

WTS Series

IoT LoRaWAN®

# Weather Station



## ◆ Introduction

IoT Weather Station is an all-in-one LoRaWAN® weather monitoring system for various atmospheric conditions, such as temperature, humidity, wind speed, wind direction, barometric pressure and rainfall. Consisting of 3 main parts, WTS Sensors, WTS Hub and solar panel, IoT Weather Station is designed to withstand the most challenging weather conditions and is easy to install in different scenarios to be widely used in meteorology, smart agriculture, smart building, etc.

Sensor data is transmitted using LoRaWAN® technology. Compliant with Milesight LoRaWAN® gateway and Milesight IoT Cloud solution, users can manage all sensor data and trigger other sensors or appliances easily via webpage or mobile App remotely.



## ◆ Features

- Integrated with multiple sensors like humidity, temperature, barometric pressure, wind speed, wind direction, rainfall, etc.

- Waterproof, UV-proof and salt spray resistant enclosure for outdoor harsh environment applications
- High power solar powered with chargeable batteries backup
- Store locally more than 19,000 historical records and support retransmission to ensure no data miss
- Easy to carry and install
- Ultra-wide-distance wireless transmission up to the line of sight of 15 km in rural areas
- Equipped with NFC for easy and quick configuration
- Compliant with standard LoRaWAN<sup>®</sup> gateways and network servers
- Quick and easy management with Milesight IoT Cloud

## ◆ Specifications

### WTS Sensors

Model	WTS506
<b>Temperature</b>	
Operating Principle	Thermistor
Range	-40°C - 85°C
Accuracy	± 0.3°C
Resolution	0.1°C
<b>Humidity</b>	
Operating Principle	Capacitive humidity sensor
Range	0% - 100% RH
Accuracy	± 3% RH
Resolution	0.5% RH
<b>Wind Direction</b>	
Operating Principle	Ultrasonic
Range	0° - 360°
Accuracy	± 3°
Resolution	0.1°
<b>Wind Speed</b>	
Operating Principle	Ultrasonic
Range	0 -60 m/s
Accuracy	± 0.3 m/s or ± 3% (whichever is greater)
Resolution	0.1 m/s

<b>Barometric Pressure</b>	
Operating Principle	Piezoresistive absolute pressure sensor
Range	500 - 1100 hPa
Accuracy	±0.5 hPa
Resolution	0.1 hPa
<b>Rainfall</b>	
Operating Principle	Piezoelectric
Range	0 - 1000 mm
Accuracy	±0.5 mm (< 10 mm), ±5 %(>10 mm)
Resolution	0.01 mm
<b>Physical Characteristics</b>	
Housing& Color	Aluminium Alloy, White
Weight	2.15 kg
Dimension	φ160 x 263 x φ73 mm
Operating Temperature	-40°C~ 85°C
Relative Humidity	0% - 100% (non-condensing)
Ingress Protection	IP65
Installation	Pole Mounting

## WTS Hub

<b>Wireless Transmission</b>	
Technology	LoRaWAN <sup>®</sup>
Antenna	Internal Antenna
Frequency	CN470/RU864/IN865/EU868/US915/AU915/KR920/AS923-1&2&3&4
Max Tx Power	16dBm (868MHz)/22dBm (915MHz)/19dBm (470MHz)
Sensitivity	-137dBm @300bps
Work Mode	OTAA/ABP Class A
<b>Connectors</b>	
Connector Type	M12 A-Coded Male
Connectors	1 × 2-pin Power Connector (15V), 1 × Data Connector for WTS Sensor
<b>Others</b>	
Button	1 × Power/Reset Button (Internal)
USB	1 × Type-C (Internal) for Configuration and Console
LED Indicator	1 × Reboot/Reset (Internal)

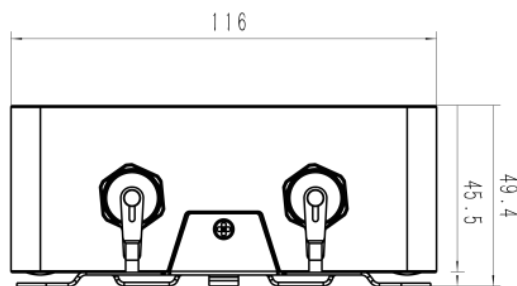
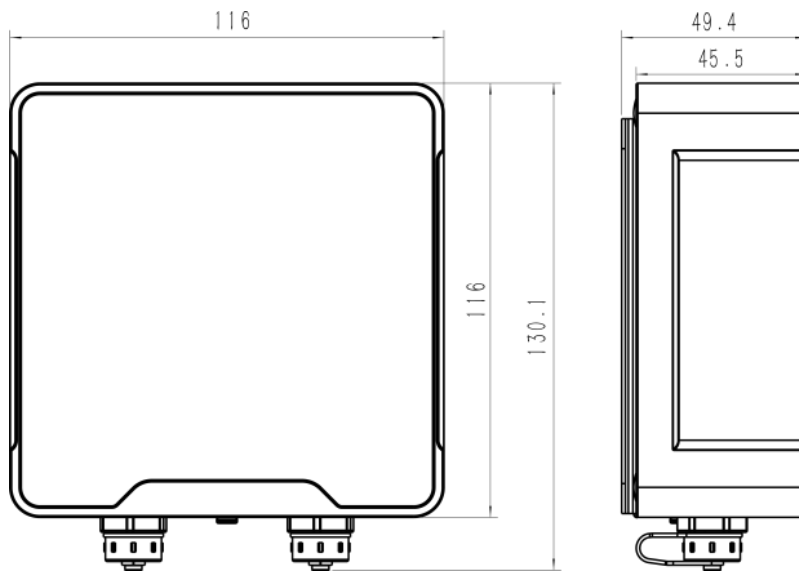
Software	
Power On & Off	Mobile App (via NFC), PC Software (via USB Type-C), Power Button (Internal)
Configuration	Mobile App (via NFC) or PC software (via USB Type-C)
Advanced Feature	Data Storage (19,000 entries), Data Retransmission, Data Retrievability, Threshold Alarm
Physical Characteristics	
Power Supply	External Solar powered (15 W, 1A) with 2 × 2550 mAh ICR18650/26V chargeable batteries backup
Operating Temperature	-20°C~60°C
Relative Humidity	0% to 95% (non-condensing)
Ingress Protection	IP67
Dimension	116 × 116 × 45.5 mm (Connectors Excluded)
Installation	Screw Mounting

## Solar Panel

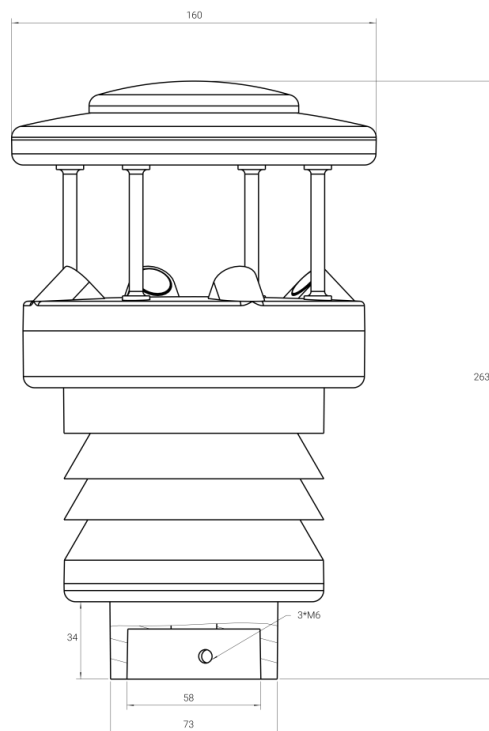
Electrical Characteristics	
Open-Circuit Voltage	18 V (± 0.3 V)
Rated Voltage	15 V (± 0.3 V)
Rated Current	1 A (± 5%)
Maximum Power	15 W (± 5%)
Minimal Power	14.5 W (± 5%)
Physical Characteristics	
Power Cable	1 × Power Cable (50 cm) with 2-pin M12 A-Coded Male Connector
Cell Type	Monocrystalline Silicon
Operating Temperature	-20°C~80°C
Weight	1 kg (Without Bracket), 2.2 kg (With Bracket)
Dimension	343 × 283 × 16.5 mm
Installation	Pole Mounting

## ◆ Dimensions(mm)

WTS Hub



### WTS506 Sensor



## Solar Panel

