FLUKE

BT508/BT510/BT520/BT521

Battery Analyzer

Safety Sheet

3-year limited warranty. See the Users Manual for the full warranty.

Go to www.fluke.com to register your product, download manuals, and find more information.

A **Warning** identifies conditions and procedures that are dangerous to the user.

⚠⚠Warning

To prevent possible electrical shock, fire, or personal injury:

- **Carefully read all instructions.**
- **Read all safety information before you use the Product.**
- **Use the Product only as specified, or the protection supplied by the Product can be compromised.**
- **Do not use the Product around explosive gas, vapor, or in damp or wet environments.**
- **Do not use the Product if it is damaged.**

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- **Do not use the Product if it operates incorrectly.**
- **Do not apply more than the rated voltage, between the terminals or between each terminal and earth ground.**
- **Do not touch voltages > 30 V ac rms, 42 V ac peak, or 60 V dc.**
- **Do not exceed the Measurement Category (CAT) rating of the lowest rated individual component of a Product, probe, or accessory.**
- **Do not use the HOLD function to measure unknown potentials. When HOLD is turned on, the display does not change when a different potential is measured.**
- **Use the Current Clamp only as specified in the operating instructions. Otherwise the clamp's safety features may not protect you.**
- **Do not hold the Current Clamp anywhere beyond the tactile barrier.**
- **Before each use, inspect the Current Clamp. Look for cracks or missing portions of the clamp housing or output cable insulation. Also look for loose or weakened components. Pay particular attention to the insulation surrounding the jaws.**
- **Never use the clamp on a circuit with voltages higher than 600 V (CAT III) or a frequency higher than 400 Hz.**
- **Use extreme caution when working around bare conductors or bus bars. Contact with the conductor could result in electric shock.**
- **Do not use test leads if they are damaged. Examine the test leads for damaged insulation or exposed metal. Check test lead continuity.**
- **Connect the common test lead before the live test lead and remove the live test lead before the common test lead.**
- **Avoid simultaneous contact with battery and frame racks or hardware that may be grounded.**
- **Comply with local and national safety codes. Use personal protective equipment (approved rubber gloves, face protection, and flame-resistant clothes) to prevent shock and arc blast injury where hazardous live conductors are exposed.**
- **Examine the case before you use the Product. Look for cracks or missing plastic. Carefully look at the insulation around the terminals.**

- **Use only correct measurement category (CAT), voltage, and amperage rated probes, test leads, and adapters for the measurement.**
- **Measure a known voltage first to make sure that the Product operates correctly.**
- **Limit operation to the specified measurement category, voltage, or amperage ratings.**
- **Keep fingers behind the finger guards on the probes.**
- **Remove all probes, test leads, and accessories before the battery door is opened.**
- **Use the correct terminals, function, and range for measurements.**
- **Use only current probes, test leads, and adapters supplied with the Product.**
- **Hold the handle behind the tactile barrier when you use the interactive handle.**
- **Install the CAT III protective cap of test lead when you use the product in CAT III environment. The CAT III protective cap decreases the exposed probe metal to < 4 mm.**
- **Do not operate the Product with covers removed or the case open. Hazardous voltage exposure is possible.**

For safe operation and maintenance of the Product:

- **Use only specified replacement parts.**
- **Use only specified replacement fuses.**
- **Have an approved technician repair the Product.**
- **The battery door must be closed and locked before you operate the Product.**
- **Batteries contain hazardous chemicals that can cause burns or explode. If exposure to chemicals occurs, clean with water and get medical aid.**
- **Remove the input signals before you clean the Product.**
- **Do not disassemble or crush battery cells and battery packs.**
- **Do not put battery cells and battery packs near heat or fire. Do not put in sunlight.**
- **A low battery indication on display may prevent the Product from taking a measurement.**
- **Keep the battery pack out of the reach of children and animals.**
- **Do not subject battery packs to severe impacts such as mechanical shock.**
- **Do not use any charger other than that specifically provided for use with the Product.**
- **Do not use any battery which is not designed or recommended by Fluke for use with the Product.**

- **Remove all probes, test leads, and accessories before the battery door is opened.**
- **Repair the Product before use if the batteries leak.**
- **Remove the batteries if the Product is not used for an extended period of time, or if stored in temperatures that exceed the specification of the battery manufacturer. If the batteries are not removed, battery leakage can damage the Product.**
- **Connect the battery charger to the mains power outlet before the Product.**
- **Use only Fluke approved power adapters to charge the battery.**
- **Keep cells and battery packs clean and dry. Clean dirty connectors with a dry, clean cloth.**
- **Do not keep cells or batteries in a container where the terminals can be shorted.**
- **Ensure fuse continuity. If the protective fuse opens, the mΩ function will display 'OL' with all probe tip conductors short circuited.**
- **Replace a blown fuse with exact replacement only for continued protection against arc flash.**
- **After extended periods of storage, it may be necessary to charge and discharge the battery packs several times to obtain maximum performance.**

Table 1. Symbols

Symbol	Description	Symbol	Description
⚠	WARNING. RISK OF DANGER.	📖	Consult user documentation.
⚠	WARNING. HAZARDOUS VOLTAGE. Risk of electric shock.	~	AC (Alternating Current)
⎓	DC (Direct Current)	⏚	Earth ground.

Symbol	Description	Symbol	Description
BC	Conforms to the Appliance Efficiency Regulation (California Code of Regulations, Title 20, Sections 1601 through 1608), for small battery charging systems.	Li-ion	This product contains a Lithium-ion battery. Do not mix with solid waste stream. Spent batteries should be disposed of by a qualified recycler or hazardous materials handler per local regulations. Contact your authorized Fluke Service Center for recycling information.
	Fuse	CAT II	Measurement Category II is applicable to test and measuring circuits connected directly to utilization points (socket outlets and similar points) of the low-voltage MAINS installation.
CAT III	Measurement Category III is applicable to test and measuring circuits connected to the distribution part of the building's low-voltage MAINS installation.	CAT IV	Measurement Category IV is applicable to test and measuring circuits connected at the source of the building's low-voltage MAINS installation.
CE	Conforms to European Union directives.		This product complies with the WEEE Directive and its marking requirements. The affixed label indicates that you must not discard this electrical/electronic product in domestic household waste. Do not dispose of this product as unsorted municipal waste. For information about take-back and recycling programs available in your country, see the Fluke website.

General Specifications

⚠ Fuse Protection for Impedance .....0.44 A (44/100 A, 440 mA), 1000 V FAST Fuse, Fluke specified part only

Maximum voltage between any terminal and Earth ground .....600 V, BT521 1000 V dc

Power Supply

- Battery power .....BP500 smart battery pack: double cell lithium-ion, 7.4 V, 3000 mAh
- Battery life .....>8 hours in continuous full-load operation
- Battery charging time .....≤4 hours
- Power adapter.....Use only BC500 battery charger: 18 V, 840 mA
- Line power.....100 V ac to 240 V ac adapter with country specific plug
- Frequency .....50 Hz to 60 Hz

Temperature

- Operating.....0 °C to 40 °C
- Storage.....-20 °C to 50 °C
- Lithium-ion battery charging.....0 °C to 40 °C

Relative Humidity (non-condensing, 10 °C)

- Operating .....≤80 % at 10 °C to 30 °C
  ≤75 % at 30 °C to 40 °C
- Storage.....≤95 %

Altitude

- Operating .....2,000 m
- Storage.....12,000 m

Temperature Coefficient	0.1 x (specified accuracy) /°C (<18 °C or >28 °C)
Dimensions	
Length	220 mm
Width	103 mm
Depth	58 mm
Weight	850 g
Screen Size	77.00 mm x 56.50 mm
Memory	
Data/Setup flash memory	4 MB
Real-Time Clock	Time and date stamp for measurement. The RTC works >50 days without battery.
IP Rating	IEC 60529: IP 40. Protected against =>1.0 mm solid foreign object, not protected for water.
Safety	IEC 61010-1, Pollution Degree 2
BT508/BT510/BT520	IEC 61010-2-033: CAT III 600 V
BT521	IEC 61010-2-033: CAT III 600 V, 1000 V dc max
All models	IEC 61010-031: CAT III 1000 V, CAT IV 600 V. De-rated to CAT II 1000 V with CAT II probe cap installed.
EMI, RFI, EMC, RF	IEC 61326-1, IEC 61326-2-2
	BT521: IEC 300328, IEC 301489-1, IEC 301489-17, FCC Part 15 Subpart C Sections 15.207, 15.209, 15.249
	CONTAINS FCC IDs: T68-FWCS, XDULE40-S2
	IC: 6627A-FWCS, 8456A-LE4S2
Radio Output Power	<100 mW
Frequency Range	2400 MHZ to 2483.5 MHz

Electromagnetic Compatibility.....Applies to use in Korea only. Class A Equipment (Industrial Broadcasting & Communication Equipment)[1]

[1] This product meets requirements for industrial (Class A) electromagnetic wave equipment and seller or user should take notice of it. This equipment is intended for use in business environments and is not to be used in homes.

USA (FCC) .....47 CFR 15 subpart B. This product is considered an exempt device per clause 15.103.

SIMPLIFIED EU DECLARATION OF CONFORMITY

Hereby, Fluke declares that the radio equipment contained in this Product is in compliance with Directive 2014/53/EU.
The full text of the EU declaration is available at the following internet address: https://www.Fluke.com/red