MARK-V

EMS60 Intelligent Energy Meter

Advanced High-Accuracy Meter with Integrated Data Telemetry Solutions and Power Quality Monitoring

☑ *Smart Grid Certified*

- ±0.06% Load Range Metering Accuracy
- ANSI C12.1/C12.20 and Measurement Canada Certified Revenue Electricity Meter
- Ethernet, Modem, Wireless Broadband and Serial Data Communications
- DNP 3.0 and Modbus Real-time SCADA Communications

Manufactured and Tested in the United States of America

TRANSDATA®

Energy Metering & Automation

Measuring Today's Energy...

Smart Grid Energy Metering is our Business...

Smart grid applications call for intelligent energy meters with integrated real-time, two-way communications solutions that provide the highest levels of measuring performance and reliability. Equally important, smart meters must be simple to use and easy to integrate within your system architecture while offering maximum flexibility to meet future requirements. Enter the MARK-V Energy Meter.

Utilized by more than 400 utilities worldwide, the MARK-V is the platinum standard of smart metering technology offering a multitude of advanced functionality including: a real-time multi-processor operating system; interval data recorder; DNP/Modbus SCADA communications; real-time AMR data communications, Ethernet connectivity and ±0.06% load range metering accuracy.

Meets Latest Smart Grid Metering Requirements

- ANSI C12.1, ANSI C12.20 and MTR1-96 Certified Meter
- Meter Clock Accuracy Maintained to within 1-second per Month of the line frequency.
- Real-time, Two-way Smart Grid Communications via Ethernet, Digital Cellular, Telephone Modem, RS232/RS485 Serial
- Cold Start Metering within 1-second of Power Initialization
- Real-Time Measuring System with Real-Time Data Interfaces and KYZ Pulse Outputs – No Data Buffering
- No Loss of Metering Data with Programming Changes
- Loss Compensation Calculations Performed per Formulae defined in "Electricity Meterman's Handbook"
- Permits Accuracy Testing in both Loss Compensated and Un-Compensated Modes without Re-Programming Meter

Key Product Features

- Bi-Directional 4-Quadrant Solid-State Energy Meter
- Integral 4 or 8 Channel Load Profile Data Recorder
- ±0.06% Load Range Accuracy per ANSI C12.20 Report
- -40°C to +85°C Rated Operating Range (Including LCD)
- Real-Time Multi-Processor Operating System
- Itron MV-90 Data Collection Software Compatible
- Patented Digital True RMS Measuring Technology
- Advanced Li-RAM Memory provides 20-years Data Retention
- Power Quality, Event Recorder and Vector Analysis Systems

Programmable Metered Quantities

- Watthours, Varhours, VAhours, Qhours, Volthours, Volt^{2}hours, Amphours, Amp^{2}hours and Power Factor
- Demand, 1-60 Minutes, Fixed or Rolling Block
- 4-Rate Time of Use (TOU) Registers
- Transformer and Line Loss Compensation
- Polyphase and/or Per-Phase Metering

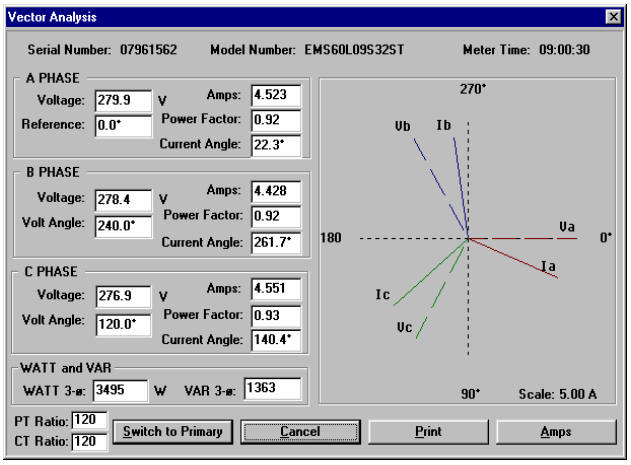
Product Availability

- Service: 3-phase; 3-Wire Delta, 4-Wire WYE, 4-Wire Delta
- Current Ratings: Class 20, Class 10 and Class 2
- Socket Base: ANSI Forms 5S, 6S, 8S, 9S and 10S
- A-Base: ANSI Forms 5A, 6A, 8A, 9A
- Switchboard Case: ANSI Forms 5, 6, 8, 9, 10

Load Profiling Interval Data Recorder

Based on the model, MARK-V Meters include a 4 or 8 channel Interval Data Recorder (IDR) that profiles interval-by-interval energy usage data with storage in non-volatile memory for future retrieval and analysis. The IDR is programmable for demand intervals of 1-60 minutes for fixed or rolling-block type demand.

- ♦ Memory Type: LiRAM
- ♦ Backup Rating: 10-Years Continuous with AC-off
- ♦ Operational Life: 20-Years under normal operating conditions
- ♦ 4-Channel 128K @ 15 Min Intervals: 149 Days
- ♦ 8-Channel 128K @ 15 Min Intervals: 74.5 Days
- ♦ 8-Channel 512K @ 15 Min Intervals: 225 Days



DNP3.0, Modbus (TCP/IP & RTU) SCADA Communications

- Ethernet 10/100 Base-T; Single or Dual Port Versions
- RS232/RS485 Serial Interface, Switch Selectable
- Analog Output Module for 0-1mA or 4-20mA Outputs
- Transmits Real-Time Metering SCADA Data to RTU's
- Transmits Billing Register; Demand Register; Last Recorder Interval; and Recorder Validation Register Data to RTU's

Billing/Recorder Data Communications

- Internal Telephone Modem
- Digital Cellular Broadband Module Under-Glass
- Ethernet 10/100 Base-T Interface
- RS232 or RS485 Serial Interface
- Optical Communications Port

Pulse Input/Outputs

- 4 Form-C KYZ Pulse Initiator Outputs
- 5 Control/Alert Contact Outputs
- 2 Pulse/Status Inputs

Revenue Meter Test Certifications:

ANSI C12.20 (Class 0.2%); ANSI C12.1; CAISO MTR1-96

EMI/RFI Test Certifications

ANSI C37.90; ANSI/IEEE C62.41; IEC: 801-4
FCC: Parts 15, 68, 22 and 24

Industry Approvals

California ISO, ERCOT ISO, COMET (Texas), New York State, New England ISO, PJM Grid, Measurement Canada, USDA RUS.

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