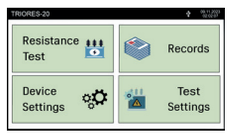
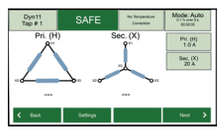
HIGHTEST TECHNOLOGY CATALOGUE

TRIORES-20 SERIES 20A 3ø WINDING RESISTANCE TESTER







TRIORES-20 Series of instruments are designed to measure current transformers, voltage transformers and power transformer windings. Applying up to 20 Amps of direct current allows TRIORES-20 Series to measure the resistance of the transformer windings quickly and accurately.

The TRIORES-20 instruments allow the operator to measure the resistance of both three-phase and single-phase transformer windings. It allows winding measurements to be performed without the need to disconnect and / or re-connect the cables from the transformer. Operators simply need to make the connection once to measure all three phases of a transformer.

Starting at 0.1 µΩ, the TRIORES-20 series can measure up to 100,000 Ω of resistance. It can control OLTC. The instrument tests resistance based on Intelligent Decision Criteria (IDC) where the device analyse the results for a period of time and if the measurement is stable under a specified value, the device decides to STOP the test and produce results. Manual operation is also available on TRIORES-20 where the operator can choose when to STOP the test depending on their preference.

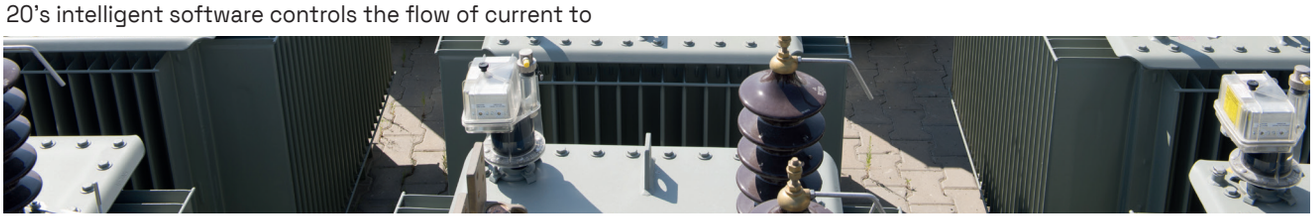
The TRIORES-20 series can demagnetise the transformer to mitigate the build up of remanence or residual magnetism due to the testing. The instrument also has a temperature measurement input which when connected to an optional temp sensor allows the TRIORES-20 series to perform temperature correction or adjustments to its measurements. In the case of a failure in the current circuit the TRIORES-20's intelligent software controls the flow of current to mitigate damage and provide added safety for users. Device discharges through its voltage channels in case High Voltage is present in the transformer under test.

Heat run test/Temperature Rise Test

Heat run test or temperature rise test reproduces conditions of continuous rated load and the temperature rise occurring during the load. TRIORES-20 is capable of measuring the winding resistance of transformers and the full load resistance Ro during heat run test by applying up to 20A DC.

A 7-inch colour touch display allows TRIORES-20 series to show all measurement results on a single screen. Field test results may be stored and recorded in the TRIORES-20's internal memory, (up to 100 Test Records) or many more on an external USB flash. Alternatively the operator may choose to employ the Data Management Platform (DMP Software) which allows PC based control of TRIORES-20 via a USB cable or the optional Bluetooth interface. This software platform allows the operators to analyze, edit and store measured results on a PC or laptop.

If an immediate hard copy of the results is required the TRIORES-20 also allows for this via an embedded 2.28-inch printer. An internal battery option is also offered for operators who feel that they may be in situations where a mains supply source isn't always available . Multi-language capability and a user-friendly operating menu make it easy to control.



DEVICE HIGHLIGHTS

Single-phase & three-phase measurement

With TRIORES's three-phase cable configuration, users can measure winding resistance of three-phase transformers as well as single-phase transformers.

Optional Rechargeable Li-Ion Smart Battery

TRIORES comes with a 14.4V Li-Ion smart battery option which enables you to make tests while on field. WINRES works on both main power and consuming battery power.

Heat run test/ Temperature Rise Test

TRIORES-20 is capable of measuring the full load resistance 'Ro' during heat run test by applying up to 20A DC.

2.28-inch Built-in Thermal printer

TRIORES's built-in thermal printer let you print the results immediately during field test.

FEATURES

- Fully Automatic Three-phase and single-phase resistance measurement with three-phase cable configuration
- Measurement range, 0.1 μΩ to 100,000 Ω
- 0.001 A to 20 A DC adjustable current output
- High accuracy (0.1%)
- Test Voltage 50 V
- Demagnetisation feature
- On Load Tap Changer (OLTC) Control
- Heat-run test
- 7-inch TFT touch display
- Built-in printer (2.28-inch)
- Battery & Bluetooth Options
- PC control / analysis via USB cable & DMP Software



TECHNICAL SPECIFICATIONS

Measurement Parameters	Three-phase and single-phase winding resistance measurement
Test Voltage	50 V
Current output	From 0.001 A to 20 A DC (User-selectable)
Resistance Measurement	From 0.1 μΩ to 100,000 Ω
Accuracy	0.1%
Resolution	5 digits
Demagnetisation	Yes
Power Supply	100-240 V 47/63 Hz
Battery	14.4 V 6.9 Ah battery (Optional) (Models: TRIORES-20B, TRIORES-20B BLUE)
Memory	Up to 100 records (include up to 25 tap results) Unlimited Storage using an external USB
Printer	2.28-inch built-in printer
Communication	USB 2.0/1.1 Standard-A, USB 2.0/1.1 Standard-B, Optional Bluetooth(Models: TRIORES-20 BLUE, TRIORES-20B BLUE)
PC Software	DMP Software
Display	7-inch colour touch display
Dimensions	(16.9 × 12.9 × 9.3)" (429 x 328 x 236) mm
Weight	9 kg (models with battery)
Working Temperature	-10 °C to + 60 °C
Storage Temperature	-30 °C to + 70 °C
Humidity	95% RH Non-condensing
Protection Class	IP67 (case closed)
Included in the package	Power Cable, Ground Cable , 2x 5m H&X Measurement Cable Set, 2x 10m H&X Extension Cable Set, 5m Tap Changer Cable Set, USB Cable, Jumper Cable, Printer Paper (x2), USB flash drive, Instruction Manual (Soft Copy), DMP Software, Cable Bag
Options	Hard carry case, Battery, Bluetooth (factory install), Temperature Sensor

*Specifications are valid at/under 25 °C temperature. *Contents subject to change without notice.*

ORDERING INFORMATION

TRIORES-20	20A 3Ø Transformer Winding Resistance Tester with Built-in Printer
TRIORES-20 BLUE	20A 3Ø Transformer Winding Resistance Tester with Built-in Printer & Bluetooth
TRIORES-20B	20A 3Ø Transformer Winding Resistance Tester with Built-in Printer & Battery
TRIORES-20B BLUE	20A 3Ø Transformer Winding Resistance Tester with Built-in Printer, Battery & Bluetooth