POWER DIAGNOSTIC INSTRUMENT COMPANY

Vacuum Circuit Breaker Analyzer

VCBA 01

- **Comprehensive vacuum CB HV test and contact timing test**
- **10-80 kV DC in 1 kV steps with 1.5% accuracy**
- **Settable leakage current 50-300 micro–A in 50 micro-A steps**
- **Measures leakage current for trending**
- **Trip & close circuit breaker main contact timing**
- **Touch screen LCD screen for improved productivity**
- **Built-in 2" thermal printer**
- **Enhanced safety features: audible and visual high voltage presence indicators, user-controlled safety switch**

Introduction:

The VCBA 01 from Power Diagnostic Instrument Company is a next-generation, field-portable analyzer engineered for fast, accurate, and reliable testing of vacuum circuit breakers. Compact, lightweight, and easy to operate, it empowers field technicians to perform comprehensive diagnostics with confidence and efficiency.

Key Features & Functions

- High-Voltage DC Vacuum Integrity Testing: Verifies the condition of circuit breaker vacuum bottles by applying a precise DC test voltage to the arcing chamber.
- Automatic Leakage Current Monitoring: Continuously measures leakage current to ground during testing to ensure the vacuum integrity of the breaker contacts.
- Smart Pass/Fail Decision: The VCBA 01 automatically evaluates results against user-defined limits. If leakage current remains below the threshold, the test is logged as *Pass*; if exceeded, the instrument immediately stops the test and records a *Fail* result—protecting both the equipment and the operator.
- User-Defined Test Parameters: Easily configure test voltage levels and test duration to match your specific maintenance or QA requirements.

Benefits

- Enhanced Safety: Automatic shutdown and isolation protect the operator and equipment from overcurrent or insulation failure.
- Time-Saving Operation: Simple setup, intuitive interface, and automated decision-making streamline field testing—boosting productivity.
- Accurate, Consistent Results: Advanced measurement circuitry ensures precise detection of leakage current, delivering repeatable and trustworthy results every time. The accurate measurement capability allows users to trend test data over time, helping identify early signs of vacuum deterioration and enabling condition-based maintenance scheduling for improved reliability and reduced downtime.
- Portable and Durable Design: Built for demanding field environments—lightweight yet rugged for reliable performance wherever testing is required.

Your Reliable Partner for Vacuum Breaker Diagnostics

With the VCBA 01, testing vacuum circuit breakers becomes **simpler, safer, and more dependable**—helping you ensure long-term reliability of your power distribution system.

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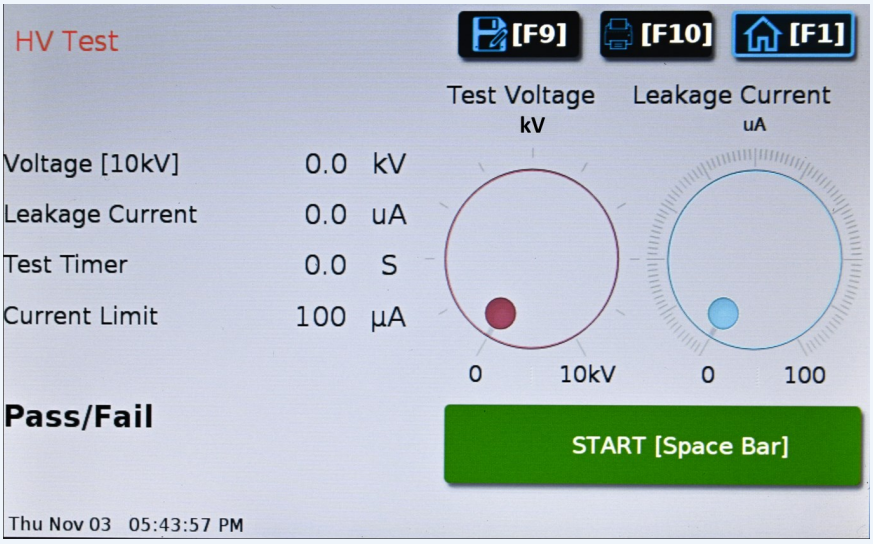
Precise and Safe High-Voltage DC Testing

The VCBA 01 enables high-voltage DC testing from 10 kV to 80 kV, adjustable in 1 kV increments, allowing precise configuration of test voltage according to specific circuit breaker ratings and maintenance standards.

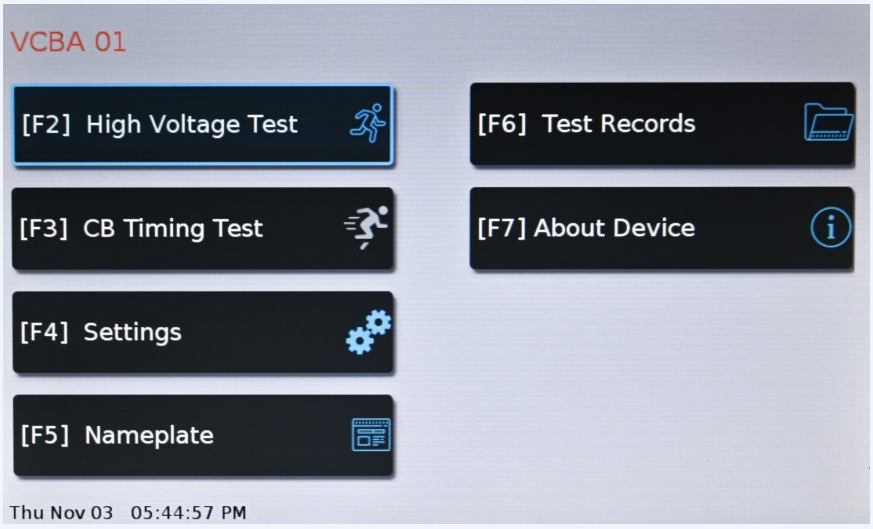
For operator protection, the instrument incorporates a comprehensive safety system that includes a built-in safety interlock, along with visual and audible indicators to clearly signal the presence of high voltage during operation.

A remote safety thumb switch, equipped with a 10-foot cable, allows users to initiate and control the test from a safe distance. If the trigger on the safety switch is released for any reason during the test, the VCBA 01 immediately discharges and removes the applied high voltage, ensuring safe shutdown and preventing accidental exposure.



User-Friendly Interface & Effortless Data Entry:

The VCBA 01 is designed with a user-friendly interface that simplifies the comprehensive testing of vacuum circuit breakers. Its back-lit color LCD touchscreen (800 × 480 pixels) remains clearly visible in both bright sunlight and low-light conditions, ensuring reliable operation in any environment. The intuitive menu navigation allows users to set up and execute tests with just a few taps, while the full-sized industrial keyboard makes data entry—such as nameplate details and test parameters—quick and error-free.



Built-in Thermal Printer

The VCBA 01 is equipped with an integrated 3-inch thermal printer, enabling immediate on-site printouts of test results for convenient record-keeping and verification in the field.

Data Storage and Transfer

Up to 100 test results can be stored internally for later review. Data can be transferred to a PC using either a USB flash drive (flash drive not included) or the USB 2.0 PC interface.

Comprehensive Analysis and Reporting

The included PC software allows users to analyze test data, generate detailed reports, and maintain a digital history of test records—supporting effective documentation and long-term asset management.

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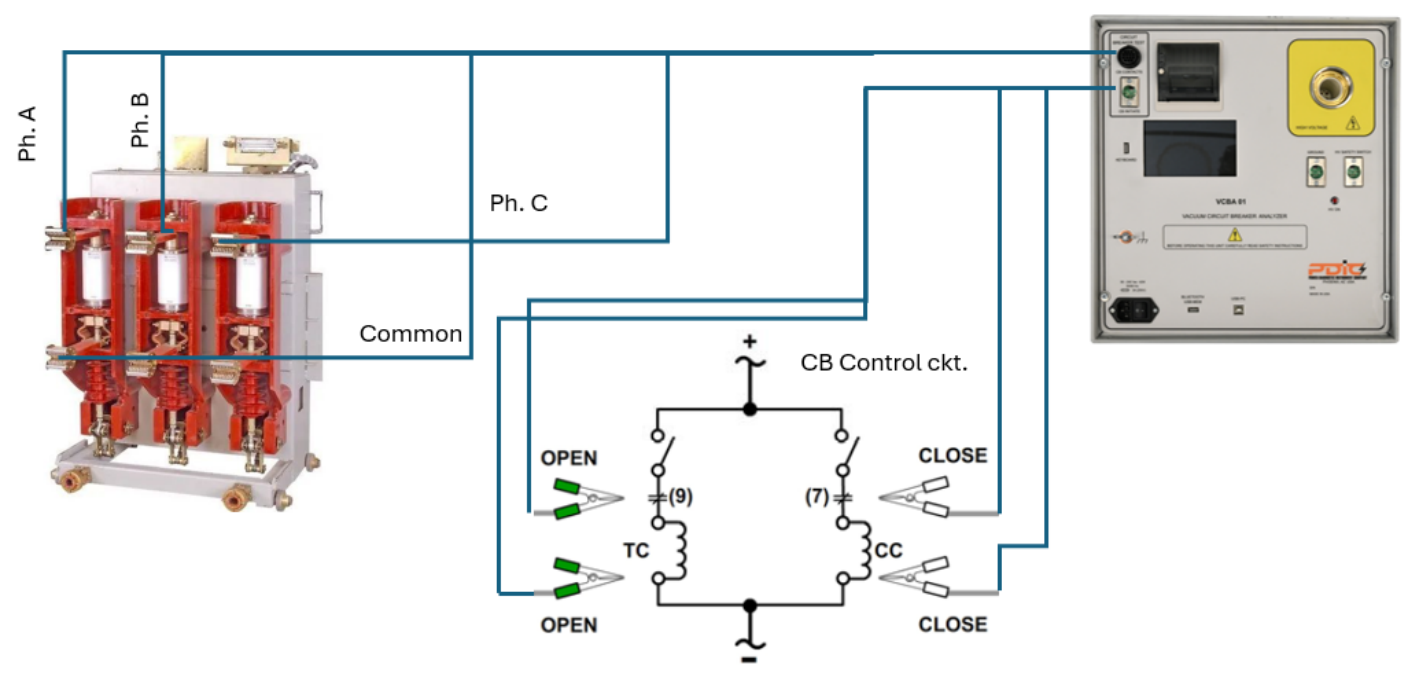
Circuit Breaker Timing Test

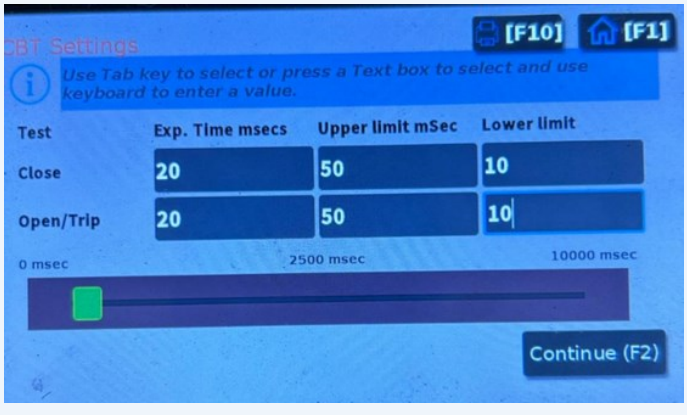


Circuit Breaker Timing Test

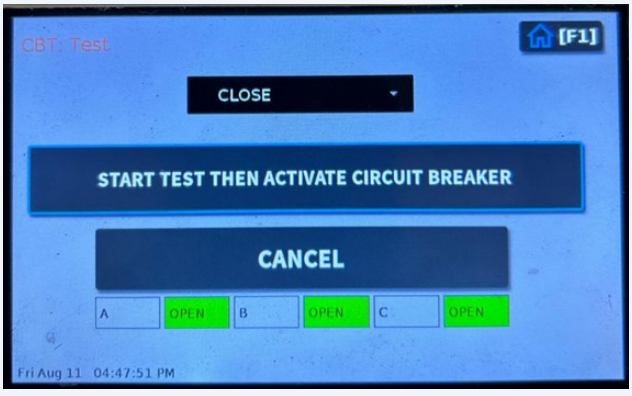
The **VCBA 01** offers an advanced optional feature that allows users to test the operating time of a circuit breaker's main contacts with precision. It enables comprehensive timing tests, including:

- **Open**
- **Close**
- **Close–Open**
- **Open–Close**

Users can set upper and lower limit values for trip and close times, allowing the **VCBA 01** to automatically determine a **Pass/Fail** status based on the test results.



The **VCBA 01** features an intuitive user interface that displays the circuit breaker status, enabling users to select the appropriate test with confidence. Once a test is activated, a countdown timer appears on the screen, prompting the user to initiate the test before the timer expires. This ensures a streamlined testing process.



Test results from the **VCBA 01** can be securely stored within the device and easily transferred to a USB drive or downloaded to a PC via USB using **PDIC Software**. This powerful software allows users to generate comprehensive test reports, incorporating nameplate data, configuration settings, test information, detailed results, and **Pass/Fail** determinations. Effortlessly document and analyze your circuit breaker testing with precision and ease.

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Technical Specification : VCBA 01

HV TEST	
Input Power	90 ¬ 240 Vac, 50/60 Hz Optional back up battery
Voltage Range	10 kV ¬ 80 kV DC in 1 kV steps
Accuracy	1.50%
Output Voltage Ripple	3% max
Voltage Discharge Time	3 seconds
Leakage Current Setting	50 to 300 micro-Amps, 50 micro-Amp steps
CB TEST (OPTIONAL)	
Dry Contact Inputs	3 channels of CB main contacts
Trigger Input Voltage Open/Close	30 - 300 V, DC, or peak AC
Breaker Operations	Open, Close, Open-Close, Close-Open
Timing Resolution	±0.1 millisecond accuracy: 0.05% of reading ±1 ms
USER INTERFACE	
Printer	Built-in 2" wide thermal printer
Display	Color touch-screen LCD (800 x 480 pixels)
Keyboard	Full-sized "QWERTY"-style industrial keyboard
SAFETY	
Safety Switch	Hand-operated safety switch with 10 ft cable
High Voltage Presence Indicators	Buzzer and LED high voltage presence indicators
OPERATING/STORAGE TEMPERATURES	
Temperature	Operating: -10°C to +50°C (+15°F to +122°F) Storage: -30°C to +70°C (-22°F to +158°F)
Humidity	90% RH @ +40°C (+104°F)
DATA STORAGE AND ANALYSIS	
Internal Test Record Storage	Up to 100 timing and high voltage test records
External Test Record Storage	USB Flash drive interface and firmware updates
PHYSICAL SPECIFICATIONS	
Dimensions	15”w x 6" H x 14" D (37 cm x 15 cm x 35 cm)
Weight	22 lbs. (10.0 Kg)

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