



# PRM-5-EUR

## Phase Sequence Tester

### Users Manual

English

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### **Limited Warranty and Limitation of Liability**

Your Amprobe product will be free from defects in material and workmanship for one year from the date of purchase unless local laws require otherwise. 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 the behalf of Amprobe. To obtain service during the warranty period, return the product with proof of purchase to an authorized Amprobe Service Center or to an Amprobe dealer or distributor. See Repair Section for details. THIS WARRANTY IS YOUR ONLY REMEDY. ALL OTHER WARRANTIES - WHETHER EXPRESS, IMPLIED OR STATUTORY - INCLUDING IMPLIED WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY, ARE HEREBY DISCLAIMED. MANUFACTURER SHALL NOT BE 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.

### **Repair**

All Amprobe returned for warranty or non-warranty repair or for calibration should be accompanied by the following: your name, company's name, address, telephone number, and proof of purchase. Additionally, please include a brief description of the problem or the service requested and include the test leads with the meter. Non-warranty repair or replacement charges should be remitted in the form of a check, a money order, credit card with expiration date, or a purchase order made payable to Amprobe.

### **In-warranty Repairs and Replacement – All Countries**

Please read the warranty statement and check your battery before requesting repair. During the warranty period, any defective test tool can be returned to your Amprobe distributor for an exchange for the same or like product. Please check the "Where to Buy" section on [www.Amprobe.com](http://www.Amprobe.com) for a list of distributors near you. Additionally, in the United States and Canada, in-warranty repair and replacement units can also be sent to an Amprobe Service Center (see address below).

### **Non-warranty Repairs and Replacement – United States and Canada**

Non-warranty repairs in the United States and Canada should be sent to an Amprobe Service Center. Call Amprobe or inquire at your point of purchase for current repair and replacement rates.

#### **USA:**

Amprobe  
Everett, WA 98203  
Tel: 877-AMPROBE (267-7623)

#### **Canada:**

Amprobe  
Mississauga, ON L4Z 1X9  
Tel: 905-890-7600

### **Non-warranty Repairs and Replacement – Europe**

European non-warranty units can be replaced by your Amprobe distributor for a nominal charge. Please check the "Where to Buy" section on [www.Beha-Amprobe.com](http://www.Beha-Amprobe.com) for a list of distributors near you.

#### **Amprobe Europe\***

Beha-Amprobe  
In den Engematten 14  
79286 Glottertal, Germany  
Tel.: +49 (0) 7684 8009 - 0  
[www.Beha-Amprobe.com](http://www.Beha-Amprobe.com)

\*(Correspondence only – no repair or replacement available from this address. European customers please contact your distributor.)

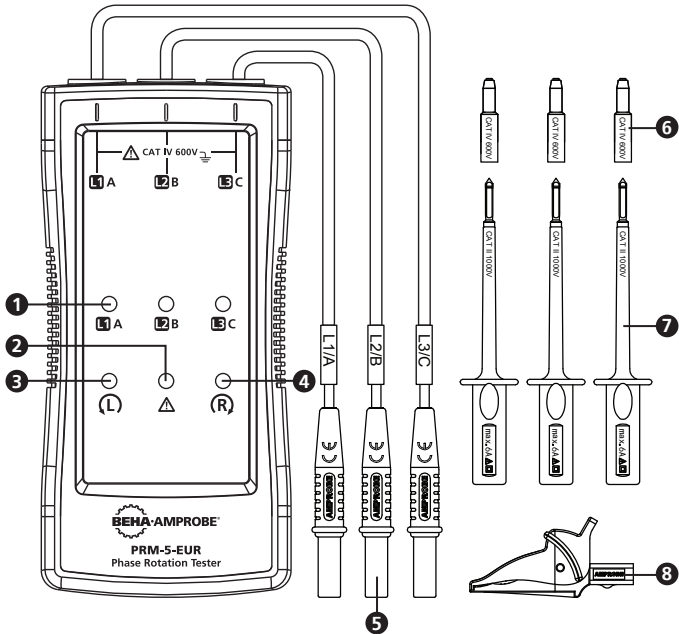
## **PRM-5-EUR Phase Sequence Tester**

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## PRM-5-EUR Phase Rotation Tester



- 1 Indicator for L1 (A), L2 (B), L3 (C)
- 2 Indicator for false input voltage
- 3 Indicator for counter-clockwise rotation
- 4 Indicator for clockwise rotation
- 5 Test lead input connectors (black / L1, red / L2, yellow / L3)
- 6 Probe tip cap (black, red, yellow)
- 7 Test probe (black, red, yellow)
- 8 Alligator clip (black)

## SYMBOLS

	Caution! Risk of electric shock.
	Caution! Refer to the explanation in this manual.
	The equipment is protected by double insulation or reinforced insulation
	Earth (Ground)
CAT IV	Measurement category IV (CAT IV) is for measurement performed at the source of the low-voltage installation. Examples are electricity meters and measurement on primary overcurrent protection device and ripple control units.
CE	Complies with European Directives.
	Conforms to relevant Australian standards
	Do not dispose of this product as unsorted municipal waste. Contact a qualified recycler.

## SAFETY INFORMATION

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The meter complies with:

IEC/EN 61557-1/-7

IEC/EN 61010-1 3rd Edition to CAT IV 600 V, pollution degree 2

IEC/EN 61010-2-030

IEC/EN 61010-031 for test leads

EMC IEC/EN 61326-1

### CENELEC Directives

The instruments conform to CENELEC Low-voltage directive 2006/95/EC and Electromagnetic compatibility directive 2004/108/EC.

### **Warning: Read Before Using**

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

- Carefully read all instructions. Read safety information before using or servicing the tester.
- 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.

- Use the product only as specified, or the protection supplied by the product can be compromised.
- Do not work alone.
- Do not use the tester or test leads if they appear damaged. Examine the tester and test leads for damaged insulation or exposed metal. Check test lead continuity. Replace damaged test leads before using the tester.
- Do not touch voltages >30 V AC RMS, 42 V AC peak, or 60 V DC. These voltages pose electrical shock hazards. Keep fingers behind the finger guards on the probes and alligator clips.
- To avoid false readings, which could lead to possible electric shock or personal injury, verify operation beforehand on a known source.
- Do not exceed the Measurement Category (CAT) rating of the lowest rated individual component of a product, probe, or accessory.
- If the tester is used in a manner not specified in the users manual, the protection provided by the equipment may be impaired.
- Measurements can be adversely affected by impedances of additional operating circuits connected in parallel or by transient currents.
- Do not use the PRM-5-EUR with any of the parts removed.
- Do not use the product around explosive gas, vapor, or in damp or wet environments.
- Disconnect the tester from energized circuits before servicing.
- Have the tester serviced only by qualified service personnel.

## **UNPACKING AND INSPECTION**

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Your shipping carton should include:

- 1 PRM-5-EUR Phase Rotation Tester
- 1 Non-detachable test leads (black, red, yellow)
- 3 Test probes (black, red, yellow)
- 1 Alligator clip (black)
- 1 Users manual
- 1 Carrying case

If any of the items are damaged or missing, return the complete package to the place of purchase for an exchange.

## USING PHASE ROTATION TESTER

### Determine the Rotary Field Direction

To determine the rotary field direction:

1. Connect the test probes/alligator clip to the other end of the test leads.
2. Connect the test probes/alligator clip to the three mains phases.
3. L1, L2 and L3 indicators shows, that voltage is present.
4. The clockwise or counter-clockwise rotary indicator showing the type of rotary field direction present.
5. If the "Warning Symbol" illuminates, either one or two of the inputs are connected to the neutral conductor or the voltage difference between the phases exceed 30% phase to phase or 65% between phase to neutral.

Note: The PRM-5-EUR is powered by the system being tested.

### **⚠ ⚠ Warning**



The rotary indicator L1, L2 and L3 light up even if the neutral conductor, N, is connected instead of L1, L2, or L3. Refer to Figure 1 for more information about what appears on the back of the PRM-5-EUR .

DISPLAY	(L)	(R)	L1 A	L2 B	L3 C	⚠
(R) CORRECT	○	●	●	●	●	○
(L) FALSE	●	○	●	●	●	○
L1 MISSING	○	○	○	●	●	●
L2 MISSING	○	○	●	○	●	●
L3 MISSING	○	○	●	●	○	●
ONE INPUT CONNECTED TO N OR PE	○	○	●	●	●	●

○ OFF ● ON

Figure 1: Phase indication table (also printed on the back of the PRM-5-EUR)

## SPECIFICATIONS

Determine Rotary Field Direction	
3 phase indication	Via LEDs
Indication of phase rotation	Via LEDs
Voltage range (Ume)	100...700 V AC phase to phase
Frequency range (fn)	16...400 Hz
Indicaton for false input voltage	difference of $> \pm 30\%$ between the phase to phase voltages ( $> \pm 65\%$ between phase to neutral voltages)
Nominal test current (In in per phase)	$< 3.5$ mA
General Specifications	
Operating time	Continuous
Operating temperature	0°C to 40°C (32°F to 104°F)
Operating altitude	Up to 2000 m
Humidity (Without condensation)	$\leq 80\%$ RH
Storage conditions	0°C to 40°C (32°F to 104°F), $\leq 80\%$ RH
Power supply	From unit under test
Dust/water resistance	IP 40
Pollution degree	2
Dimensions (H x W x D)	137 x 65 x 33 mm (5.43 x 2.56 x 1.3 in)
Weight	253 g (0.56 lb) with test leads
Product Standard	EN 61557 -1/-7
Electrical safety	EN 61010-1, EN 61557-7
Overvoltage category	CAT IV 600 V
EMC	Conforms to EN 61326-1
Agency approvals	 



## MAINTENANCE

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### **Caution**

To prevent damage to the PRM-5-EUR:

- Do not attempt to repair or service the PRM-5-EUR unless qualified to do so.
- Make sure that the relevant calibration, performance test, and service information is being used.
- Do not use abrasives or solvents. Abrasives or solvents will damage the PRM-5-EUR case.

### **Cleaning**

The only maintenance the PRM-5-EUR requires is inspection and cleaning. Periodically wipe the case with a mild solution of detergent and water. Apply sparingly with a soft cloth and allow to dry completely before using. Do not use aromatic hydrocarbons, gasoline or chlorinated solvents for cleaning.