

3DAA5 3DWA300 3DVA120

Triple Display Power Monitoring

User Friendly & Intuitive

DM
SERIES

- True RMS Measurements
- Large .56" Bright LEDs
- ANSI Standard Size - Direct Retrofit
- Average Min/Max Demand
- 0-1 or 4-20mA Transducer Outputs
- Digital Communication
- On-Board Harmonic - % THD Measurements
- 2 Tripping Output Relays
- Utility Grade

Description

The 3D series triple display meters provide long lasting, reliable power metering for voltage, current and power parameters. These units are designed for long life in harsh environments with typical 25+ year operation. Advanced digital signal processing technology ensures accurate and reliable readings. The units utilize digital calibration techniques minimizing "slippage" of calibration over time and temperature.

Utility Grade Construction

The units are constructed in a rugged metal housing. They directly replace existing ANSI style switchboard meters. No panel alteration is required.

Surge Withstand Capability

The units meet and exceed all IEEE C37.90.1 surge withstand capability. They are designed specifically for utility, industrial and power applications.

User Friendly Operation

We designed these meters to be user friendly and intuitive. The operator immediately understands how to access all the readings without hesitations. There is no meter reading learning curve.



3DVA 120
Volt Meter

3DAA5
Ammeter

3DWA 300
Power Meter

3D Ammeter 3DAA5

The 3DAA5 simultaneously displays phases A, B, and C. It also displays the neutral current by a touch of the keypad. It is the perfect replacement for traditional utility 3 phase amp demand meters.

Max/Min Thermal Demand

The unit monitors max/min thermal demand for all phases of current including the neutral. The unit calculates the demand based on a user selectable averaging period from one second to 2½ hours. The default averaging period is 15 minutes. The unit calculates the average demand using a sliding window technique. The max/min average demand is stored until reset.

Analog Outputs

4 channels of 0-1 or 4-20mA transducer outputs are available and can be brought to any existing RTU or PLC.

Digital Communication

RS232 or RS485 digital communication is available.

Harmonic Measurement

Harmonic measurement is available to the 31st order including a captured waveform. The unit displays %THD and K-Factor for each of the current readings on the display.

Alarm Level/Relay Outputs

The unit offers set points and 2 Form C dry contact relays for over/under current and over %THD and K-Factor. The feature is designed for alarm and secondary protection only.



*Replaces Traditional Utility
Amp Demand Meters*

3D Power Meter 3DWA300

The 3DWA300 simultaneously displays Watts, VARs, KVA and PF. This unit is available in 3, 2½ and 2 element connections. It is a full four quadrant meter with polarity indicators.

Max/Min Demand

The unit calculates average max/min demand based on a user-selectable sliding window average. The highest average is stored until the value is reset. The averaging period is selectable from one second to 2½ hours. The default averaging period is 15 minutes.

Analog Outputs

2 channels of bidirectional 0-1 or 4-20mA analog outputs are available. The outputs are programmable and preconfigured for Watts and VARs.

Digital Communication

RS232 or RS485 digital communication is available.

Alarm Level/Relay Outputs

The unit offers set points and 2 Form C dry contact relays. The relays and set points can be configured for the following conditions:

- Over & Reverse Power
- Over KVA
- Under PF Lag or Lead
- Over/Under Vars

- *Perfect for Substation Feeders*
- *Displays Watts, VARs & PF Simultaneously*



3D Volt Meter 3DVA120

The 3DVA120 simultaneously displays all phase to neutral voltages. By pressing a button, the unit displays all phase to phase voltages.

Max/Min Demand

The unit provides max/min readings based on a user selectable sliding window averaging period.

Analog Outputs

4 channels of 0-1 or 4-20mA outputs are available. The outputs can be brought to any RTU or PLC.

Digital Communication

RS232 or RS485 digital communication is available.

Harmonic Measurement

Harmonic measurement is available to the 31st order including a captured waveform. The unit displays %THD and K-Factor for each voltage reading on the display.

Alarm Level/Relay Outputs

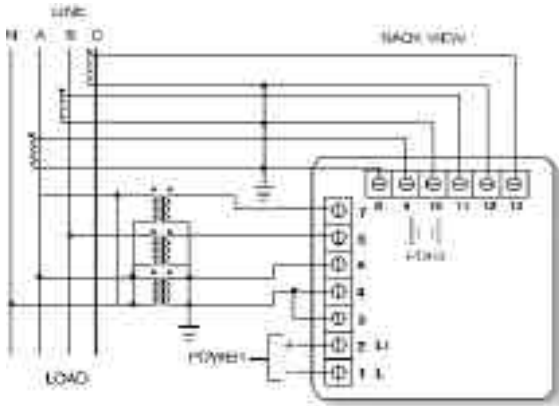
The unit offers set points and 2 Form C dry contact relays for:

- Over/Under Voltage
- Voltage Phase Neutral
- Voltage Imbalance
- Over %THD/K-Factor

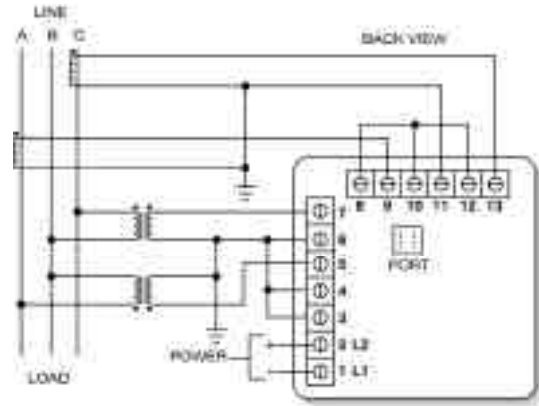


Wiring

Download EIG 3DAA5, 3DVA 120 or the 3DVA 300 manual from www.electroind.com to get additional wiring configurations.

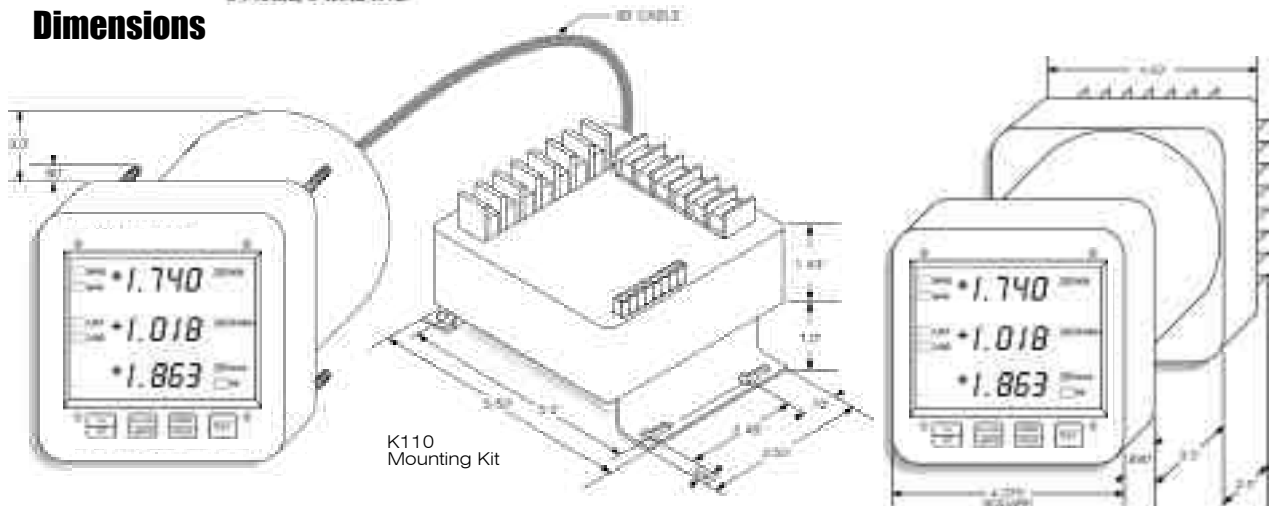


3-PHASE, 4-WIRE WYE with PTs & CTs



3-PHASE, 3-WIRE OPENDELTA with 2 CTs & 2PTs

Dimensions



K110
Mounting Kit

Specifications

INPUT VOLTAGE RANGE

- 150V Phase to Neutral Standard*
- 300V Phase to Neutral (OPTION G).
- *Also used with PTs for extended input voltage.

INPUT CURRENT RANGE

- 10 Amps Max (programmable to any CT ratio).

INPUT WITHSTANDING CAPABILITIES

- Voltage & Current
- Continuous 200% Rated
- Surge 10x Max Input for 3 Seconds
- Surge Withstanding per IEEE C37.90.1

RELAY RATING

- Relay Output: 2 form C relays rated 5A, 250VAC (OPTION NL)

BURDEN

- Voltage Inputs: 0.1VA Max
- Current Inputs: 0.1VA Max

I/O ISOLATION

- 2500V AC 60 Hz (Minimum isolation between any input to output digital communication module or relay output terminals.)

SENSING METHOD

- True RMS

UPDATE TIME

- 1 second

CONTROL POWER REQUIREMENTS

- 115V AC, +20%, 6VA 47-400Hz (OPTION 115A)
- 230V AC, +20%, 6VA 47-400Hz (OPTION 230A)
- 24-48 DC, +20%, 6VA (OPTION D)
- 125V AC or DC, +20%, 6VA (OPTION D2) universal

FREQUENCY RANGE

- Fundamental 45-75 Hz
- Up to 31st Harmonic Capability.

HARMONIC RANGE

- 3 Channels volt to neutral (OPTION H)**
- 3 channels A, B, C current (OPTION H)**
- **To the 31st harmonic range.

CONSTRUCTION

- Metal Housing
- Standard Switchboard Dimensions & Cutout per ANSI 39.1

DIGITAL COMMUNICATIONS

- RS-232 or RS-485 serial channel connections

COMMUNICATION FORMAT

- 1 start, 8 data bits.
- 1 stop bit, programmable up to 9600 baud.

ENVIRONMENTAL

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

COMPLIANCE

- IEEE C37.90.1 (Surge Withstand)
- IEEE C62.41 (Surge)
- ANSI C39.1 (Form)

ANALOG COMMUNICATIONS

- 0-1 mA output - 10k Ohm max impedance
- 4-20 mA output - 250 Ohm max impedance

MODEL	PARAMETERS	ACCURACY *	RESOLUTION	RANGE
3DAA5	Amps A, B, C, N	0.25%	0.1%	0-1,999 ④
	Harmonic	0.50%	0.2%	31 st Order
	Max/Min Demand	0.25%	0.1%	0-100%
3DVA120	Volts L-N	0.25%	0.1%	0-1,999 ②
	Harmonic	0.50%	0.2%	31 st Order
	Max/Min Demand	0.25%	0.1%	0-100%
3DWA300	KW ①	0.40%	0.1%	0-1,999 ③
	KVA ①	0.40%	0.1%	0-1,999 ③
	KVAR ①	0.40%	0.1%	0-1,999 ③
	PF ①	1.00%	1.0%	1.0 to ±0.5
	Max/Min Demand ①	0.40%	0.1%	0-100%

* % of the readings ① For each of the phase and total power. ② Reads in Kilovolts for voltage over 1,999. ③ Reads in MVA, MW, MVAR for readings over 1,999. ④ Reads in Kiloamps for readings over 1,999.

Ordering Information

Model	Labeling	Harmonic Option	Connection	Operating Voltage	Control Power	Relay Option
Option Numbers: Specify a unit by writing its option numbers below. Specify your CT and PT ratio, Delta or Wye System. If a specification is given, it will be preprogrammed in the factory. List each desired accessory for every meter ordered.						
-	-	-	-	-	-	-
Example:						
3DAA5	A	H	3E	120	115A	NL
3DAA5	A Amps Label KA Kiloamp Label	H Harmonic Measurement	3E 3 Element Wye System	120 120/208	115A 115VAC ±20% 6VA	NL 2 Control Relays
3DVA120	V Volts Label KV Kilovolts Label	H Harmonic Measurement	2.5E 2.5 Element Wye System	G 277/480	230A 230VAC ±20% 6VA	
3DWA300	KW Kilowatt Label MW Megawatt Label	Does Not Apply	2E 2 Element Delta System	75 69/120 Wye Only	D 24-48 VDC ±20% 6VA D2 125VAC or DC ±20% 6VA universal	

Accessories

K110	SF232DB	SF485DB	SDFI-1 or SDFI-20	SNFI-1 or SNFI-20
Mounting Kit	RS232 Communication Adapter	RS485 Multi-Drop, Daisy Chain Communication Adapter	2 Channel Analog Outputs for model: 3DWA300	Channel Analog Outputs for models: 3DAA5 & 3DVA120
Remote terminal block mounting kit with 36" cable and mounting bracket.	Limited to a distance of 50 feet between the central computer and the unit.	The maximum distance is 4000 feet between the computer and the units.	SDFI-1 provides 0-1mA output. SDFI-20 provides 4-20mA output. Outputs can be mapped to any reading. Both channels are bidirectional.	Unidirectional.



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