

**SIRIUS ENERGY STORAGE MODULE
TECHNICAL DATA SHEET**

Part Number: 2728-24-A-0.9C-M-SD-A-R Version Date: March 2020



| | | |
|-------------------------------------|---|--|
| PERFORMANCE SPECIFICATIONS | Voltage (Nominal) | 24 V _{dc} |
| | Maximum Charge Voltage | 27 V _{dc} |
| | Discharge Cut-Off Voltage | 22 V _{dc} |
| | Total Energy | 2728 Wh |
| | Maximum Charge Rate | 100 A |
| | Maximum Discharge Rate | 100 A |
| ENVIRONMENTAL SPECIFICATIONS | Cell Operating Temperature ¹ | -30 °C to 80 °C |
| | Operating Humidity | Non-Condensing |
| MECHANICAL SPECIFICATIONS | Dimensions (w × d × h) | 526mm x 610mm x 202mm |
| | Weight | 51 kg Approx. |
| | Module Casing Material | Aluminum |
| | Terminal Type | F12 |
| SMART FEATURES | Monitoring Data | Total Cell Voltage, Individual Cell Voltages, Current, Temperatures, SOC and Energy |
| | Remote control (optional) | Via Sirius Remote Control |
| | Communication and Connectivity | USB + Module Combiner |
| | Alarm | Audible alarm in the event of Over/under-Voltage, Over-Current, Over Temperature |
| SIRIUSVEIW SOFTWARE | Module Monitoring | Current, Voltage, Individual Cell Voltage, Temperatures, Total Energy delivered, SOC, Graphs |

This technical data sheet may change without notice and at the sole discretion of Kilowatt Labs, Inc.

Solutions for: Microgrids | C&I and Residential Solar | Electric Vehicles | Utility Grade Storage

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| | System Monitoring | Modules Monitoring (connected in parallel or series) |
| MODULE SERVICE LIFE | Projected Cycle Life ^{2,3} | 1 million cycles |
| | Projected Calendar Life ^{3,4} | 45 years |
| | Shelf Life ⁵ | 10 years |
| | Warehousing | Can be stored at any SOC without affecting cycle life |
| SAFETY PERFORMANCE | Over/under voltage | Hardware protection, Module shut down |
| | Over Current | Hardware protection, Module shut down |
| | Over temperature | Hardware protection, Module shut down |
| | Additional Safety | 2×DC circuit breaker (100A, 20A) + DC Contactor |
| COMPLIANCE⁶ INFORMATION | EN55032:2015, EN55024:2010, EN61000-4-2:2009, EN61000 EN61000:2008+A2:2010 | |
| PRECAUTIONS | Alarm | In case of alarm, immediately rectify/attend to the cause of the alarm. |
| | Physical Damage | In case the Module is physically damaged due to any event, do not install and energize the Module under any circumstances and contact your Reseller. |
| | Short Circuit | Ensure precautions to prevent short-circuit under all circumstances. |
| | Galvanic isolation | When connecting to external devices ensure that galvanic isolation does not exceed 1000V. |
| | Charge/Discharge Current | Under no circumstances must the charge/discharge current exceed 100A. |
| | Charging Voltage | Under no circumstances must the charging voltage exceed 27 V _{dc} for more than 60 seconds. |
| | Charge Cycle | During charge cycle ensure never to exceed constant voltage of 27 V _{dc} and constant current of 100A. |
| | Series Connection | <ul style="list-style-type: none"> All Modules must be at 100% SOC before connecting in series. A maximum of 15 Modules with Module Combiner can be connected in series. |

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| | | Please consult your Reseller when connecting the Modules in series. Under no circumstances should more than 15 Modules be connected in series without the Module Combiner. |
| | Parallel Connection | There is no limit on the number of Modules that can be connected in parallel. |
| | Series-Parallel Connection | Modules cannot be connected in Series-Parallel combination under any circumstance. |
| <p>¹The temperature range indicates the range in which the supercapacitor cells can operate. The performance of the cells may vary if they are continuously operated outside a temperature range of -10°C to 55°C, and/or at C-rates higher than the maximum charge/discharge rate specified in this spec sheet. The operating temperature range of the Module varies based on the application. If the Module is to be operated continuously outside a temperature range of -10°C to 55°C, and/or at C-rates higher than the maximum charge/discharge rate specified in the spec sheet, please consult Kilowatt Labs or its Reseller prior to deploying.</p> <p>²Projected life of supercapacitor cells. Cycle life will vary if cycled more than 4 times a day.</p> <p>³Additional terms and conditions, including a limited warranty, will apply at the time of purchase.</p> <p>⁴Projected Calendar life of supercapacitor cells from the date of first operation.</p> <p>⁵Shelf life is the life of the Module (in years) from the date it is manufactured to the time it is first operated.</p> <p>⁶CE certification is completed for supercapacitor cells.</p> <p>Product dimensions are for reference only unless otherwise identified and may change without notice.</p> <p>For critical applications, please contact your Reseller.</p> | | |