FLUKE

771

Milliamp Process Clamp Meter

Instruction Sheet

Introduction

The Fluke 771 Milliamp Process Clamp Meter (Meter or Product) is a hand-held battery-operated clamp meter that measures 4-20 mA dc without breaking the electrical circuit. Unlike conventional clamp meters, the Meter features a remote jaw that is connected to the main body via extension cable.

Features

- DC mA measurement (4-20 mA) using a remotely connected clamp via extension cable
- Electronic zero
- Percentage span (0 % to 100 %)
- Hold
- Display backlight
- Auto power off
- Measurement spotlight LED

The Meter comes with:

- Two AA alkaline batteries (installed)
- Soft case
- Instruction sheet

PN 2567301
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How to Contact Fluke

To contact Fluke, call one of the following telephone numbers:

- Technical Support USA: 1-800-44-FLUKE (1-800-443-5853)
- Calibration/Repair USA: 1-888-99-FLUKE (1-888-993-5853)
- Canada: 1-800-36-FLUKE (1-800-363-5853)
- Europe: +31 402-675-200
- Japan: +81-3-6714-3114
- Singapore: +65-6799-5566
- China: +86-400-921-0835
- Brazil: +55-11-3530-8901
- Anywhere in the world: +1-425-446-5500

Or, visit Fluke's website at www.fluke.com.

To register your product, visit http://register.fluke.com.

To view, print, or download the latest manual supplement, visit http://us.fluke.com/usen/support/manuals.

Safety Information and Symbols

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 prevent possible electrical shock, fire, or personal injury:

- **Carefully read all instructions.**
- **Do not alter the Product and use only as specified, or the protection supplied by the Product can be compromised.**

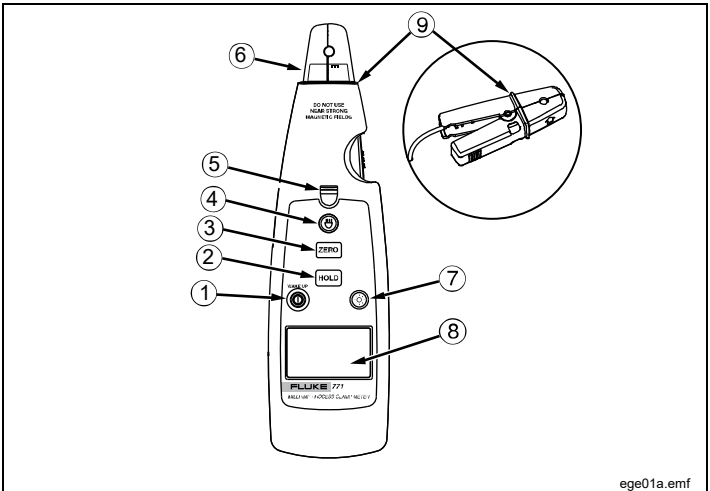
- **Before each use, inspect the Meter and cable for damage. Look for cracks and missing portions of the clamp and cable. Do not use if clamp is damaged.**
- **Do not use to measure ac current.**
- **Do not touch voltages >30 V ac rms, 42 V ac peak, or 60 V dc.**
- **Do not work alone.**
- **Use the Clamp only on insulated conductors. Use caution around bare conductors or bus bars. To prevent electrical shock, do not touch the conductor.**
- **Replace the batteries when the low battery indicator shows to prevent incorrect measurements.**
- **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.**
- **Hold the Product behind the tactile barrier. See Figure 1.**
- **Not to be used on non-insulated conductors.**

Table 1 explains the symbols that are used on the Meter or in this instruction sheet.

Table 1. Symbols

	Do not apply around, or remove from HAZARDOUS LIVE conductors
	Consult user documentation.
	WARNING. RISK OF DANGER.
	WARNING. HAZARDOUS VOLTAGE. Risk of electric shock.
	On/Off
	Battery
	DC (Direct Current)
	Avoid strong magnetic fields.
	Conforms to European Union directives.
	Conforms to relevant Australian Safety and EMC standards
	Certified by CSA Group to North American safety standards.
	This product complies with the WEEE Directive 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.

Getting Acquainted with the Meter



Item	Description
①	Turn on and turn off the Meter. When the Meter is in sleep mode, press this button to wake it up.
②	Captures and holds the current reading
③	Removes interference and zeros the display
④	Measurement spotlight LED button
⑤	Measurement spotlight LED
⑥	Detachable clamp
⑦	Turns the backlight off and on
⑧	LCD
⑨	Tactile Barrier docked and un-docked

Figure 1. The 771 Milliamp Process Clamp Meter

Features

The following sections give more detail about the Meter's features.

Percentage Span

The Percentage Span feature displays the span for 4 to 20 mA loops.

20 mA	100 %	4 mA	0 %
16 mA	75 %	3.6 mA	-2.5 %
12 mA	50 %	3.2 mA	-5.0 %
8 mA	25 %	2 mA	-12.5 %

Zero Adjust

Before taking each measurement, push ZERO to zero the display by removing dc offset. Make sure the clamp jaws are closed and no current is flowing through them.

Backlight

Press ☼ to turn the backlight on and off. The backlight automatically turns off after 2 minutes.

To disable the automatic 2-minute backlight timeout, hold down ☼ while turning the Meter on.

Measurement Spotlight LED

The Measurement Spotlight LED helps to quickly find mA signal wires. To activate it, press ⧈. To extend battery life, the light automatically turns off after 2 minutes. To disable the automatic timeout, hold down ⧈ while turning the Meter on.

Display HOLD

⚠⚠ Warning

To prevent electric shock, when Display HOLD is activated, the display will not change when a different current is applied.

Pressing HOLD activates Display Hold mode. The display shows **HOLD** and the Meter freezes the display. To exit and return to normal operation, press HOLD a second time.

Auto Off

The Meter automatically turns off after 15 minutes of inactivity. To disable the Auto Off feature, hold down HOLD while turning on the Meter. If the Meter has automatically shut down, restart it by pushing ⏻ (“WAKE UP”).

Taking Measurements

⚠⚠ Warning

The Clamp Meter is not for use on non-insulated conductors.

Measurements can be taken with the clamp in the docked position, or remotely via the 1 m cable. For accurate measurements:

- Always zero the Meter prior to taking measurements.
- Zero the Meter as close to the measurement source as possible.
- Make sure the clamp is free of contamination.

Note

To reduce magnetic influences, zero the Meter in the same position or jaw direction that is used for the measurements.

With the clamp disconnected from any conductor, press ⏻ to turn on the Meter and press ZERO.

Clamp the jaw around the conductor under test. The Meter displays the measured conductor current. See Figure 2.

A positive reading indicates current flowing in the direction of the arrow on the clamp.

A negative reading indicates current flowing in the opposite direction of the arrow.

Do not clamp more than one wire. Currents cancel and no results are returned.

The small secondary display shows the reading in terms of percentage span.

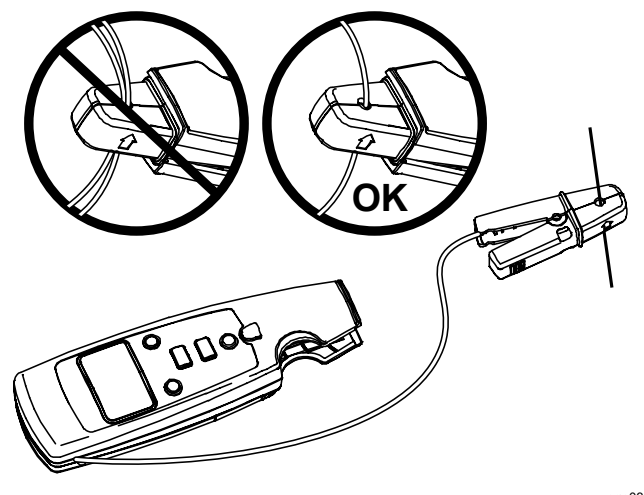


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Figure 2. Taking Measurements

Maintenance

⚠⚠ Warning

To prevent possible electric shock or personal injury, repairs or servicing not covered in this manual should be performed only by qualified personnel.

Cleaning the Meter

⚠⚠ Warning

To prevent electrical shock, remove any input signals before cleaning.

⚠ Caution

To prevent damage to the Meter, do not use aromatic hydrocarbons or chlorinated solvents for cleaning. These solutions will react with the plastics used in the Meter.

Clean the instrument case with a damp cloth and mild detergent.

Note

Dirt or debris on the surface of the sensor in the clamp jaw will impact the precision of measurements. For best performance, clean the sensor surfaces with a soft cloth and a solution of Isopropyl alcohol as needed.

Battery Replacement

⚠⚠ Warning

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

- **Replace the batteries when the low battery indicator shows to prevent incorrect measurements.**
- **Remove the batteries if the Product is not used for an extended period of time, or if stored in temperatures >50 °C. If the batteries are not removed, battery leakage may result.**

To replace the batteries (see Figure 3):

1. Turn off the Meter.
2. Use a flat head screwdriver to loosen the battery compartment door screw and remove the door from the case bottom.
3. Remove the batteries.
4. Replace the batteries with two new AA batteries.
5. Reattach the battery compartment door to the case bottom and tighten the screw.

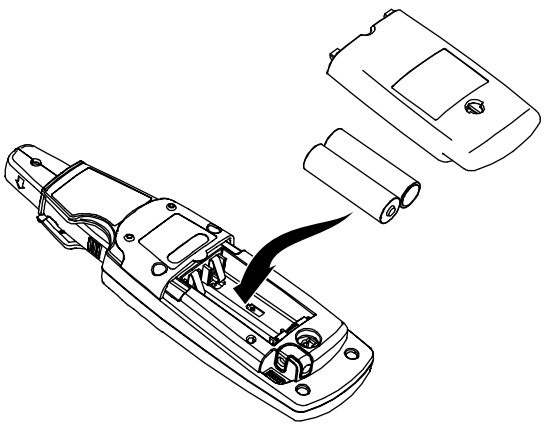

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Figure 3. Changing the Batteries

Specifications

Current Ranges	±20.99 mA	±21.0 mA to ±99.9 mA
Resolution	0.01 mA	0.1 mA
Accuracy		
20.99 mA range	0.2 % reading ±5 digits	
99.9 mA range	1 % reading ±5 digits	
Maximum Reading	±99.9 mA	
Influence of Earth's Field	<0.20 mA	
Battery	2 AA 1.5 V Alkaline, IEC LR6	
Battery Life	40 hours	
Size (H X W X L)	59 mm x 38 mm x 212 mm (with clamp nested)	
Weight	260 g (includes battery)	
Operating Temperature	-10 °C to 50 °C	
Storage Temperature	-25 °C to 60 °C	
Operating Humidity	<90 % @ <30 °C, <75 % @ 30 °C to 50 °C	
Operating Altitude	0 m to 2000 m	
Storage Altitude	None	
IP Rating	IP40	
Vibration Requirements	Random 2 g, 5 Hz to 500 Hz	
Temperature Coefficients	0.1x (specified accuracy)/°C (<18 °C or >28 °C)	
AC Noise Rejection	≥5 Hz, the Meter reading is the mean value of the measured current	
Diameter of Measurable Conductor	4.5 mm maximum	
Electrical Compatibility (EMC)		
General	IEC 61010-1: Pollution Degree 2	
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.

User Replaceable Parts

Table 2 is a list of user replaceable parts.

Table 2. Replaceable Parts

Part or Model Number	Description	Quantity
376756	AA Batteries, 1.5 V	2
2687457	Absorber	1
2720304	Battery door	1
948609	Fastener	1
2726174	Soft Carrying Case	1
2567301	Instruction Sheet	1

LIMITED WARRANTY & LIMITATION OF LIABILITY

This Fluke product will be free from defects in material and workmanship for 3 years (one year for cable and clamp) from the date of purchase. This warranty does not cover fuses, disposable batteries or damage from accident, neglect, misuse 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, send your defective Meter to the nearest Fluke Authorized 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.

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