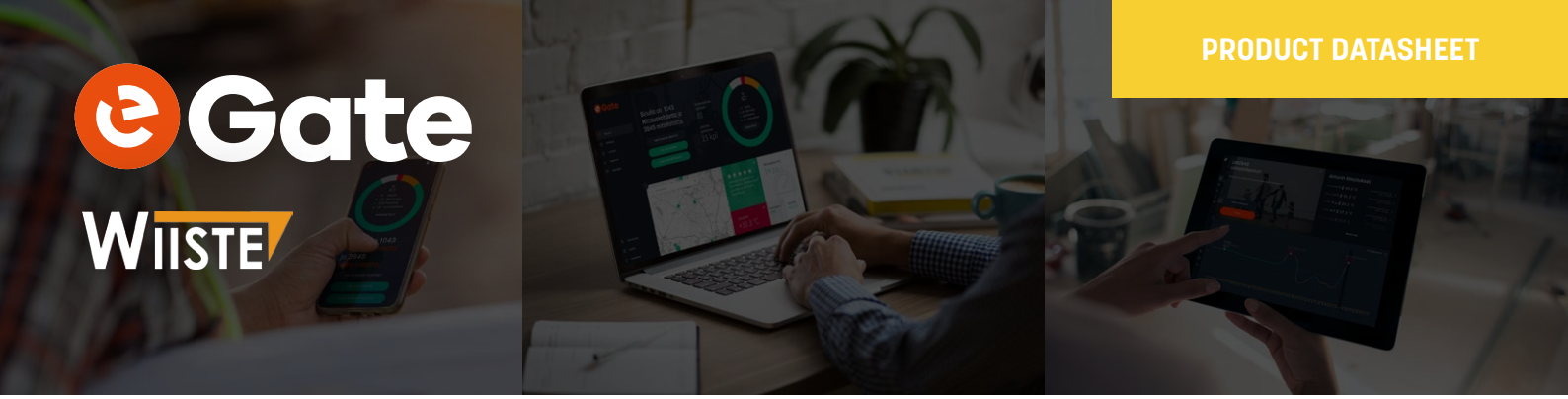


PRODUCT DATASHEET

WM1-WAN

IoT sensor for wood moisture

Wiiste WM1-WAN wood moisture sensor data now available via eGate service.

Wiiste WM1-WAN is an intelligent wood moisture sensor that can wirelessly connect to the eGate Cloud data monitoring platform. The Wiiste sensor monitors wood moisture content, ambient air temperature, and humidity. It is attached to the surface of the wood material, for instance, on CLT- or LVL-elements, at the construction site.

The sensor periodically transmits measurement data to the cloud service, enabling continuous monitoring and alerts. Automated data alerts include wood moisture content, ambient air temperature, humidity, and battery level. The replaceable battery in the sensor supports a minimum of two years of continuous measurement.

Wiiste sensor was developed in collaboration with Wiiste Oy, a Finnish sensor development company, and Stora Enso Oy, a global corporation and expert in wood products and processing.

Sensor Functionality

Wiiste sensor is attached to the wood surface with two specially designed screws, which also serve as the sensor electrodes. This allows for the measurement of two different depths, ensuring accurate monitoring of the wood moisture profile. Wiiste sensor utilizes the resistive measurement method, and the results are reported as a percentage of the weight of water in the wood (Moisture Content).

Cloud Dashboard for Data

Wiiste sensor continuously updates the eGate cloud data with the latest measurements. The eGate cloud dashboard has a responsive design that can be viewed on various mobile and desktop devices. It includes data reporting, archiving, job site area maps, floor plan drawings, and more.

Patented Technology

Wiiste WM1-WAN incorporates unique patent-pending technology known as the W-Tip sensor head structure. This technology ensures leading accuracy and reliability in continuous wood moisture measurement.

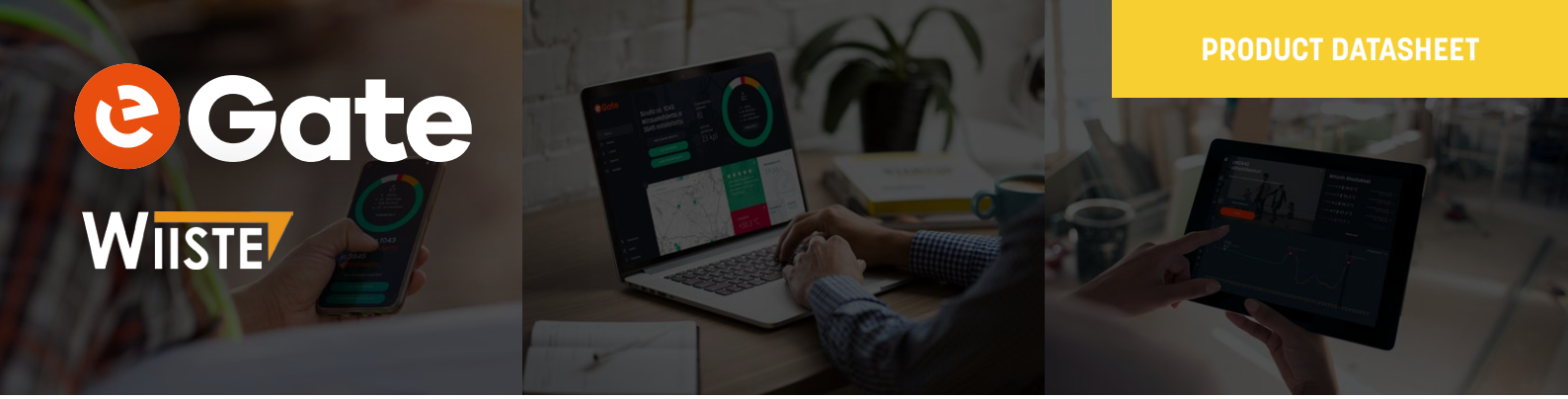
WM1-WAN Features

- Moisture content measurement at two different depths
- Standard measurement depths range: 5–48 mm (0.2 to 1.9 inches)
- Can be permanently attached to the wood element surface.
- Wireless communication (LoRaWAN)
- Battery life: up to two years
- Fast Wiiste W-Tip – condition measurement

Sensor Accuracy:

- Wood moisture: ± 1 percentage point of Moisture Content (MC)
- Relative Humidity: ± 2.5% RH

Resale: eGate Smart Building Innovation Oy: info@e-gate.io / www.e-gate.io
Product development and manufacture: Wiiste Oy



PRODUCT DATASHEET

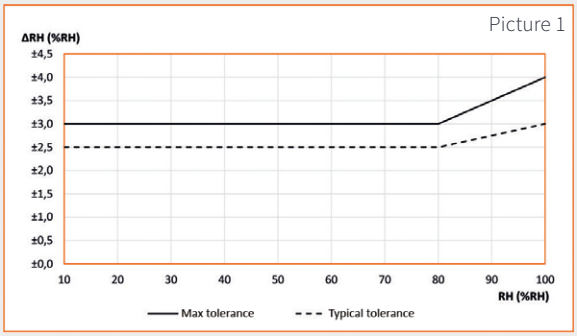
WM1-WAN

TECHNICAL DETAILS

HUMIDITY MEASUREMENT

Measurement Range:	6…30 MC
Measurement Accuracy:	±1 MC
Repeatability:	0.2 MC
Hysteresis:	0.2 MC
Resolution:	0.1 MC
Linearity mistake:	0.1 MC
Measurement type:	Resistive

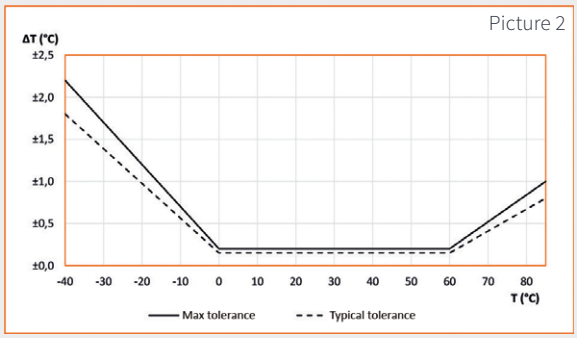
Picture 1



HUMIDITY MEASUREMENT

Measurement Range:	10…100 % RH (Refer to Pic. 2)
Measurement Accuracy:	(Refer to Pic. 1) ±2.5 % RH (10…80 % RH)
Repeatability:	±0.2 % RH
Hysteresis:	< ± 1 % RH
Resolution:	0.1 % RH
Response Time (T10–90 %):	< 20 seconds min
Drift:	< 0.5 % RH/annually
Sensor Technology:	Capacitive Polymer Sensor

Picture 2

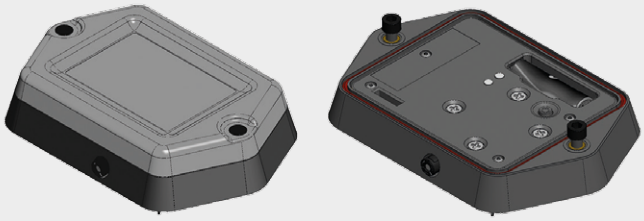


TEMPERATURE MEASUREMENT

Measurement Range:	-40…85 °C (-40…185 °F)
Measurement Accuracy:	(see picture 2)
Repeatability:	±0.1 °C (±0.18 °F)
Resolution:	0.1 °C (±0.18 °F)
Response time (T10–90 %):	< 10 minutes
Drift:	< 0.05 °C/annually (<0.09 °F/annually)
Sensor Technology:	PTAT

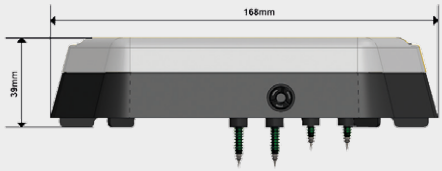
ELECTRICAL SPECIFICATIONS

Internal Power Supply:	3.6 V / 1.2 Ah / 4.32 Wh (Li-SOCl2)
Wireless Radio:	LoRaWAN
Wireless transmission power:	25 mW / 14 dBm



MECHANICAL SPECIFICATIONS

Outside dimensions:	168 mm x 113 mm x 39 mm (6.6” x 4.5” x 1.5”)
Weight:	228 g (8 oz)
Water tolerance:	IP54



OPERATING AND INVENTORY

Operating Temperature Range:	-40…85 °C (-40…185 °F)
Storage Temperature Range:	20…30 °C / 40…60 %RH (68…86 °F) / 40…140% RH

CE