

# POWERSCOUT™ 24 HD

## NETWORKED MULTI-CIRCUIT METERING

REVENUE GRADE INSTRUMENTS FOR SUPERIOR ENERGY MEASUREMENT



24  
channels



### MAXIMUM FLEXIBILITY FOR MONITORING

The PowerScout 24 HD is a versatile, multi-channel instrument. The flexible design allows it to be configured for monitoring multiple electrical circuits. Designed specifically for applications where 12 channels are not enough, but 48 channels are overkill, the just-right PowerScout 24 HD can be supplied with any of DENT's internally-shunted, 333 mV output split-core or RōCoil CTs. Monitor any combination of up to 8 three-phase or 24 single-phase electrical devices with a single meter. With data updates every 1 second and ANSI C12.20-2010 Class 0.2 revenue grade accuracy (depending on CT), the PowerScout 24 HD is well-suited for data center monitoring, tenant submetering, and for accountability metering in commercial, retail, and industrial facilities.

### INDUSTRY-STANDARD MODBUS OR BACNET

The PowerScout 24 HD supports both Modbus (based on SunSpec IEEE-754) and BACnet communications protocols. Communications interface can be accomplished through standard serial RS-485 or Ethernet using either Modbus, BACnet MS/TP, Modbus TCP, or BACnet IP protocols. Additionally, the PowerScout 24 HD features two pulse inputs.

### EASY INSTALLATION

Every PowerScout is line powered and designed to operate on any voltage from 90-600VAC. The PowerScout 24 HD is equipped with two independent voltage inputs, allowing for the monitoring of customer-derived voltage networks. Modbus & BACnet protocols are field-selectable and any combination of split-core or flexible RōCoil CTs can be used. Configure the meter prior to installation using the ViewPoint HD software utility and a direct USB connection or by using the built-in web server. Eliminate expensive trips back into the field: patented\* PhaseChek™ ensures proper CT-to-phase installation the first time.

\*U.S. Patent and Trademark Office Patent No. 7,612,552



### APPLICATIONS

- Data Centers
- Tenant Submetering
- Bi-Directional Metering
- Real-Time Power Monitoring in Commercial, Retail, and Industrial environments

### FEATURES

- 24 channels: Multi-circuit submeter monitors voltage, current, power, energy, and many other electrical parameters on any combination of single and/or three-phase systems
- Two independent voltage inputs allow the PowerScout HD meter to be used on two systems simultaneously
- Line-Powered: 90-600V Phase-to-Phase Power Supply
- Revenue grade. ANSI C12.20-2010 Class 0.2
- Available with UL 94-V0 enclosure or as a circuit board on a mounting plate that helps facilitate easy, safe installation
- Safest installation ever: TouchSaf™ High-Voltage Cover offers additional level of protection
- The PowerScout HD uses both BACnet or Modbus protocol and features 2 digital pulse input ports. All models feature both serial and Ethernet.
- Floating Point: IEEE-754 data format allows for bidirectional monitoring and eliminates scaling factors
- Mix-and-match a full range of Split Core or RōCoil™ Rogowski-style CTs, including several revenue-grade options
- Display shows real-time information about the meter configuration and metered data
- PhaseChek™ confirms proper CT orientation
- UL Listed (enclosure version) or UL Recognized (plate and circuit board only version)
- CE Mark



# POWERSCOUT™ 24 HD

## KEY HARDWARE/SOFTWARE FEATURES

### EASY DEPLOYMENT

Setting the PowerScout HD up for a new deployment has never been easier thanks to two features:

#### Network Scan

Using ViewPoint HD Software, you can now quickly scan the local area network and find all the PowerScout HD meters installed on the network. The results page shows each meter's system description and even allows for some basic meter setup directly from the scan window. Use ViewPoint HD to give each meter a "friendly" name, such as "3rd Floor Utility Rm," to identify the right meter even faster.

#### Pre-Configuration

Maybe you have several meters that need to be configured the same way. Or, maybe you don't have the meter in your possession, but need to configure it ahead of time for an installer. It is now possible to build a meter configuration file without having a meter connected. This is especially helpful for teams who handle configuration and installation in two separate steps.

### INTERVAL DATA RECORDING & RTC

The PowerScout HD Series features interval data recording of kWh. The meter's non-volatile memory stores up to 63 days of 15-minute kWh data that can be downloaded in the event of lost communication with the RTU. The CSV data file can be quickly downloaded through a direct USB or Ethernet connection using ViewPoint HD software and can be used to backfill any missing data. Interval Data Recording works automatically in the background - no configuration necessary.

In addition, the PowerScout HD Series has a capacitor-backed real-time clock (RTC) to ensure an accurate time stamp on all recorded data records. Unlike other systems, there is no battery to change and the capacitor retains calendar time for up to 1 week. The clock can be synchronized with the PC clock during meter setup.



### PULSE INPUTS

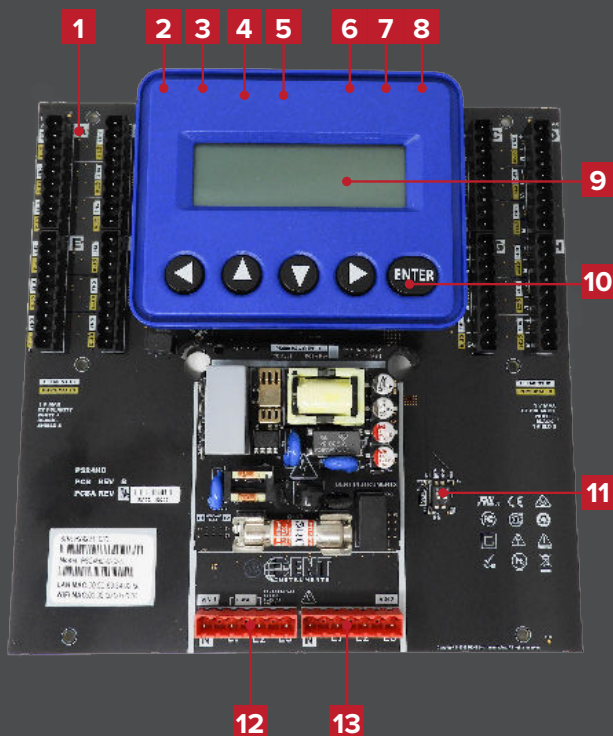
PowerScout 24 HD meters are equipped with two pulse inputs. Correlate the consumption of a variety of systems using the standard dry contact pulse inputs. Configure each of the input channels independently with customizable units of measure (i.e., gallons) within ViewPoint HD Software. The PowerScout HD pulse inputs are compatible with "low speed" meters.

### PHASE LOSS ALARM

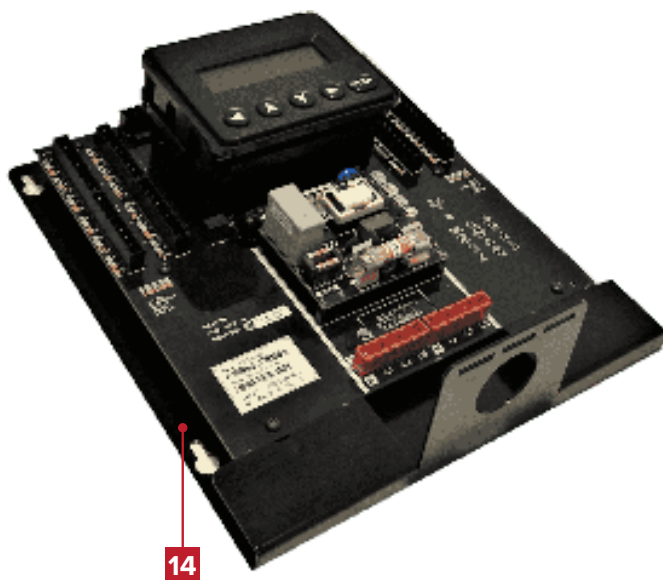
The PowerScout HD power meter has the ability to set alarms on any meter channel. Alarms can be set through ViewPoint HD software to be triggered by under voltage events. The persistence setting is also adjustable within the software to allow start-up on transients.

# POWERSCOUT™ 24 HD

## ANATOMY



1. CT Connections (x24)
2. Pulse Input 1
3. Pulse Input 2
4. Ethernet
5. USB
6. 12V Out (2W)
7. RS-485
8. Phase Loss Alarm
9. Display
10. Navigation Buttons
11. Seal Switch (CW&M option only)
12. Voltage Input 1
13. Voltage Input 2
14. Mounting Plate (Optional)
15. 1" EMT Conduit Connection (x6)
16. ABS Plastic Enclosure



Detailed information about the PowerScout HD meter hardware and ViewPoint HD Software can be found in the Operator's Guide.

# POWERSCOUT™ 24 HD SPECIFICATIONS

## TECHNICAL

|                       |                                                                                                                                                                                                                                                                                                                      |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SERVICE TYPE          | Single Phase, Split Phase, Three Phase-Four Wire (WYE), Three Phase-Three Wire (Delta)                                                                                                                                                                                                                               |
| POWER                 | From L1 Phase to L2 Phase. 90-600VAC RMS CAT III 50/60Hz, 500mA AC Max. Use of 12 volt auxiliary output requires 100 VAC minimum input voltage.                                                                                                                                                                      |
| AC PROTECTION         | 0.5A Fuse 200kA interrupt capacity                                                                                                                                                                                                                                                                                   |
| POWER OUT             | Unregulated 12VDC output, 200 mA, self-resetting fuse.                                                                                                                                                                                                                                                               |
| VOLTAGE CHANNELS      | 90-346 Volts AC Line-to-Neutral, 600V Line-to-Line, CAT III. Two voltage reference inputs.                                                                                                                                                                                                                           |
| CURRENT CHANNELS      | 24 channels, 0.525 VAC max, 333 mV CTs, 0-4,000 Amps depending on CT                                                                                                                                                                                                                                                 |
| MAXIMUM CURRENT INPUT | 150% of current transducer rating (mV CTs) to maintain accuracy. Measure up to 4000A with RøCoil CTs                                                                                                                                                                                                                 |
| MEASUREMENT TYPE      | True RMS using high-speed digital signal processing (DSP) with continuous sampling                                                                                                                                                                                                                                   |
| LINE FREQUENCY        | 50/60 Hz (45-70 Hz measurable range). Measurement taken L1-N.                                                                                                                                                                                                                                                        |
| WAVEFORM SAMPLING     | 1.8 kHz                                                                                                                                                                                                                                                                                                              |
| PARAMETER UPDATE RATE | 1 second                                                                                                                                                                                                                                                                                                             |
| MEASUREMENTS          | Volts, Amps, kW, kVAR, kVA, aPF, dPF, kW demand, kVA demand, Import (Received) kWh, Export (Delivered) kWh, Net kWh, Import (Received) kVAh, Export (Delivered) kVAh, Net kVAh, Import (Received) kVARh, Export (Delivered) kVARh, Net kVARh, THD, Theta, Frequency. All parameters for each phase and element total |
| ACCURACY              | 0.2% ANSI C12.20-2010 Class 0.2                                                                                                                                                                                                                                                                                      |
| RESOLUTION            | Values in IEEE-754 single precision floating point format (32 bit).                                                                                                                                                                                                                                                  |
| DISPLAY               | 4-line display, tri-color backlight (PhaseChek™)                                                                                                                                                                                                                                                                     |
| ALARM OUTPUT          | Under Voltage (open collector - 30 VDC Max.)                                                                                                                                                                                                                                                                         |
| PULSE INPUTS**        | Two inputs. 3.3V sourcing voltage (current limited) to customer dry contact pulse output. Max pulse rate 10 Hz (50 mSec minimum transition time).                                                                                                                                                                    |

## COMMUNICATIONS

|                           |                                                         |
|---------------------------|---------------------------------------------------------|
| HARDWARE                  | RS-485, Ethernet, and USB (for configuration only)      |
| SUPPORTED PROTOCOLS       | Modbus RTU, BACnet MS/TP, Modbus TCP or BACnet IP       |
| MAX COMMUNICATION LENGTH  | 1200 meters with Data Range of 100K bits/second or less |
| COMMUNICATION RATE (BAUD) | 9600 (Default), 19200, 38400, 57600, 76800, 115200      |
| DATA BITS                 | 8                                                       |
| PARITY                    | None, Even, Odd                                         |
| STOP BIT                  | 2, 1                                                    |
| TERMINATION               | None provided                                           |

## MECHANICAL

|                              |                                                                                 |
|------------------------------|---------------------------------------------------------------------------------|
| WIRE CONNECTIONS             | 12-28 AWG 600 VAC, Voltage connection must be #14 AWG or larger & 600 VAC rated |
| MOUNTING                     | Panel Mount/Enclosure                                                           |
| TOUCHSĀF™ HIGH VOLTAGE COVER | IP30. Available with PS24 Enclosure & Plate Models                              |
| OPERATING TEMPERATURE*       | -20° to 60°C (-4° to 140°F)**                                                   |
| HUMIDITY                     | 5% to 95% non-condensing                                                        |
| ENCLOSURE                    | ABS Plastic, 94-V0 flammability rating. Connections: 1" EMT conduit             |
| ENCLOSURE DIMENSIONS         | (L) 33.7cm x (W) 25.1cm x (H) 8.0 cm (13.3" x 9.8" x 3.1")                      |
| MOUNTING PLATE DIMENSIONS    | (L) 26.2cm x (W) 24.1cm x (H) 8.0 cm (10.3" x 9.5" x 3.1")                      |
| PCBA DIMENSIONS              | (L) 21.6cm x (W) 21.6cm x (H) 6.4 cm (8.5" x 8.5" x 2.5")                       |

## CERTIFICATIONS

|                         |                                                                                                                                                          |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| UL RECOGNIZED (E186827) | Applies to mounting plate and circuit board only version<br>Conforms to UL Std 61010-1 3rd Edition<br>Certified to CSA Std C22.2 No. 61010-1 3rd Edition |
| UL LISTED (E186827)     | Applies to indoor enclosure version<br>Conforms to UL Std 61010-1 3rd Edition<br>Certified to CSA Std C22.2 No. 61010-1 3rd Edition                      |
| CE                      | LVD (EN61010-1), EMC (EN61326-1), RoHS 2 (EN50581)                                                                                                       |
| ANSI C12.20 CLASS 0.2   | NIST Traceable Calibration                                                                                                                               |

## VIEWPOINT HD SOFTWARE

|                  |                                                       |
|------------------|-------------------------------------------------------|
| OPERATING SYSTEM | Windows® 11, Windows® 10, Windows® 8, Windows® 7      |
| COMMUNICATIONS   | USB & Ethernet standard. One USB Port required on PC. |
| SECURITY         | 2 levels of PIN protection (Read/Write or Read-Only)  |

## ORDERING PART NUMBERS

|                |                                                               |
|----------------|---------------------------------------------------------------|
| PS24HD-C-D-N   | POWERSCOUT 24 HD, WITH ENCLOSURE + DISPLAY                    |
| PS24HD-C-N-N   | POWERSCOUT 24 HD, WITH ENCLOSURE, NO DISPLAY                  |
| PS24HD-P-D-N   | POWERSCOUT 24 HD, MOUNTING PLATE + DISPLAY                    |
| PS24HD-P-N-N   | POWERSCOUT 24 HD, MOUNTING PLATE, NO DISPLAY                  |
| PS24HD-C-D-N-C | POWERSCOUT 24 HD, WITH ENCLOSURE + DISPLAY, CW&M OPTION       |
| PS24HD-P-D-N-C | POWERSCOUT 24 HD, MOUNTING PLATE + DISPLAY, CW&M OPTION       |
| PS24HD-C-D-N-D | POWERSCOUT 24 HD, WITH ENCLOSURE + DISPLAY, DENTCloud Enabled |

\*At -20°C, LCD display could be illegible. Meter voltage @ -20°C must exceed 100 VAC to power the meter.

\*\*Colder temperatures require higher voltage to power the meter.

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