



## BMS Master<sup>4</sup>

The new Master<sup>4</sup> in the battery management system of I+ME ACTIA GmbH represents the core of a versatile system for the installation, evaluation and operation of a large diversity of batteries on a lithium basis.

Applications range from the power wheelchair to the airship and from the forklift to the hybrid driven truck/city bus.

The Master<sup>4</sup> is always used together with the BMS Slave<sup>4</sup> or the BMS Slave<sup>4</sup> from I+ME ACTIA GmbH. The Slave modules are responsible for measuring the cell voltage, monitoring the temperature and compensating the differences in cell voltage, while the Master<sup>4</sup> manages the tasks of system monitoring, data processing and communication with the superior ECUs.



Two independent processors, which mutually monitor each others function and ensure a redundant control of the output drivers, allow you to establish a battery management system for batteries on a lithium basis in a large diversity of applications.



The Master<sup>4</sup> provides many different interfaces for control and communication:

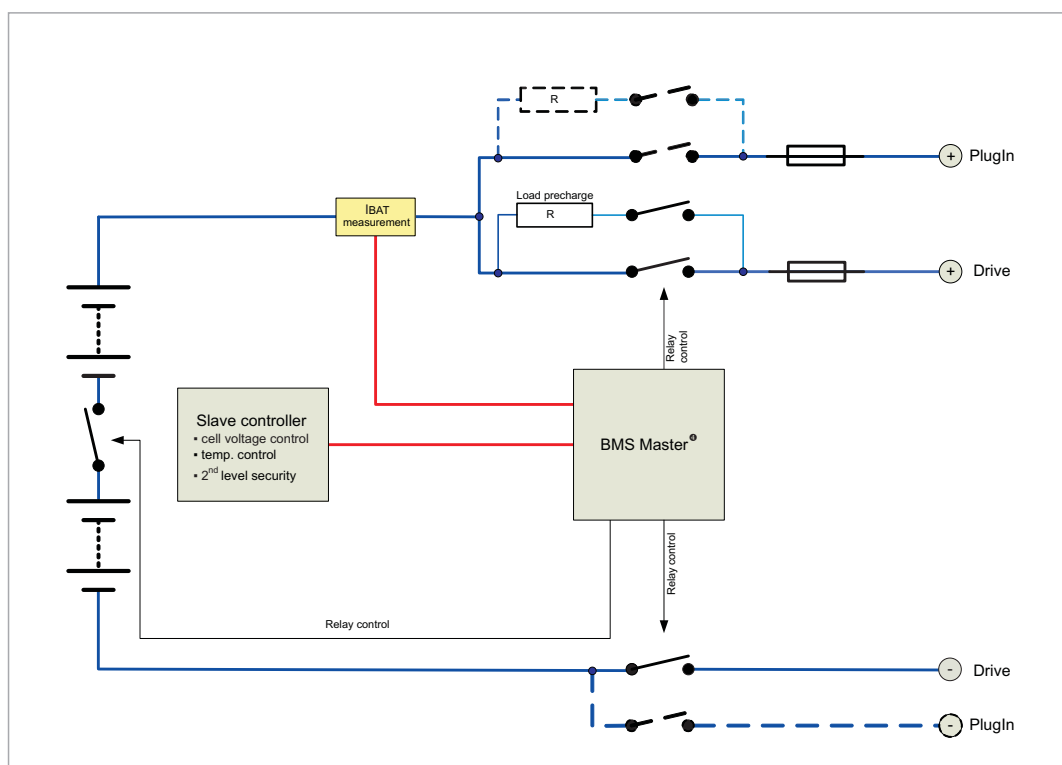
- ▶ External measuring
  - RS485 for connection with the BMS Slave<sup>4</sup> or BMS Slave<sup>4</sup> incl. cell voltage and temperature monitoring by hardware
  - CAN bus for communication with a current/high voltage measurement module
  - Interface for different current sensor types
- ▶ Input and output control
  - 8 digital inputs with different characteristics
  - 4 analogue measuring inputs with 2 constant current outputs for PT100 sensors
  - 1 emergency stop switch
  - 2 wake-up inputs
  - 8 digital outputs for activation of contactors or relays
  - 2 potential-free relay outputs
  - 1 analogue output with 0 ... 10 V
  - 1 PWM output with 0 ... 10 V
- ▶ External communication
  - CAN bus for communication with other control units
- ▶ Service interfaces
  - RS232 interface for communication with a PC
  - Ethernet interface for representation of system data and status, as well as for parameter adjustment for the battery system.





General Data	Power supply voltage	12 / 24 VDC
	Environmental temperature	- 20 °C ... +70 °C
	Weight	1 kg
	Dimensions	approx. 150 x 230 x 40 mm incl. connector
Interfaces	RS485 interface	for communication with BMS Slave <sup>®</sup> or Slave <sup>®</sup> incl. input for hardware monitoring (voltage surge, over-temperature)
	3 x CAN interface	for communication with other control systems or measurement modules
	Current sensor interface	for different types of current sensors with input for electric surge recognition
	Ethernet	for diagnosis & service
	RS232 interface	for diagnosis & service
	LEDs	BMS-Status
Outputs	8 x high-side switch, 2 x floating relay, 1 x analog, 1 PWM, 2 x constant current for PT100 sensors for relays, fans and specific applications	
Inputs	6 x voltage sensitive, 4 x analog input	
	2 x current sensitive 1 of which is designed as security input	
	1 x emergency stop input	
	2 x wake-up input	
Wakeup	via CAN, 2 x digital input or time-controlled	

## Possible battery system setup using BMS Master<sup>®</sup>



## Contact



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