



Circuit Breaker Analyzer & Timer CAT30

- Simple & easy to operate
- Timing measurement
- 3 Channels for main contacts
- OPEN & CLOSE coils current measurement
- Results printed on 80 mm thermal printer
- Detailed analysis of test results with DV-Win software



Circuit Breaker Analyzer & Timer CAT30 is a standalone or a PC-controlled digital instrument for condition assessment of circuit breakers. The timing channels record closings and openings of main contacts and resistor contacts. CAT30 records graphs of both Open and Close coil currents. Main contact channels can also measure resistance value of pre-insertion resistors (if present in the circuit breaker). Test results are printed on 80 mm thermal printer in tabulated and graphical form.

An alphanumeric keypad is used for entering Breaker data, Test data and Control functions. CAT30 provides easy selection of different operational modes: Open (O), Close (C), Open-Close (O-C), Close-Open (C-O), and Open-Close-Open (O-C-O). Multiple operations, such as Open-Close and Open-Close-Open, can be initiated by using predefined delay time or by sensing breaker's contact position. The breaker can be operated remotely by using External trigger.

Two analog channels measure and record the coil currents simultaneously (OPEN and CLOSE), up to 35 A DC. Results are printed in both diagram and table form on a built-in printer.

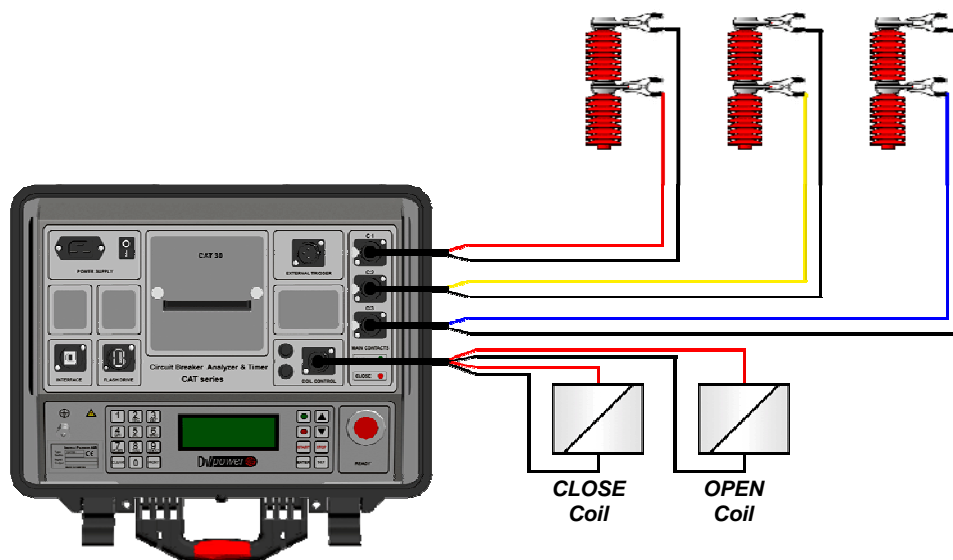
DV-Win software provides full control of all CAT30 functions from a PC, acquisition and analysis of test results. Graphical presentation of variety of measurements and timing test results uses cursors and powerful zoom functions for detailed analysis. Colors, grids, scales and positioning of the test data are all controlled by the user. DV-Win supports automatic unit conversion. (e.g.: cycles to seconds or mm to inches). Test records can be exported in standard file format for further analysis.

Application

Typical application is:

- ✓ Simultaneous measurement of 6 Main contacts (2 break per phase) and pre-insertion resistors (if present in the circuit breaker),
- ✓ Resistance measurement of pre-insertion resistors (if present in the circuit breaker),
- ✓ Evaluation of the synchronization between the circuit breaker poles,
- ✓ Measurement of coil currents, simultaneously for both coils,
- ✓ Display and print test results, both numerically and graphically.

Connecting a test object to CAT30



Features

Mains power supply input
90 V – 264 V AC; 50 Hz – 60 Hz

Thermal printer (built-in 80 mm wide)
Graphic and numeric printout of contact and travel wave form

External Trigger input
Used for remote activation of CAT30

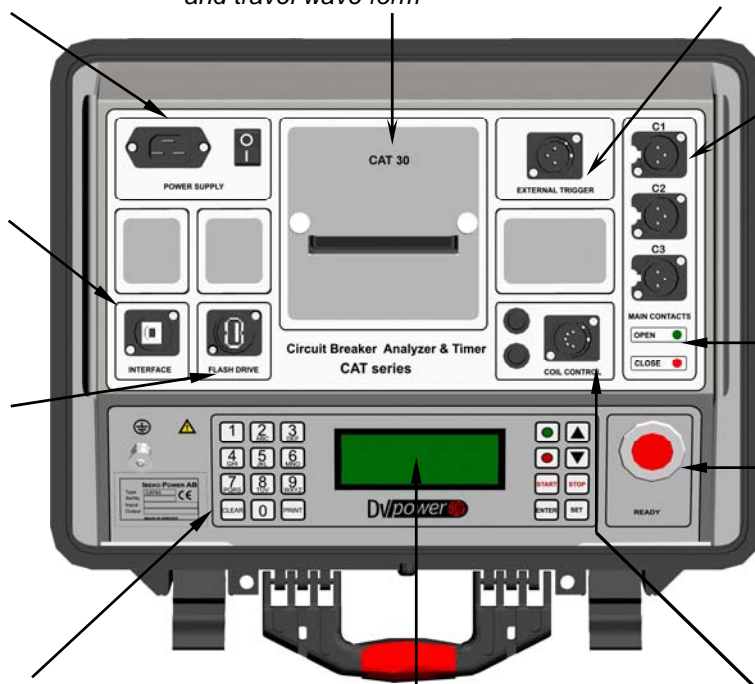
PC communication USB interface

Main contacts inputs
Used for timing of main and pre-insertion resistor contacts, and for resistance measurement of pre-insertion resistors

Flash drive
Used for direct download of test results on a USB memory stick

Breaker state indicator
The state of circuit breaker is indicated

READY button
Prepares the instrument for start of the test



Alphanumeric keypad
Used for entering Breaker data, Test data and Control functions

LCD Screen
20 Characters by 4 Lines; LCD display with backlight, viewable in bright sunlight.

Coil Control inputs
Used for operating of circuit breaker's OPEN and CLOSE coil



Main contacts cables set



Coil control cable



External trigger cable

Ordering information:

CAT3000-N-00 CAT30 device with ground cable, USB cable and CD with software

CO-05-00C5B1 Coil Control Cable 5 m with banana plugs*

CM-05-30C3A2 Main Contact Cables 5 m with alligator clamps*

CE-05-00C4B1 External Trigger Cable 5 m with banana plugs*

*The above cables are also available in many other lengths and terminations. Please contact IBEKO Power for more information.

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Technical Data

Main Contact Inputs

- Number of contact inputs: 3. Each channel detects Main and Pre-insertion resistor contacts.
 - Closed $\leq 10 \Omega$,
 - Resistor contacts range 10Ω to $10 \text{ k}\Omega$,
 - Open $\geq 10 \text{ k}\Omega$
 - Open circuit voltage: 20 V DC
 - Short circuit current 50 mA
- Each channel measures resistance of pre-insertion resistors
- Each input group is isolated with respect to the others

Breaker Operation

- Close (C),
 - Open (O),
 - Close-Open (C-O),
 - Open-Close (O-C),
 - Open-Close-Open (O-C-O)
- User can select any desired test sequence

Coil Operation

- Number of channels: 2 (Open and Close coil)
- Two separate outputs for coil triggering
- Driver characteristics: 300 V DC max, 35 A DC max

Printer (optional)

- Thermal printer
- Graphic and numeric printout of contact and travel wave form
- Paper width 80 mm

Dimensions and Weight

- Dimensions: 410 mm x 180 mm x 320 mm
16,14 in x 7,08 in x 12,59 in
- Weight: 7 kg / 15,4 lb

Electromagnetic Compatibility (EMC)

- CE conformity: EMC standard 2004/108/EC

Environmental conditions

- Operating temperature: $-10 \text{ }^\circ\text{C}$ - $+50 \text{ }^\circ\text{C}$
 $14 \text{ }^\circ\text{F}$ - $+122 \text{ }^\circ\text{F}$
- Storage & transportation: $-40 \text{ }^\circ\text{C}$ - $+70 \text{ }^\circ\text{C}$
 $-40 \text{ }^\circ\text{F}$ - $+158 \text{ }^\circ\text{F}$

Humidity: 5 % - 95 % relative humidity,
non condensing

Time Measurement

Time measurement resolution:

- 0,1 ms for 2 s test duration;
- 1 ms for 20 s test duration;
- 10 ms for 200 s test duration;

Time accuracy 0,05% of the reading \pm resolution

Current Measurement

- Current measurement for Open and Close coil, 2 channels, Hall-Effect sensor
- Range $\pm 35 \text{ A}$ DC to 5 kHz
- Accuracy 1%
- Graphic presentation: currents waveform is displayed with resolution of 0,1 ms

DV-Win software

- User friendly software
- Complete control of CAT30 during the testing
- Complete analysis of tests results
- Internal memory for pre-defined Test plans
- Database for managing and analysis of all testing

Analog inputs

- 2 channels – Coil current measurement
- The analog inputs are isolated with respect to all other circuits

External Trigger

- Trigger input voltage: 10 V – 300 V AC/DC

Mains Power Supply

- Connection according to IEC/EN60320-1; UL498, CSA 22.2
- Mains supply: 90 V - 264 V AC; 50-60 Hz

Safety Standards

- European standards: EN 61010-1; LVD 73/23/EEC
- International standards:
IEC 61010-1; UL 3111-1
CAN/CSA-C22.2 No 1010.1-92

All specifications herein are valid at ambient temperature of $+25 \text{ }^\circ\text{C}$ and recommended accessories.
Specifications are subject to change without notice.