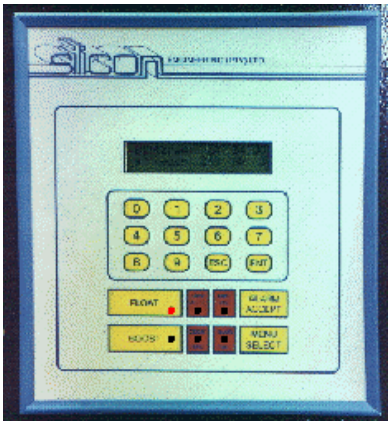
Instructions how to convert from a SILICONBMS V1.2 to a BMS Plus V4.0

The new BMS Plus is pin for pin compatible with the BMS VER1.2, with two extra wires, which need to be connected



BMS V1.2

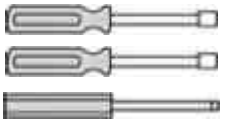
BMS Plus V4.0

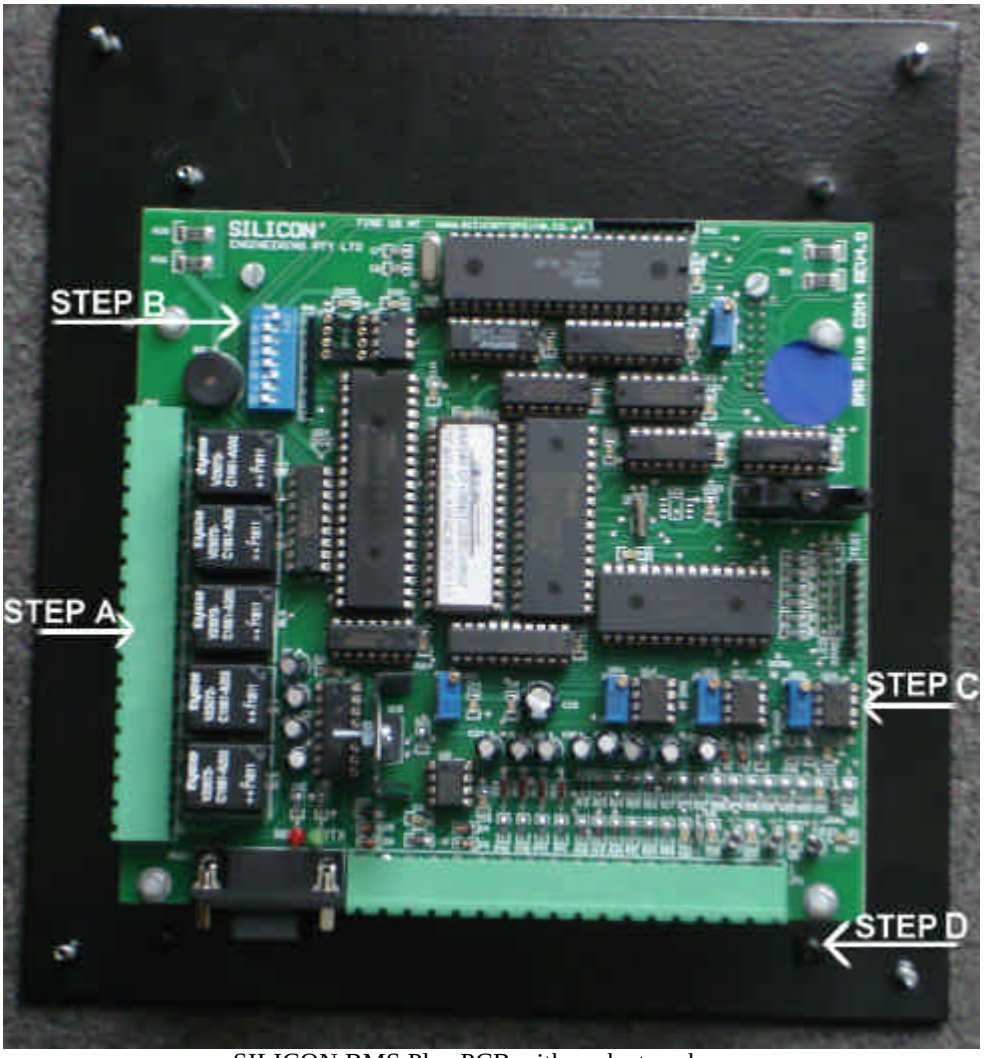
If the BMS Plus is plugged into a unit without the modification, the following functions below will be affected:

a. Beeper. The beeper will be silent.
b. ON/ / OFF or BMS remote shutdown
c. Load Control (if Applicable)
d. Mains Supply Fail (if applicable)
e. Minor Alarm output.
f. Major Alarm output.

Tools required:

a. 5.5mm nut driver
b. 7mm nut driver
c. Small flat screw driver
d. Multimeter
e. Wire crimper

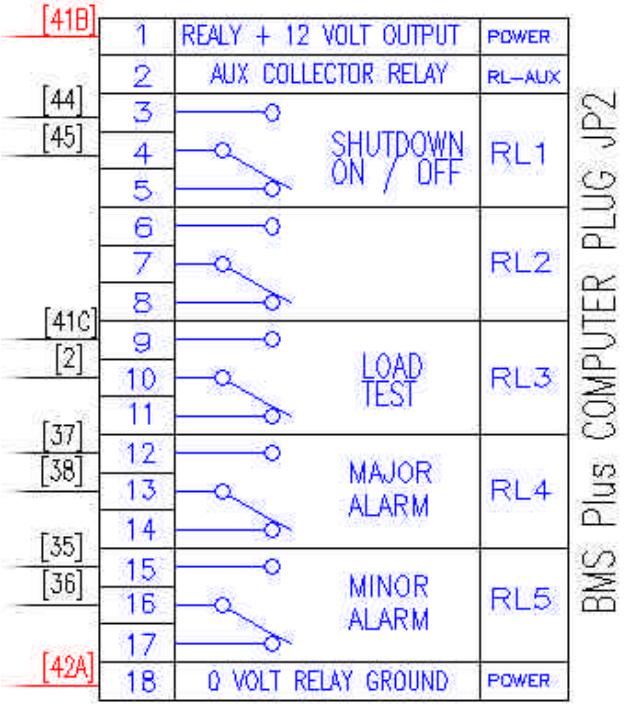




SILICON BMS Plus PCB with each step shown

STEP A.

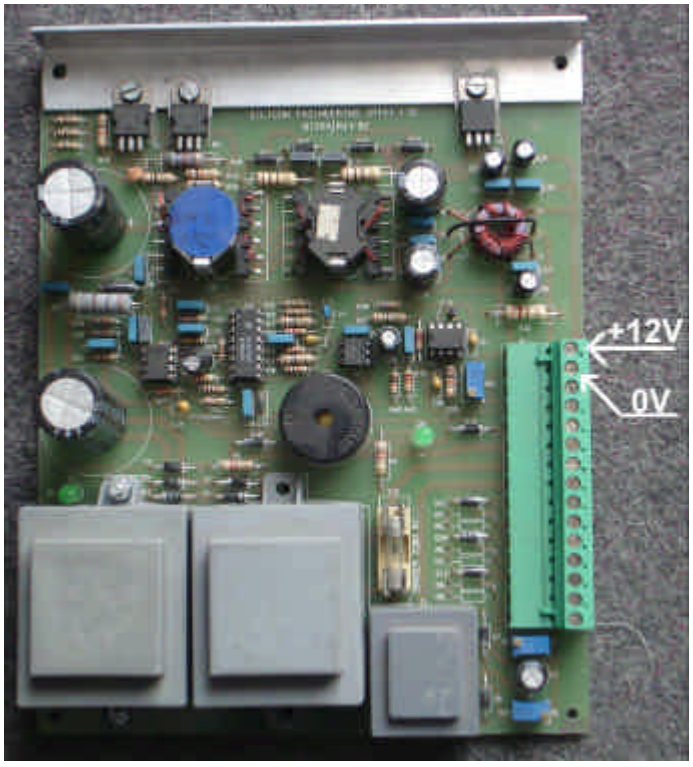
BMS Plus vertical terminal JP2



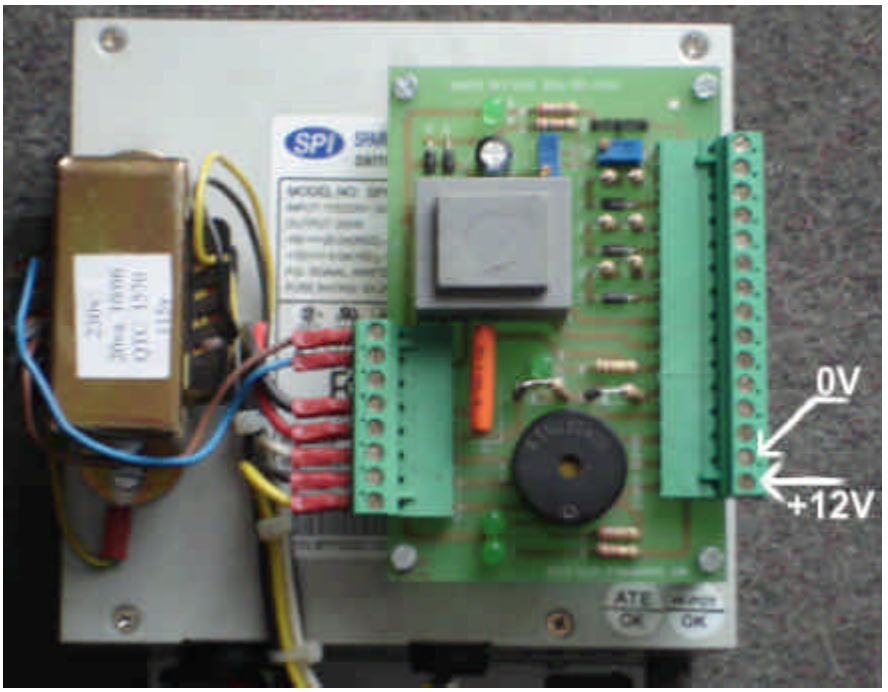
The 18 way left hand side plug (JP2) is numbered from top to bottom
(1 = TOP: 18 = BOTTOM)

a. Connect a 1mm wire from +12V (wire #41B) of the power supply directly to the BMS Plus JP2 pin1
b. Connect a 1mm wire from 0V (wire #42B) of the power supply directly to the BMS Plus JP2 pin18.

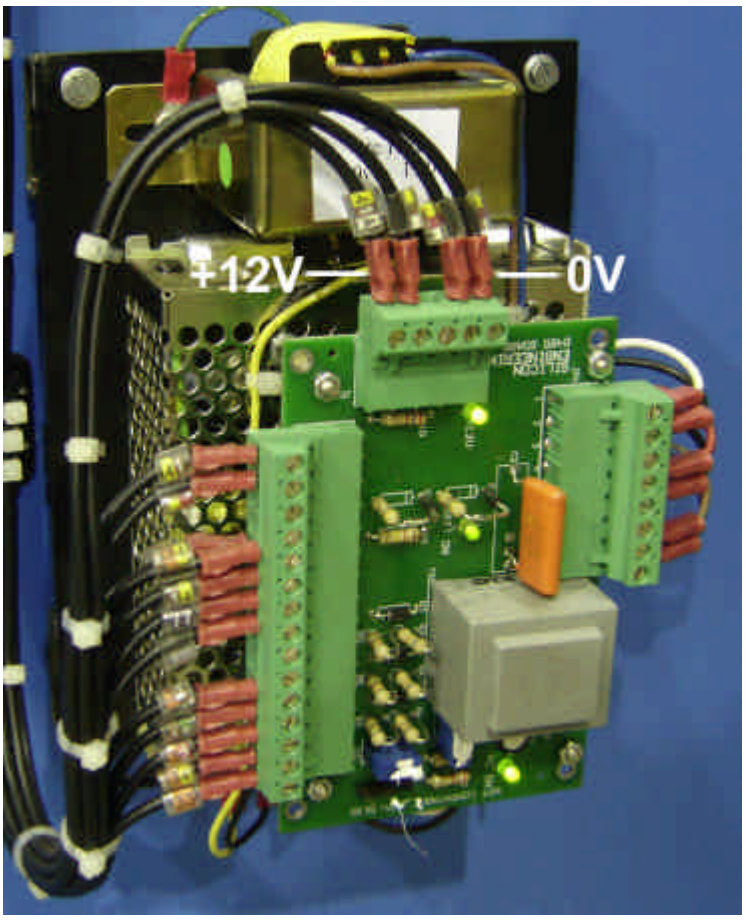
Various Powe r Supply types:



D130 BMS Power Supply with 0V(pin14) and +12V (pin 15) connections indicated use on 24VDC and 48VDC systems.

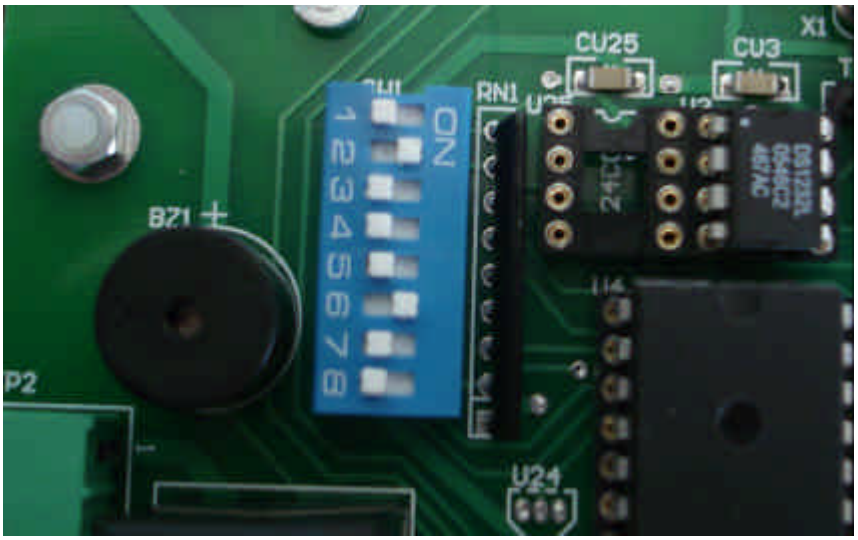


D188 BMS Power Supply with 0V and +12V connections indicated use on 110VDC systems



D488 BMS Power Supply with 0V and +12V connections indicated use on 110VDC and 220VDCsystems with extra +12V and 0V connections on 5-way plug

STEP B.



BMS Plus dipswitch

DIPSWITCH SETTINGS

The Silicon BMS Plus can be used on units with nominal voltages from 24VDC to 220VDC and with current shunts from 5Amps to 1000Amps at 50mV. This is selected on the dipswitch located on the top left hand side of the BMS Plus REV4.0 PCB

CURRENT SETTINGS

DIP1	DIP2	DIP3	SHUNT AMPS
0	0	0	5
1	0	0	15
0	1	0	30
1	1	0	60
0	0	1	125
1	0	1	250
0	1	1	500
1	1	1	1000

ALARMS

DIP4	FUNCTION	
0	EOA	Relay Energize On Alarm
1	DOA	Relay De-energize On Alarm

VOLTAGE

DIP5	DIP6	NOMINAL VOLTAGE
0	0	24
1	0	48
0	1	110
1	1	220

CONTROL

DIP7	FUNCTION
0	DDC (D200, D200A)
1	1PC1,3PC1 CONROL without D278 PCB card

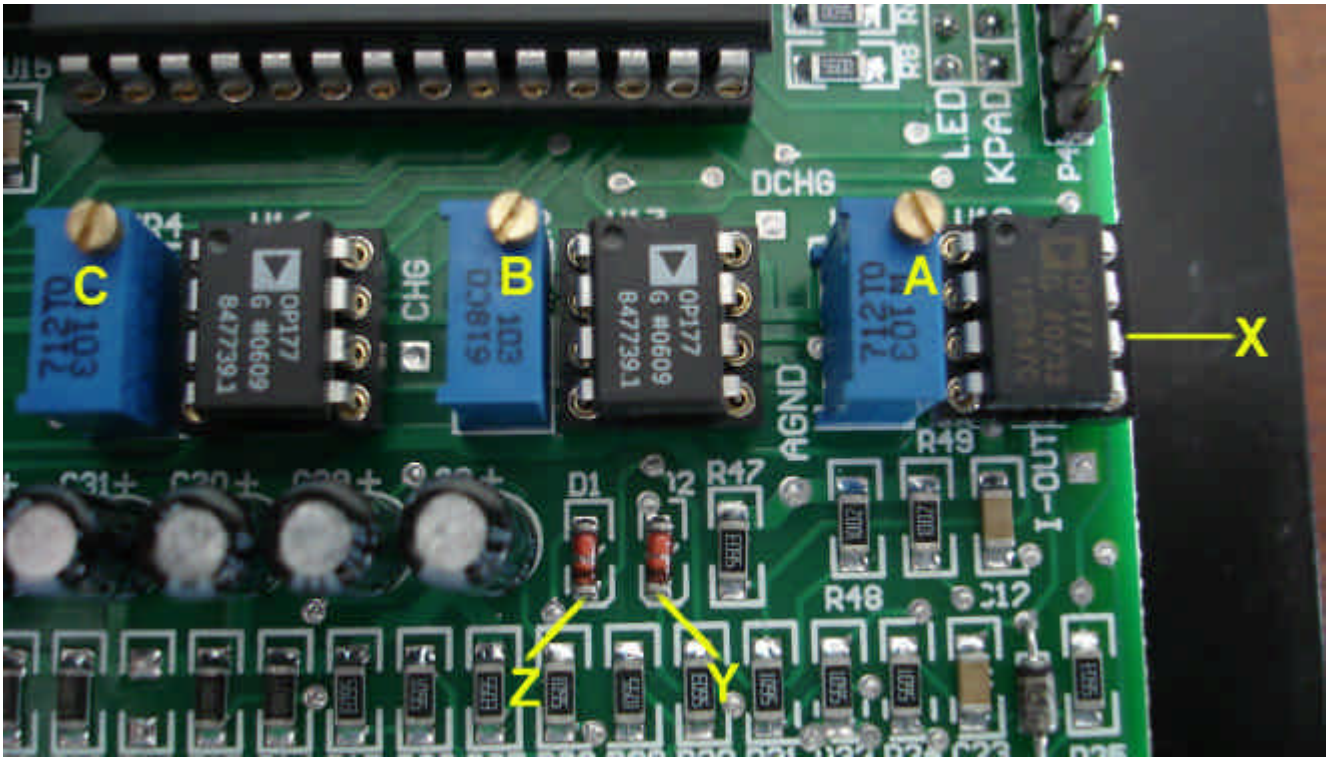
or

DIP7	FUNCTION (Only for single phase systems)
0	220vac
1	110vca

BEEPER

DIP8	FUNCTION
0	Beeper on
1	Beeper off

STEP C.



BMS Plus op-amps

Calibration

All measurements are taken with negative probe of a digital Multimeter on pin #18 [42] for the measurements of Calibration A, B and C below. The 0V connection is found next to the 9-way serial port (PORT1) on JP1 (1 = RIGHT: 18 = LEFT)

Calibration A:

1. Set the multimeter to mV scale
2. Place the red positive probe onto U18 pin 6 as indicated on the picture above as X.
3. Turn the A potiometer until 0.00mV is indicated on the multimeter. Turn the potiometer clockwise for up and anticlockwise for down.
4. Done

Calibration B:

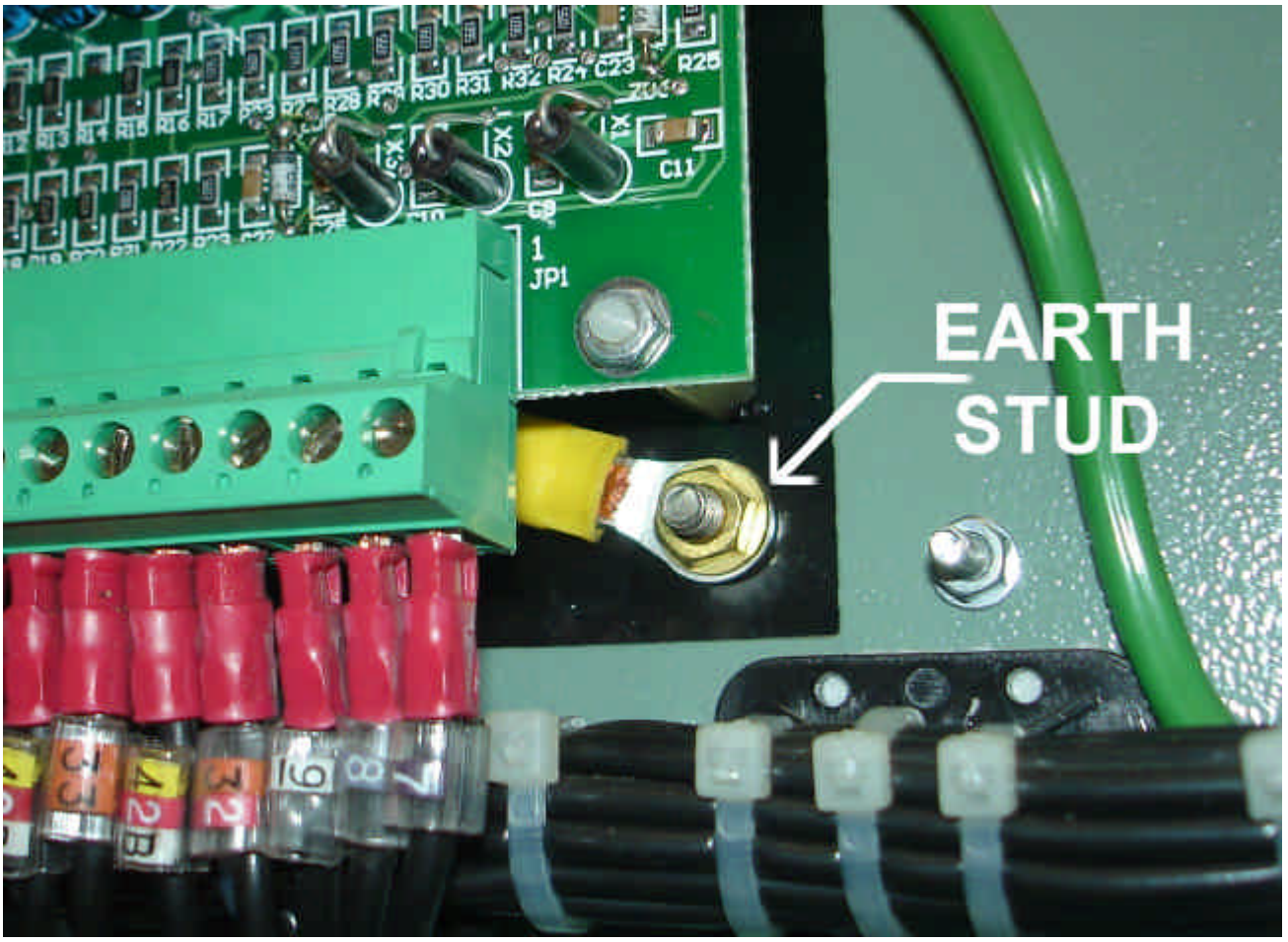
1. Set the multimeter to mV scale
2. Place the red positive probe onto cathode of D2 as indicated on the picture above as Y.
3. Turn the B potiometer Clockwise until a voltage of +5mV is achieved. Then turn the potiometer counter clockwise until +0.01mV is indicated on the multimeter.
4. Done

Calibration C:

1. Set the multimeter to mV scale
2. Place the red positive probe onto cathode of D1 as indicated on the picture above as Z.
3. Turn the C potiometer Clockwise until a voltage of +5mV is achieved. Then turn the potiometer counter clockwise until +0.01mV is indicated on the multimeter.
4. Done

The currents on the LC display should all indicate zero.

STEP D.



Earthing of BMS Plus

The earthing of the BMS Plus has been improved by the addition of a 4mm stud welded to the rear of the faceplate.

1. Ensure the two green 18 way plugs on the BMS marked JP1 ands JP2 are unplugged.
2. Remove the existing earth wire, usually connected to the rear BMS 3mm mounting screws.
3. Replace the lug with a 4mm lug and bolt onto the earth stud on the right hand side on the metal work of the BMS Plus case.

Plug in both BMS plugs and switch on the AC mains voltage and reconnect the battery. The BMS will be seen to initialise with the usual startup LED flashing and synchronised beeping. Check, at startup, that the correct battery type is selected and the correct numbers of cells are configured.

It should commence operation without any interference from the operator.

End of Upgrade