

# X2

## ENVIRONMENTAL DATA LOGGER

- Supports most industry environmental sensors
- Wi-Fi, cellular, satellite or radio telemetry
- Direct PC or cloud-based communications
- Waterproof sensor and power ports
- Marine anodized aluminum housing



The **X2** is an all-in-one environmental data logger that can be controlled from any internet browser using a smartphone, tablet, or PC. It automatically recognizes sensors and sends data to the web via Wi-Fi, cellular, satellite, or radio telemetry. The **X2** includes three sensor ports that are compatible with most environmental sensor protocols including SDI-12, RS-232, and RS-485. All connections are made with a simple thread-in connector, and the built-in sensor library automatically facilitates setup and configuration. Data is stored on common or independent schedules.

Power options include SP-Series solar packs, AC adapter, or external 5-16 VDC. Advanced power management combined with ultra-low sleep and run currents extend battery life and eliminate the need for multi-battery arrays or large solar charging systems. Smart power circuits automatically switch to reserve power when the main source is depleted. The **X2** monitors itself while collecting environmental data. Internal temperature, humidity, voltages and currents are constantly recorded. Failure alerts can be sent automatically to a predefined list of contacts.

Using a USB adapter and **CONNECT** Software, users can configure the **X2** data logger for deployment, view live data, change settings, or troubleshoot. Optional integrated Wi-Fi, cellular or satellite telemetry modules offer real-time remote communications via the **WQData LIVE** web datacenter. There, data is presented on a fully-featured and easy-to-use dashboard. Other features include automated reports, alarms, push notifications and much more.

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### specifications

Mount	(3) 3/8-16 bolt holes on bottom
Material	Anodized aluminum
Weight	3.5 lbs.
Dimensions	4.9" Diameter, 4.77" Height
Power Requirements	5-16 VDC +/-5% (Reverse polarity protected)
Current Draw (Typical @ 12VDC)	Low power sleep: 350uA; Active: 45mA; Cellular Transmitting: 300mA; Iridium satellite transmitting: 170mA
Peak Current	Power supply must be able to sustain a 500mA 1-second peak current (@ 12V)
Operating Temperature	-20 to 70°C
Rating	IP67 (Standalone); IP65 (With telemetry)
User Interface	RS-485 direct to CONNECT Software, WQDataLive Web Datacenter, Status LEDs
Data Logging	256MB microSD card (expandable up to 4GB)
Data Processing	Parameter level polynomial equation adjustment; Basic & Burst Averaging (min, max, standard deviation, and raw data available)
Real Time Clock (RTC)	<30sec/month drift <sup>1</sup> ; Auto-sync weekly <sup>2</sup> ; Internal backup battery
Log Interval	User configurable from 1 minute (10 minute default) <sup>3</sup> ; Unique interval per sensor
Transmission Trigger	Time-based; Selective parameter upload option
Sensor Interfaces	SDI-12, RS-232 (3 Channels), RS485
Sensor Power	(3) independent switches from input supply <sup>4,5</sup>
Built-in Sensors	Temperature (-40 to 85C, 0.1C resolution, ±0.3C accuracy); Humidity (0% to 100%, 0.1% resolution, ±4% accuracy from 5 to 95% RH & -20 to 70C); Battery voltage; System & sensor current
Sensor Ports	(3) 8-Pin for Sensor Interface (RS-232, RS-485, SDI-12, Switched Power, GND)
Power Port	(1) 6-Pin for Power and Communication (Primary/Secondary/Backup Input, RS-485 Host, GND)
Telemetry Options	Wi-Fi, 4G LTE cellular, CAT-M1 cellular, Iridium satellite, 900 MHz radio, 2.4 GHz radio
Antenna Port	SMA (Cellular and Iridium) and RP-SMA (Radio)

<sup>1</sup> Assumes 25°C operating temperature

<sup>2</sup> Requires the X2 to be connected to the internet

<sup>3</sup> Minimum log interval dependent on sensor limitations and processing time

<sup>4</sup> Cumulative concurrent current limit of all three channels is 2A

<sup>5</sup> Logger power supply must be able to support current requirements of sensors



### parts list

Part #	Description
X2	X2 environmental data logger
X2-W	X2 environmental data logger with Wi-Fi telemetry
X2-C-2G3G	X2 environmental data logger with 2G/3G cellular telemetry
X2-C-NA4G	X2 environmental data logger with North American 4G LTE cellular telemetry
X2-C-CATM	X2 environmental data logger with CAT-M1/NB2 4G LTE cellular telemetry
X2-I	X2 environmental data logger with Iridium satellite telemetry
X2-R-DG	X2 environmental data logger with 900 MHz radio telemetry
X2-R-DG24	X2 environmental data logger with 2.4 GHz radio telemetry
X2-RB-DG	X2 environmental data logger with 900 MHz radio base station
X2-RB-DG24	X2 environmental data logger with 2.4 GHz radio base station
X2-RC-DG-NA4G	X2 environmental data logger with 900 MHz radio to North American 4G LTE cellular telemetry
X2-RC-DG-CATM	X2 environmental data logger with 900 MHz radio to CAT-M1/NB2 4G LTE cellular telemetry



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