

CCGM – Centralized CAN Cell Group Module (CCGM022D)

INTRODUCTION

EMUS Centralized Cell Group Module (CCGM) is a battery cells communication adapter (or “Slave unit”) equipped with two CAN connectors for easy BMS system assembly and integrated proprietary EMUS software that allows data transfer within 100ms frequency. CCGM performs all cell data measuring by itself, so the product allows saving space by reducing the need of having cell modules and three-way connectors. CCGM increases the speed of the cell data broadcasting and provides for each connected battery cell balancing functionality.



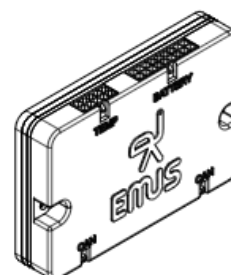
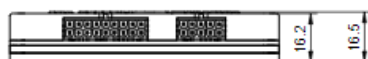
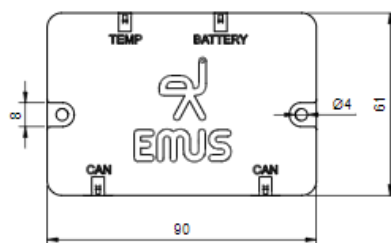
APPLICATIONS

- Any lithium chemistry, series-connected battery pack, or a pack of multiple parallel strings, of up to 512 cells total if using 32 EMUS Centralized CAN Cell Group Modules with connected 16 cells on each. (centralized cell monitoring)

FEATURES

- 2x CAN connectors. Enables communication with CAN equipped EMUS G1 Control Unit and EMUS Centralized Cell Group Modules.
- Supports from 6 up to 16 lithium cells.
- 5x external temperature sensors.
- Using Temperature Breakout (or Extender) board (TBB010A) possible to extend up to 16 temperature sensors.
- Balancing of cells, 400mA per each cell.
- Supports 50, 125, 250, 500, 800 kbit/s and 1 Mbit/s CAN baud rates.

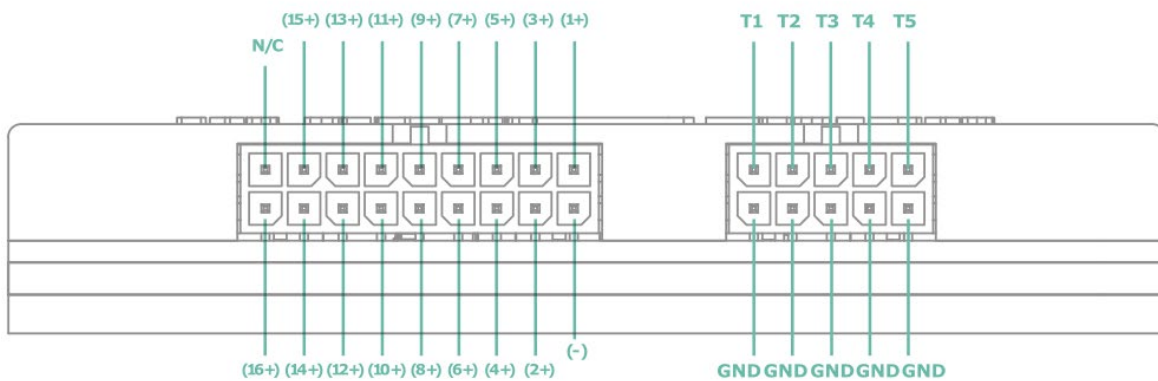
MECHANICAL INFORMATION



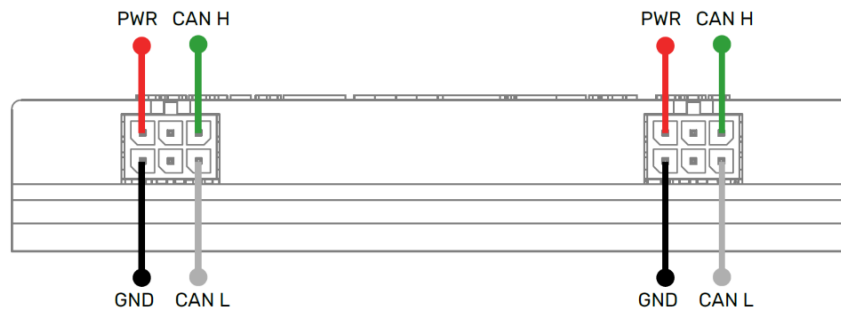
CONNECTION LAYOUT

Cells Layout:

Ext. Temperature Sensors Layout:



Assignment	Mating Housing	Terminal
(-)	Microfit 43025-1800 cell connector	43030-0003 Molex Micro-latch crimps (recommended crimp tool Molex Hand Crimp Tool P/N: 638190000)
1+		
2+		
3+		
4+		
5+		
6+		
7+		
8+		
9+		
10+		
11+		
12+		
13+		
14+		
15+		
16+		
N/C	Microfit 43025-1000 Temp connector	43030-0003 (recommended crimp tool Molex Hand Crimp Tool P/N: 638190000)
5XGND		
T1		
T2		
T3		
T4		
T5		

CAN Connection Layout:


Assignment	Mating Housing	Terminal
PWR	2x microfit 43025-0600	43030-0003 (recommended crimp tool Molex Hand Crimp Tool P/N: 638190000)
GND		
CAN_H		
CAN_L		

ELECTRICAL CHARACTERISTICS

Item	Value
Supply voltage	12-95V
Supply voltage battery	12.0 VDC to 79.2 VDC (firmware limited by 72.8VDC)
Power supply reverse protection	yes
Current consumption	6.1 mA @ 67.2V - 7.7 mA @ 15V
Isolation voltage	1000V
Transient/overvoltage protection between CAN H/CAN L and GND (and vice versa)	24V

OTHER SPECIFICATIONS

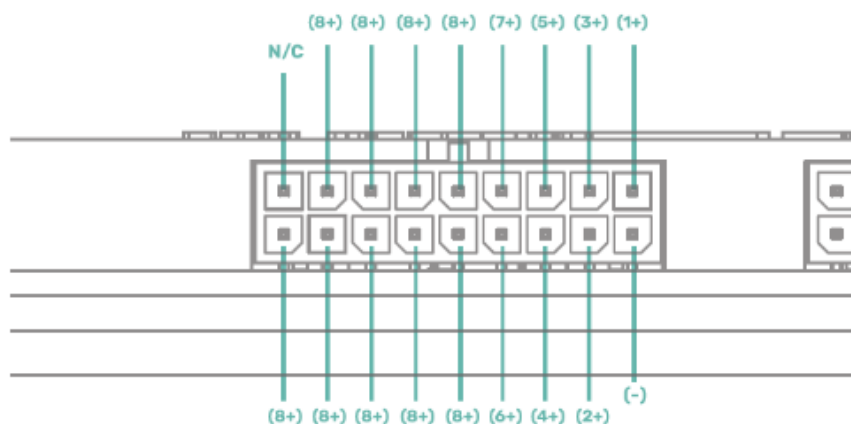
Item	Conditions	Value
Cell Count		6-16
CAN Speed		50kbps, 125kbps, 250kbps, 500kbps, 800kbps, 1Mbps (by default 250kbps)
Reserved CAN IDs		0x1FFFFEE5, 0x1FFFFEE6, 0x1FFFE5E5, and 0x1FFFE5E6
Operating Temperature		-40 to +85 °C
IP rating		IP40
Weight	Without Quick Start Kit	105g
	With Quick Start Kit	145g
Cell communication wire length	In our Quick Start Kit	45cm
Temperature sensors wire length	In our Quick Start Kit	45cm

INSTALLATION



NOTE: Connection must start from the most negative cell to the most positive. In cases when cells number is less than 16, e.g. 8 cells, then free cells connection wires (dedicated for 9th-16th cells) must ALL be connected to the last 8th (most positive cell).

Cells Layout: (using other amount of cells)



To setup the 16 cells and 5 external temperature sensors please refer to figure below.

Cells Layout: _____ Ext. Temperature Sensors Layout: _____

