OpenWay® Riva™ CENTRON® Polyphase Meter

The OpenWay Riva CENTRON Polyphase electricity meter combines robust smart metering functionality with new, high-performance communications capabilities and a distributed intelligence platform to deliver differentiating capabilities and new approaches to meter-to-grid applications.

In addition to providing full smart meter functionality, the OpenWay Riva CENTRON Polyphase meter takes advantage of the latest developments in software-defined communications and affordable computing power to provide a robust distributed intelligence platform that is capable of processing and analyzing data at the edge to manage changing grid conditions in real time. These capabilities enable the OpenWay Riva CENTRON Polyphase meter, as part of the OpenWay solution, to become a platform for an entirely new portfolio of distributed applications that deliver significant improvements in areas such as outage detection and analysis, theft detection, transformer load management, demand response and detection of unsafe grid conditions.

The OpenWay Riva CENTRON Polyphase meter also provides a revolutionary new approach to meter and grid communications. With the meter's OpenWay Riva Adaptive Communications Technology, utilities can deploy a high-performance, IoT-ready communications solution that lowers costs and simplifies deployment by reducing the amount of infrastructure required to connect devices while delivering improved communications performance and reliability.

OpenWay Riva does this through its unique ability to combine multiple communications – RF mesh, powerline carrier and Wi-Fi – in the same OpenWay Riva CENTRON Polyphase meter, or in any grid device for that matter. This enables dynamic and continuous selection of the optimal communications path, and the most appropriate frequency modulation at every link in the network to ensure the fastest and most reliable path back to the utility. No other smart meter can intelligently and continuously optimize its communication links in this way.

From dense urban centers filled with high rises to isolated rural farmlands, the OpenWay Riva CENTRON Polyphase meter provides advanced metering capability with a single, unified communication technology for all types of service environments that delivers assured connectivity at the highest possible speed. Equipped with powerful microprocessors as well as an embedded Linux operating system, the OpenWay Riva CENTRON Polyphase meter gives utilities the ability to create a highly flexible and programmable metering platform that is adaptable, secure and ready for the future.

SPECIFICATIONS

FEATURES AND BENEFITS

Flexible Two-Way Communications

- Execute all supported meter reading, configuration update and firmware download functionality
- Customize targeted meter firmware updates
- Support on-demand readings from the meter

Upgradable Firmware

- Customize firmware upgrades with the ability to automatically roll-back if activation fails
- Create multiple firmware images including primary and pending

Bi-Directional Metering

- Store received and delivered data metrics in the meter
- Support customers who own renewable energy facilities or participate in vehicle to grid systems with real-time data being sent back to the utility

Energy Quantities

- Wh Delivered, Received, Net and Uni-Direction
- VARh Delivered and Received
- VARh Q1-Q4
- VAh Delivered, Received and Net

Demand Measurements

- Max Watts Delivered, Received
- Max VA Delivered, Received
- Max VAR Delivered, Received
- Max VAR Q1, Q2, Q3, Q4
- Min Power Factor

Automated Meter Reading

- Receive and transmit meter billing data including interval data, register reads
- Transmit recorded events and exceptions with each interval to the head-end software, which interprets them and logs appropriate messages (such as time adjustments)

Real-Time Meter Event and Alarm Retrieval

- Automated alarms received by the head-end system via e-mail to a specific user or group of users

Tamper Detection

- Detect and report exceptions for events such as magnetic fraud attacks
- Communicate tamper indications in real time through the OpenWay system

Option Availability

- Manual demand reset

Integration & Installation

- Fully integrated solution under-the-cover allows for plug and play installation in the field
- Shipped from the factory as one complete unit, ready for field deployment

Meter Security

- Platform Security with an encrypted file system and secure boot
- Standard DLMS Security
- Application Layer Enhanced Security
- Local Access Signed Authorization

Adaptive Communications

- Support both RF and PLC for “last mile” communication to the meters via the IPv6 Mesh
- Support standards based, true IPv6 mesh communication where each meter is assigned a global routable IPv6 address
- Power line carrier links implement the IEEE 1901.2 standard
- RF links implement IEEE 802.15.4g/e standard
- Meters dynamically select the optimal link based on channel conditions and the target QoS
- IPv6 mesh network uses the 6LoWPAN adaptation layer and RPL as a mesh routing protocol
- Embedded Wi-Fi communications for local access using common security model with OpenWay network communications

Technical Data

Meets applicable standards:

- ANSI C12.1 – 2008 (American National Standard for Electricity Meters – Code for Electricity Metering)
- ANSI C12.20 – 2010 (American National Standard for Electricity Meters – 0.2 and 0.5 Accuracy Classes)
- ANSI/IEEE C62.45 – 2002 (Guide to Surge Testing on Low-Voltage AC Power Circuits)
- ANSI MH 10.8 – 2005 Specification for Bar Code
- ANSI ASQZ 1.4 – 2008 Sampling Procedures and Tables for Inspection by Attributes
- IEC 61000-4-2 2008
- IEC 61000-4-4 2012
- IEEE C37.90.1 – 2004 SWC Surge Testing
- IEEE C62.45 Recommended Practice on Surge Testing for Equipment Connected to Low Voltage (1000V or less) AC Power Circuits C62.45 2002
- NEMA SG-AMI 1 – 2009 Requirements for AMI Meter Upgradeability
- UL 2735

Radio Specifications

» Radio Output Power
- Configured at time of manufacture:
  - 500mW-1W

» Frequency Ranges
- Configured at time of manufacture (software controlled within ranges):
  - 902-928MHz
  - 870-876MH

Product Availability

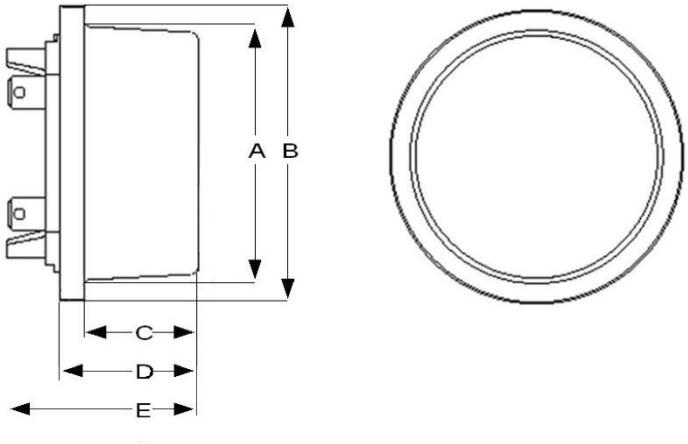
Forms	Class	Elements	Wires	Voltage	Test
1S	100	1	2	120V-277V, 345V-480V	15
2S	200	1.5	3	120V-277V, 345V-480V	30
2S	320	1.5	3	120V-277V, 345V-480V	50
3S	20	1	2	120V-277V, 345V-480V	2.5
4S	20	2	3	120V-277V, 345V-480V	2.5
9S (8S)	20	3	4	120V-277V, 345V-480V	2.5
9S (8S)/36S	20	3	4/3	120V-277V, 345V-480V	2.5
45S/5S	20	2.5	3	120V-277V, 345V-480V	2.5
12S	200	2	3	120V-277V, 345V-480V	30
12S	320	2	3	120V-277V, 345V-480V	50
16S (14S, 15S, 17S)	200	3	4	120V-277V, 345V-480V	30
16S (14S, 15S, 17S)	320	3	4	120V-277V, 345V-480V	50

Specifications

Power Requirements	Voltage rating: 120V-277V, 345V-480V 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% relative humidity
Transient/Surge Suppression	IEC 61000-4-4-2004-07 ANSI C62.45-2002
Accuracy	ANSI C12.20 0.2 accuracy class
General	Demand calculation: Block or Rolling Energy calculation: Bi-directional (Wh, VAh, VARh and VARh Q1-Q4))
Time Reference When Off Network	Line sync: Power line frequency Crystal sync: 5.8 PPM @ 25°C; 110 PPM over full temperature range
Display	Nine-digit liquid crystal display Six-digit data height: 10.16 mm Annunciator height: 2.24 mm Display duration: 1-15 seconds Two-digit code number height: 6.01 mm Three-segment electronic load indicator
Operating System	Linux

Dimensions

A	B	C	D	E
6.29”	6.95”	3.84”	4.30”	5.67”
16.00 cm	17.70 cm	9.80 cm	10.90 cm	14.40 cm



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