



SL4148-4A-18V 48-Channel Battery Management System

PRODUCT AREA

CHARGERS



The SL4148-4A-18V is an advanced 48-channel battery management platform with integrated diagnostics.

The system provides simultaneous management of up to 48 Li-ion batteries with automated charging, health monitoring, and performance logging. Engineered for continuous operation in demanding military environments, it helps maintain battery readiness through intelligent charge optimisation and real-time diagnostics.

The platform supports standalone operation and integration with existing logistics systems, delivering battery lifecycle management from initial charging through long-term maintenance and readiness verification.



Multi-Channel Architecture

Independent management of up to 48 Li-ion batteries, each with dedicated power circuits and protection systems. Supports parallel operation of batteries with varying specifications and charge/discharge states.



Adaptive Charging

Automated optimisation of charging parameters based on continuous monitoring of voltage, current, resistance, and temperature. Profiles adapt to battery age, chemistry, and condition to maximise service life, performance, and safety.



Integrated Health Monitoring

Real-time tracking of key health indicators, including resistance, voltage stability, temperature deviation, and charge retention. Built-in diagnostics detect early signs of degradation or imbalance, issuing alerts through the system interface without requiring external tools.



Protection Systems

Multi-layer hardware safety including reverse polarity protection, overvoltage shutdown, thermal monitoring, and per-channel fault isolation. Operates independently of software control for assured protection.



Thermal Management

Active 13-fan ventilation with variable-speed control helps maintain operating conditions during high-power use while minimising noise and thermal stress.

SPECIFICATIONS

ELECTRICAL CHARACTERISTICS	PART #: 152080	PART #: 105399
CHARGING PARAMETERS:	340-550 V AC, 50/60 Hz, max. 6 A	230 V AC, 50/60 Hz, max. 10 A
OUTPUT VOLTAGE:	48× 3 V-18 V DC, max. 4 A, max. 3 000 W	48× 3 V-18 V DC, max. 4 A, max. 2 200 W
CAPACITY:	1-48 pcs batteries	
BATTERY TYPES:	Li-ion, Li-poly, NiCd, NiMH. Nominal voltage max. 18 V	
DATA EXTRACTION:	State of Charge (SOC), Voltage, Manufacture Date, Serial Number, State of Health (SOH), Current, Charge, Discharge, Cycles, Temperature	
DISCHARGE FUNCTION:	Charge + Discharge supported	
PHYSICAL PROPERTIES		
WEIGHT:	155 kg (excl. batteries)	
DIMENSIONS (L × W × H):	600 × 600 × 1736 mm	
ENCLOSURE MATERIAL:	Powder-coated cold-rolled steel with glass (Std) or wire mesh door	
THERMAL MANAGEMENT:	13-fan active ventilation system	
ENVIRONMENTAL & COMPLIANCE		
OPERATING TEMPERATURE RANGE:	-20 °C to 40 °C	
STORAGE TEMPERATURE RANGE:	-40 °C to 70 °C	
PROTECTION:	IP67, MIL-STD-810G (adapters)	
CE COMPLIANCE:	CE Marked, Declaration of Conformity 2023	
EMC:	MIL-STD-461, MIL-STD-1275B, ISO7637, EN61000	
SAFETY:	EN60950, EN60335-2-29	
RoHS / REACH:	Exempt from RoHS under Article 2(4)(a) for military equipment; materials selected in accordance with REACH requirements.	
GENERAL		
CHARGER COMPATIBILITY:	All W5 adapters support charging. New W5 adapters are required for discharge and data extraction functions.	



◀ **Touchscreen Interface:** 7-inch colour touchscreen with extended temperature operation, outdoor visibility, and compatibility with military gloves.

Server Rack Size ▶
600 × 600 × 1736 mm
 Standard rack dimensions allow for compatibility when transporting and storing.



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