innovative energies

SR750i

750W No-Break DC UPS System with Communications

Optional internal V/I meter shown

♦ 24 Month Warranty

Charger

- **Battery detection - regular battery presence and battery circuit integrity checks**
- **Deep discharge protection for battery (low voltage disconnect circuit)**
- **Battery circuit overload & short circuit protection**
- **Automatic temperature compensated output**
- **Automatic or manually controlled battery condition test (BCT)**
- **LED flash codes for precise state indication**
- **Alarm relay outputs**
- **Adjustable charge current limit**
- **Reverse battery polarity protection**

Communication interfaces

- **Ethernet**
- **RS485**
- **RS232**

Protocols

- **SNMP**
- **Modbus RTU, TCP/HTTP (using external protocol converter**
- **Innovative Energies ASCII code**

BRIEF SPECIFICATIONS (at nominal input, full load and at 20°C unless otherwise stated)

Input voltage	230V 50Hz standard 110V 50/60Hz on request
Fusing / protection	Input fuse plus varistor Output fuse & ECB for battery circuit
Output power	750W
Output voltages	12, 24, 30, 36, 48VDC (nominal)
Temp. compensation	-4mV / °C / cell
Line regulation	<0.2% over AC input range
Load regulation	<0.4% open circuit to 100% load
Thermal protection	Yes, self resetting
OVP	Over-voltage protection on output at ~ 130% of nominal output voltage
EMI	CISPR 22 / EN55022 class A
Safety	IEC950 / EN60950 / AS/NZS3260
Battery type	Lead acid
Isolation	1KV DC input - output / earth
Efficiency	≥ 85%
Indication LEDs	**Green:** Battery System OK, Power OK **Red:** Standby
Operating temperature	0 to 50 °C ambient at full load

Battery detection	Every 60 minutes when charge current < 200mA
Battery protection	Electronic circuit breaker (ECB) operates under the following conditions:
- low battery volts	• battery voltage drops to 1.67V/cell - auto reset
- overload	• < 300ms for load > 6 x rated PSU current, allows ~1.5x rated PSU current from battery without acting,
- short circuit	• < 2ms, backed up by fuse
Relay outputs	• Power OK • Battery System OK - alarms when battery voltage low (on mains fail) , battery missing, battery circuit wiring faulty, BCT fail • BCT in progress
Alarm relay contacts	Changeover, rated 1A /50V DC, 32VAC
Standby mode	Turns off DC output of PSU & allows load to run off battery
Battery condition test	Using communication port: • automatic test can be enabled or disabled by user (default setting 20mins/28days) • manually start and stop BCT
Cooling	Fan cooled
Protection	IP20
Weight	4.3kg
Dimensions	225W x 304D x 70H mm

Models and Ratings

MODEL No.	DC Output				
	Output (V)	PSU Rated (A)	Charge Limit (A) *1	Recomm. Load (A)	Peak load on input fail (A)
SR750*i*12	13.8	54	12	42	81
SR750*i*24	27.6	27	8	19	40
SR750*i*30	34.5	21	7	14	31
SR750*i*36	41.4	18	6	12	27
SR750*i*48	55.2	13.5	5	8.5	20

Modbus protocol converter

Communication Functions

Alarms (all versions)

- Input power fail
- Failed BCT
- Battery missing
- Battery low (during power fail)

Alarm Traps (SNMP versions)

- Battery over temperature
- Battery low temperature
- Overload
- Communications fail

Command Functions

- Enable pre-programmed BCT
- Disable pre-programmed BCT
- Start BCT manually
- Stop BCT manually

Monitored States (all versions)

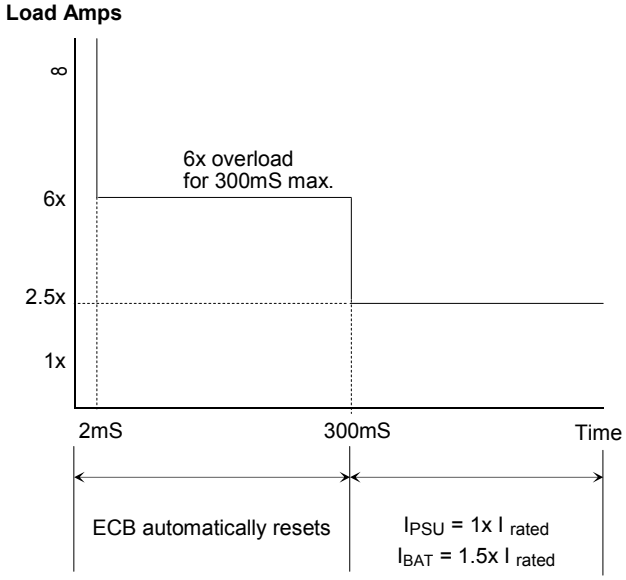
- BCT in progress
- BCT passed
- Battery fully charged
- Output voltage
- Battery current
- PSU current
- Load current
- Battery temperature

Monitored States (SNMP versions)

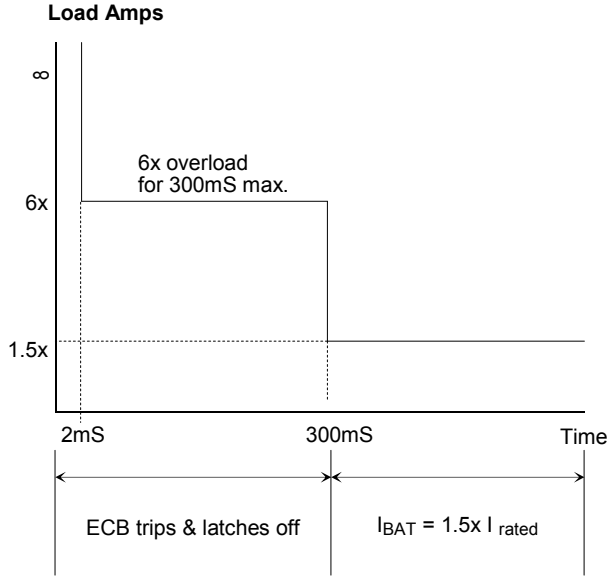
- Lowest temperature recorded
- Highest temperature recorded

Operation of ECB (system current limit)

Input power on

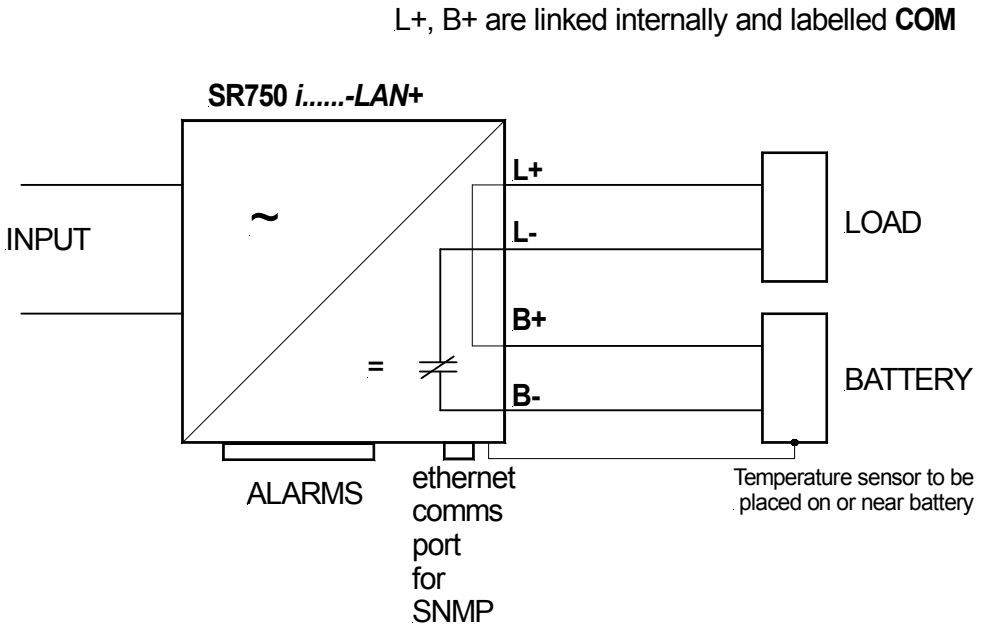


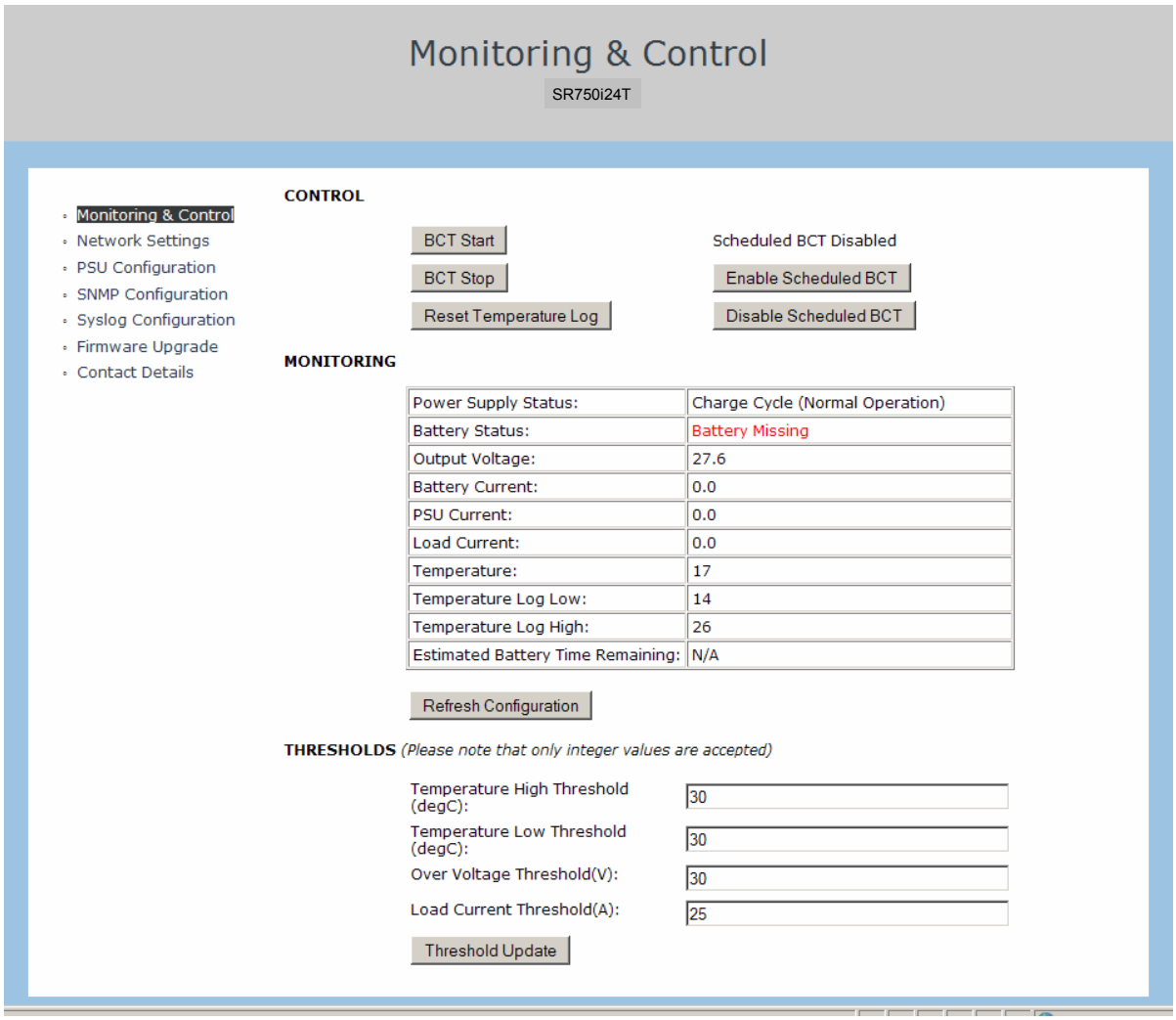
Input power off



Connection Diagrams and Screenshots

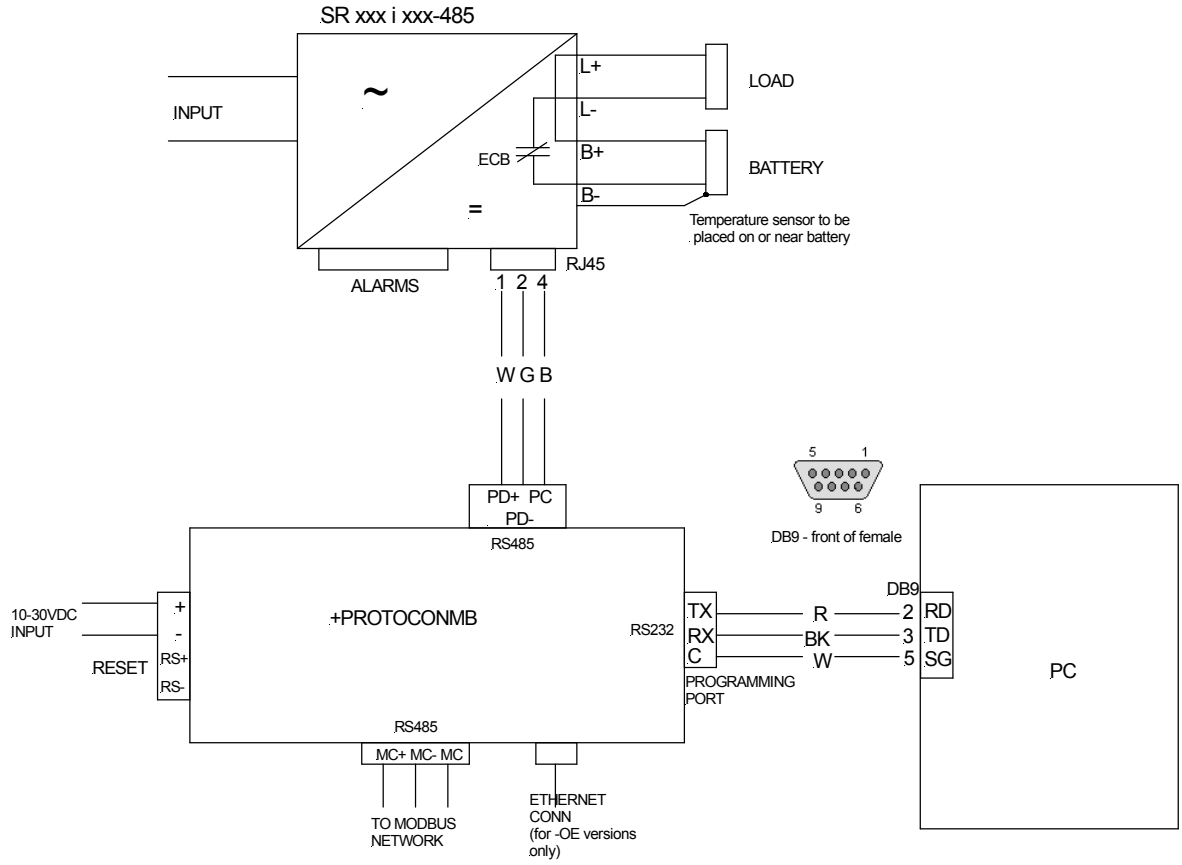
1. *Ethernet/SNMP*

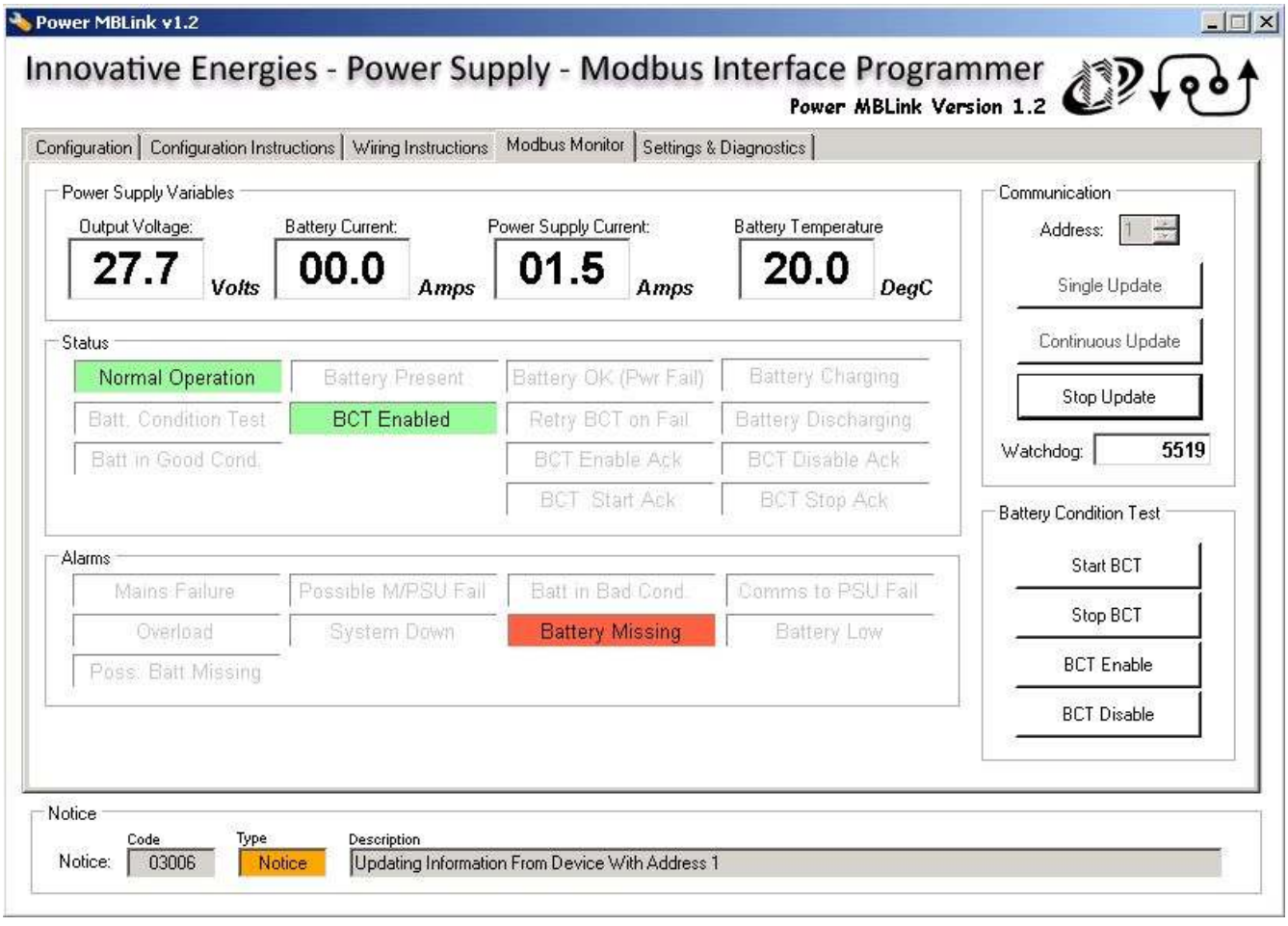




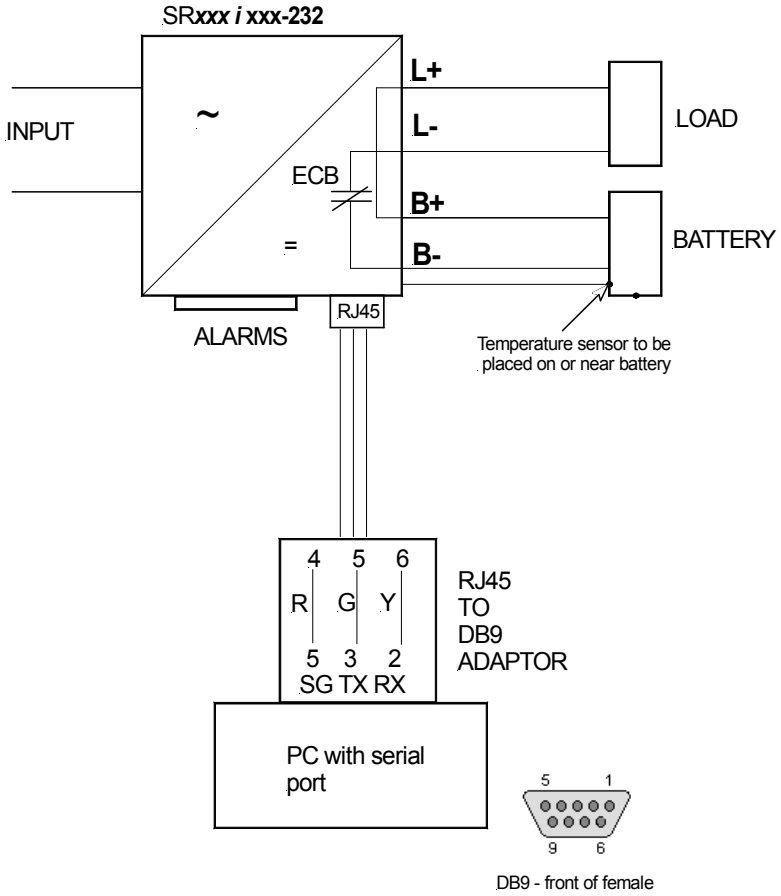
Total current
PSU + Battery

2. *RS485/ Modbus*

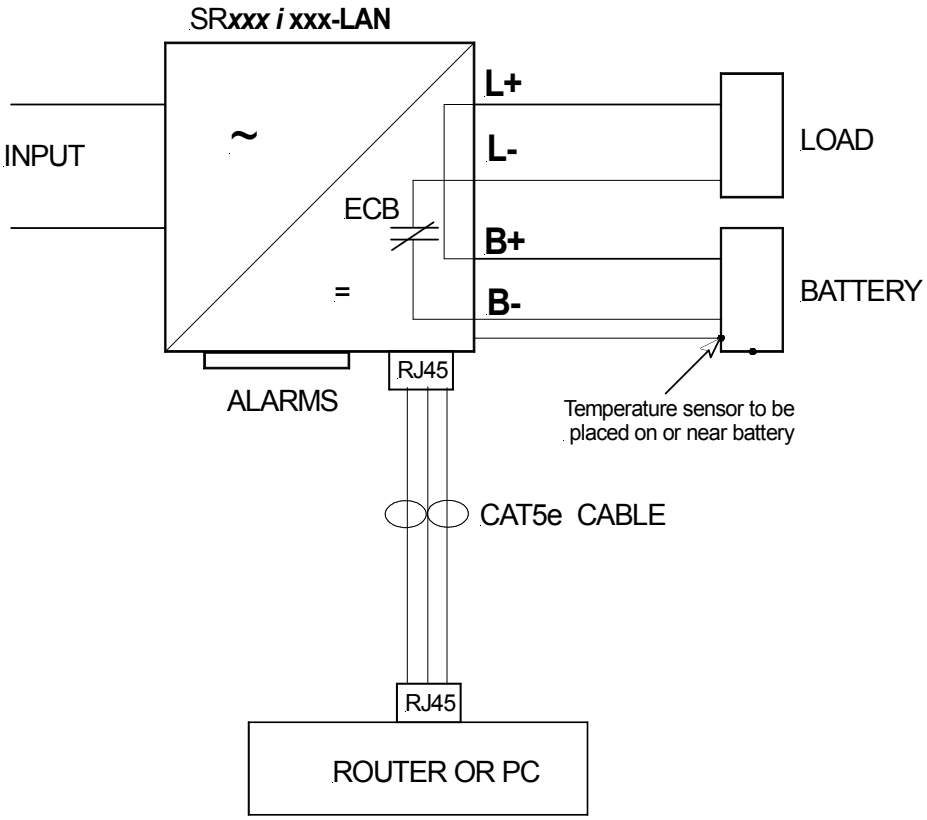




3. *RS232/ IE ASCII code*



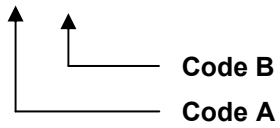
4. *Ethernet/ IE ASCII code*



Connection Diagrams and Screenshots

Screenshot for IE ASCII code

IEL NB5sys.V13 SR500i12T
s/n: 0025 6666 BatDetect:060m
Vpres(1):12.0V Vshutd(2):11.5V
Vbatl(3):11.0V Vdisco(4):10.0V
Bccl(ABC):100% BCT:020m Ret:Y
Comms(MF):F CC:40m 23h 027d
MfiBCT:090m
- CC BM Vout:13.5V Ibat:-00.0A Ipsu:01.4A + 20C



Code A

CC – charge cycle (normal operation)
MF – mains fail (system on battery power)
OL – system overloaded, output voltage is below Vpres setting
BCT – battery condition test is in progress

Code B

M? – possible mains fail, i.e. no mains detected but brown out timer not expired (30sec)
m? – same as above, but has failed the previous BCT
BP – battery present, system OK
bP – same as above, but has failed the previous BCT
B? – No battery charge current detected, up to the next scheduled battery detection, uncertainty about the presence of the battery exists.
b? – same as above, but has failed the previous BCT
BM - battery is missing, the battery detection routine did not find a battery to be present. This will also reset the 'battery condition not good' of a failed BCT.
BO – battery is in 'OK' state during mains fail
bO – same as above, but has failed the previous BCT
BL – battery is in 'LOW' state during mains fail
bL – same as above, but has failed the previous BCT
SD – system will shut-down if no mains present and output voltage stays below Vdiscon for 30seconds.

Displayed values following Code B

Vout = output voltage of PSU
Ibat = charging current
Ipsu = total output current
+20°C = temperature measured by temp. sensor

Power Supply Default Settings

Parameter	*Setting*				
V nominal	**12**	**24**	**30**	**36**	**48**
BatDetect (mins)	60	60	60	60	60
Vpres:	12.2	24.1	30.4	36.5	48.7
Vbatl:	11	22	27.5	33	44
Vshutd:	11.5	23	28.7	34.5	46
Vdisco:	10	20	25	30	40
Bccl (%)	100	100	100	100	100
BCTim (mins)	20	20	20	20	20
CC Mins:	40	40	40	40	40
CC Hrs:	23	23	23	23	23
CC Days:	27	27	27	27	27
MfiBCT:	30	30	30	30	30

BatDetect: Time between battery detections

Vpres: Voltage threshold for battery detection and BCT. Note that if the voltage drops to this level during a BCT the test is aborted and the **BAT LOW** alarm shows.

Vshutd: Internal voltage level of the power supply during battery detection and battery condition tests.

Vbatl: **BAT LOW** alarm voltage level

Vdisco: Voltage at which the load is disconnected from the battery during mains fail

Bccl: Battery charge current limit as percentage of the rated power supply current

BCTim: Length of battery condition test

CC Mins: Time in minutes between automatically scheduled BCTs

CC Hrs: Time in hours between automatically scheduled BCTs

CC Days: Time in days between automatically scheduled BCTs

Note: The total time interval between BCTs is the accumulation of the above three settings

MFiBCT: Time in minutes before the mains fail check during the BCT (only applicable to SR100)

BCT = battery condition test