OpenWay®
CENTRON® Polyphase

Introduction

OpenWay CENTRON Polyphase Meter
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 Polyphase meter is fully compliant with the ANSI C12.19 and C12.22 standards for storage and transport of register data over a network, providing a secure, open-standards approach to data collection and communications with the meter. In addition, each OpenWay CENTRON Polyphase meter comes factory-equipped with a ZigBee® radio chip 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 for 370 days
  2. Two channels: 60 minute data for 1011 days
  3. Three channels: 15 minute data for 189 days
  4. Four channels: 60 minute data for 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, delivered, received, net)
  kVARh (Q1, Q4, Del, Rec, Net)
  PF (Minimum, average, instantaneous)
  Additional Registers include Max W Delivered, Max VA Delivered Arith, Max VA Lag, Average Power Factor (arithmic), 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
- 2KY, 1KY output board
- Option slot for additional communications options
Features

Technical Data

Meets applicable standards:
> ANSI C12.20 - 2002 (American National Standard for Electricity Meters - 0.2 and 0.5 Accuracy Classes)
> ANSI C12.22 - (consult ANSI electricity metering protocol standards, balloted version)
> IEC 61000-4-2
> IEC 61000-4-4

Reference Information
> OpenWay CENTRON Polyphase Technical Reference Guide
> Hardware Specification Form

Specifications

Product Availability

<table>
<thead>
<tr>
<th>Metrology</th>
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<th>Voltage</th>
<th>Test Amps</th>
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</table>

1 These meter forms are only available in Hardware 3.0

Specifications

Power Requirements

| Voltage rating: 120-480 V |
| Operating voltage: + 20% (60Hz); ± 10% (50Hz) |
| Battery voltage: 3.6V nominal |
| Frequency: 60 Hz, (50 Hz) |
| Operating range: ± 3 Hz |
| Battery operating range: 3.4V-3.8V |
| Carryover: 12-year continuous usage or 20-year shelf life |

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), kVArh (del, rec, net, uni)
Advanced: KWh (del, rec, net, uni), kVArh (del, rec, net, uni)

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
Annunciator height: 0.088”
Six-digit data height: 0.4”
Display duration: 1-15 seconds
Three-digit code number height: 0.24” 3-segment electronic
About Itron Inc.

At Itron, we’re dedicated to delivering end-to-end smart grid and smart distribution solutions to electric, gas and water utilities around the globe. Our company is the world’s leading provider of smart metering, data collection and utility software systems, with nearly 8,000 utilities worldwide relying on our technology to optimize the delivery and use of energy and water. Our offerings include electricity, gas, water and heat meters; network communication technology; collection systems and related software applications; and professional services. To realize your smarter energy and water future, start here: www.itron.com

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