



CAN GROUP MODULE v2

FEATURES

- Operates on CAN bus
- Suitable for 12V system
- Optically isolated
- Low current consumption
- Micro Power sleep mode
- Small size (35x35x15mm)
- Waterproof
- Easy installation
- Supports 50, 125, 250, 500, 800, 1000Kbps CAN bus speeds.
- Supports standard 11 bit and extended 29 bit CAN identifiers.
- Supports up to 255 cell modules
- High CAN-Cell Module isolation voltage

APPLICATIONS

- Electric vehicles
- Solar/Wind energy storage
- Industrial energy storage

DESCRIPTION

Emus CAN Group Module is used as an interconnecting interface to separate the whole battery pack into cell groups. Each group of cells is served by one Emus CAN Group Module which then communicates to Emus BMS Control Unit via CAN bus. This arrangement allows better communication reliability in installations where EMI levels could pose issues for simple serial connection. CAN group modules should also be used if the whole battery pack's cells are installed in physically separate locations where EMI would likely cause communication interference errors over long single wire connecting Emus Cell Modules. CAN Group Module has optical embedded isolation circuitry so it may be connected directly to Cell Modules chain without additional isolation modules.

CAN Group Module also allows to form exchangeable modules of battery pack. Optical isolation allows to build exchangeable modules each having safe voltage levels for manual handling.

Please note that CAN Group Module still requires Emus BMS Control Unit to perform BMS functions.

Table1. ABSOLUTE MAXIMUM RATINGS

PARAMETER	VALUE
Storage temperature	-40°C to +95°C
Supply Voltage on GND and +12V (DC)	-0.3V to +24V
CAN-Cell Modules isolation voltage	3500V
Isolation voltage between Top Cell and Bottom Cell circuitries	3500V
DC Voltages at CANH, CANL with respect to CAN interface ground	-6V to +6V
DC Voltage between BOTTOM CELL- / DN	-7V to +7V
DC Voltage between TOP CELL- / TOP CELL+	-7V to +7V
DC Voltage between TOP CELL- / UP	-7V to +7V



Table2. ELECTRICAL CHARACTERISTICS

PARAMETER	VALUE
Supply Voltage (DC)	6V to 20V
CAN Operating Speed	(50, 125, 250, 500, 800)Kbps and 1Mbps
Operating temperature	-30°C to +80°C
Average active mode Current consumption from 12V line (depends on communication intensity)	7mA
Sleep mode Current consumption	10uA
Current consumption from upper cell	3uA
Supported number of connected cells	1 to 255
Recommended number of cells (number could be higher depending on EMI conditions)	Up to 50

Figure 1. Pinout Diagram

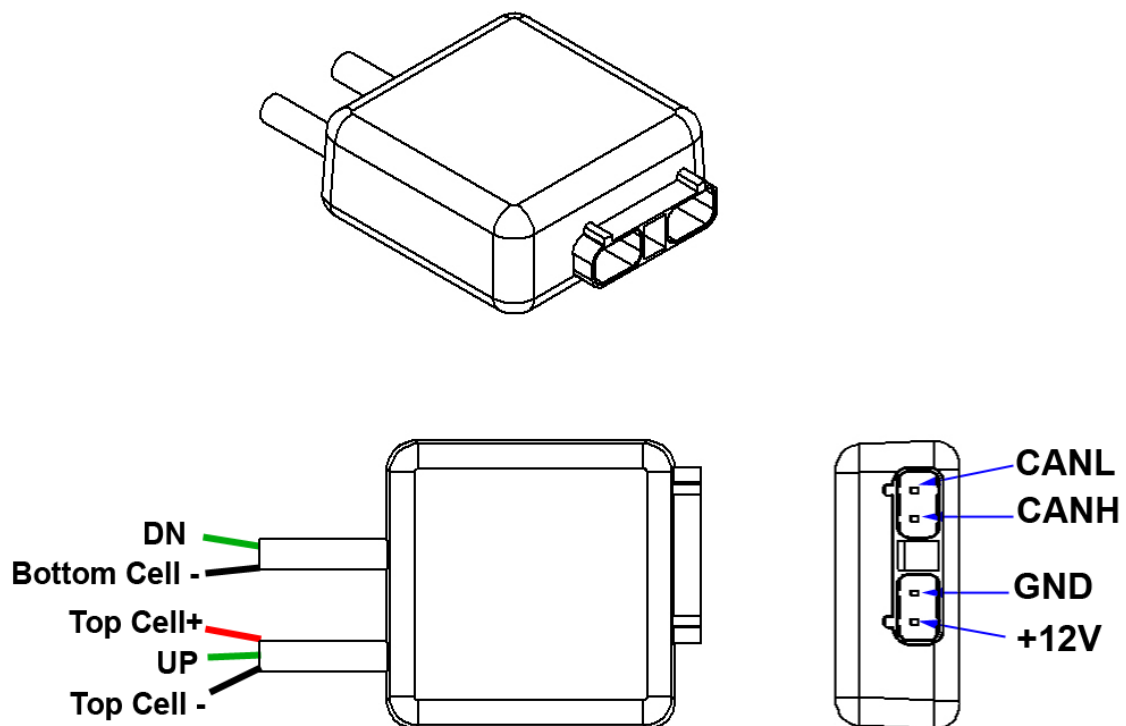




Table 3. TERMINAL FUNCTIONS

Terminal			DESCRIPTION
No.	Name	Wire color	
1	GND	NO	12V power source GROUND
2	CANH		CAN bus high-level signal
3	+12V	Black	12 volts DC power from vehicle's auxiliary battery or other 6-20Vdc source.
4	CANL		CAN bus low-level signal
5	TOP CELL-	Green	Top Cell Module negative (-) contact
6	UP	Red	Top Cell module UP signal
7	TOP CELL+	Black	Top Cell Module positive (+) contact
8	BOTTOM CELL-	Green	Bottom Cell Module negative (-) contact
9	DN		Bottom Cell module DN signal

Figure 2. RECOMMENDED CONNECTION DIAGRAM

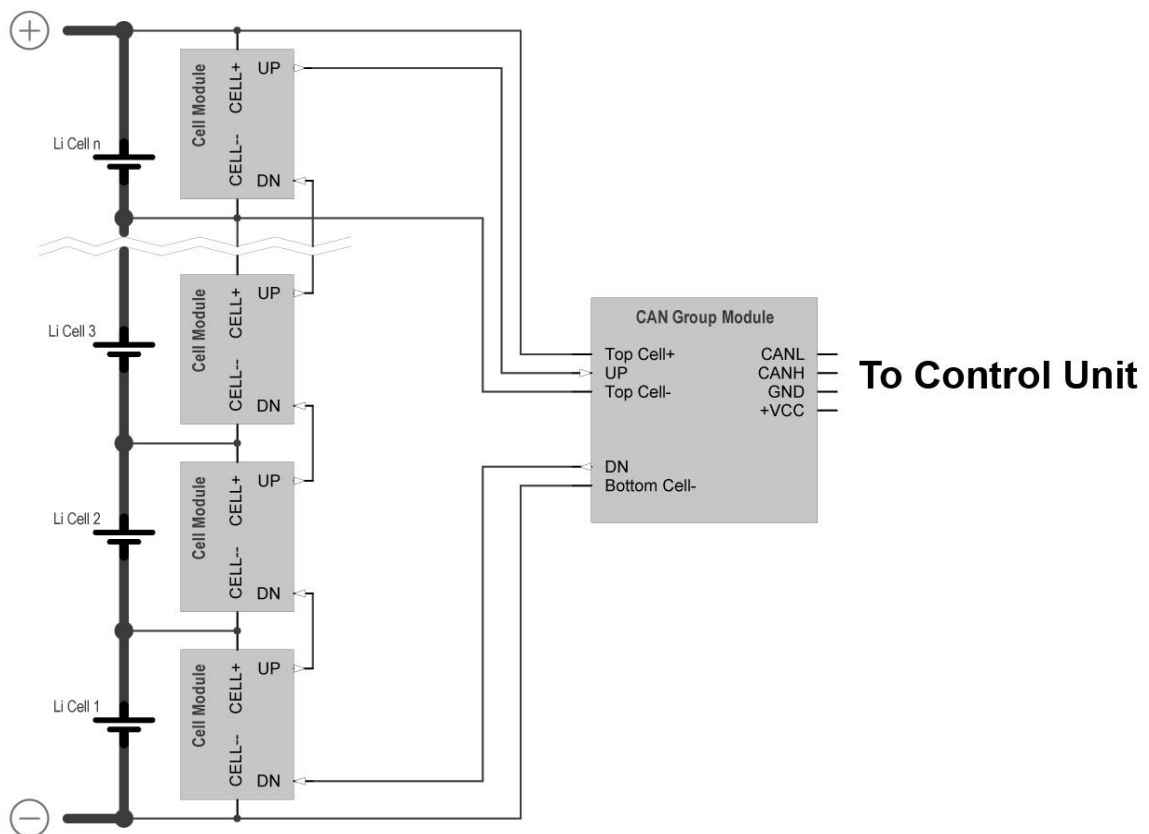




Figure 3. TYPICAL CAN BUS APPLICATION

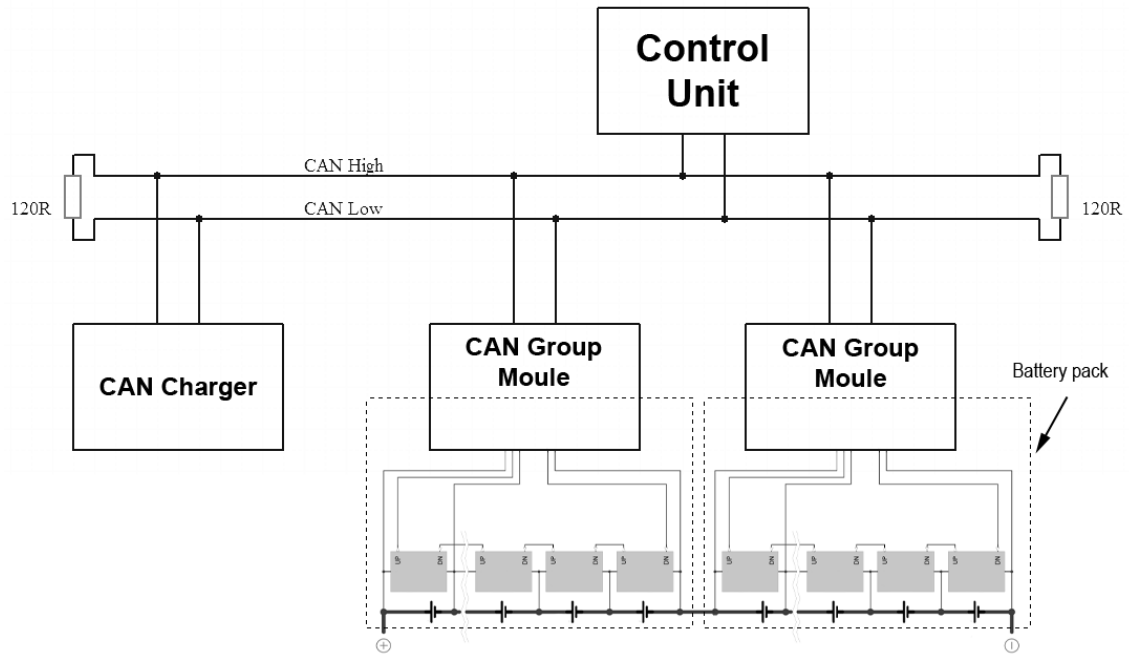


Figure 4. INTERNAL I/O STRUCTURE

