

# CBCT

programmable DC power supply



**Vanguard Instruments**  
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### Product Overview

The CBCT provides one pulse and one continuous DC output. The unit's builtin short-circuit protection feature protects the coil under test if the current exceeds 80 amperes or if the current drawing duration is more than 500 milliseconds. A general purpose single channel timer is also available for checking circuit breaker operating time or for any other timing application.

### ordering information

Part No.	Description
9063-UC	CBCT unit and cables

The Vanguard Circuit Breaker Coil Tester (CBCT) is a variable voltage DC power supply designed specifically to test substation circuit-breaker Open and Close coils. The CBCT uses the substation's DC power supply to electronically generate a programmable output voltage from 5% to 95% of the source voltage. The CBCT can maintain up to an 80A test current while maintaining 2% or better voltage regulation during the circuit breaker coil operation. The CBCT provides a safe and convenient method for testing minimum operating voltages of Open and Close coils.

### Input Voltage

The CBCT's input voltage range is from 20 to 300 Vdc. The input circuit is also protected from a reversed polarity connection.

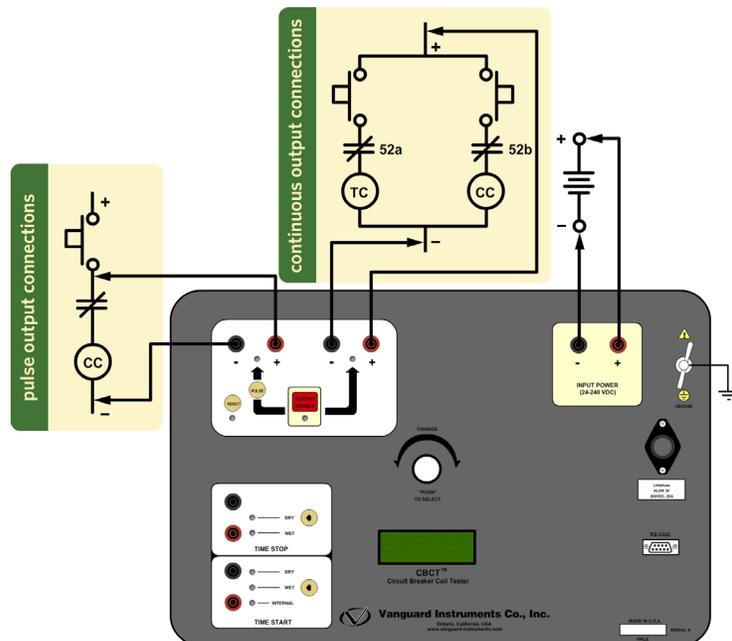
### Output Voltage

The output voltage is programmable from 5% to 95% of the input voltage and is set using the dial on the front panel. Output voltage regulation is better than 2% under load. Two DC outputs (one continuous and one pulse) are available on the CBCT. Both outputs are capable of sourcing up to 80 amperes. These outputs are protected against short-circuit conditions and will not exceed 80 amperes or a duration of 500 milli-seconds.

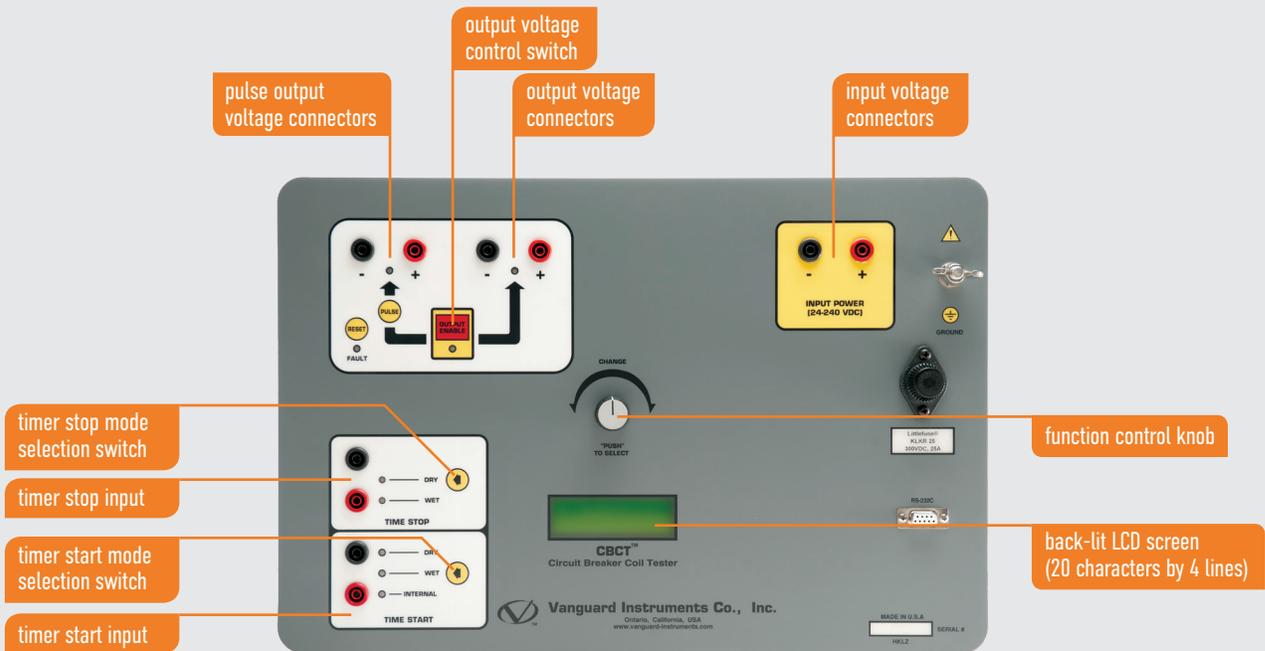
### CBCT Timer

The built-in, single channel timer can be used to verify circuit-breaker timing parameters or for any timing application. The timing range is from 0.000 to 999.000 seconds with an accuracy of 0.1 milli-seconds. The timing results are displayed in both milli-seconds and cycles. The timer can be started by circuitbreaker coil initiation or can be triggered by the dry or wet contact input. The timer can be stopped by either the dry or wet contact input.

## CBCT connections



# CBCT Features



## CBCT technical specifications

 <b>physical specifications</b>	<b>Dimensions:</b> 19"W x 7"H x 15" D (48 cm x 17 cm x 38 cm) <b>Weight:</b> 25 lbs. (11.3 Kg)	 <b>input voltage</b>	20 – 300 Vdc, 20A fuse
 <b>output voltages</b>	5% – 95% of input voltage with 2% regulation at max current (up to 80A)	 <b>output voltage protection</b>	shutdown if current exceeds 80A or if current drawing time exceeds 500 ms @ 80A
 <b>output voltage channels</b>	one continuous and one pulse DC output	 <b>volt meter range</b>	input/output meters, 0 – 300 Vdc; accuracy: 1% of reading, ±0.2V
 <b>timer start input</b>	internal (coil initiation), wet-contact input (20 – 240 Vac/dc) or dry-contact input (1 – 200 ohms)	 <b>timer stop input</b>	wet-contact (20 – 240 Vac/dc) or dry-contact (1 – 200 ohms)
 <b>timer display range</b>	0.0000 – 999.999 seconds; accuracy: 0.1 ms, ±1 digit	 <b>display</b>	back-lit LCD screen (20 characters by 4 lines)
 <b>safety</b>	designed to meet UL 61010A-1 and CAN/CSA C22.2 No. 1010.1-92 standards	 <b>humidity</b>	90% RH @ 40°C (104°F) non-condensing
 <b>temperature</b>	<b>Operating:</b> -10°C to +50°C (+15°F to +122°F) <b>Storage:</b> -30°C to +70°C (-22°F to +158°F)	 <b>altitude</b>	2,000 m (6,562 ft) to full safety specifications
 <b>cables</b>	two 6-foot (1.83m) #8 AWG DC cable sets, two 10-foot (3.05m) cable sets, one ground cable, one cable bag	 <b>warranty</b>	one year on parts and labor
 <b>options</b>	shipping case		

**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.

Founded in 1991 and located in Ontario, California, USA, Vanguard Instruments™ offers a wide range of diagnostic test equipment that accurately and efficiently measures the health of critical substation equipment, such as transformers, circuit breakers, and protective relays.

Our first product was a computerized, extra high voltage (EHV) circuit breaker analyzer, which became the forerunner of an entire line of EHV circuit breaker test equipment. Over the years, our portfolio has grown tremendously to include microcomputer-based precision micro-ohmmeters; single- and three-phase transformer winding turns-ratio testers; transformer winding-resistance meters; mega-ohm resistance meters; and a variety of other application-specific products.

Our instruments are rugged, reliable, accurate, and user friendly. They eliminate tedious and time-consuming operations, while providing fast, complex test-result calculations. Using our equipment helps reduce errors and eliminates the need to memorize long sequences of procedural steps.

In 2017, Vanguard Instruments became a part of Doble Engineering Company, an energy industry leader in hardware, software, and services that diagnose and monitor the health of critical assets.



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