



Model 4156 PR

Phase and Motor Rotation Tester



Operation

• Motor Rotation Test

Set the rotary switch to Motor position. Use the yellow terminals on the left of the meter. Connect the test leads to the motor in any order. Operate the ZERO adjustment to set the meter pointer at the center of the scale. Manually turn the motor shaft slightly in the desired operating direction (clockwise or counter-clockwise). Observe the meter. The meter will deflect (kick) in one direction then in the opposite direction. The first direction is significant. Ignore the second or opposite direction. The first direction is the correct direction for users to identify the motor rotation.

• Phase Rotation Test

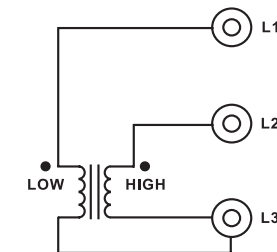
Set the rotary switch to Phase Rotation position. Use the red terminals on the right of the meter. Connect the test leads to the three terminals of the line system in any order. Observe the meter. If the pointer deflects to the right, that means the Rotation is clockwise. The phase sequence is R, S and T in order of the power source terminals where the test leads are connected. If the pointer deflects to the left, that means the Rotation is counter-clockwise.

• Transformer Polarity-Single Phase

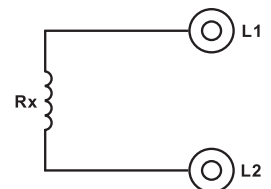
Set the rotary switch to OFF position. Connect test leads to the yellow terminals on the left of the panel. Connect two adjacent high and low voltage transformer terminals using a suitable jumper. Connect the L3 terminal to one of the terminals where the jumper connected. Connect the L2 terminal to the remaining high voltage terminal. Connect the L1 terminal to the remaining low voltage terminal. Set the rotary switch to TRANS position. Press the Momentary Test push button and release. Observe the meter on release. Deflection of the meter indicates transformer polarity. Read either Subtractive to the right, or Additive to the left. If sensitivity is not adequate on low ratio transformers, switch to MOTOR position without changing test leads, operate Zero ADJ. knob to set pointer at center, then test As above.

• Continuity Check

Set the rotary switch to MOTOR (CONT.) Position. Use the L1 and the L2 terminal for continuity checking. At first, connect the two test leads together. Then operate Zero ADJ. knob until the meter reads zero on the scale plate. Connect the two test leads to the resistance we want to measure. Then read the value on the meter.



Transformer Polarity Test



Continuity Check

The 4156 PR is used to identify the leads of a disconnected motor so that when the motor is in true phase sequence, it will run in the desired direction.

The identification process is necessary before a motor can be connected. The tester is also used to identify true phase sequence of energized AC power lines up to 600 AC volts. The other functions of the 4156 PR include the determination of transformer polarity and testing of circuit continuity.

The three red terminals on the right side (R,S,T) are used to be connected to energized AC power systems up to 600 volts. The other three yellow terminals on the left side (L1, L2, L3) are for connection to de-energized equipment. Do not connect to Live Voltage!

The Momentary Test push-button is used to identify transformer polarity. Deflection of the rotation pointer indicates transformer polarity. Read either Subtractive on the right, or Additive to the left. The Zero Adjustment knob is used to check continuity.

Specifications

Measuring ranges	0~200kΩ
Test leads AL-34 length	50cm
Dimensions	250(L) × 190(W) × 110(D)mm
Weight (battery included)	Approx. 1280g
Power source	1.5V (AA) × 2
Safety standard	EN 61010-1 EN 61326-1

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