

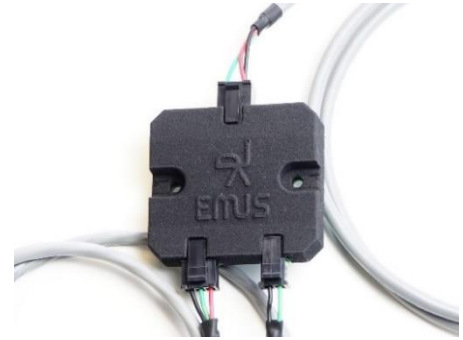


CAN Cell Group Module

Product Code: CGM022C

Introduction

EMUS G1 CAN Cell Group Modules (also known as CGMs) are advanced, microprocessor equipped cell communication adapters that allow the Control Unit to communicate with the Cell Modules over the CAN bus. More than one of them can be used in a single battery pack, which allows to connect the Cell Modules into several small daisy chains instead of one long chain. This not only eliminates the drawbacks of the Top and Bottom Isolators, but also enables the EMUS G1 BMS to manage battery packs that consist of several strings of cells connected in parallel.



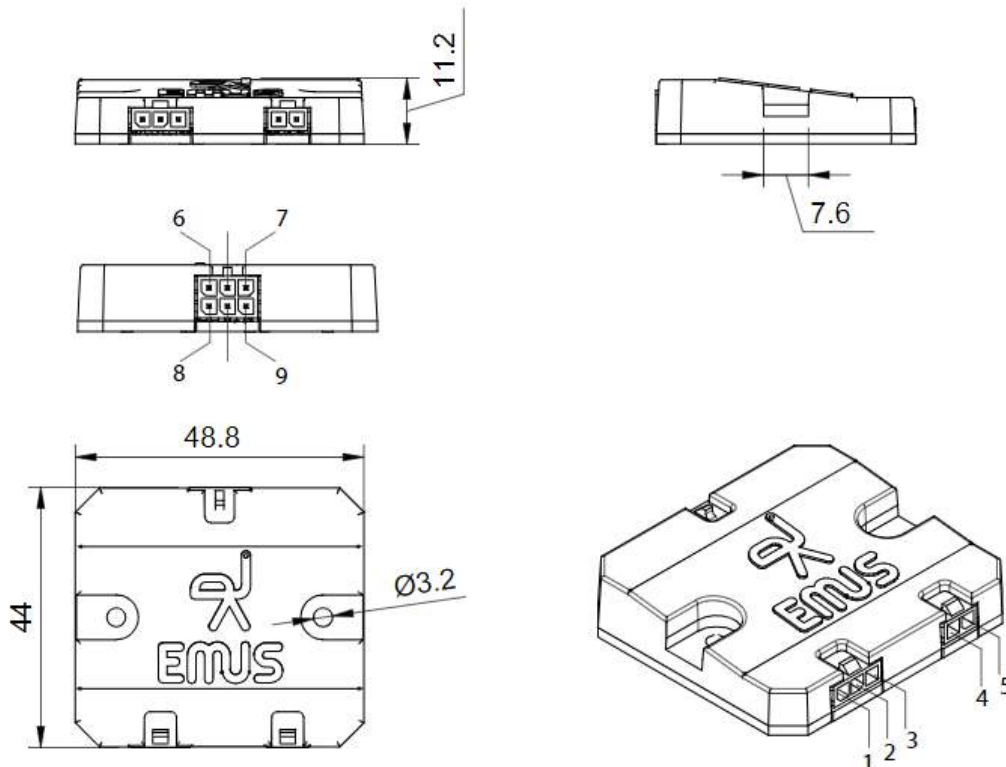
Applications

- Any lithium chemistry, series-connected battery pack, or multiple parallel strings
- Designed for big capacity prismatic cells
- Designed for multiple strings batteries and/or high voltage systems
- Ideal for big energy storage systems
- Photovoltaic battery systems
- Electric vehicles

Features

- Multiple CGMs can be connected in series or parallel strings
- Up to 24 CGMs can be connected to the same Control Unit controlling up to 80 cells each CGM.
- Scalable up to 1200V battery
- Serial data interface for continuous cell monitoring and CAN communication with the Control Unit
- Adjustable CAN speed communication to 50, 125, 250, 500, 800kbps and 1Mbps (Default 250kbps)

Mechanical Information





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Table 1. CGM022C pin assignment

Pin No.	Wire Color	Assignment
1	Black	TOP CELL -
2	Green	UP
3	Red	TOP CELL +
4	Black	BOT CELL -
5	Green	DN

Pin No.	Assignment	Mating Housing	Terminal
6	PWR	Microfit 43025-0600	43030-0003 (recommended crimp tool Molex Hand Crimp Tool P/N: 638190000)
7	CAN H		
8	GND		
9	CAN L		

Electrical Characteristics

Table 2. CGM022C electrical specifications

Item	Conditions	Value
Supply voltage	-	9.0 VDC to 32.0 VDC (24 VDC Typical)
Power supply reverse protection	-	Yes
Current consumption	In active mode, supply voltage = 12VDC	6.3 mA
	In active mode, supply voltage = 24VDC	3.6 mA
	In sleep mode, supply voltage = 12VDC	1.0 mA
	In sleep mode, supply voltage = 24VDC	0.16 mA
Isolation voltage	-	1.5 kV
Transient/overvoltage protection between TOP CELL- and UP	-	5.6 VDC
Reverse polarity protection between TOP CELL- and UP	-	-0.7 VDC
Transient/overvoltage protection between TOP CELL- and TOP CELL+	-	5.6V V DC
Reverse polarity protection between TOP CELL- and TOP CELL+	-	-0.7 VDC
Transient/overvoltage protection between BOT CELL- and DN	-	5.6 VDC
Reverse polarity protection between BOT CELL- and DN	-	-0.7 VDC
CAN Speed	-	50kbps, 125kbps, 250kbps, 500kbps, 800kbps, 1Mbps
Transient/overvoltage protection between CAN H/CAN L and GND (and vice versa)	-	24 VDC



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Other Specifications

Table 3. CGM022C other specifications

Item	Conditions	Value
Max number of Cell Modules in cell communication daisy chain	-	80
Reserved CAN IDs	-	0x1FFFFEE5, 0x1FFFFEE6, 0x1FFFE5E5, and 0x1FFFE5E6
Sleep mode timeout	-	10 s
Wakeup source	-	CAN activity
Operating temperature	-	-40 to +85 °C
IP rating	-	IP53
Weight	CGM	15 g
	CGM with battery cell communication cables	35 g
	CGM with battery cell communication and CAN cables	66 g
Cell communication cable length	-	0.5 m
Cell communication wire ring terminal type	-	Molex 19323-0011 (recommended crimp tool Molex 64003-0100 or PRESSMASTER KWB0325S)
CAN cable length	-	1 m