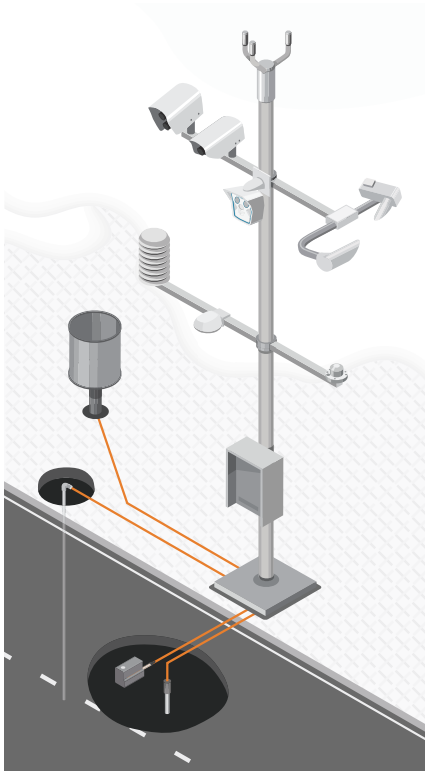




Road Weather Station RWS200



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.

To extend station operating time, PMU701 switches off sensor heating power if mains power is lost and the station is running on backup battery power.

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.

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

Technical Data

Operating Environment

Operating temperature ¹⁾	-40 ... +60 °C (-40 ... +140 °F)
Storage temperature ²⁾	-60 ... +80 °C (-76 ... +176 °F)
Operating humidity ³⁾	5 ... 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	IEC 60068-2-6
Rough handling	IEC 60068-2-31
Shock	IEC 60068-2-27
Cold	IEC 60068-2-1
Dry heat	IEC 60068-2-2
Damp heat	IEC 60068-2-78
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

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 ¹⁾

Without sensor heating	18 W
At -10 °C (+14 °F) with sensor heating on ²⁾	102 W

- 1) With the following configuration: WR21 cellular router, DSC211, DST111, WMT700, PWD22, two DRSS11s, and HMP155E.
2) DSC211 lens heating (5 W), WMT700 transducer heating (22 W), and PWD22 lens heating and hood heating (57 W).

Data Reporting

Polled interfaces	DATEX II NTCIP 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	2.5G/3G/4G cellular, WLAN, and Ethernet
Customer-provided communication options	Cellular, Ethernet, and serial options
User interface	Browser-based Web UI

Standard Sensor Options

Road state, remote	DSC211
Road temperature, remote	DST111
Road state and temperature, embedded	DRS511
Subsurface temperature	DTS12G
Subsurface temperature multidepth	TPS10
Humidity and temperature	HMP155E
Visibility and present weather	PWD12/PWD22
Rain	DRD11A
Tipping bucket	RG13H
Wind speed and direction (ultrasonic)	WMT700
Wind speed and direction (mechanical)	WA15 (WAC155)
Wind speed and direction (combined/mechanical)	R.M. Young Wind
Pressure	PTB110
Multiparameter	WXT536
Water level	SR50A
Snow depth	SR50A
Global radiation	SP Lite2
Fixed camera	Mobotix M16
Pan-tilt-zoom (PTZ) camera	Axis Q6124-E

Other Supported Sensors

Air quality	AQT420
Road state and temperature, embedded	FP2000
Subsurface temperature	DTS210
Multiparameter	WXT520
Fixed camera	Mobotix M12, M15
PTZ camera	Axis Q6032-E, Q6042-E, Q6052-E
Traffic sensor	Wavetronix SmartSensor HD ¹⁾

¹⁾ North America only.

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)

