Brief Product Summary

Plasmatronics Pty Ltd
165 Cheddar, Reservoir
VIC 3073, AUSTRALIA
Ph: +61-3-9486-9902
Web: www.plasmatronics.com.au

Product = PR1210(L) & PR2410(L) Regulators

Fully encapsulated, Suitable for marine applications, 10Amp, 2 Stage

PR1210 12V (Flooded batteries)

PR1210L 12V (Gel batteries)

PR2410 24V (Flooded batteries)

PR2410L 24V (Gel batteries)

Product = PL20, PL80e Regulators

12-48V, fully programmable, inc generator, wind, & event control

PL20
(20A Charge, 20A Load)

PL40
(40A Charge, 7A Load)

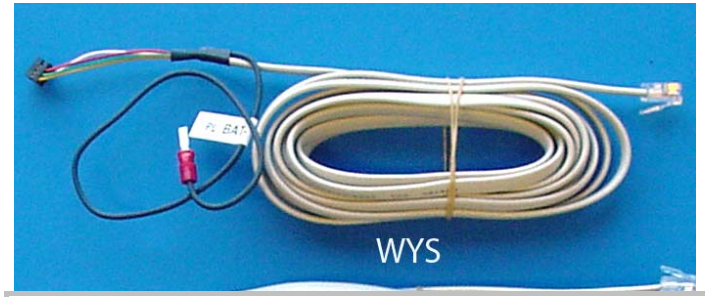
PL60
(60A Charge, 30A Load)

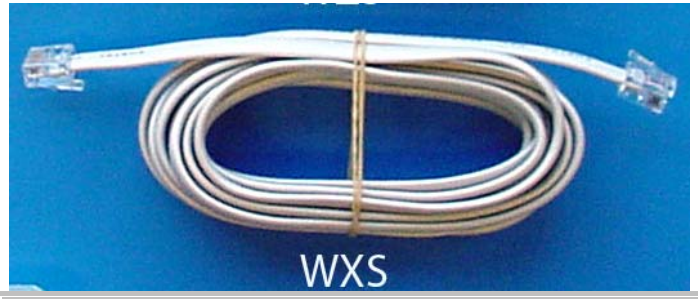
PL20 (cover off)

PL40 (cover off)

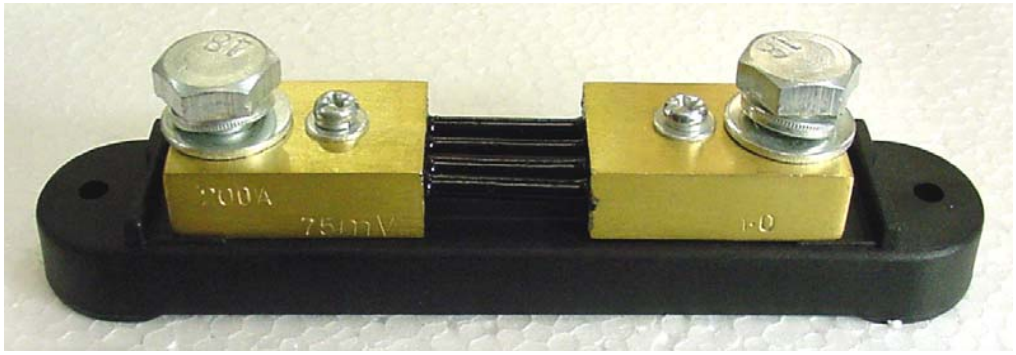
PL60 (cover off)

Product = PL Regulator Accessories





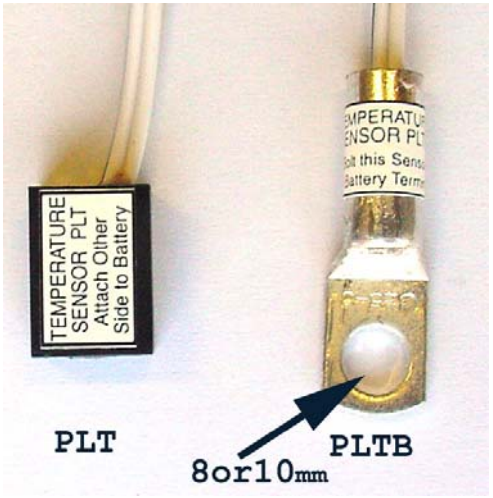
WYS Shielded Cable PL20/40 to accessory	WZS Shielded Cable PL60 to accessory	WXS Shielded Cable accessory to accessory or extension to WYS/WZS



SH200 Shunt (200Amp)

PLS2 Shunt Adapter

Product = PL Regulator Accessories (continued)



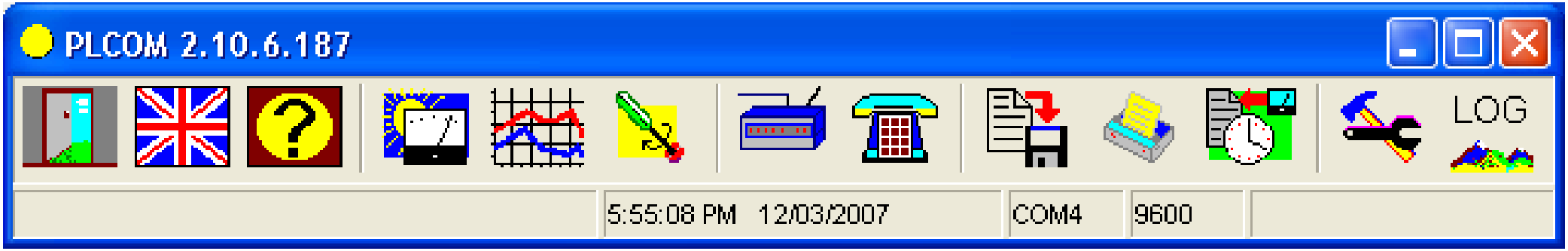
PLT & PLTB (Batt Temp Sensors)

PLI RS232 Serial Interface

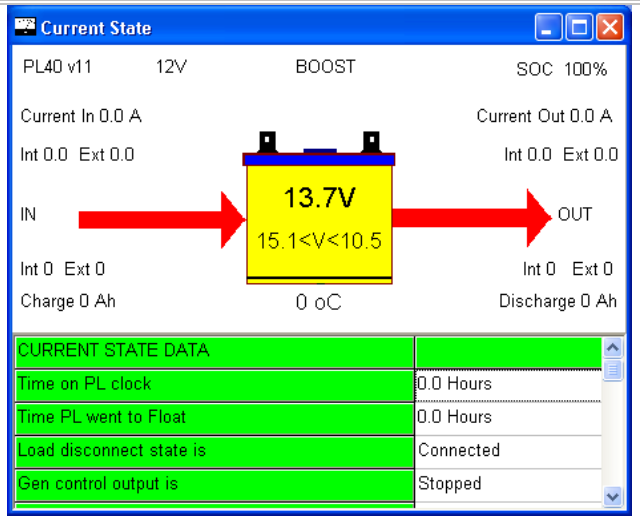
PLM Remote Monitor **(inc backlight & alarm)**

Product = PLCOM software (free from website)

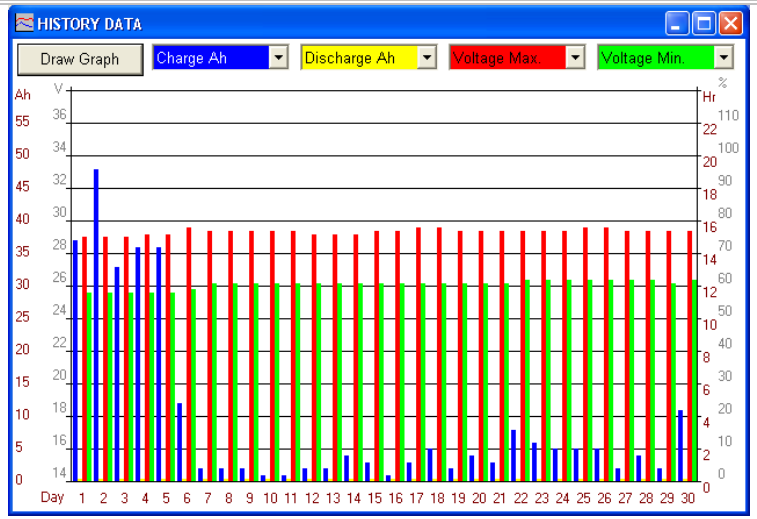
Remotely configure regulator settings, download history, etc via serial port



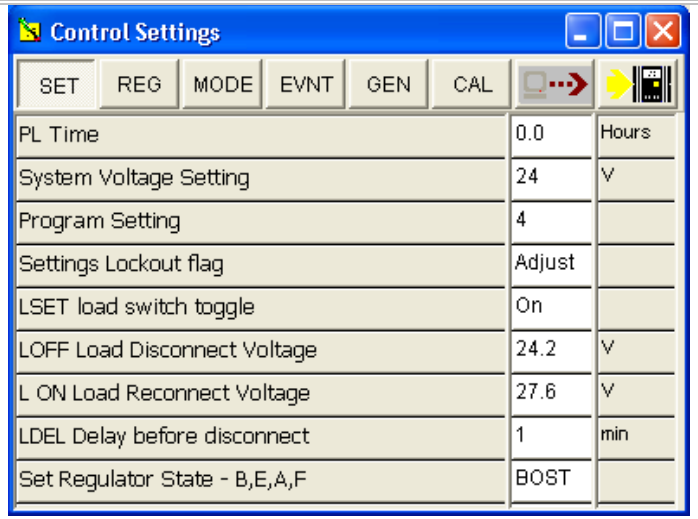
Main PLCOM Window



Current Status

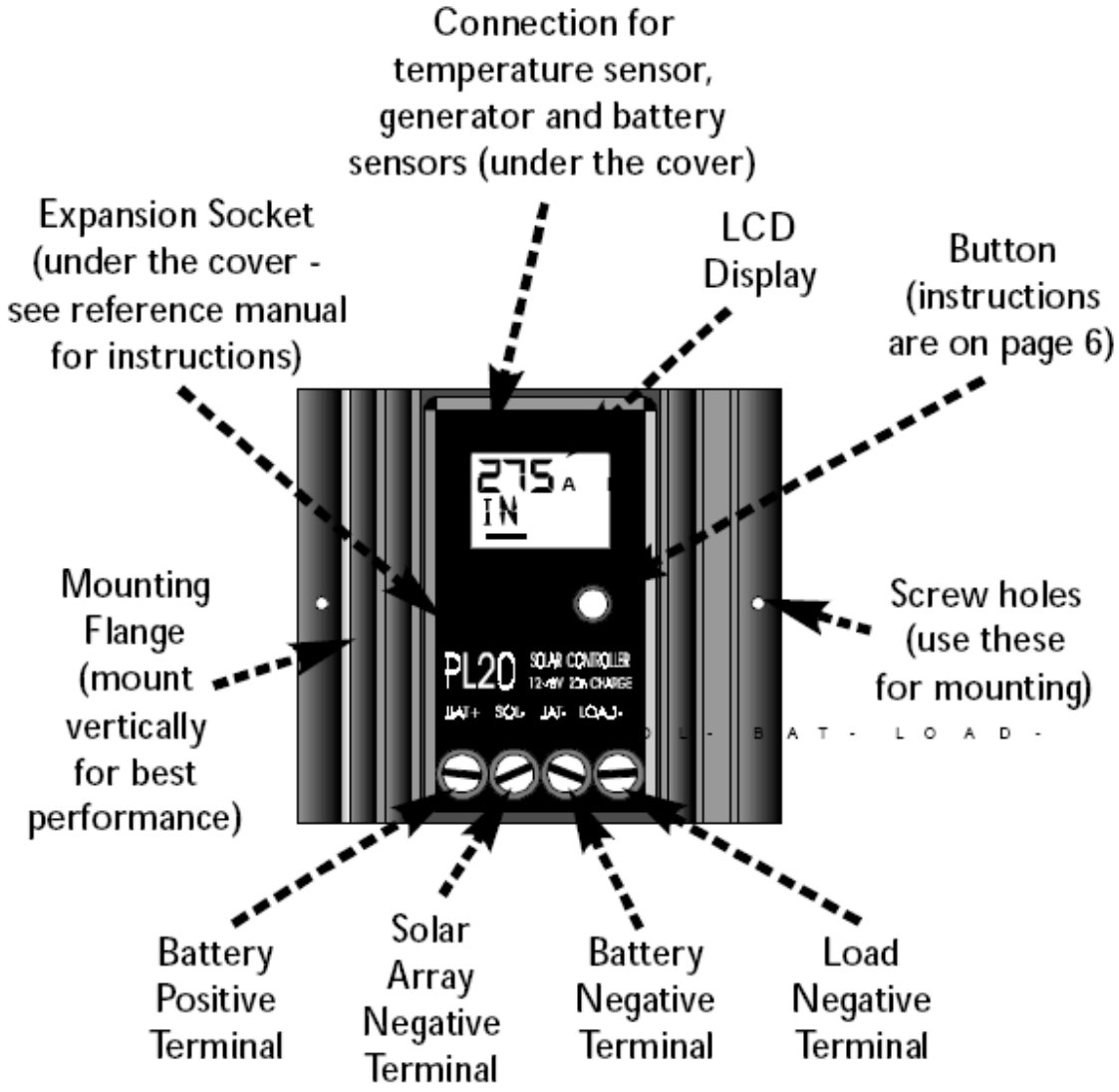


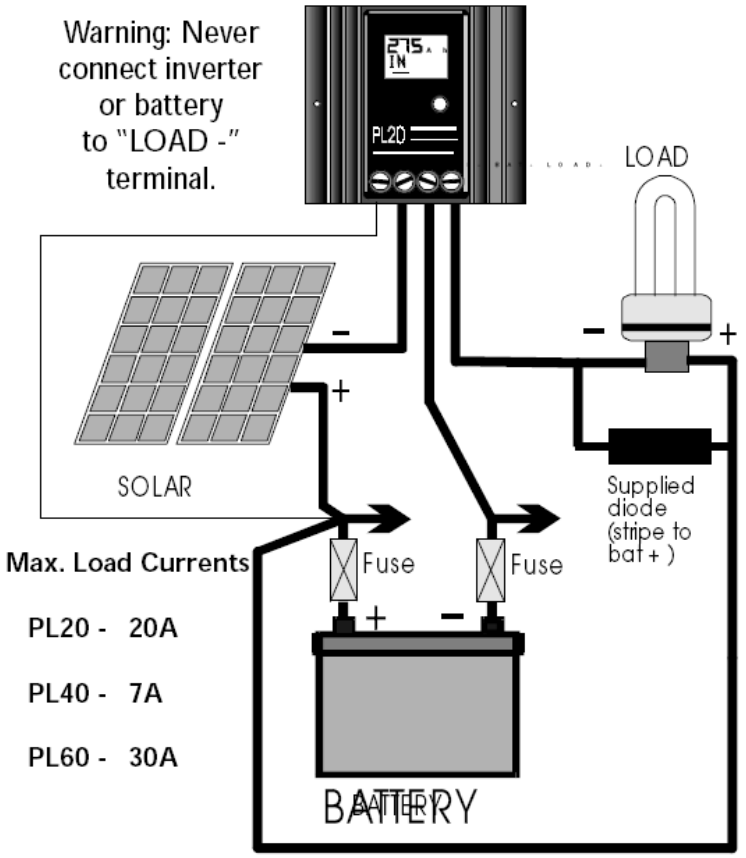
History Data

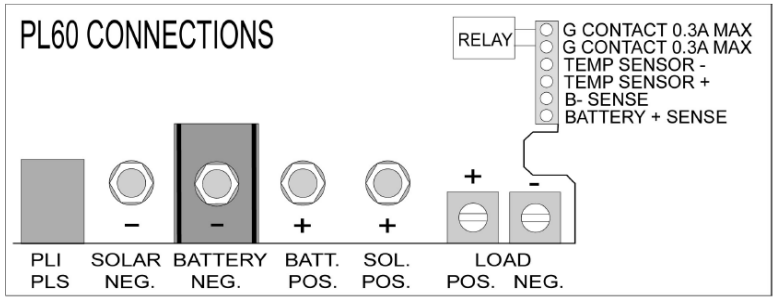


Control Settings

PL User Manual Connection Diagrams



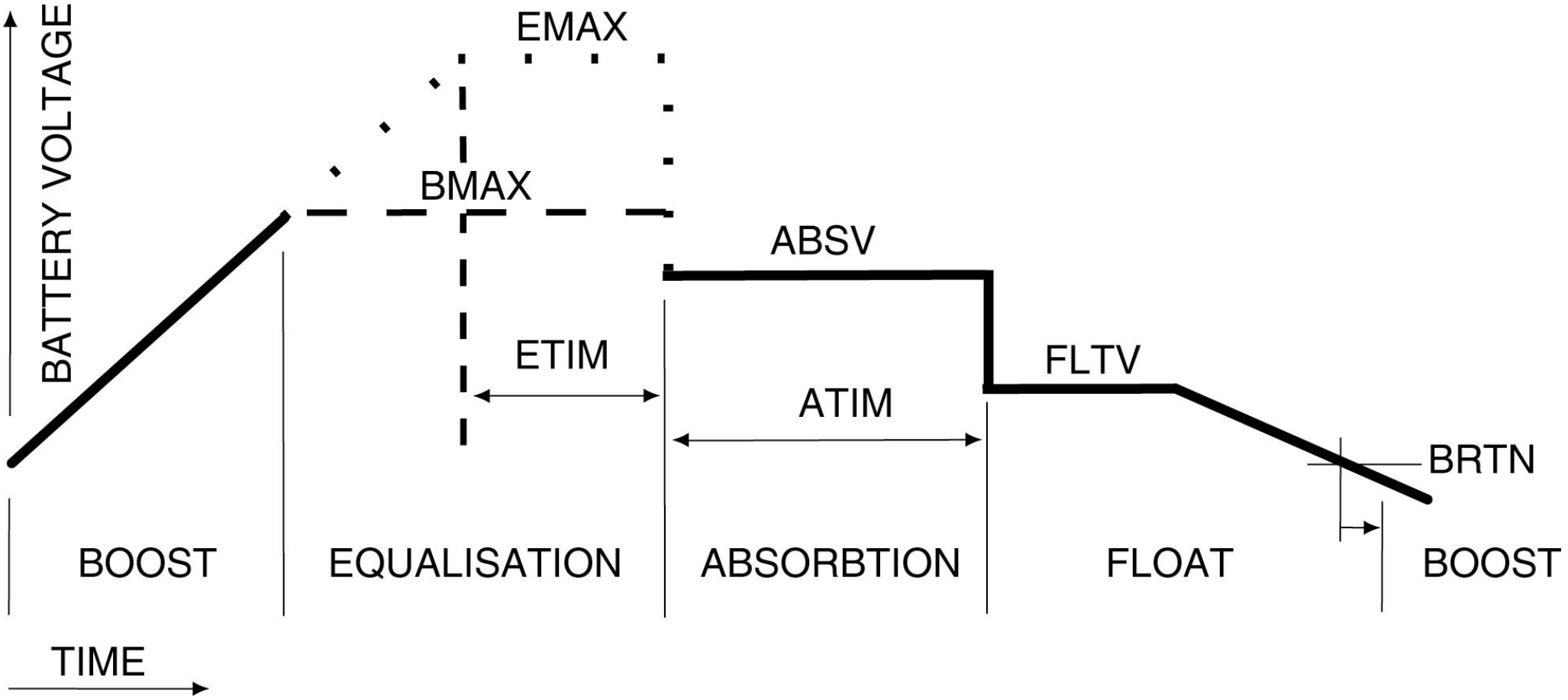




PL Regulator Features

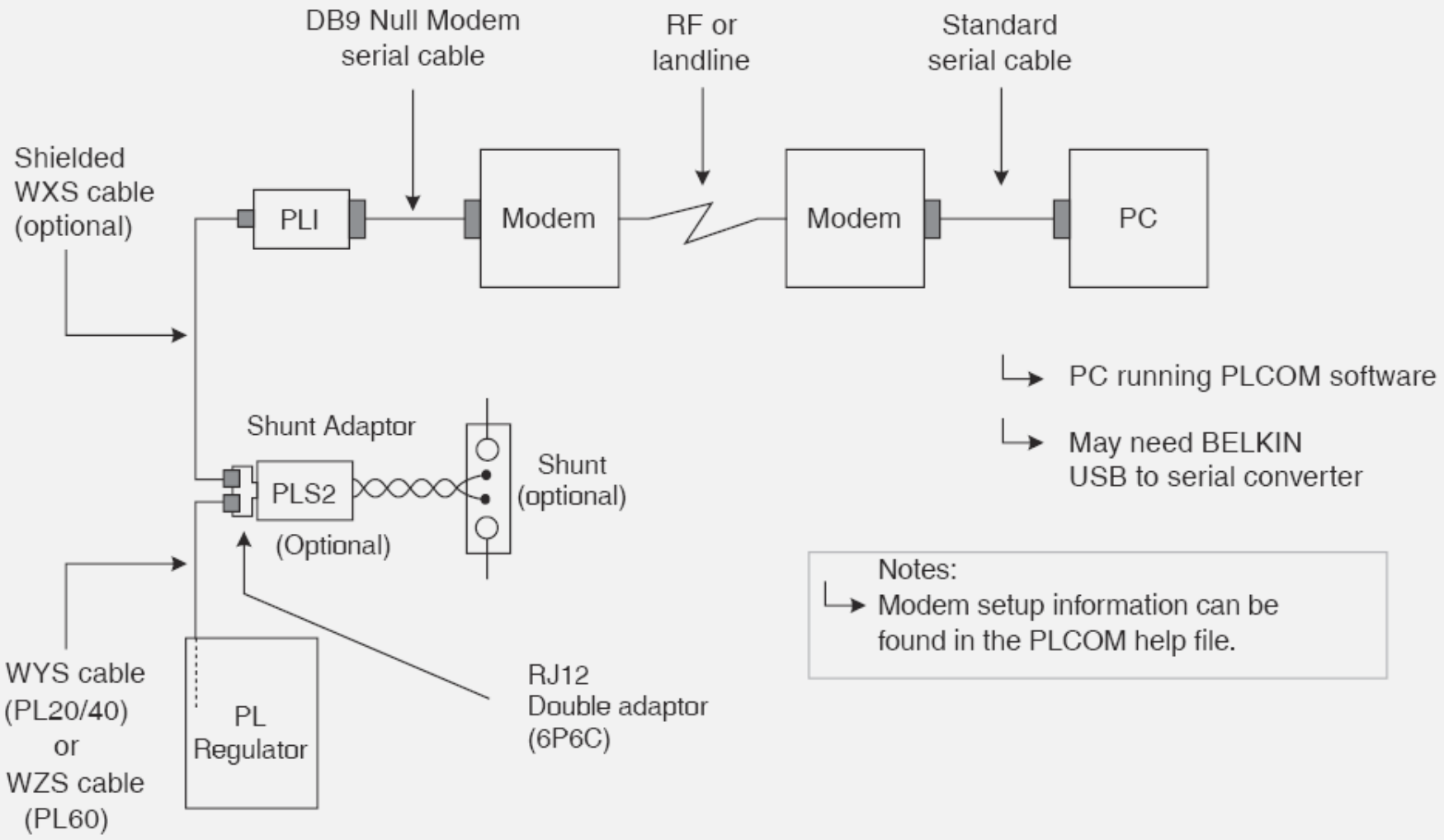
Adjustable: All settings are adjustable, and are stored in non volatile memory so you don't lose your custom set up if the unit needs to be disconnected from the battery.
Display: User friendly LCD display. Each number has a label.
Energy metering: Daily Load and Charge Ah plus State of Charge, all recorded for 30 days.
Four Stage Regulation: Boost, Absorption, Float, and Equalisation available as appropriate for the battery type.
History: Records Charge and Load Ah, Max and Min battery voltages, SOC, and Float times for the last 30 days. You can tell how much energy was really collected and used. This history can be very useful when diagnosing a system problem.
Generator Control: A sophisticated generator controller is included, with four different modes of control, and a quiet time option.
Event Control: A powerful event controller/timer allows the Load and/or General Purpose terminal to turn on or off a wide range of loads (eg pumps, lights, motors etc.), under a user specified set of conditions.
Alarm: There is an adjustable high or low battery voltage alarm output, which can drive an external alarm device.
Second Battery: When the main battery is full, the PL can supply a signal to switch a relay, so that some or all of the array can charge a second battery. The second battery charging is also controlled.
Remote control: The PLM remote display allows all functions to be accessed from up to 100 metres away. Fits in a standard light switch mounting plate.
Data Comms: Communication with a computer is possible via the optional PLI interface. This allows fast downloading of all data and adjustment of settings. Can be used via a modem for remote sites etc.
Protection: Protected against short circuits, reverse flow, and lightning. Low battery load disconnect function built in. Current limiting in the event of over temperature or over current. Full conformal coating protects against corrosion.
External Shunts: Up to two external shunts can be added using optional DC isolated PLS2 shunt adaptors. Inverter and/or battery charger current and other external currents can be included in the Ah readings and SOC.

PL Series Battery Charge Regulation Cycle



Four stage charging algorithm incorporating true Pulse Width Modulated (PWM) constant voltage control (slow switching 'On/Off' option selectable if required)

PL Regulator - Remote monitoring via modem



This diagram is for reference only. Wiring and fuses etc. must be installed as specified by the relevant Australian Standards.

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16/04/08 V1.11 CL
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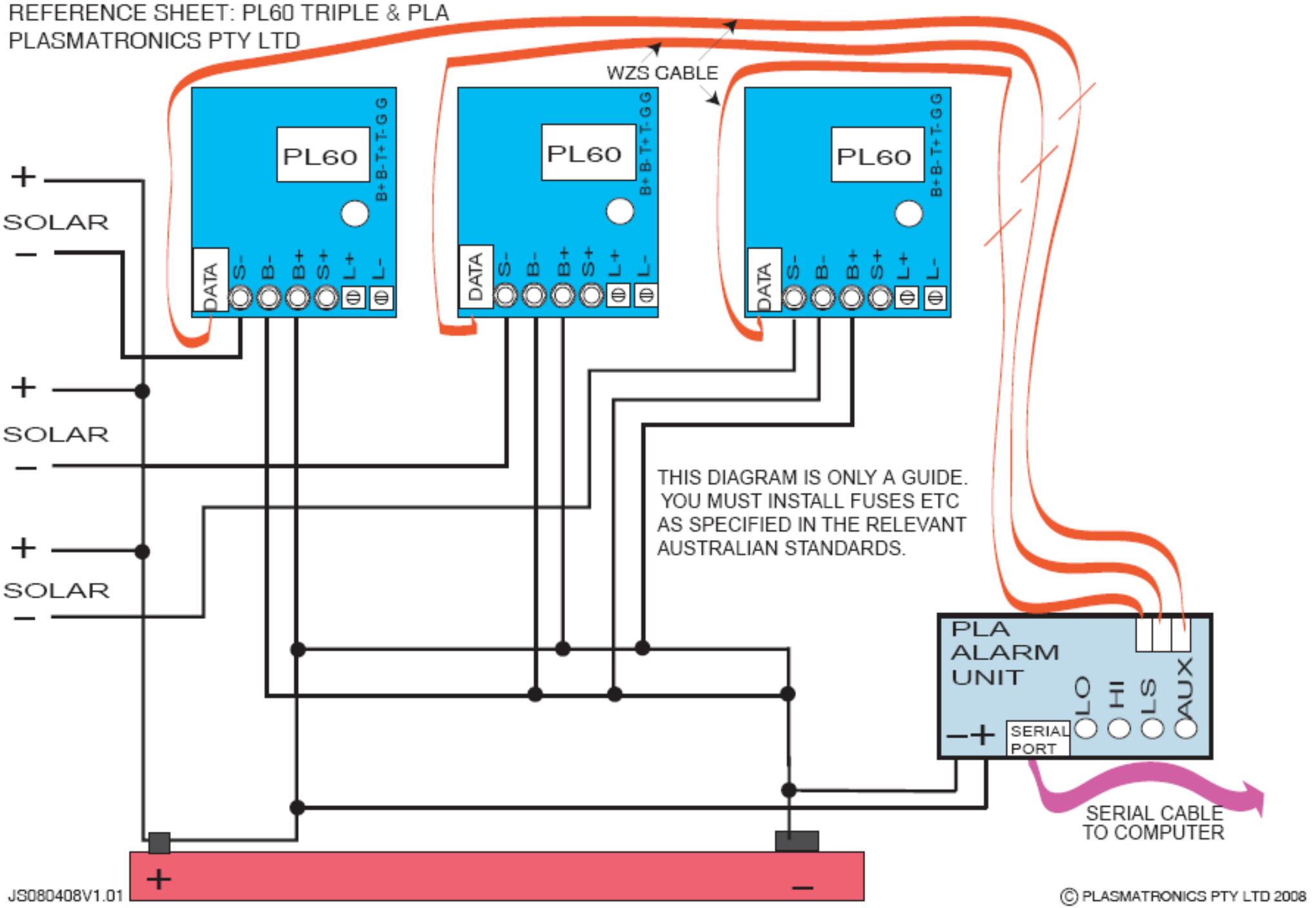
REFERENCE SHEET: PL60 TRIPLE & PLA
PLASMATRONICS PTY LTD
WZS CABLE
PL60
PL60
PL60
B+ B- T+ T- G G
DATA
S- B- B+ S+ L+ L-
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SOLAR
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THIS DIAGRAM IS ONLY A GUIDE.
YOU MUST INSTALL FUSES ETC
AS SPECIFIED IN THE RELEVANT
AUSTRALIAN STANDARDS.
PLA
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AUX
SERIAL
PORT
SERIAL CABLE
TO COMPUTER
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JS080408V1.01
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Product = DINGO 2020N (Negative Gnd Regulator)

12-48V, fully programmable, inc generator, wind, & event control

20A Charge | 20A Load

Product = DINGO 2020N (Negative Gnd Regulator)

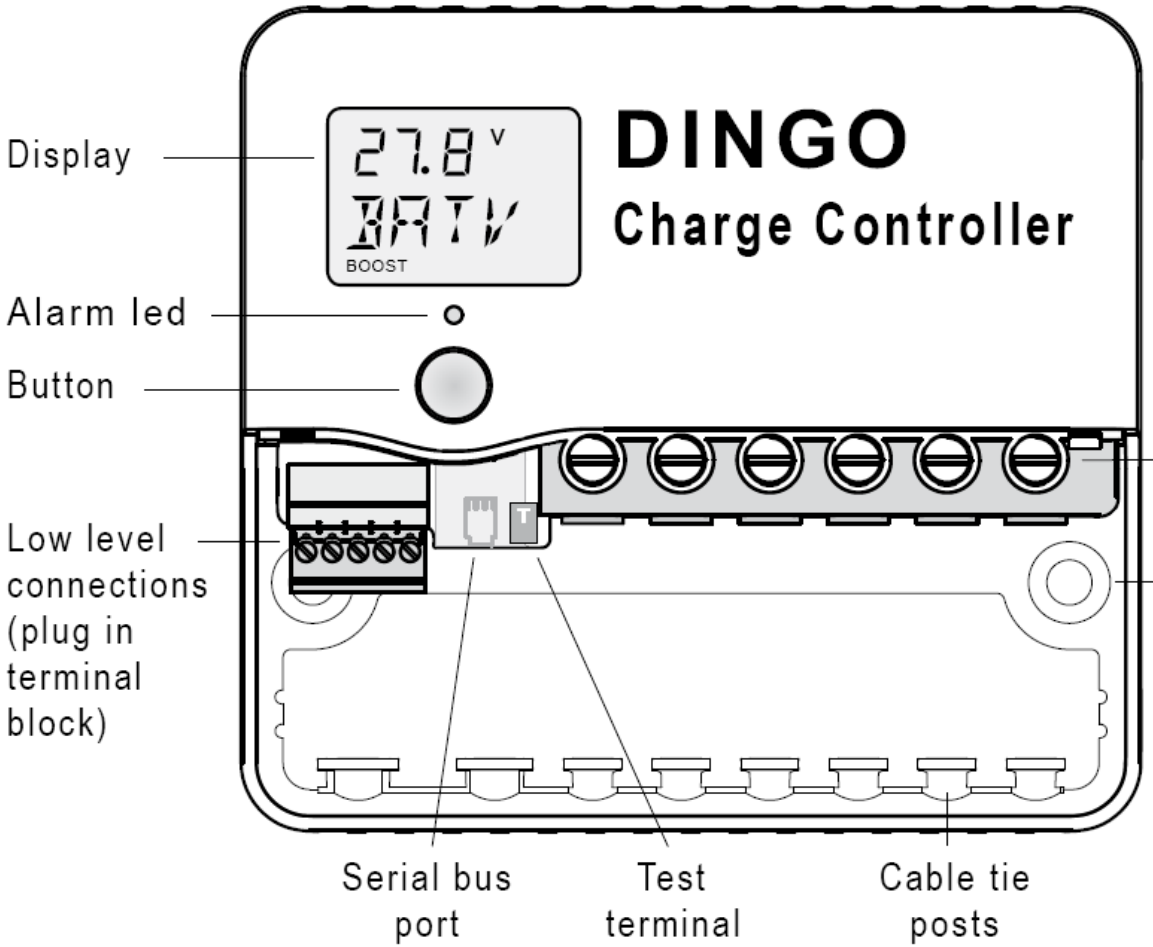
What's the same?

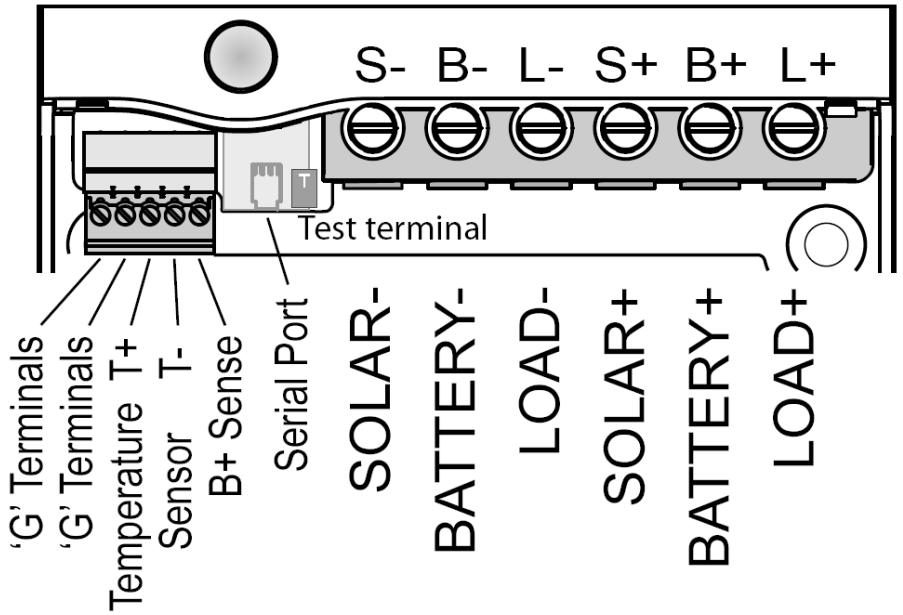
- All the best features of the PL series

What's new?

- **Negative Ground...**
  This makes it much easier to use in vehicles and easier to understand for people used to working with vehicle systems.
- **Enhanced one button interface...**
  Now includes *Reverse gear* for going backwards, and *Fast Forward* for setting very large number (e.g. Battery capacity)
- **LED backlighting...**
  makes the display readable in any light conditions.
- **Hidden Wiring...**
  All the wires are covered. Wiring to the unit can be kept out of sight inside the wall or behind the mounting panel.
- **More terminals...**
  A terminal for every wire. Wiring is simpler and quicker. No need for External electrical common points or busbars.
- **New Communications Bus.**
  Rugged new RS485 bus that allows unprecedented flexibility in system design with many new modular accessories.
- **More Data Storage...**
  512 days worth of system history data can be stored (99 days accessible via the regulators display).
- **Generator Terminals...**
  Voltage free contacts, as required by many generator start systems, are now included in the basic controller (like PL60 has).
- **Accessories...**
  - The **DSA** reads external charge or load currents. You can use up to 4 per system.
  - The **DUSB** provides a USB interface to a PC. This allows the user to download data from the controller & change settings.
  - The **D232** provides an RS232 interface (DTE) designed for remote computer access via a modem.
  - *Future accessories will include switching charge/load modules for huge system expansion, MPPT modules, etc.*

Product = DINGO 2020N (Negative Gnd Regulator)





Product = DINGO 4040P (Positive Gnd Regulator)

12-48V, fully programmable, inc generator, wind, & event control

40A Charge | 40A Load

Product = DINGO 4040P (Positive Gnd Regulator)

- ✓ **All the best features of the PL series**
- ✓ **Same price as the PL40**

POSITIVE Ground
Similar to PL40, but with a terminal for each wire.

40Amps of Load Current
Symmetrical charge and load, both 40Amps.

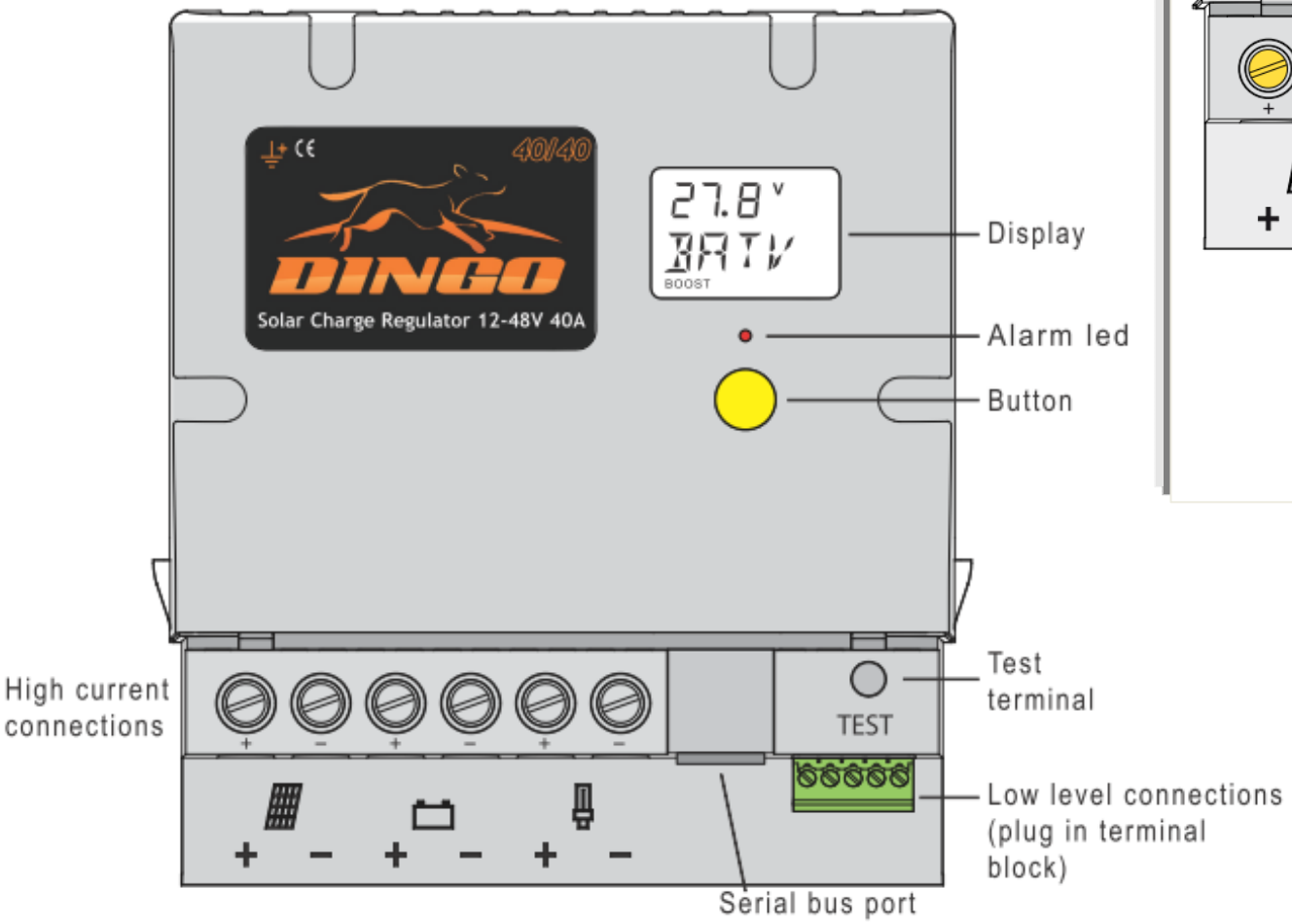
Enhanced one button interface
Now includes Reverse gear for going backwards, and Fast Forward for setting large numbers (e.g. Battery capacity) .

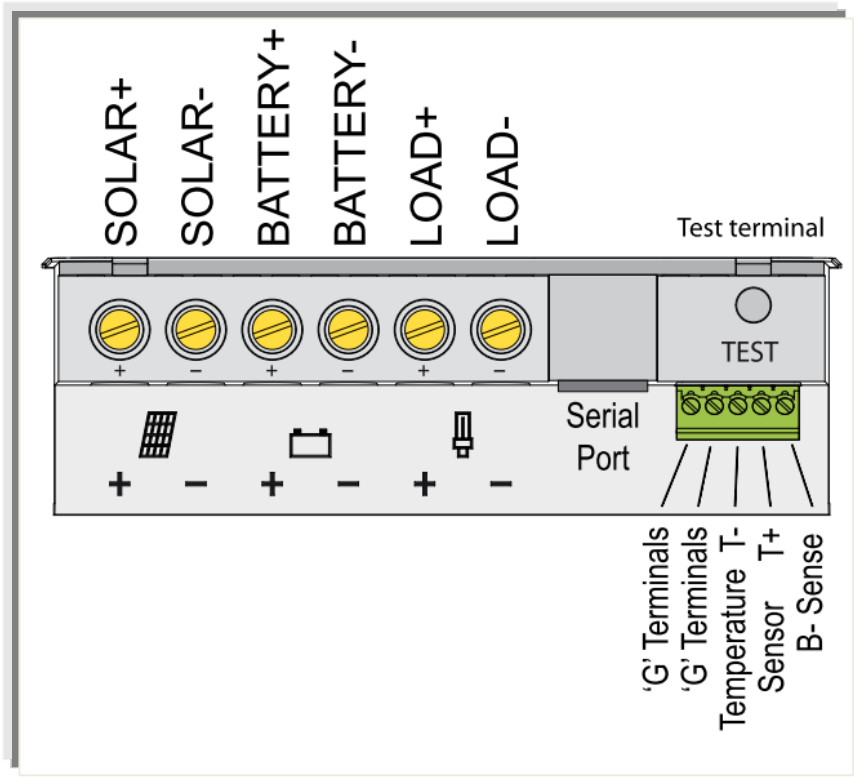
LED backlighting (Switches off when not in use)
Makes the display readable in any light conditions.

Hidden Wiring
All the wires are covered. Wiring to the unit can be kept out of sight inside the wall or behind the mounting panel.

More Data Storage...
512 days worth of system history data can be stored (99 days via regulator display).

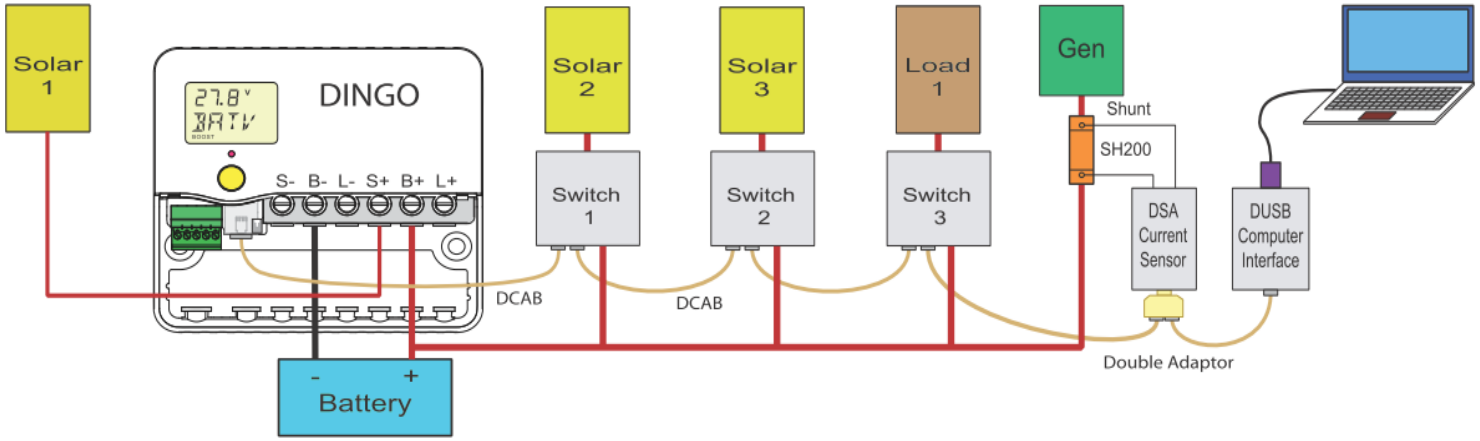
Product = DINGO 4040P (Positive Gnd Regulator)



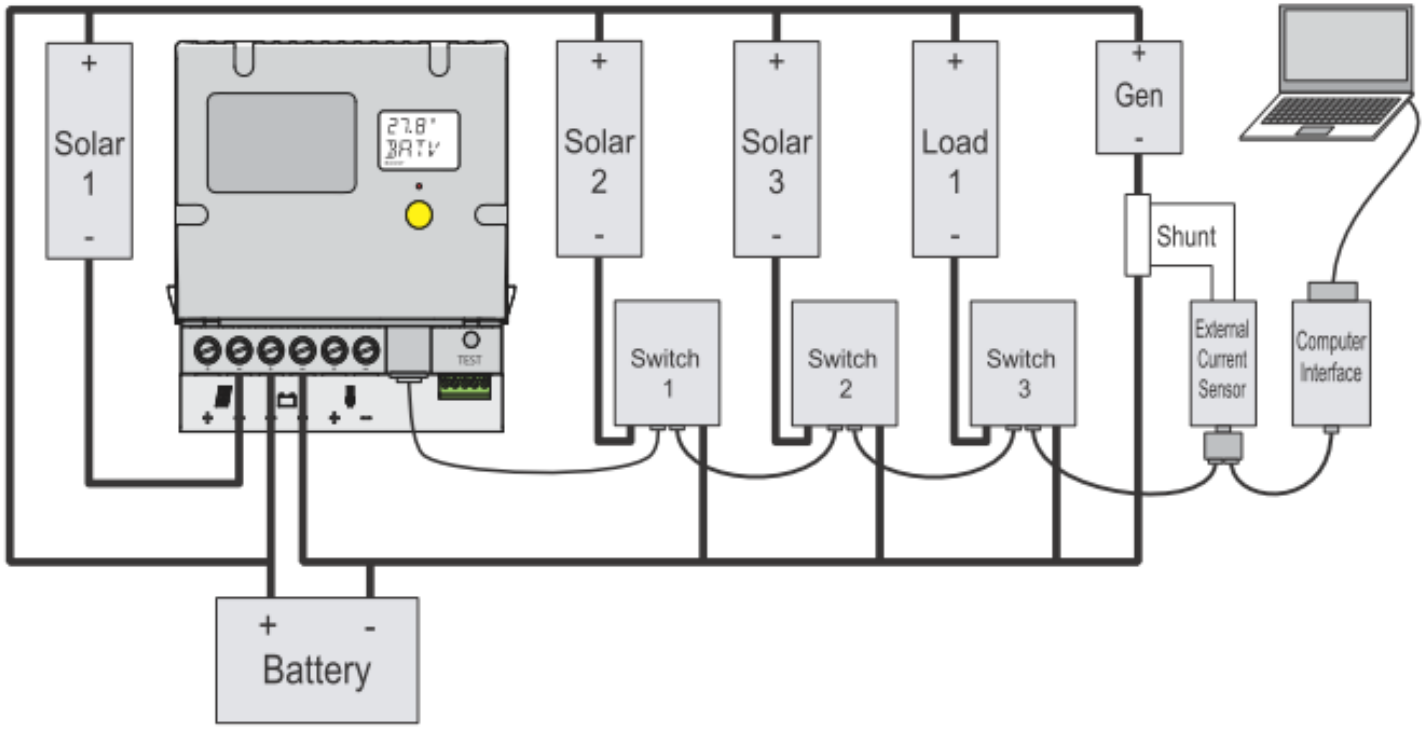


DINGO Expansion via Modular System

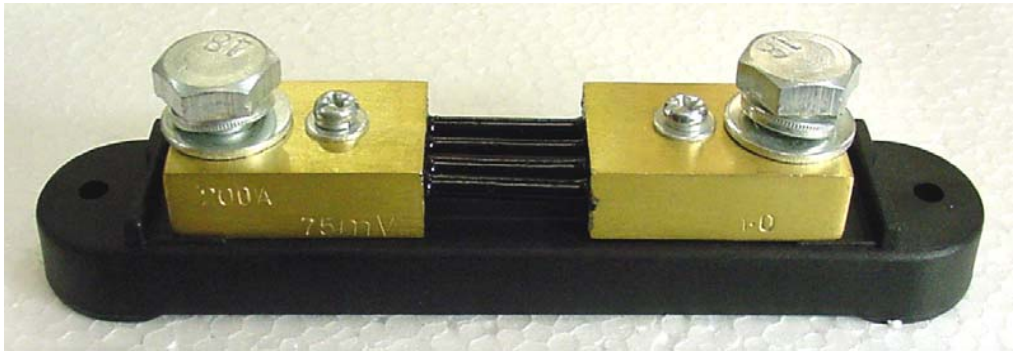
2020N



4040P

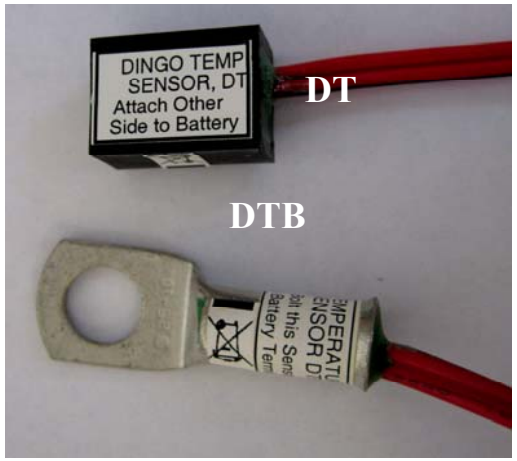


Product = Dingo Regulator Accessories



SH200 Shunt (200Amp)

DSA Shunt Adapter



DT & **DTB** (Batt Temp Sensors)

DCAB data cable *(one cable fits everything)*

Product = Dingo Regulator Accessories (continued)

DUSB USB Interface
D232 RS232 Serial Interface

DRC Remote Monitor **(inc backlight & alarm)**

DNET2 Ethernet/SNMP Interface

Plasmatronics DNET2 for Dingo (Ethernet Gateway)

Supports: HTTP, SNMP, Modbus over TCP

Built-in Web Server

The Gateway can present the main parameters of the attached Dingo device via web pages. These can be accessed by using the assigned IP address directly from a web browser.

SNMP (Simple Network Management Protocol)

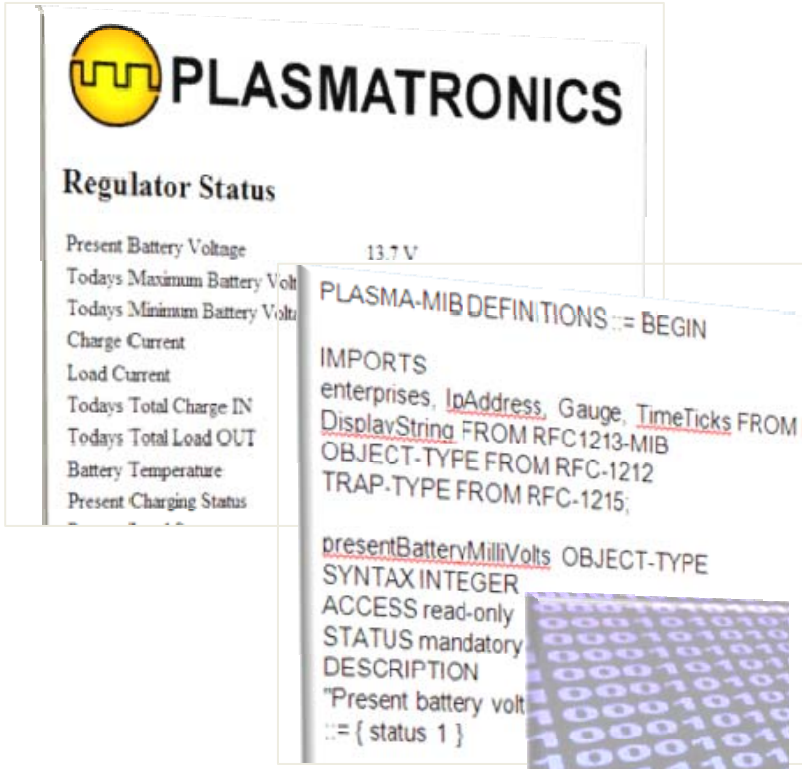
The Gateway has an SNMP agent which can report the main parameters of the attached Dingo device

Modbus TCP

The gateway can provide full read and write access to the attached Dingo controller using Modbus over TCP and uses the standard Modbus TCP port 502.

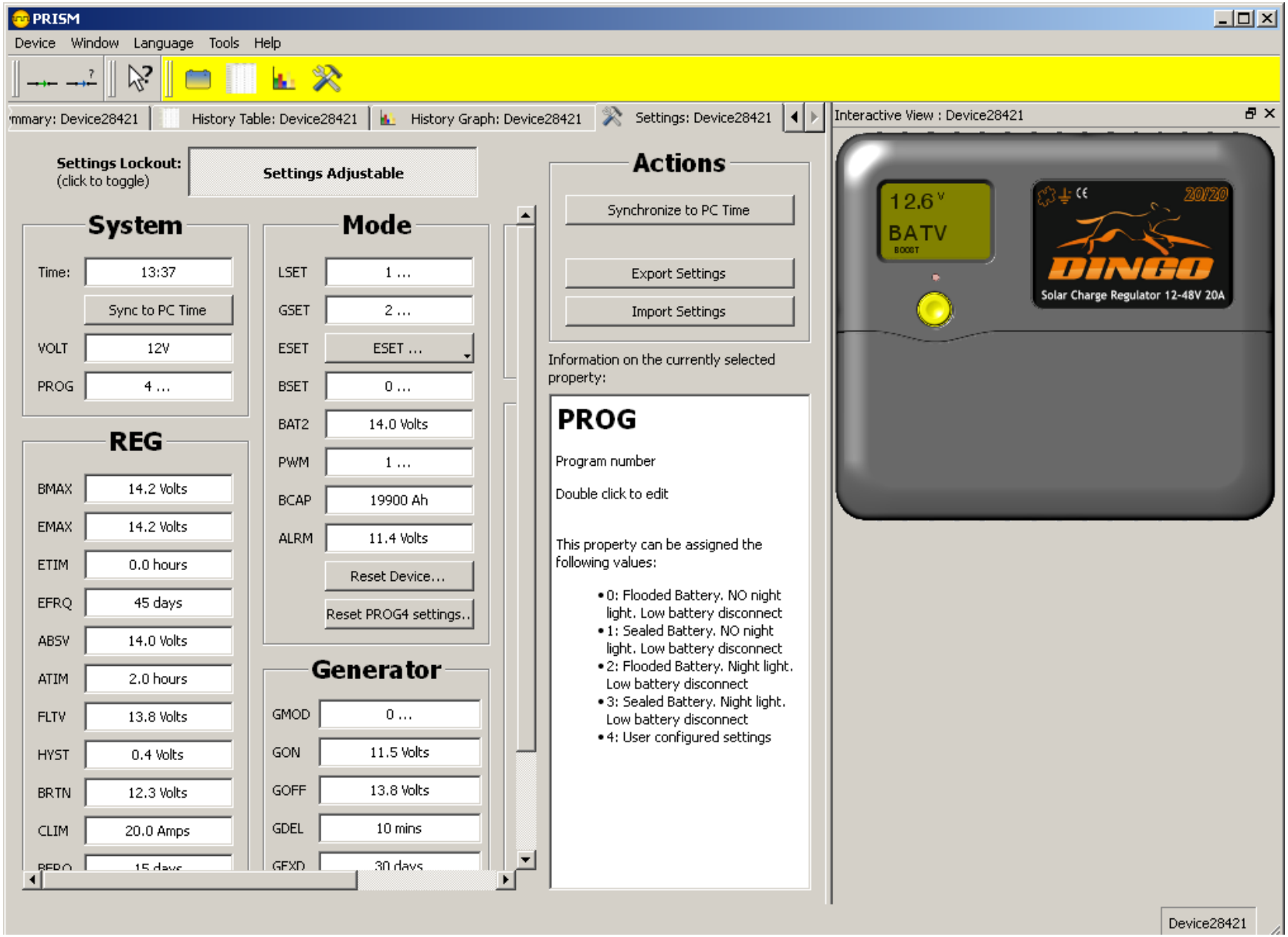
Field Upgradeable Firmware

The firmware updater runs from the Web page and provides the update over the Ethernet connection.



Product = PRISM software (for DINGO regulators)

Remotely configure regulator, download history, etc via USB or RS232 port

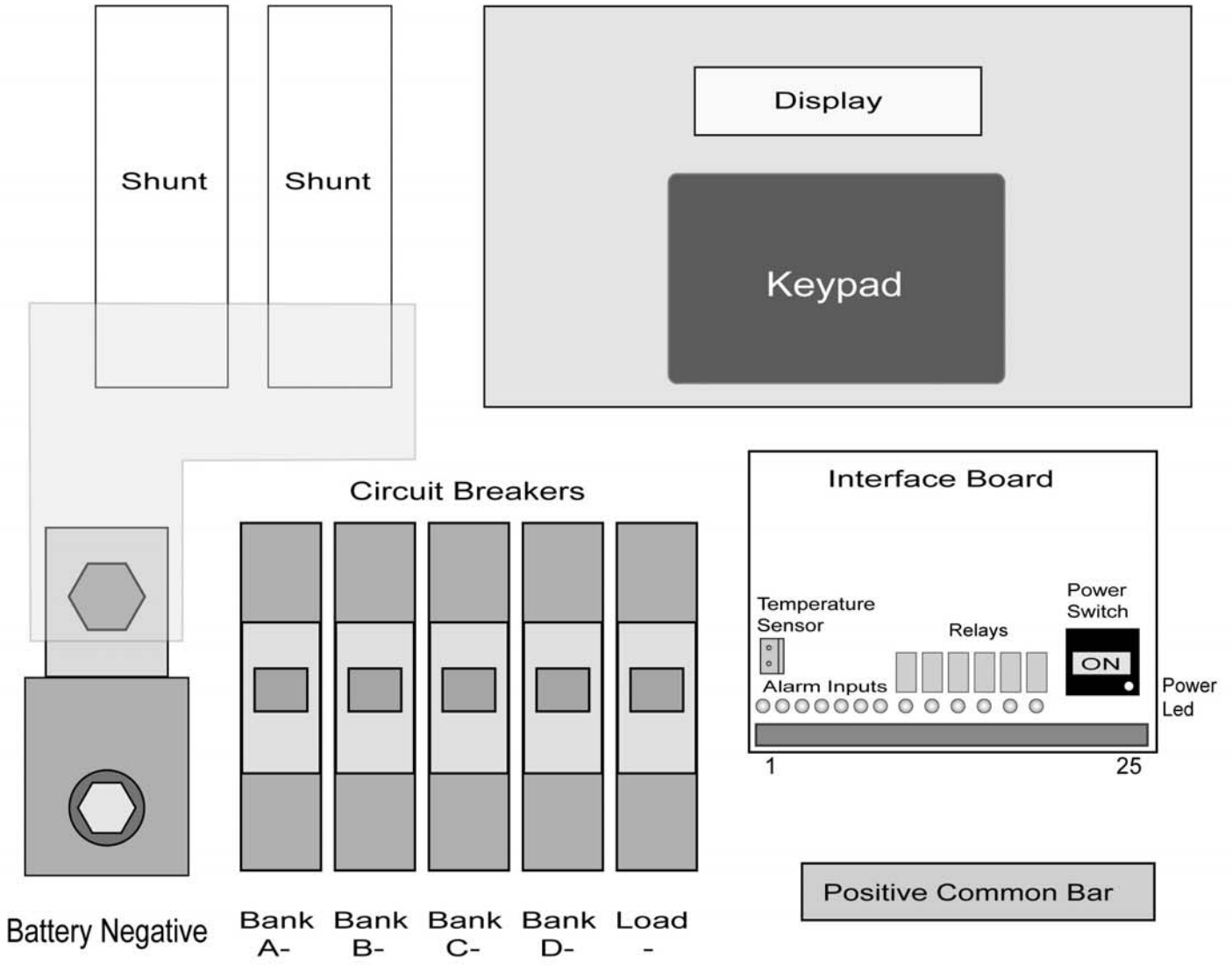


Product = SPSD (Bank Switching Regulator)

12 or 24 or 48V, up to 4 solar banks (300A max), Pos/Neg Gnd, low EMI

Standard Cabinet SPSD

SPSD INTERNAL LAYOUT DIAGRAM

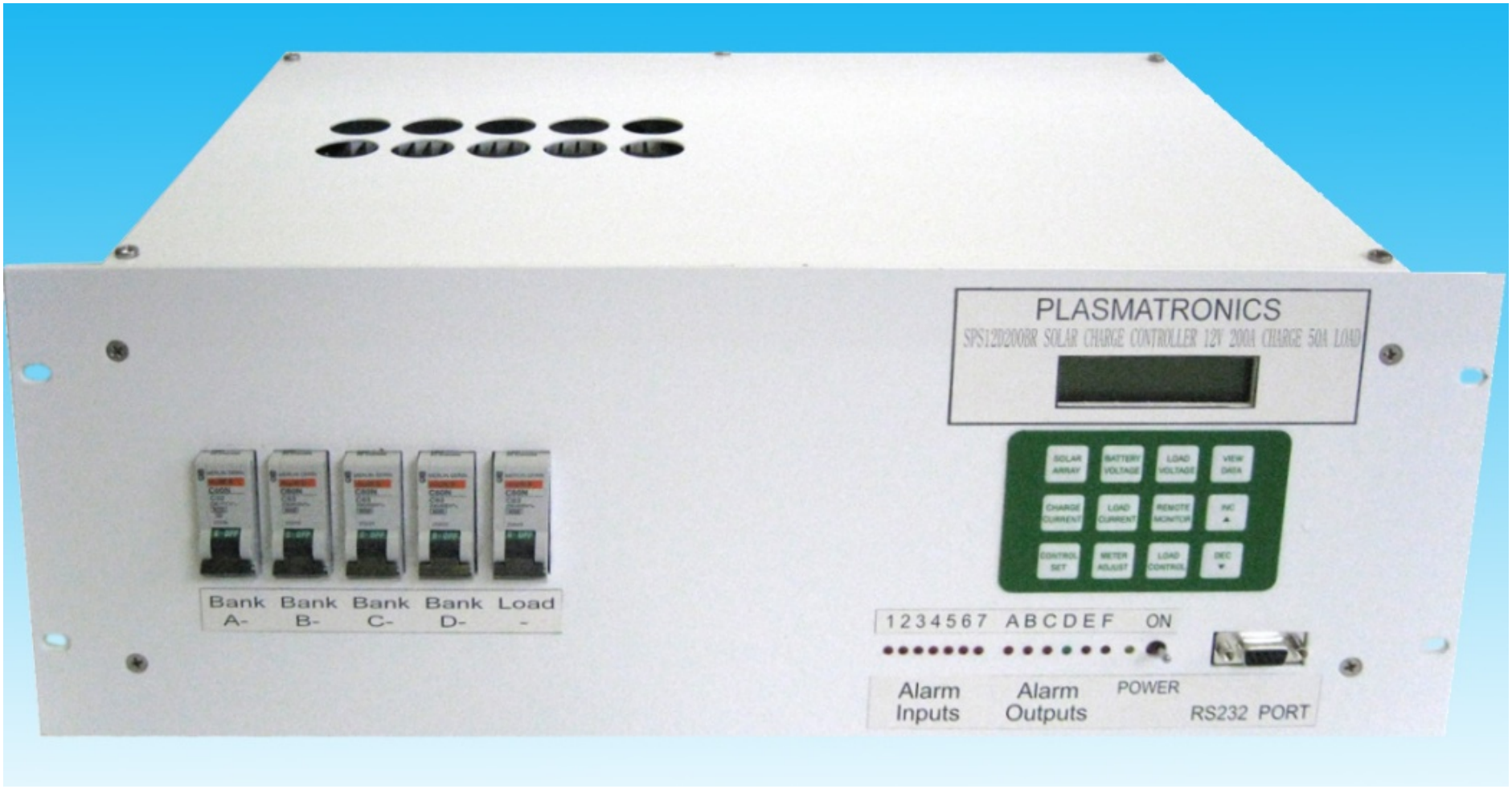


Interface board signal terminal connections

Terminal	Function	Terminal	Function
1	Alarm Common Input	13	Generator Control
2	Alarm 1	14	Generator Control
3	Alarm 2	15	Logic Fail Alarm
4	Alarm 3	16	Logic Fail Alarm
5	Alarm 4	17	Load Voltage Alarm
6	Alarm 5	18	Load Voltage Alarm
7	Alarm 6	19	Solar Bank Switch Fail Alarm
8	Alarm 7	20	Solar Bank Switch Fail Alarm
9	Battery Low Voltage Alarm	21	Serial Port RS232 RX
10	Battery Low Voltage Alarm	22	Serial Port RS232 TX
11	Battery High Voltage Alarm	23	Serial Port Signal Ground
12	Battery High Voltage Alarm	24	Serial Port RS485 S+
		25	Serial Port RS485 S-

Product = SPSD (Bank Switching Regulator)

12 or 24 or 48V, up to 4 solar banks (200A max), Pos/Neg Gnd, low EMI



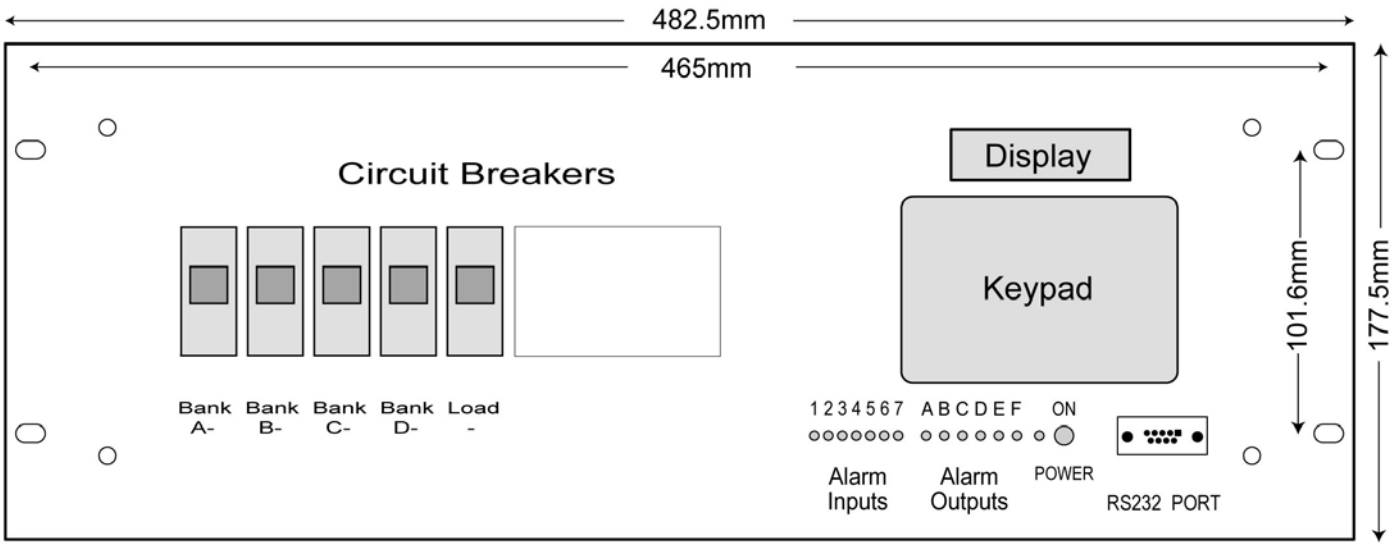
19” RACK Mount SPSD

Product = SPSD (Bank Switching Regulator)

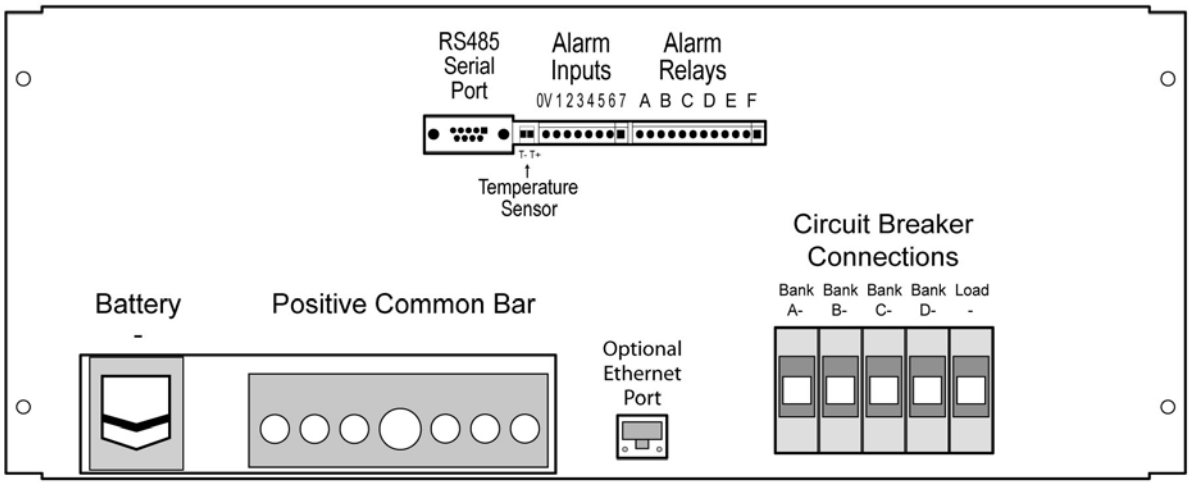
12 or 24 or 48V, up to 4 solar banks (200A max), Pos/Neg Gnd, low EMI

19” RACK Mount SPSD (Back View)

SPSD Rack Mount exterior



Front View



Back View

Rack Height 4U Depth 285mm
ALLOW 1U (44mm) ABOVE & BELOW FOR COOLING AIR FLOW

Indicator and signal terminal connections

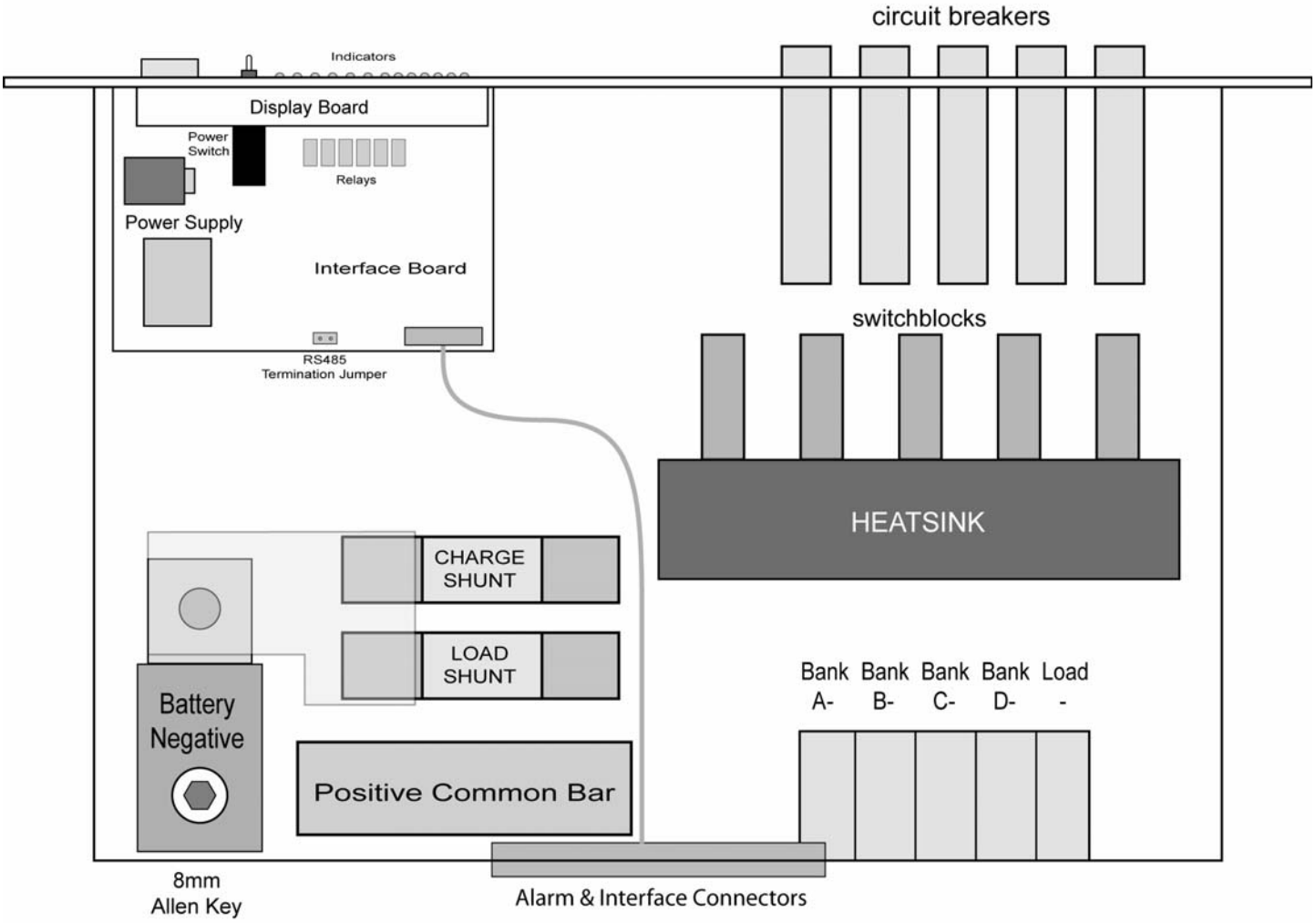
Terminal	Function
0V	Alarm Common Input (Bat-)
1	Alarm Input 1
2	Alarm Input 2
3	Alarm Input 3
4	Alarm Input 4
5	Alarm Input 5
6	Alarm Input 6
7	Alarm Input 7

Terminal	Function
A	Battery Low Voltage Alarm
B	Battery High Voltage Alarm
C	Generator Control
D	Logic Fail Alarm
E	Load Voltage Alarm
F	Solar Bank Switch Fail Alarm

(alarm outputs are voltage free contact pairs)

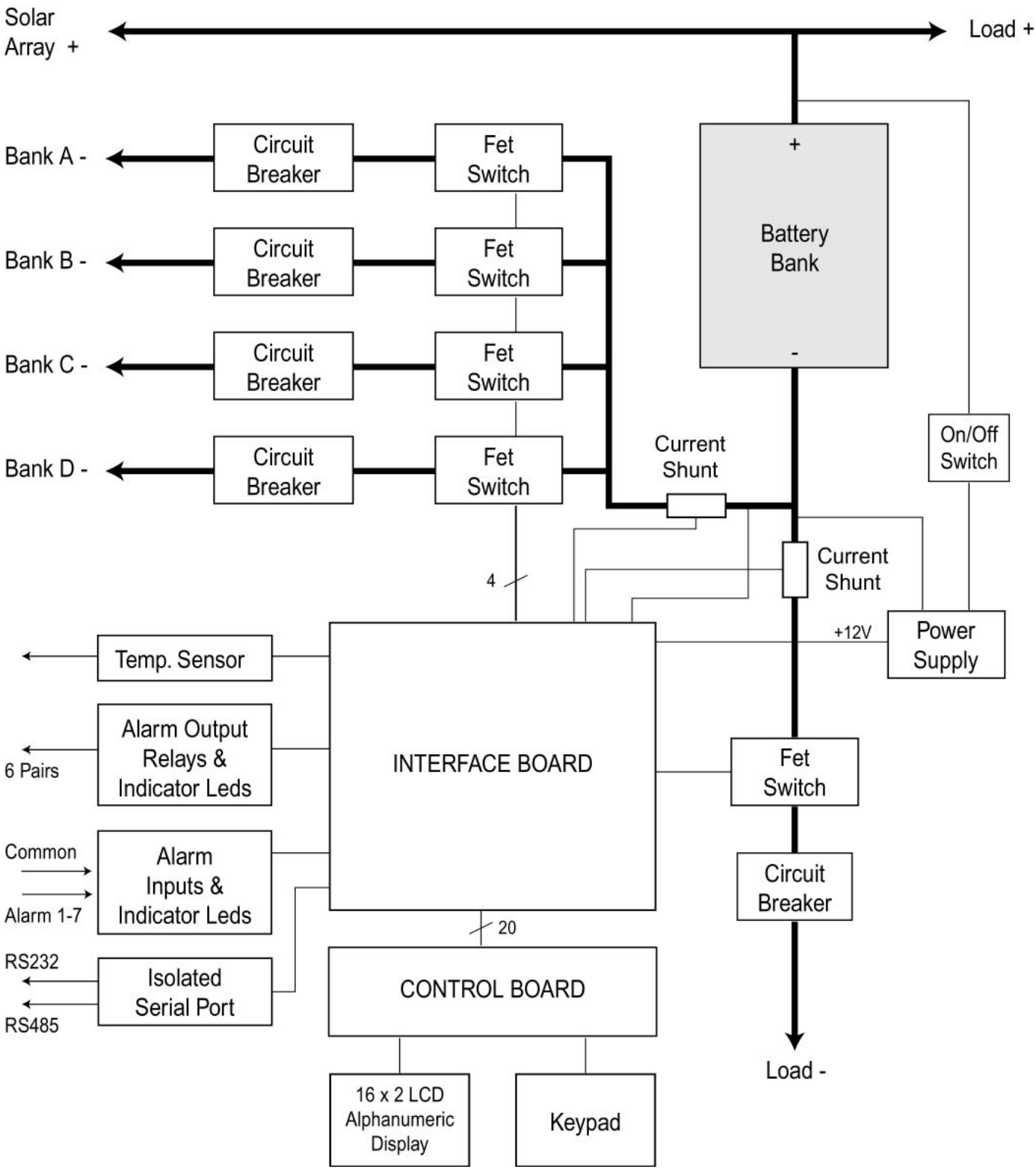
RS232 Serial Port is a DB9F connected as a DCE interface 2-TX 3-RX 5-GND 1,6,8 - +5V
RS485 Serial Port is a DB9F with D+ on pin 7, D- on pin 9 and ground on pin 1
(The signal ground is common to RS232 and RS485 and is isolated from the controller)

SPSD Rack Mount interior

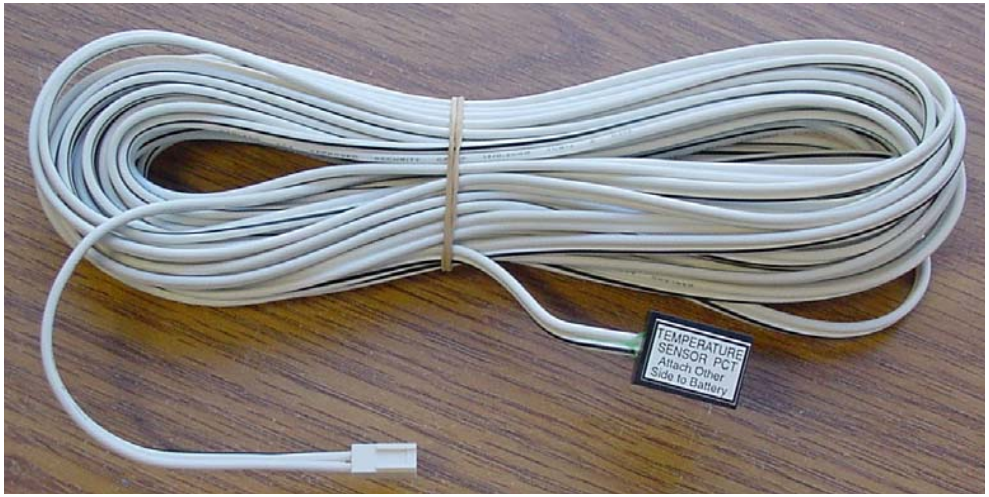


Top View

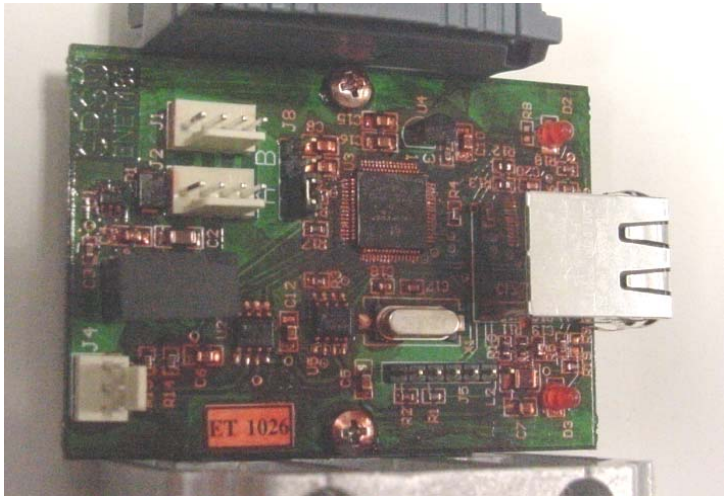
SPSD SOLAR CONTROLLER (B version Positive Ground)
Block Diagram



Product = SPSD Regulator Accessories



PCT (Batt Temp Sensor, 10m lead)

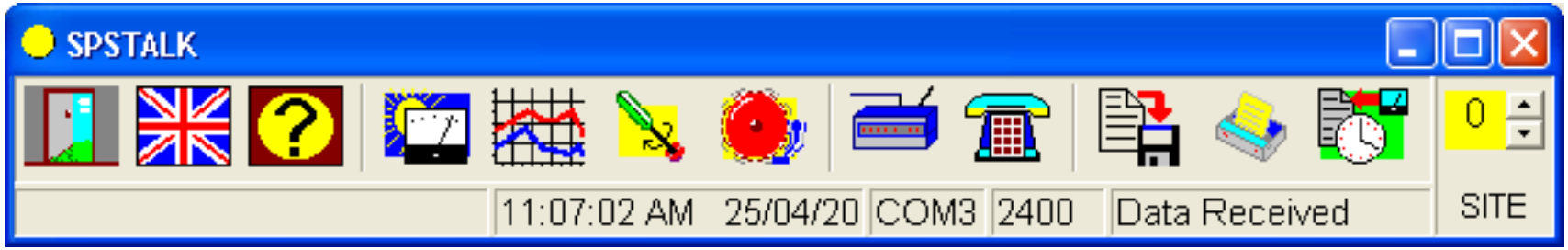


'E-NET' Ethernet adapter
for browser control over LAN/WWW

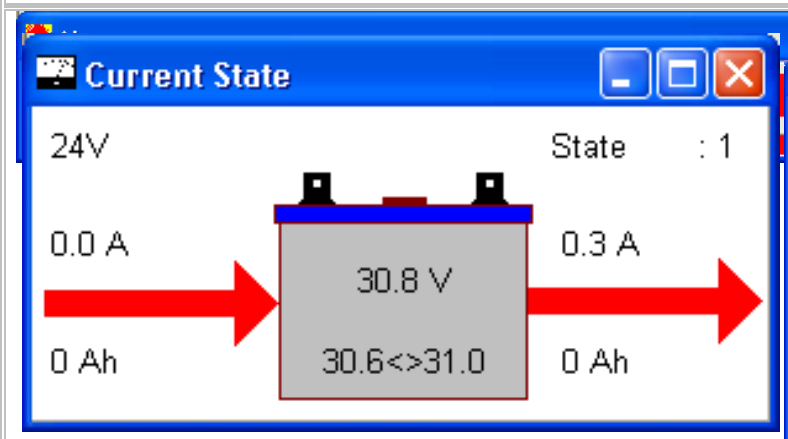
- 10BaseT Ethernet connection.
- TCP/IP, HTTP, DHCP support.
- Fixed IP or DHCP allocated.

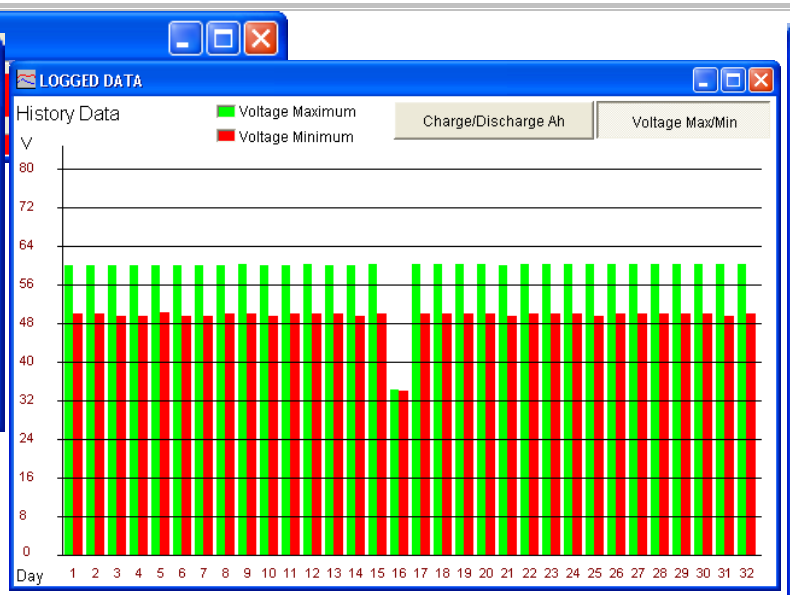
Product = SPSTALK software ($=POA)

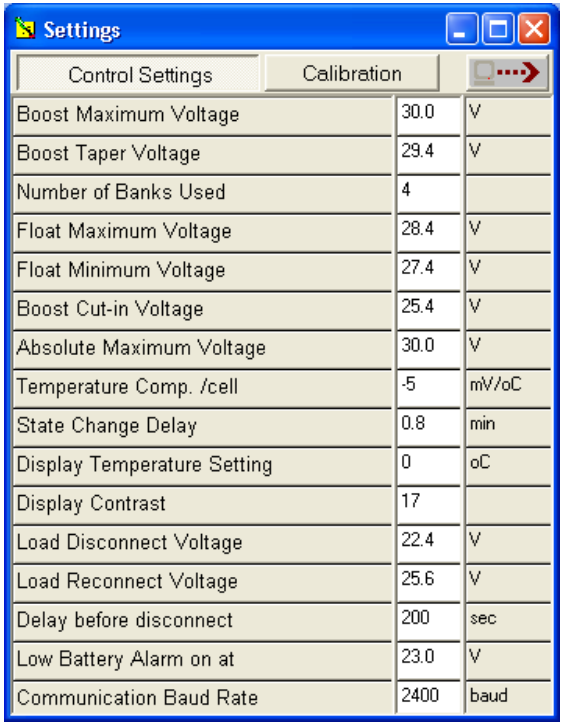
Remotely configure regulator settings, download history, etc via serial port



Main SPSTALK Window







Boost Maximum Voltage	30.0	V
Boost Taper Voltage	29.4	V
Number of Banks Used	4	
Float Maximum Voltage	28.4	V
Float Minimum Voltage	27.4	V
Boost Cut-in Voltage	25.4	V
Absolute Maximum Voltage	30.0	V
Temperature Comp. /cell	-5	mV/oC
State Change Delay	0.8	min
Display Temperature Setting	0	oC
Display Contrast	17	
Load Disconnect Voltage	22.4	V
Load Reconnect Voltage	25.6	V
Delay before disconnect	200	sec
Low Battery Alarm on at	23.0	V
Communication Baud Rate	2400	baud

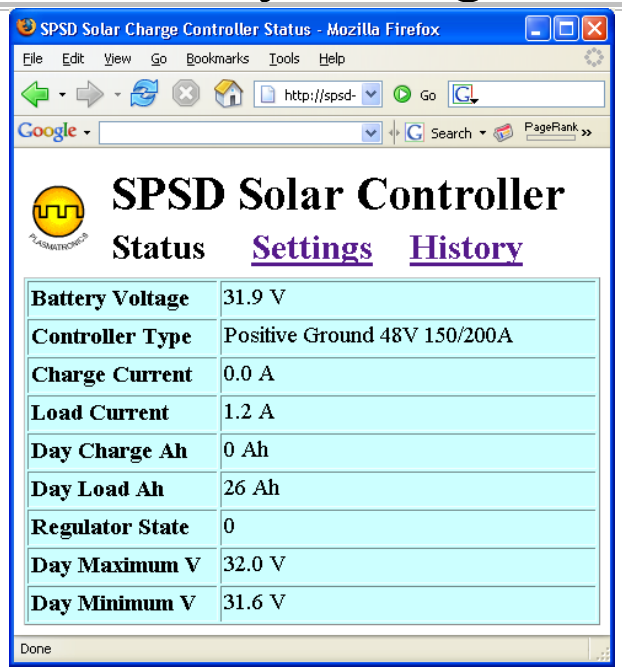
Current Status

History Data

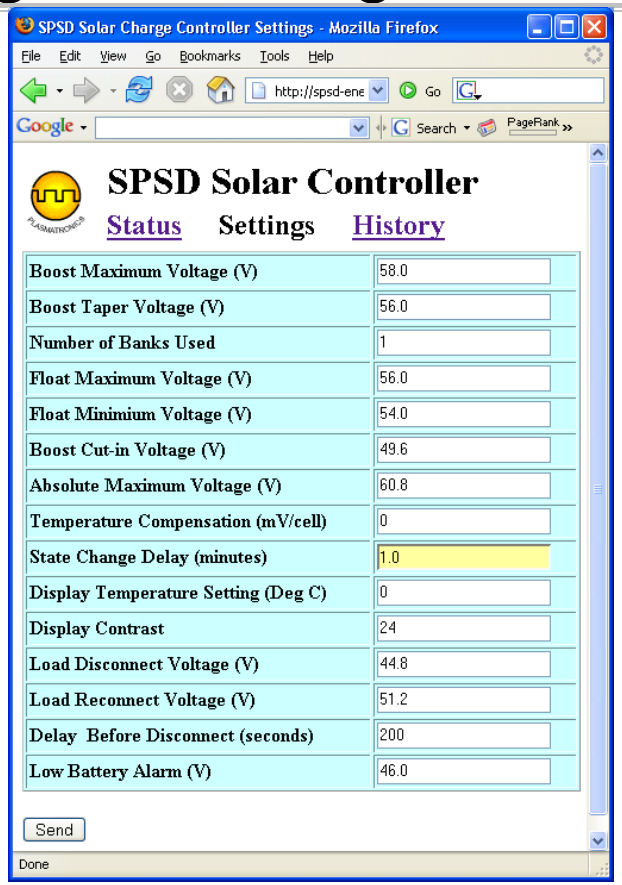
Control Settings

Product = SPSD-ENET (Ethernet Adapter) ($=POA)

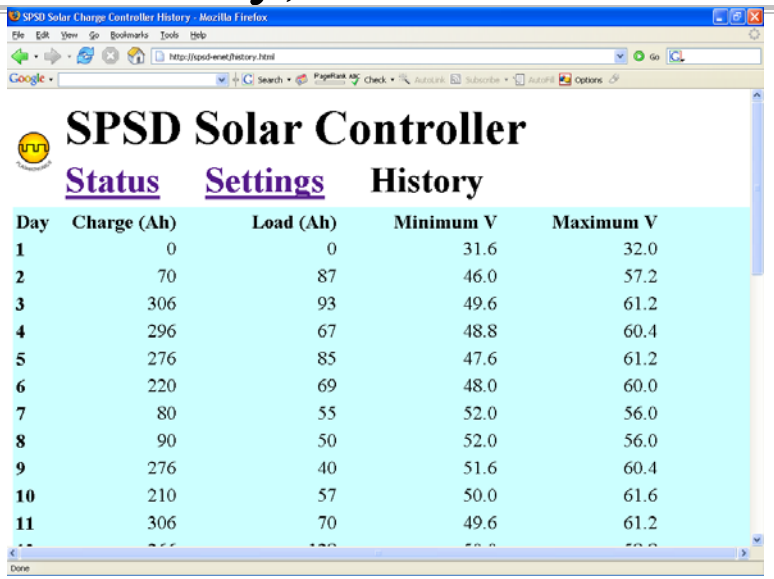
Remotely configure regulator settings, download history, etc via network



SPSD Status



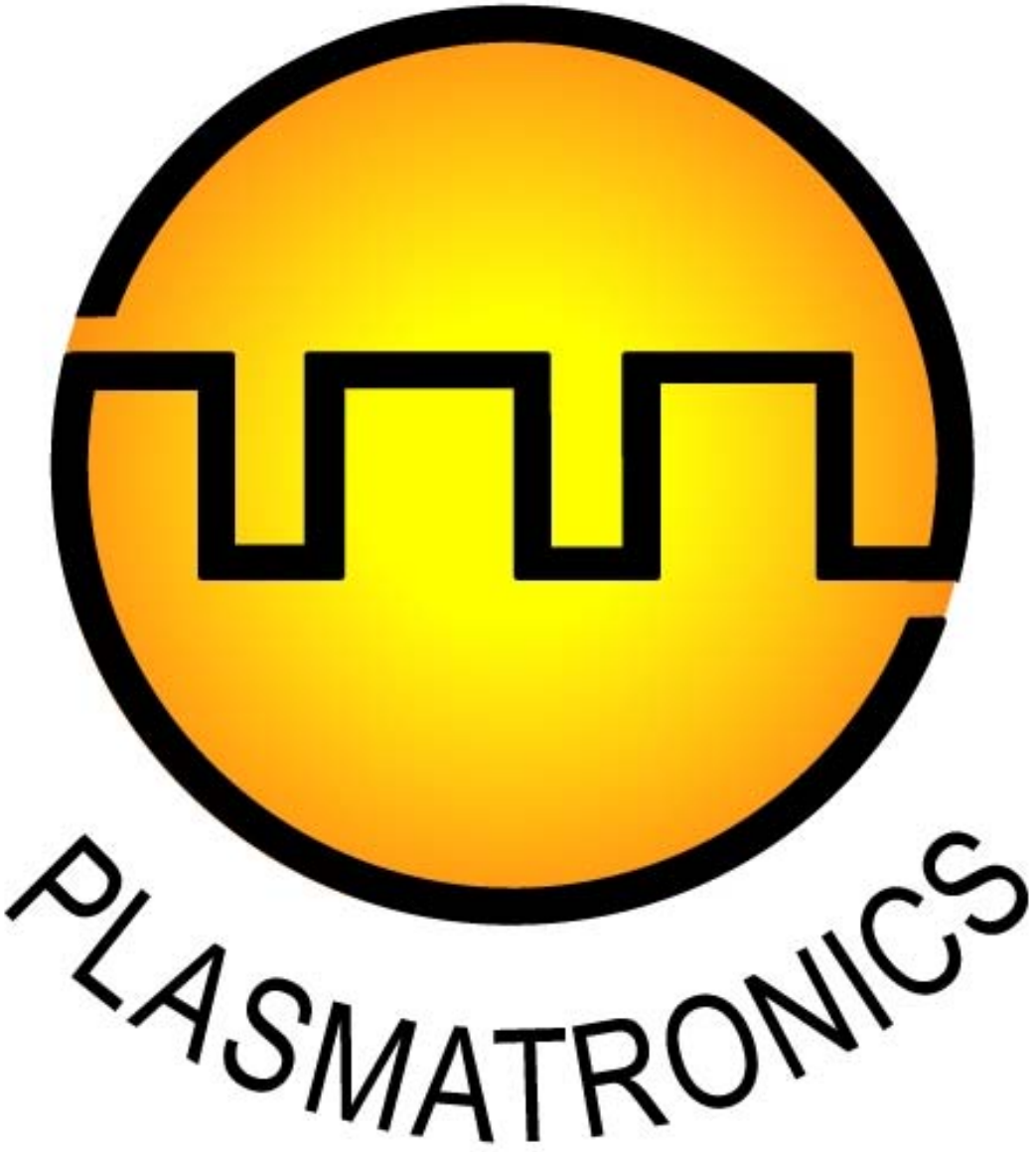
SPSD Settings



Password protected access to SPSD regulator via internet browser.

SPSD Regulator Features

- 12V or 24V or 48V models, 100A – 300A models available.
- Rugged IP66 sealed case (300A max) or 19” Rack mounting models (200A max).
- Up to 4 solar banks.
- Positive or Negative Ground models.
- Low EMI.
- Bank (sub array) switching design.
- Fully adjustable settings.
- Taper charge without heat.
- 2 stage boost/float charging.
- Temperature compensated regulation voltages.
- Comprehensive metering.
- Built in Test Programs.
- Low battery protection.
- Performance data logging.
- Remote control & monitoring.
- Lightning protection.
- Overload protection.
- Reverse polarity protection.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