

MLR10

Megger Leakage Reactance Tester



- Measures the short circuit impedance of transformers
- Useful in detecting and diagnosing winding deformation
- Capable of performing measurements in single- or three-phase transformers
- Optional capacitor bank testing (without the need to disconnect terminals)

DESCRIPTION

The Megger Leakage Reactance Tester MLR10 is used to measure leakage reactance and other associated parameters in high voltage power transformers. Leakage reactance, or more generally leakage impedance, is measured at the transformer primary winding while the secondary winding is shorted. Ideally, a transformer's primary and secondary windings should be 100% coupled by magnetic flux, but in real transformers there is always a small amount of leakage flux. Leakage inductance is a result of this leakage flux.

The amount of leakage flux a transformer has is partially dependent on the configuration of the windings. Since leakage reactance depends on leakage flux, measuring a transformer's leakage reactance can give an indication of the condition of the windings. Changes in the leakage flux, and therefore the leakage reactance, are generally caused by winding mechanical deformation. The mechanical deformation can occur during shipping, installation, or a high current event while the transformer is in operation. Such changes can be detected by comparing before and after leakage reactance measurement values.



Test Parameters

Automatic display of the following parameters:

- Test current
- Test voltage
- Watts
- Power factor (tan delta)
- Inductance
- Resistance
- Impedance
- Impedance (in %)
- Reactance
- Reactance (in %)
- Delta X (in %)
- Delta Z (in %)
- Capacitance (via optional capacitor test probe)



Shown above are include accessories: 50 ft (15 m) output leads, 15 ft (4.6 m) ground lead and USB cable.

SPECIFICATIONS

AC Input

MLR10: 120 V ±10% 60 Hz, 10 A breaker
 MLR10-47: 220 V ±10% 50 Hz, 10 A breaker
 240 V ±10% 60 Hz, 10 A breaker

Inductance

250 µH to 2 H (for <10% power factor at 50 or 60 Hz)

Accuracy

±1% Rdg ±10 µH

Resistance Measurements

0.1 to 700 ohms (for > 90% Power Factor)

Accuracy

±1% ±10 m-ohms

Impedance Measurements

0.1 to 700 ohms

VA at V AC Output Voltage

with Input of 220 V (50 Hz):

0 to 256 V AC, 2.2 kVA

with Input of 240 V (60 Hz):

0 to 280 V AC, 2.4 kVA

with Input of 120 V (60 Hz):

0 to 280 V AC, 1.2 kVA

Current Rating

10 A continuous, 20 A for 4 minutes

Operating Temperature

32° to 140° F (0 to 60° C)

Dimensions

16 in. x 8 in. x 13 in. (406 mm x 203 mm x 330 mm)

Weight

31 lbs (14.1 kg)

OPTIONAL ACCESSORY

Capacitance Test Probe

With the use of the MLR10's optional capacitance test probe, electrical measurements can be isolated to individual legs of a complex capacitive bank network. The MLR10 ac voltage source is applied across the appropriate capacitor section (containing the capacitance of interest) and the optional capacitance test probe is used to isolate the measurements specific to the capacitor of interest.

Specifications of Optional Accessory

Capacitance Measurements Range

10 µF to 800 µF

Accuracy

1% of reading or ±10 milliohms

Length

50 ft (15 m)



The optional capacitance test probe C/N 37553 gives the user the capability of measuring individual legs of capacitive banks

ORDERING INFORMATION	
Item (Qty)	Cat. No.
Leakage Reactance Tester, 120 V AC, 60 Hz	MLR10
Leakage Reactance Tester, 240 V AC, 60 Hz, 220 V AC, 50 Hz	MLR10-47
Included Accessories	
Output leads, 50 ft (15 m)	2000-876
Ground lead, 15 ft (4.6 m)	4702-7
Canvas carrying bag for cables	18313
USB cable	90000-730
MLR10 Software	P1001-191
User guide included on software CD	
European 3-conductor power supply cord supplied with 120 V (MLR10) and 240 V (MLR10-47) units	17032-1
North American 3-conductor detachable power supply cord supplied with 120 V unit (MLR10) ONLY	17032-7
Continental European power supply cord supplied with 240 V unit (MLR10-47) ONLY	17032-13
User guide	AVTMMMLR10
Optional Accessory	
Capacitance test probe with 50 ft (15 m) lead	37553

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