

Intensium® Home

48 Volts

Based on Synerion® 24M modules, the Intensium® Home is a 48 V energy storage system for residential applications offering compactness, outstanding efficiency and high reliability over thousands of cycles

Applications

- PV self-consumption increase
- Load peak shaving
- Backup in case of grid outage
- Local voltage control

Features

- Field-proven Li-ion technology (15 years experience)
- Operation at any state of charge with 100% useable capacity
- Full recharge in 1hour
- Compact 12U cabinet integrating two Synerion® 24M modules and a Battery Management Module (BMM) in a 19" rack
- Power connectors and cabling included for easy installation with inverters
- Advanced industrial design offering highest reliability and robustness based on Saft's system development experience in high tech markets
- BMM integrating specific management functions required in on-grid residential applications (always on, self-supplied and pre-charge)
- Best energy efficiency of all electrochemical technologies (better than 95%)
- Outstanding calendar and cycle life

Benefits

- Flexibility to provide both energy and power functions
- Maximized self-consumption and energy throughput over lifetime
- Easily compatible with 48 V inverters for residential market
- Compactness
- High operational reliability
- Low maintenance
- Effective troubleshooting with user-friendly diagnostic tool



Nominal characteristics at + 25°C	
Voltage (V)	48
Capacity (C/5) (Ah) at + 25°C	84
Rated energy (C/5) (Wh)	4000
Mechanical characteristics	
Width (mm)	535
Height (mm)	700
Depth (mm)	520
Weight (kg)	85
Electrical characteristics at + 25°C	
Voltage (V)	42 to 56
Maximum continuous discharge current (A)	160
Maximum continuous discharge power (W) at 50% SOC	7600
Peak discharge power in 3 s (W) at 50% SOC	15100
Maximum continuous recharge current (A)	82
Maximum continuous recharge power (W) at 50% SOC	4100
Peak recharge power in 5 s (W) at 50% SOC	12100
Operating conditions	
Operating temperature	0 to 40°C
Cycle efficiency (one way)	>96%
Self-discharge	<5% per month
Calendar lifetime at + 25°C	>20 years
Cycling lifetime at 60% DOD	>7000 cycles
Cooling	Natural convection



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Battery Management System

- Sophisticated battery management system based on one Battery Management Module (BMM) and one Safety Monitoring Unit (SMU) per Synerion® 24M module providing the following functions:
 - Monitoring and control of voltage and temperature at cell level
 - Real time calculation of charge and discharge current limits
 - Real time calculation of State Of Charge (SOC) using temperature, aging, voltage and currents
 - Balancing of State Of Charge (SOC) between modules
 - Alarms and faults management
 - Indication of State Of Health (SOH) of the system integrating cycling and calendar aging
 - Always-on circuit enabling inverter start up at any moment
 - Self-supplied by Synerion® modules
 - Pre-charge circuit to manage inrush currents from application
- Three BMM versions available depending on communication protocol (CAN Open, CAN 2.0A and CAN 2.0B) with possibility to adjust communication speed (500 kb/s by default)

Safety

Safety driven design for cells, modules and systems guarantees safe behavior in case of abuse usage or component failure. This includes:

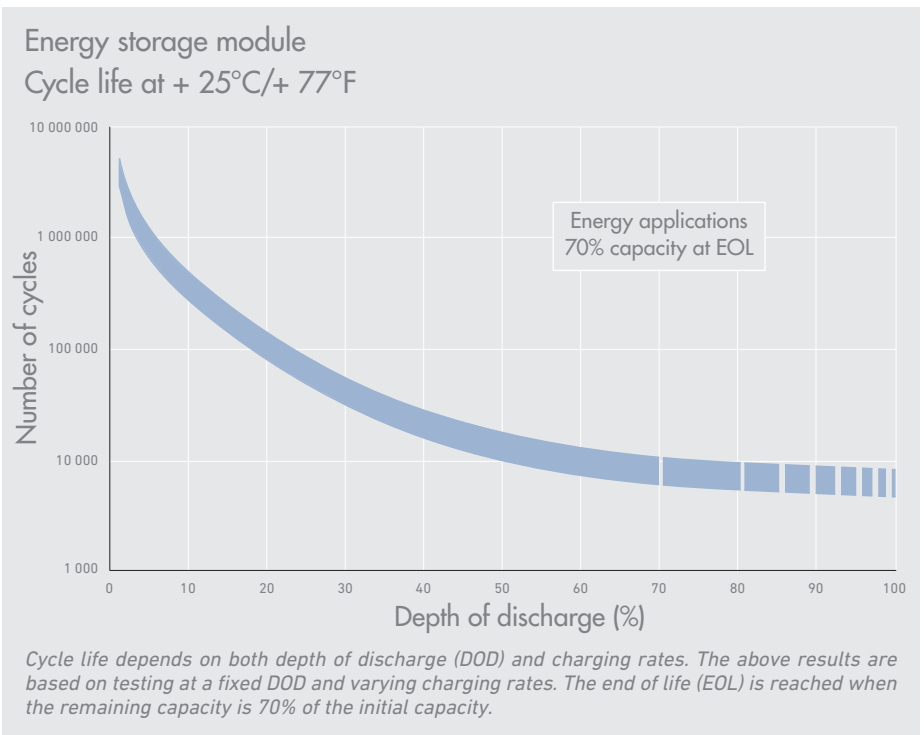
- Stringent design rules and qualification processes like IEC 61508/SIL2 standards to suit the demanding requirements of performance and operational reliability
- Implementation of redundant safety features at cell level (e.g. shutdown effect separator, mechanical vent), at module level (e.g. voltage and temperature monitoring, balancing), and at system level (e.g. current sensor, fuse, contactor and disconnect switch)
- Cabinet with multiple protection functions

Storage conditions

Storage temperature	- 25°C to 70°C
Storage time	6 months
Maximum altitude	3000 m above sea level
Maximum relative humidity	95% (non condensing)

Compliance to standards

Cell safety	UL 1642
Module safety	EN 50178
Electrical safety	IEC 60950-1
EMC (module in cabinet)	IEC 62 040-2 Cat C1 and C3
Environmental	Indoor non conditioned (non condensing)
Transport classification	UN 3480 – Class 9
Transport regulation compliance	UN 3480 - ST/SG/AC.10/11 Rev 5 § 38.3
Directives	RoHS, Reach, WEEE
Manufacturing plants	ISO 9001, QS 9000, ISO 14000
Marking	CE



Saft

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