IMECAR

IM-P150

Technical Specifications



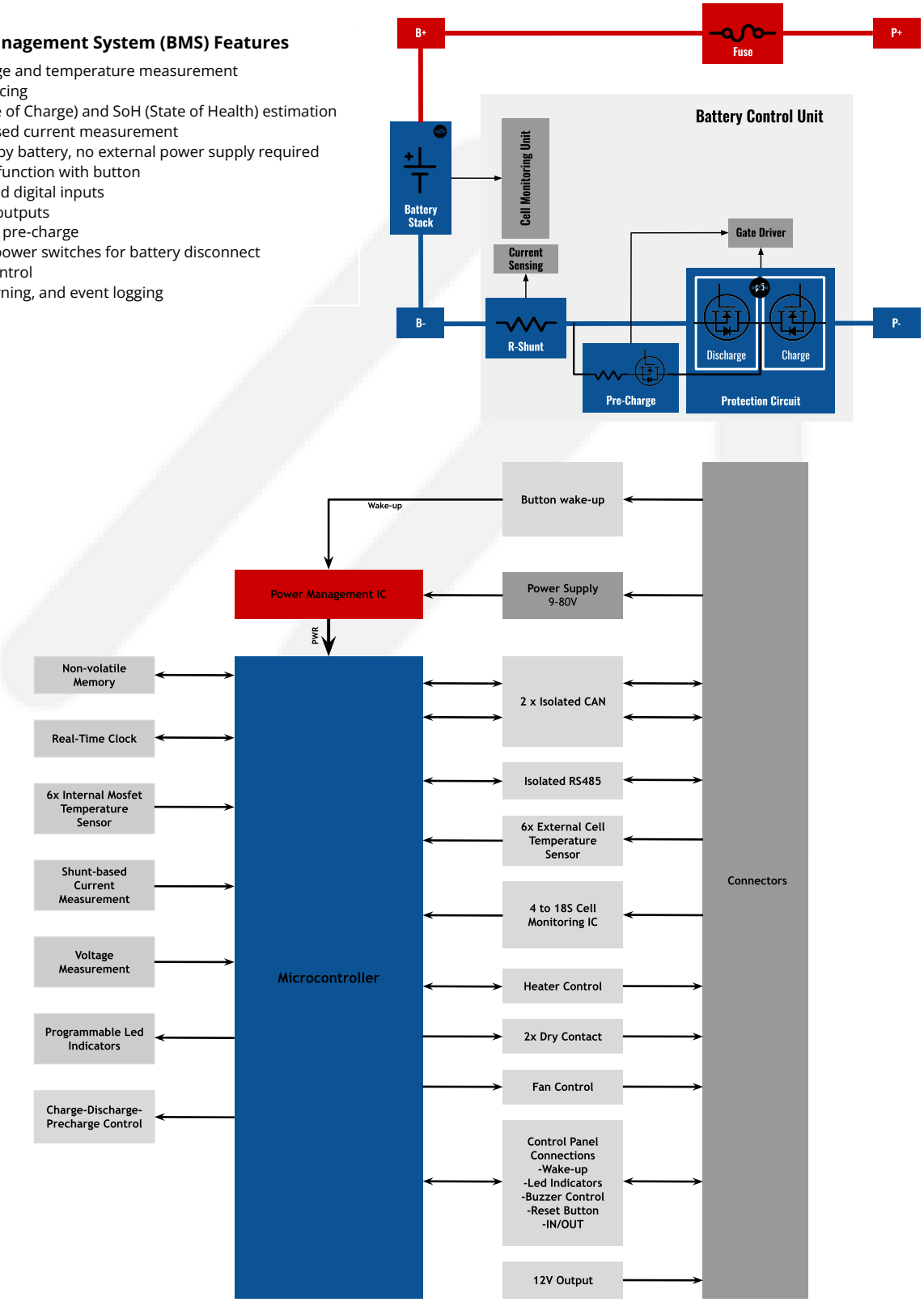
Technical Data Sheet

General Definition

IM-P150, developed by IMECAR Electronics, is designed to provide high safety and efficiency for automotive-grade low voltage battery packs. Optimized for applications such as electric vehicles and battery energy storage systems, this solution precisely monitors the voltages and temperatures of the battery cells, ensuring safe battery operation. The IM-P150 enhances battery performance and ensures long-term system reliability with advanced cell balancing, State of Charge (SoC) and State of Health (SoH) estimation, current measurement, and many other features.

Battery Management System (BMS) Features

- Cell voltage and temperature measurement
- Cell balancing
- SoC (State of Charge) and SoH (State of Health) estimation
- Shunt-based current measurement
- Powered by battery, no external power supply required
- Wake-up function with button
- Analog and digital inputs
- Auxiliary outputs
- On-board pre-charge
- MOSFET power switches for battery disconnect
- Heater control
- Error, warning, and event logging



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Technical Specifications

General Information

Working Temperature	-25°C~80°C
Working Humidity	%5~95
SOC/SOH Accuracy	≤%5
Voltage Accuracy	±10mV (25°C)
Single Cell Voltage Measurement Accuracy	±0,8 mV
Temperature Accuracy	±1°C (-40°C~125°C)
Current Accuracy	≤%2 (±200A)
Operating Voltage Range	9~80V
Power Consumption	~50mA ((48VDC , Active Mode)
Maximum Continuous Discharge Current	Maximum continuous current 200A (Temperature rise less than 45°C), peak current 350A (60s)
Supported Protocols and Standards	UDS/Diagnostics
Cell Balancing Topology	Passive
Applicable Battery Type	LPF, NCM, LTO
Cell Sensors	4~18S
Temperature Sensors	14 (6x Cell + 6x MOSFET + 2x Internal)
Button Wake-up Detection	Supported
Buzzer	Supported
Real Time Clock	Supported
Battery Level Indicator LED Control	Supported
MOS Control	Supported (MOS withstand voltage level ≥ 100V, MOS tube temperature rise under nominal conditions ≤ 45°C)
Balancing Control	Supported (Balancing Current > 150mA@3.5V , Balancing Resistor Temperature < 50°C)
Heating Control	Maximum supported 5A
Pre-charge Control	Supported

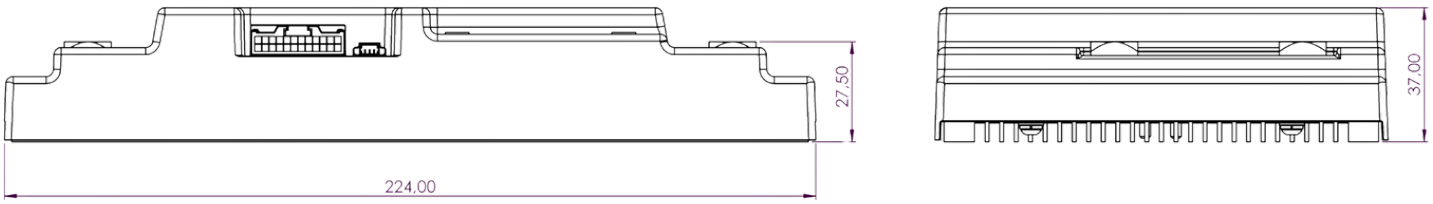
Communication and Interface

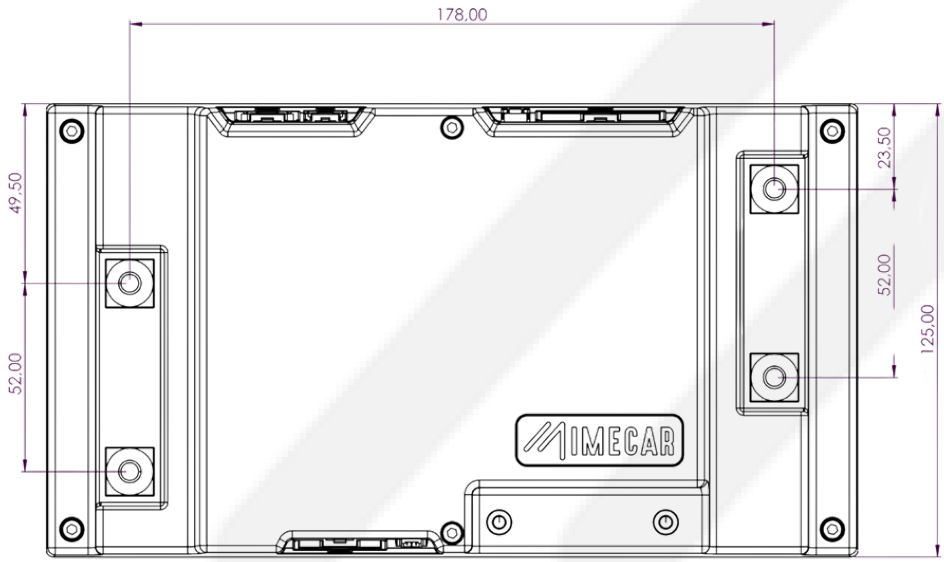
CAN	2 Channel (Isolated)
RS485	1 Channel (Isolated)
WIFI	Requires additional module
Bluetooth	Requires additional module



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Mechanical Details

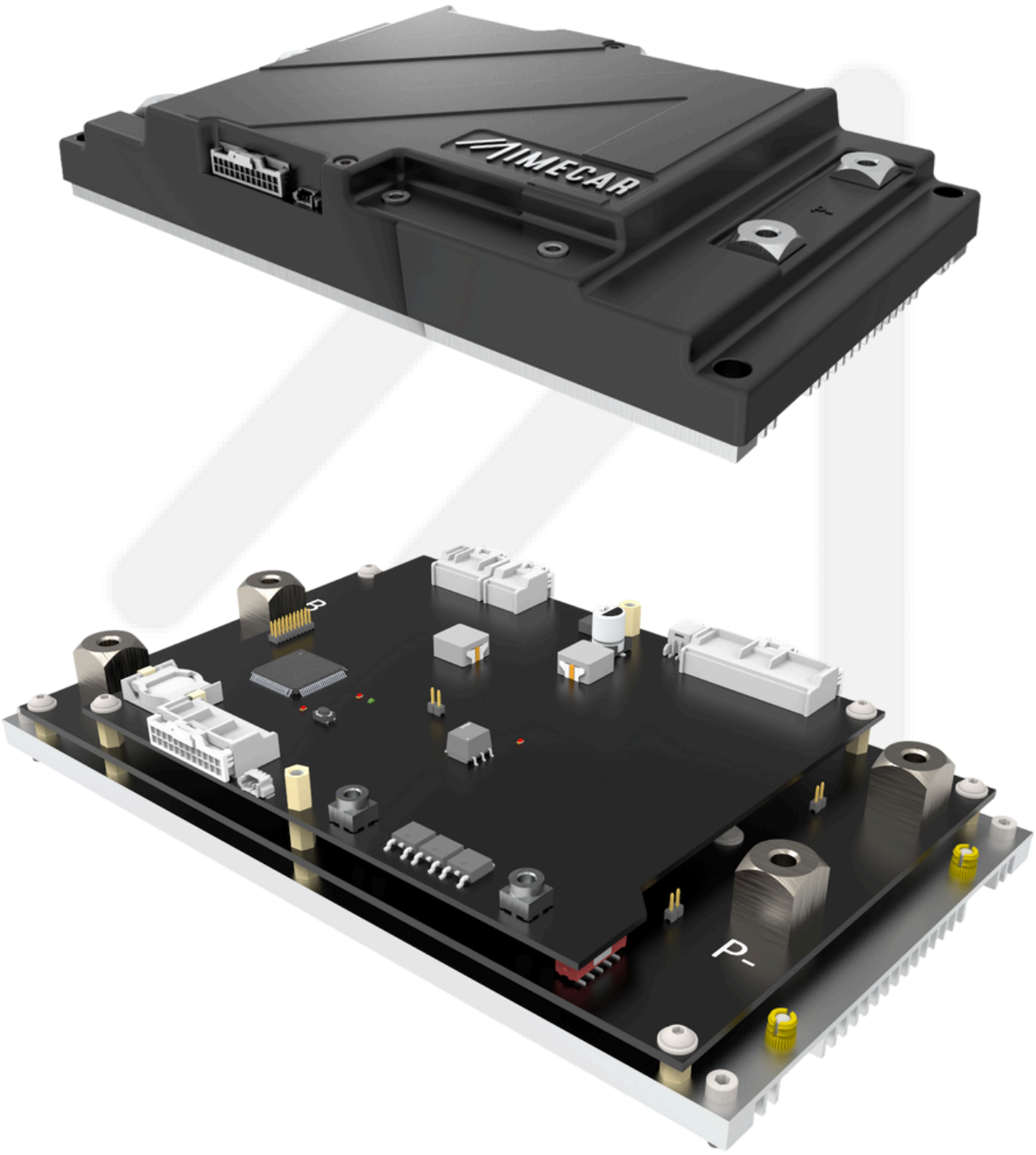






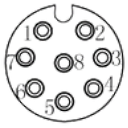
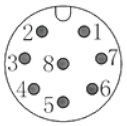
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BMS Interior and Exterior



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BMS Pin Lists

PANEL INTERFACE BOARD			SMARTDASH
Socket Views			
Description	8 PIN M12 FEMALE CONNECTOR	5 PIN M12 MALE CONNECTOR	8 PIN MALE CONNECTOR
Product Code	RHT-634-1138-8P	RHT-634-1138-5P	RND 205-01187
Pin Out	1)CAN0-L 2)CAN0-H 3)GND_12V 4)12V 5)LEDBUTON_CTRL 6)VBAT_BUTON 7)BUTON_CTRL 8)GND_CAN	1)CAN1-L 2)CAN1-H 3)DRYCT1- 4)DRYCT1+ 5)GND_CAN	1)CAN0-L 2)CAN0-H 3)GND_12V 4)12V 5)LEDBUTON_CTRL 6)VBAT_BUTON 7)BUTON_CTRL 8)GND_CAN

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Focus on green technology

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