

BT508/BT510/BT520/BT521

Battery Analyzer *Safety Sheet*

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.
- 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.**

General Specifications

⚠ Fuse Protection for Impedance0.44 A (44/100 A, 440 mA), 1000 V FAST Fuse, Fluke specified part only

Power Supply

Battery powerBP500 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 adapterUse only BC500 battery charger: 18 V, 840 mA

Line power100 V ac to 240 V ac adapter with country specific plug

Frequency50 Hz to 60 Hz

Temperature

Operating0 °C to 40 °C

Storage-20 °C to 50 °C

Lithium-ion battery charging0 °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

Operating2,000 m

Storage12,000 m

Temperature Coefficient0.1 x (specified accuracy) /°C (<18 °C or >28 °C)

VibrationComplies with MIL-PRF-28800F Class 2

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
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IP Rating.....IEC 60529: IP 40

Safety.....IEC 61010-1, IEC 61010-2-030, IEC 61010-031, Pollution Degree 2

BT508/BT510/BT520.....	600 V CAT III
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BT521.....	600 V CAT III, 1000 V dc max
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All models.....	derated to CAT II with CAT II probe cap installed
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EMI, RFI, EMC, RFIEC 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

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.

Table 1. Symbols

Symbol	Description	Symbol	Description
	Risk of danger. Important information. See manual.		AC (Alternating Current)
	Hazardous voltage.		DC (Direct Current)
	Earth ground.		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.		Conforms to relevant South Korean EMC Standards.

Symbol	Description	Symbol	Description
	Inspected and licensed by TÜV Product Services.		Conforms to relevant North American Safety Standards.
CE	Conforms to European Union directives.		Conforms to relevant Australian Standards.
	This product complies with the WEEE Directive (2002/96/EC) marking requirements. The affixed label indicates that you must not discard this electrical/electronic product in domestic household waste. Product Category: With reference to the equipment types in the WEEE Directive Annex I, this product is classed as category 9 "Monitoring and Control Instrumentation" product. Do not dispose of this product as unsorted municipal waste. Go to Fluke's website for recycling information.		

Radio Frequency Data

See the *Radio Frequency Data for Class A* file on the Fluke website.

LIMITED WARRANTY AND LIMITATION OF LIABILITY

This Fluke product will be free from defects in material and workmanship for three years from the date of purchase. This warranty does not cover fuses, disposable batteries, or damage from accident, neglect, misuse, alteration, contamination, or abnormal conditions of operation or handling. Resellers are not authorized to extend any other warranty on Fluke's behalf. To obtain service during the warranty period, contact your nearest Fluke authorized service center to obtain return authorization information, then send the product to that Service Center with a description of the problem.

THIS WARRANTY IS YOUR ONLY REMEDY. NO OTHER WARRANTIES, SUCH AS FITNESS FOR A PARTICULAR PURPOSE, ARE EXPRESSED OR IMPLIED. FLUKE IS NOT LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES OR LOSSES, ARISING FROM ANY CAUSE OR THEORY. Since some states or countries do not allow the exclusion or limitation of an implied warranty or of incidental or consequential damages, this limitation of liability may not apply to you.

Fluke Corporation
P.O. Box 9090
Everett, WA 98206-9090
U.S.A.

Fluke Europe B.V.
P.O. Box 1186
5602 BD Eindhoven
The Netherlands

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