



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)

<b>Input voltage</b>	230V 50Hz standard 110V 50/60Hz on request	<b>Battery detection</b>	Every 60 minutes when charge current < 200mA
<b>Fusing / protection</b>	Input fuse plus varistor Out-put fuse & ECB for battery circuit	<b>Battery protection</b>	Electronic circuit breaker (ECB) operates under the following conditions:
<b>Output power</b>	500W	- <b>low battery volts</b>	<ul style="list-style-type: none"> <li>• battery voltage drops to 1.67V/cell - auto reset</li> </ul>
<b>Output voltages</b>	12, 24, 30, 36, 48VDC (nominal)	- <b>overload</b>	<ul style="list-style-type: none"> <li>• &lt; 300ms for load &gt; 6 x rated PSU current, allows ~1.5x rated PSU current from battery without acting,</li> </ul>
<b>Temp. compensation</b>	-4mV / °C / cell	- <b>short circuit</b>	<ul style="list-style-type: none"> <li>• &lt; 2ms, backed up by fuse</li> </ul>
<b>Line regulation</b>	<0.2% over AC input range	<b>Relay outputs</b>	<ul style="list-style-type: none"> <li>• Power OK</li> <li>• Battery System OK - alarms when battery voltage low (on mains fail), battery missing, battery circuit wiring faulty, BCT fail</li> <li>• BCT in progress</li> </ul>
<b>Load regulation</b>	<0.4% open circuit to 100% load	<b>Alarm relay contacts</b>	Changeover, rated 1A /50V DC, 32VAC
<b>Thermal protection</b>	Yes, self resetting	<b>Standby mode</b>	Turns off DC output of PSU & allows load to run off battery
<b>OVP</b>	Over-voltage protection on output at ~ 130% of nominal output voltage	<b>Battery condition test</b>	Using communication port: <ul style="list-style-type: none"> <li>• automatic test can be enabled or disabled by user (default setting 20mins/28days)</li> <li>• manually start and stop BCT</li> </ul>
<b>EMI</b>	CISPR 22 / EN55022 class A	<b>Cooling</b>	Fan cooled
<b>Safety</b>	IEC950 / EN60950 / AS/NZS3260	<b>Protection</b>	IP20
<b>Battery type</b>	Lead acid	<b>Weight</b>	4.3kg
<b>Isolation</b>	1KV DC input - output / earth	<b>Dimensions</b>	225W x 304D x 70H mm
<b>Efficiency</b>	≥ 85%		
<b>Indication LEDs</b>	<b>Green:</b> Battery System OK, Power OK <b>Red:</b> Standby		
<b>Operating temperature</b>	0 to 50 °C ambient at full load		

## 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)
SR500i12	13.8	36	9	27	54
SR500i24	27.6	18	6	12	27
SR500i30	34.5	14.5	5.5	10	21.5
SR500i36	41.4	12	5	7	18
SR500i48	55.2	9	4	5	13.5



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

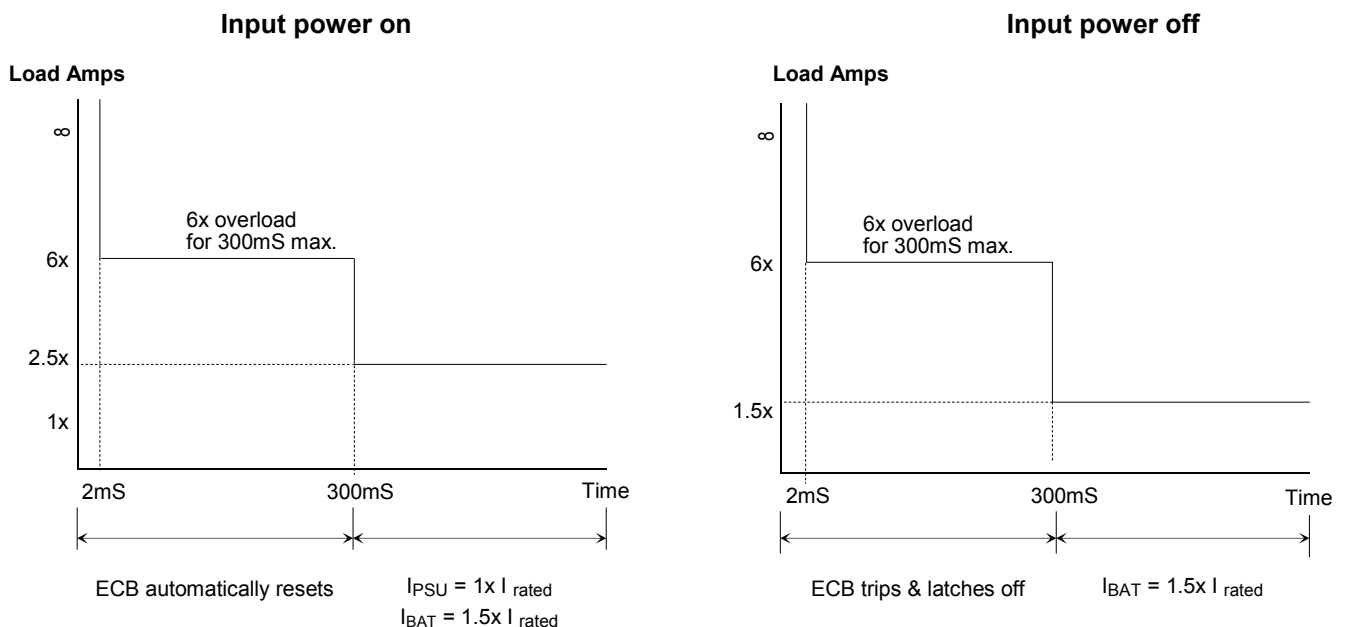
### Monitored States (all versions)

- 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

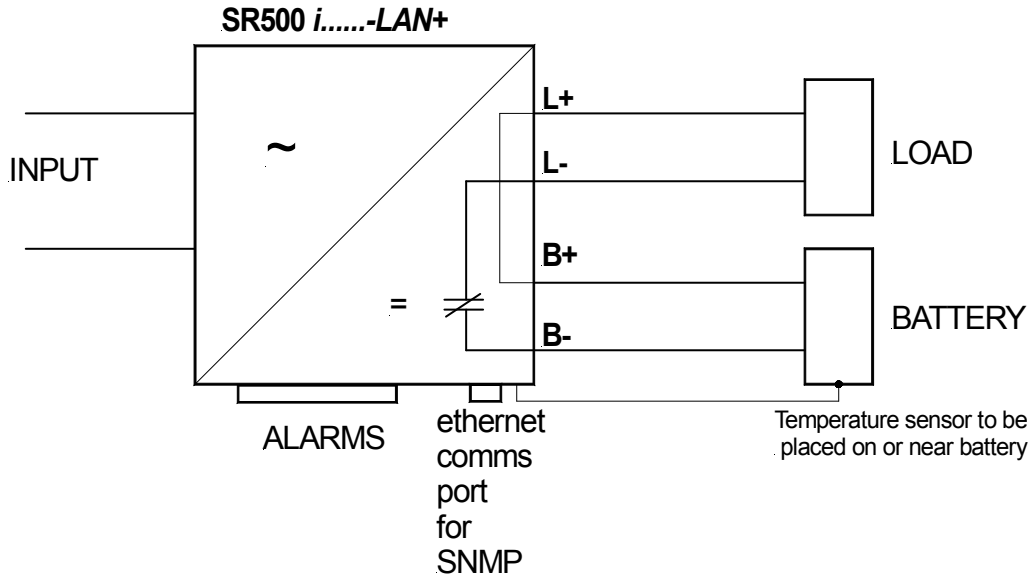
## Operation of ECB (system current limit)



# Connection Diagrams and Screenshots

## 1. Ethernet/SNMP

L+, B+ are linked internally and labelled COM



### Monitoring & Control

SR500i24T

- Monitoring & Control
- Network Settings
- PSU Configuration
- SNMP Configuration
- Syslog Configuration
- Firmware Upgrade
- Contact Details

#### CONTROL

BCT Start

BCT Stop

Reset Temperature Log

Scheduled BCT Disabled

Enable Scheduled BCT

Disable Scheduled BCT

#### MONITORING

Power Supply Status:	Charge Cycle (Normal Operation)
Battery Status:	Battery Missing
Output Voltage:	27.6
Battery Current:	0.0
PSU Current:	0.0
Load Current:	0.0
Temperature:	17
Temperature Log Low:	14
Temperature Log High:	26
Estimated Battery Time Remaining:	N/A

Refresh Configuration

#### THRESHOLDS (Please note that only integer values are accepted)

Temperature High Threshold (degC):

Temperature Low Threshold (degC):

Over Voltage Threshold(V):

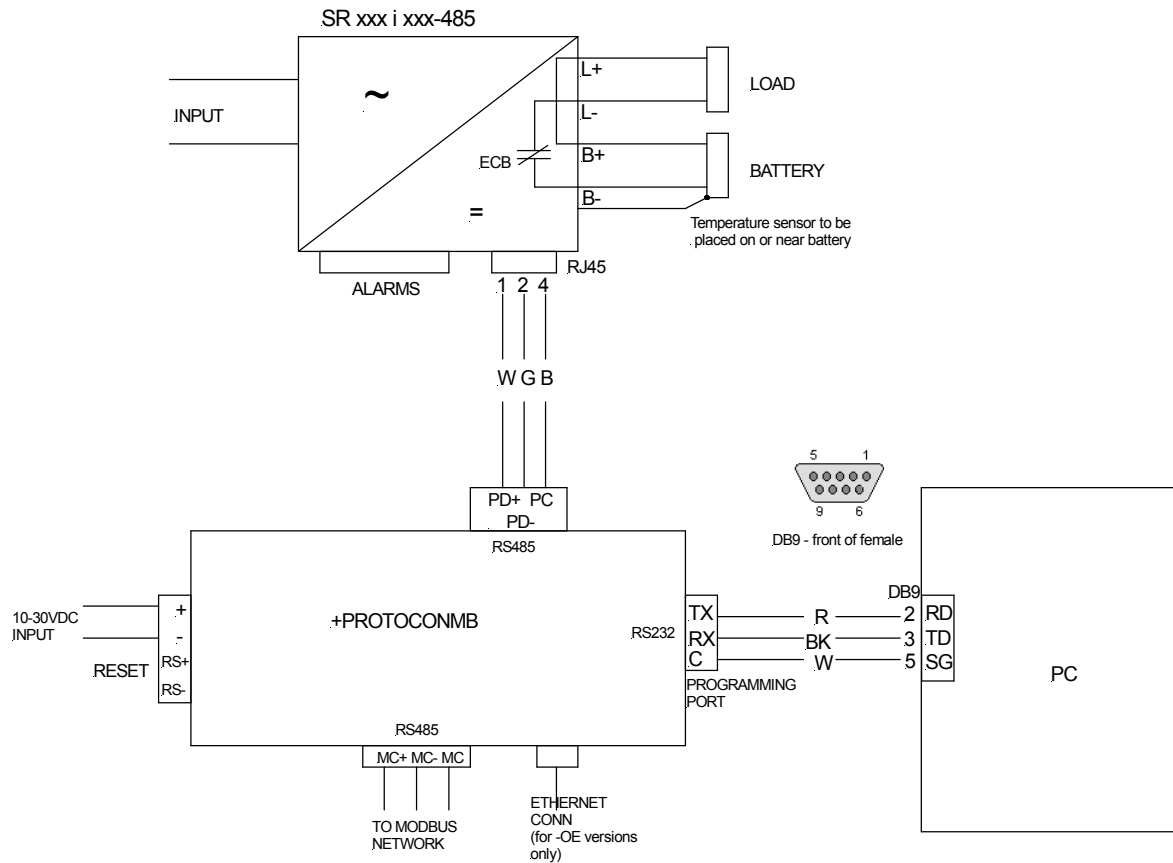
Load Current Threshold(A):

Threshold Update

Total current  
PSU + Battery

# Connection Diagrams and Screenshots

## 2. RS485/ Modbus



**Power MBLink v1.2**

### Innovative Energies - Power Supply - Modbus Interface Programmer

Power MBLink Version 1.2

Configuration | Configuration Instructions | Wiring Instructions | **Modbus Monitor** | Settings & Diagnostics

**Power Supply Variables**

Output Voltage: <b>27.7</b> Volts	Battery Current: <b>00.0</b> Amps	Power Supply Current: <b>01.5</b> Amps	Battery Temperature: <b>20.0</b> DegC
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**Status**

Normal Operation	Battery Present	Battery OK (Pwr Fail)	Battery Charging
Batt. Condition Test	<b>BCT Enabled</b>	Retry BCT on Fail	Battery Discharging
Batt in Good Cond.		BCT Enable Ack	BCT Disable Ack
		BCT Start Ack	BCT Stop Ack

**Alarms**

Mains Failure	Possible M/PSU Fail	Batt in Bad Cond.	Comms to PSU Fail
Overload	System Down	<b>Battery Missing</b>	Battery Low
Poss: Batt Missing			

**Communication**

Address:

Single Update

Continuous Update

Stop Update

Watchdog:

**Battery Condition Test**

Start BCT

Stop BCT

BCT Enable

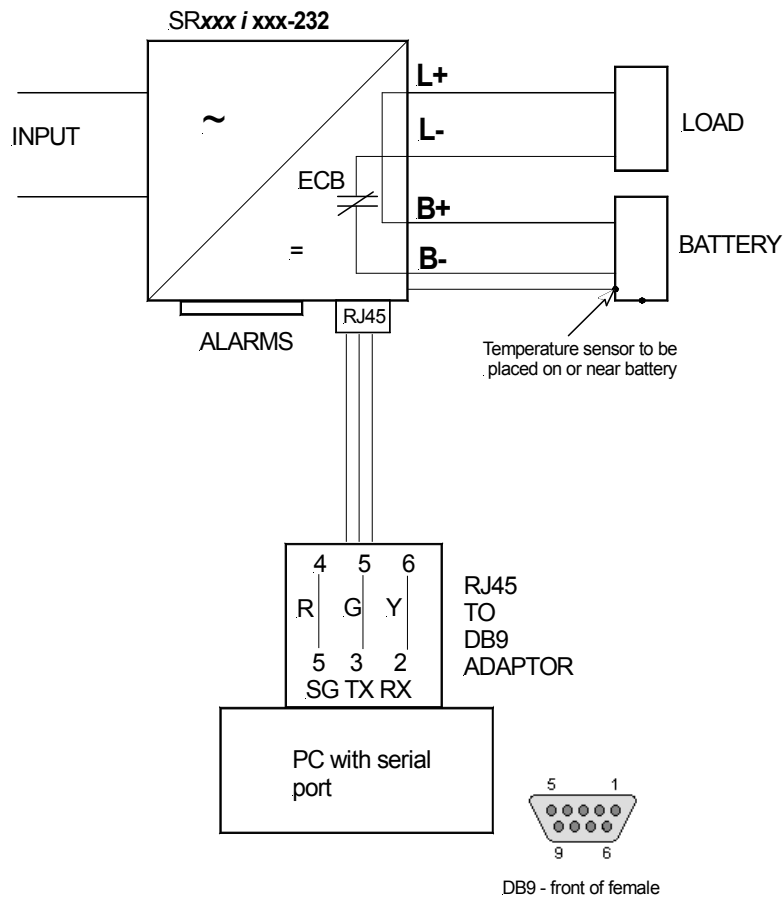
BCT Disable

**Notice**

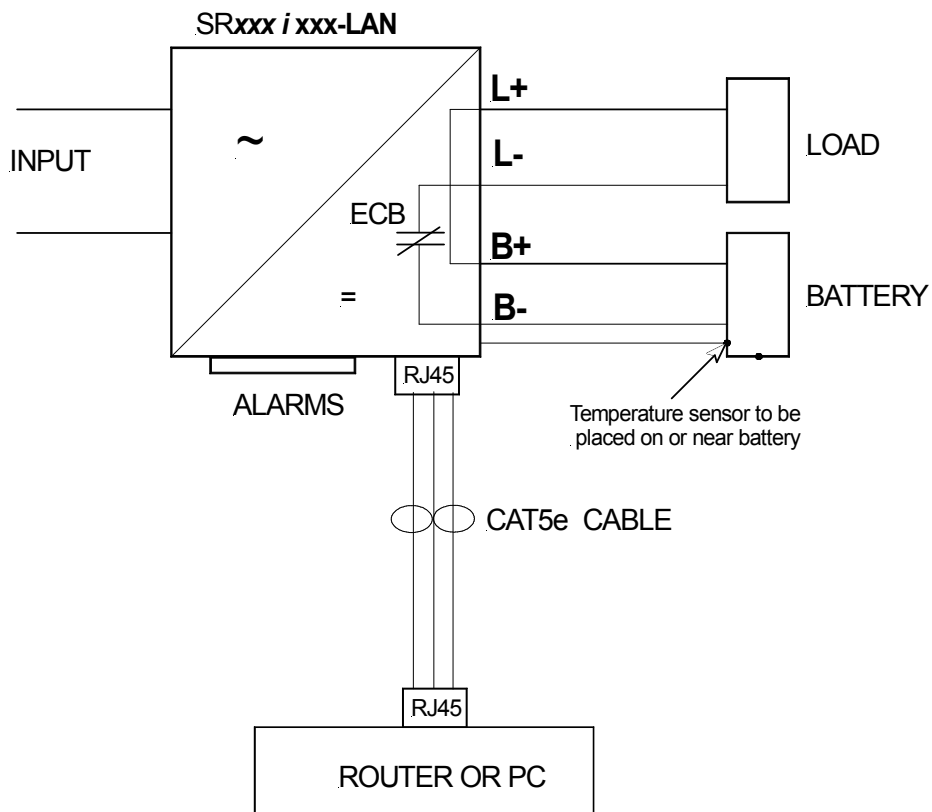
Code	Type	Description
03006	Notice	Updating Information From Device With Address 1

# Connection Diagrams and Screenshots

## 3. RS232/ IE ASCII code



## 4. Ethernet/ IE ASCII code

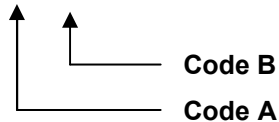


# Connection Diagrams and Screenshots

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## 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

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