SC3/10

Specialty Concepts MARK III/10

PHOTOVOLTAIC CHARGE CONTROLLER

DESCRIPTION

The Specialty Concepts Mark III/10 (SC3/10) is a low cost, flush mount, battery charge controller and system monitoring unit. The SC3/10 is available for 12 volt systems with charging current up to 10 amps, and provides efficient charging while protecting the batteries from damage due to overcharging. This regulator is designed for use in mobile or stationary photovoltaic energy systems, with monitoring consisting of "SOLAR CHARGING", "BATTERY CHARGED" and "LOW BATTERY" lights. A blocking diode and a front panel fuse are included.

SC3/10

FEATURES

CHARGE REGULATION
- 10 amp charge current, 12 volt
- Switching shunt, pulse charging

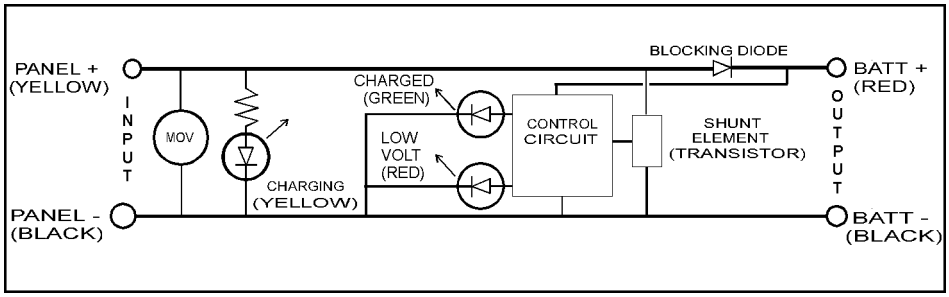
DESIGN FEATURES
- 100% solid-state
- Designed for rugged mobile use
- Over-current protection - battery fuse
- Reverse leakage protection - blocking diode
- Lightning protection
- Input noise suppression
- Low power consumption

MONITORING
- "LOW BATTERY" light
- "SOLAR CHARGING" light
- "BATTERY CHARGED" light

MOUNTING
- Flush mount
- Wall mounting on standard electrical double switch box

OPERATION

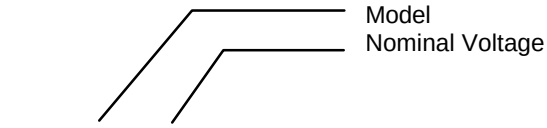
SWITCHING SHUNT REGULATION - The SC3/10 will allow maximum array current to flow into the battery through a blocking diode, lighting the "SOLAR CHARGING" light (LED), until the battery voltage reaches the charge termination set-point. At this point, a shunt transistor will turn on, shorting out the solar 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, charging will resume and the lights will reverse. 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.



Block diagram - SC3/10

PARAMETERS	UNITS	VALUE
Nominal Voltage	(Volts)	12
Short Circuit Current, Continuous	(Amps)	10
Short Circuit Current, Max (60 seconds)	(Amps)	13
Array Voltage, Max Voc	(Volts)	26
Operating Voltage @ Battery, Minimum	(Volts)	0
Quiescent Current	(Milliamps)	10
Current Consumption, Charging, Typ.	(Milliamps)	15
Voltage Drop, Array to Battery, Typ.	(Volts)	.4
Charge Termination	(Volts)	14.3 ± .2
Charge Resumption	(Volts)	13.5 ± .3
Low Battery Warning Light (On)	(Volts)	11.5 ± .2
Operating Temp. Range	(°C)	-40 to 50
Storage Temp. Range	(°C)	-55 to 85

PART NUMBERING KEY



SC3/10 - 12

MODEL	NOMINAL VOLTAGE
SC3/10	12

DIMENSIONS

In Inches (cm)

Specifications and product availability subject to change without notice.

SPECIALTY CONCEPTS, INC.

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