OpenWay®

CENTRON® Polyphase

The OpenWay system delivers the first truly smart meter for the commercial mass market. Itron engineers have built upon our proven CENTRON solid-state platform to deliver an advanced meter that provides an open-standards architecture, modular design for flexibility in communications, and extensive features and functionality to support the most demanding smart grid and advanced metering infrastructure (AMI) business requirements both of today and well into the future.

The OpenWay CENTRON system provides enhanced security and a reliable approach to data collection and communications with the meter and the network. Storage and transport of register data are provided through ANSI C12.19 and C12.22 open standards technology. In addition, each OpenWay CENTRON Polyphase meter comes factory-equipped with a ZigBee® radio to provide a built-in communications pathway to the customer premise for data presentation, load control and demand response.

The OpenWay CENTRON Polyphase meter also provides robust data storage capability to support time-of-use (TOU) pricing, load profile data and other data-intensive applications, as well as the most advanced feature set available to support smart grid requirements. These features include full two-way communication, positive outage detection and restoration notification, voltage monitoring, automatic tamper and theft detection, as well as the ability to reprogram the meter remotely and upload new firmware via the network.

The OpenWay CENTRON Polyphase meter is the smart meter for the smart grid.

FEATURES

Time-of-Use and Critical Peak Pricing

- The CP1SO supports four TOU rates as well as critical peak pricing (CPP)
- TOU registers may be displayed on the meter's display

Load Profile

- Four channels of load profile intervals are available in the following default parameters:
  - (1) single channel
    15 minute data 370 days
  - (2) two channels
    60 minute data 1011 days
  - (3) three channels
    15 minute data 189 days
  - (4) four channels
    60 minute data 606 days
- Parameters can be modified via downloadable configuration
- Programmable interval lengths of 5, 10, 15, 30 and 60 minutes

OpenWay RFLAN Module

- Two-way, unlicensed RF module
- Adaptive-tree RFLAN architecture provides easy installation and self-healing capabilities

Home Area Network (HAN)

- Every OpenWay CENTRON Polyphase meter includes a ZigBee radio for interfacing with the HAN and load control devices
- The CP1SO can store consumption from 2.4 GHz OpenWay Gas Modules utilizing the ZigBee radio

Bi-Directional Metering

- OpenWay CENTRON Polyphase measures and displays active energy delivered, received, net, or uni-directional registers

Tamper Detection

- Tamper indications can be communicated regularly through the OpenWay system
- Indicators include meter inversion, meter removal, unauthorized network access attempt and outage notification
- SiteScan Diagnostics (Advanced Register Only)

Voltage Monitoring

- Configured to store Vh data for average voltage measurement
- Supports average voltage data (line to line or line to neutral) up to three phases, dependant on the meter form
- Monitoring of instantaneous voltage during each interval

Standard Features

- Electronic LCD display
- Polycarbonate cover
- Optical tower
- Normal and Test Annunciator
- Service-sensing
- Phase indicators

Register Capabilities

- Basic Register: (4 Energies, 1 Demand)
  - Wh (delivered, received, net, uni-directional)
  - VAh (delivered arithmetic, received arithmetic, Lag)
  - W (max delivered, max received, max net, max uni-directional)
- Advanced Register (4 Energies, 3 Demand) allows all basic register functionality with the following additions:
  - Varh (Q1, Q4, Del, Rec, Net)
  - kVARh (Q1, Q4, Del, Rec, Net)
  - PF (minimum, average, instantaneous)
  - 5 Energies available in the Canadian market only
- Additional Registers include Max W Delivered, Max VA Delivered Arith, Max VA Lag, Average Power Factor (arithmetic), VA Arith d @ max W d, PF Arith @ max W d, W d @ min PF Arith, VA Arith d @ min PF Arith
- All programming, register, TOU and load profile data are stored in the EEPROM during a power outage. Battery maintains the clock circuitry during a power outage
- Configurable event log

Option Availability

- 2KYZ, 1KY output board
- Option slot for additional communications options

Technical Data

Meets applicable standards:

- ANSI C12.1 - 2008 (American National Standard for Electric Meters - Code for Electricity Metering)
- ANSI C12.18 - 1996 (American National Standard - Protocol Specification for ANSI Type 2 Optical Port)
- ANSI C12.19 - 2008 (American National Standard - Utility Industry End Device Data Tables)
- ANSI C12.20 - 2002 for Hardware 2.0 and 3.0 (American National Standard for Electricity Meters - 0.2 and 0.5 Accuracy Classes)
- ANSI C12.20 - 2010 for Hardware 3.1 (American National Standard for Electricity Meters - 0.2 and 0.5 Accuracy Classes)
- ANSI C12.22
- ANSI/IEEE C62.41.1-2002 (Characterization of surges on Low-Voltage AC Power Circuits)
- ANSI/IEEE C62.41.2-2002 (Characterization of surges on Low-Voltage AC Power Circuits)
- IEC 61000-4-2
- IEC 61000-4-4

Reference Information

- OpenWay CENTRON Polyphase Technical Reference Guide
- Hardware Specification Form

SPECIFICATIONS

Product Availability

Metrology	Class	Elements	Wires	Voltage Amps	Test
1S[1]	100	1	2	120-480	15
2S[1]	200	1.5	3	120-480	30
2S[1]	320	1.5	3	120-480	50
3S[1]	20	1	2	120-480	2.5
4S[1]	20	2	3	120-480	2.5
9S (8S)	20	3	4	120-480	2.5
9S (8S)/36S	20	3	4/3	120-480	2.5
45S/5S	20	2.5	3	120-480	2.5
12S	200	2	3	120-480	30
12S	320	2	3	120-480	50
16S (14S, 15S, 17S)	200	3	4	120-480	30
16S (14S, 15S, 17S)	320	3	4	120-480	50

[1]These meter forms are only available in Hardware 3.0

Specifications

Power Requirements	Voltage rating: 120-480 V Frequency: 60 Hz, (50 Hz) Operating voltage: + 20% (60Hz); ± 10% (50 Hz) Operating range: ± 3 Hz Battery voltage: 3.6 V nominal Battery operating range: 3.4 V-3.8 V
Operating Environment	Temperature: -40° to +85°C Humidity: 0% to 95% non-condensing
Transient / Surge Suppression	IEC 61000-4-4-2004-07 ANSI C62.45-2002
Accuracy	ANSI C12.20 0.2 accuracy class
General	Demand interval lengths: Selectable from 5, 6, 10, 12, 15, 20, 30 or 60 min. Demand calculation: Block, sliding, thermal
Energy calculation	Basic: KWh (del, rec, net, uni), kVAh (del/rec/net) Advanced: KWh (del, rec, net, uni), kVAh (del, rec, net), kVARh (Q1, Q4, del, rec, net)
Time	Line sync: Power line frequency or Internal Crystal Crystal sync: +0.01% @ 25°C; +0.025% over full temperature range
Display	Nine-digit liquid crystal display Six-digit data height: 0.4" Annunciator height: 0.088" Display duration: 1-15 seconds Three-digit code number height: 0.24" 3-segment electronic

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