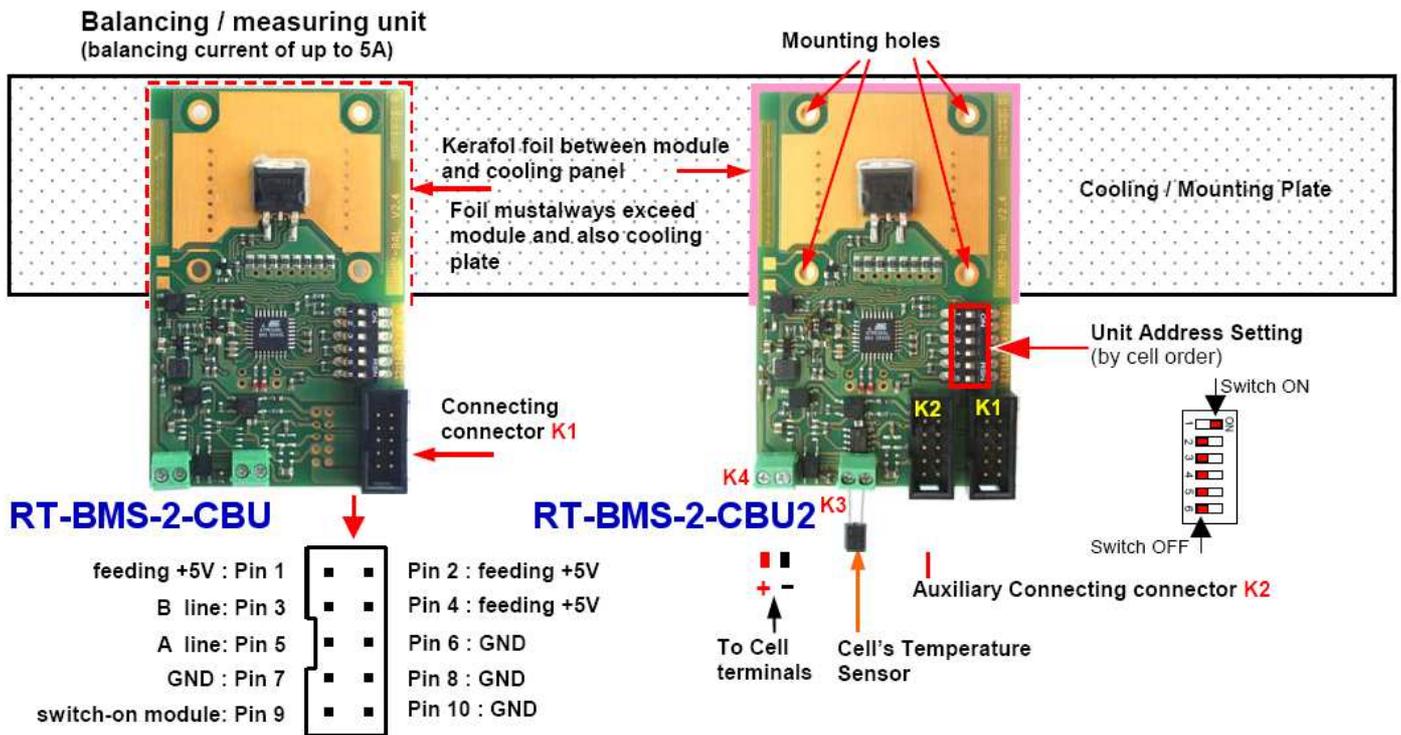## RT-BMS Component Information

The detailed installation of the CBU units

The Cell Balancing Unit is connected to each individual cell in the battery pack.

Balancing / measuring unit
(balancing current of up to 5A)

Mounting holes

Kerafol foil between module and cooling panel

Foil mustalways exceed module and also cooling plate

Cooling / Mounting Plate

Unit Address Setting
(by cell order)

Switch ON

Connecting connector **K1**

K2   K1

K4

RT-BMS-2-CBU   **RT-BMS-2-CBU2** K3

Switch OFF

feeding +5V : Pin 1	Pin 2 : feeding +5V
B line: Pin 3	Pin 4 : feeding +5V
A line: Pin 5	Pin 6 : GND
GND : Pin 7	Pin 8 : GND
switch-on module: Pin 9	Pin 10 : GND

To Cell terminals

Cell's Temperature Sensor

Auxiliary Connecting connector **K2**

RT-BMS-2-CBU has one data line connector (K1), RT-BMS-2-CBU2 has two data line connectors (K1 and K2). Two connectors allow to connect and disconnect the data line.

The data line cable when connecting with CBU (single connector) modules:

Flat cable with force on connectors

Pink marking of wire No. 1
(connection with connector's pin 1)

The data line cable when connecting with CBU2 (two connectors) modules:

Flat cable with force on connectors

CBU2   CBU2

Pink marking of wire No. 1
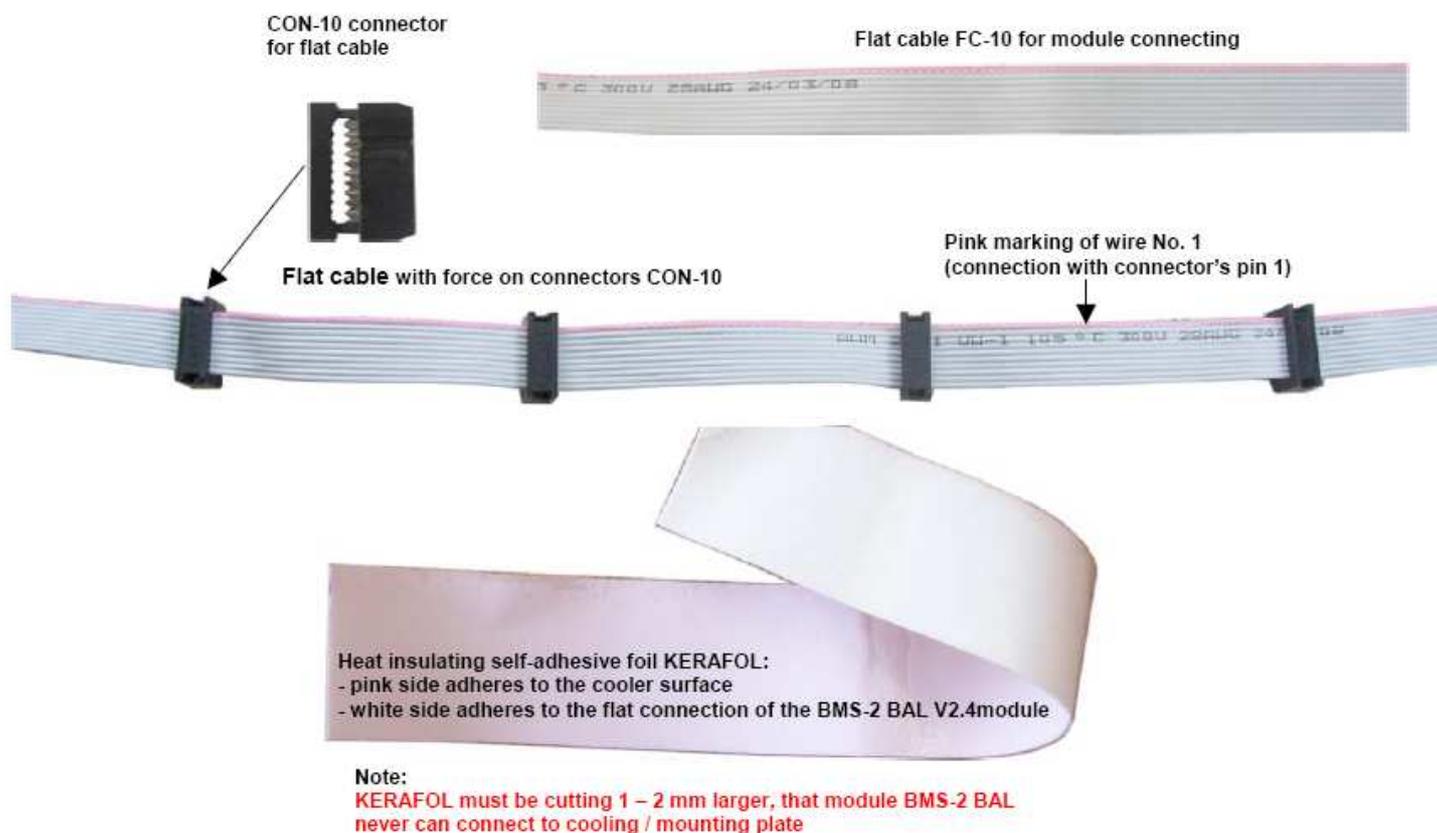(connection with connector's pin 1)

The complete photo of the CBU unit

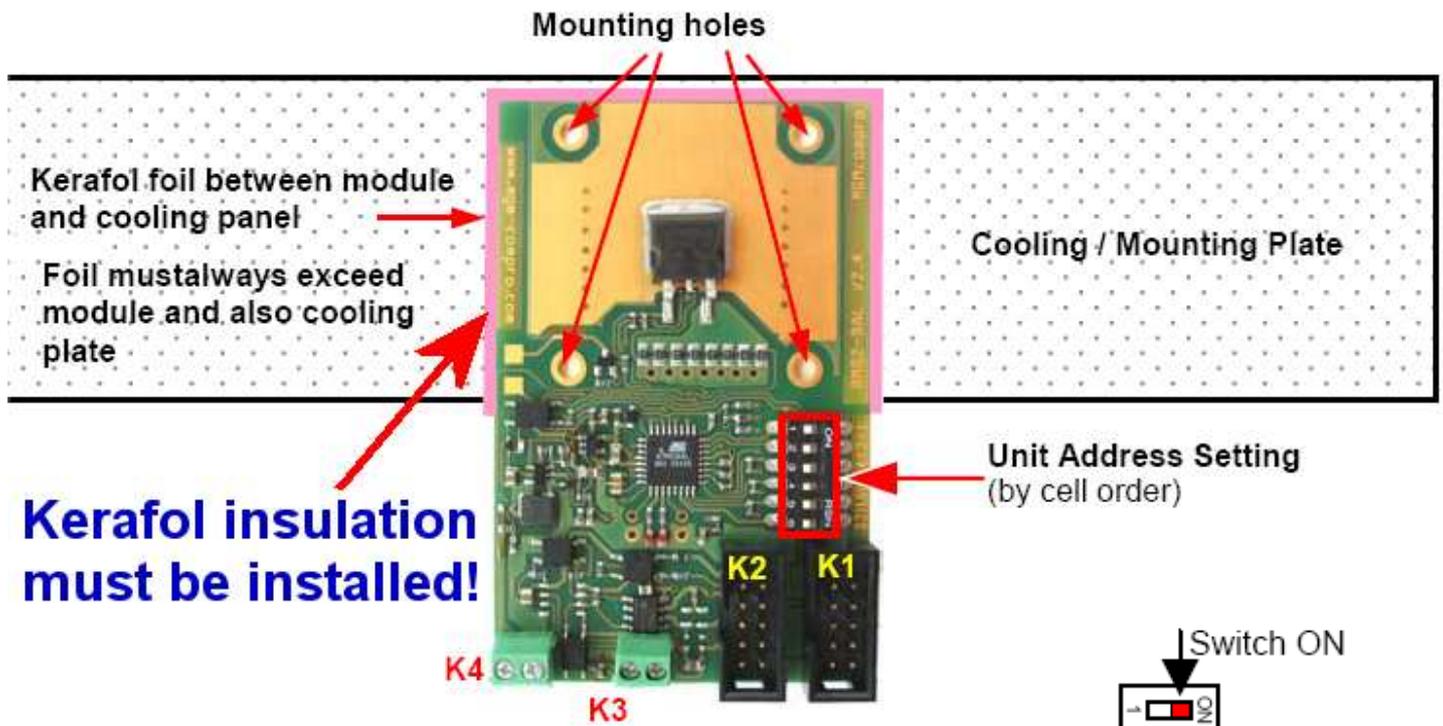The battery connectors and the battery temperature sensor are provided with each CBU unit.

PLEASE NOTE: CBU2 modules (with 2 connectors) are marked with "ACC" sticker on the module.

Additional accessories supplied with each BMS

CON-10 connector for flat cable

Flat cable FC-10 for module connecting

Flat cable with force on connectors CON-10

Pink marking of wire No. 1 (connection with connector's pin 1)

Heat insulating self-adhesive foil KERAFOL:
- pink side adheres to the cooler surface
- white side adheres to the flat connection of the BMS-2 BAL V2.4module

Note:
KERAFOL must be cutting 1 – 2 mm larger, that module BMS-2 BAL never can connect to cooling / mounting plate
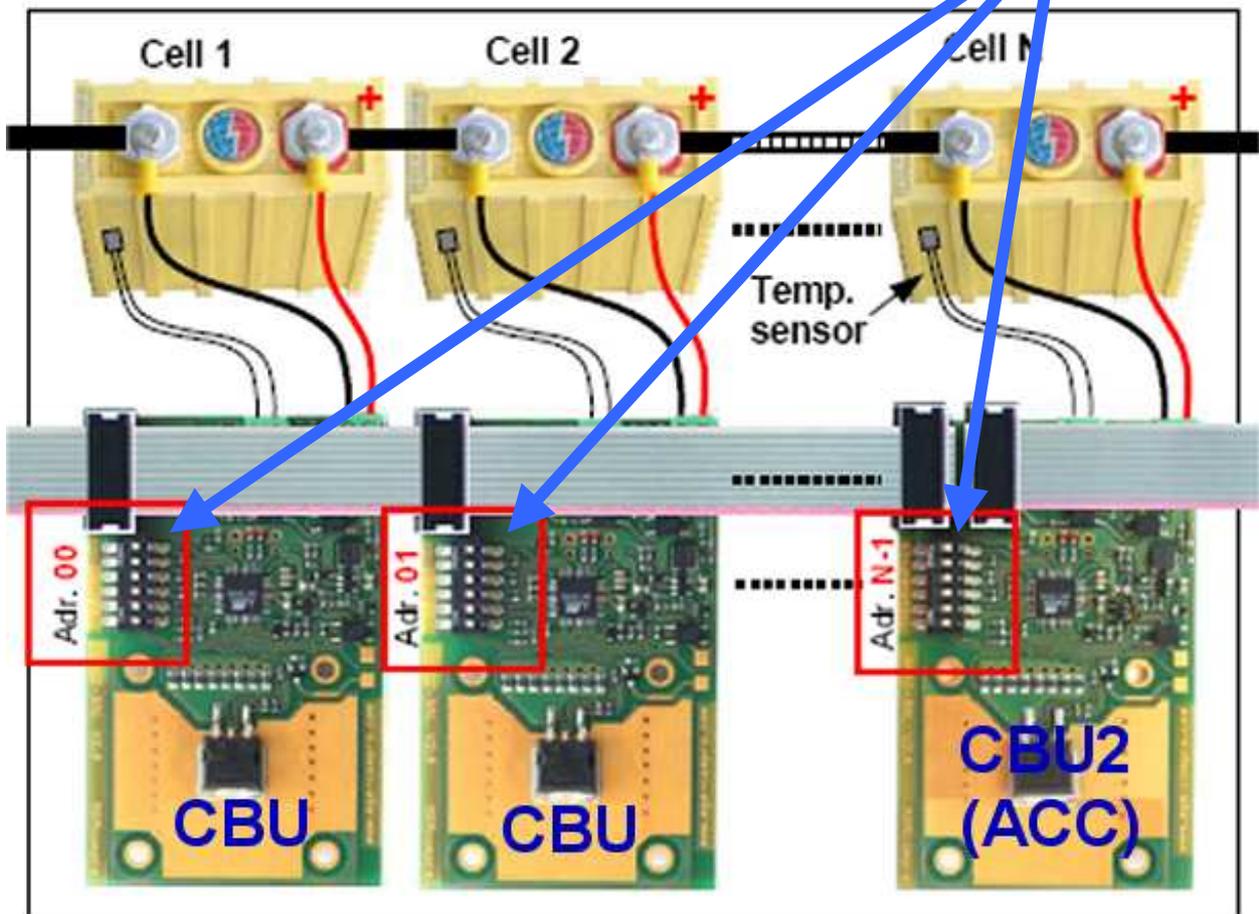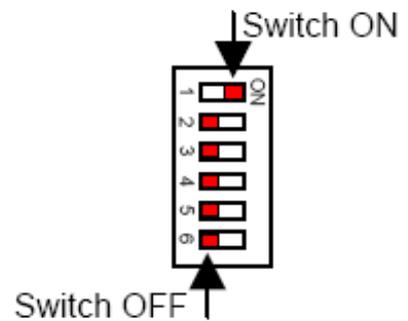
Heat conductive, electrically insulated self-adhesive foil KERAFOL must be installed under each CBU unit, between the CBU unit and the cooler surface.

The mounting of the insulation for each module

Mounting holes

Kerafol foil between module and cooling panel

Foil must always exceed module and also cooling plate

Cooling / Mounting Plate

Kerafol insulation must be installed!

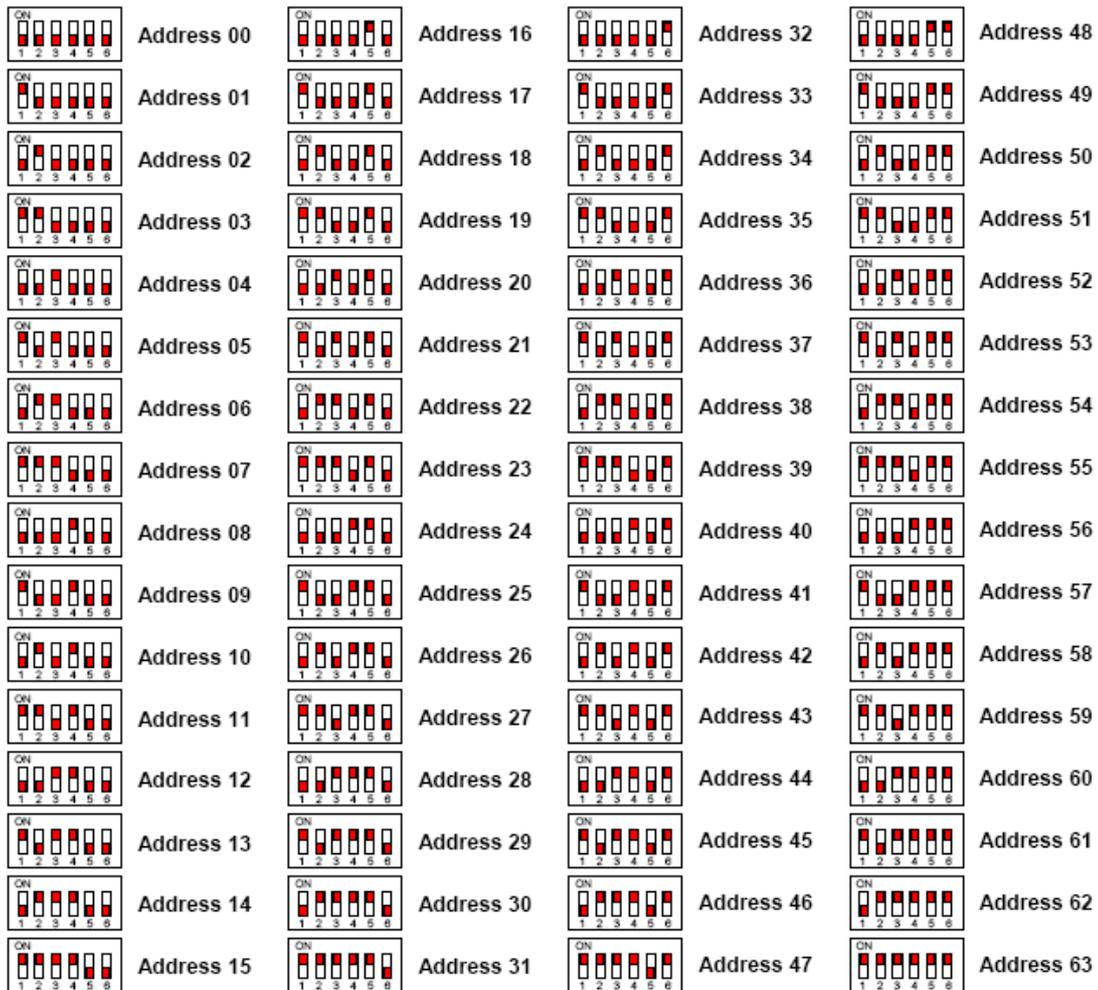Unit Address Setting (by cell order)

K2   K1

K4   K3

Switch ON

1
2
3
4
5
6
ON

Switch OFF

The CBU module addressing

Each module has a DIP switch to set the address of the module. The address is a binary number.

Cell 1   Cell 2   Cell N

Temp. sensor

Adr. 00   Adr. 01   Adr. N-1

CBU   CBU   CBU2 (ACC)

Module addressing:

Address 00	Address 16	Address 32	Address 48
Address 01	Address 17	Address 33	Address 49
Address 02	Address 18	Address 34	Address 50
Address 03	Address 19	Address 35	Address 51
Address 04	Address 20	Address 36	Address 52
Address 05	Address 21	Address 37	Address 53
Address 06	Address 22	Address 38	Address 54
Address 07	Address 23	Address 39	Address 55
Address 08	Address 24	Address 40	Address 56
Address 09	Address 25	Address 41	Address 57
Address 10	Address 26	Address 42	Address 58
Address 11	Address 27	Address 43	Address 59
Address 12	Address 28	Address 44	Address 60
Address 13	Address 29	Address 45	Address 61
Address 14	Address 30	Address 46	Address 62
Address 15	Address 31	Address 47	Address 63

The CBU Terminal module – CBUX (ZR)

The 64 cell BMS Main unit has one (1) dataline for up to 64 cells. The last module, at the end of the dataline, must be the Terminal module – CBUX – also marked "ZR". The terminal module closes the dataline connection. In all other functions, the CBUX is the same as any CBU module.

The 128 cell BMS Main unit has two (2) datalines for up to 64 cells. One dataline for cells 1 to 64, the other dataline for cell 65 to 128. The terminal modules are needed at the end of each dataline.

http://www.yttrium-power.com/

The complete overview of the installation of the CBU, CBU2 and the terminal module – CBUX (ZR)

System connection, part A:

Current probe HALL 400

– traction battery (GND)
(to motor controller and charger)

Two boxes for one section - sample

BOX 1   **BOX 2**

Cell 1   Cell 2   Cell N   Cell N+1   Cell 64

Temp. sensor

1. section, cells 1 - 64

2. section, cells 65 - 128

Connection between boxes

Adr. 00   Adr. 01   Adr. N-1   Adr. N   Adr. 63

CBU2 (ACC)   **CBU2 (ACC)**   **CBUX (ZR)**

DATALINE 1 (cell 1 to 64)
Dataline must be terminated by CBUX (ZR) module

BOX 3

Cell 65   Cell 66   Cell 67   Cell 127   Cell 128

Adr. 00   Adr. 01   Adr. 02   Adr. 62   Adr. 63

DATALINE 2 (cell 65 to 128)
(optional)
Dataline must be terminated by CBUX (ZR) module

CBUX (ZR)

One box for one section

+ traction battery (GND)
(to motor controller and charger)