

# ENCAP

BEYOND BATTERIES

## TECHNICAL DATA SHEET

### 10KWH-48V Module (Series Connection)



### EN-10k-48-1C-X-T-X-X-1V0-GEN1

#### SMART MANAGEMENT

- Feature-rich online monitoring via App or OLED display
- Automatic Firmware Updates
- Warning Alarms

#### EFFICIENT

- Highly Efficient: > 95% RTE (Round Trip Efficiency)
- 100% DOD (Depth of Discharge)
- 500,000 Cell Life Cycles

#### SAFE & RELIABLE

- Wider operating ambient temperature range
- Deployable in Various Environments including High Altitudes
- No thermal runaway risk

## Performance Specifications

Useable Energy Capacity	10kWh
DC Voltage Range	43.2Vdc to 60.8Vdc
Nominal DC Voltage	48Vdc
Internal Resistance	<4 mΩ

## Cell Specifications

Technology	Encapsulated Cell
Nominal Cell Voltage	6.4 ~ 6.6Vdc / Cell (Encapsulated) 1/2 + 0.12V Envelope

## Charge Characteristics

Maximum Continuous Charge Current	200A (~1C)
Charging Method	CC/CP/VP

## Discharge Specifications

Maximum Continuous Discharge Current	300A (~1.5C)
Discharging Method	CC/CP/VP

## ENConnect Software

Module Monitoring	Total Voltage, Individual Cell Voltages, Current, Temperatures, SOC and Energy Consumed
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## Module Environmental Specifications

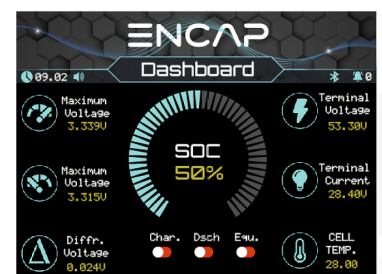
Operating Temperature Range	-30°C~ +70°C (See Fig.1:Temperature Specifications)
Operating Humidity	Non-Condensing



Front View



Isometric View



LCD View

## Mechanical Specifications

<b>Dimensions<sup>1</sup> (W x H x D) mm</b>	433 x 335 x 650
<b>Weight (kg)</b>	120
<b>Module Casing Material</b>	GI Powdered
<b>Terminal Type</b>	300A Terminal Post

## Smart Features

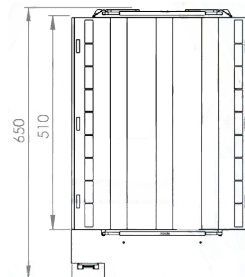
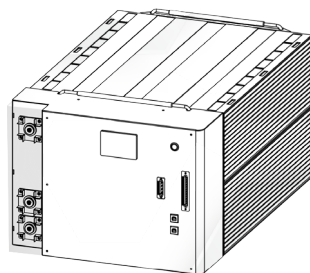
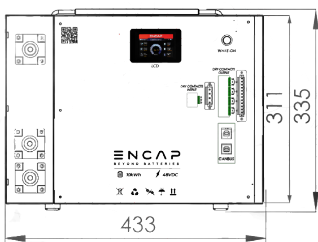
<b>OLED Display</b>	Monitor Module
<b>Communication</b>	WIFI / CANBUS / Bluetooth
<b>Alarm</b>	Buzzer Alarm in the event of Over/Under-Voltage, Over-Current, Over-Temperature
<b>Dry Contacts Output</b>	Four programmable Dry Contacts
<b>Dry Contacts Input</b>	24Vdc three digital input with Isolated ground

## Safety Performance

<b>Short Circuit Protection</b>	Electronic Switching, Terminal Cut-off
<b>Over/Under Voltage</b>	Electronic Switching, Terminal Cut-off
<b>Over Current</b>	Electronic Switching, Terminal Cut-off
<b>Over Temperature</b>	Electronic Switching, Terminal Cut-off

## Module Service Life

<b>Projected Cycle Life<sup>2</sup></b>	500,000 cycles
<b>Projected Calendar Life<sup>3</sup></b>	25 years
<b>Shelf Life<sup>4</sup></b>	10 years
<b>Warehousing</b>	Can be stored at any SOC without affecting cycle life



Front View

Isometric View

Top View

Side View

## Precautions

<b>Alarm</b>	In case of alarm, immediately rectify/attend to the cause of the alarm.
<b>Physical Damage</b>	In case the Module is physically damaged for any reason, do not install and energize the Module under any circumstances and contact your Reseller or After Sales Support.
<b>Short Circuit</b>	Ensure precautions to prevent short-circuit under all circumstances.
<b>Galvanic isolation</b>	When connecting to external devices ensure that galvanic isolation does not exceed 1000V.
<b>Series Connection</b>	All Modules must be at 100% SOC before connecting in series. Do not Connect in series without controller.
<b>Parallel Connection</b>	All Modules must be at 100% SOC before connecting in parallel. There is no limit on the number of Modules that can be connected in parallel.
<b>Series-Parallel Connection</b>	Modules cannot be connected in series-parallel combination under any circumstance.

## Notes:

- <sup>1</sup>Product Dimensions are for reference only and may change without notice.
- <sup>2</sup>Projected Life of encapsulated cells.
- <sup>3</sup>Projected Calendar Life of encapsulated cells from the date of first operation.
- <sup>4</sup>Shelf Life is the Life of the Module (in years) from the date it is manufactured to the time it is first operated.
- Additional terms and conditions, including a limited warranty, will apply at the time of purchase.
- For critical applications, please contact your Reseller or After Sales Support.

## Temperature Specifications

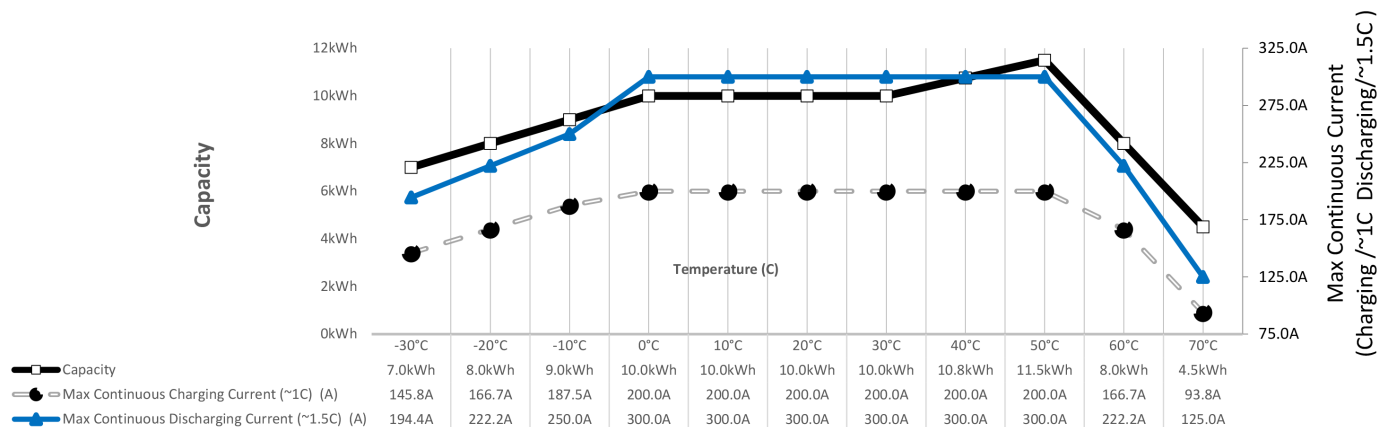


Fig.1: Temperature Specifications of 10kWh 48V ENCAP Module