

## SAT40A

Coil testers



Powers and analyses the breaker where no battery exists

## SAT40A II

Coil analyzer and power supply unit

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# amperis

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Circuit breaker testing without a substation battery: stable source and auxiliary circuit analyzer.

## Product overview



Front panel: separate coil and motor outputs with touch-proof terminals

### A dual-purpose device

As a source, it delivers regulated voltages from 10 to 300 V DC or 10 to 250 V AC through four independent coil outputs (up to 15 A) and two motor outputs that withstand 40 A inrush. As an analyzer, it measures coil resistance and current, minimum trip voltage and the motor's current and charging time per IEC 62271-100.

### Ripple that stays out of the way

The DC output is filtered with less than 1% ripple: coil current curves recorded with a circuit breaker analyzer come out clean, and undervoltage or overvoltage conditions are reproduced at will.

### Main features

- Only 11 kg: the best power-to-weight ratio in its class.
- AC motor output unique in the market (40 A inrush).
- Fully automatic minimum trip voltage test.
- Coil resistance from 1 to 999  $\Omega$  per IEC 62271-100.
- Ambient or coil temperature sensor input.
- Memory for 1000 time- and date-stamped measurements.
- Compatible with circuit breaker analyzers from any vendor.



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# Applications and software



Testing a breaker in the substation with the auxiliary circuit powered

## Applications

- LV, MV and HV breakers in manufacturing, commissioning and maintenance.
- Power supply for coils and spring-charging motors during tests.
- Coil resistance and current measurement.
- Minimum trip voltage (IEC 62271-100, IEC 56, ANSI C37.09).
- Temperature rise test of auxiliary and control equipment.

## PC software for control and analysis

The included PC software controls every function, records the motor current diagram, adds the voltage-time graph to the minimum trip voltage test and generates reports; with the circuit breaker analyzers of the same family it works as a single test system with joint control and reporting.

## Made for the field

Thermal and overcurrent protection, filtering against electrostatic and electromagnetic interference in HV fields, cables with touch-proof contacts and USB communication, with optional RS232 and Bluetooth.



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## SAT40A — MEASUREMENT DATA

|                                       |                                                                                                   |
|---------------------------------------|---------------------------------------------------------------------------------------------------|
| <b>Voltage measurement</b>            | 10 – 300 V DC or 10 – 250 V AC                                                                    |
| <b>Current measurement</b>            | 1 – 50 A                                                                                          |
| <b>Accuracy (voltage and current)</b> | $\pm(0.25\%$ of reading + 0.25% of full scale)                                                    |
| <b>Coil resistance</b>                | 1 – 99.9 $\Omega$ (0.1 $\Omega$ resolution); 100 – 999 $\Omega$ (1 $\Omega$ resolution)           |
| <b>Typical resistance accuracy</b>    | $\pm(0.5\% + 0.5\%$ FS) up to 99.9 $\Omega$ ; $\pm(1\% + 1\%$ FS) up to 999 $\Omega$              |
| <b>Motor output (230 V mains)</b>     | At 110 V DC: 30 A / 30 s, 24 A / 110 s, 15 A continuous; at 220 V DC: 16 A / 30 s, 8 A continuous |
| <b>Minimum trip voltage test</b>      | Automatic, per IEC 62271-100, IEC 56 and ANSI C37.09                                              |
| <b>Memory</b>                         | 1000 time- and date-stamped measurements                                                          |

The coil outputs are not intended for continuous voltage generation; the motor output does accept continuous use.  
Specifications valid at +25 °C with recommended accessories.



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## SAT40A — TECHNICAL SPECIFICATIONS

|                              |                                                                             |
|------------------------------|-----------------------------------------------------------------------------|
| <b>Coil outputs</b>          | 4 separate outputs (2 DC + 2 AC); 10 – 300 V DC / 10 – 250 V AC; up to 15 A |
| <b>Motor outputs</b>         | DC and AC, 10 – 250 V; inrush current up to 40 A                            |
| <b>DC output ripple</b>      | Below 1%                                                                    |
| <b>Mains supply</b>          | 90 – 264 V AC, 50/60 Hz, single-phase; maximum consumption 4000 VA          |
| <b>Communication</b>         | USB; optional RS232 and Bluetooth                                           |
| <b>Mechanical protection</b> | IP50                                                                        |
| <b>Temperature</b>           | Operation -10 to +55 °C; storage -40 to +70 °C                              |
| <b>Dimensions and weight</b> | 216 × 380 × 396 mm (handle down); 11 kg                                     |

Standards: safety EN 61010-1 (Directive 2014/35/EU), installation category II, pollution degree 2; EMC EN 61326-1 (Directive 2014/30/EU). Maximum relative humidity 95%, non-condensing.  
Accessories: set of six 2 m cables with touch-proof connectors, cable bag, 5 m cables, temperature probe, Bluetooth module and transport bag. Specifications valid at +25 °C.



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