



## MULTIDIGIT

The MultiDigit is a complete 3 phase digital metering system, in a standard ANSI 4.5 " case. All functions are performed via the two front control buttons, making the MultiDigit simple to use.

### Parameters Measured

- \* Phase to phase Voltage (V)
- \* Phase to neutral voltage (V)
- \* Phase current (I)
- \* Frequency (Hz)
- \* Active Power (W)
- \* Reactive Power (VAr)
- \* Apparent Power (VA)
- \* Active Energy (W.h)
- \* Reactive Energy (VAr.h)
- \* Power Factor (P.F.)
- \* Instantaneous Demand Amps
- \* Instantaneous Demand Active Power
- \* Instantaneous Demand Apparent Power
- \* Maximum Demand Amps
- \* Maximum Demand Apparent Power
- \* Maximum Demand Active Power
- \* Total Harmonic Distortion Phase Volts & Amps

### Display

The display has three lines, consisting of four digit LED displays, per line. There are 24 LED enunciators, to indicate which parameter is being read. The bright red LEDs can be clearly read, from a distance and over a wide viewing angle.

### System Types

Single Phase  
Single Phase 3 Wire  
3 Phase 3 Wire  
3 Phase 4 Wire

### Order Codes

M842-SB1  
M842-SB1-3  
M842-SB4  
M842-SB9

### Accuracy

Volts & Amps	0.5% of reading $\pm$ 2 digits
Frequency	0.1 Hz $\pm$ 1 digit
Active Power	1% of reading $\pm$ 2 digits
Reactive Power	1% of reading $\pm$ 2 digits
Apparent Power	1% of reading $\pm$ 2 digits
Power Factor	2% of range
Energy	IEC 1036 class 1
THD	$\pm$ 1% of range

### Controls & Programming

The two front control buttons are for scrolling up or down through the parameters being displayed.

These buttons also allow programming of different CT and PT ratios, demand times, baud rates, etc.

### Security Code

The MultiDigit has the facility to allow the user to program a 4 digit security code. Once the code is programmed, only authorised personnel can enter the programming mode.

### Memory

CT and PT ratios, demand time periods, W.h, VAr.h and calibration data are stored in non volatile eeprom memory. In power down (power loss) conditions, this data is retained.

### Applications

Typical product uses include, management systems, distribution feeders, switchgear, control panels, generating sets, UPS systems, process control, co-generation systems, power management and control.

### Pulsed Output

An option of pulsed output, via a relay is offered. The pulsed output can be assigned to W.h, VAr.h, VA.h or A.h

## Communications

The MultiDigit has the option of providing either RS232 or RS485 communications.

The RS485 enables remote reading of up to 32 MultiDigits on a two wire bus, using the Modbus protocol.

The Modbus protocol allows the MultiDigit to be used with PC, PLC, RTU, data loggers and Scada programs.

The RS232 output is 2wire one way communication and does not have a protocol.

The data is an ASCII data string i.e. continuous data  
With either RS232 or RS485 the following are programmable :-

Baud rate : 19200, 9600, 4800, 2400

Parity : Odd, Even, No Parity.

Stops : 1 or 2 (RS232 only)

Address : 1 to 247 (RS485 only)

## Software

Multitek provides free set-up and monitoring software, that can be downloaded from their website: [www.multitek-ltd.com](http://www.multitek-ltd.com)

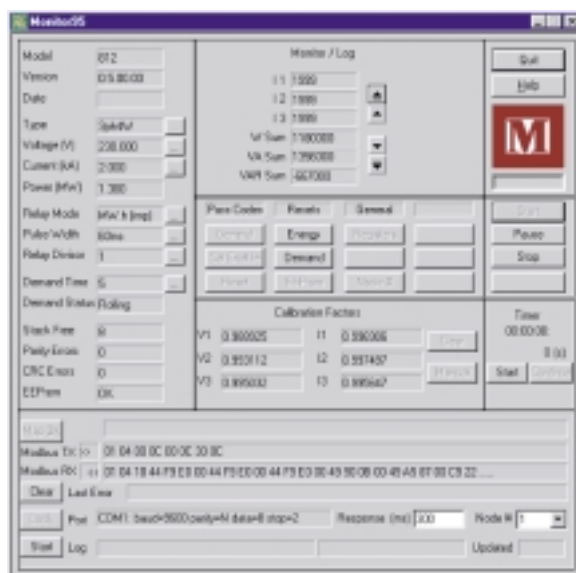
## Monitor95

The Monitor95 program allows the user to set up CT & PT ratios, demand times,baud rates, node address, rest energy registers, etc, via the RS485 modbus port.

The Monitor95 displays all of the parameters, that the MultiDigit is reading.

A data logging facility is also provided.

On board help files, provide all the necessary information to use Monitor95.



## General Specifications

### Input

Rated Un	57.8 to 600V (specify nominal)
Range	20 - 120% Un
Burden	0.5VA per phase
Overload	1.5 x Un continuous 4x Un for 1 Second
Rated In	1A or 5A
Range	10 - 120% In
Overload	4 x In continuous 50 x for 1 second
Frequency	45/65 Hz

### Auxiliary

AC Voltage	110, 120, 220, 230, 277 Volts AC $\pm 15\%$ 45 to 65 Hz, burden < 7VA
DC Voltage	12, 24, 30, 48, 110, 130, 220 Volts DC $\pm 15\%$

### Insulation

Test Voltage	3kV RMS @ 60Hz for 1 min between case, input, output and auxiliary.
Impulse Test	EMC 5kV transient complying with IEC 801 EN55020HF
Surge	IEC801 / EN55020
Withstand	ANSI C37.90A
Interference	EHF 2.5kV 1MHz complying with IEC255-4, DIN57411, VDE
Protection	Class 2, complying with IEC348, DIN57411, VDE

## Applied Standards

General	IEC688, BSEN60688, BS 4889, IEC359
EMC	
Emissions	BSEN50082/1
Immunity	BSEN50082/2
Safety	IEC1010, BSEN601010

### Display

Digits	3 lines 9999
Size	14.2mm 7 segment

### Options

Pulsed Output	W.h, VAr.h, VAh or A.h
RS485	Modbus protocol
RS 232	ASCII

## Environmental

<b>Working Temperature</b>	<b>-20 to + 70 deg C</b>
<b>Storage Temperature</b>	<b>-40 to + 85 deg C</b>
<b>Temperature Coefficient</b>	<b>0.01% per deg C</b>
<b>Relative Humidity</b>	<b>0-95% non condensing</b>
<b>Warmup Time</b>	<b>1 minute</b>
<b>Shock</b>	<b>30G in 2 planes</b>

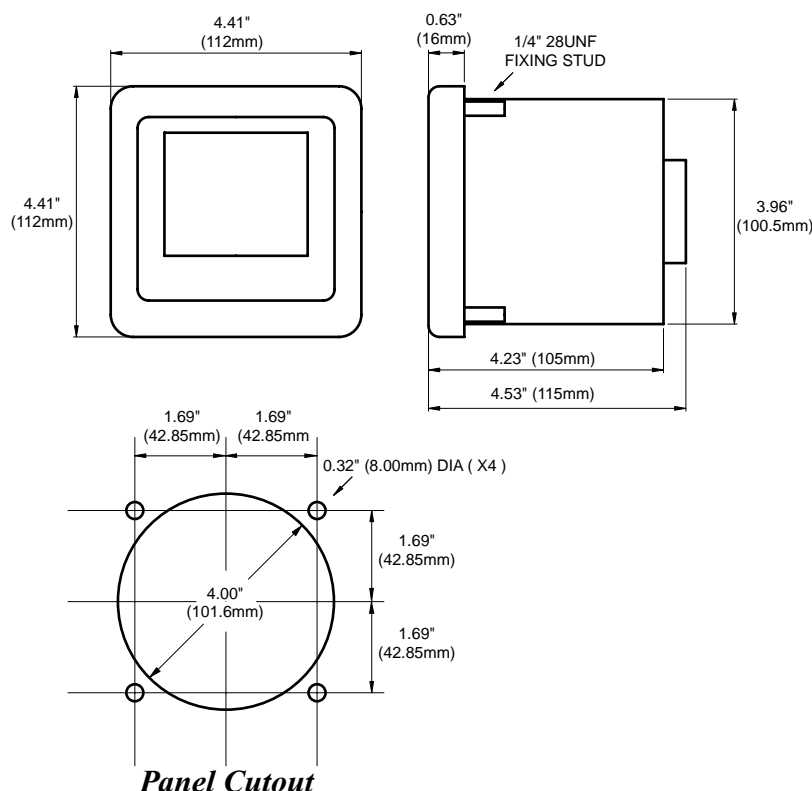
## Enclosure

<b>Standard</b>	<b>ANSI 4.5"</b>
<b>Mounting Terminals</b>	<b>Via 4 1/4"-28 Screws</b>
<b>Panel Cutout</b>	<b>4.0" Diameter</b>
<b>Material</b>	<b>Polycarbonate</b>
	<b>complying with UL 94 VO</b>
<b>Terminals</b>	<b>Screws for 2 x # 14 AWG</b>
<b>IP Rating</b>	<b>NEMA 4 / IP54</b>
<b>Weight</b>	<b>1.6lb</b>

## Approvals

**UL, C-UL, CSA**

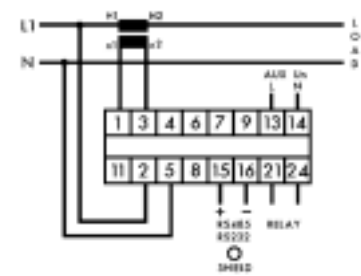
## Case Dimensions



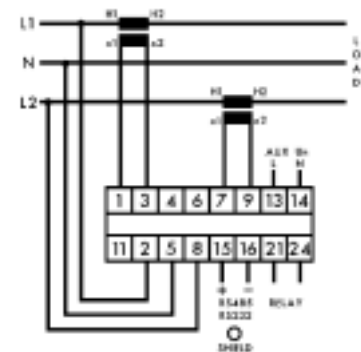
Power Measurement Specialists 1-800-523-9194

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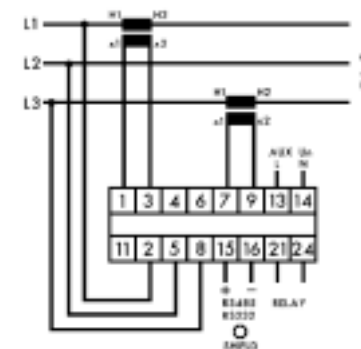
## Connection Diagrams



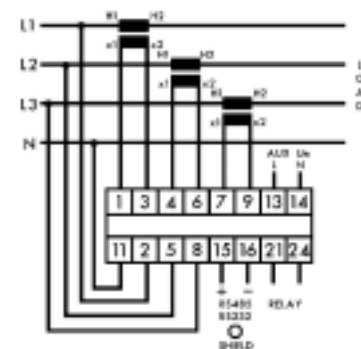
**SINGLE PHASE**



**SINGLE PHASE 3 WIRE**



**3 PHASE 3 WIRE  
UNBALANCED LOAD**



**3 PHASE 4 WIRE  
UNBALANCED LOAD**

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