FLUKE®

28 II Ex

True-rms Digital Multimeter

Safety Information



3-Year Limited Warranty.
See the Users Manual for the full warranty.

To register your product, or to view, print, or download the latest manual or manual supplement, go to:
www.fluke.com/productinfo.

Safety Information

A **Warning** identifies hazardous 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.

Ex Safety Information

Remarque

Go to www.ecom-ex.com or www.fluke.com to download the EU Declaration of Conformity and Ex certificate for this product. You can also order them from Fluke.

⚠⚠ Warning

Refer to the ECOM Safety Instructions for use of the 28 II Ex in an Ex location.

To prevent possible electrical shock, fire, or personal injury in ALL areas of operation:

- **Read all safety Information before you use the Product.**

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- **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**
- **See the Ex Safety Instructions for additional warnings on Product use in hazardous areas.**
- **Use the Product only as specified, or the protection supplied by the Product can be compromised.**
- **Do not use the Product in damp or wet environments.**
- **Do not exceed the Measurement Category (CAT) rating of the lowest rated individual component of a Product, probe, or accessory.**
- **Examine the case before you use the Product. Look for cracks or missing plastic. Carefully look at the insulation around the terminals.**
- **Do not use test leads if they are damaged. Examine the test leads for damaged insulation, exposed metal, or if the wear indicator shows. Check test lead continuity.**
- **Do not work alone.**
- **Do not touch voltages >30 V ac rms, 42 V ac peak, or 60 V dc.**
- **Use only correct measurement category (CAT), voltage, and amperage rated probes, test leads, and adapters for the measurement.**
- **Remove all probes, test leads, and accessories that are not necessary for the measurement.**
- **Keep fingers behind the finger guards on the probes.**
- **Limit operation to the specified measurement category, voltage, or amperage ratings.**
- **Measure a known voltage first to make sure the Product operates correctly.**
- **Measure for hazardous voltage without the Low-Pass Filter.**
- **Do not use the AUTOHOLD function to measure unknown potentials. When AUTOHOLD is turned on, the display may not change when a different potential is measured.**
- **Do not apply more than the rated voltage, between the terminals or between each terminal and earth ground.**
- **Do not touch the probes to a voltage source when the test leads are connected to the current terminals.**
- **Connect the common test lead before the live test lead and remove the live test lead before the common test lead.**
- **Replace the batteries when the low battery indicator shows to prevent incorrect measurements.**
- **The battery door must be closed and locked before you operate the Product.**
- **Do not use the Product if it operates incorrectly.**
- **Do not use and disable the Product if it is damaged.**
- **The product shall be protected against high static charge generating processes.**

Symbols

The Table 1 lists the symbols that can be used on the Product or in this document.

Table 1.

Symbol	Description
	Consult user documentation.
	WARNING. RISK OF DANGER.
	WARNING. HAZARDOUS VOLTAGE. Risk of electric shock.
	Double Insulated
	Fuse
	Conforms to the European Explosive Atmospheres (ATEX) directive.
OFF	Turns Product off.
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.

Safety Specifications

For complete specifications, see the Users Manual.

Maximum voltage between any terminal and earth ground...1000 V

⚠ **Fuse for mA inputs**.....0.44 A, 1000 V IR 10 kA

⚠ **Fuse for A inputs**.....11 A, 1000 V IR 17 kA

Altitude

Operating .....2000 meters

Storage .....10 000 meters

Operating Temperature ..... Different temperature ranges for T_{amb} are fixed by type-approved batteries (see separate ecom *Safety Instructions* for a list of approved batteries)

Temperature coefficient ..... 0.05 X (specified accuracy) /$^{\circ}$C ($<18\ ^{\circ}$C or $>28\ ^{\circ}$C)

Relative Humidity ..... 0 % to 80 % (0 $^{\circ}$C to 35 $^{\circ}$C)

0 % to 70 % (35 $^{\circ}$C to 50 $^{\circ}$C)

Battery Type ..... 3 AAA Alkaline batteries, IEC LR03 (see separate ecom *Safety Instructions* for a list of approved batteries)

Safety

General ..... IEC 61010-1: Pollution Degree 2

Measurement ..... IEC 61010-2-033: CAT IV 600V / CAT III 1000V

Ingress Protection ..... IEC 60529: IP67, non-operating

Electromagnetic Compatibility (EMC) ..... In an RF field of 3 V/M, accuracy = specified accuracy +20 counts, except 600 A dc range total accuracy = specified accuracy +60 counts. Temperature not specified

International ..... IEC 61326-1: Portable Electromagnetic Environment

IEC 61326-2-2 CISPR 11: Group 1, Class A

Group 1: Equipment has intentionally generated and/or uses conductively-coupled radio frequency energy that is necessary for the internal function of the equipment itself.

Class A: Equipment is suitable for use in all establishments other than domestic and those directly connected to a low-voltage power supply network that supplies buildings used for domestic purposes. There may be potential difficulties in ensuring electromagnetic compatibility in other environments due to conducted and radiated disturbances.

Caution: This equipment is not intended for use in residential environments and may not provide adequate protection to radio reception in such environments.

Korea (KCC) ..... Class A Equipment (Industrial Broadcasting & Communication Equipment)

Class A: Equipment meets requirements for industrial electromagnetic wave equipment and the seller or user should take notice of it. This equipment is intended for use in business environments and not to be used in homes.

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