

Current Sensor – Bus Bar Type (CS013A)

INTRODUCTION

The Bus Bar type of EMUS G1 Dual Range Current Sensor is designed specifically for use in battery packs that consists of prismatic form factor cells. It doubles as an interconnecting bus bar, and due to the galvanic isolation between the sensor and the conducting part, it can be installed anywhere in the battery pack between two adjacent, series-connected cells.



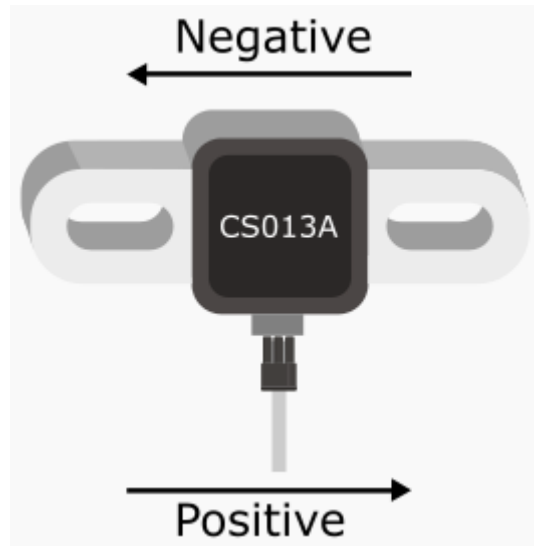
APPLICATIONS

- High power batteries requiring high current draw
- Specifically designed to be used in EMUS battery management system.
- Due to sensitivity to surrounding magnetic environment recommended to calibrate in system.
- For use with EMUS current sensor cables.

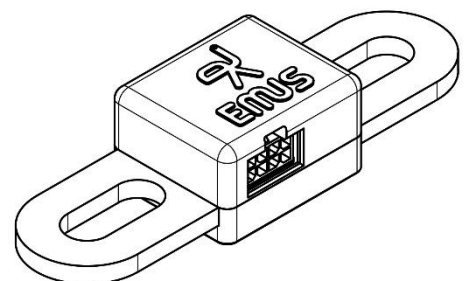
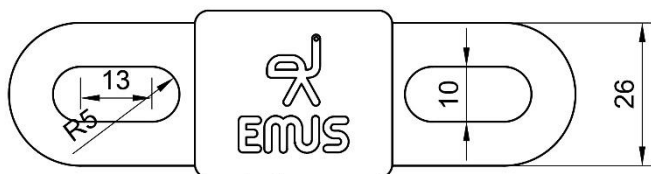
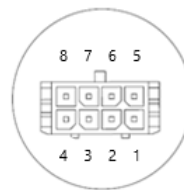
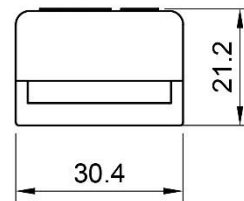
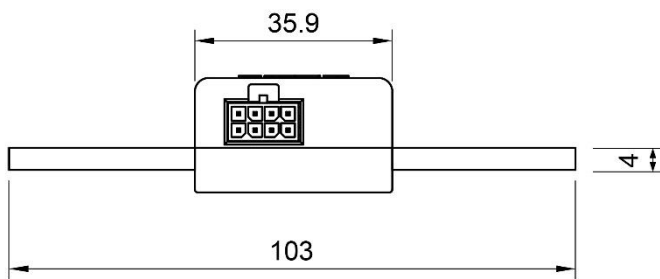
FEATURES

- Two separate measurement channels with different sensitivity, which allows to accurately measure small currents without sacrificing the range of measurable values
- Designed Current measurement range is ± 1000 A, accuracy reaches 0.5 %
- Hall-effect current measurement method which provides the characteristic galvanic isolation between the sensor and the conductive part
- Shielded sensor that reduces the influence of the surrounding magnetic field

■ DEFAULT POSITIVE/NEGATIVE CURRENTS DIRECTIONS



■ MECHANICAL INFORMATION





Pin No.	Assignment	Mating Housing	Terminal
1	CHANNEL 1	8 Pin Molex Micro-fit Header 43025-0800	43030-0003 (recommended crimp tool Molex Hand Crimp Tool P/N: 638190000)
2	CHANNEL 3		
3	GND		
4	N.C		
5	CHANNEL 2		
6	N.C		
7	+5V		
8	N.C		

ELECTRICAL CHARACTERISTICS

Item	Conditions	Value	
Nominal Current range	Tested up to	±350A	
	Hardware ready (to be tested)	±500A	
Peak current range	Tested up to	±350A	
	Hardware ready (to be tested)	±1000A	
Accuracy	<350A	±0.5%	
Noise	<80A	±55mA	
	>80A	±500mA	
Resolution	With G1 CU021, FW 2.7 (10bit ADC)	<80A	0.1A
		>80A	0.3A
Basis Isolation DC Voltage		1kV	
Supply voltage		5.0 VDC	
Current consumption	At typical supply voltage	25 mA	
Conductor resistance		20 µOhm	

OTHER SPECIFICATIONS

Item	Value
Operating temperature	-40 to +85 °C
IP rating	IP40
Weight	98 g



Sensor calibration procedure	<ol style="list-style-type: none">1. Open EMUS Control Panel (from version 2.7.);2. Check for correct Sensor Type;3. To Calibrate L value:4. Run constant current from 30 up to 70A;5. Make sure you connect current measurement device to measure actual value;6. Press Calibrate L value, enter momentary current value from measurement device;7. Make same process for H Value, only run current of more than 130A.
Default calibration values	H: 22500 L: 2340