Gen5 Riva Polyphase Meter

The Gen™5 Riva Polyphase Meter. equipped with power microprocessors as well as an embedded Linux operating system, combines robust polyphase electric smart metering functionality with innovative distributed intelligence (DI) edge computing capability on Itron's Gen5 industrial IoT (IIoT) network. This unique feature enables a new approach to AMI for your commercial & industrial customers, enabling AMI, consumer engagement, grid operations, smart city applications and more – from every single meter.

In addition to providing full electric smart meter functionality for commercial & industrial (C&I) customers, each Gen5 Riva Polyphase Meter is embedded with robust DI capability that processes and analyzes data in real time at the edge to provide insights to control and manage the grid more accurately. Improve grid efficiency, reliability and safety while transforming customer service and adapting to an evolving energy landscape.

Harness a unified, intelligently connected network platform with DI to unlock new applications in smart energy, water and communities. Leverage DI for advanced applications Itron's DI platform utilizes an app store model, similar to a smartphone. This ensures rapid, continuous innovation, choice and new value across a broad ecosystem of apps from multiple vendors. This model offers significant ROI improvements along with the ability to easily add additional smart utility and city use cases as business needs evolve.

SPECIFICATIONS

FEATURES AND BENEFITS

Flexible Two-Way Communications

- Bi-directional Distributed Intelligence applications
- 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 (total and per phase) Delivered, Received Net and Uni-Direction
- VARh (total and per phase) Delivered, Received and Net
- VARh Q1-Q4
- VAh (total and per phase) Delivered, Received and Net

Demand Measurements

- Max Watts (total and per phase) Delivered, Net and Uni-Directional
- Max VAR (total and per phase) Delivered, Received and Net
- Max VA (total and per phase) Delivered and Received
- Max VAR Q1, Q2, Q3, Q4
- Min Power Factor Delivered and Received

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 system

Option Availability

- Manual demand reset
- 2 KYZ and 1 KY Output

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

Profiles

- Supports three independent profiles:
  - Load Profile – 16 channels and programmable to support 5,
  - 10, 15, 30 or 60-minute intervals
  - Instrumentation Profile – 16 channels and programmable to support 5, 10, 15, 30 or 60-minute intervals
  - Voltage Profile – 16 channels and programmable to support 5,
  - 10, 15, 30 or 60-minute intervals

Distributed Intelligence Data

- Voltage and current waveforms
- Sub-second RMS voltages and currents
- Per second directional per phase Wh

Time of Use

- 8 rates plus Total
  - 25-year DST calendar
  - 50 Holidays/Special days

Arc Detection

- Meters support the ability to detect micro-arcing at the meter socket

Power Outage Notification (PON)

- Standard Feature – 15 second last gasp
- Optional Feature – 75 second extended last gasp

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

Product Availability

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

Specifications

Power Requirements	Voltage rating: 120v-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	Eight-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

Itron

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