

Rapidly Ana



CT-6500

Easy to Use, Available in 3, 6, or 12 Dry-Contact Inputs

The Model CT-6500 is a stand-alone, microcomputer-driven EHV Circuit-Breaker Analyzer. It is inexpensive and easy to use. The CT-6500 is available in models with either 3 dry contacts (CT-6500-3); 6 dry-contacts (CT-6500-6); or 12 dry-contact inputs (CT-6500-12). The CT-6500 fully analyzes circuit-breaker performance: contact time, stroke, velocity, over-travel, and contact wipe. Contact-motion analysis includes: Open, Close, Open-Close, Close-Open, and Open-Close-Open. The CT-6500 timing window is selectable: 1-second, 10-second, or 20-second periods. The 10 and 20-second timing windows allow timing the long duration events (Circuit-Switcher contacts).

Contact Timing Inputs

Breaker contact timing uses dry-contact input channels. Each contact-input channel can detect main contact and insertion-resistor contact times (milliseconds and cycles).

Voltage Monitoring Inputs

One analog voltage input channel is dedicated to monitoring circuit-breaker dc power supply or coil voltages 0 to 300 volts, dc or peak ac. One digital voltage input channel allows users to monitor voltage on/off status of an A/B switch.

Trip/Close Current Monitoring

A built-in Hall-effect current sensor records Trip/Close current level and duration. The breaker's operate-coil current waveform duration (effectively, a performance "fingerprint" or "current profile") can be used as a diagnostic tool for analysis of a breaker's performance.

Breaker Stroke and Velocity

Three travel transducer digital channels let the CT-6500 measure stroke, over-travel, and bounce-back. Unlike other types of transducers, the digital transducer requires neither calibration nor setup.

Slow-Close Test

When a cable-connected travel transducer is attached to a circuit breaker (for measuring contact velocity), the Analyzer can also print out a table of "slow-close" test results. The Analyzer feature is a tool for accurately measuring contact-travel during circuit-breaker maintenance (when the circuit-breaker contact motion is slowly jacked through the stroke by manual operation i.e., a hand-operated "slow-close" test).

Timing Shot Storage Capabilities

The CT-6500 uses Electrically Erasable PROMs (EEPROMs) to store timing-shot data. Unlike other storage media, EEPROMs are immune to shock, temperature, and humidity. Stored timing shots can be recalled by users to reanalyze test data, to print copies, or to transfer data to an IBM-compatible PC for record keeping. Up to 200 timing shots can be stored in EEPROMs.

Breaker Initiate Features

A built-in solid-state initiate device lets users operate the breaker from the CT-6500. The operational mode includes: Open, Close, Open-Close, Close-Open, and Open-Close-Open. Multiple operation (e.g., Open-Close, Open-Close-Open) can be initiated by using programmable delay time or by sensing breaker's contact condition.

Diagnostic Capabilities

The CT-6500 can perform diagnostics on its internal electronics. Self testing of transducer and contact-test cables lets users check out the Timer whenever verification is wanted.

Computer Interface

An RS-232C Interface port permits the control of the CT-6500 with an IBM-PC compatible computer. From the PC, circuit breakers can be timed, and users can retrieve timing shots saved in the CT-6500 flash EEPROM. Windows® 95/98/NT/2000-based Breaker-Analysis software package lets users retrieve test-shot data stored in the computer's hard-drive disk, re-analyze the stored data, and generate reports in the office on an IBM-compatible computer. Available database software lets users generate customized test-result reports. Users may also create a circuit-breaker database library.

User Interface

An alpha-numeric keypad lets users enter breaker ID and control functions. A 4-line by 20-character LCD readout displays user messages. The LCD is back lighted so messages can be viewed in low light levels. A display contrast control is located on the front panel.

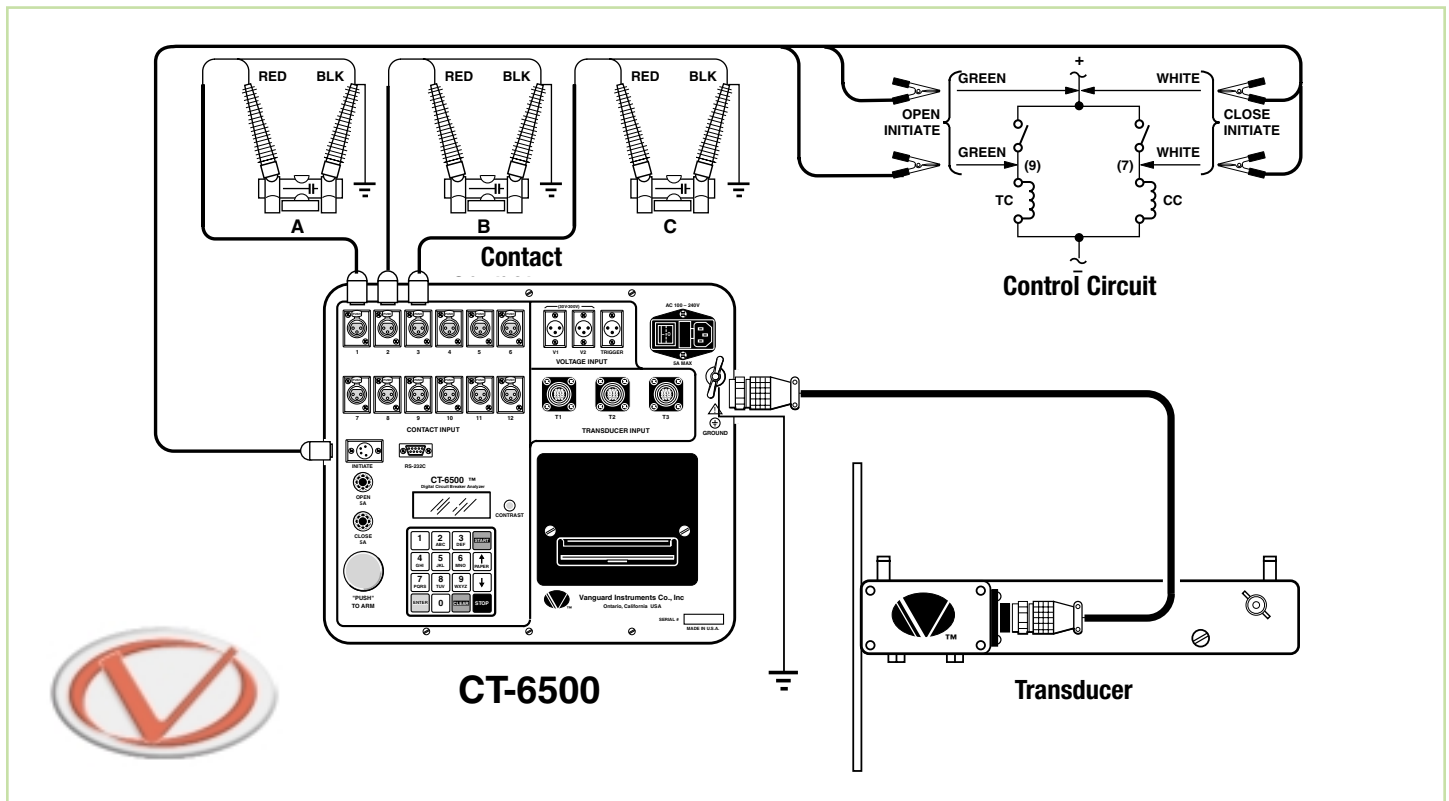
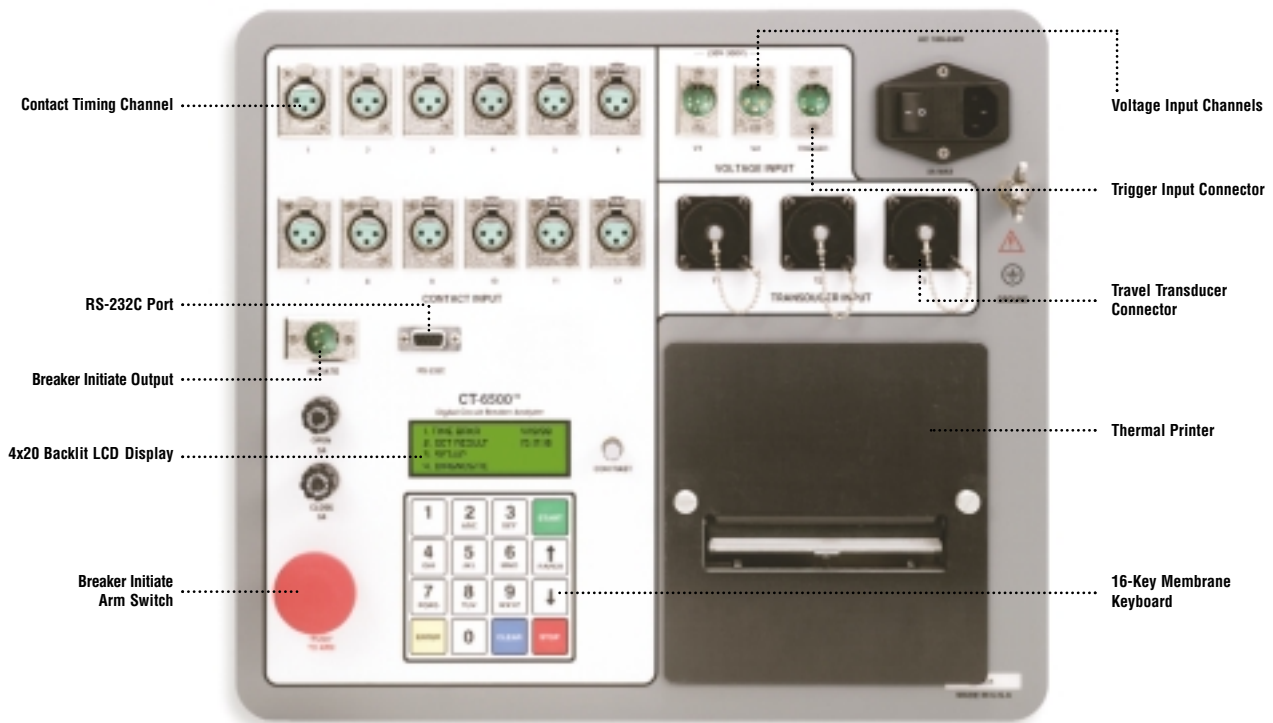
Built-in Thermal Printer

A built-in thermal printer prints the breaker contact analysis results in both tabular and graphic formats on 4.5-inch-wide thermal paper.

Digital Circuit Breaker Analyzer

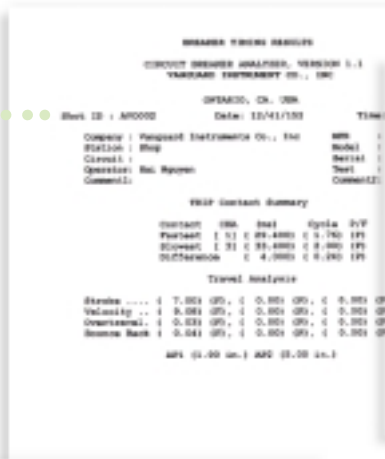
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OCB, Vacuum, and SF6 Circuit Breakers with Vanguard's CT-6500

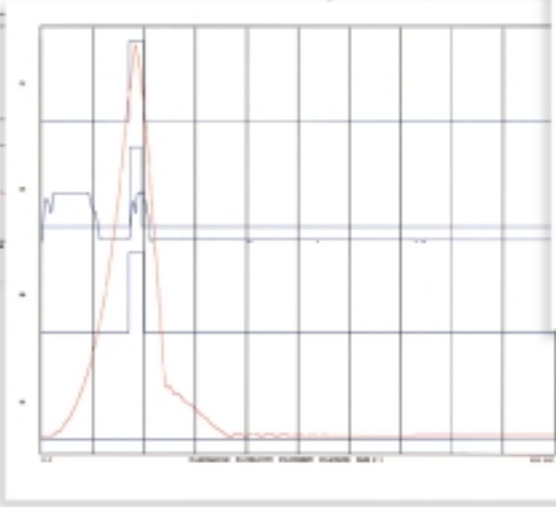
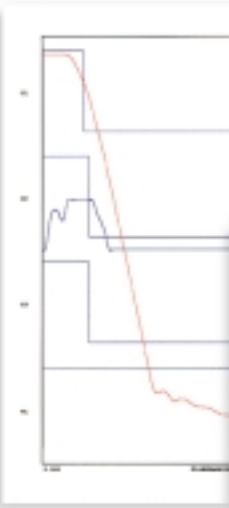


Microcomputer Accuracy in an Inexp

Graphic and
Tabulated Printouts



◀ Built-in Thermal Printer Output



◀ PC Compatible Output

Ordering Information

CT-6500 Digital Circuit Breaker Timer

- CT-6500, 3 Contact Channels, Cables, PC Software
- CT-6500, 6 Contact Channels, Cables, PC Software
- CT-6500, 12 Contact Channels, Cables, PC Software
- CT-6500 Shipping Case
- 4.5-inch Printer Paper

- Part No: CT-6500-3
- Part No: CT-6500-6
- Part No: CT-6500-12
- Part No: CT-6500-CASE
- Part No: Paper-TP4

See
Page 42
for Travel
Transducer
Ordering Info



Digital Circuit Breaker Analyzer

Comprehensive Digital Circuit Breaker Tester

FEATURES

- Full Breaker Tabulated & Graphic Data Printout
- Built-in thermal printer • Initiate Breaker Operation
- Digital Travel Transducer; no setup or calibration required
- Detect Main Contact and Insertion Resistor Contact on the same input channel
- On-Board EEPROM Shot Storage • Computer Interface • Diagnostic Capabilities



SPECIFICATIONS

CONTACT TIMING	Open, Close, Open-Close, Close-Open, and Open-Close-Open	BREAKER OPERATION	Initiate Open, Close, Open-Close, Close-Open, Open-Close-Open 3 travel transducer channels
SIZE	16-inches x 14-inches x 11-inches	INITIATE CAPACITY	25A/250Vac/dc max
WEIGHT	Less than 25 lbs	TRAVEL TRANSDUCER	Linear-motion: 0.0-60.0 in (± 0.005 in.); Rotary range: 0-360° ($\pm 0.006^\circ$)
INPUT POWER	3 amps, selectable 90-130Vac or 200-240Vac, 50/60 Hz	CONTACT TRAVEL POINT DIFFERENCE	Measures "Slow-close" contact-point distances (hard copy)
DRY-CONTACT INPUTS	3, 6, or 12 dry-input channels; Each channel detects Main and Insertion-Resistor Contacts	BREAKER ANALYSIS SOFTWARE (INCLUDED)	Breaker analysis software: Analysis software running under Windows 95/98/NT/2000 and features graphic display, numerical reports, and data base utility for use at shop or office. This software package is furnished with each Analyzer
TIMING WINDOW	Selectable: 1-sec, 10-sec, or 20-sec	STORAGE CAPACITY	200 timing shots
RESOLUTION	± 100 microseconds at 1-second duration; ± 1.00 milliseconds at 10-second duration; ± 2.00 milliseconds at 20-second duration	COMPUTER INTERFACE	RS-232C Port
ACCURACY	0.05% of reading +/- 0.1 ms at 1-second duration	DISPLAY	Backlit LCD readout screen: 20-character by 4-line display, viewable in the bright sunlight
DRY-CONTACT CHANNEL PROTECTION	Fuses protect all isolated power supplies; All contact inputs are grounded until test; TVS and zener-diode protected	PRINTOUT	Both Graphic contact travel waveforms and tabulated results are printed on 4.5-inch thermal paper
CONTACT DETECTION RANGE	Closed: < 20 ohms Open: > 5,000 ohms	CARRYING CASE (OPTIONAL)	Hard case for shipping: available for both Travel Transducers and the CT-6500
RESISTOR DETECTION RANGE	Range: 50-5,000 ohms	TEMPERATURE	Operating: -10°C to 50°C (15°F to +122°F) Storage: -30°C to 70°C (-22°F to +158°F)
EXTERNAL TRIGGER INPUT	Open/Close: 30-300V, dc/peak ac	WARRANTY	One-year warranty on parts and labor; post-warranty service contracts are available
VOLTAGE SENSING INPUT	V1: analog input; 0-255V, dc or peak ac, Sensitivity: $\pm 1V$ V2: voltage detector (present/absent) input; 30-300V, dc or peak ac		
CURRENT-SENSOR INPUT	One, Non-contact, Hall-Effect sensor, 0 - 30-amp ranges, dc to 5Khz		

Note: The above specifications are valid at nominal voltage and ambient temperature of +25°C (+77°F). Specifications are subject to change without notice.