ENS-3002DC Battery Charge/Discharge Tester

Product overview

For battery-group charge/discharge, activation and maintenance testing. Records group/cell voltages, charge/discharge current, elapsed time and capacity to assess energy-storage performance and load capacity. Suitable for battery and UPS power-system maintenance.

Internal load • Touchscreen • Analysis and reports

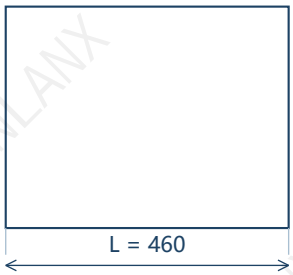


Operating ratings

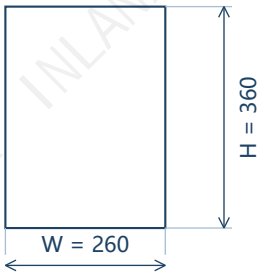
Item	Specification
Discharge voltage	2-300 VDC
Discharge current	0-100 A; maximum discharge power 9 kW
Charge voltage	2-300 VDC
Charge current	0-100 A; maximum charge power 6 kW
Power limits	Discharge 9 kW; charge 6 kW
Dimensions (L × W × H)	460 × 260 × 360 mm
Main-unit mass	Approx. 21.5 kg

Overall dimensions • mm

Side envelope



Front envelope



Overall envelope only; not an installation/manufacturing drawing. Dimensions from the model manual.

Select operating points within the stated voltage, current and specified power limits. Optional functions require the corresponding accessories.

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Technical specifications

Item	Specification
AC supply	Single-phase AC 220 V, 40-60 Hz
Discharge voltage	2-300 VDC
Discharge current	0-100 A; maximum discharge power 9 kW
Charge voltage	2-300 VDC
Charge current	0-100 A; maximum charge power 6 kW
Operation	Touchscreen
Display	7-inch TFT LCD, resistive touchscreen, 1024×600
Data communication	1×RS485
Internal storage	128 Mbit FLASH
Voltage measurement accuracy	±0.5%FS + 0.1 V
Current measurement accuracy	±1%FS + 0.1 A
Group voltage display accuracy	0.1 V
Group current display accuracy	0.1 A
Discharge current control accuracy	±1%FS

Protection and safety tests

Item	Specification
Main-unit protection	Shutdown on overtemperature, overcurrent or loss of current control
Shutdown device	High-voltage DC switch
Reverse-polarity protection	Supported
Abnormal-condition protection	Mains-cable power loss and main-cable disconnection/power loss
Overtemperature thresholds	Resistor enclosure 85°C; heatsink 100°C
Alarm	LCD indication and buzzer
Dielectric withstand test	2200 VDC, 1 min. AC input-to-chassis; the source lists both DC input-to-output and DC input-to-chassis, pending confirmation.

Operating and storage environment

Item	Specification
Cooling	Forced-air cooling
Operating temperature	-5 to +50°C
Storage temperature	-40 to +70°C
Relative humidity	0-90% RH (40±2°C)
Rated altitude	2000 m

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Core functions

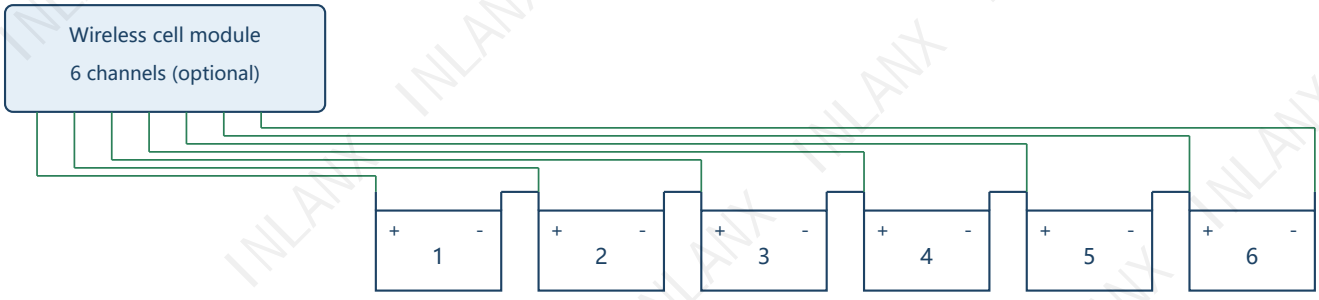
No.	Description
1	Load source: custom nickel-chromium alloy resistors with low resistance and high power density. Resistance accuracy can be controlled within ±0.001 Ω; low temperature coefficient and high-current surge capability.
2	Intelligent control: adjusts the load as battery voltage changes to maintain constant-current discharge. Acquires individual-cell voltages in real time, displays curves and evaluates voltage status against configurable thresholds.
3	Discharge testing: supports constant-current or constant-power discharge with the battery group disconnected from its system, or constant-current discharge in parallel with user equipment. Voltage, current, time and capacity thresholds are configurable; discharge parameters can be changed during a test.
4	Discharge termination: stops at the configured battery-group voltage, capacity or time limit, when any cell drops below its cutoff voltage, or on manual stop. Records group and cell voltages, current, elapsed time and discharged capacity.
5	Automatic charging: follows a three-stage sequence of constant current, constant voltage with tapering current (equalization), and automatic transition to trickle/float charging for battery recovery and maintenance.
6	Touch operation: 7-inch high-brightness TFT display with resistive touch input and 1024×600 resolution for direct on-screen operation.
7	Wireless cell monitoring (optional): LoRa modules support 2 V, 4 V, 6 V and 12 V cells, monitoring six cells simultaneously per module. The source example uses four modules for a 48 V battery group.
8	Cell-data analysis: displays cell voltages during charge/discharge as bar charts and data tables, identifies the highest- and lowest-voltage cells, and supports trend analysis.
9	Curves and reports: reviews recorded battery-group voltage/current curves. Supports USB-drive data export, PC analysis and report generation.

Automatic charging sequence



Charging sequence redrawn from the source description; not a measured curve.

Wireless cell sensing (optional)



Cell-voltage sensing redrawn from the manual; follow module labels and manual for wiring.