

FLUKE®

Biomedical

190M

Medical ScopeMeter

Safety Information

PN 4202934

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Safety Information










⚠⚠ Warning

To prevent possible electrical shock, fire, or personal injury, read all safety information before you use the Product.

For complete operator instructions, refer to the Users Manual on the 190M Medical ScopeMeter CD-ROM. Specific warning and caution statements, where they apply, appear throughout the manual.

Table 1 is a list of symbols used on the Product and in the manuals.

Table 1. Symbol

Symbol	Description	Symbol	Description
	Risk of Danger. Important information. See Manual.		Hazardous voltage.
	Conforms to relevant North American Safety Standards.		Conforms to European Union directives
	Double Insulation		Earth Ground
	AC Current		DC Current
	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.		

A **Warning** identifies conditions and procedures that are dangerous to the user. A **Caution** identifies conditions and procedures that can cause damage to the Product or the equipment under test.

⚠⚠ Warning

To avoid electrical shock or fire:

Use only the Fluke Biomedical power supply, Model BC190 (Power Adapter).

Before use check that the selected/indicated voltage range on the BC190 matches the local line power voltage and frequency.

For the BC190/808/MED universal Power Adapter only use line cords that comply with the local safety regulations.

Note

To accommodate connection to various line power sockets, the BC190/808/MED universal Power Adapter is equipped with a male plug that must be connected to a line cord appropriate for local use. Since the adapter is isolated, the line cord does not need to be equipped with a terminal for connection to protective ground. Since line cords with a protective grounding terminal are more commonly available you might consider using these anyhow.

⚠⚠ Warning

To avoid electrical shock or fire if a product input is connected to more than 42 V peak (30 Vrms) or 60 V dc:

- **Use only insulated voltage probes, test leads and adapters supplied with the product, or indicated by Fluke BioMedical as suitable for the 190M Medical ScopeMeter series.**

- **Before use, inspect voltage probes, test leads and accessories for mechanical damage and replace when damaged.**
- **Remove all probes, test leads and accessories that are not in use.**
- **Always connect the power adapter first to the ac outlet before connecting it to the product.**
- **Do not touch voltages >30 V ac rms, 42 V ac peak, or 60 V dc.**
- **Do not connect the ground spring (figure 1, item d) to voltages higher than 42 V peak (30 Vrms) from earth ground.**
- **Do not apply more than the rated voltage, between the terminals or between each terminal and earth ground.**
- **Do not apply input voltages above the rating of the instrument. Use caution when using 1:1 test leads because the probe tip voltage will be directly transmitted to the product.**
- **Do not use exposed metal BNC connectors. Fluke BioMedical offers cables with plastic, safety designed BNC connectors suitable for the ScopeMeter product, see Chapter 7 'Optional accessories'.**
- **Do not insert metal objects into connectors.**
- **Use the product only as specified, or the protection supplied by the product can be compromised.**
- **Carefully read all instructions.**

- **Do not use the product if it operates incorrectly.**
- **Do not use and disable the product if it is damaged.**
- **Keep fingers behind the finger guards on the probes.**
- **Use only correct measurement category (CAT), voltage, and amperage rated probes, test leads, and adapters for the measurement.**
- **Do not exceed the Measurement Category (CAT) rating of the lowest rated individual component of a product, probe, or accessory.**
- **Do not use the product around explosive gas, vapor, or in damp or wet environments.**
- **Measure a known voltage first to make sure that the product operates correctly.**
- **Examine the case before you use the product. Look for cracks or missing plastic. Carefully look at the insulation around the terminals.**
- **Do not work alone.**
- **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.**
- **The battery door must be closed and locked before you operate the product.**

- **Do not operate the product with covers removed or the case open. Hazardous voltage exposure is possible.**
- **Remove the input signals before you clean the product.**
- **Use only specified replacement parts.**

Voltage ratings that are mentioned in the warnings, are given as limits for “working voltage”. They represent V ac rms (50-60 Hz) for ac sinewave applications and as V dc for dc applications.

Measurement **Category IV** refers to the overhead or underground utility service of an installation.

Measurement **Category III** refers to distribution level and fixed installation circuits inside a building.

The terms ‘Isolated’ or ‘Electrically floating’ are used in this manual to indicate a measurement in which the product input BNC is connected to a voltage different from earth ground.

The isolated input connectors have no exposed metal and are fully insulated to protect against electrical shock.

The **BNC jacks** can independently be connected to a voltage above earth ground for isolated (electrically floating) measurements and are rated up to 1000 Vrms CAT III and 600 Vrms CAT IV above earth ground.

If Safety Features are Impaired

⚠⚠ Warning

Use of the product in a manner not specified may impair the protection provided by the equipment.

Do not use test leads if they are damaged. Examine the test leads for damaged insulation, exposed metal, or if the wear indicator shows.

Whenever it is likely that safety has been impaired, the product must be turned off and disconnected from the line power. The matter should then be referred to qualified personnel. Safety is likely to be impaired if, for example, the product fails to perform the intended measurements or shows visible damage.

Safe Use of Li-ion battery pack

The battery pack Fluke model BP291/MED (52 Wh) has been tested in accordance with the UN Manual of Tests and Criteria Part III Subsection 38.3 (ST/SG/AC.10/11/Rev.3) – more commonly known as the UN T1..T8 – tests, and have been found to comply with the stated criteria. The battery pack has been tested according to EN/IEC62133. As a result they can be shipped unrestricted internationally by any means.

Storing the Battery Pack Safely

- Do not store battery packs near heat or fire. Do not store in sunlight.
- Do not remove a battery pack from its original packaging until required for use.
- When possible, remove the battery pack from the equipment when not in use.
- Fully charge the battery pack before storing it for an extended period to avoid a defect.
- After extended periods of storage, it may be necessary to charge and discharge the battery packs several times to obtain maximum performance.
- Keep the battery pack out of the reach of children and animals.
- Seek medical advise if a battery or part of it has been swallowed.

Using the Battery Pack Safely

- Charge the battery pack before use. Use only Fluke approved power adapters to charge the battery pack. Refer to Fluke's safety instructions and Users Manual for proper charging instructions.
- Do not leave a battery on prolonged charge when not in use.
- The battery pack gives the best performance when operated at normal room temperature $20\text{ }^{\circ}\text{C} \pm 5\text{ }^{\circ}\text{C}$ ($68\text{ }^{\circ}\text{F} \pm 9\text{ }^{\circ}\text{F}$).
- Do not put battery packs near heat or fire. Do not put in sunlight.
- Do not subject battery packs to severe impacts such as mechanical shock.
- Keep the battery pack clean and dry. Clean dirty connectors with a dry, clean cloth
- Do not use any charger other than that specifically provided for use with this equipment.
- Do not use any battery which is not designed or recommended by Fluke Biomedical for use with the Product.
- Take careful notice of correct placement of the battery in the product or the External Battery Charger.
- Do not short-circuit a battery pack. Do not keep battery packs in a place where the terminals can be shorted by metal objects (e.g. coins, paperclips, pens or other).
- Never use a battery pack or charger showing visible damage.
- Batteries contain hazardous chemicals that can cause burns or explode. If exposure to chemicals occurs, clean with water and get medical aid. Repair the product before use if the battery leaks.

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