

FLUKE®

9040/9040UK

Phase Rotation Indicator

Users Manual

**Test Equipment
Depot**
1-800-517-8431

99 Washington Street
Melrose, MA 02176
Phone 781-665-1400
Toll Free 1-800-517-8431



Visit us at www.TestEquipmentDepot.com

Table of Contents

Title	Page
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

Table	Title	Page
1.	Symbols	5

List of Figures

Figure	Title	Page
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.

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

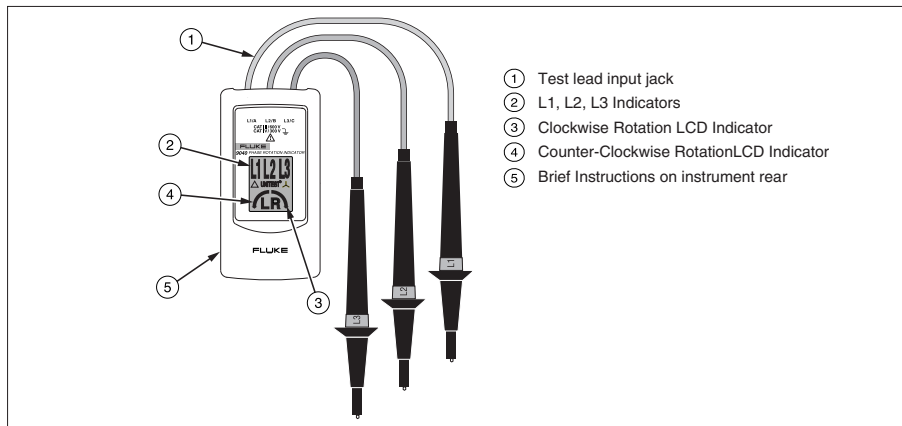
The following symbols appear on the 9040 or in this manual.

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 (Ume)

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_n)

15 to 400 Hz

Current Pickup

1 mA

Nominal Test Current (in per phase)

1 mA



[Back to the Fluke 9040 Product Info Page](#)



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