ASC™: *Specifications*

PHOTOVOLTAIC CHARGE CONTROLLER

The ASC™ photovoltaic battery charge controller is ideal for 1-4 solar panel systems. This unit offers unsurpassed protection to your batteries from over-charging. This rugged unit holds the record for high reliability since 1981.

The standard ASC™ is UL recognized and is FM approved for hazardous locations. The ASC™ is also CSA approved for Canadian markets. Contact factory for specific information.

FM APPROVED

For standard units. Contact factory for specific information

FEATURES

CHARGE REGULATION

- 12 volt units: 4,8,12,16 amps
- 24 volt units: 8 and 16 amps
- 6, 36 and 48 volt units available (contact factory for current ratings)
- Switching shunt, pulse charging
- Low switching frequency (no noise)
- No minimum operating voltage (can charge a dead battery)
- Remote temperature compensation (optional, not available on 6 volt)

LOW VOLTAGE LOAD DISCONNECT (LVD) (option)

- 10 amp LVD Relay
- Contacts for generator start or alarm

DESIGN FEATURES

- Completely encapsulated for environmental protection (suitable for outdoor mounting)
- 100% solid state charge control
- Reverse leakage protection -blocking diode
- Lightning protection
- Input noise suppression
- Low power consumption
- Simple (low component count) with rugged circuitry
- 12 AWG terminal block (10 AWG stranded OK)

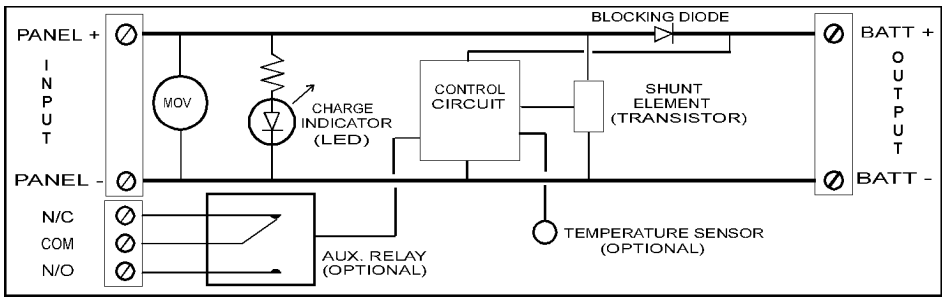
MONITORING & MOUNTING

- Charging light
- LVD activated light (with LVD)

OPERATION

SWITCHING SHUNT REGULATION -The ASC™ will allow maximum array current to flow into the battery through a blocking diode, lighting the "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 "CHARGING" LED 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.

FOR LARGER ARRAYS - The ASC™ can be wired in parallel to sub-arrays. This method provides the added reliability of independent, redundant charge controls and allows for sequential charging.



Block Diagram - ASC

OPTIONS

A - Temperature Compensation :
Temperature compensation is generally recommended for sealed batteries or where batteries are expected to experience temperature variations of more than ± 10° from 25°C during periods of charging. A small temperature sensor on a 10 foot lead monitors battery temperature and adjusts the charging thresholds according to battery temperature. The rate of compensation is -5mv/°C per battery cell from 25°C.

E - Low Voltage Disconnect (LVD) / Generator Start :
The ASC™ can be provided with an auxiliary relay. This relay can be used to protect the battery from low-voltage damage by disconnecting loads or by signaling a standby generator to start or stop battery charging. The relay is rated for 10 amps and provides the common, the normally open and the normally closed voltage free contacts. The relay consumes 30 ma when activated and is activated at 1.92 ± .03 volts/cell and deactivated at 2.17 ± .03 volts/cell. A separate terminal block is provided for connection.

F - Adjustability :
The ASC™ may be ordered with the adjustment pot available to change the charging set-points if required. Load disconnect set-points are also adjustable for units with E-option (LVD / Gen. start).

ASC - Specifications

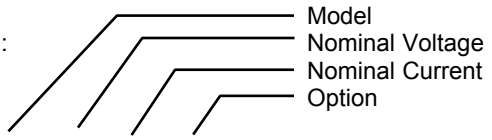
PARAMETERS	UNITS	NOMINAL CURRENTS				
		4 amp	8 amp	12 amp	16 amp	
Short Circuit Current, Continuous	(Amps)	4	8	12	16	
Short Circuit Current, Max (60 seconds)	(Amps)	5	10.5	15.5	21	

PARAMETERS	UNITS	NOMINAL VOLTAGES				
		6 v	12 v	24 v	36 v	48 v
Load Current, Continuous (1)(2)	(Amps)	N/A	10	10	N/A	N/A
Load Current, Max (60 seconds) (1)(2)(3)	(Amps)	N/A	13	13	N/A	N/A
Array Voltage, Max Voc	(Volts)	26	26	46	69	92
Operating Voltage @ Battery, Minimum						
Charge Control	(Volts)	0	0	0	0	0
Load Disconnect (1)	(Volts)	N/A	8.5	17	N/A	N/A
Quiescent Current	(Milliamps)	10	10	10	10	10
Current Consumption, Charging, Typ.	(Milliamps)	15	15	15	15	15
Current Consumption,						
Load Disconnected, Typ. (1)(4)	(Milliamps)	N/A	40	40	N/A	N/A
Voltage Drop, Array to Battery, Typ.	(Volts)	.30	.30	.30	.6	.6
Voltage Drop, Array to Battery, Max.	(Volts)	.55	.55	.55	.7	.7
Voltage Drop, Battery to Load, Typ. (1)	(Volts) @ 10 amps	N/A	.06	.06	N/A	N/A
Charge Termination (5)	(Volts)	7.1 ± .1	14.3 ± .2	28.6 ± .4	42.9 ± .6	57.2 ± .8
Charge Resumption (5)	(Volts)	6.65 ± .2	13.5 ± .3	27.0 ± .6	40.5 ± .9	54.0 ± 1.2
Load Disconnect (LVD) (1) (5)	(Volts)	N/A	11.5 ± .2	23.0 ± .4	N/A	N/A
Load Reconnect (1) (5)	(Volts)	N/A	13.0 ± .3	26.0 ± .6	N/A	N/A
Operating Temp. Range	(°C)	-40 to 50	-40 to 50	-40 to 50	-40 to 50	-40 to 50
Storage Temp. Range	(°C)	-55 to 85	-55 to 85	-55 to 85	-55 to 85	-55 to 85
Temperature Comp. Coef. (from 25°C) (6)	(Volts/°C)	N/A	-.03	-.06	-.09	-.12

Notes:
(1) Low-voltage disconnect option (option E)
(2) Non-inductive.
(3) Carry only, Non-switching
(4) LVD relay energized, red L.E.D. on, typical value.
(5) Value adjustable with Adjust. Voltage Set-points option (option F). Charge Termination / Resumption (and Load Disconnect / Reconnect (option E)) span is fixed.
(6) Temperature compensation option (option A)

PART NUMBERING KEY

EXAMPLE:



ASC- 12 / 8 - A

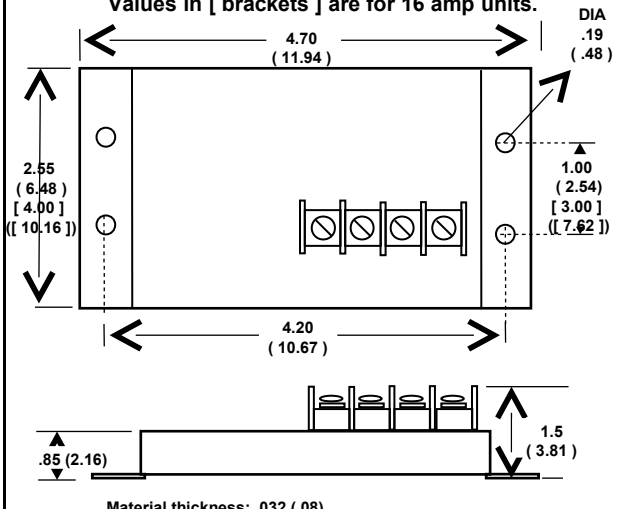
AVAILABLE MODELS

MODEL OPTIONS	(voltage / current options)	OPTIONS
ASC	6 / (4*,12*)	A - Temperature Compensation
	12 / (4,8,12,16, 20*)	E - Low-voltage Disconnect (LVD)/ Generator Start
	24 / (8,16)	F - Adjustable Voltage Set-point(s)
	36 / (6*,12*)	
	48 / (6*,12*)	

NOTES: * indicates a non-standard model
Options not available for 12/4, 12/20
Option E & option F not available with 6, 36, 48 volt units. Option A not available on 6

DIMENSIONS

In Inches (cm)
Values in [brackets] are for 16 amp units.



Material thickness: .032 (.08)

Shipping weight: .5 lbs. (.25 Kgs.)
[16 amp: 1 lbs. (.5 Kgs.)]

Specifications and product availability subject to change without notice.

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