



## Multifunctional test device

## Relay Timing Tests

## Turns Ratio Tests

## Microohmmeter

## 3Φ Circuit Breaker Timing Tests

## SUWI SERIES

## Multifunctional Substation Test device

SUWI Series is designed using advanced engineering technology to test power and control equipment in the substations. SUWI is an all in one device which can test Relay Timing, Transformer's Turns Ratio, Circuit Breaker Contact Resistance & Timing, and Fuses etc.

SUWI is a combined substation testing device with advanced features hence; named Substation Wizard that is SUWI. SUWI has easy, fast and accurate measurement features using its user-friendly software.

### RELAY TIMING MEASUREMENT

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

### TURN'S RATIO MEASUREMENT

By using ANSI/IEEE C57.12.90 measurement method SUWI can produce precise results. SUWI is one of the most accurate devices with its wide range (0.8 to 33,000) ratio measurement capability and high precision (0.08 %).

Apart from the ratio measurement, SUWI can also measure phase angle and polarity. It has 1V, 4V, 10V, 40V and 100V AC test voltages generation capability. SUWI Series can measure turns ratio of current, voltage and power transformers.

### LOW RESISTANCE MEASUREMENT/MICROOHM METER

SUWI can easily measure contact resistances of a circuit breaker, shunt, and disconnecter by applying adjustable current from 1A to 150A. It can calculate the real values of the resistors by providing penetration with the feature of the continuous current application.

SUWI can measure resistance up to 5  $\Omega$ . It is capable of measuring static resistance of the contact points of the circuit breaker. SUWI can measure idle circuit breakers as well as dual grounded circuit breakers.

The frequently used test models can be saved as templates and the tests can be performed more rapidly and quickly. Thanks to the quick test feature of the SUWI's user interface, the test can be performed in barely 15 seconds.

### CIRCUIT BREAKER TIMING

Contact Timing Tests are performed to determine the optimal performance of the breakers. Contact timing tests are performed to compare the breakers' contact performance against the manufactures 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 manufacturers' specifications to determine the performance of the circuit breaker. SUWI can perform 3-phase circuit breaker timing test; open, close, open-close, close-open, open-close-open timings, coil current measurement as well as internal and external trigger operations.

### GENERAL FEATURES

A 7-inch IPS 1024x600 pixel touch panel display allows SUWI Series to show all measurement results on a single screen. Users can record test results to the device's 8GB internal memory or an external USB flash memory.

With the HighTest Data Management Platform (DMP Software), users can analyse and manage measurement results using a PC. Multi-language capability and user-friendly operation menu make it easy to control SUWI Series. SUWI Series is a light, compact and rugged device with the protection class IP67 (case closed).

# Technical Specifications

Measurement Parameters	<b>Relay Timing Tests</b> (over current relays, over voltage relays, directional over current relays, frequency control relays); <b>Turns Ratio Measurement</b> , Phase Angle, Polarity, Ratio Error (%); <b>Microohmmeter/Low Resistance Tests</b> (Circuit breaker contact resistance and shunt resistance) <b>Circuit breaker timing test</b> (3-phase circuit breaker timing tests; open, close, open-close, close-open, open-close-open timings, coil current measurement, internal and external trigger operations)
<b>PROTECTION RELAY TIMING MEASUREMENT FEATURES</b>	
Current Outputs	Up To 110 A AC (magnitude and frequency adjustable) 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
<b>TURNS RATIO MEASUREMENT FEATURES</b>	
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
Excitation Current	0 to 2 A
Excitation Current Accuracy	±0.1 mA
<b>LOW RESISTANCE MEASUREMENT FEATURES/MICROOHM METER</b>	
Measurement Modes	Static Dual ground Resistance Measurement
Auto Test Mode	Yes
Test Current	1 A to 150 A DC
Measurement Range	Up to 5 Ω
<b>CIRCUIT BREAKER TIMING MEASUREMENT FEATURES</b>	
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 ± 0.1 ms
Contact detection	Yes
Trigger input voltage	24 – 300 V DC or AC <sub>peak</sub>
Breaker Initiate Capacity	20 A, 300 V DC or AC <sub>peak</sub>
Initiate current reading range	0 – 20A DC, 5 kHz
<b>GENERAL FEATURES</b>	
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 × 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)



**Contact Timing Tests**

**3 Dry Contact Inputs**

**Ultra-lightweight**

## **CIBRE-L3 SERIES**

### **3-Contact Circuit Breaker Timer with Built-in Printer**

CIBRE-L3 Series, 3-Contact Circuit Breaker Timers are designed using advanced engineering technology to test contact timings of circuit-breakers.

CIBRE-L3 Series have fast, easy and accurate measurement features by its user-friendly software.

CIBRE-L3 Series are battery-powered devices (optional feature), which allow users to perform tests even without power supply during field tests.

#### **Why do we need to test circuit breakers?**

It is very important to test circuit breakers regularly. Contact Timing Tests are performed to determine the optimal performance of the breakers.

The testing can determine improper breaker operations in case of system fault and to improve system reliability.

#### **Contact Timing Tests**

Contact timing tests are performed to compare the breakers' main & resistor 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 manufacturer's specification to determine the performance of the circuit breaker.

CIBRE-L3 Series feature with a 4.3-inch large colour touch display, which is visible under both bright sunlight as well as dim light conditions.

Operators can easily print the measurement results with the 2.25-inch built-in printer of CIBRE-L3 Series.

The results can also save to a USB flash drive or to the device's internal memory.

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

CIBRE-L3 Series devices are light-weight, compact and rugged with the protection of IP67 (case closed) which makes it perfect for the field test.





## Features

- Contact Timing (O, C, O-C, C-O & O-C-O)
- 3 Dry Contact Inputs
- Timing Accuracy: 0.05% rdg  $\pm$  0.1 ms
- Timing Windows: 1s, 10s & 20s
- Contact Detection Range: Closed  $\leq 20 \Omega$  & Open  $\geq 5000 \Omega$
- 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 <sub>peak</sub>		
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 <sub>peak</sub>		
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 ( <b>Optional</b> ; 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> )		
Working Temperature	-10 °C to +60 °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		

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**Contact Timing Tests**

**Ultra-lightweight**

## CIBRE-L6 SERIES

### 6-Contact Circuit-Breaker Timer with Built-in Printer

CIBRE-L6 Series, 6-Contact Circuit Breaker Timers are designed using advanced engineering technology to test contact timings of circuit-breakers.

CIBRE-L6 Series have fast, easy and accurate measurement features by our user-friendly software.

CIBRE-L6 Series are battery-powered devices (optional feature), which allow users to perform tests even without power supply during field tests.

#### Why do we need to test circuit breakers?

It is very important to test circuit breakers regularly. Contact Timing Tests are performed to determine the optimal performance of the breakers.

The testing can determine improper breaker operations in case of system fault and to improve system reliability.

#### Contact Timing Tests

Contact timing tests are performed to compare the breakers' main & resistor 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 manufacturer's specification to determine the performance of the circuit breaker.

CIBRE-L6 Series feature with a 4.3-inch large colour touch display, which is visible under both bright sunlight as well as dim light conditions.

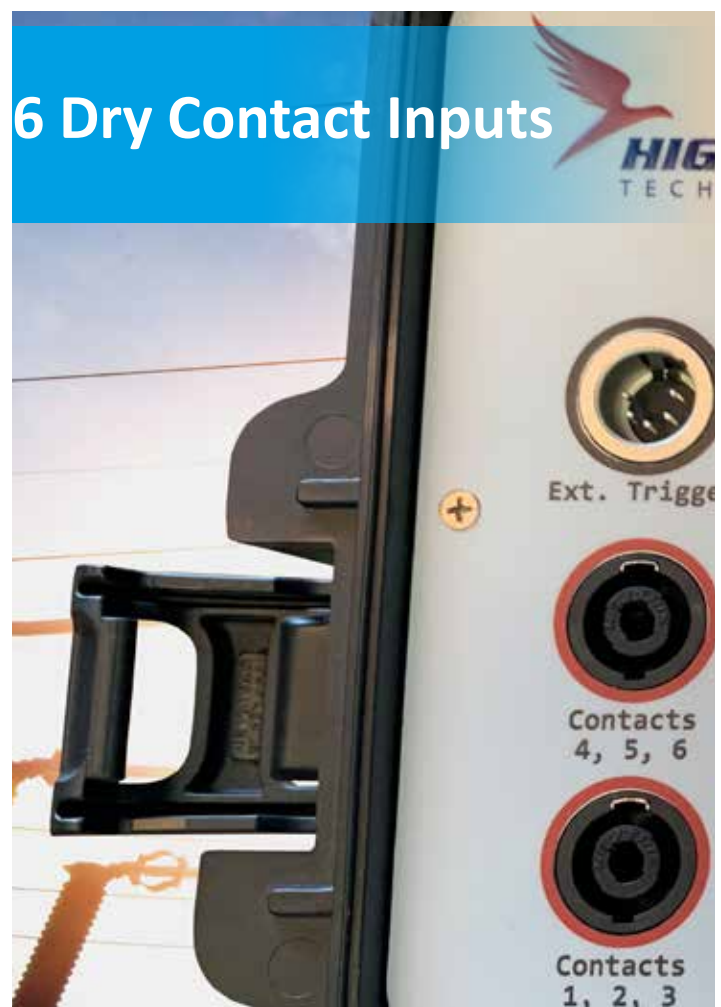
Operators can easily print the measurement results with the 2.25-inch built-in printer of CIBRE-L6 Series.

The results can also save to a USB flash drive or to the device's internal memory.

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

CIBRE-L6 Series devices are light-weight, compact and rugged with the protection of IP67 (case closed) which makes it perfect for the field test.

### 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  $\pm$  0.1 ms
- Timing Windows: 1s, 10s & 20s
- Contact Detection Range: Closed  $\leq 20 \Omega$  & Open  $\geq 5000 \Omega$
- 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 <sub>peak</sub>		
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 <sub>peak</sub>		
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 ( <b>Optional</b> ; 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> )		
Working Temperature	-10 °C to +60 °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		

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**Contact Timing & Motion Tests**

**3 Dry Contact Inputs**

## CIBRE-30

### 3-Contact Circuit Breaker Analyser with Built-in Printer

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

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

CIBRE-30 is a battery-powered device (optional feature), which allows users to perform tests even without power supply during field tests.

#### Why do we need to test circuit breakers?

It is very important to test circuit breakers regularly. Contact Timing Tests and Motion tests are performed to determine the optimal performance of the breakers. The testing can determine improper breaker operations in case of system fault and to improve system reliability.

#### Contact Timing Tests

Contact timing tests are performed to compare the breakers' main & resistor contact performance against the manufacturer's specifications.

The breakers OPEN, CLOSE, OPEN-CLOSE, CLOSE-OPEN & OPEN-CLOSE-OPEN operations are timed in milliseconds (ms) and cycles and then compared with the manufacturer's specification to determine the performance of the circuit breaker.

#### Motion Tests

CIBRE-30 can use to perform motion tests such as Transducer Speed, 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 manufacturer's specifications.

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

Operators can easily print the measurement results with the 2.28-inch built-in printer of CIBRE-30. The results can also save to a USB flash drive or to the device's internal memory.

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

CIBRE-30 is a light-weight, compact and rugged device with the protection of IP67 (case closed) which makes it perfect for the field test.





## 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



CIBRE-30 Series

## 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 <sub>peak</sub>		
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 <sub>peak</sub>	24 – 300 V DC or AC <sub>peak</sub>	
Breaker Initiate Capacity	20 A, 300 V DC or AC <sub>peak</sub>		
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> )		
Working Temperature	-10 °C to + 60 °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		

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Launching Soon..

Contact Timing & Motion Tests

6 Dry Contact Inputs

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

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

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

CIBRE-60 is a battery-powered device (optional feature), which allows users to perform tests even without power supply during field tests.

### Why do we need to test circuit breakers?

It is very important to test circuit breakers regularly. Contact Timing Tests and Motion tests are performed to determine the optimal performance of the breakers. The testing can determine improper breaker operations in case of system fault and to improve system reliability.

### Contact Timing Tests

Contact timing tests are performed to compare the breakers' main & resistor contact performance against the manufacturer's specifications.

The breakers OPEN, CLOSE, OPEN-CLOSE, CLOSE-OPEN & OPEN-CLOSE-OPEN operations are timed in milliseconds (ms) and cycles and then compared with the manufacturer's specification to determine the performance of the circuit breaker.

### Motion Tests

CIBRE-60 can use to perform motion tests such as Transducer Speed, 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 manufacturer's specifications.

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

Operators can easily print the measurement results with the 2.28-inch built-in printer of CIBRE-60. The results can also save to a USB flash drive or to the device's internal memory.

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

CIBRE-60 is a light-weight, compact and rugged device with the protection of IP67 (case closed) which makes it perfect for the field test.



## 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  $\pm$  0.1 ms
- Timing Windows: 1s, 10s & 20s
- Contact Detection Range: Closed  $\leq$ 20  $\Omega$  & Open  $\geq$ 5000  $\Omega$
- 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 <sub>peak</sub>		
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 <sub>peak</sub>	24 – 300 V DC or AC <sub>peak</sub>	
Breaker Initiate Capacity	20 A, 300 V DC or AC <sub>peak</sub>		
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> )		
Working Temperature	-10 °C to + 60 °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		

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