

# TDR9100

Circuit Breaker Test System

## THE ESSENTIAL TEST SET FOR YOUR CIRCUIT BREAKER TESTING

The TDR9100 is a state-of-the-art circuit breaker test system to test all types of circuit breakers with efficient and accurate performance measurements. The TDR9100 provides main contact timing, motion, resistance and capacitance measurements with the flexibility to double or triple your usable channels. Use this inclusive, rugged and field-portable instrument for simple and complex testing of circuit breakers. TDR9100 controls circuit breaker trip and close commands and supports the following operations: Trip (O), Close (C), Reclose (O-0.3s-C), Tripfree (CO), O-CO, O-0.3s-CO, First Trip (O), Slow Close (C).

### FEATURES

- Test circuit breakers with up to 4 breaks per phase, 3 motion channels and 6 event channels
- Testing Flexibility - the test set can be ganged as a set of 2 or 3 units effectively doubling or tripling your usable channels and main contacts for circuit breakers with up to 12 breaks per phase
- Sampling rates up to 20kHz and expanded analog measurement ranges
- Rugged and Reliable - a single box solution, providing the accuracy of a laboratory instrument with durability for field use
- Complete Test Reports - provided in MS Excel™, Word™ and PDF formats
- User-friendly software interface - T-Doble software features an intuitive control panel for quick, efficient and simple testing of circuit breakers
- Includes pre-insertion resistor and capacitance measurement capability
- Detects main contact and resistor contact timing errors
- Measure additional parameters in the mechanism cabinet using Doble or 3rd party transducers

### BENEFITS

- Use Doble's patented digital rotary and linear transducers to provide early diagnosis of mechanical problems
- Easily detect main contact and resistor contact timing errors
- Immune to Interference - the accuracy of test results is unaffected by the severe conditions of electrostatic and electromagnetic interference that are normally present in harsh substation environments
- Control with a Doble Universal Controller (DUC), tablet or PC



## TDR9100 TECHNICAL SPECIFICATIONS

MAIN/RESISTOR CONTACT TIMING	
OCB Configuration	3 Contacts
EHV Configuration:	12 Contacts - up to 36 with ganged units
Resolution	50 $\mu$ s / at max sample rate
Maximum Sample Rate	20 kHz
Resistor Detection Range	10 $\Omega$ to 10 k $\Omega$
Resistor (Insertion) Value Range	10 to 7000 $\Omega$
Measurement Accuracy	
Resistor Value	$\pm$ 10%
Capacitor Value	$\pm$ 10%
Capacitance Detection Range	75 to 10,000 pF
Voltage Isolation to Chassis	1.0 kV
TRIP/CLOSE INITIATION CONTROL	
Maximum Input Current	$\pm$ 100 A
Maximum Input Voltage	$\pm$ 300 V
Voltage Isolation to Chassis	1.0 kV
MOTION CHANNELS	
Number of Channels	3 - up to 9 with ganged units
Connector	15-pin "D"
Voltage Isolation to Chassis	1.0 kV
EVENT CHANNELS	
Dual function, Analog or Auxiliary, user programmable	
Number of Channels	6 - up to 18 with ganged units
Analog Measurement Channels	Maximum Input Voltage: $\pm$ 300 V Input Impedance: 1 M $\Omega$ Resolution: 12 Bit Number of Ranges: Ten - 0.2 to 300 V Analog Accuracy: $\pm$ 1% of reading, $\pm$ 1.5% full scale offset Voltage Isolation to Chassis: 1.0 kV
Auxiliary Contact Channels	Sense Mode: Voltage Sense/Contact Sense Maximum Input Voltage: $\pm$ 300 V Open Circuit Voltage: 30 V $\pm$ 10% Closed Circuit Current: 28 mA $\pm$ 10% Voltage Isolation to Chassis: 1.0 kV

GENERAL SPECIFICATIONS	
Recordings	25 seconds (all channels at max resolution) Up to 87 minutes (reduced resolution)
Communication	USB or Ethernet
Safety	Safety Ground Remote Safety Switch Audible Indication (test in progress)
Pending Certifications	CE, C-Tick, CSA Compliant

PHYSICAL SPECIFICATIONS	
Dimensions	24.0 X 15.5 X 8.5 in, 60.9 X 39.4 X 21.6 cm
Weight	24 lbs / 11 kg
Power Supply	100 - 240 V, 50/60 Hz
Temperature	0° to 50° C operating, -25° to + 70° C storage
Humidity	Up to 95% relative humidity non-condensing

TDR9100 OPTIONAL ACCESSORIES:	
OCB & EHV Contact Cable Sets	
Analog/Auxiliary Cable Kit - T9940	
Doble Current Probe (20 A / 200 A Ranges)	
10' or 60' Instrument Ganging Cable	
Full line of Motion Transducers & Adapters	
Mechanical Adapter Clamp Set	
Safety Switch Bypass Flag	



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Specifications are subject to change without notice.  
Doble is ISO certified.  
Doble is an ESCO Technologies Company.  
MKT\_SL\_TDR9100\_C6\_11/15