

MAGSET® Series

MAGNETIC ADJUSTMENT SOLUTION FOR DIFFERENTIAL CIRCUIT BREAKERS

MADE IN FRANCE

Designed and manufactured in France by SPHEREA Power & Instrumentation, the MAGSET® Series "Circuit Breaker Adjustment" is specifically dedicated to the magnetic tuning of the differential circuit in an already assembled circuit breaker.

Comprising a control/command rack, a power source, and an electromagnetic inductor, this testing and validation system performs—through fully automated sequences—the saturation, desaturation, fine adjustment, and final verification of the differential relay integrated within the circuit breaker.

Resulting from significant innovation, MAGSET® "Circuit Breaker Adjustment" executes the desaturation and relay tuning processes within a single sequence, enabling extremely precise setting of its tripping threshold. Furthermore, processing the relay mounted in a fully assembled circuit breaker ensures optimal productivity.

Available in a 19" cabinet format for laboratory activities (R&D, investigation, development, quality control...) or production environments (assembly line testing...), the MAGSET® Series guarantees completeness, repeatability, accuracy, and speed for an optimal adjustment cycle of the circuit breaker's differential magnetic circuit.

KEY POINTS

- Precise adjustment of the differential relay already mounted in the assembled circuit breaker
- Complete adjustment cycle (saturation / desaturation / adjustment / verification): < 7.5 s
- Single sequence for continuous desaturation and adjustment
- Adjustable step desaturation: optimized balance between speed and adjustment accuracy
- Systematic detection of relay opening (electronic detection)
- Two measurement/injection channels enabling two simultaneous setups (mounting/unmounting time masked)
- Two form factors: "laboratory" version or "production" version

APPLICATIONS

- Manufacturing industry (circuit breakers, ...)
- Laboratory (R&D activities, investigation, fine-tuning, quality control...)
- Production (in-line product testing on assembly lines)

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SPHEREA POWER & INSTRUMENTATION

MAGSET® Series

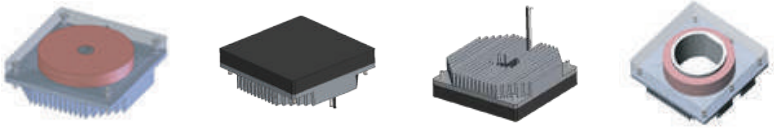
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SPECIFICATIONS

Power Electromagnetic Inductor

> Max. field for saturation : 1,1 T
> Max. field for adjustment : 280mT
> Adjustment resolution : 0,06mT
> Dimensions : Ø out. 300 mm – Ø in. 150 mm – H. 50 mm / Weight : 21 kg (L00035 Model)
> Integrated sense : for inductor temperature

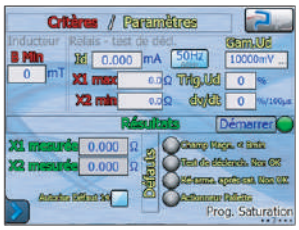


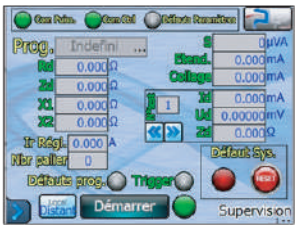
Power Supply Rack

> Saturation mode: Pulse 850 A
> Adjustment Mode: from 0 to 250 A, resolution 50 mA
> Ballast voltage : 450VDC

Control / Command Rack

> Current generation : from 0 to 1400 mA (DC, or 50/60 Hz)
> 2 measurement channels (U &t I)
> Offset < 5µA
> Voltage measurement :from 1,8 mV to 14 V (16 ranges)
> Resistance measurement (DC) & impedance measurement (AC)
> Precision : 0,1 % of range + 0,1 % of programmed value





Performance

> Current resolution: < 0.2 mA
> Setting time : < 5 s
> Full cycle (5 measurements) : < 7.5 s
> Saturation only : 300 ms



Industrial integration

> Intuitive touch screen HMI with simplified calibration
> Digital I/O (24 V opto-isolated)
> Ethernet communication port
> Available formats :
    > Laboratory : 19'' industrial cabinet (600 x 1550 mm)
    > Industrial rack-mount : chassis 850 x 405 x 675 mm (135kg)

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