



## Features

- ✓ Lightweight and Portable
- ✓ Testing up to 6 Main + 6 PIR
- ✓ High resolution of 0.05ms
- ✓ Programmable delays in OC, CO cycle
- ✓ Internal Memory for 200 Results
- ✓ Calibration Due Indicator
- ✓ Comes with Inbuilt Battery and
- ✓ Thermal Printer

## MCBT-P

### Circuit Breaker Timer Testing



MCBT-P is a microprocessor-based second generation circuit breaker time interval meter. It measures the Closing, Opening, CO and OC times of various types of circuit breakers up to 400kV. The equipment is capable of testing up to 6 Main and 6 PIR contacts at a time under hostile EHV switch yard conditions. MCBT-P has a compact and lightweight construction. This makes it ideal for reliable measurements during periodic maintenance and inspection of circuit breakers.

## Applications

Circuit Breaker Testing (AIS, VCB) Gas Insulated Switchgear Testing Drive Switch/Earth Switch Testing Isolator /Disconnect or Testing

### Measurements

- Main Contact Timing
- PIR Contact Timing
- Number of Bounces
- Bounce Duration
- Contact Mismatch

<b>Contact Channels</b>	6 Main + 6 PIR		
<b>Sampling Speed</b>	20kC, 10C, 5kC, 2C, 1kC, 500Hz and 100Hz selectable		
<b>Plot Length</b>	0 - 1000 mSec @ 20kHz,	0 - 2000 mSec @ 5kHz,	0 - 10000 Sec @ 1kHz,
	0 - 1000 mSec @ 20kHz,	0 - 5000 Sec @ 2kHz	0 - 50000 mSec @ 500Hz, and 0 - 100000 mSec @ 100Hz
<b>Resolution</b>	0.05mSec @ 20kHz	0.2 mSec @ 5kHz,	1 mSec @ 1kHz,
	0.1 mSec @ 10kHz,	0.5 mSec @ 2kHz	2 mSec @ 500Hz and 10 mSec @ 100Hz
<b>Accuracy</b>	Value 0.05% + 1 Digit		
<b>Breaker Control</b>	Two solid state contacts rated at 35A, 300V AC/DC for breaker operation		
<b>Trigger Options</b>	Open, Close, C-O, O-C (Delay between operations selectable)		
<b>Special Cycle</b>	Duty Cycle "O-0.3Sec-CO-3Min-Co" Operation Only with Fixed Delay)		
<b>Display</b>	4 lines x 20 characters backlit LCD		
<b>Printer</b>	56 mm paper width, thermal printer		
<b>Keypad</b>	5 Keys		
<b>Memory</b>	Upto 200 results		
<b>Built-in Li-Ion Battery</b>	Li-Ion, 11.1 V, 4 Ah		
<b>Power</b>	Input to Instrument: 230 V AC, 50 Hz + 15% Instrument consumption: 15 VA		
<b>Communication</b>	Serial (RS 232C) and USB (Through Converter)		
<b>Software</b>	Window PC Software for MCBT-P		
	Optional : "Motware" - Windows based Software for downloading test results and analysis		
<b>Environment</b>	0°C to 50°C, 95% RH (non-condensing), Electrical noise normally found in charged HV switchyards		
<b>Dimensions</b>	380 mm x 260 mm x 175 mm		
<b>Weight</b>	7 kg		
<b>Type Test</b>	IEC 364-4-41 Protection against electric shock		
	IEC 1010-1 Safety requirements for electrical equipment for Measurement, control & laboratory use.		
	IP 54/IEC 529 Weather Proof Standards.		
	IEC 68-2/ IS 9000 Basic Environmental Testing Procedures covering shock, bump and vibration tests.		
	IEC 61326 EMC Standards		
	IEC 359 Humidity		
	IEC 61000 EMI/EMC/ Safety environment requirement for EHV switchyard		

### User Benefits

- Simultaneous measurement of 6 Main and 6 PIR contacts i.e. 2 Main and 2 PIR per pole.
- Easy to use with backlit LCD Display and a special purpose keypad.
- Continuous indication of breaker contact status by using LEDs.
- Special operation of O-0.3 Sec-CO-3Min-CO (Operation only)
- The highest sampling rates of 20 kHz offers a high resolution of 0.05ms.
- Special facility of programmable delay Too for CO operation.
- Special facility of programmable delay Toc for OC operation.
- Dual-powered with AC mains or through built-in Li-Ion battery with quick charging and long battery back-up.
- Battery protection from overcharging and deep discharge.
- Inbuilt Real-time clock which enables report printing with date and time stamp using an onboard thermal printer
- Up to 200 results can be stored along with the date and time stamp on the internal memory.
- User-friendly Windows software for downloading test results, performing trend analysis, and generating test reports.
- Supplied in Lightweight, military-grade ABS Case (IP67 class).
- Rugged and easy-to-connect test leads for timing measurement (15 meters) and breaker control (7 meters).

### Accessories

Contact Timing Cable, 15m	3 Nos
Breaker Control Cable, 7m	1 Nos
Master Earthing Cable 7m	1 Nos
Mains cord, 3m	1 Nos
Communication Cable 1.5m	1 Nos
USB to Serial (RS232) Converter	1 Nos
Printer Paper Roll	1 Set
Spare Fuses	1 Set
Soft Carrying Case For Test Leads	1 Nos
PC Downloading & Analysis Software on CD	1No
Printer Paper Roll. One fitted in instrument + One in TLS case	1 No
Operation cum Instruction Manual	1 Set