

# DMMS300+

DM  
SERIES

## 3 Phase Multifunction Power Monitor

Full Featured with Advanced Power Quality

- True RMS Measurements of Voltage, Current & Power
- Bidirectional Energy, & Min/Max on all Electrical Parameters
- Digital Modbus and DNP 3.0 Communication Options
- Up to 10 Channels of Analog Outputs
- Power Quality (%THD & K-Factor) to 31st Order
- Bright .56" LED Displays
- ANSI Standard 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

Best Cost/  
Performance  
Ratio



### Description

The DMMS 300+ Multifunction Power Meter provides complete access to all voltage, current and power values through an easy to use interface and through standard digital or analog connections to your control and monitoring systems. These outputs make the DMMS 300+ more cost effective than discrete meters and transducers.

The unit provides advanced features including harmonic analysis, waveform scope, control features and up to 10 channels of analog outputs (0-1mA or 4-20mA). These features make this instrument useful for most power monitoring and control applications.

### Measurements

The DMMS 300+ is a four-quadrant, multifunction power meter. It measures the following parameters:

- 3 $\phi$  Voltage (L-N)
- 3 $\phi$  Voltage (L-L)
- 3 $\phi$  Current
- Neutral Current
- Bidirectional kW (3 $\phi$  and Total)
- Bidirectional kVAR (3 $\phi$  and Total)
- kVA (3 $\phi$  and Total)
- PF (3 $\phi$  and Total)
- Bidirectional kWh
- kVAh
- Frequency
- %THD
- K Factor

### Product Applications

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

Perfect for  
Substation Panels



Designed and  
Manufactured

 **Electro Industries/GaugeTech**  
The Leader in Web Accessed Power Monitoring



## Advanced Measurement Features

The DMMS 300+ 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

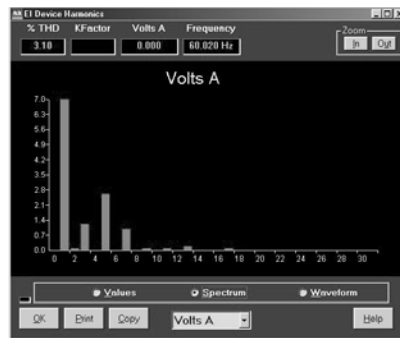
The meter also provides user-defined set points for most of the measured values including:

- 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 / Power Quality Measurements

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

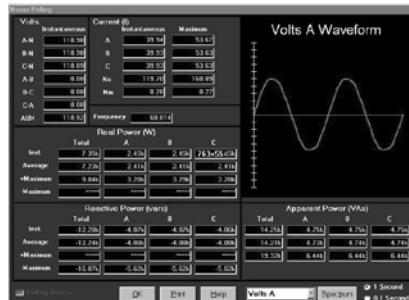
- Phase Voltage %THD
- Phase Current %THD
- Phase Current K Factor
- Harmonic Magnitudes
- Harmonic Angles



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

## 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.

## Digital Communication

The DMMS 300+ provides connection to industry standard RS-232 or RS-485 communication channels. The meter can connect to any serial network and reports circuit information using industry-standard Modbus or DNP 3.0 protocols.

## Analog Transducer Outputs

The DMMS 300+ provides connection to Analog Inputs using either 0-1 mA or 4-20 mA outputs. Analog outputs are available for 2, 4, 6 or 10 channels to allow collection of needed meter information.

## Rugged Utility Grade Construction

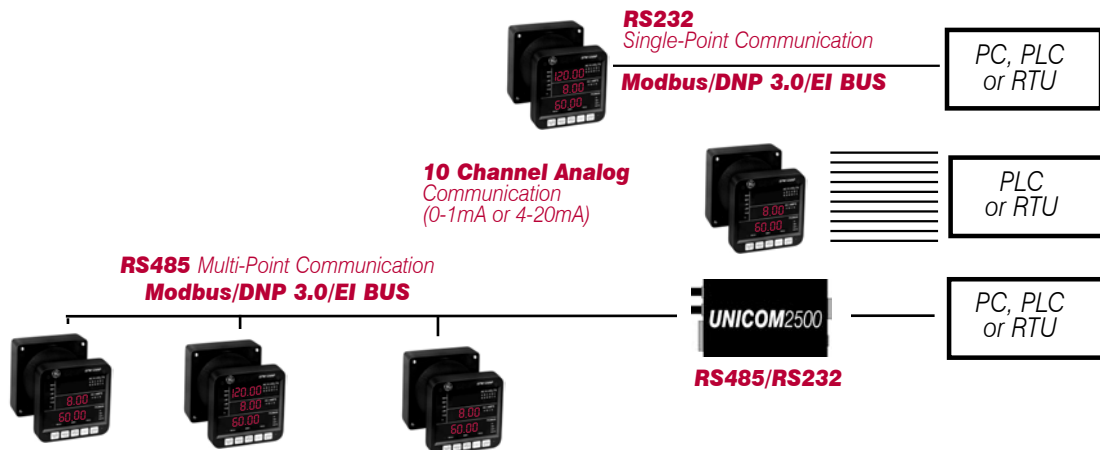
The DMMS 300+ is housed in a rugged metal enclosure protected from EMI and RFI emission. Internal protection circuits protect the power supply from damaging spikes and transients.

## Relay Output Options

The DMMS 300+ has two Relay Output Options:

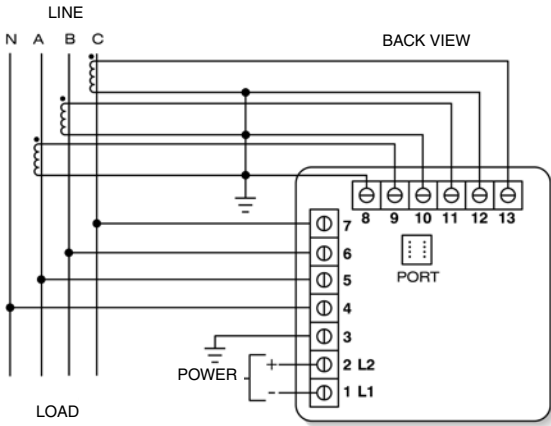
- NL Option - 2 Relay Outputs/1 KYZ Pulse**
- 2 C-Form relays
  - One KYZ Pulse Output
  - Relays Operate Automatically through User Programmable Set Points or through the Digital Commands
  - Programmable Logical Descriptors
  - Fail-Safe & Hysteresis Mod

- NL2 Option**
- 3 KYZ Output Pulse Channels for Energy Pulsing

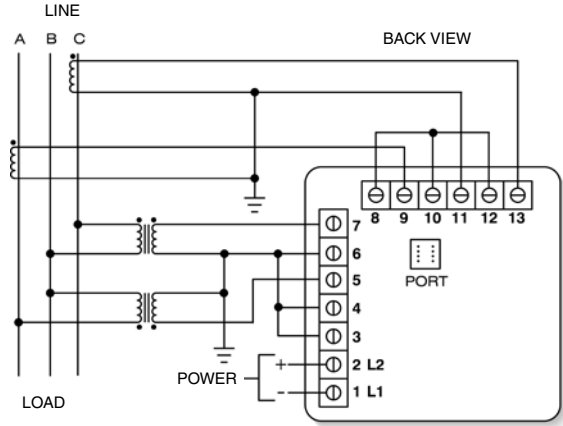


# Typical Wiring Information

**Note:** Download DMMS 300+ manual from [www.electroind.com](http://www.electroind.com) to get additional wiring configurations.



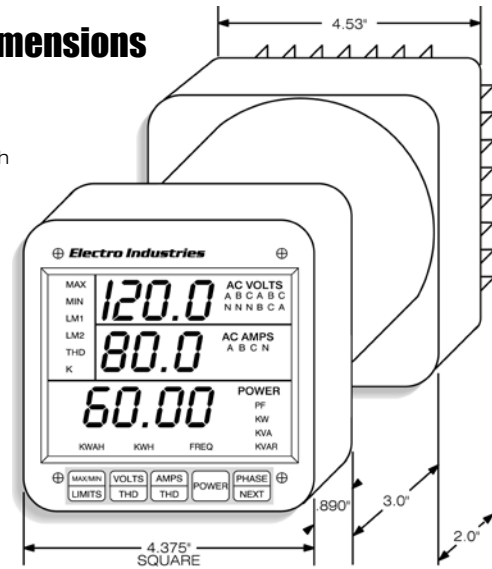
3-PHASE WYE with CT's



3-PHASE OPEN DELTA

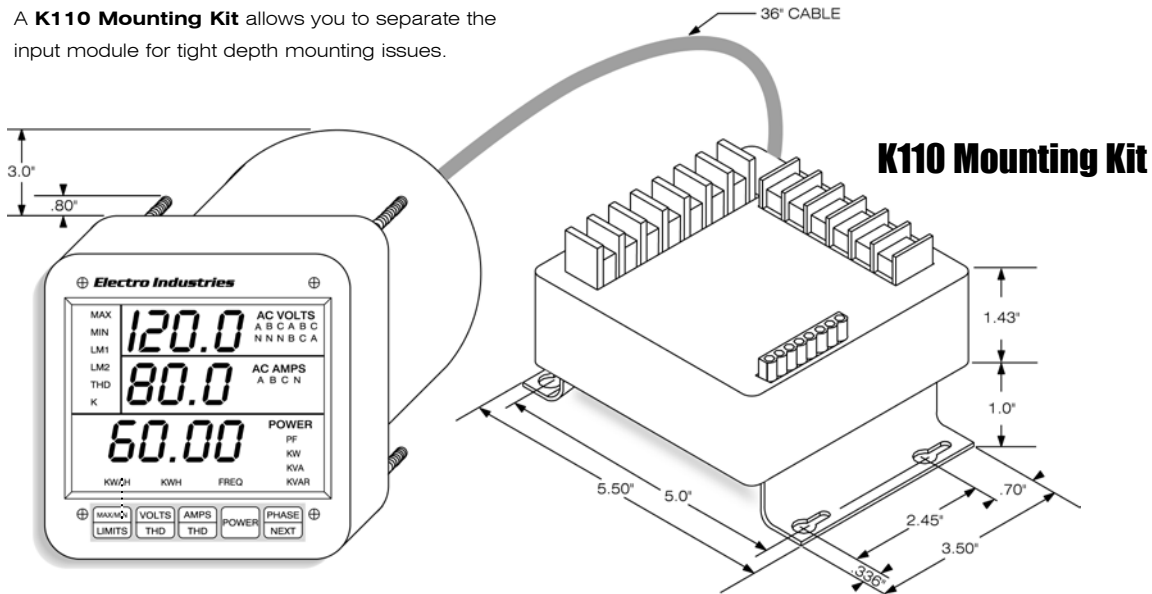
## Dimensions

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.



# Specifications

## INPUT VOLTAGE RANGE

- Three voltage inputs Va, Vb, Vc.
- 150 volts phase to neutral, 300 volts phase to phase; for 120/208 connection (**OPTION 120**).
- 300 volts phase to neutral, 600 volts phase to phase; for 277/480 connection (**OPTION G**).
- 75 volts phase to neutral, 130 volts phase to phase; for 69/120 connection (**OPTION 75**).

## 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.

## BURDEN

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

## FREQUENCY

- 45-75 Hz

## COMMUNICATION ISOLATION

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

## COMPLIANCE

- IEEE C37.90.1 (Surge Withstand)
- IEEE C62.41 (Surge)
- ANSI C39.11 (Form)

## SENSING / MEASUREMENT

- True RMS
- 64 samples per cycle
- One-second update time

## MEMORY

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

## DISPLAY

- 3 line LED Display
- Continuous display of voltage, current, and power quantities.

## DIGITAL COMMUNICATIONS

- RS-232 or RS-485 serial channel connections
- Industry standard Modbus RTU, Modbus ASCII or DNP 3.0 Protocols

## ANALOG COMMUNICATIONS

- 0-1 mA output - 10k Ohm max impedance
- 4-20 mA output - 250 Ohm max impedance
- 2, 4, 6, or 10 channels

## ENVIRONMENTAL

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

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

\*% of full scale

## Ordering Information

Model	kVARh Option	Connection	Harmonic Option	Volts Label	Current Label	Power Label	Operating Voltage	Control Power	Communication Protocol	Relay Options
<b>Option Numbers:</b> Specify a unit by writing its option numbers below. See sample. Specify your CT and PT ratio, Delta or Wye System. If a specification is given, it will be preprogrammed in the factory.										
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<b>Example:</b> DMMS 300+ R - 3E - H - V - A - KW - 120 - 115A - MODR - NL										
DMMS 300+	R	3E	H	V	A	KW	120	115A	MODR	NL
	Displays kVARh instead of kVAh	3 Element Wye System	Harmonic Measurement	Volts	Amps	Kilowatts	120/208	120V AC	Modbus RTU	2 Control Relays & 1 KYZ Pulse
		2.5E		KV	KA	MW	G	230A	MODA	NL2
		2.5 Element Wye System		Kilovolt	Kiloamp	Megawatt	277/480	230V AC ±20%	Modbus ASCII	3 KYZ Pulse Outputs
		2E					75	D	DNP	
		2 Element Delta System					69/120 Wye Only	24-48V DC	DNP 3.0	
								D2	EI	
								125V AC or DC	EI-BUS	

## Accessories

K110	SF232DB	SF485DB	SDFI-1 or SDFI-20
<b>Mounting Kit</b> Remote terminal block mounting kit with 36" cable and mounting bracket.	<b>RS232 Communication Adapter</b> Limited to a distance of 50 feet between the central computer and the DMMS 300+.	<b>RS485 Multi-Drop, Daisy Chain Communication Adapter</b> The maximum distance is 4000 feet between the computer and DMMS 300+.	<b>2 Channel Analog Outputs</b> SDFI-1 provides 0-1mA output. SDFI-20 provides 4-20mA output. Outputs can be mapped to any reading. Both channels are Bidirectional.
SNFI-1 or SNFI-20	SEFI-1 or SEFI-20	SHNI-1 or SHNI-20	Unicom 2500-F
<b>4 Channel Analog Outputs</b> All Channel Unidirectional.	<b>6 Channel Analog Outputs</b> 2 channels are Bidirectional.	<b>10 Channel Analog Outputs</b> 3 Channels are Bidirectional.	<b>Interface Converter</b> RS485 to RS232 to Fiber Converter.



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