Vaisala 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 for storing observation data. A local storage makes gaps in observation data less likely even if the 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. 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 that of embedded road sensors.

The algorithms that further calculate, for example, the road surface state, reside in Data Management Unit DMU703. The storage and analysis of observation data, as well as reporting, is also the responsibility of DMU703.

Power Control

Continuous and steady power is a luxury for a roadside station. Power Management Unit PMU701 meets the challenges posed by power interruptions and surges caused by, for example, lightning. PMU701 provides surge protection and power to the sensors, including heating power when needed.

## 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.

RWS200 has a web user interface for setup and maintenance tasks, as well as for viewing observation data and reports.

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 meets your needs for continual improvement while avoiding unnecessary costs.

Integration to Vaisala-hosted information services expands the possibilities to profit from the winter index and forecast services, among others.
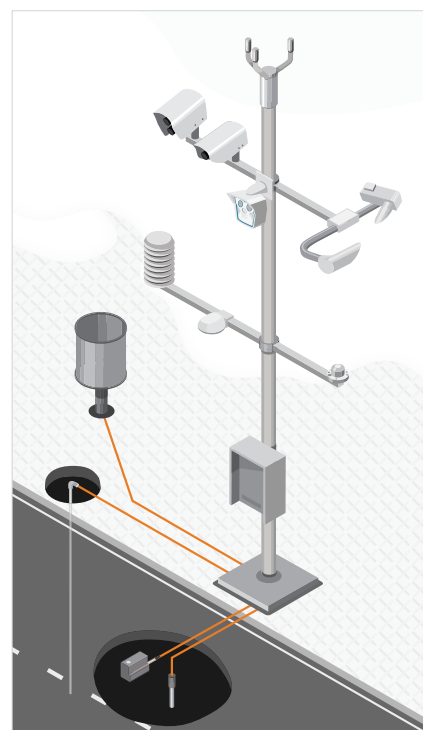
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Benefits of RWS200

- 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

General

Operating temperature range	-40 ...+60 °C (-40 ...+140 °F) [1]
Storage temperature range	-60 ...+80 °C (-76 ...+176 °F)
Operating humidity range	5 ... 100 %RH

Test Method Standards

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)	EN/IEC 61326-1
Conducted emissions	CISPR22/EN 55022/Class B [2]
Radiated emissions	CISPR22/EN 55022/Class B [2]
Electrical safety	EN/UL/IEC 60950-1/-22

Powering

AC (mains) power	90 ...264 VAC, 45 ...65 Hz
	24 VDC (12 … 32 VDC)
External power	12 ...32 VDC (min. 10 VDC)
	12 or 24 VDC

INTERNAL BACKUP BATTERY

Standard backplate (BOX652, BOXALU-US, BOXSS-US)	26 Ah/12 V
Slim backplate (BOX722)	2.6 Ah/12 V
Mains fuse	10 A

Protocols and Data Reports

Protocols	NTCIP
Message inputs/outputs	Images
	Vaisala MES 14
	Vaisala MES 16
	Vaisala DTO XML
	Vaisala observation web service
	DATEX II
Road surface state	Vaisala classes
	EN 15518-3 classes

Station Reports

Station summary report	HTML
Event log	CSV

Communication Options

Standard options	2.5G/3G/4G cellular, wireless LAN, and LAN
Customer-provided options	LAN, cellular, or serial
User interface	Browser-based Web UI

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[1] Operating temperature range for Mobotix M15 camera:
-30 … +60 °C (-22 … +140 °F)
[2] Axis PTZ camera and Wavetronix traffic sensor are Class A.

Standard Sensor Options

Road state, remote	DSC211
Road temperature, remote	DST111
Road state and temperature, embedded	DRS511/FP2000
Subsurface temperature	DTS12G
Subsurface temperature multidepth	TPS10
Humidity and temperature	HMP155E
Visibility and present weather	PWD12/22
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
Pressure	PTB110
Multiparameter	WXT536
Water level	Campbell SR50A
Snow depth	Campbell SR50A
Global radiation	SP Lite2
Pan-tilt-zoom (PTZ) camera	Axis Q6042-E
Fixed camera	Mobotix M15

SUPPORTED SENSORS AND EQUIPMENT

Subsurface temperature	DTS210
PTZ camera	Axis Q6032-E
Fixed camera	Mobotix M12
Traffic sensor	Wavetronix SmartSensor HD

Enclosure Options

BOX652

Ingress protection rating	IP66
Shock/Vibration	IEC 6008-2-27/IEC 60068-2-6
Size (H × W × D), incl. mounting frame,	787 × 581 × 270 mm
radiation shield, and cabling box	(31.0 × 22.9 × 10.6 in)
Weight after installation	~46 kg (101 lb)

BOX722

Ingress protection rating	IP66
Shock/Vibration	IEC 6008-2-27/IEC 60068-2-6
Size (H × W × D), incl. mounting frame,	887 × 322 × 270 mm
radiation shield, and cabling box	(34.9 × 12.7 × 10.6 in)
Weight after installation	~29 kg (64 lb)

BOXALU-US, BOXSS-US (NORTH AMERICA ONLY)

Ingress protection rating	NEMA Certified Type 4X
Size (H × W × D),	838 × 610 × 330 mm
enclosure only	(33.0 × 24.0 × 13.0 in)
BOXALU-US weight after installation	~35.3 kg (77.8 lb)
BOXSS-US weight after installation	~55.5 kg (122.3 lb)

For further details on the enclosures, see their own datasheet.

NO ENCLOSURE (BACKPLATE ONLY)

Shock	IEC 6008-2-27
Vibration	IEC 60068-2-6
Size (H × W × D)	555 × 455 × 42 mm
	(21.9 × 17.9 × 1.7 in)
Weight	~12.8 kg (28.2 lb)

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