DMMS350

DM SERIES

3 Phase Multifunction Power Monitor

with Built-In Ethernet LAN Connectivity & Power Quality

The Low Cost Solution to Get 3 Phase Electrical Parameters to Your Ethernet LAN

- True RMS Voltage, Current & Power Measurements
- Bidirectional Energy & Min/Max on all Electrical Parameters
- On-Board Ethernet Protocol with Standard Modbus TCP
- Harmonics (%THD & K-Factor) to the 31st Order
- Bright LED display
- Standard ANSI Size for Easy Installation to New or Retrofit Panels
- Advanced Control Features
- KYZ Pulse for Energy
- Ideal Circuit Monitoring for Main Feeds, Branch Circuits, Gensets & Equipment

Advanced Multifunction Meter with Ethernet TCP/IP

The DMMS 350 Multifunction Power Meter provides complete access to all voltage, current, and power values through an easy to use display and through your TCP/IP Ethernet LAN.

This meter is ideal for applications requiring real time metering data streaming to data collection systems through a facility LAN or through the Internet. This meter provides on-line connectivity easily, quickly and economically.

Product Applications

- **Control Panels**
- **Switchboards**
- **Motor Control Centers**
- **Power Distribution Panels**
- **Connections to Plant Monitoring & Control Systems**
- **Connection to SCADA Systems**
- **Utility Substation Feeders**

Perfect for Substation Panels

Electro Industries/GaugeTech

The Leader in Web Accessed Power Monitoring

ISO 9001 : 2000

Measurements

The DMMS 350 is a four-quadrant, multi-function power meter. It measures the following parameters:

- 3ϕ Voltage (L-N)
- 3ϕ Voltage (L-L)
- 3ϕ Current
- Neutral Current
- Bidirectional KW (3ϕ and Total)
- Bidirectional KVAR (3ϕ and Total)
- KVA (3ϕ and Total)
- PF (3ϕ and Total)
- Bidirectional KWh
- KVah
- Frequency
- %THD
- K-Factor

Advanced Measurement Features

The DMMS 350 includes multiple advanced measurement features to support power analysis and control. The meter includes the following Max/Min readings:

- Voltage Max/Min
- Amps Demand Max/Min
- KW Demand Max/Min
- KVAR Demand Max/Min
- KVA Demand Max/Min
- PF Max/Min
- Frequency Max/Min
- %THD Max/Min
- K-Factor Max/Min

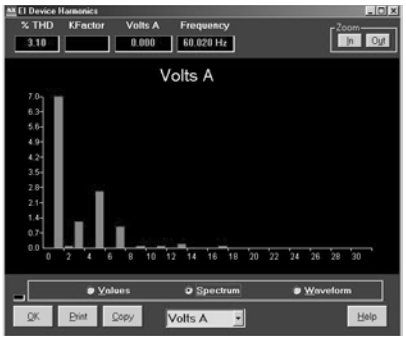
The meter also provides user-defined set points for most of the measured values including:

- Over/Under Voltage
- Over/Under Current
- Over/Under KVA
- Over/Under KW
- Over/Under KVAR
- Over/Under PF
- Over/Under Frequency
- Over %THD
- Phase Reversal
- Reverse Power
- Logic and Hysteresis Functions on Set Points
- Relay Output Control for all Limits

Harmonic Measurements

The harmonic option calculates harmonic values on each phase of voltage and current through the 31st order.

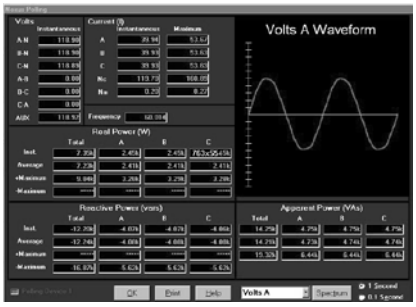
- Phase Voltage %THD
- Phase Current %THD
- Phase Current K-Factor
- Harmonic Magnitudes
- Harmonic Angles



Harmonic Spectrum to the 31st Order

Waveform Scope

The unit also provides data to build a graphical, real time depiction of each waveform channel. This allows the user to view actual waveforms at each voltage and current channel using PC software.



Real Time Waveform Scope

Ethernet Communication

The DMMS 350 includes a standard Ethernet TCP/IP connection. The meter can connect to any Ethernet network and reports its information using industry-standard Modbus TCP/IP protocol.

Multiple socket Ethernet connectivity enables the unit to respond to as many as 12 different requests from separate users simultaneously.

.

Relay Output Options

The DMMS 350 has two relay output options:

NL Option- 2 Relay Outputs/1 KYZ Pulse

- 2 C-Form relays
- One KYZ Pulse Output
- Relays Operate Automatically through User Programmable Set Points or through the Digital Commands
- Programmable Logical Descriptors
- Fail-Safe & Hysteresis Modes

NL2 Option

- 3 KYZ Output Pulse Channels for Energy Pulsing

Display Features

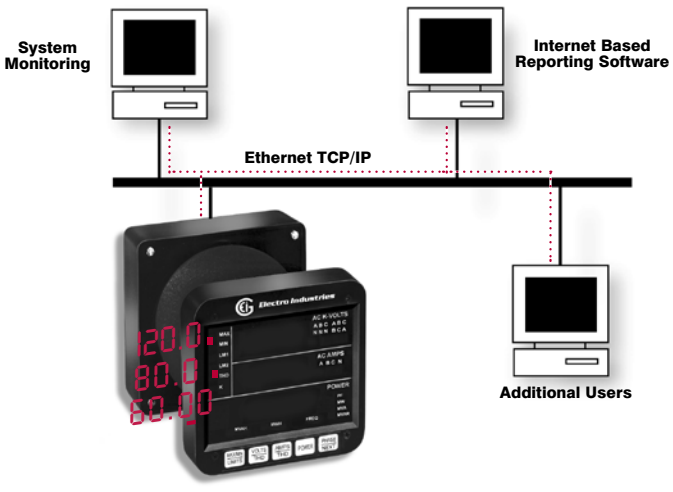
The display is a three-lined LED display. Voltage, Current, and Power values are simultaneously available. A five button keypad at the bottom provides a simple, easy-to-use interface to read all metered data. The LED display provides long life and durability. It is ideal for harsh temperature environments.

Rugged "Utility Grade" Construction

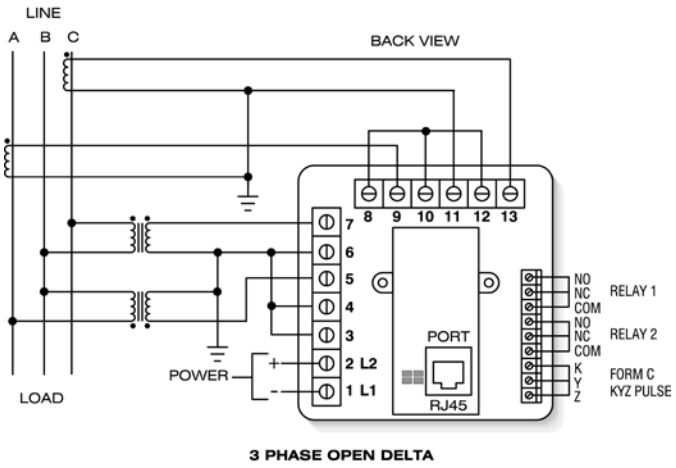
The DMMS 350 is housed in a rugged metal enclosure protected from EMI and RFI emission. Internal protection circuits protect the power supply from damaging spikes and transients.

Multi-Socket Ethernet/Internet Access

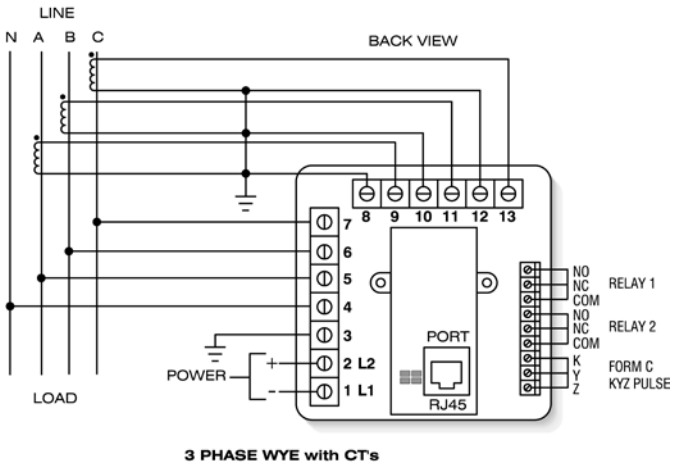
(12 Simultaneous Requests)



Typical Wiring Information



3 PHASE OPEN DELTA

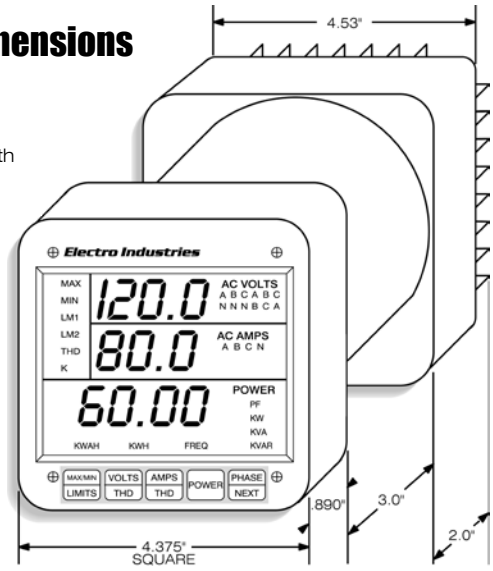


3 PHASE WYE with CT's

Note: Download manual from **www.electroind.com** to get additional wiring configurations.

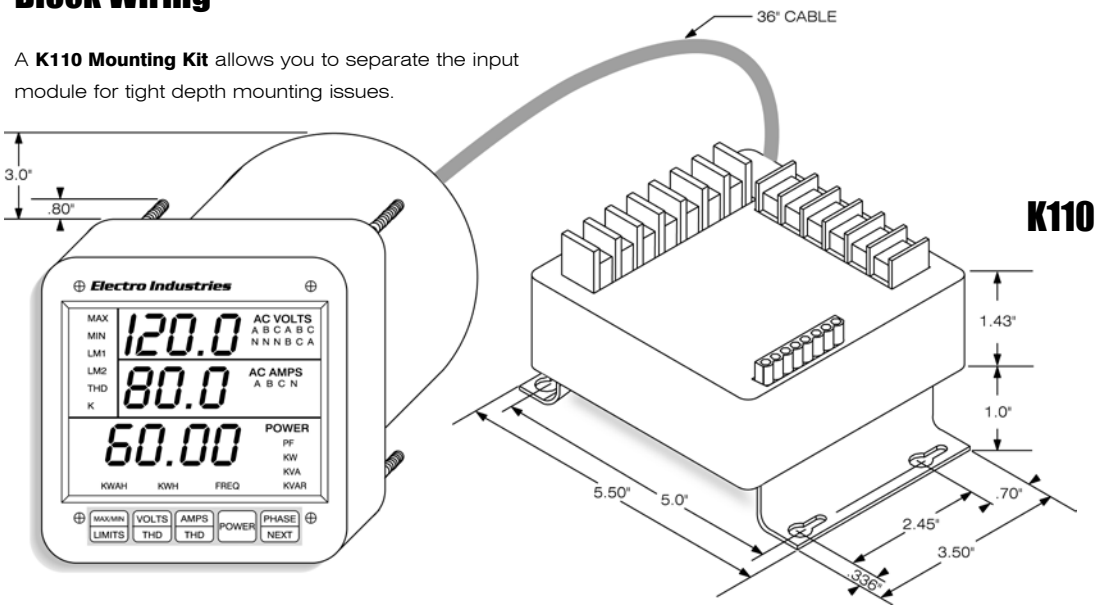
Dimensions

Recommended for installation where depth behind the panel is 5.5 inches or deeper.



Remote Terminal Block Wiring

A **K110 Mounting Kit** allows you to separate the input module for tight depth mounting issues.



K110 Mounting Kit

Specifications

INPUT VOLTAGE
- 3 voltage inputs Va, Vb, Vc.
- **120 Option –** 150 volts phase to neutral, 300 volts phase to phase; for 120/208 connection.
- **G Option –** 300 volts phase to neutral, 600 volts phase to phase; for 277/480 connection.
- **75 Option –** 75 volts phase to neutral, 150 volts phase to phase, for a 69/120 connection.
- Additional voltage inputs available (Contact Factory)

INPUT CURRENT
- 3 current inputs (Ia, Ib, Ic), 5 Amp nominal current input.
- Continuous overload 10 Amp maximum.
- Overload 10X maximum amp for 3 seconds.
- 1 Amp secondary configuration available (Contact Factory)

BURDEN
- Voltage Inputs: 0.1VA Max
- Current Inputs: 0.1VA Max
- Power Supply: 6VA Max

FREQUENCY RANGE
- 45 – 75 Hz.

COMMUNICATION ISOLATION
- 2500 Volts AC isolation between any input and communication output.

CONTROL POWER REQUIREMENTS
- 115V AC ±20% 6VA 47-400HZ **(115A Option)**
- 230V AC ±20% 6VA 47-400HZ **(230A Option)**
- 24-48V DC ±20% 6VA **(D Option)**
- 125V AC or DC ±20% 6VA **(D2 Option)** Universal
- 12V DC ±20% 6VA **(D4 Option)**

HARMONIC MEASUREMENTS
- Up to the 31st Harmonic Capability. %THD and K-Factor calculated on board. On Board waveform scope for each channel of voltage and current.

CONSTRUCTION
- Rugged metal housing with standard switchboard dimensions and cutout per ANSI 39.1

SENSING / MEASUREMENT
- True RMS
- 64 samples per cycle
- 1-second-update time

MEMORY
- All meter setup parameters and Max/Min data contained in Nonvolatile RAM. No unit battery is required.

STANDARD COMMUNICATIONS
- 3 line LED Display
- Ethernet 10Base T
- Modbus TCP/IP Protocol

ENVIRONMENTAL
- Operating Temperature: –20°C to +70°C

MEASUREMENTS	ACCURACY*	RESOLUTION	RANGE
Volts(All Channels)	0.2%	0.1%	0-2000
Volt Max/Min Demand	0.2%	0.1%	0-100%
Amperes	0.2%	0.1%	0-2000
Amp Max/Min Demand	0.2%	0.1%	100%
KW	0.4 %	0.1%	0-2000
kVA	0.4 %	0.1%	0-2000
kVAR	0.4 %	0.1%	0-2000
PF	1.0 %	1.0%	1.0 TO ± .5%
KW Max/Min Demand	0.4 %	0.1%	0-100%
KW-Hour	0.4 %	1 KW Hour	0-199.999
KVA-Hour	0.4 %	1KVA Hour	0-199,999
KVAR-Hour	0.4 %	1KVA Hour	0-199,999
Frequency	0.02Hz	0.01Hz	45-75Hz
Harmonics	0.50%	0.1%	0-100%

*% of full scale

Ordering Information

Model	KVARH Option	Connection	Volts Label	Current Label	Power Label	Operating Voltage	Control Power	Relay Option	Mounting Kit
Option Numbers:									
	-	-	-	-	-	-	-	-	
Example: DMMS 350	R -	3E -	V -	A -	KW -	120 -	115A -	NL -	K110
DMMS 350	**R** Displays KVARH instead of KVAH	**3E** 3 Element Wye System **2.5E** 2 .5 Element Wye System **2E** 2 Element Delta System	**V** Volts **KV** Kilovolts	**A** Amps **KA** Kiloamps	**KW** Kilowatts **MW** Megawatts	**120** 120/208 **G** 277-480 **75** 69-120	**115A** 115V AC ±20% **230A** 230V AC ±20% **D** 24-48V DC ±20% **D2** 125V AC or DC ±20% Universal **D4** 12V DC	**NL** 2 Control Relays/ 1 KYZ Pulse **NL2** 3 KYZ Pulse Outputs	**K110*** Mounting Bracket

*Limits Behind Panel Depth to 3"

Electro Industries/GaugeTech
1800 Shames Drive • Westbury, NY 11590
1-877-EIMETER (1-877-346-3837) • **E-mail:** sales@electroind.com
Tel: 516-334-0870 • **Web Site:** www.electroind.com • **Fax:** 516-338-4741

E104710 100507 E
Printed in Canada