

# Cyberhawk 300™

## MULTI-PORT ENERGY & POWER QUALITY METER

Cyberhawk 300 is an advanced meter that provides an extensive array of energy, power and power quality measurements, along with comprehensive event logs of user-defined deviations. Configurations integrating up to three 3-phase ports in one meter are available to save space and cost. All models include an easy to use touchscreen display for simple meter setup and viewing of live data including waveforms.

## REAL-TIME MONITORING FOR IMPROVED SYSTEM RELIABILITY

- Comprehensive power and power quality parameters including THD, harmonic spectrum and waveforms
- Half cycle sags/swells, over/under voltage and loss of phase event logs with recorded time stamp showing duration, deviation and recovery time
- Integrated relay outputs can be triggered by recorded events for annunciation and control features such as remote shutdown of a breaker
- Track water, gas, steam and other building resources through pulse inputs
- Advanced error correction for superior accuracy when used with error-characterized CTs (also offered by Powersmiths)
- Up to four independent temperature inputs

## APPLICATIONS

- Analyze electrical system for root cause of equipment failure
- Monitor for conditions that can negatively impact equipment operating reliability
- Benchmark and trend building electrical performance
- Identify cost avoidance opportunities by load profiling
- Consolidate tracking of utilities (electricity, water, gas, etc.)
- Validate and enhance energy conservation measures
- Support ongoing commissioning and verification for high performance building certifications and frameworks
- Support education for sustainability programs



## CONNECTIVITY

Cyberhawk 300 is equipped with an RS-485 serial port supporting Modbus RTU. When equipped with the web-server option, the meter provides a dynamic browser-based user interface to access real-time data and short-term trends, enables third party systems to read required data from the meter over an Ethernet based network connection using Modbus TCP or optional BACnet/IP protocol, and allows for data push to the cloud-based Powersmiths WOW™ Sustainability Management Platform. Trend logs stored on the web-server can be downloaded via the network or a computer directly connected to the meter, allowing for further analysis.

## LOCAL DISPLAY

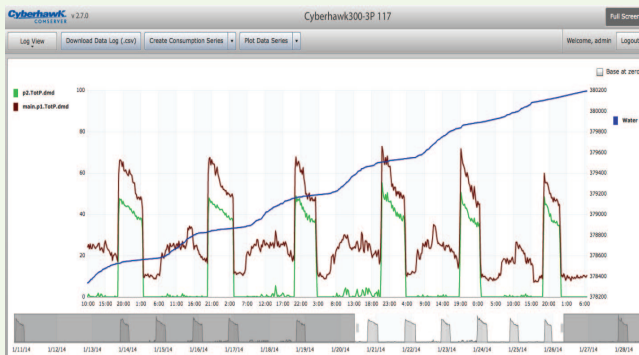
All models include an intuitive touchscreen display with context sensitive menus for ease of navigation.

## EASE OF INSTALLATION

Cyberhawk 300 comes pre-wired and packaged ready for conduit connection, including compression terminal block interfaces, fused voltage disconnects and ‘shorting’ CT terminal blocks. This avoids time, cost and safety approval issues related to field component assembly by providing a finished product that has been manufactured in an ISO 9001 certified facility and UL Listed to meet all safety requirements for the application.

## KEY FEATURES

- Track energy use, demand and comprehensive power quality
- Time stamped event logging (e.g. sags/swells and under/over voltage) showing duration, deviation and recovery time
- Event triggered relay outputs for annunciation and control
- Web-server option enables browser-based remote access to live data and trend logs, third party systems to read data, and data push to Powersmiths WOW™
- Simplifies on-going commissioning of building systems and equipment
- Packaged and UL Listed for safe, approved installation



Graphical data trends viewed via a standard web browser

## TECHNICAL INFORMATION

Cyberhawk 300 is built on Powersmiths' robust Cyberhawk PMP-30 Power Management Platform. This platform provides the backbone of the meter and enables vast analytic capabilities through its detailed power and power quality measurements and event logs.

Packaged in a NEMA 2 enclosure, Cyberhawk 300 is equipped with a menu-driven touchscreen display. The meter is directly powered by the 3-phase voltage sensing lines, eliminating the need for a separate feed and allows the unit to operate through poor power quality conditions - down to less than 50% voltage on any available phase and even momentary power interruptions.

Web-server versions of Cyberhawk 300 connected to a network can be quickly discovered and setup remotely using a free downloadable software tool. For security, the meter supports multiple level password protection. Cyberhawk 300 incorporates user settable event/alarm thresholds for magnitude, delay and action, as well as advanced error correction of gain and phase to minimize PT and CT error.

## CURRENT TRANSFORMERS (CTs)

Current sensing CTs are required for each phase and are selected based on the current rating and physical conductor dimensions. The accuracy of the CT has more of an impact on overall measurement accuracy than the meter itself, therefore, CTs must be properly selected for each application.

Note: CTs are not included with Cyberhawk 300 but can be ordered separately. CT error characterization is available for CTs purchased through Powersmiths. Cyberhawk Express and Cyberhawk 300™ are unique in their capability to incorporate this error data, enabling superior measurement accuracy.

## POWERSMITHS WOW™ CERTIFIED

Cyberhawk 300 has been tested and certified to be compatible with the cloud-based Powersmiths WOW Sustainability Management Platform to support education, analytics and GHG reporting. Note: Data push to Powersmiths WOW requires either the integrated web-server option (EM or EB model) or an external WOW COMserver™.

## ORDERING INFORMATION

### Cyberhawk - 300 - 3P - 600/480 - RS - S

Model Family	Metering Ports	Voltage	Connectivity			Option
	<b>1P:</b> 1 x 4W <b>2P:</b> 2 x 4W <b>3P:</b> 2 x 4W & 1 x 3W	<b>208/120*</b> <b>600/480</b> <small>*208/120 model should be used for single-phase 120/240V applications</small>	RS	EM	EB	S: SPD
			RS-485	✓	✓	Transient
			Modbus RTU	✓	✓	Currents
			Web-Server		✓	
			Modbus TCP		✓	
			Ethernet		✓	
			Web Accessible		✓	
			Trend Logs		✓	
			WOW Push		✓	
			BACnet/IP		✓	

Technical specifications subject to change without notice.

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## SYSTEM RATINGS:

208/120 Model: 120/208V 50/60Hz; 120/240V single-phase 50/60Hz  
 600/480 Model: 231/400V - 277/480V 50/60Hz; 347/600V 60Hz  
 Operating Range: 50% of nom.; 115% of max. 1 or 3-phase  
 Ride Through: > 200ms  
 Power Burden: < 13W

## METER PORT CONFIGURATIONS:

Port 1, 2, 3: 1-phase Single/Split  
 3-phase D (3-wire, 2-CT)  
 Port 1, 2: 3-phase Y (4-wire, 3-CT)  
 Correction Factors: ± 3% (PTs and CTs) ± 3° phase

## CT INPUTS:

5A nom. 10A max, Crest Factor < 3, Burden < 1VA

## MEASUREMENTS & ACCURACIES:

Accuracy: < 0.2% typical (V & I), 0.5% Power/Energy

## PROTECTION & CONNECTIONS:

Fused disconnects, Shorting CT terminal blocks

## PHYSICAL:

Size: 24"H x 16"W x 8"D; 47 lbs weight  
 Mounting: Wall (bracket included)  
 Enclosure: NEMA 2  
 Temperature: -10°C to +40°C

## MEMORY TYPES:

Energy: Non-Volatile Ferro-electric  
 User Settings: Non-Volatile Ferro-electric  
 Event Logs: Non-Volatile Ferro-electric  
 Firmware: Flash (field reflashable)

## ANALOG INPUTS:

Temperature: 4 x Type A Thermistor inputs (1 ambient sensor included)

## DIGITAL INPUTS:

Inputs: 2 x self-biased 24V, 13mA max.  
 WET Input: 24VDC max.

## RELAY OUTPUTS:

Contacts: 2 x SPDT; 5A @ 250VAC

## EVENTS & ALARMS:

Parameters: > 15/meter port  
 Set Points: > 90/meter port  
 Settings: <, >, delays, action

## COMMUNICATION INTERFACES:

RS-485: half-duplex, 240VAC isolated, 19.2kb  
 Ethernet: 10/100 BaseT (EM and EB models)  
 IP Addressing: Static or DHCP client (EM and EB models)

## COMMUNICATION PROTOCOLS:

Modbus RTU  
 Modbus TCP (EM and EB models)  
 BACnet/IP (EB model)  
 TCP/IP, HTTP (EM and EB models)  
 WOW XML Push (EM and EB models)

## USER INTERFACES:

Browser-based access via IP (Requires Adobe® Flash® plugin, EM and EB models)  
 Setup: Software (Windows XP or later) or local display  
 Access Restriction: 2-level password  
 Display: 1/4 VGA monochrome touchscreen

## WEB-SERVER TREND LOGS: (EM and EB models)

Parameters: Up to 200  
 Log Intervals: 1 - 60 min  
 Typical Log Period: 40 days for 6 parameters logged at 15 min  
 Unlimited remote logging when connected to Powersmiths WOW™

## PRODUCT CERTIFICATIONS:

UL/cUL Listed to Category FTRZ (UL916)  
 EMI Class A: Part 15 FCC (USA) & ICES-003 (Canada)  
 Certified compatible for data push to Powersmiths WOW™

## WARRANTY:

5 year limited

## ACCESSORIES:

External CTs: 5A output; Refer to CT Selection Guide  
 Voltage Interface: 15A fused disconnect  
 CT Interface: 5A CT shunting blocks  
 Temperature Sensors: Ambient or Liquid, -40°C to 105°C  
 Coil, -40°C to 220°C

## MANUFACTURER'S STANDARDS COMPLIANCE:

ISO 9001, Quality Management System  
 ISO 14001, Environmental Management System  
 ISO 17025, CSA Certified Efficiency Test Lab