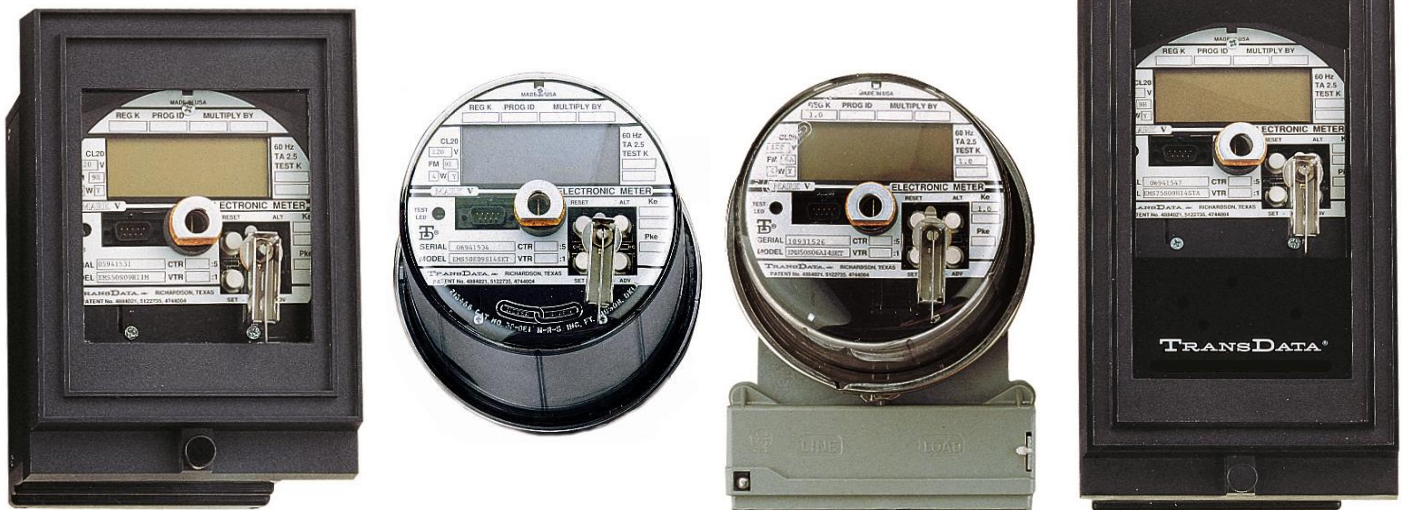# MARK-V EMS60

Advanced Revenue Energy Meter

Substation, Generation, ISO Transmission Grid Energy Meter with DNP3 SCADA Telemetry and PQ Monitoring

☑ **Smart Grid Certified**

- ANSI C12.1 & C12.20 and California ISO MTR 1-96 Certified Revenue Electricity Meter
- Featuring U-Com Multi-Path Ethernet, 4G LTE, Serial Data Telemetry Module
- DNP3/Modbus Data Telemetry of Real-Time, Accumulated Register and Demand Data
- Purchased by More than 450 Electric Utilities, Government Agencies and Power Producers
- Designed, Manufactured, Tested and Supported in the USA by a USA Owned Company

MADE IN USA

⋀⋁ TRANSDATA®

Advanced Energy Metering Since 1969

Measuring Today's Energy...

The Definitive Advanced Revenue Metering Solution

More Than Just a Meter… The MARK-V EMS60 offers users a powerful combination of high-accuracy revenue metering, DNP3/Modbus real-time metering SCADA interfaces and multi-port Ethernet, 4G LTE cellular, telephone modem and serial communication interfaces. Purchased by more than 450 leading utilities, government agencies and independent power producers, TransData's MARK-V EMS60 meters are widely deployed throughout the world at critical infrastructure applications including power generation, distributed energy resources, ISO Transmission Grid, Distribution Substation and Commercial-Industrial AMI revenue metering installations.

Renowned for their exceptional accuracy and reliability performance, TransData's MARK-V EMS60 Energy Meters are fully manufactured and tested to exacting quality standards at our factory in Dallas, Texas.

Key Product Features
- 4-Quadrant, Bi-Directional Solid-State Revenue Energy Meter
- Multi-port Ethernet, 4G LTE, Serial and Modem Communications
- DNP3/Modbus Real-Time SCADA Data Telemetry
- Enhanced NERC-CIP Data Security Compliance
- Real-Time Multi Processor Operating System
- Digital True RMS Energy Measuring Technology
- ±0.06% Load Range Metering Accuracy
- -40°C to +85°C Rated Operating Range (Including LCD)
- Integral Load Profiling Interval Data Recorder
- Advanced Li-RAM Memory provides 20-years Data Retention

Programmable Metered Quantities
- Watthours, Varhours, VAhours, Qhours, Volthours, Volt^{2}hours, Amphours, Amp^{2}hours and Power Factor
- Polyphase and/or Per-Phase Metering
- 4-Rate Time of Use (TOU) Registers
- Transformer and Line Loss Compensation

Power Quality Monitoring System
- Detects Sags, Surges, Interruptions and Outages
- Programmable Threshold Levels Down to 1 Cycle
- Records, Time, Description Magnitude and Duration of Events
- Event Reporting Supported by Itron MV-90 and Primestone

Product Availability
- Socket Base: ANSI Forms 5S, 6S, 8S, 9S and 10S
- A-Base: ANSI Forms 5A, 6A, 8A, 9A
- Short S1 Style Switchboard Case: ANSI Forms 5, 6, 8, 9
- Tall M2 Style Switchboard Case: ANSI Forms 5, 6, 8, 9
- ANSI Class 20 (0-20 Amp); Class 10; Class 2 input ranges
- ANSI Voltages: 69, 120, 240, 277 or 480 volts

Revenue Meter Independent Lab Test Certifications
- ANSI C12.1
- ANSI C12.20 Meets Class 0.1%
- ANSI C12.16
- MTR 1-96 California ISO Meter
- Measurement Canada Approved
- IEC 687 Class 0.2% Precision

EMI/RFI Independent Lab Test Certifications
- ANSI/IEEE C37.90 SWC Wave/Transient
- ANSI C62.41 Ring Wave
- IEC 801-4 Fast Transient Burst
- 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.

TransData, Inc.
2560 Tarpley Road
Carrollton, Texas 75006
Tel: 972-418-7717
www.transdatainc.com

U-Com Multipath Data Telemetry Module
The U-Com module enables multiple users to simultaneously access DNP3/Modbus real-time and accumulated meter register data via any of its communication interfaces
- 10 Port Ethernet
- 4G LTE Cellular (Verizon and AT&T Networks)
- 4 RS232/RS485 Serial Ports – Switch Selectable

DNP3, Modbus Real-Time Data Telemetry
- U-Com Multi-Port Compatible for simultaneous Ethernet, 4G LTE and Serial Data Telemetry
- Transmits Real-Time Metering SCADA Data to RTU's
- Transmits Billing Register; Demand Register; Last Recorder Interval; Recorder Validation and Frozen Register Data
- Programmable Response Time Update Rate
- Analog Output Module for 0-1mA or 4-20mA Outputs

Billing Register/Recorder Data Communications
- U-Com Multi-Port Compatible for simultaneous Ethernet, 4G LTE and Serial Data Telemetry
- Internal Telephone Modem
- ANSI Optical Communications Port
- Itron MV-90 and Primestone Data Collection Compatible

Advanced Meter Register
- Over 700 Available Register Data Channels Available for Display
- Self-Read Registers with Hourly, Daily and Monthly Update
- Register Modes: Normal, Alternate, Test and Vector Analysis
- Demand - Fixed or Rolling Block, 1-60 Minutes Intervals
- Displays Instantaneous Watts, Vars, Amps and Volts
- Register Memory Type: LiRAM
- Backup Rating: 20-Years Normal Operating Conditions

Load Profiling Interval Data Recorder
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 recorder is programmable for demand intervals of 1-60 minutes for fixed or rolling-block type demand.
- EMS60E 4-Channels @ 15 Min Intervals: 149 Days
- EMS60L 8-Channels @ 15 Min Intervals: 74.5 Days
- EMS60X 8-Channels @ 15 Min Intervals: 225 Days

Vector Analysis Meter Site Diagnostics System
- Online Site Analysis System with Real-Time Phasor Diagram
- Verifies Correct Site Wiring, Input Levels and Phase Rotation
- Detects and Reports Equipment Failures and Tampering

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