

Product Datasheet

SuperCapacitor Energy Storage

- Optimized for grid and power supply integration
- Modular 19" rack
- Controlled Monitoring and Balancing with field bus
- High dielectric strength for enhanced safety

ELECTRICAL SPECIFICATIONS

Part number	26-00001533
Type	S1440-062-XX-0
Rated Voltage V_R	1440 Vdc
Surge Voltage V_{S1}	1488 Vdc
Rated Capacitance C^2	6.2F
Capacitance Tolerance	0% / +20%
ESR ²	<120 mΩ
Constant Current ($\Delta T = 15^\circ C$) ³	79A
Max Current I_{Max}^4	2.6kA
Short-Circuit Current I_S	12 kA
Stored Energy ⁵	1800 Wh

THERMAL CHARACTERISTICS

Operating Temperature	-40 ~ 65°C
Storage Temperature ⁶	-40 ~ 70°C
Thermal Resistance R_{Th}^7	0.02°C/W
Thermal Capacitance C_{Th}	360 kJ/°C

SAFETY & ENVIRONMENTAL SPECIFICATIONS

Safety	Short-Circuit Protection (Fuse)
Vibration	Seismic Standard IEC 60068-3-3 Zone 3
Pollution degree	3
Ingress Protection	IP54
Dielectric Strength (basic insulation level)	4000 VDC
Environment	RoHS, REACH

LIFETIME CHARACTERISTICS

Calendar Life @1440V and 65°C ⁸	>1500 hours
Calendar Life @1200V and 25°C ⁸	>15 years
Cycle Life, DoD 50% (25°C) ⁹	>1M cycles
Shelf Life ¹⁰	4 years

PHYSICAL PARAMETERS

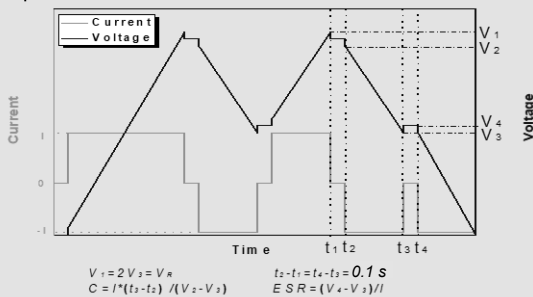
Mass M, typical	~350 kg
Dimensions L x W x H	608 x 800 x 2101 mm

MONITORING AND MANAGEMENT (CMS)

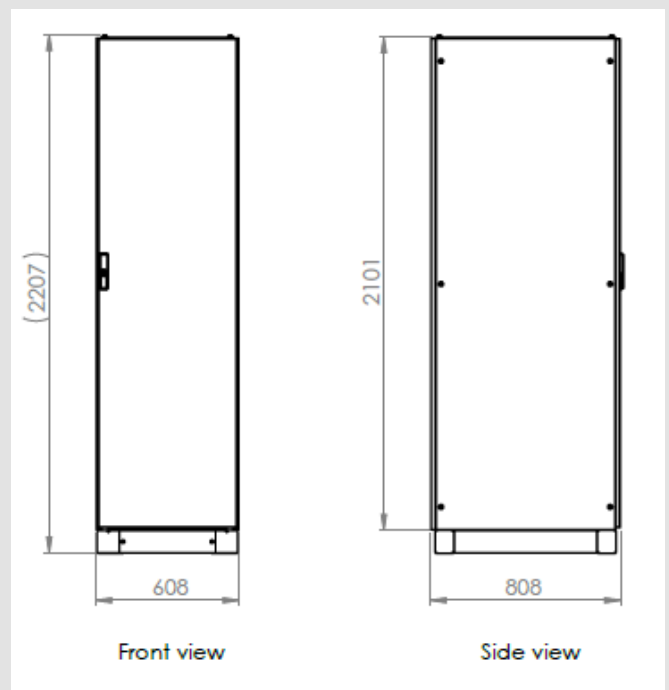
Monitoring and Management	via a master CCMU
Auxiliary power supply	24V <5W
Communication interface	Modbus TCP/IP
Communication Connector	RJ45
Current Hall sensor	±2500A
Cell Voltage measurement range	0.6 - 5V
Cell Voltage measurement error	≤10mV
Cell Voltage measurement cycle	100ms
Cell balancing	Controlled Passive, 100mA
Rack Voltage measurement range	0 – 1500V
Rack Voltage measurement error	±1%
Rack Voltage measurement cycle	10ms
Rack Current measurement range	±2500A
Rack Current measurement error	±1%
Rack Current measurement cycle	10ms
Diagnostic	Open Wire check, balancing MOSFETs check
Upgrade & Debug	Remote
Fault Log	>10'000 records, storage time 30 days

NOTES:

1. Surge voltage V_s : Absolute maximum voltage, non-repetitive. The duration must not exceed 1 second.
2. Capacitance C : The test current is 100A.



3. Max constant working current: $I_{MCC} = \sqrt{\Delta T / (ESR * R_{Th})}$
4. Max current: $I_{Max} = 0.5C * V_R / (\Delta t + ESR * C)$, discharge from V_R to $V_R/2$ in 1 second.
5. Stored energy: $E = 0.5C * V^2 / 3600$
6. Storage in discharged state
7. Thermal resistance: $R_{Th} = \Delta T / P$, where $P = ESR * I^2$
8. Calendar aging: Hold the capacitor charged at voltage and temperature. The capacitance shall be >80% of the rated value, the ESR shall be <200% of the rated value.
9. Cycle life: Charge and discharged the capacitor in the range between V_R and $V_R/2$. 5 seconds waiting period between charge and discharge.
10. Shelf life: temperature <30°C



Notes:

Standard markings:

- + Name of manufacturer, part number, serial number
- + Rated voltage and capacitance, negative and positive terminals, warning marking
- + Stored energy in watt-hours

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