OpenWay® Riva™ Polyphase Electricity Meter

OpenWay Riva is the new standard in grid communications and edge intelligence for smart meters. Building on Itron's proven IPv6 OpenWay platform, OpenWay Riva adds adaptive communications technology and intelligence to grid devices at the edge of the network.

In addition to providing full smart meter functionality, the OpenWay Riva meter can also process, analyze, communicate, and react to grid conditions and business requirements in real-time. Riva's Adaptive communications allows meters and grid devices to interact with each other while dynamically switching between Radio Frequency (RF) and Power Line Carrier (PLC) to ensure the fastest and most reliable path. Built on an open architecture that forms the foundation of an expansive application ecosyste, the OpenWay Riva meter is built for the future and is the latest example of Itron's commitment to a more resourceful world. By providing powerful microprocessors as well as embedded Linux operating system, utilities now have the ability to create a highly flexible and programmable metering platform that is adaptable, secure and ready for the future.

The multi-link communication module provides the utilities with assured connectivity. Intelligence in the module chooses the communication link type and modulation scheme that support the best possible data rate. High data rates deliver the required throughput for a multi-application network while long range modes ensure even fringe devices can join the network. This is done automatically in real-time by the modules without any need for pre-programming or path hard-coding.

Itron's multi-link technology offers a unique way to deploy a single communication module anywhere, regardless of traditional network design considerations, such as geography, density or structural environmental. This assured connectivity eliminates the need for extensive network planning while optimizing network infrastructure to significantly reduce the total cost of the communications network deployment.

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 Import, Export, Net and Uni-Direction
- VARh Import and Export
- VARh Q1-Q4
- VAh Import, Export and Net

Demand Measurements

- Max Watts Import, Export
- Max VA Import, Export
- Max VAR Import, Export
- 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 cover removals, and magnetic fraud attacks
- Communicate tamper indications in real time through the OpenWay system

Remote Disconnect/Reconnect

- Support integrated disconnect switch
- Perform remote disconnects/reconnects through the OpenWay Operations Center

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

Technical Data

Meets applicable standards:

- IEC 62053-21 Import Class 1
- IEC 62053-23 Export Class 2
- IEC 62054-21 (Time Keeping)

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
    - 870-876MHz

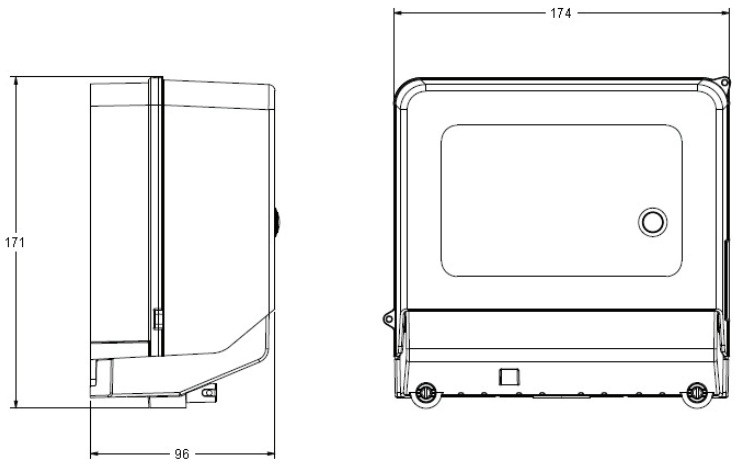
Product Availability

Volts/Service	Meter Class	Test Amps	Kh (Pulse/Wh)	Service Type	Mounting
220	100	5	1.0	3-Phase 4-Wire	Bottom Connect
230	100	5	1.0	3-Phase 4-Wire	Bottom Connect
240	100	5	1.0	3-Phase 4-Wire	Bottom Connect

Specifications

Power Requirements	Operating Voltage: 220V (± 20%); 230V (± 20%); 240V(+10%, -20%) Frequency: 50 Hz (± 3Hz); 60Hz (±3Hz) Battery Voltage: 3.6 V nominal
Operating Environment	Temperature: -40° to +70°C Humidity: 0% to 95% relative humidity
Transient/Surge Suppression	IEC 61000-4-4-2004-07
Accuracy	IEC 62053-21 Class 1 IEC 62053-23 Class 2
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
IP Rating	54

Dimensions (in mm)



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