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# **NORMA 4000/5000**

Power Analyzer

## Operators Manual

PN 2842188

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# **Chapter 1**

## ***About this Document***

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## Signs and Symbols

Table 1-1 is a list of symbols used in this document.

**Table 1-1. Symbols**

Symbol	Description
	Risk of danger. Important information.
	Hazardous voltage. Risk of electrical shock.
CE	<i>Conformité Européenne.</i> Conforms to requirements of European Union and European Free Trade Association (EFTA).
	Conforms to relevant North American Safety Standards.
	Conforms to relevant Australian Standards.
	Do not dispose of this product as unsorted municipal waste. Go to Fluke's website for recycling information.
	Earth ground.

## Transport and Storage

### Transport

- Transport the device in its original packaging.
- Protect the device during transport against heat and moisture; do not exceed temperature range of  $-20\text{ }^{\circ}\text{C}$  to  $+50\text{ }^{\circ}\text{C}$  ( $-4\text{ }^{\circ}\text{F}$  to  $+122\text{ }^{\circ}\text{F}$ ) and maximum humidity of 85 %.
- Protect the device against impacts and loads.

### Storage

- Keep original packaging, as it might be required at a later stage for transport purposes or to return the device for repairs. Only the original packaging guarantees proper protection against mechanical impacts.
- Store the device in a dry room; the temperature range of  $-20\text{ }^{\circ}\text{C}$  to  $+50\text{ }^{\circ}\text{C}$  ( $-4\text{ }^{\circ}\text{F}$  to  $+122\text{ }^{\circ}\text{F}$ ) and maximum humidity of 85 % may not be exceeded.
- Protect the device against direct sunlight, heat, moisture, and mechanical impacts.

## Recalibration

The manufacturer recommends recalibrating the device every 2 years. For information about how to obtain service and calibration, check the Fluke website: [www.fluke.com](http://www.fluke.com).

## Maintenance

Ensure that the ventilation slots are not blocked. Otherwise, the device is maintenance free.

## ***Decommissioning and Disposal***

### ***Shutting Down***

- Ensure that all connected devices are switched off and disconnected from the power supply.
- Switch off the Power Analyzer.
- Disconnect the plug from the mains (power) socket.
- Remove all connected devices.
- Secure the unit against inadvertent switching on.
- Keep the Operators Manual near the device.

### ***Recycling and Disposal***

Always adhere to the applicable statutory regulations for recycling and waste disposal.

### ***Housing***

The housing is made of metal and can be recycled.

### ***Electronic Components***

The electronic components including the power adapter, filter, plug-in modules, and wires have a weight of approximately 1500 g (3.3 lb) and a volume of approximately 3000 cm<sup>3</sup> (183 in<sup>3</sup>).

## **Chapter 2**

# **General Safety Instructions**

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## **Introduction**

The design and manufacture of this device conform to the latest state of technology and the safety standards defined in IEC 61010-1/ 2nd edition. If used improperly, there is a risk of damage to persons and property.

## **Protection Class**

The device is assigned to protection class I according to IEC 61010-1 and is equipped with a protective earth connector.

## **Qualified Personnel**

The device may be operated only by qualified personnel.

This means only persons who are familiar with the installation, assembly, connection, inspection of connections, and operation of the analyzer and who have completed training in at least one of the following areas:

- Switching on/off, enabling, earth-grounding and identification of electrical circuits and devices/systems according to the applicable safety standards.
- Maintenance and operation of appropriate safety gear, in accordance with the applicable safety standards.
- First aid.

## **Safe Operation**

- Ensure that all persons using the device have read and fully understood the Operators Manual and safety instructions.
- The device may only be used under certain ambient conditions. Ensure that the actual ambient conditions conform to the admissible conditions laid down in the chapter "Technical Data".
- During operation, ensure that the cooling vents are not obstructed.
- Always comply with the instructions in Chapter 1, "Transport and Storage".

## **Proper Use**

Do not use the device for any other purpose than the measuring of voltages and currents that are within the measuring ranges and categories, including voltage to earth ground, detailed in the "Technical Data" chapter.

Improper use shall void all warranty.

## **Warranty**

- The warranty period for fault-free operation is limited to 2 years from the date of purchase.
- The warranty period for accuracy is 2 years.

## Electrical Connections

- Ensure that the power and connecting cables used with the device are in proper working order.
- Ensure that the protective earth ground connector of the power lead is connected according to the instructions of the low-resistance unit earth ground cable.
- Ensure that the power and connecting cables as well as all accessories used in conjunction with the device are in proper working order and clean.
- Install the device in such a way that its power cable is accessible at all times and can easily be disconnected.
- For connection work, work in teams of at least two persons.
- Do not use the device if the housing or an operating element is damaged.

## Binding Post

To maintain proper clearance distances, the lug must be correctly connected to the connection terminal (binding post).

### Warning

To avoid possible electric shock or personal injury from flashover caused by CAT III transients between the housing and the lug, see Figure 2-1:

- The minimum clearance distance must comply with at least the distance illustrated in ①.
- Do not reverse ② or bend the lug ③ towards the housing.
- Use only insulated lugs preferably assembled with shrinking tube as illustrated in ④.
- If the connection leads exceed a cross section of 0.75 mm<sup>2</sup>, an additional external-protective conductor with the same cross section must be installed between the protective earth terminal ⑤ and the protective earth of the measuring circuit.

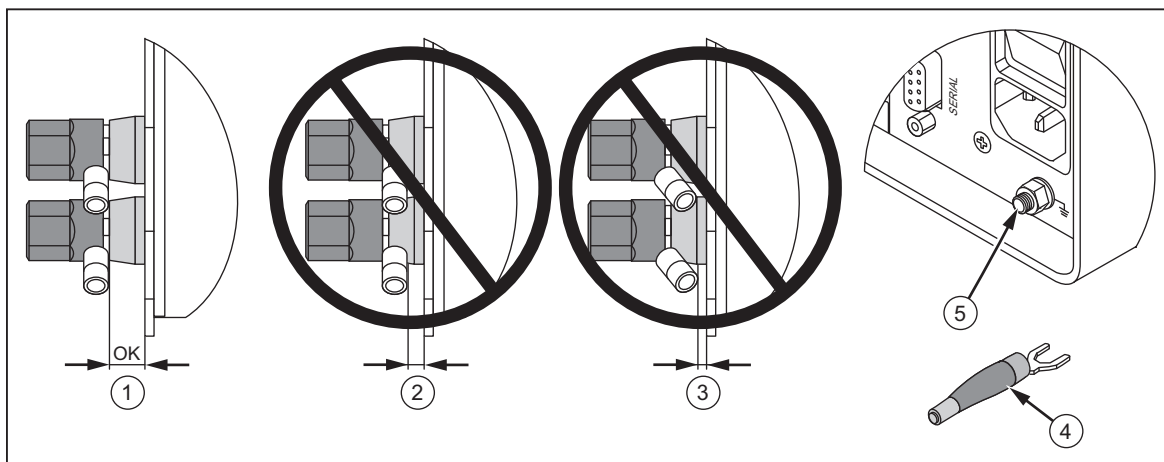


Figure 2-1. Binding Post Connection

esn070.eps

## Risks During Operation

- Ensure that the connected devices work properly.
- In the case of a direct connection to current circuits (without transformer or shunt), ensure that the circuit is protected to maximum 16 A.
- Shunts and conductors generate heat when in use and surfaces may burn the skin.

## Maintenance and Repairs

- Do not open the housing. Do not carry out any repairs and do not replace any component parts of the device.
- Damaged connecting and power leads must be repaired or replaced by an authorized service technician.
- Damaged or defective devices may only be repaired by authorized technicians.

## Accessories

- Only use the accessories supplied with the device or specifically available as optional equipment for your model.
- Ensure that any third-party accessories used in conjunction with the device conform to the IEC 61010-031/61010-2-032 standard and are suitable for the respective measuring voltage range.

## Shutting Down

- If you detect any damage to the housing, controls, power cable, connecting leads, or connected devices, immediately disconnect the unit from the power supply.
- If you are in doubt as regards the safe operation of the device, immediately shut down the unit and the respective accessories, secure them against inadvertent switching on, and bring them to an authorized service agent.

## Safety Instructions on the Device Housing

### Mains Connection

MAINS 85 - 264 V $\sim$  / 47 - 440Hz / 120 - 300 V $\equiv$   
Mains connection must conform to these ranges/values  
40 VA (NORMA 4000) and 65 VA (NORMA 5000)  
Maximum power consumption

### Input Voltage and Current

#### **Warning**

To avoid possible electric shock or personal injury:

**VOLTAGE INPUTS MAX 1000 V CAT II to  $\perp$**

**CURRENT INPUTS MAX 1000 V CAT II to  $\perp$**

If the measuring circuit is used to measure MAINS, the voltage to earth  $\perp$  may not exceed 1000 V in a CAT II Overvoltage Category environment.