OpenWay®

CENTRON® Meter

The OpenWay system delivers a truly smart meter for the residential mass market. Itron engineers have built upon our proven CENTRON solid-state platform to deliver an advanced meter that provides a cornerstone technology for the smart grid.

Featuring open-standards architecture, modular design for flexibility in communications, and extensive features and functionality, the OpenWay CENTRON supports the most demanding smart grid business requirements today and well into the future.

A key component of any advanced metering or smart grid initiative, the OpenWay CENTRON meter is a truly smart device used to collect, process and transmit vital energy information to utility systems. Rather than simply inserting a network communication card into a standard meter, Itron developed an advanced meter where calculations and usage data are calculated within the meter itself, allowing utilities to leverage time-based rates, demand response, home networking and many other smart grid applications.

The OpenWay CENTRON system provides enhanced security and a reliable approach to data collection and communications between 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 meter comes factory-equipped with a ZigBee® radio to provide a built-in communications pathway into the home for data presentation, load control and demand response. ZigBee also provides a communication channel with 2.4GZ OpenWay Gas Modules.

The OpenWay CENTRON also provides robust data storage capability to support time-of-use 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, a load-limiting remote disconnect and reconnect switch, 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 meter is the smart meter for the smart grid.

SPECIFICATIONS

FEATURES

Time-of-Use and Critical Peak Pricing

- The OpenWay CENTRON supports four TOU rates as well as CPP
- TOU registers may be displayed on the meter's display

Load Profile

- Four channels of configurable load profile data are available in the following default parameters: (1) single channel 30-minute data 753 days; (2) two channels 30-minute data 501 days
- Modified parameters are available via configuration download
- The OpenWay CENTRON module provides over one year of 15-minute load profile data storage

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 meter includes a ZigBee radio for interfacing with the HAN, in-home displays and load control devices
- The OpenWay CENTRON can store consumption from 2.4GZ OpenWay gas modules utilizing the ZigBee radio

Bi-Directional Metering

- The OpenWay CENTRON measures and displays active energy (kWh) delivered, received, uni-directional and/or net or apparent energy (kVAh) delivered and/or received

Disconnect/Reconnect with Load Limiting

- The OpenWay CENTRON forms 1S, 2S, 12S network, and 25S is available with a 200 amp remote disconnect/reconnect switch as an optional feature. The switch can be operated on demand, or automatically as part of a service-limiting configuration

Tamper Detection

- Tamper indications can be communicated regularly through the OpenWay system
- Tampers include: inversion, removal and reverse power flow
- SiteScan Diagnostics (advanced polyphase register only)

Non-Volatile Memory

- All programming, register, TOU and load profile data are stored in the EEPROM during a power outage. A battery maintains just the clock circuitry during a power outage

Voltage Monitoring

- Instantaneous voltage
- Voltage monitoring system

Standard Features

- Electronic LCD display
- Polycarbonate cover
- Optical tower
- Test LED

Register Capabilities

- 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)
- Configurable event log
- 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

Option Availability

- Identification/accounting aids
- Remote disconnect/reconnect
- Multiple WAN options including GPRS and CDMA
- 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 - 2008 (consult Section 9 of the standard)
- 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
- UL2735 for Hardware 3.1

Reference Information

- OpenWay CENTRON Technical Reference Guide
- Hardware Specification Form

SPECIFICATIONS

Specifications

Power Requirements	Voltage Rating: 120 V, 240 V Operating Voltage: ± 20% (60Hz) Battery Voltage: 3.6 V nominal	Frequency: 60Hz Operating Range: ± 3 Hz Battery Operating Range: 3.6 V nominal; 3.4 V - 3.8 V
Operating Environment	Temperature: -40° to +85°C	Humidity: 0% to 95% non-condensing
Transient / Surge Suppression	IEC 61000-4-4-2004-0ANSI C62.45-2002	
Accuracy	ANSI C12.20 0.5 accuracy class	
General	Demand interval lengths: Demand calculation: Peak	Programmable: 5, 6, 10, 12, 15, 20, 30 and 60 min. Energy calculation: Basic: Wh and VAh
Time	Line sync: Power line frequency Battery: +0.005%@25°C; +0.005% to -0.02% over full temperature range	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 load indicator
Characteristic Data	Starting Current: 20 mA (Class 200), 5 mA (Class 20)	
Register Burden	0.66W	

	Form	Watt Loss	VA Loss	Test Voltage
Burden Data (C2S0D) (United States)	1S	2.796	6.759	120
	2S	3.773	12.357	240
	3S	2.123	7.068	120
	3S	2.350	14.255	240
	4S	2.535	14.619	240
	12S	2.861	6.751	120

	Form	Watt Loss	VA Loss	Test Voltage
Burden Data (C2S0D) (Canada)	1S	2.686	6.999	120
	2S	3.203	11.89	240
	3S	2.123	7.068	120
	3S	2.350	14.255	240
	4S	2.535	14.619	240
	12S	2.831	7.393	120

Service Switch (Optional)	200A; can be programmed as service (load) limiting Service Switch is available in Forms 1S, 2S, and 12S/25S
Modules	Standard OpenWay Register
Additional Base Functionality	Cell Relay (available in Form 2S only)

Product Availability

Volts / Service	Meter Class	Test Amps	Kh (Pulse/Wh)	Meter Form	Register Descriptions
120 V	200	30	1.0	1S	OpenWay RF with or without Disconnect
240 V	200	30	1.0	2S	OpenWay RF with or without Disconnect
240 V	320	50	1.0	2S	OpenWay RF
120 V	20	2.5	1.0	3S	OpenWay RF
240 V	20	2.5	1.0	3S	OpenWay RF
240 V	20	2.5	1.0	4S	OpenWay RF
120 V	200	30	1.0	12S/25S	OpenWay RF with or without Disconnect

SPECIFICATIONS

Dimensions

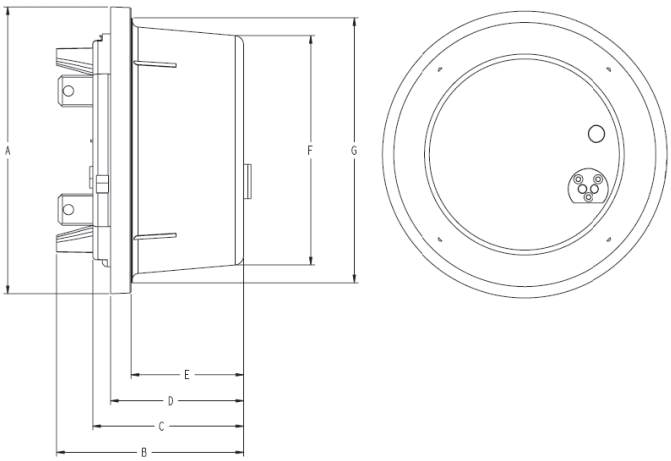
C2S0/C2S0D - Forms 1S, 2S and 12S						
A	B	C	D	E	F	G
6.95"	5.27"	4.37"	3.97"	3.47"	5.68"	6.30"
17.66 cm	13.39 cm	11.10 cm	10.08 cm	8.82 cm	14.43 cm	16 cm

C2S0/C2S0D - Forms 3S and 4S						
A	B	C	D	E	F	G
6.95"	4.56"	3.66"	3.23"	2.73"	5.56"	6.42"
17.66 cm	11.59 cm	9.30 cm	8.21 cm	6.94 cm	14.13 cm	16.31 cm

Shipping Weights

Polycarbonate C2S0/C2S0D		
	Pounds	Kilograms
4 Meter Cartons	11 lbs	5 kg
96 Meter Pallets	280 lbs	127 kg

C2S0/C2S0D Dimensions



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