MARK PV™ Series
Specifications

PHOTOVOLTAIC CHARGE CONTROLLER

The MARK PV™ Controllers provide ideal battery charging for solar systems while protecting these batteries from over-charging. These units provide a cost effective, flush mounted, controller with complete digital monitoring. The MARK PV™ Controllers are designed for 12 volt systems and are rated from 15 to 22 amps of charging. These controllers are designed for use in mobile or stationary photovoltaic energy systems.

The standard MARK/15™ is UL recognized.

For MARK/15 units. Contact factory for specific information

MARK/15

OPERATION

SWITCHING SHUNT REGULATION - The MARK PV™ Controller will allow maximum array current to flow into the battery through a blocking diode, lighting the "SOLAR CHARGING" light (LED), until the battery voltage reaches the charge termination set-point. At this point, a shunt transistor will turn on, shunting the solar array, turning off the "SOLAR CHARGING" LED, lighting the "BATTERY CHARGED" light and halting any further battery charging.

When the battery voltage drops to the charge resumption set-point, the shunt transistor will turn off and charging will resume. The result is that when battery capacity is low, charging will be continuous. As the battery charges up, current will pass into the battery for shorter and shorter periods, until at full charge, it will pulse current into the battery to achieve and maintain full charge.

FEATURES

CHARGE REGULATION
- For 12 volt systems
- Rated from 15 to 22 amps (refer to serial number tag on unit for rating).
- Switching shunt, pulse charging
- Low switching frequency (no noise)
- No minimum operating voltage (can charge a dead battery)
- Field adjustable set-points

DESIGN FEATURES
- 100% solid-state
- Designed for rugged mobile use
- Simple design (low component count)
- Over-current protection – battery fuse, array fuse
- Reverse leakage protection - blocking diode
- Reverse polarity protection
- Lightning protection
- Input noise suppression
- Low power consumption
- 10 awg terminal block: (22 amp units)
- 12 awg terminal block: (15 amp units)
- Conformal coated circuit board
- Designed to operate at very low or high temperatures

MONITORING
- Very accurate digital monitoring of:
  a) System battery voltage
  b) Solar charge current
  c) Charge set-point calibration
- "SOLAR CHARGING" light
- "BATTERY CHARGED" light
- Colored BATTERY CONDITION bar-graph
- BAR or DOT display
- Power saver display mode

MOUNTING
- Flush mount
- Knock-out box available for wall mounting (4x7 BOX accessory)

ACCESSORIES

BOX 4X7 - Knock-out box used for wall mounting.

SPECIALTY CONCEPTS MARK PV CONTROLLER

PARAMETERS	UNITS	VALUE
Array Current, Continuous (Isc)	(Amps)	15, 22 (Refer to Serial Number Tag on Unit)
Array Current, Max (60 seconds)	(Amps)	130% of rated charge current
Nominal Voltage	(Volts)	12
Array Voltage, Max (Voc)	(Volts)	26
Operating Voltage at Battery, Min		
Charge Control	(Volts)	0
LCD Metering	(Volts)	7.8
LED Bar-graph	(Volts)	10.5
Current Consumption		
Quiescent (Tare)	(Milliamps)	8.8
Charging (with LED Bar-graph off)	(Milliamps)	12.8
LED Bar-graph	(Milliamps per LED)	5
Charge Termination, Factory Set	(Volts)	14.4 ± .2
Charge Termination, Adjustable Range (1)	(Volts)	13.6 – 15.3
Charge Resumption, Factory Set (1)	(Volts)	13.0 ± .2
Voltage Drop, Array to Battery @ 15 amp		
Controller, Max	(Volts)	0.5
Controller and 2 fuses, Max	(Volts)	0.8
LCD Meter Accuracy		
DC Voltage	(Percent)	1 %
DC Current	(Percent)	2 %
Operating Temperature Range	(°C)	-30 to 50
Storage Temperature Range	(°C)	-40 to 70

Notes:

(1) The Charge Termination / Resumption span is fixed. The Resumption set-point changes as the Termination set-point is adjusted.

PART NUMBERING KEY

EXAMPLE:

Model / Nominal Current
Nominal Voltage

MARK/15-12

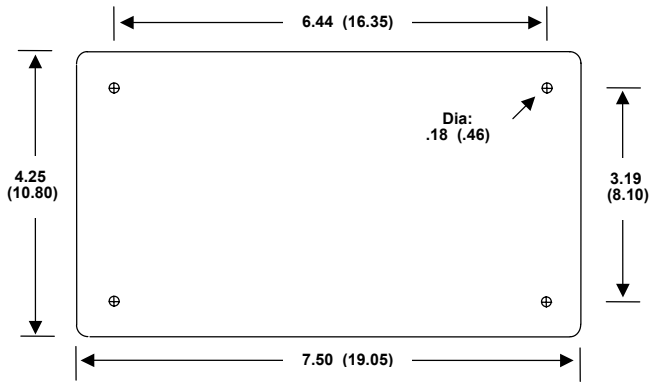
MARK/22-12

ACCESSORIES

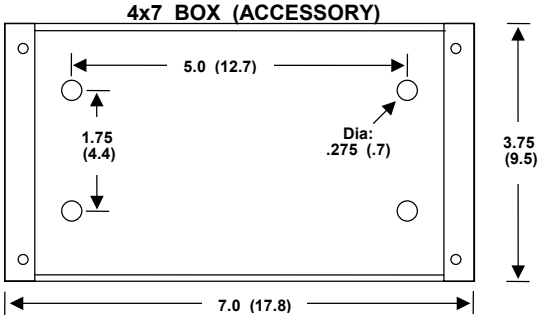
4x7 BOX

DIMENSIONS

In Inches (cm)



4x7 BOX (ACCESSORY)



Specifications and product availability subject to change without notice.

Shipping weight: MARK/15 - 1 lbs. (.5 Kg.) 4X7 BOX - 1.25 lbs. (.6 Kgs.)

MARK/15 unit depth: 2.25 (5.7) 4x7 BOX depth: 2.25 (5.7)
MARK/15 with 4x7 BOX depth: 2.55 (6.35)

SPECIALTY CONCEPTS, INC.

8954 Mason Ave.
Chatsworth, CA 91311 USA,

Ph:(818) 998-5238
Fx:(818) 998-5253

E-mail: speccon@earthlink.net
Web-site: www.specialtyconcepts.com