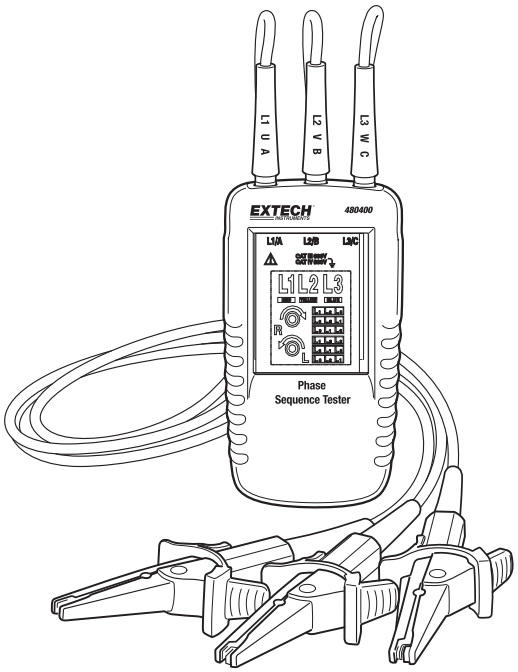
User's Guide

EXTECH INSTRUMENTS

Phase Sequence Tester

Model 480400



Introduction

Congratulations on your purchase of the Extech Model 408400 Phase Sequence Tester. This handheld instrument detects the phase sequence of three-phase systems. Color-coded test leads are provided for connecting to the three mains phases of the system under test. This meter is shipped fully tested and calibrated and, with proper use, will provide years of reliable service.

Safety

International Safety Symbols

 Caution ! Refer to the explanation in this Manual

 Caution ! Risk of electric shock

 Earth (Ground)

 Double Insulation or Reinforced insulation

 AC, Alternating Current or Voltage

 DC, Direct Current or Voltage

Safety Procedures

To avoid possible electric shock or fire, observe the following:

- Read the following 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 phase Rotation indicator if it appears damaged.
- Use care when working above 30V ac rms, 42V ac peak and 60V 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 30V ac rms, 42V ac peak and 60V dc).
- Do not use the phase Rotation indicator with any of the parts removed.
- Do not use the phase Rotation indicator around explosive gas, vapor, or dust.
- Do not use the meter in a wet environment.

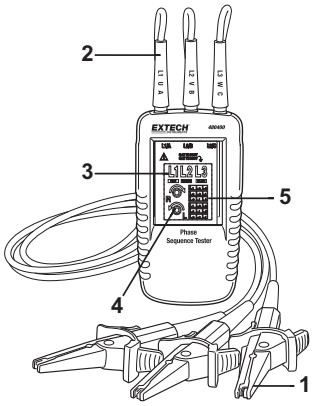
Warranty

EXTECH INSTRUMENTS CORPORATION *warrants this instrument to be free of defects in parts and workmanship for* ***one year*** *from date of shipment (a six month limited warranty applies to sensors and cables). If it should become necessary to return the instrument for service during or beyond the warranty period, contact the Customer Service Department at (781) 890-7440 ext. 210 for authorization or visit our website www.extech.com for contact information. A Return Authorization (RA) number must be issued before any product is returned to Extech. The sender is responsible for shipping charges, freight, insurance and proper packaging to prevent damage in transit. This warranty does not apply to defects resulting from action of the user such as misuse, improper wiring, operation outside of specification, improper maintenance or repair, or unauthorized modification. Extech specifically disclaims any implied warranties or merchantability or fitness for a specific purpose and will not be liable for any direct, indirect, incidental or consequential damages. Extech's total liability is limited to repair or replacement of the product. The warranty set forth above is inclusive and no other warranty, whether written or oral, is expressed or implied.*

Description

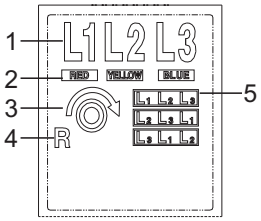
Meter Description

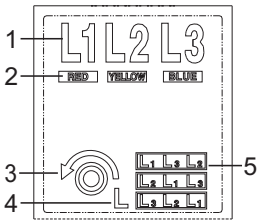
1. Test Lead alligator clips
2. Test lead input jacks
3. L1, L2, L3 display icons
4. Clockwise Rotation LCD Indicator R (right) and L (left) icons
5. Sequence grid



Display Description

1. Line designators (L1, L2, and L3)
2. Color codes for test leads
3. Clockwise / Counter-Clockwise indicator
4. LEFT (L) or RIGHT (R) rotation direction
5. Phase Sequence grid





Operation

Determine Phase Rotation Direction

1. Connect the supplied color-coded test leads to the meter's test lead input jacks at the top of the meter.
2. Connect the test probes to the three mains phases for the system under test.
3. L1, L2, and L3 indicators will illuminate one at a time on the meter's LCD display as each phase is connected.
4. The clockwise and counter-clockwise arrows with the left/right 'L' or 'R' icons display the phase rotation direction of the device under test.
5. The sequence grid simply shows the three line sequences for Clockwise 'R' and the three line sequences for Counter-Clockwise 'L'.

Note: The rotational arrow indicators illuminate even if one of the test probes is connected to a neutral or ground conductor instead of one of the mains phases.

Specifications

Nominal Voltage	40 to 690 VAC
Frequency Range (fn)	15 to 400HZ
Current pickup	1 mA
Nominal Test current (in per phase)	1 mA
Maximum Operating Voltage (Ume)	690 V
Operating Temperature	32 to 104°F (0 to 40°C)
Type of protection	IP 40
Dimensions	(H x W x D): 5.1 x 2.7 x 1.3" (130 x 69 x 32mm)
Weight	4.6 oz. (130g)
Approvals	CE (EU directives)
Safety	For indoor use and in accordance with the requirements for double insulation to IEC1010-1 (1995): EN61010-1 (1995) Overvoltage Category III 600V and Category IV 300V, Pollution Degree 2.

Calibration and Repair Services

Extech offers repair and calibration services for the products we sell. Extech also provides NIST certification for most products. Call the Customer Care Department for information on calibration services available for this product. Extech recommends that annual calibrations be performed to verify meter performance and accuracy.

Support line (781) 890-7440

Technical Support: Extension 200; E-mail: support@extech.com

Repair & Returns: Extension 210; E-mail: repair@extech.com

Product specifications subject to change without notice

For the latest version of this User Guide, Software updates, and other up-to-the-minute product information, visit our website: www.extech.com

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