

**FLUKE®**

**9040/9040UK**

*Phase Rotation Indicator*

**Users Manual**

PN 2438546

April 2005

© 2005 Fluke Corporation. All rights reserved. Printed in China  
All product names are trademarks of their respective companies.

## **LIMITED WARRANTY AND LIMITATION OF LIABILITY**

This Fluke product will be free from defects in material and workmanship for one year from the date of purchase. 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 Fluke's behalf. To obtain service during the warranty period, contact your nearest Fluke authorized service center to obtain return authorization information, then send the product to that 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.

Fluke Corporation  
P.O. Box 9090  
Everett, WA 98206-9090  
U.S.A.

Fluke Europe B.V.  
P.O. Box 1186  
5602 BD Eindhoven  
The Netherlands

## ***Table of Contents***

<b>Title</b>	<b>Page</b>
Introduction.....	1
Contacting Fluke .....	1
Unpacking the 9040 .....	2
Safety Information .....	3
Symbols.....	5
Elements of the 9040 .....	6
Determine the Rotary Field Direction.....	7
Maintaining the 9040.....	8
Specifications .....	9

## ***List of Tables***

<b>Table</b>	<b>Title</b>	<b>Page</b>
1.	Symbols .....	5

## ***List of Figures***

<b>Figure</b>	<b>Title</b>	<b>Page</b>
1.	The 9040/9040UK Phase Rotation Indicator.....	6

# 9040/9040UK

## ***Introduction***

The Fluke 9040 Phase Rotation Indicator (hereafter referred to, “the 9040”) is a handheld instrument designed to detect the rotary field of three-phase systems.

## ***Contacting Fluke***

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

USA: 1-888-44-FLUKE (1-888-443-5853)  
Canada: 1-800-36-FLUKE (1-800-363-5853)  
Europe: +31 402-675-200  
Japan: +81-3-3434-0181  
Singapore: +65-738-5655  
Anywhere in the world: +1-425-446-5500  
USA Service: 1-888-99-FLUKE (1-888-993-5853)

Or, visit Fluke's Web site at [www.fluke.com](http://www.fluke.com).

To register your product, visit [register.fluke.com](http://register.fluke.com)

### ***Unpacking the 9040***

The 9040 ships with the following items:

- 3 pieces self-retaining test probes (black)
- Alligator clip
- Users Manual

If an item is damaged or missing, contact the place of purchase immediately.

## **Safety Information**

A **⚠ Caution** identifies conditions and actions that may damage the 9040.

A **⚠⚠ Warning** identifies conditions and actions that pose hazard(s) to the user.

### **⚠⚠ Read First: Safety Information**

**To avoid possible electric shock or fire, do the following:**

- **Read the following safety information carefully before using or servicing the instrument.**
- **Adhere to local and national safety codes.**
- **Individual protective equipment must be used to prevent shock and injury.**
- **Use of instrument in a manner not specified by the manufacturer may impair safety features/protection provided by the equipment.**
- **Avoid working alone.**
- **Inspect the test leads for damaged insulation or exposed metal. Check test lead continuity. Damaged leads must be replaced. Do not use the 9040 if it looks damaged.**
- **Be careful when working above 30 V ac rms, 42 V ac peak and 60 V dc. Such voltages pose a shock hazard.**








- **When using the probes, keep fingers away from probe contacts. Keep fingers behind the finger guards on the probes.**
- **Measurements can be adversely affected by impedances of additional operating circuits connected in parallel or by transient currents.**
- **Verify operation prior to measuring hazardous voltages (voltages above 30 V ac rms, 42 V ac peak and 60 V dc).**
- **Do not use the 9040 with any of the parts removed.**
- **Do not use the 9040 around explosive gas, vapor, or dust.**
- **Do not use the 9040 in a wet environment.**



## **Symbols**

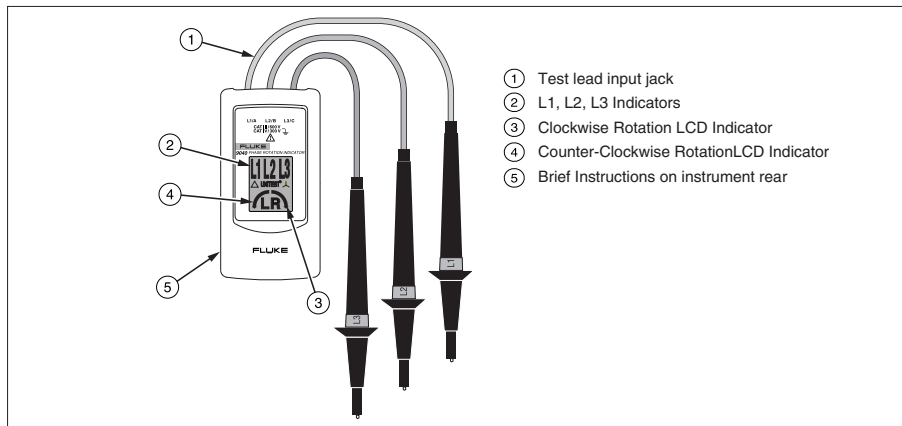
The following symbols appear on the 9040 or in this manual.

**Table 1. Symbols**

	Risk of electric shock		Earth
	Risk of Danger. Important information. See manual.		AC or DC
	Hazardous voltage.		Conforms to EU directives.
	Equipment protected by double or reinforced Insulation	CAT III	OVERVOLTAGE (Installation) CATEGORY III, Pollution Degree 2 per IEC1010-1 refers to the level of Impulse Withstand Voltage protection provided. Equipment of OVERVOLTAGE CATEGORY III is equipment in fixed installations (e.g., electricity meter and primary over-current protection equipment).

## **Elements of the 9040**

Indicators, buttons, and jacks are shown in Figure 1.



bbx02f.eps

**Figure 1. The 9040/9040UK Phase Rotation Indicator**

### ***Determine the Rotary Field Direction***

To determine the rotary field direction:

1. Connect the test probes to the end of the test leads.
2. Connect the test probes to the three mains phases.
3. The green ON indicator shows that the instrument is ready for testing.
4. Either the clockwise or counter-clockwise rotary indicator illuminates showing the type of rotary field direction present.

#### **Warning**

**The rotary indicator lights even if the neutral conductor, N, is connected instead of L1, L2, or L3. Refer to the back of the 9040 for more information.**

#### *Note*

*The 9040 is powered from the installation under test.*

## **Maintaining the 9040**

### **⚠ Caution**

**To avoid damaging the 9040:**

- **Do not attempt to repair or service the 9040 unless qualified to do so.**
- **Make sure that the relevant calibration, performance test, and service information is being used.**

The only maintenance the 9040 requires is cleaning. Periodically wipe the case with a damp cloth and mild detergent. Clean only with soap and water and remove any residue afterwards.

### **⚠ Caution**

**To avoid damaging the 9040:**

- **Do not use abrasives or solvents. Abrasives or solvents will damage the 9040 case.**
- **Prior to cleaning, remove test leads from the 9040.**

***Specifications***

***Environmental***

**Operating Temperature**

0 °C to +40 °C

**Pollution Degree**

2

**Type of Protection**

IP 40

***Mechanical Specifications***

**Size**

124 x 61 x 27 mm (4.9 x 2.4 x 1.1 in)

**Weight**

200 g (0.44 lbs)

***Safety Specifications***

**Electrical Safety**

IEC 61010/EN 61010,

IEC 61557-7/EN 61557-7

**Maximum Operating Voltage (U<sub>me</sub>)**

690 V

**Protection Levels**

CAT III, 600 V to ground

***Electrical Specifications***

**Power Supply**

From unit under test

***Determine Rotary Field Direction***

**Nominal Voltage**

40 to 690 VAC

**Frequency Range (f<sub>n</sub>)**

15 to 400 Hz

**Current Pickup**

1 mA

**Nominal Test Current (in per phase)**

1 mA

