Supercapacitor Module Test System

CAPABILITY SHEET · READ THE STEP, THEN THE SLOPE. · FOUR-WIRE SENSING, A TAP ON EVERY CELL AND A D

THE ONE IDEA

PRINCIPLE	Read the step, then the slope.
WHY IT MATTERS	A constant-current discharge of a supercapacitor module gives two readings on one curve: the step at the instant the current starts is the resistance, and the straight fall that follows is the capacitance.

THE SYSTEM

POWER STAGE	A bidirectional DC source and sink holds a constant current down to a very low voltage and returns the energy to the supply.
SENSING	Four-wire sensing at the module terminals and fast sampling keep the cable out of the reading and catch the first instants.
CELL TAPS	A tap on every cell shows how the voltage is shared, because the weakest cell reaches its limit first.
HEAT	Temperature sensors and a limit on the module, and a chamber when the temperature must be held.

THE METHOD

ORDER	Duty, power stage, sensing, cell taps and heat, protection, proof. The four-wire sensing and the cell taps are the two that a quick job skips.
LIMITS	The voltage window, the current and the limits come from the standard or the maker's datasheet and are not printed here.

CONFIGURATIONS

BENCH	A bench module tester: one or two channels with four-wire sensing, cell taps and a recipe.
RACK	A multi-module cycler rack: several channels cycling modules side by side, every cycle logged.
CHAMBER	A module station with a chamber: the same test with the temperature held.

SCOPE

SCOPE BOUNDARY	It is the supercapacitor module test system: not a battery cycler, not a load bank and not an environmental chamber.
STATUS	Neometrix engineers supercapacitor module test systems to order, and no delivered supercapacitor module test system is claimed.

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