

Battery Management Module 300 A

Telecom & Industrial Stationary applications (UPS); Energy Storage Systems (ESS)

Saft BMM (Battery Management Module) ensures that Saft lithium-ion battery systems (Intensium® Series) communicates with the UPS, and operates in the appropriate and safe range of voltage, temperature, and current.

What is Intensium® Flex?

Saft Intensium Flex is a battery system that provides a high power for demanding stationary back up applications, like UPS. It is composed of Synerion® modules (available in 24 V or 48 V, in Medium (M) or Power (P) configuration), which are connected in series and associated with one BMM to reach the required voltage range (from 190 V to 960 V_{nom}). For each serial string, the BMM insures appropriate operating conditions (voltage, current, temperature, SOH). When strings are linked in parallel, a Saft MBMM (Master Battery Management Module) is required to handle the communication and balancing of the multiple strings.



3 cabinets, 1 MBMM, 3 BMM, 10 Saft Synerion 48 V (in series)
Example: typical 480 V Intensium® Flex 3 x 480 10.48P system, with 3 parallel strings (with 1 MBMM added to allow paralleling)

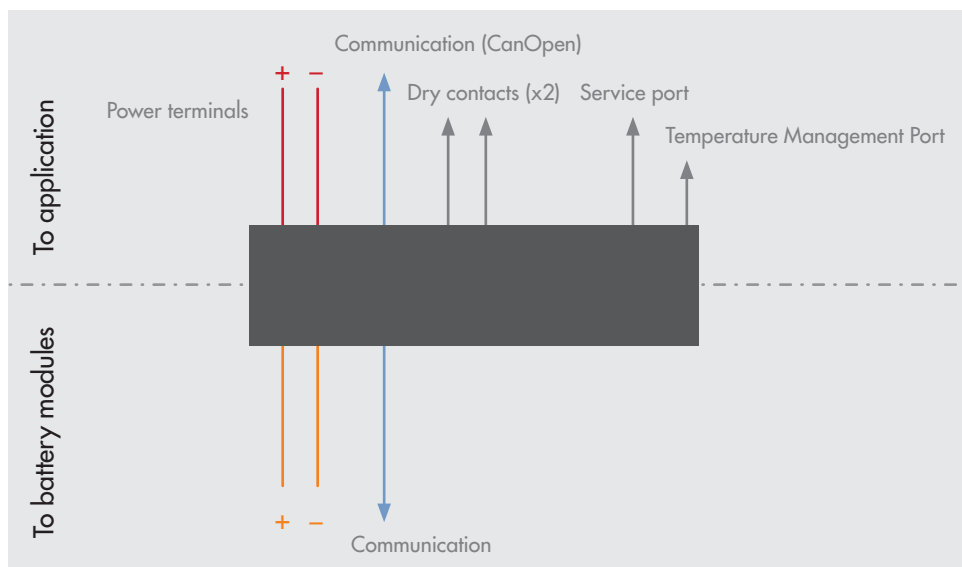
What is a BMM?

The BMM embeds the following functions for Intensium® lineup:

- Manages the charge and the discharge of batteries with an intelligent continuous supervision: cells voltage, current on the string, temperature
- SOH, SOC
- A built-in pre-charge circuit prevents high inrush or outrush of current which can be potentially damaging components
- A built-in 24 V self power will ensure autonomy in power of the battery system
- Opens the string (1 contactor on each pole) in case of safety emergency (short circuit, over current or with external manual emergency switch)
- Allows the access to diagnostic bus through HMI connector



BMM interface connections



SAFT

BMM HMI

- 4 LEDs with an activation button indicate I-Flex alarms, battery status and SOC available

BMM ensures safe operation

- Detect anomalies
- Send alarms to trigger corrective action (e.g. reduce charge voltage, lower power...)
- Disconnect the battery (interrupt charge/discharge) if a critical threshold is reached and put the battery into a safe mode condition
- Re-connect battery and allow charge/discharge if the anomaly has cleared

BMM communication

- 2 communication connectors on front panel
- CAN Open bus communication protocol carrying:
 - State Of Charge (SOC)
 - State Of Health (SOH)
 - Alarms
 - Operating conditions (voltage, temperature, identification numbers)
 - Operating limits (maximum voltage and current values in charge and discharge)

Other communication protocol (Modbus, ...) can be managed upon request (option)

Technical characteristics of Saft BMM

Nominal characteristics

Operating voltage range	190 V to 960 V	
Continuous current	300 A	
Maximum current	400 A peak (10 sec)	
Self power consumption	24 V DC	14 W
Pre charge capacitance at 1000 V	11.2 mF	

Physical characteristics

Width	481 mm	19 inches
Height	128.6 mm (3U)	5 inches
Depth	424 mm	16.5 inches
Weight	13.5 kg	29.8 lbs

Physical interface

Power terminals	M8	
Dry contactors	2 (Sub D9) (one major, one minor)	
Manual disconnect	Single throw double pole	

Communication

Communication protocol	CAN Open
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Compliance to standards

Safety	IEC 60950
	IEC 62093
	CE marking
Transport	UN 3480
Saft chemistry compatibility	NCA, SLFP

MBMM: Master Battery Management Module

Saft MBMM processes and manages data from several BMM modules, and communicates with the host application. It has also a built in Manual Disconnect.

Physical characteristics of Saft MBMM

Width	430 mm
Height	44.5 mm (1U)
Depth	288 mm
Weight	2.6 kg



Saft

Industrial Battery Group
12, rue Sadi Carnot
93170 Bagnolet - France
Tel. : +33 1 49 93 19 18
Fax : +33 1 49 93 19 64
www.saftbatteries.com

Saft America, Inc.

13575 Waterworks Street
Jacksonville, FL 32221
Tel. : +1.904.861.1501
Fax : +1.904.772.1463
www.saftbatteries.com

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