

# TRAN-203 SERIES 20A, 250V 3-PHASE TRANSFORMER ANALYSER



The TRAN-203 series of instruments are designed to measure the turns ratio and winding resistance of three-phase and single-phase transformers. With the help of its user-friendly interface, the TRAN provide a fast and accurate assessment of key transformer parameters.

## TURNS RATIO MEASUREMENT

The TRAN-203 employs elements of performance tests specified in the ANSI/IEEE C57.12.90 standard. With market leading accuracy the TRAN-203 has a very wide ratio measurement capability with a precision of 0.08 %. Other features include the measurement of core excitation current, phase angle, polarity, ratio error and magnetic balance. Even though TRAN-203 has a three-phase cable configuration, users can also perform single-phase transformer tests. TRAN-203 can detect vector groups automatically. The instrument has a wide operating range for use on equipment such as high excitation current transformers and high-power potential transformers in substations. The instrument can generate 1V, 4V, 10V, 40V, 100V, 250V AC test voltages.

## WINDING RESISTANCE MEASUREMENT

Applying up to 20 Amps of direct current allows the TRAN -203 series to measure the resistance of three phase transformer's primary and secondary windings automatically. TRAN-203 instrument/s are designed to measure the resistance of the primary and secondary transformer windings without the need to disconnect and reconnect the test cables.

Starting at 0.1  $\mu\Omega$ , the TRAN-203 series can measure up to 100,000  $\Omega$  of resistance. The instrument can control OLTC. The TRAN-203 series can demagnetise the transformer to mitigate the build-up of remanence or residual magnetism due to the testing. Device discharges through its voltage channels in case High Voltage is present in the transformer under test.

The instrument also has a temperature measurement input which when connected to an optional temp sensor allows the TRAN-203 series to perform temperature correction or adjustments to its measurements. In the case of a failure in the current circuit the TRAN instrument/s intelligent software controls the flow of current to mitigate damage and provide added safety for users.

## 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. TRAN-203 is capable of measuring the winding resistance of transformers and the full load resistance  $R_o$  during heat run test by applying up to 20A DC.

An internal battery option is also offered for operators who feel that they may be in situations where a main supply source isn't always available . Multi-language capability and a user-friendly operating menu make it easy to control.



## DEVICE HIGHLIGHTS



### Turns Ratio & Winding Resistance Tests

TRAN has a 3-phase cable configuration cable of testing turns ratio and winding resistance of both three-phase and single-phase transformers.



### Optional Rechargeable Li-Ion Smart Battery

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



### Heat run test/ Temperature Rise Test

TRAN-203 is capable of measuring the full load resistance ' $R_o$ ' during heat run test by applying up to 20A DC.



### 2.28-inch Built-in Thermal printer

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

## TECHNICAL SPECIFICATIONS

Measurement Parameters	3-Phase Turns Ratio Measurement, Excitation Current, Phase Angle, Polarity, Ratio Error (%), Vector group detection, Magnetic Balance; 3-Phase Winding Resistance Measurement			
TURNS RATIO MEASUREMENT FEATURES				
Ratio Measurement Modes	CT Mode, PT Mode (Single-Phase and Three-Phase)			
Measurement Method	ANSI/IEEE C57.12			
Test Voltages	CT Mode: 1 V and 4 V ; PT Mode: 1, 4, 10, 40, 100 & 250 V			
Ratio Range	0.8 – 50,000			
Phase Angle Measurement	0-360 Degree, ±0.2 degree			
Excitation Current	Up to 2 A			
Excitation Current Accuracy	±0.1 mA			
WINDING RESISTANCE MEASUREMENT FEATURES				
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	Current Range	Measuring Range	Accuracy	Resolution
	1A-20A	0.00μΩ to 50Ω	0.1% rdg ± 1μΩ	0.1μΩ
	100mA- 1A	0.00mΩ to 500Ω	0.1% rdg ± 10μΩ	1μΩ
	10mA-100mA	0.00mΩ to 5kΩ	0.1% rdg ± 100μΩ	10μΩ
1 mA - 10 mA	5kΩ to 100kΩ	0.1% rdg ± 50Ω	10Ω	
Resolution	5 digits			
Demagnetisation	Yes			
GENERAL FEATURES				
Power Supply	100-240 V, 47/63 Hz,			
Battery	14.4 V 6.9 Ah battery (Models: TRAN-203B, TRAN-203B BLUE)			
Internal Memory	Yes			
Printer	2.28-inch Built-in Printer			
Communication	USB 2.0/1.1 Standard-A, USB 2.0/1.1 Standard-B, Bluetooth (Models: TRAN- 203BLUE & TRAN- 203B BLUE)			
PC Software	Data Management Platform Software			
Display	7-inch colour touch display			
Dimensions	(16.9 × 12.9 × 9.3)" (429 x 328 x 236) mm			
Weight	9.5 kg			
Temperature	Working: -10 °C to +60 °C; Storage: -30 °C to +70 °C			
Humidity	95% RH Non-condensing			
Protection Class	IP67 (case lid 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, Jumper Cable, USB Cable, Printer Paper (x2), USB flash drive, Instruction Manual (Soft Copy), DMP Software, Cable Bag			

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

## ORDERING INFORMATION

TRAN-203		20A, 250V 3Ø Transformer Analyser with Built-in Printer
TRAN-203 BLUE	 	20A, 250V 3Ø Transformer Analyser with Built-in Printer & Bluetooth
TRAN-203B	 	20A , 250V 3Ø Transformer Analyser with Built-in Printer & Battery
TRAN-203B BLUE	  	20A, 250V 3Ø Transformer Analyser with Built-in Printer, Battery & Bluetooth