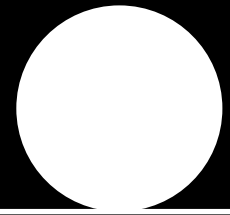


DM3 - Digital Monitor MARK III

SPECIALTY CONCEPTS, INC.

SYSTEM MONITORING DEVICE



The Specialty Concepts Digital Monitor Mark III (DM3) is a flush mounted digital meter for monitoring the performance of an alternative energy system. The DM3 can be used in 12 through 48 volt nominal systems and will show up to four functions via the high efficiency, easy to read, liquid crystal display (LCD). The functions displayed are system battery voltage, a versatile auxiliary voltage function, and two current readings. The auxiliary voltage function displays in volts or millivolts, and can also be used for current readings from an external shunt. High and low voltage alarm lights provide warnings of voltage extremes, and a plug-in alarm relay module is available. An installer can program the DM3 to display the alarm set-points for easy field calibration. The DM3 includes an internal shunt for current measurement up to 30 amps. The internal shunt can be cut and an external shunt used for monitoring currents up to 500 amps.

FEATURES

MONITORING FEATURES

- Four function monitoring
 - 1) System battery voltage
 - 2) Current reading via internal 30 amp or external shunt
 - 3) Current reading via external shunt
 - 4) Auxiliary input - displays one of the following:
 - a) Array voltage
 - b) Secondary battery voltage
 - c) Millivolt readings
 - d) Current reading via external shunt
- High and low voltage alarm lights
- Plug-in alarm relay module available (accessory)

DESIGN FEATURES

- 12-48 volt operation
- Liquid crystal display (LCD)
- Alarm set-points are adjustable and can be displayed
- Programming for correct reading of 100 or 500 amp shunts
- Reverse polarity protected
- Incorrect shunt connection protection
- On board fuse
- Flush mount
- Knock-out box available for wall mounting (4X7 BOX accessory)



DM3

OPERATION

FUNCTION SELECT SWITCH - The front panel rotary switch has four positions to select the system parameter to be displayed.

POSITION 1: "BATTERY VOLTAGE" provides a reading of the system battery voltage.

POSITION 2: "AUX. INPUT" display can be used for a voltage reading for the array or a second battery, as a millivolt meter, or for a current reading from a remote shunt. Programming pins on the back of the unit allow selection of the desired scale.

POSITION 3: "CURRENT 2 (LOAD)" provides a reading from a 100 or 500 amp external shunt. This is normally used to monitor DC loads, or currents to an inverter or main DC load center. Also used for the alarm set-point display during calibration.

POSITION 4: "CURRENT 1 (ARRAY)" includes an internal 30 amp shunt that can be replaced with an external shunt. If the array current does not exceed 30 amps and the monitor is installed close to the charge controller, the internal shunt can be used. For arrays that exceed 30 amps, or if remote monitoring is desired, the internal shunt can be cut and an external shunt of 100 or 500 amps can be used.

HIGH VOLTAGE ALARM and LOW-VOLTAGE ALARM LIGHTS -

The red lights, labeled "HIGH VOLTAGE ALARM", and "LOW VOLTAGE ALARM" on the front

panel will light when the respective warning voltage is reached. The voltage set-points for the warnings are adjustable from the back panel via potentiometers, and the settings can be viewed on the display.

PROGRAMMING - The DM3 has various functions and features that are selected via programming pins located on the back of the circuit board. By connecting various pins with the supplied jumpers, the desired operations will be performed.

ALARM SET PROGRAM PINS - Programming pins are provided to set the CURRENT 2 function to the set-point program mode, and to select high or low voltage set-point to be displayed.

DECIMAL POINT PROGRAM PINS - select the correct scale for the currents displayed using 100 or 500 amp external shunts.

AUX. INPUT VOLTAGE SCALE - selects the scale for the auxiliary voltage input. Voltages displayed can be in volts or millivolts. The millivolt scale is selected for current reading when using an external shunt.

AUX. INPUT NEGATIVE GROUND - The auxiliary input voltage can have a floating or grounded negative for more metering versatility.

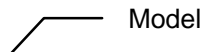
ACCESSORIES

REMOTE SHUNTS: 100 AMP SHUNT, 500 AMP SHUNT
KNOCK OUT BOX: 4x7 BOX
ALARM RELAY MODULE

DIGITAL MONITOR MARK III

PARAMETERS	UNITS	ADJUSTED TO 12 v	ADJUSTED TO 24 v
Charge Current, Display, Int. Shunt	(Amps)	30	30
Charge Current, Display, Ext. Shunt	(Amps)	1999	1999
Input Voltage, Continuous	(Volts)	65	65
Input Voltage, Max (10 seconds)	(Volts)	90	90
Operating Voltage @ Battery, Minimum	(Volts)	9.5	9.5
Quiescent Current	(Milliamps)	13	13
Current Consumption, One Alarm On	(Milliamps)	18	18
Accuracy, DC current (int. shunt)	%	2%	2%
Accuracy, DC current (ext. shunt)	%	1%	1%
Accuracy, DC Voltage	%	1%	1%
High Voltage Alarm, Factory Set	(Volts)	15.5 ± .1	31.0 ± .2
Low Voltage Alarm, Factory Set	(Volts)	11.5 ± .1	23.0 ± .2
Operating Temp. Range	(°C)	0 to 50	0 to 50
Storage Temp. Range	(°C)	-20 to 70	-20 to 70
Optional Relay Module			
Quiescent Current	(Milliamps)	12	12
Low-Alarm Current Consumption	(Milliamps)	.1	.1
High-Alarm Current Consumption	(Milliamps)	24	24
Relay Contact Current, Max.	(Amps)	3	3

PART NUMBERING KEY



DM3

DIMENSIONS

In Inches (cm)

4x7 BOX (ACCESSORY)

ACCESSORIES

100 AMP SHUNT
 500 AMP SHUNT
 4X7 BOX
 ALARM RELAY MODULE

DM3 unit depth: 2.25 (5.7). 4x7 BOX depth: 2.25 (5.7)
 DM3 with 4x7 BOX depth: 2.55 (6.35)
 Shipping Wt. 2 lbs. (1 Kg.)

Specifications and product availability subject to change without notice.

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