

Battery Tester Internal Resistance Voltage Temperature Measurement

Item Number: DC17



Introduction

Portable battery tester **DC17** measures internal resistance terminal voltage and temperature with four wire AC testing USB connectivity wireless expansion and reliable field performance for battery maintenance production inspection and laboratory evaluation workflows and quality control teams worldwide.

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Application	Description	Key Benefit
Stationary backup battery maintenance	Check internal resistance and DC terminal voltage of individual batteries in standby power systems during scheduled maintenance.	Helps identify batteries or terminal paths requiring closer inspection before service reliability is affected.
Battery manufacturing incoming inspection	Evaluate received cells or battery assemblies before they enter production or assembly operations.	Provides repeatable resistance, voltage, and temperature data for documented supplier-quality decisions.
Battery module assembly verification	Inspect cell connections, terminals, and assembled module electrical condition after joining operations.	Microohm-level resolution supports detection of small resistance changes in critical current paths.
Research laboratory cell evaluation	Compare electrical resistance, terminal voltage, and test temperature during controlled battery research workflows.	Brings three relevant parameters into one portable measurement process.
Electric mobility service operations	Perform DC battery terminal checks during maintenance of low-voltage battery systems and related assemblies.	The plus or minus 60 V DC measurement range supports practical service-side voltage verification.
Telecommunications power-system inspections	Assess battery condition in communications backup installations using scheduled field checks.	Battery-powered operation and USB communication support portable, traceable inspection routines.
Industrial UPS maintenance	Measure battery electrical condition and surface or connection temperature in uninterruptible power system service programs.	Supports condition-based maintenance decisions using resistance, voltage, and temperature evidence.
Battery pack repair and refurbishment	Screen candidate batteries and repaired connections before returning packs or subassemblies to service.	Range selection from mOhm through Ohm-scale measurements accommodates varied diagnostic tasks.

Parameter	Specification
Site-facing identifier	DC17
Intended use location	Indoor use; pollution degree 2; altitude 2000 m or less
Operating temperature	0 C to 40 C
Operating humidity	80% RH or less, non-condensing
Storage temperature	-10 C to 50 C
Storage humidity	80% RH or less, non-condensing
Applicable safety standard	EN 61010
Applicable EMC standard	EN 61326
Power supply	AA alkaline batteries (LR6) x 8; rated supply voltage DC 1.5 V x 8; maximum rated power 3 VA
Rechargeable battery compatibility	Nickel-metal hydride batteries may be used; battery remaining-capacity indication is not supported

Parameter	Specification
Continuous operating time without wireless module	Approximately 8.3 hours
Continuous operating time with wireless module and wireless communication	Approximately 8.2 hours
Operating-time reference condition	Standard supplied alkaline batteries, backlight OFF, 23 C reference value; actual time varies with conditions
Backup battery life	Approximately 10 years at 23 C reference value
Interface	USB
USB communication speed	USB 2.0
USB communication class	CDC class
USB connector	USB mini-B
Wireless communication	Available when the optional wireless communication module is installed; remove the factory-fitted protective cover before installation
External dimensions	Approximately 199 W x 132 H x 60.6 D mm, with protective case installed
Weight	Approximately 960 g, including batteries and protective case
Product warranty	3 years
Internal fuse	One internal fuse; 250 V / F 630 mA
Accessories	Refer to accessory information in the supplied reference documentation, page 2
Options	Refer to option information in the supplied reference documentation, page 3
Display	FSTN monochrome LCD
Measurement items	Battery internal resistance; battery terminal voltage, DC voltage only; temperature
Resistance measurement range	0.000 mOhm to 3.100 Ohm; four ranges
Voltage measurement range	0.000 V to plus or minus 60.00 V; two ranges
Temperature measurement range	-10.0 C to 60.0 C; one range
Maximum input voltage	DC 60 V between positive and negative measurement terminals; AC input is not permitted
Maximum rated voltage to earth	DC 60 V; no measurement category
Expected transient overvoltage	330 V between all measurement terminals and earth
Resistance measurement method	AC four-terminal test method; open-terminal voltage 5 V maximum peak
Resistance measurement current	1.6 mA to 160 mA, fixed by resistance range
Temperature sensing method	Platinum temperature sensor, 500 Ohm at 25 C
A/D conversion method	Delta-sigma type
Display update rate	3 times/s; resistance, voltage, and temperature are treated as one group
Resistance and voltage terminals	Banana-plug terminals
Resistance and voltage terminal maximum input	DC plus or minus 60 V maximum; AC input is not permitted
Resistance and voltage terminal input resistance	20 kOhm or more
Temperature input terminal	Headphone-jack type, phi 3.5 mm
Switch input terminal	Headphone-jack type, phi 2.5 mm
Measurement time	100 ms
Response time	Approximately 1.6 s
Accuracy guarantee period	1 year
Accuracy guarantee period after adjustment	1 year
Accuracy guarantee temperature and humidity	23 C plus or minus 5 C; 80% RH or less
Warm-up time	None required
Temperature characteristic	Add test accuracy x 0.1/C within the operating temperature range outside 18 C to 28 C
Resistance measurement-current accuracy	Plus or minus 10%

Parameter	Specification
Resistance measurement-current frequency	1 kHz plus or minus 30 Hz
Resistance test frequency with noise-frequency avoidance ON	1 kHz plus or minus 80 Hz

Resistance range	Maximum display	Resolution	Test accuracy	Measurement current
3 mOhm	3.100 mOhm	1 microohm	Plus or minus 1.0% of reading plus or minus 8 digits	160 mA
30 mOhm	31.00 mOhm	10 microohm	Plus or minus 0.8% of reading plus or minus 6 digits	160 mA
300 mOhm	310.0 mOhm	100 microohm	Plus or minus 0.8% of reading plus or minus 6 digits	16 mA
3 Ohm	3.100 Ohm	1 mOhm	Plus or minus 0.8% of reading plus or minus 6 digits	1.6 mA

Voltage range	Maximum display	Resolution	Test accuracy
6 V	Plus or minus 6.000 V	1 mV	Plus or minus 0.08% of reading plus or minus 6 digits
60 V	Plus or minus 60.00 V	10 mV	Plus or minus 0.08% of reading plus or minus 6 digits

Temperature configuration	Measurement range	Maximum display	Resolution	Test accuracy
Clamp-type temperature test lead	-10 C to 60 C	60.0 C	0.1 C	Plus or minus 1.0 C
1.5 m temperature probe	-10 C to 60 C	60.0 C	0.1 C	Add plus or minus 0.5 C to the above test accuracy
0.1 m temperature probe	-10 C to 60 C	60.0 C	0.1 C	Add plus or minus 0.5 C to the above test accuracy
Approximate-input temperature measurement	-10 C to 60 C	60.0 C	0.1 C	Plus or minus 0.5 C

Resistance accuracy note	Specification
Zero-adjustment influence on the 3 mOhm range	When zero adjustment has not been performed, add the stated reference influence to measurement accuracy: compatible clip lead plus or minus 5 digits; compatible lead plus or minus 6 digits; compatible pin lead plus or minus 1 digit; compatible clamp-type temperature lead plus or minus 16 digits; compatible temperature lead plus or minus 5 digits.
Zero-adjustment method	Use the supplied zero-adjustment board or the compatible optional zero-adjustment board when zero adjusting the compatible clip, lead, and pin-lead configurations.
Non-specified test leads or extension leads	Accuracy is guaranteed only after zero adjustment when using non-specified test leads or extension leads. Accuracy and operation are not guaranteed when using test leads outside the specified compatible configurations.