

Cell Module – Small Type (CM021)

INTRODUCTION

EMUS Cell Module is the device which once mounted on a cell measures cell's voltage, temperature, its own temperature and broadcasts all measured values to main unit. Also, cell module using previously mentioned values and regulates the balancing current to keep cell's voltage lower than the balancing threshold, while at same time keeping its own temperature lower than certain maximum value to protect itself from overheating.



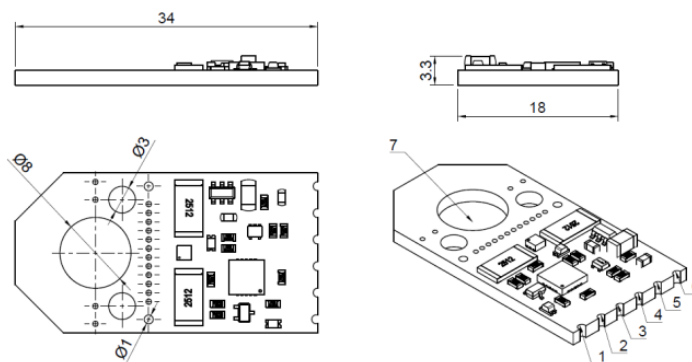
APPLICATIONS

- Any lithium chemistry, series connected battery pack of up to 100 cells if using serial cell communication. (distributed regular)
- Any lithium chemistry, series connected battery pack, or pack of multiple parallel strings, of up to 3200 cells total, if using EMUS CAN Cell Group Modules. (distributed grouped)
- Applications with battery capacity up to 270¹Ah.

FEATURES

- External temperature measurement sensor 100k (sold separately by code ETS04).
- Digital I/O, Analog, proprietary serial interface for communication.
- Communication indicating green LED.
- Balancing level indicating red LED.
- Maximum balancing current up to 0.85 A.

MECHANICAL INFORMATION



Terminal No.	Assignment
1	DN
2	Temperature sensor GND
3	CELL+
4	
5	Temperature sensor
6	UP
7	CELL-

¹ The maximum value of the battery capacity using this type of cell module depends on the battery pack cells quality, lifecycle, grading, temperature control, and other factors. For more detailed information about cell module selection please refer to EMUS G1 User Manual.



ELECTRICAL CHARACTERISTICS

Item	Value
Operating Voltage	2.0 VDC to 4.55 VDC
Voltage measuring range	2.0 VDC to 4.55 VDC
Voltage measurement resolution	10mV
Internal temperature measuring range	-40°C to +85°C
Internal temperature measurement resolution	1°C
Internal temperature measurement accuracy	±5°C
External temperature measuring range	-99°C to 154°C
External temperature measurement resolution	1°C
External temperature measurement accuracy	±5°C
Current consumption in active mode, when communication LED is on, supply voltage = 3.60V	2.9 mA
Current consumption in sleep mode, supply voltage = 3.60V	35µA
Balancing resistor resistance	4.10 Ω
Balancing resistor rated power	2 W

OTHER SPECIFICATIONS

Item	Value
Operating temperature	-40°C to +85°C
IP Rating	IP21
Weight	8 g
Dimensions	34x18x3.3 mm
Mounting hole	M8
CELL + wire length	0.1m
CELL + wire ring terminal type	-
Communication wire length	0.1m
External temperature sensor type	SR PASSIVES NTC, 100 kΩ P/N NTCM-100K-B4250
Sleep mode timeout when not balancing	60 ms
Sleep mode timeout when balancing	10 s
Wakeup source	Cell communication signal edge, watchdog timer timeout (8 s period)