

Weather Station

Overview

The Rubicon Weather Station is an accurate and reliable all-in-one device for measuring weather across your district and on farm.

The device provides measurement of rainfall, ambient temperature, relative humidity, wind speed and direction, solar radiation, and barometric pressure. The low-maintenance, all-in-one device adopts Rubicon's proven ultrasonic transducer technology, providing high resolution accuracy of precipitation and wind speed.

The Rubicon Weather station can be connected to a Rubicon pedestal, or to a Rubicon FerIT™ Solar Node. Weather data is then transmitted via district or on-farm communication infrastructure to deliver real-time insights directly within Rubicon software applications.

When used with Rubicon's FarmConnect™ and Water Ordering software, the Weather Station can help farmers to determine the optimal time to irrigate.

A TCC™ product

The Weather Station is one of the products making up a modular family of precision hardware and software called TCC (Total Channel Control™). TCC is an advanced technology set designed to improve the management and productivity of water in open canal and gravity pipeline distribution. TCC products can interact and work together to help managers improve:

- water availability
- service and equity to users
- management and control
- canal operator safety



Features

- Accurate and reliable measurement of rainfall, temperature, humidity, wind speed/direction, solar radiation and atmospheric pressure
- Dual pressure, temperature and humidity sensors for increased redundancy
- Integrated solar-radiation sensor
- Utilizes Rubicon's proven ultrasonic transducer technology
- Assists in determining the optimal time to irrigate
- Patented high precision, high intensity rainfall measurement system
- Self detection and alarming for remote diagnostics
- Developed in line with WMO standards

Weather Station components

Power/Communication Options

Control Pedestal

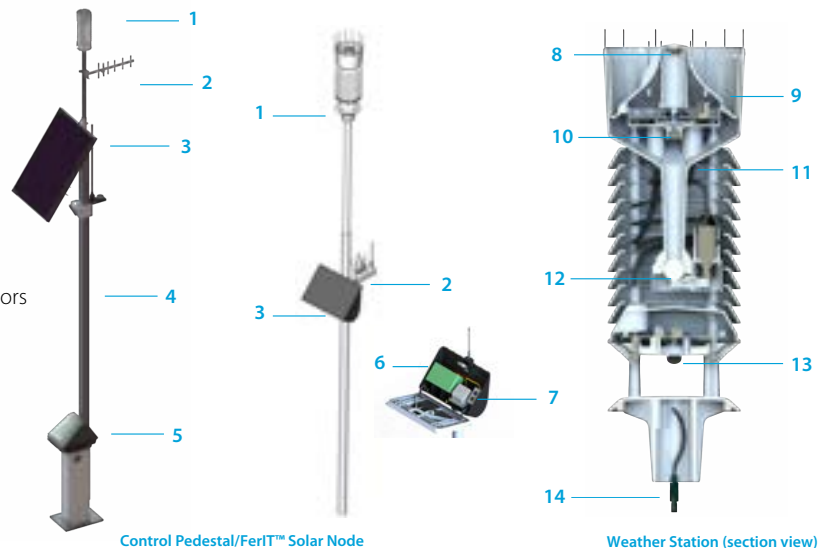
- 1 Weather Station
- 2 Antenna
- 3 Solar panel
- 4 Hinged mast
- 5 LCD display

FerIT™ Solar Node

- 6 Battery
- 7 Communications Node

Weather Station

- 8 Solar radiation sensor
- 9 Precipitation filter
- 10 Rainfall level sensor
- 11 Temperature/humidity/pressure sensors
- 12 Automatic rapid release valve
- 13 Wind speed and direction sensors
- 14 Connection loom



Seamless installation

Districts that have already invested in Rubicon's modernization technology can easily upgrade their robust pedestal to include our micro-climate weather station technology. The Weather Station presents as a value-add option to enable accurate and reliable weather data from any location. The device can also be integrated with Rubicon's FerIT Solar Node, a low power IoT node with LoRaWAN communication capabilities. Contact your Rubicon Sales Engineer to find out which power option is a suitable solution to meet your needs.

Real-time data

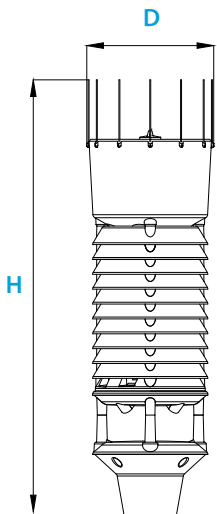
The data derived from the Weather Station can be managed from directly within Rubicon's Water Ordering App or integrated within the operator's SCADA system. Access to real-time data within the Water Ordering App will assist in determining the optimal time to irrigate.

Low maintenance

The Weather Station's unique flush valve mechanism prevents the build-up of debris associated with traditional rainfall methods. The all-in-one design addresses the high maintenance cost of traditional weather station technology with all components comprised in a single, compact and robust housing.

Weather Station Dimensions

Dimension	Description	Value (in)
H	Height	23.2
D	Diameter	6.7



FerIT Solar Node



Control Pedestal



Water Ordering Mobile App

Weather Station specifications

General	
IP rating	IP66
Housing material	ASA - Acrylonitrile styrene acrylate
Voltage	12 VDC
Power	1.3 Ah/day 1W Nominal (25W Peak for Solenoid Actuation)
Data interface	Modbus RTU via RS485
Air temperature	
Range	-40°F to 140°F
Accuracy	± 0.7°F A naturally aspirated radiation shield is applied which can affect readings in calm wind.
Precipitation	
Sensor type	Ultrasonic
Range	0 to 80in/h
Accuracy	±2% at >0.7 in, intensity ≤ 40 in/h ±3% at >0.7 in, intensity > 40 in/h For rainfall events > 0.02 in
Resolution	0.0004 in (0.01 mm)
Wind speed	
Sensor type	Ultrasonic
Range	0 to 67 mph
Accuracy	0.7 mph below 22 mph and 3% above 22 mph
Wind direction	
Sensor Type	Ultrasonic
Range	0 to 359°
Accuracy	±3°
Humidity	
Range	0 to 100%
Accuracy	± 2.5% A naturally aspirated radiation shield is applied which can affect readings in calm wind.
Barometric pressure	
Range	300 to 1200 mbar
Accuracy	±2.5 mbar
Solar radiation	
Range	0 to 3700 Ly/day
Accuracy	±5%

Specifications subject to change

About Rubicon Water

Rubicon Water delivers advanced technology that optimizes gravity-fed irrigation, providing unprecedented levels of operational efficiency and control, increasing water availability and improving farmers' lives.

Founded in 1995, Rubicon has more than 35,000 gates and meters installed in TCC systems in 17 countries.