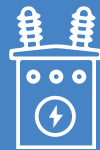




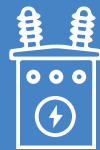
GENERAL CATALOGUE 2022

HIGHTEST TECHNOLOGY LIMITED

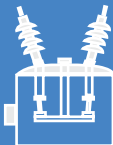
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Nunawading, Victoria 3131
Australia
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Turns Ratio Meter



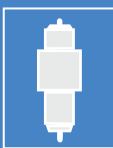
Winding Resistance Tester



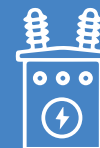
Contact Resistance Tester



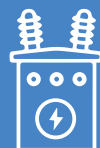
Circuit Breaker Analyser



Vacuum Bottle Tester



Transformer Analyser



Multifunctional Substation Test Device



HIGHTEST Technology Ltd. is a leading manufacturing company based in the UK that produces high precision test equipment. Our focus is on the development, manufacture, and marketing of Transformer test and measurement equipment.

We have been designing and manufacturing high-end test equipment for many years and we supply our instruments worldwide to Transformer manufacturers, Electrical utilities, general contractors and service companies. Our test equipment is designed and produced according to the most widely adopted international standards and our experienced team provides excellent after-sales support and technical assistance as we endeavour to uphold customer satisfaction at all times.



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TURA-01 SERIES Single-Phase Transformer Turns Ratio Tester with Built-in Battery & Printer

TURA-01 is designed to accurately measure the turns ratio of single-phase and three-phase transformers.

TURA-01 performs fast and accurate turns ratio measurements on current, voltage and power transformers via its user-friendly interface.

With market leading accuracy the TURA-01 has a very wide ratio measurement capability, (0.8 to 33,000) at a precision of 0.08 %.

Other features available on TURA-01 include the measure of core excitation current, phase angle, polarity, and ratio error.

TURA-01 instrument has a single-phase cable configuration, although users may still perform three-phase transformer tests with an optionally accessorized adaptor.

The instrument also contains a helpful list of connection diagrams for the various transformer configurations. The operator simply selects the one they need to be displayed.

The TURA-01 instrument has a wide operating range for use on equipment such as high excitation current transformers to high power potential transformers in substations. The instrument can generate 1V, 4V, 10V, 40 V and 100 V AC test voltages.

The 4.3-inch colour touch screen is large enough to display all parameters requiring entry. It is also large enough to display all measurement results on a single screen.

USB, Bluetooth (Option), and Flash Memory feature allow TURA-01 to control, record and store up to 100 test records.

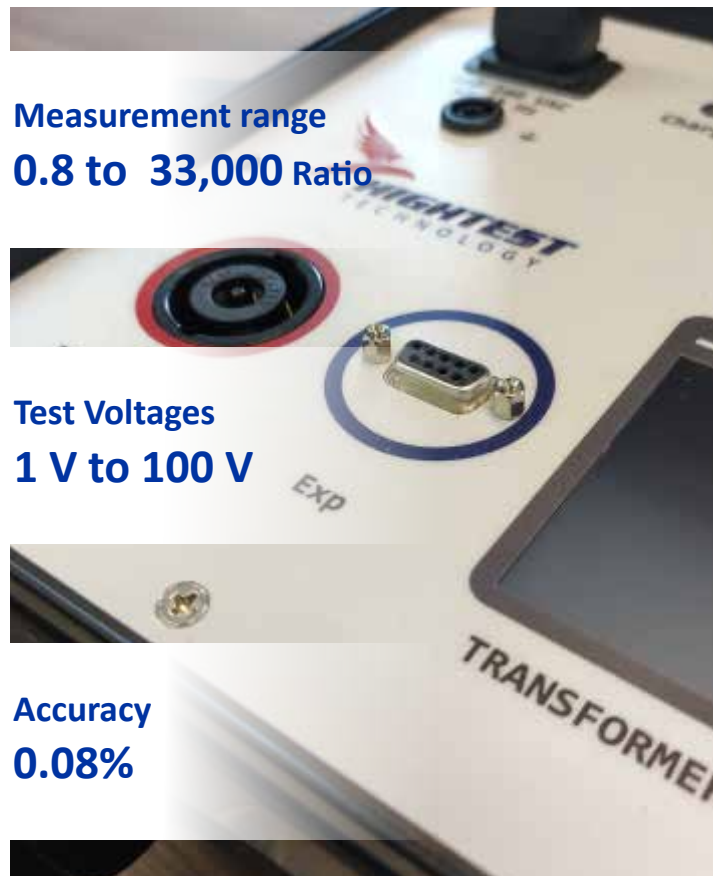
With the HighTest Data Management Platform or a.k.a. (DMP Software), users may control the TURA-01 instrument and analyse the measured results on a PC.

If an immediate hard copy of the results is required the TURA-01 also allows for this via an embedded 2.25-inch printer.

Multi-language capability and user-friendly operation menu make it easy to control TURA-01, even by less trained staff.

An optional TPA-03, Three-Phase Adaptor, allows three-phase connections and testing of all phases simultaneously.

TURA-01 is a light, compact and rugged device with an IP protection class of IP67, (case closed).



Measurement range
0.8 to 33,000 Ratio

Test Voltages
1 V to 100 V

Accuracy
0.08%



Features

- Turns Ratio Measurement (Single-phase and three-phase measurement)
- Ranges from 0.8 to 33,000 Ratio Measurement
- High Accuracy (0.08 %)
- 1V, 4V, 10V, 40 V and 100 V AC Test Voltages
- Ratio Error Measurement
- Excitation current, phase angle, polarity measurement
- Magnetic Balance (Requires optional TPA-03)
- Built-in Battery & Printer
- Internal memory, USB Flash Drive
- PC control via USB cable
- Optional Bluetooth control and communication
- 4.3-inch colour touch display
- Expansion feature with optional accessory TPA-03 (Three-Phase Adaptor)

Technical Specifications

Measurement Parameters	Turns Ratio Measurement, Excitation Current, Phase Angle, Polarity, Ratio Error (%), Magnetic Balance (Required TPA-03)		
Ratio Measurement Modes	CT Mode, PT Mode (Single-Phase and Three-Phase)		
Test Voltages	CT Mode: 1 V and 4 V ; PT Mode: 1, 4, 10, 40 & 100 V		
Ratio Range	0.8 – 33,000		
Accuracy	Mode	Ratio	Accuracy
	CT Mode (1V -4 V)	0.8-399	0.08 %
		400-4000	0.1 %
	PT Mode(10 V- 100 V)	0.8-5000	0.08 %
5001-12000		0.15 %	
	12001-33000	0.5 %	
Phase Angle Measurement	0-360 degrees, ± 0.2 degrees (± 1 digit)		
Excitation Current	2 A, 2 % of reading (± 1 mA)		
Power Supply	100-240V AC, 47/63 Hz		
Built-in Battery	Yes, 14.4 V 3.45 Ah		
Memory	Up to 100 records (includes up to 25 tap results)		
Printer	2.25-inch built-in printer		
Communication	USB 2.0/1.1 Standard-A, USB 2.0/1.1 Standard-B, Bluetooth (Model: TURA-01 BLUE)		
PC Software	DMP Software		
Display	4.3-inch colour touch display		
Dimensions	12.5" x 10.1" x 6.0" (318 mm x 257 mm x 152 mm)		
Weight	3.8 kg		
Temperature	Working: -10 °C to +60 °C ; Storage: -30 °C to +70 °C		
Humidity	95% RH Non-condensing		
Protection Class	IP67 (case closed)		
Included in the package	TURA-01, Power Cable, Ground Cable, 5 m Test Cable Set, USB Cable, Printer Paper (x2), USB flash drive, Instruction Manual (Soft Copy), DMP Software, Soft Carrying Case		
Options	Hard Carry Case, TPA-03 Three-Phase Adapter, Bluetooth (factory install option)		

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

Ordering Information

TURA-01



Single-Phase Transformer Turns Ratio Tester with Built-in Battery & Printer

TURA-01 BLUE



Single-Phase Transformer Turns Ratio Tester with Built-in Battery, Bluetooth & Printer



Ratio Measurement
0.8 to 50,000

Test Voltages
1 V to 250 V

High Accuracy
0.08%

TURA-03 SERIES **3 Φ Transformer Turns Ratio Tester** **with Built-in Printer**

TURA-03 is designed to accurately measure the turns ratio of single-phase and three-phase transformers.

TURA-03 performs fast and accurate turns ratio measurements on current, voltage and power transformers via its user-friendly interface.

With market leading accuracy the TURA-03 has a very wide ratio measurement capability, (0.8 to 50,000) at a precision of 0.08 %.

Other features available on TURA-03 include the measure of core excitation current, phase angle, polarity, ratio error and magnetic balance.

TURA-03 can detect vector groups automatically. The instrument has a wide operating range for use on equipment such as high excitation value current transformers and high power potential transformers in substations. The instrument can generate 1V, 4V, 10V, 40V, 100V and 250V AC test voltages.

A 7-inch TFT touch display allows TURA-03 to show all measurement results on a single screen. USB, Bluetooth (Option), and Flash Memory features allow TURA-03 to control, record and store measurement results, (up to 100 Test Records).

Using the HighTest Data Management Platform or a.k.a. (DMP Software), users can control TURA-03 and analyse measured results and records.

If an immediate hard copy of the results is required the TURA-03 also allows for this via an embedded 2.28-inch printer.

Multi-language capability and user-friendly menus make it easy to control the instrument, even by less trained staff. TURA-03 can also control the tap changer, (i.e. raise and lower) via its tap changer outputs.

TURA-03 is a light, compact and rugged device with an IP protection class of IP67, (case closed).

In addition to ratio tests, TURA-03 can also be used to perform Magnetic Balance Test.



Built-in Printer



Features

- Turns Ratio Measurement (Single-phase and three-phase measurement)
- Ranges from 0.8 to 50,000 ratio measurement
- High Accuracy (0.08 %)
- 1V, 4V, 10V, 40V, 100V and 250V AC test voltages
- 1V, 4V, 8V, 10V, 40V, 100V and 250V AC test voltages
- Ratio Error Measurement
- Excitation Current, Phase Angle, Polarity Measurement, Magnetic Balance
- Built-in Printer
- Automatic vector group detection
- Internal memory, USB Flash Drive
- PC control via USB cable
- Optional Bluetooth control and communication
- 7-inch colour touch display

Technical Specifications

Measurement Parameters	Turns Ratio Measurement, Excitation Current, Phase Angle, Polarity, Ratio Error (%), Vector group detection, Magnetic Balance
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
Optional Test Voltages	1, 4, 8, 10, 40, 100, 250 V
Ratio Range	0.8 – 50,000
Phase Angle Measurement	0-360 degrees, ± 0.2 degrees
Excitation Current	0 to 2 A
Excitation Current Accuracy	± 0.1 mA
Power Supply	100-240 V, 47/63 Hz,
Battery	Optional as Models: TURA-03B, TURA-03B BLUE. Type 14.4 V / 3.45 Ah
Memory	Up to 102 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, Bluetooth (Models: TURA-03 BLUE & TURA-03B BLUE)
PC Software	DMP Software
Display	7-inch colour touch display
Dimensions	16.7" x 13.4" x 6.8" - (424 mm x 340 mm x 173 mm)
Weight	7.1 kg (<i>models with battery</i>)
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	TURA-03, Power Cable, Ground Cable, 5m Standard Test Cable Set, 10m Extension Cable Set, Tap Changer Cable Set, USB Cable, Printer Paper (x2), USB flash drive, Instruction Manual (Soft Copy), DMP Software, Cable Bag
Options	Hard Carry Case, Bluetooth (factory install option), Battery (factory install option)

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

Ordering Information

TURA-03



Three-Phase Transformer Turns Ratio Tester with Built-in Printer

TURA-03 BLUE



Three-Phase Transformer Turns Ratio Tester with Built-in Bluetooth & Printer

TURA-03B



Three-Phase Transformer Turns Ratio Tester with Built-in Battery & Printer

TURA-03B BLUE



Three-Phase Transformer Turns Ratio Tester with Built-in Battery, Bluetooth & Printer



Ratio Measurement
0.8 to 50,000

Test Voltages
1 V to 430 V

High Accuracy
0.08%

TURA-X SERIES **TRUE 3 Φ Transformer Turns Ratio** **Tester with Built-in Printer**

TURA-X is designed to accurately measure the turns ratio of single-phase and three-phase transformers.

TURA-X performs fast and accurate turns ratio measurements on current, voltage and power transformers via its user-friendly interface.

With market leading accuracy the TURA-X has a very wide ratio measurement capability, (0.8 to 50,000) at a precision of 0.08 %.

Other features available on TURA-X include the measure of core excitation current, phase angle, polarity, ratio error and magnetic balance.

TURA-X can detect vector groups automatically. The instrument has a wide operating range for use on equipment such as high excitation value current transformers and high power potential transformers in substations. The instrument can generate 1V, 4V, 10V, 40V, 100V, 250V and 430V AC test voltages.

A 7-inch colour touch display allows TURA-X to show all measurement results on a single screen. USB, Bluetooth (Option), and Flash Memory features allow TURA-X to control, record and store measurement results, (up to 100 Test Records).

Using the HighTest Data Management Platform or a.k.a. (DMP Software), users can control TURA-X and analyze measured results and records.

If an immediate hard copy of the results is required the TURA-X also allows for this via an embedded 2.28-inch printer.

Multi-language capability and user-friendly menus make it easy to control the TURA-X instrument, even by less trained staff. TURA-03 can also control the tap changer, (i.e. raise and lower) via its tap changer outputs.

TURA-X is a light, compact and rugged device with an IP protection class of IP67, (case closed).

In addition to ratio tests, TURA-X can also be used to perform Magnetic Balance Test.



Built-in Printer
TRUE 3-Phase

Features

- Turns Ratio Measurement (Single-phase and TRUE three-phase measurement)
- Ranges from 0.8 to 50,000 ratio measurement
- High Accuracy (0.08 %)
- 1V, 4V, 10V, 40V, 100V, 250V & 430V AC test voltage
- Ratio Error Measurement
- Magnetic Balance Test
- Excitation Current, Phase Angle, Polarity Measurement
- Automatic vector group detection
- Internal memory, USB Flash Drive
- PC control via USB cable
- Built-in Printer
- Optional Battery
- Optional Bluetooth control and communication
- 7-inch colour touch display

Technical Specifications

Measurement Parameters	Turns Ratio Measurement, Excitation Current, Phase Angle, Polarity, Ratio Error (%), Vector group detection, Magnetic Balance		
Ratio Measurement Modes	CT Mode, PT Mode (Single-Phase and TRUE Three-Phase)		
Measurement Method	ANSI/IEEE C57.12		
Test Voltages	CT Mode Single-Phase : 1 V and 4 V PT Mode; TRUE Three-Phase (Phase to Neutral): 1, 4, 10, 40, 100 & 250 V PT Mode; TRUE Three-Phase (Phase to Phase): 1, 4, 10, 40, 100, 250 & 430 V		
Ratio Range	0.8 – 50,000		
Accuracy	Mode	Ratio	Accuracy
	CT Mode (1V-4 V)	0.8000- 399.99	0.08 %
		400.00- 4000.0	0.1 %
	PT Mode(10 V- 430 V)	0.8000- 5000.0	0.08 %
5000.1- 12000 12001- 50000		0.15 % 0.5 %	
Phase Angle Measurement	0-360 Degree, ± 0.2 degree		
Excitation Current	Up to 2 A		
Accuracy	Range	Resolution	Accuracy
	Up to 1.0000 mA	0.2 μ A	0.25 % rdg \pm 500 μ A
	1.0000 mA to 10.000 mA	1 μ A	0.25 % rdg \pm 500 μ A
	10.000 mA to 100.00 mA	10 μ A	0.25 % rdg \pm 500 μ A
	100.00 mA to 2000.0 mA	100 μ A	0.25 % rdg \pm 500 μ A
Power Supply	100-240V AC, 47/63 Hz		
Battery	Optional as Models: TURA-XB, TURA-XB BLUE. Type 14.4 V / 3.45 Ah		
Memory	Up to 102 records (include up to 25 tap results)		
Printer	2.28-inch Built-in Printer		
Communication	USB 2.0/1.1 Standard-A, USB 2.0/1.1 Standard-B, Bluetooth (Models: TURA-X BLUE & TURA-XB BLUE)		
PC Software	DMP Software		
Display	7-inch colour touch display		
Dimensions	16.7" x 13.4" x 6.8" (424 mm x 340 mm x 173 mm)		
Weight	7.1 kg (models with battery)		
Temperature	Storage: -10 °C to + 60 °C ; Working: -30 °C to + 70 °C		
Protection Class	IP67 (case closed)		
Included in the package	TURA-X, Power Cable, Ground Cable, 5m Standard Test Cable Set, 10m Extension Cable Set, Tap Changer Cable Set, USB Cable, Printer Paper (x2), USB flash drive, Instruction Manual (Soft Copy), DMP Software, Cable Bag		
Options	Hard Carrying Case, Battery, Bluetooth (factory install option)		
Ordering Information	TURA-X , Three-Phase Transformer Turns Ratio Tester with Built-in Printer		
	TURA-X BLUE , Three-Phase Transformer Turns Ratio Tester with Built-in Bluetooth & Printer		
	TURA-XB , Three-Phase Transformer Turns Ratio Tester with Built-in Battery & Printer		
	TURA-XB BLUE , Three-Phase Transformer Turns Ratio Tester with Built-in Battery, Bluetooth & Printer		

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



Resistance Measurement
0.1 $\mu\Omega$ - 100,000 Ω

Current Output
0.001 A - 20 A DC

Test Voltage
50 V

WINRES-20 SERIES

20 A Winding Resistance Tester with Built-in Printer

WINRES-20 has been designed to measure the resistance of current, voltage and power transformer windings as well as shunt resistors.

It is able to apply up to 20 Amps of direct current allowing the instrument to measure the resistance of a transformer winding quickly and accurately.

The instrument also has two measurement channels allowing simultaneous resistance measurement of two windings in any configuration such as, two primary or two secondary or one primary and one secondary winding, the choice will depend on the configuration of transformer/s.

Starting from 0.1 $\mu\Omega$, the WINRES-20 instrument series can measure up to 100,000 Ω of resistance.

To avoid residual core magnetization or remanence of a transformer the WINRES-20 series of instruments will de-magnetise the transformer after each test.

The instrument also has a separate temperature sense input which allows the operator to automatically correct for temperature variation.
An optional sensor is available for this input

In the case of a failure in the current circuit the WINRES-20's intelligent software control's the flow of current to mitigate damage and provide added safety for users.

A 7-inch colour touch display allows WINRES-20 to show all measurement results on a single screen.

Field test results may be stored and recorded in the WINRES-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 WINRES-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 WINRES-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 user-friendly operating menu make it easy to control the WINRES-20 instrument.

An optional three-phase adaptor, TPA-03, facilitates the connection to all primary and secondary windings at once. This adaptor allows the operator to test the resistance of all three phases at once or each phase separately.

The TPA-03 adaptor also facilitates transformer tap changer control via its tap changer outputs.

WINRES-20 is a light, compact and rugged device with an IP protection class of IP67, (case closed).

Features

- 2-channel resistance measurement
- Measurements from 0.1 $\mu\Omega$ 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 Test
- Built-in printer (2.28-inch)
- User-friendly operating menu
- Battery Power (Option)
- Internal memory, USB Flash Drive
- PC control / analysis via USB cable & DMP Software
- Optional Bluetooth control and communication
- 7-inch TFT touch display
- Temperature correction (1 input, optional sensor)
- User-friendly operation menu
- Optional accessory TPA-03 (Three-Phase Adapter) makes WINRES-20 outputs concurrently connectable to primary and secondary sides of three-phase power transformers.

Technical Specifications

Measurement Parameters	2-channel resistance			
Test Voltage	50 V			
Current output	From 0.001 A to 20 A DC (User-selectable)			
Resistance Measurement	From 0.1 $\mu\Omega$ to 100,000 Ω			
Accuracy	Current Value	Resistance Value	Accuracy	Resolution
	1 mA - 10 mA	Up to 100 k Ω	0.1 % rdg 0.1 % of Fs	100 $\mu\Omega$
	10 mA - 100 mA	Up to 5 k Ω	0.1 % rdg 0.1 % of Fs	10 $\mu\Omega$
	100 mA - 1 A	Up to 500 Ω	0.1 % rdg 0.1 % of Fs	10 $\mu\Omega$
	1 A	Up to 50 Ω	0.1 % rdg 0.1 % of Fs	1 $\mu\Omega$
	20 A	Up to 2.5 Ω	0.1 % rdg 0.1 % of Fs	0.1 $\mu\Omega$
Demagnetisation	Yes			
Power Supply	100-240V AC, 47/63 Hz			
Built-in Battery	Optional as Models: WINRES-20B, WINRES-20B BLUE. Type 14.4 V / 6.9Ah			
Memory	Up to 500 records (recommended for better device performance)			
Printer	2.28-inch built-in printer			
Communication	USB 2.0/1.1 Standard-A, USB 2.0/1.1 Standard-B, Bluetooth (Models: WINRES-20 BLUE & WINRES-20B BLUE)			
PC Software	DMP Software			
Display	7-inch Colour touch display			
Dimensions	16.7" x 13.4" x 6.8" (424 mm x 340 mm x 173 mm)			
Weight	7 kg (<i>models with battery</i>)			
Temperature	Working: -10 °C to + 60 °C ; Storage: -30 °C to + 70 °C			
Humidity	95% RH Non-condensing			
Protection Class	IP67 (case closed)			
Included in the package	WINRES-20, Power Cable, Ground Cable , 1x 5m Current Cable Set, 2 x 5m Voltage Cable Set, USB Cable, Tap Changer Cable Set, Jumper Cable, Printer Paper (x2), USB flash drive, Instruction Manual (Soft Copy), DMP Software, Cable Bag			
Options	Hard carry case, Battery, Bluetooth (factory install), Three-Phase Adapter TPA-03, Temperature Sensor, 10m Long Cable Sets for Current and Voltage channels			

Ordering Information

WINRES-20



20A Winding Resistance Tester with Built-in Printer

WINRES-20 BLUE



20A Winding Resistance Tester with Built-in Bluetooth & Printer

WINRES-20B



20A Winding Resistance Tester with Built-in Battery & Printer

WINRES-20B BLUE



20A Winding Resistance Tester with Built-in Battery, Bluetooth & Printer



3-Phase Resistance Measurement
0.1 $\mu\Omega$ - 100,000 Ω

Current Output
0.001 A - 20 A DC

Test Voltage
50 V

TRIORES-20 SERIES

20A Three-Phase Winding Resistance Tester with Built-in Printer

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 also allows for simultaneous primary & secondary 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 $\mu\Omega$, the TRIORES-20 series can measure up to 100,000 Ω of resistance. The instrument can also measure the dynamic resistance of on-load tap changers, (OLTC's) simultaneously on all three phases or one phase at a time.

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 instrument's intelligent software controls the flow of current to mitigate damage and provide added safety for users.

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.

TRIORES-20 Series is a light, compact and rugged device with the protection class IP67, (case closed).



Built-in Printer

Features

- Fully Automatic Three-phase and single-phase resistance measurement
- Simultaneous primary & secondary winding measurement on all phases
- Measurement range, 0.1 $\mu\Omega$ to 100,000 Ω
- 0.001 A to 20 A DC adjustable current output
- High accuracy (0.1%)
- Test Voltage 50 V
- Demagnetisation feature
- Dynamic resistance measurement of OLTC
- Heat-run test
- Built-in printer
- Optional Battery
- Internal memory, USB Flash Drive
- PC control via USB cable
- Optional Bluetooth control and communication
- 7-inch large colour touch display
- Temperature correction (1 input, sensor optional)
- Data Management Platform (DMP Software) allows to control TRIORES-20, analyse and manage results on PC

Technical Specifications

Measurement Parameters	Three-phase and single-phase resistance measurement
Test Voltage	50 V (Continuous)
Current output	From 0.001 A to 20 A DC (User-selectable)
Resistance Measurement	From 0.1 $\mu\Omega$ to 100,000 Ω
Accuracy	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 × 328 × 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	TRIORES-20, 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, 10 m (33 ft.) Long Cable Set

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

Ordering Information

TRIORES-20



20A 3-Phase Winding Resistance Tester with Built-in Printer

TRIORES-20 BLUE



20A 3-Phase Winding Resistance Tester with Built-in Bluetooth & Printer

TRIORES-20B



20A 3-Phase Winding Resistance Tester with Built-in Battery & Printer

TRIORES-20B BLUE



20A 3-Phase Winding Resistance Tester with Built-in Battery, Bluetooth & Printer



TRAN SERIES 3Φ Transformer Analyser with Built-in Printer

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

TURNS RATIO MEASUREMENT

The TRAN instrument/s employs elements of performance tests specified in the ANSI/IEEE C57.12.90 standard.

With market leading accuracy the TRAN instrument has a very wide ratio measurement capability, (0.8 to 50,000) at 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 has a three-phase cable configuration, users can also perform single-phase transformer tests.

TRAN instrument 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 and 430V AC test voltages.

WINDING RESISTANCE MEASUREMENT

Applying up to 20 Amps of direct current allows the TRAN series to measure the resistance of three phase transformer windings quickly and accurately.

TRAN instrument/s are designed to measure the resistance of the primary and secondary transformer windings simultaneously without the need to disconnect and reconnect the test cables.

3Φ Ratio Measurement

0.8 to 50,000

Test Voltages

1 V to 250 V

3Φ Resistance Measurement

0.1 $\mu\Omega$ - 100,000 Ω

Current Output

0.001 A - 20 A DC

Starting at 0.1 $\mu\Omega$, the TRAN series can measure up to 100,000 Ω of resistance. The instrument can also measure the dynamic resistance of on-load tap changers, (OLTC's) simultaneously on all three phases or one phase at a time.

The TRAN 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 TRAN 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.

GENERAL FEATURES

Colour touch display

Independent or PC based control via Data Management Platform (DMP Software)

Optional Bluetooth interface.

Instrument and / or PC based results analysis

Built in 2.28-inch Printer

Optional internal battery models available

Multi-language capability

Tap changer control outputs

Light, compact and rugged device with an IP protection class of IP67, (case closed)

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
URNS 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	1%
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-B, TRAN-B 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- BLUE & TRAN- B 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	9.5 kg
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	TRAN, 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, Bluetooth (factory install option), Battery (factory install option)

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

Ordering Information

TRAN



Three-Phase Transformer Analyser with Built-in Printer

TRAN-BLUE



Three-Phase Transformer Analyser with Built-in Bluetooth & Printer

TRAN-B



Three-Phase Transformer Analyser with Built-in Battery & Printer

TRAN-B BLUE



Three-Phase Transformer Analyser with Built-in Battery, Bluetooth & Printer



SUWI SERIES - Substation Wizard, Multifunctional Substation Test device

The SUWI series is a multi purpose test instrument designed to test power and control equipment in substations such as Relay Timing, a Transformer's Turns Ratio, Circuit Breaker Contact Resistance & Timing, Fuses, etc.

This combined substation testing device is call SUWI as we think it's a Substation Wizard

RELAY TIMING MEASUREMENT

The SUWI instrument can automatically test over-current, over-voltage, directional overcurrent relays and frequency control relays. SUWI has an adjustable output current up to 110A AC / 150A DC and an adjustable output voltage to 150V AC / 220V DC. It has four universal input modules.

URNS RATIO MEASUREMENT

Employing elements of performance tests specified in the ANSI/IEEE C57.12.90 standard, the instrument performs transformer ratio measurements to a precision of 0.08 % across a ratio range of 0.8 to 33,000..

SUWI also measures phase angle and polarity, and it can generate 1V, 4V, 10V, 40V and 100V AC test voltages to facilitate the measurement of the turns ratio for current, voltage and power transformers.

MICRO-OHM / LOW RESISTANCE MEASUREMENT

As described earlier, SUWI has an adjustable output DC current to 150 Amps which facilitates the measurement of contact resistance of a circuit breaker, a shunt or disconnecter.

With the ability to measure resistance to 5 Ω , operators are able to test the static resistance of the contact points of circuit breakers such as idle circuit breakers as well as dual grounded circuit breakers.

Multifunctional test device

Relay Timing Tests

Turns Ratio Tests

Micro-ohmmeter

3 Φ Circuit Breaker Timing Tests

Frequently used test models can be saved as templates and used later to speed up testing.

CIRCUIT BREAKER TIMING

Contact Timing Tests are performed to determine a breaker's contact performance against its manufactured specifications.

A breaker's operation such as OPEN, CLOSE, OPEN-CLOSE, CLOSE-OPEN and OPEN-CLOSE-OPEN are timed in milliseconds (ms) and then compared with the manufacturer's specification. SUWI can perform 3-phase circuit breaker timing test cycles as described above along with coil current measurements using internal and external trigger inputs.

GENERAL FEATURES

Seven,7-inch IPS 1024x600 pixel touch panel display.

8GB internal memory or an external USB flash memory for record retention.

Data Management Platform (DMP Software), for PC based results analysis and management.

Multi-language capability

Light, compact and rugged device with an IP protection class of IP67, (case closed).

Technical Specifications

Measurement Parameters	Relay Timing Tests (over current relays, over voltage relays, directional over current relays, frequency control relays); Turns Ratio Measurement , Phase Angle, Polarity, Ratio Error (%); Micro-ohmmeter/Low Resistance Tests (Circuit breaker contact resistance and shunt resistance) Circuit breaker timing test (3-phase circuit breaker timing tests; open, close, open-close, close-open, open-close-open timings, coil current measurement, internal and external trigger operations)
PROTECTION RELAY TIMING MEASUREMENT FEATURES	
Current Outputs	Up To 110 A AC (magnitude and frequency adjustable) Up to 150 A DC
Voltage Outputs	150 V AC (magnitude and frequency adjustable)
Universal Input Modules	4 input module; Binary wet/dry Up to 300 V AC and DC voltage measurement
TURNS RATIO MEASUREMENT FEATURES	
Ratio Measurement Modes	CT Mode PT Mode (Single-Phase and Three-Phase)
Test Voltages	CT Mode: 1 V and 4 V ; PT Mode: 1, 4, 10, 40 & 100 V
Ratio Range	0.8 – 33,000
LOW RESISTANCE MEASUREMENT FEATURES/MICRO-OHMMETER	
Measurement Modes	Static Dual ground Resistance Measurement
Auto Test Mode	Yes
Test Current	Up to 150 A DC
Measurement Range	Up to 5 Ω
CIRCUIT BREAKER TIMING MEASUREMENT FEATURES	
Measurement Parameters	Contact Timing (O, C, O-C, C-O & O-C-O); Coil Current Measurement, Internal and External Trigger Operations
Timing Windows	1s, 10s, 20s
Timing Accuracy	0.05% rdg \pm 0.1 ms
Contact detection	Yes
Trigger input voltage	24 – 300 V DC or AC _{peak}
Breaker Initiate Capacity	20 A, 300 V DC or AC _{peak}
Initiate current reading range	0 – 20A DC, 5 kHz
GENERAL FEATURES	
Power Supply	100-240 V, 47/63 Hz,
Internal Memory	Yes
Communication	USB 2.0/1.1 Standard-A, USB 2.0/1.1 Standard-B
PC Software	DMP Software
Display	7-inch IPS 1024x600 pixel touch panel display
Dimensions	(16.9 \times 12.9 \times 9.3)" (429 x 328 x 236) mm
Weight	9.5 kg
Working Temperature	-10 $^{\circ}$ C to +60 $^{\circ}$ C
Storage Temperature	-30 $^{\circ}$ C to +70 $^{\circ}$ C
Humidity	95% RH Non-condensing
Protection Class	IP67 (case closed)

Specifications are valid at/under 25 $^{\circ}$ C temperature. *Contents subject to change without notice.



**Long Term
Current Injection**

**1A to 200 A
Adjustable Current**

**0.1 $\mu\Omega$ to 5 Ω
Resistance Value**

ARES-200 SERIES 200 Amp DC Micro-ohmmeter with Built-in Printer

With the ability to adjust current from 1 A to 200 A, the ARES-200 micro-ohmmeter can comprehensively measure the contact resistance of a circuit breaker, a shunt and/or disconnectors. The output current is managed through the easy-to-use display and control interface.

By applying continuous current, the ARES-200 can measure the static resistance values of a circuit breaker from as low as 0.1 $\mu\Omega$ up to 5 Ω .

The instrument also has a handy "Auto-Test" mode which enables the unit to begin testing automatically once it senses a current path between two connection points. This is highly convenient when measuring an array of resistance values in a circuit breaker contact.

An optional current clamp is also available to measure the leakage current through the earth or ground line during the test.

Frequently used test models can be saved as templates, and brought up to perform tests more rapidly. Most tests are completed in roughly 15 seconds.

A 4.3-inch colour touch screen displays all measured results on a single screen. The ARES-200 guides operators to perform tests quickly with an easy-to-use, user-friendly interface.

ARES-200's internal flash memory can record up to 100 Test Records. The test records are may also be downloaded to an external USB drive for later analysis on a different platform such as a PC.

Alternatively the operator may choose to employ the Data Management Platform which allows PC based control of ARES-200 via a USB cable or an 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 ARES-200 also allows for this via an embedded 2.25-inch printer.

Multi-language capability and a user-friendly operating menu make it easy to control.

ARES-20 Series is a light, compact and rugged device with a IP protection class of IP67, (case closed).

Why do we measure transition or contact resistance on breakers?

When high current passes through a switchyard due to a line fault, circuit breakers respond by opening and breaking this flow of current thereby mitigating potential damage to equipment or personnel.

The contacts in the circuit breaker needs to checked periodically to ensure that the breaker is healthy and functional. Poorly maintained or damaged contacts can cause arcing, phase loss, and even fire.

Increase in resistance of a breakers contact can cause a high-voltage drop in the system, as well as cause local hot-spots, unplanned power failures and large energy loss.

Measurement of the contact resistance helps to identify fretting corrosion of contacts, and allows contact corrosion to be diagnosed and prevented.



Features

- Contact Resistance Measurement
- Adjustable Current: 1 A to 200 A
- Measurement Range from 0.1 $\mu\Omega$ to 5 Ω
- Typical Accuracy: 0.1%
- Static Resistance Measurement
- Dual Ground Test Mode
- Auto Test Mode
- Built-in Printer
- Optional Current Clamp
- Internal Memory, USB Flash Drive
- PC control via USB cable
- Optional Bluetooth control and communication
- 4.3-inch TFT touch Display
- Protection Class: IP67 (case closed)

Technical Specifications

Measurement Parameter	Contact Resistance
Measurement Modes	Static Resistance, Dual ground
Auto Test Mode	Yes
Test Current	1 A to 200 A
Measurement Range	0.1 $\mu\Omega$ to 5 Ω
Accuracy	Typical: 0.1% \pm 0.1% Fs, Guaranteed: 0.5% \pm 0.1% Fs
Power Supply	100-240 V 47/63 Hz
Memory	Up to 200 records with 25 intervals for each
Test Plan	Up to 6 plans
Printer	2.25-inch Built-in Printer
Current Clamp	Yes (Optional)
Communication	USB 2.0/1.1 Standard-A, USB 2.0/1.1 Standard-B, Bluetooth (factory install option)
PC Software	DMP Software
Display	4.3-inch TFT touch display
Dimensions	16.7" x 13.4" x 6.8" (424 mm x 340 mm x 173 mm)
Weight	9 kg
Working Temperature	-10 °C to + 60 °C
Storage Temperature	-30 °C to + 70 °C
Humidity	95% RH non condensing
Protection Class	IP67 (case closed)
Set of Package	ARES-200, Power Cable, Ground Cable, 10m Standard Test Cable Set, USB Cable, Printer Paper (x2), USB flash drive, Instruction Manual (Soft Copy), DMP Software, Cable Bag
Options	Hard Carrying Case, Length Customised Cables, Bluetooth (factory install option), Current Clamp

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

Ordering Information

ARES-200



200 A DC Micro-ohmmeter with Built-in Printer

ARES-200 BLUE



200 A DC Micro-ohmmeter with Built-in Bluetooth & Printer



ARES-200D SERIES 200A DC Micro-ohmmeter with Built-in Printer

ARES-200D is a micro-ohmmeter which like the ARES-200 can apply up to 200 A of current to easily measure contact resistance of a circuit breaker, shunt, and disconnecter.

It can calculate the real resistance values by applying continuous current and measuring the voltage at the point of application. It is able to measure both static and dynamic resistance of the contact points from $0.1 \mu\Omega$ to 5Ω and it is able to measure idle circuit breakers as well as dual grounded circuit breakers. An optional current clamp may also be used to measure part of the current going through the ground line during the test and this can be used to calculate the resistance values correctly.

Frequently used test models can be saved as templates, and the tests can be performed far more rapidly. Thanks to the quick test feature of the ARES-200D user interface, users can complete a test in almost 15 seconds.

A 4.3-inch colour touch screen displays all measured results on a single screen. The ARES-200D guides operators to perform tests quickly with an easy-to-use, user-friendly interface.

ARES-200D's internal flash memory can record up to 200 test records which may later be copied to an external USB drive for further analysis on a different platform such as a PC.

Alternatively the operator may choose to employ the Data Management Platform, DMP, which allows remote PC based control of ARES-200D via a USB cable or an 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 ARES-200 also allows for this via an embedded 2.25-inch printer.

Dynamic Resistance Measurement

1A to 200 A Adjustable Current

$0.1 \mu\Omega$ to 5Ω Resistance Value

With ARES-200D's temperature measurement channel, the temperature values of the measured sample can be taken and calculated according to the desired temperature value.

ARES-200D is a compact, rugged device with an IP67 protection class, (case closed). Weight 9 kg.

Why do we measure contact transition resistance at breakers?

When high current passes through a switchyard due to a line fault, circuit breakers respond by opening and breaking this flow of current thereby mitigating potential damage to equipment or personnel.

The contacts in the circuit breaker needs to checked periodically to ensure that the breaker is healthy and functional. Poorly maintained or damaged contacts can cause arcing, phase loss, and even fire.

Increase in resistance of a breakers contact can cause a high-voltage drop in the system, as well as cause local hot-spots, unplanned power failures and large energy loss.

Measurement of the contact resistance helps to identify fretting corrosion of contacts, and allows contact corrosion to be diagnosed and prevented.

Dynamic Resistance Measurement?

ARES-200D can employ an innovative method to determine if there is any contact deformation in a circuit breaker by use of a time-dependent measure of the contact resistance when the breaker is switched from closed to open. This is called dynamic resistance measurement.



Features

- ▮ Contact Resistance Measurement
- ▮ Adjustable Current: 1 A to 200 A
- ▮ Measurement Range from 0.1 $\mu\Omega$ to 5 Ω
- ▮ Typical Accuracy: 0.1%
- ▮ Dynamic Resistance Measurement
- ▮ Static Resistance Measurement
- ▮ Dual Ground Test Mode
- ▮ Auto Test Mode
- ▮ Built-in Printer
- ▮ Optional Current Clamp
- ▮ Internal Memory, USB Flash Drive
- ▮ PC control via USB cable
- ▮ Optional Bluetooth control and communication
- ▮ 4.3-inch TFT touch Display
- ▮ Protection Class: IP67 (case closed)

Technical Specifications

Measurement Parameter	Contact Resistance
Measurement Modes	Static, Dynamic & Dual ground Resistance Measurement
Auto Test Mode	Yes
Test Current	1 A to 200 A
Measurement Range	0.1 $\mu\Omega$ to 5 Ω
Accuracy	Typical: 0.1% \pm 0.1% Fs, Guaranteed: 0.5% \pm 0.1% Fs
Power Supply	100-240 V 47/63 Hz
Memory	Up to 200 records with 25 intervals for each
Test Plan	Up to 6 plans
Printer	2.25-inch Built-in Printer
Current Clamp	Yes (Optional)
Communication	USB 2.0/1.1 Standard-A, USB 2.0/1.1 Standard-B, Bluetooth (Model: ARES-200D BLUE)
PC Software	DMP Software
Display	4.3-inch TFT touch display
Dimensions	16.7" x 13.4" x 6.8" (424 mm x 340 mm x 173 mm)
Weight	9 kg
Working Temperature	-10 °C to + 60 °C
Storage Temperature	-30 °C to + 70 °C
Humidity	95% RH non condensing
Protection Class	IP67 (case closed)
Set of Package	ARES-200D, Power Cable, Ground Cable , 10m Standard Test Cable Set, USB Cable, Printer Paper (x2), USB flash drive, Instruction Manual (Soft Copy), DMP Software, Cable Bag
Options	Hard Carrying Case, Length Customised Cables, Bluetooth (factory install option), Current Clamp

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

Ordering Information

ARES-200D



200A DC Micro-Ohmmeter with Dynamic Resistance Measurement feature (model with built-in Printer)

ARES-200D BLUE



200A DC Micro-Ohmmeter with Dynamic Resistance Measurement feature (model with built-in Bluetooth & Printer)



Only 3 kg!

Static Resistance
Measurement

Battery powered

Extra Light-Weight
Micro-ohmmeters

HARE SERIES

Digital Micro-ohmmeter

HARE Series is a highly portable and light micro-ohmmeter. It comes in 3 versions manufactured to deliver test currents up to 100A, 200A and 300A.

With its easy-to-use software, the HARE Series of instruments can easily measure the contact resistance of circuit breaker, shunt and disconnecter by applying adjustable test currents to measure the static resistance of a breaker's contact from $0.1 \mu\Omega$ to 5Ω .

HARE Series can also measure idle circuit breakers. The 4.3-inch colour touch screen displays all measurement results on a single screen.

The HARE Series guides operators to perform tests quickly with a user-friendly interface. HARE Series' flash memory feature allows storage for up to 1000 records.

Records may later be copied to an external USB drive for further analysis on a different platform such as a PC.

HARE Series is a compact, rugged device with an IP67 protection class, (case closed) and weighs only 3 kg.

FEATURES

- Portable Contact Resistance Tester
- 0.4A to 100A Adjustable test current (HARE-100)
- 0.4A to 200A Adjustable test current (HARE-200)
- 0.4A to 300A Adjustable test current (HARE-300)
- Up to 5Ω resistance measurement
- $0.1 \mu\Omega$ resolution
- Automatic discharge
- High EM interferences protection
- Battery-powered
- Ultra-fast measurement
- Light-weight
- 4.3" Resistive touch colour display (visible under sunlight)
- User-friendly operation menu
- Internal memory
- USB Flash Drive
- IP67 Protection case

Ordering Information

HARE-100



100A DC Micro-Ohmmeter with Rechargeable Battery

HARE-200



200A DC Micro-Ohmmeter with Rechargeable Battery

HARE-300



300A DC Micro-Ohmmeter with Rechargeable Battery



Technical Specifications

Measurement Parameter	Contact Resistance				
Measurement Modes	Static Resistance Measurement				
Adjustable Test Current	0.4A to 100A (HARE-100) 0.4A to 200A (HARE-200) 0.4A to 300A (HARE-300)				
Measurement Range	0.1 $\mu\Omega$ to 5 Ω				
Accuracy & Resolution	Nominal Resistance	Full Range Display	Resolution	Recommended Test Current	Typical Accuracy
	1 m Ω	999.9 $\mu\Omega$	0.1 $\mu\Omega$	50 – 300 A	$\pm 0.1\%$ rdg $\pm 0.1\%$ Fs
	10 m Ω	9.999 m Ω	1 $\mu\Omega$	10 – 300 A	$\pm 0.1\%$ rdg $\pm 0.1\%$ Fs
	100 m Ω	99.99 m Ω	10 $\mu\Omega$	5 – 30 A	$\pm 0.1\%$ rdg $\pm 0.1\%$ Fs
	1 Ω	999.9 m Ω	0.1 m Ω	1 – 3 A	$\pm 0.1\%$ rdg $\pm 0.1\%$ Fs
5 Ω	4999 m Ω	1 Ω	0.4A	$\pm 1\%$ rdg $\pm 1\%$ Fs	
Power Supply to charge the battery	100-240 V 47/63 Hz				
Memory	Up to 1000 records				
Test Plan	Up to 6 plans				
PC Software	DMP Software (Reporting only)				
Display	4.3-inch TFT touch display				
Dimensions	12.5" x 10.1" x 6.0" (318 mm x 257 mm x 152 mm)				
Weight	3 kg				
Working Temperature	-10 $^{\circ}\text{C}$ to + 60 $^{\circ}\text{C}$				
Storage Temperature	-30 $^{\circ}\text{C}$ to + 70 $^{\circ}\text{C}$				
Humidity	95% RH non condensing				
Protection Class	IP67 (case closed)				
Set of Package	HARE device, Rechargeable Battery, Power Cord, 1.5m Measurement Cable Set, USB				

Specifications are valid at/under 25 $^{\circ}\text{C}$ temperature. *Contents subject to change without notice.



Contact Timing Tests

3 Dry Contact Inputs

Ultra-lightweight

CIBRE-L3 SERIES 3-Contact Circuit Breaker Timer with Built-in Printer

CIBRE-L3 Series is a 3-Contact Circuit Breaker Timer test instrument and as its name suggests, it has been designed to test the contact timing of circuit-breakers.

CIBRE-L3 Series provides for fast, easy and accurate measurements through its user-friendly software.

CIBRE-L3 Series are optionally available with an internal battery that allow users to perform tests even without a mains power source during field tests.

Contact Timing Tests

It is essential to test circuit breakers regularly and a contact timing test is a valuable method in determining if a breaker will behave correctly in the case of system fault and maintain system reliability.

Contact timing tests are performed to compare the breaker's contact performance against the manufacturer's specifications.

The breakers OPEN, CLOSE, OPEN-CLOSE, CLOSE-OPEN and OPEN-CLOSE-OPEN operations are timed in milliseconds (ms) and cycles and then compared with the timing outlined by the breaker's manufacturer to determine if the equipment is still operating within specification.

CIBRE-L3 Series instrument features a 4.3-inch large colour touch display, which is visible under bright sunlight and dim light conditions.

A 2.25-inch built-in printer comes standard and allows for an immediate hardcopy of test results.

The results can also be saved to a USB flash drive or remain stored in the device's internal memory.

Multi-language capability and user-friendly operation menu make it easy to control the CIBRE-L3 Series.

CIBRE-L3 Series devices are light-weight, compact and rugged with an IP protection class of IP67, (case closed), making them perfect for use in the field.





Features

- Contact Timing (O, C, O-C, C-O & O-C-O)
- 3 Dry Contact Inputs
- Timing Accuracy: 0.05% rdg ± 0.1 ms
- Timing Windows: 1s, 10s & 20s
- Contact Detection Range: Closed ≤20 Ω & Open ≥5000 Ω
- Optional Battery
- Optional Bluetooth Communication
- 2.25" Built-in Printer
- 4.3" TFT Touch Colour Display
- Lightweight and Portable
- Protection Class IP67 (case closed)

Technical Specifications

Measurement Parameters	Contact Timing (O, C, O-C, C-O & O-C-O)		
Dry Contact Inputs	3 dry input channels (each detects main)		
Timing Windows	1s, 10s, 20s		
Timing Resolution	1 s duration	10 s duration	20 s duration
	± 50 μs	± 500 μs	± 1 ms
Timing Accuracy	0.05% rdg ± 0.1 ms		
Dry contact channel protection	Fuses and Diodes protection, All contacts grounded until test		
Contact detection range	Closed	≤20 Ω	
	Open	≥5000 Ω	
Resistor detection range	20Ω- 5000Ω		
Trigger input voltage	24 – 300 V DC or AC _{peak}		
Dry contact input protection	Diode Protection/ ESD		
Breaker Operations	OPEN, CLOSE, OPEN-CLOSE, CLOSE-OPEN, OPEN-CLOSE-OPEN		
Breaker Initiate Capacity	20 A, 300 V DC or AC _{peak}		
Initiate current reading range	0 – 20A DC, 5 kHz		
Input Power	100-240 V, 47/63 Hz		
Battery	Yes, 14.4 V 3.45 Ah (Optional ; Models: CIBRE-L3B & CIBRE-L3B BLUE)		
Display	4.3-inch Colour Touch Display		
Memory	Up to 200 records		
Communication	USB 2.0/1.1 Standard-A, USB 2.0/1.1 Standard-B Bluetooth (Factory install option; Models: CIBRE-L3 BLUE & CIBRE-L3B BLUE)		
Printer	2.25-inch Built-in Printer		
Dimensions	12.5" x 10.1" x 6.0" (318 mm x 257 mm x 152 mm)		
Weight	3 kg (<i>models with battery</i>)		
Temperature	Working: -10 °C to +60 °C ; Storage: -30 °C to +70 °C		
Humidity	95% RH non-condensing		
Protection Class	IP67 (case closed)		
Scope of Supply	CIBRE-L3 device, 6m Contact Cable, 10m Contact Extension Cable, 1m Initiate Cable, 5m Initiate Extension Cable, 1m External Trigger Cable, 5m External Trigger Extension Cable, Power Cord, Ground Cable, USB Cable, Printer Paper (2x), USB Flash Drive, Instruction Manual (soft copy), Soft Carry Bag		
Ordering Information	CIBRE-L3 , 3-Contact Circuit Breaker Timer with Built-in Printer		
	CIBRE-L3 BLUE , 3-Contact Circuit Breaker Timer with Built-in Bluetooth & Printer		
	CIBRE-L3B , 3-Contact Circuit Breaker Timer with Built-in Battery & Printer		
	CIBRE-L3B BLUE , 3-Contact Circuit Breaker Timer with Built-in Battery, Bluetooth & Printer		



Contact Timing
Tests

Ultra-lightweight

CIBRE-L6 SERIES 6-Contact Circuit-Breaker Timer with Built-in Printer

CIBRE-L6 Series is a 6-Contact Circuit Breaker Timer test instrument and as its name suggests, it has been designed to test the contact timing of circuit-breakers.

CIBRE-L6 Series provides for fast, easy and accurate measurements through its user-friendly software.

CIBRE-L6 Series are optionally available with an internal battery that allow users to perform tests even without a mains power source during field tests.

It is essential to test circuit breakers regularly and a contact timing test is a valuable method of determining if a breaker will behave correctly in the case of system fault and maintain system reliability.

Contact Timing Tests

It is essential to test circuit breakers regularly and a contact timing test is a valuable method of determining if a breaker will behave correctly in the case of system fault and maintain system reliability.

Contact timing tests are performed to compare the breaker's contact performance against the manufacturer's specifications.

The breakers OPEN, CLOSE, OPEN-CLOSE, CLOSE-OPEN and OPEN-CLOSE-OPEN operations are timed in milliseconds (ms) and cycles and then compared with the timing outlined by the breaker's manufacturer to determine if the equipment is still operating within specification.

CIBRE-L6 Series instrument features a 4.3-inch large colour touch display, which is visible under bright sunlight and dim light conditions.

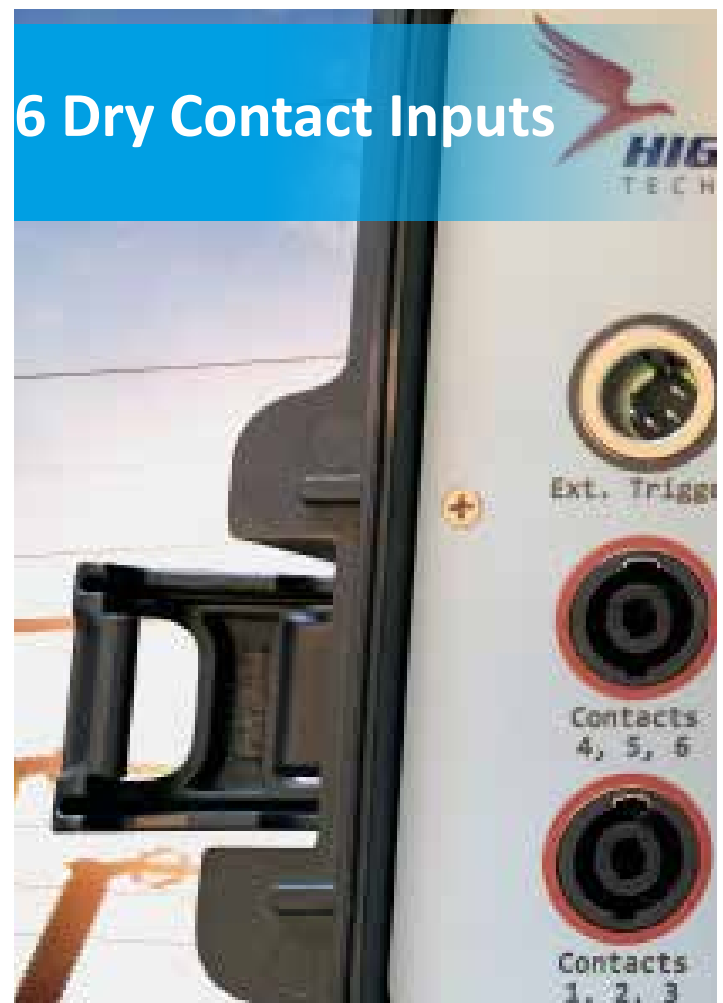
A 2.25-inch built-in printer comes standard and allows for an immediate hardcopy of test results.

The results can also be saved to a USB flash drive or remain stored in the device's internal memory.

Multi-language capability and user-friendly operation menu make it easy to control the CIBRE-L6 Series.

CIBRE-L6 Series devices are light-weight, compact and rugged with an IP protection class of IP67, (case closed), making them perfect for use in the field.

6 Dry Contact Inputs





Features

- Contact Timing (O, C, O-C, C-O & O-C-O)
- 6 Dry Contact Inputs
- Timing Accuracy: 0.05% rdg ± 0.1 ms
- Timing Windows: 1s, 10s & 20s
- Contact Detection Range: Closed ≤20 Ω & Open ≥5000 Ω
- Optional Battery
- Optional Bluetooth Communication
- 2.25" Built-in Printer
- 4.3" TFT Touch Colour Display
- Light-weight and Portable
- Protection Class IP67 (case closed)

Technical Specifications

Measurement Parameters	Contact Timing (O, C, O-C, C-O & O-C-O)		
Dry Contact Inputs	6 dry input channels (each detects main)		
Timing Windows	1s, 10s, 20s		
Timing Resolution	1 s duration	10 s duration	20 s duration
	± 50 μs	± 500 μs	± 1 ms
Timing Accuracy	0.05% rdg ± 0.1 ms		
Dry contact channel protection	Fuses and Diodes protection, All contacts grounded until test		
Contact detection range	Closed	≤20 Ω	
	Open	≥5000 Ω	
Resistor detection range	20Ω- 5000Ω		
Trigger input voltage	24 – 300 V DC or AC _{peak}		
Dry contact input protection	Diode Protection/ ESD		
Breaker Operations	OPEN, CLOSE, OPEN-CLOSE, CLOSE-OPEN, OPEN-CLOSE-OPEN		
Breaker Initiate Capacity	20 A, 300 V DC or AC _{peak}		
Initiate current reading range	0 – 20A DC, 5 kHz		
Input Power	100-240 V, 47/63 Hz		
Battery	Yes, 14.4 V 3.45 Ah (Optional ; Models: CIBRE-L6B & CIBRE-L6B BLUE)		
Display	4.3-inch Colour Touch Display		
Memory	Up to 200 records (recommended for better device performance)		
Communication	USB 2.0/1.1 Standard-A, USB 2.0/1.1 Standard-B Bluetooth (Factory install option; Models: CIBRE-L6 BLUE & CIBRE-L6B BLUE)		
Printer	2.25-inch Built-in Printer		
Dimensions	12.5" x 10.1" x 6.0" (318 mm x 257 mm x 152 mm)		
Weight	3.5 kg (<i>models with battery</i>)		
Temperature	Working: -10 °C to +60 °C ; Storage: -30 °C to +70 °C		
Humidity	95% RH non-condensing		
Protection Class	IP67 (case closed)		
Scope of Supply	CIBRE-L6 device, 6m Contact Cable (2x), 10m Contact Extension Cable (2x), 1m Initiate Cable, 5m Initiate Extension Cable, 1m External Trigger Cable, 5m External Trigger Extension Cable, Power Cord, Ground Cable, USB Cable, Printer Paper (2x), USB Flash Drive, Instruction Manual (soft copy), Soft Carry Bag		
Ordering Information	CIBRE-L6 , 6-Contact Circuit Breaker Timer with Built-in Printer		
	CIBRE-L6 BLUE , 6-Contact Circuit Breaker Timer with Built-in Bluetooth & Printer		
	CIBRE-L6B , 6-Contact Circuit Breaker Timer with Built-in Battery & Printer		
	CIBRE-L6B BLUE , 6-Contact Circuit Breaker Timer with Built-in Battery, Bluetooth & Printer		



Contact Timing & Motion Tests

3 Dry Contact Inputs

CIBRE-30 SERIES 3-Contact Circuit Breaker Analyser with Built-in Printer

CIBRE-30, 3-Contact Circuit Breaker Analyser is designed to test contact timings of circuit breakers.

CIBRE-30 has fast, easy and accurate measurement features through its user-friendly software.

CIBRE-30 may be optionally powered with an internal battery allowing users to perform tests even without a mains supply.

It is essential to test circuit breakers regularly. The CIBRE-30 instrument provides the operator with the ability to perform Contact Timing and Motion tests. Both tests are valuable methods of determining if a breaker will behave correctly in the case of system fault and maintain system reliability.

Contact Timing Tests

Contact timing tests are performed to compare the breaker's contact performance against the manufacturer's specifications.

The breakers OPEN, CLOSE, OPEN-CLOSE, CLOSE-OPEN and OPEN-CLOSE-OPEN operations are timed in milliseconds (ms) and cycles and then compared with the timing outlined by the breaker's manufacturer to determine if the equipment is still operating within specification.

Motion Tests

Breakers have moving parts so it makes sense to test the moving parts with a motion or travel test.

The CIBRE-30 can test for Transducer velocity, Stroke and Bounce. Slower transducer speed can reduce the breaking capacity of the main contact, while faster speed can cause mechanical damage to the damping components and cause excessive vibration. So it is necessary to test the transducer speed to compare it with the manufacturer's specifications.

CIBRE-30 features a large 7-inch colour touch display, which is visible under bright sunlight and dim light conditions.

The unit comes with a 2.28-inch built-in printer allowing for an immediate test record print out when required.

The results may also be saved to a USB flash drive as well as the device's internal memory.

Multi-language capability and user-friendly operation menu make it easy to control CIBRE-30.

CIBRE-30 is a lightweight, compact and rugged device with an IP protection class of IP67, (case closed), which makes it ideal for field use.



Features

- ▮ Contact Timing (O, C, O-C, C-O and O-C-O)
- ▮ Motion Tests (Transducer Speed, Stroke, Bounce)
- ▮ 3 Dry Contact Inputs
- ▮ Timing Accuracy: 0.05% rdg ± 0.1 ms
- ▮ Timing Windows: 1s, 10s & 20s
- ▮ Contact Detection Range: Closed ≤20 Ω &
- ▮ Open ≥5000 Ω
- ▮ Optional Battery
- ▮ Optional Bluetooth Communication
- ▮ 2.28" Built-in Printer
- ▮ 7" TFT Touch Colour Display



Technical Specifications

Measurement Parameters	Contact Timing (O, C, O-C, C-O & O-C-O), Motion Tests (Transducer Speed, Stroke, Bounce)		
Dry Contact Inputs	3 dry input channels (each detects main) and insertion resistor contacts		
Timing Windows	1s, 10s, 20s		
Timing Resolution	1 s duration	10 s duration	20 s duration
	± 50 μs	± 500 μs	± 1 ms
Timing Accuracy	0.05% rdg ± 0.1 ms		
Dry contact channel protection	Fuses and Diodes protection, All contacts grounded until test		
Contact detection range	Closed	≤20 Ω	
	Open	≥5000 Ω	
Resistor detection range	20Ω- 5000Ω		
Trigger input voltage	24 – 300 V DC or AC _{peak}		
Dry contact input protection	Diode Protection/ FSD		
Breaker Operations	OPEN, CLOSE, OPEN-CLOSE, CLOSE-OPEN, OPEN-CLOSE-OPEN		
Voltage sensing input range	V1 (Analogue Input)	V2 (Presence/Absence Detector)	
	0 – 250 V DC or AC _{peak}	24 – 300 V DC or AC _{peak}	
Breaker Initiate Capacity	20 A, 300 V DC or AC _{peak}		
Digital Travel Transducer Input	5V/12Vdc TTL		
Initiate current reading range	0 – 20A DC, 5 kHz		
Input Power	100-240 V, 47/63 Hz		
Built-in Battery	Yes, 14.4 Vdc 6.9 Ah (Optional; Models: CIBRE-30B, CIBRE-30B BLUE)		
Display	7-inch Colour Touch Display		
Memory	Up to 200 records (recommended for better device performance)		
Communication	USB 2.0/1.1 Standard-A, USB 2.0/1.1 Standard-B Bluetooth (Factory install option; Models: CIBRE-30 BLUE & CIBRE-30B BLUE)		
Dimensions	16.9" x 12.9" x 9.3" (429 mm x 328 mm x 236 mm)		
Weight	8.2 kg (<i>models with battery</i>)		
Temperature	Working: -10 °C to +60 °C ; Storage: -30 °C to +70 °C		
Humidity	95% RH non-condensing		
Protection Class	IP67 (case closed)		
Scope of Supply	CIBRE-30, 6m Contact Cable, 10m Contact Extension Cable, 1m Initiate Cable, 5m Initiate Extension Cable, 1m External Trigger Cable, 5m External Trigger Extension Cable, 1m Voltage Measurement Cable, 5m Voltage Measurement Extension Cable, Power Cable, Ground Cable, USB Cable, Printer Paper (x2), USB flash drive, Instruction Manual (Soft Copy), Cable Bag		
Options	325 mm Linear Encoder, Rotary Encoder, Battery, Bluetooth		
Ordering Information	CIBRE-30 , 3-Contact Circuit Breaker Analyser with Built-in Printer		
	CIBRE-30 BLUE , 3-Contact Circuit Breaker Analyser with Built-in Bluetooth & Printer		
	CIBRE-30B , 3-Contact Circuit Breaker Analyser with Built-in Battery & Printer		
	CIBRE-30B BLUE , 3-Contact Circuit Breaker Analyser with Built-in Battery, Bluetooth & Printer		



Launching Soon..

Contact Timing & Motion Tests

6 Dry Contact Inputs

CIBRE-60 SERIES 6-Contact Circuit Breaker Analyser with Built-in Printer

CIBRE-60, 6-Contact Circuit Breaker Analyser is designed to test contact timings of circuit breakers.

CIBRE-60 has fast, easy and accurate measurement features through its user-friendly software.

CIBRE-60 may be optionally powered with an internal battery allowing users to perform tests even without a mains supply.

It is essential to test circuit breakers regularly. The CIBRE-60 instrument provides the operator with the ability to perform Contact Timing and Motion tests. Both tests are valuable methods of determining if a breaker will behave correctly in the case of system fault and maintain system reliability.

Contact Timing Tests

Contact timing tests are performed to compare the breaker's contact performance against the manufacturer's specifications.

The breakers OPEN, CLOSE, OPEN-CLOSE, CLOSE-OPEN and OPEN-CLOSE-OPEN operations are timed in milliseconds (ms) and cycles and then compared with the timing outlined by the breaker's manufacturer to determine if the equipment is still operating within specification.

Motion Tests

Breakers have moving parts so it makes sense to test the moving parts with a motion or travel test.

The CIBRE-60 can test for Transducer velocity, Stroke and Bounce. Slower transducer speed can reduce the breaking capacity of the main contact, while faster speed can cause mechanical damage to the damping components and cause excessive vibration. So it is necessary to test the transducer speed to compare it with the manufacturer's specifications

CIBRE-60 features a large 7-inch colour touch display, which is visible under bright sunlight and dim light conditions.

The unit comes with a 2.28-inch built-in printer allowing for an immediate test record print out when required.

The results may also be saved to a USB flash drive as well as the device's internal memory.

Multi-language capability and user-friendly operation menu make it easy to control CIBRE-60.

CIBRE-60 is a lightweight, compact and rugged device with an IP protection class of IP67, (case closed), which makes it ideal for field use.



Features

- ▮ Contact Timing (O, C, O-C, C-O and O-C-O)
- ▮ Motion Tests (Transducer Speed, Stroke, Bounce)
- ▮ 6 Dry Contact Inputs
- ▮ Timing Accuracy: 0.05% rdg ± 0.1 ms
- ▮ Timing Windows: 1s, 10s & 20s
- ▮ Contact Detection Range: Closed ≤20 Ω & Open ≥5000 Ω
- ▮ Optional Battery
- ▮ Optional Bluetooth Communication
- ▮ 2.28" Built-in Printer
- ▮ 7" TFT Touch Colour Display
- ▮ Light-weight and Portable
- ▮ Protection Class IP67 (case closed)

Technical Specifications

Measurement Parameters	Contact Timing (O, C, O-C, C-O & O-C-O), Motion Tests (Transducer Speed, Stroke, Bounce)		
Dry Contact Inputs	6 dry input channels (each detects main) and insertion resistor contacts		
Timing Windows	1s, 10s, 20s		
Timing Resolution	1 s duration	10 s duration	20 s duration
	± 50 μs	± 500 μs	± 1 ms
Timing Accuracy	0.05% rdg ± 0.1 ms		
Dry contact channel protection	Fuses and Diodes protection, All contacts grounded until test		
Contact detection range	Closed	≤20 Ω	
	Open	≥5000 Ω	
Resistor detection range	20Ω- 5000Ω		
Trigger input voltage	24 – 300 V DC or AC _{peak}		
Dry contact input protection	Diode Protection/ FSD		
Breaker Operations	OPEN, CLOSE, OPEN-CLOSE, CLOSE-OPEN, OPEN-CLOSE-OPEN		
Voltage sensing input range	V1 (Analogue Input)	V2 (Presence/Absence Detector)	
	0 – 250 V DC or AC _{peak}	24 – 300 V DC or AC _{peak}	
Breaker Initiate Capacity	20 A, 300 V DC or AC _{peak}		
Digital Travel Transducer Input	5V/12Vdc TTL		
Initiate current reading range	0 – 20A DC, 5 kHz		
Input Power	100-240 V, 47/63 Hz		
Built-in Battery	Yes, 14.4 Vdc 6.9 Ah (Optional; Models: CIBRE-60B & CIBRE-60B BLUE)		
Display	7-inch Colour Touch Display		
Memory	Up to 200 records (recommended for better device performance)		
Communication	USB 2.0/1.1 Standard-A, USB 2.0/1.1 Standard-B Bluetooth (Factory install option; Models: CIBRE-60 BLUE & CIBRE-60B BLUE)		
Printer	2.28-inch Built-in Printer		
Dimensions	16.9" x 12.9" x 9.3" (429 mm x 328 mm x 236 mm)		
Weight	8.2 kg (<i>models with battery</i>)		
Temperature	Working: -10 °C to +60 °C ; Storage: -30 °C to +70 °C		
Humidity	95% RH non-condensing		
Protection Class	IP67 (case closed)		
Scope of Supply	CIBRE-60, 6m Contact Cable (2x), 10m Contact Extension Cable (2x), 1m Initiate Cable, 5m Initiate Extension Cable, 1m External Trigger Cable, 5m External Trigger Extension Cable, 1m Voltage Measurement Cable, 5m Voltage Measurement Extension Cable, Power Cable, Ground Cable, USB Cable, Printer Paper (x2), USB flash drive, Instruction Manual (Soft Copy), Cable Bag		
Ordering Information	CIBRE-60 , 6-Contact Circuit Breaker Analyser with Built-in Printer		
	CIBRE-60 BLUE , 6-Contact Circuit Breaker Analyser with Built-in Bluetooth & Printer		
	CIBRE-60B , 6-Contact Circuit Breaker Analyser with Built-in Battery & Printer		
	CIBRE-30B BLUE , 6-Contact Circuit Breaker Analyser with Built-in Battery, Bluetooth & Printer		

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



**10 kV to 80 kV
Output Voltage**

**High Accuracy
1.5%**

VABO-80 SERIES 80 kV Circuit-Breaker Vacuum Bottle Tester with Built-in Printer

VABO-80 is designed to test circuit-breaker vacuum bottles up to 80 kV DC. The instrument facilitates fast, easy and accurate measurement through its user-friendly software.

VABO-80 can be optionally battery-powered to perform tests even without a mains supply.

Users can select the test voltages from 10kV to 80kV DC with step voltages of 1kV, and the user can define the test time from 5 seconds to 2 minutes.

The leakage current preset values of VABO-80 are 100 μ A, 200 μ A and 300 μ A.

The test can be performed after setting the output voltage and test time with a predefined cutoff for leakage current. After the execution of the test, if the leakage current doesn't exceed the preset leakage current value, the screen will show "TEST PASSED".

If the leakage current does exceed the input preset value, then the applied voltage will be turned off immediately and display "TEST FAILED". In the case of HV presence, the HV indicator on the device illuminates and gives off an audible tone.

VABO-80 features a 4.3-inch colour touch display, which is visible under both bright sunlight and dim light conditions. With the HighTest Data Management Platform (DMP Software), users can analyse and manage test results on a PC.

Operators can easily print the measured results using the 2.25-inch built-in printer in the VABO-80. The results may also be saved to a USB flash drive or the device's internal memory.

Multi-language capability and user-friendly operating menu make it easy to control the instrument.

VABO-80 is a lightweight, compact and rugged device with an IP protection class of IP67, (case closed), which makes it ideal for field use.

WHY DO WE TEST A VACUUM BOTTLE INTERRUPTER?

Fast and reliable protection is extremely important in case of short circuits or line faults occurring in the electrical power system.

Suppose the circuit breaker does not succeed in clearing the fault at the appropriate moment. The resulting accident can be dangerous in terms of both personnel injury and equipment damage and cause heavy losses.

Even though circuit breakers can be very reliable, they tend to gather dirt, moisture, and contaminants on the poles and the exterior surface of the interrupter, which may lead to non-optimal operation. Once air finds its way into the interrupter and leakage starts to appear, the vacuum bottle becomes unreliable.

Hence, Vacuum bottle interrupters must be tested and maintained to ensure proper operation during electrical faults.

The manufacturers of circuit breakers recommend an insulation integrity test that is well documented in international test standards such as IEC and IEEE.

Testing high voltage circuit breakers present a series of challenges. HIGHTEST's knowledge and experience within the power circuit breaker industry resulted in the design of VABO-80. This lightweight and impressive device is able to apply High Voltage DC up to 80 kV to a vacuum interrupter for a comprehensive test.

Features

- Circuit Breaker Vacuum Bottle Interrupter Testing
- Automatic Testing
- 10 kV to 80 kV DC with 1 kV step voltages
- High Accuracy (1.5 %)
- 100 μ A, 200 μ A and 300 μ A leakage current preset value
- Battery (Option)
- 2.25-inch Built-in Printer
- Internal memory (storage up to 200 records)
- External Memory- USB flash drive
- PC Software
- 4.3-inch TFT touch colour Display
- IP67 Protection Class (case closed)
- Light-Weight

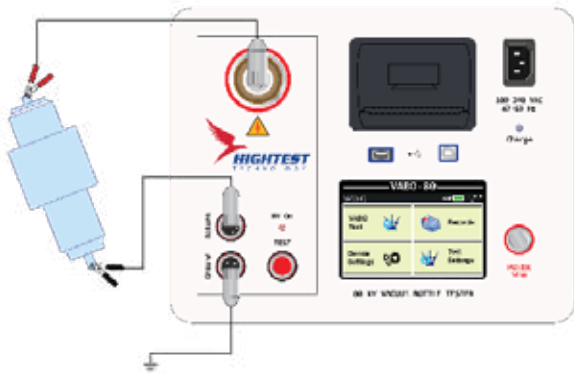


Illustration: Circuit Breaker Vacuum Bottle Testing with VABO-80

Technical Specifications

Measurement/Test	Circuit Breaker Vacuum Bottle
Output Voltage	10 kV to 80 kV DC with 1 kV step voltages
Output Ripple Voltage	2% at 20 kV- 80 kV ; 3% at 10 kV
Discharge Time	< 3 seconds
Leakage Current Preset Value	100 μ A, 200 μ A and 300 μ A
Accuracy	Typical: 1.5 %
Input Power	100-240 Vac, 47/63 Hz
Built-in Battery	Yes, 14.4 V 3.45 Ah (Optional; Model – VABO-80B)
Display	4.3-inch TFT touch Display (visible under bright sunlight and dim light)
Internal Memory	Up to 200 records (recommended for better device performance)
Communication	USB (USB 2.0/1.1 Standard-A and USB 2.0/1.1 Standard-B)
PC software	DMP Software
Printer	2.25-inch Built-in Printer
Test Plan	Up to 6 plans
Dimensions	12.5" x 9.8" x 8.0" 318 mm x 249 mm x 203 mm
Weight	4 kg (model with battery)
Operating Temperature	-10 °C to +60 °C
Storage Temperature	-30 °C to +70 °C
Humidity	95% RH non-condensing
Protection Class	IP67 (case closed)
Set of Package	VABO-80, Power Cable, Ground Cable, 3m Test Cable, USB Cable, Printer Paper (x2), USB flash drive, Instruction Manual (Soft Copy), DMP Software, Soft Cable Carrying Case
Options	Hard Carrying Case, Battery (Optional; Model – VABO-80B)

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

Ordering Information

VABO-80



80 kV Circuit-Breaker Vacuum Bottle Tester with Built-in Printer

VABO-80B



80 kV Circuit-Breaker Vacuum Bottle Tester with Built-in Battery & Printer

NOTES

HIGHTEST Technology Ltd. is a leading manufacturing company based in the UK that manufactures high precision test equipment. We mainly focus on the development, manufacture, and marketing of Transformer test systems.

We have years of experience in the field of development and production of high-end electrical test equipment. Customer satisfaction is our prime goal and through our trusted agents and distributors we supply our test equipment to Transformer manufacturers, Electrical utilities, Service contractors and companies throughout the world.

Our test equipment is designed and produced according to the most widely adopted international standards and our highly experienced team consistently provide excellent after-sales support and technical assistance as we value our customers contribution to maintaining the safe electrical work environments through quick and efficient equipment auditing.



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