

Verdigris EV2 Energy Monitoring for Connected Commercial and Industrial Buildings

1. Virtualize asset energy data at the lowest cost
2. Flexibly integrate with native BACnet IP and Modbus TCP support
3. Access both measured and AI-enhanced data

KEY FEATURES

EV2 improvements over previous generation equipment include:



Native Ethernet support



Wider operating temperature range



Native 480V Delta support commonly seen in older, rural and industrial installations

Datapoints Available

Metered:

Energy
Voltage
Current
Power Factor
Apparent Power
Reactive Power
Voltage Total Harmonic Distortion
Current Waveform
Voltage Waveform

Cloud:

Energy
Power
Power Factor
Voltage Total Harmonic Distortion
Current
Voltage
Rate Schedules
End Uses
Relational Meter Hierarchy
Energy Consumption Forecasting
Weather

Equipment Specifications

Breaker Panel Types Served

EV2 advanced energy meters work with a range of electricity main switchboards, sub-panels, MCCs, and breaker boxes. The Energy Data Gateway mounts external to the monitored breaker panel, or on a nearby wall or junction box.

- Panel and voltage types (up to 42 circuits/panel):
 - Single-phase 100-277 V
 - Split-phase 100-277 V
 - Three-phase 120/208 V
 - Three-phase 240/416 V wye
 - Three-phase 277/480 V wye
 - Three-phase 120/240 V delta
 - Three-phase 480 V delta*
 - Three-phase 600 V wye**
 - Three-phase 600 V delta**
- * Unearthed
- ** Requires a power transformer and external power adapter
- Frequency: 50-60 Hz
- Current measurement range (Amperage): 0.25 A-15,000 A

Harmonic Parameters:

Synchronization frequency range: 50 Hz-60 Hz

Data Transmission

Data is transmitted securely via 4G LTE, WiFi, or Ethernet, stored on the cloud, and available 24/7 on any desktop web browser. Data also available through CSV export, API, and integration via BACnet IP or Modbus TCP.

- Frequency Characteristics: AC up to 8 kHz
- Precision: 10 mW
- Data Access via API: unlimited
- Historical data available:
 - 1-minutely
 - 15-minutely
 - Hourly
 - Daily

Energy Data Gateway

- Physical Size and Weight: 11 x 5 x 2.5 in [280 x 127 x 64 mm], 4.4 lbs [2 kg]
- Frequency Range: 50-60 Hz
- Voltage Range: 100-480 VAC CAT III*
 - * CAT III-rated instruments are primarily used on fixed installations, distribution boards, and circuit breakers and can withstand the specified voltage range.



- Current Rating: 300 mA
- Cable Max Voltage: 600 V
- Temperature Range: -40 °F-145 °F [-40 °C-63 °C]
- ADC Accuracy: 16-bit
- Power Supply: 100-480 Vac 50/60 Hz, 20 W
- Degree of Protection: IP30

Analog Inputs:

- Up to 42 current measurement channels
- 4 voltage measurement channels (100-480 Vac)

Current Transformers (CTs)

Verdigris offers two types of CTs: (1) Verdigris Smart CTs for sensor individual circuit breakers (< 60 A) in tight spaces and (2) High current hinged CTs or Rogowski Coils for larger amperage circuits. High Current CTs connect to the data chain using the Verdigris High Current CT Interface Module adapter.

	Verdigris Smart CT	Hinged CT	Coil CT	Verdigris High Current CT Interface Module
Max Circuit Ampacity	60 A per circuit	250 A	Up to 15,000A per circuit (custom sizes available)	
Minimum Load (Amperage or %)	0.25 A	0.5% of CT load	5 A	
Sensor Accuracy	±2%	0.5%	0.5%	
Physical Dimensions	2.2 x 1 x 1 in [56 x 25 x 25 mm]	Varies by amperage	Coil diameter is 0.61 in [15.5 mm]	2.4 x 2.4 x 1 in [60 x 60 x 25 mm]
CT Accuracy Range (% of rated current)	1%-100%	10%-120%	0%-100%	
Temperature	-40 °F-145 °F [-40 °C-63 °C]	5 °F-140 °F [-15 °C-60 °C]	-4 °F-158 °F [-20 °C-70 °C]	
Max Conductor Size	4 AWG [21.1mm ²]	1 in [25 mm] window for up to 900 kcmil or MCM [456 mm ²]	4 in [102 mm] or 7 in [178 mm] window	2.4 x 2.4 x 1 in [60 x 60 x 25 mm]

Data Transmission

- Ethernet: 100/1000 Mbps (RJ-45)
- 4G/LTE Cat 4 and LTE Cat-M1/NB-IoT*
- WiFi: 802.11 b/g/n
- Local Networks: BACnet/IP, Modbus/TCP

* For more additional cellular coverage information, please contact sales@verdigris.co

Safety Certificates

- UL 61010
- IEC 61010-1:2010
- CAN/CSA-C22.2 NO. 61010-1-12
- CAN/CSA-C22.2 NO. 61010-2-030-12

Wireless

- EN 61326-1:2013
- EN 55011:2009+A1:2010
- CISPR 11:2009+A1:2010
- FCC Part 15 Subpart B:2015
- ICES-003:2014
- SRRC CMIIT ID: 2017DJ1734

Environmental

- RoHS
- WEEE

Warranty

- 2 year standard*
- * extended options available

Accessories

- Instruction manual
- Data cables
- Mounting assembly
- Built-in wiring compartment (J-Box)