

EZCT-2000™

Current Transformer Test Set



Vanguard Instruments Company

Simplify the Test with



EZCT-2000™

The EZCT-2000 is Vanguard's second-generation microprocessor-based current transformer test set. The EZCT-2000 will perform the CT (current transformer) saturation test, measure the CT winding resistance and CT turn ratios automatically. All of the EZCT-2000 test leads can be connected to the CT output terminals (X1, X2, X3, X4 & X5); there is no lead switching required during testing. Test voltage output is automatically raised and lowered by the EZCT-2000; no operator input is required. With 2000 Vac saturation test voltage available, the EZCT-2000 can easily perform saturation tests on very large CTs.

Saturation Test

The CT saturation test is performed using the ANSI/IEEE C57.13.1 test method. Test voltage ranges from 50, 300, 500, 1200 and 2000 Vac can be selected by the user for the saturation test. Test voltage is raised and lowered automatically by the EZCT-2000. The saturation test voltage and current data is collected and stored in the EZCT-2000 internal memory. Since the EZCT-2000 allows the user to connect its test leads to all the CT output terminals, the user can test any of the 10 possible combinations of X1 to X5. Up to 10 saturation tests can be stored in one record. Once the test is completed, the user can plot the CT excitation curves on the built-in thermal printer.

CT Ratio and Polarity Test

The EZCT-2000 determines the CT turns ratio by using the ANSI/IEEE C57.12.90 measurement method. A test voltage is applied on any two terminals (X1 to X5) of the CT. The induced voltage is measured through the H1 & H2 terminals of the CT. CT turns ratio is displayed and stored in memory. The turns ratio is measured from 0.8 to 5,000 to 1. The CT winding polarity is displayed as a + sign (in-phase) or a - sign (out-of-phase) and is printed with the phase in degrees.

CT Winding Resistance Test

The EZCT-2000 will also measure the DC resistance of the CT winding under test. DC winding resistance reading range is from 100 micro-ohm to 10 ohms.

Operator Interface and Display

The EZCT-2000 displays messages on a 4 lines by 20 character, sunlight-viewable LCD. The LCD is also backlit so messages can be viewed in low light levels. An alphanumeric keypad allows users to enter test information and control functions.

Thermal Printer

A 4.5 inch-wide built-in thermal printer prints the CT test results and saturation curves.

Test Record Header Information

Test-record header information includes the company name, substation name, circuit ID, manufacturer, CT serial number, operator's name and test-record comments. In addition to the test-record header, the user also can enter a 20-character test description for each test in the record (10 tests per record). The test-record header and the 10 test descriptions are stored with each test record in Flash EEPROM.

Test Record Storage Capacity

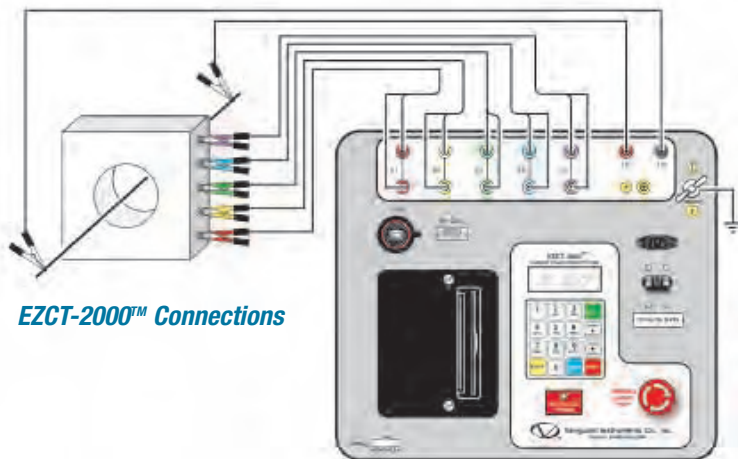
The EZCT-2000 can store up to 140 test records in FLASH EEPROM. Each test record may contain up to 10 saturation curves, turns ratio readings, and polarity & DC resistance readings. Test record can be recalled and printed by the thermal printer.

Test Plan Storage Capacity

The EZCT-2000 will store up to 128 CT test plans in FLASH EEPROM. A test plan defines the saturation test voltage and current range selection, CT name plate ratio, and CT winding terminals (X1 to X5) for each of the tests. Up to 10 test definitions can be stored per test plan. With the use of a test plan, the CT testing becomes extremely simple. The user only needs to connect the EZCT-2000 to the CT terminals and select a test plan to run. A test plan can be created from the EZCT-2000 front panel keypad or on the PC and downloaded to the EZCT-2000 via the RS-232C or USB port.

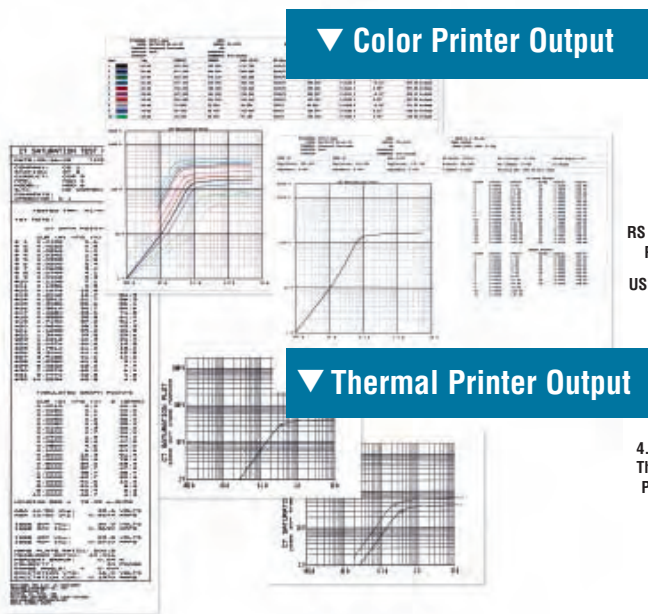
Computer Interface

The EZCT-2000 can be used as a stand-alone unit or in computer-control mode. A Windows XP-based "Current Transformer Analysis" software program is provided with each EZCT-2000. In computer control mode, the user can retrieve test records from the EZCT-2000 memory, create test plans or run a CT test from the PC. A built-in RS-232C or USB port can be used for the computer interface. Tabulated test records can be exported to EXCEL.



Current-Transformer Test Set

Efficient Procedure of Current-Transformer Testing with Vanguard's EZCT™ Current Transformer Test Set

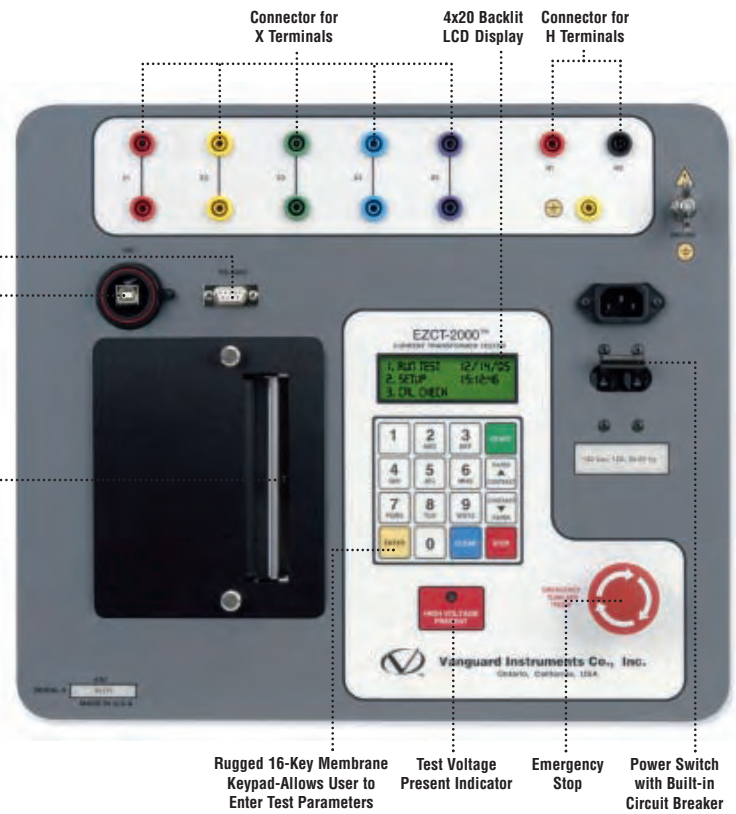


▼ Color Printer Output

▼ Thermal Printer Output

RS 232-C Port
USB Port

4.5-inch Thermal Printer



Rugged 16-Key Membrane Keypad-Allows User to Enter Test Parameters

Test Voltage Present Indicator

Emergency Stop

Power Switch with Built-in Circuit Breaker

Ordering Information EZCT-2000™ Current Transformer Test Set

EZCT-2000™, Cable, Software
EZCT-2000™ Shipping Case
4.5-inch Printer Paper

Part No: EZCT-2000
Part No: EZCT-2000 Shipping Case
Part No: Paper TP4

SPECIFICATIONS

TYPE	Portable Current-Transformer Test Set
PHYSICAL SPECIFICATIONS	16"W by 12"H by 14"D (40.6 cm x 30.0 cm x 35.6 cm), Weight 40 lbs (20 Kg)
INPUT POWER	90-130 Vac or 200-240 Vac, 50/60 Hz (user specified)
MEASUREMENT METHOD	ANSI/IEEE C57.12.90 and ANSI/IEEE C57.13.1
OUTPUT TEST VOLTAGE	0 to 50 Vac @10A max, 0 to 300 Vac @ 10A max, 0 to 500 Vac @ 5A max 0 to 1200 Vac @ 2A max, 0 to 2000 Vac @ 1.2 A max
VOLTAGE READING RANGE	0 to 2,200 Vac, (Accuracy: ±1.0% of reading, ±1 volt)
CURRENT READING RANGE	0 to 10A, (Accuracy: ±1.0% of reading, ±0.02A)
TURN-RATIO RANGE	0.8 to 999: 0.1%, 1000 to 1999: 0.3%, 2000 to 5000: 1%
PHASE ANGLE MEASUREMENT	0 to 360 degree, Accuracy: ±1.0 degree
RESISTANCE READING RANGE	100 micro-ohm to 10 ohm, Accuracy: 2% of reading, ±1 count, ±10 μ-ohms
DISPLAY	LCD Screen: 20 characters by 4 lines; viewable in bright sunlight
PRINTER	4.5-inch thermal printer
COMPUTER INTERFACE	RS-232C Port (115k baud) and one USB Port
PC SOFTWARE	Windows XP-based CT Analysis Program included with purchase price
TEST RECORD STORAGE	Store 140 test records. Each test record may contain up to 10 sets of saturation, resistance and ratio data
TEST PLAN STORAGE	Store 128 test plans. Each test plan stores 10 saturation test voltage and current settings
SAFETY	Designed to meet UL 61010A-1 Certification and CAN/CSA C22.2 No. 1010.1-92
ENVIRONMENT	Operating: -10° to 50° C (15°F to +122° F); Storage: -30° C to 70° C (-22°F to +158° F)
CABLES	Five 20-ft X cables set, One 35-ft H cable set, Power cord, One cable-carrying duffel bag
WARRANTY	One-Year parts & labor

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

Instruments Designed and Developed by the Hearts and Minds of Utility Electricians Around the World

You've seen a lot of utility test equipment in your time. You work with it routinely. Your facility relies upon it to ensure peak performance. Often times, your maintenance tasks are tedious, time-consuming and repetitive. But timely and accurate information is the currency of maintaining maximum uptime and minimal repair, thus testing must be done. Your instruments must be up to the task.

Vanguard Instruments is familiar with your problems and shares in your desire to make transformer and breaker testing fast, reliable, and simple. These principles are the basis for every Vanguard design. They also form the premise for our ongoing research and development as well as every innovative feature we introduce.

How do we know what you're looking for in utility test equipment? We're there in the trenches with you! Our Chief Engineer is frequently on-site at power utility substations around the country and all over the world; working, listening and talking with electricians and technicians just like you. More than that, you've shown us the real nitty-gritty of testing. We've taken that to heart and then back to the lab to solve your problems. The results of your recommendations are embodied in utility test equipment that is easy to use, lightweight, rugged and dependable. The EZCT-2000™, along with Vanguard's full line of test equipment, leads the industry in accuracy and automatically performs a range of tasks and calculations that were once the bane of every utility electrician.

We hope that you will take a few moments to consider the technological innovations that are engineered into every Vanguard test instrument. Equally important, we want to know that our past efforts make a present difference in your testing routines and on-line uptime. We're not done though. You can be confident we're looking for new ways to improve the results of your testing regimen. Thanks for choosing Vanguard Instruments.



Vanguard Instruments Company, Inc.

1710 Grevillea Court • Ontario, CA 91761 • Phone 909-923-9390 • Fax 909-923-9391
Website: www.vanguard-instruments.com