



# SA100s

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**Switchgear Analyser  
Breaker Timing Test Set**

# Switchgear Analyser

## Introduction

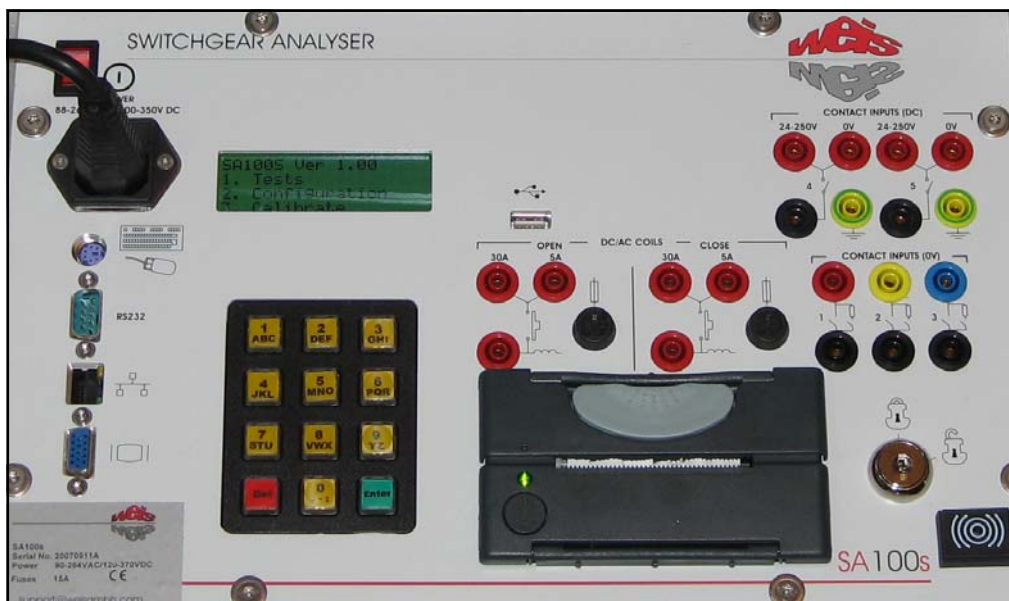
Weis is a specialist company with over 20 years of experience in the commissioning, testing & maintenance of switchgear and power network fault monitoring within the Power Utility Industry.

The **SA100s** Switchgear Analyser is an extremely light-weight & quick tool to check basic Circuit Breaker Timing and is an instrument intended for use in Power Station, Substation & industrial environments.

As the latest addition to our **SA100** series, the **s** version is based on well established and proven technology used worldwide. Results are printed out and viewable on a built-in display, which also serves as a backup should printer paper not be immediately available.

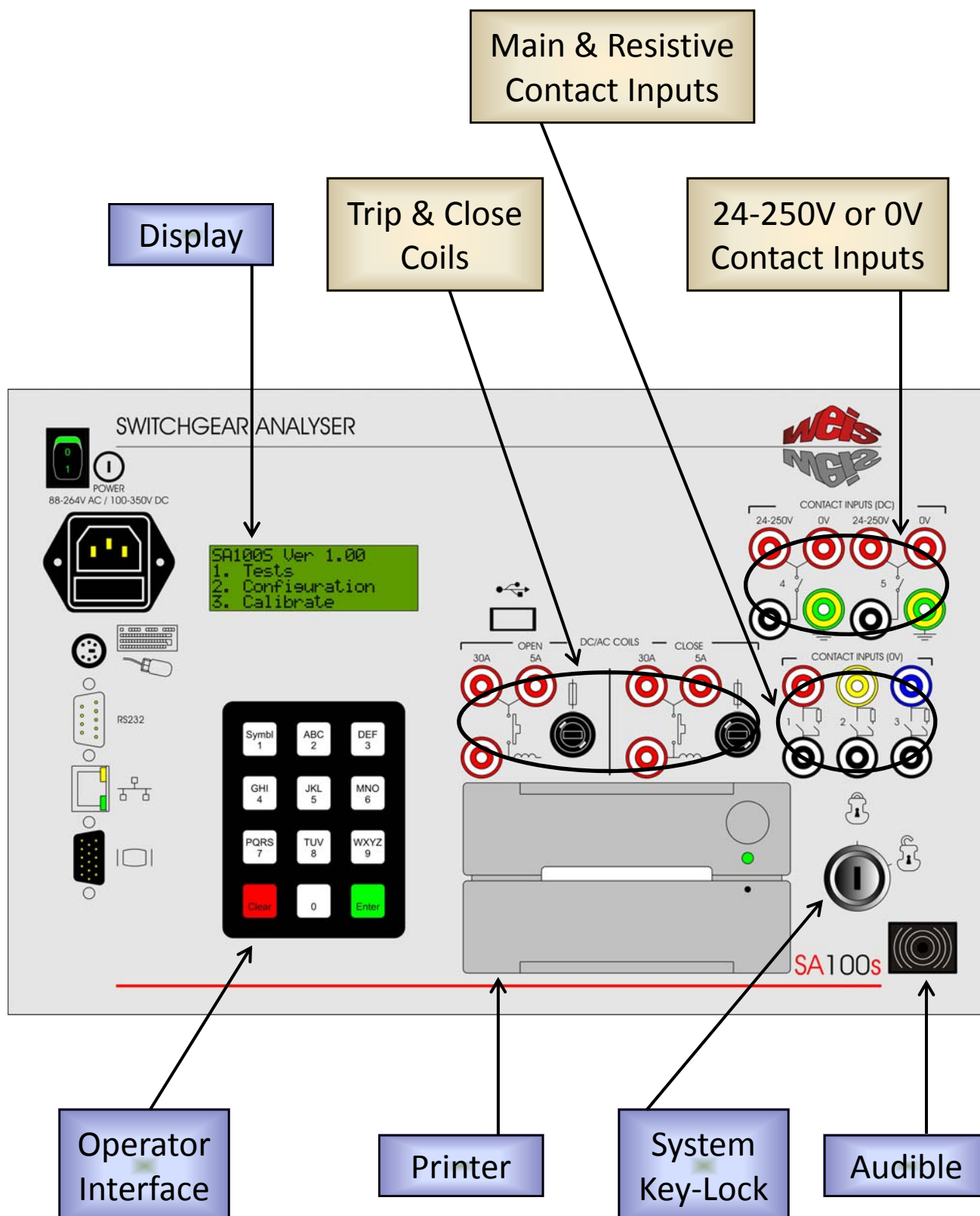
Also available within our range of switchgear test equipment:

- ▶ **SA100**, Switchgear Analyser
- ▶ **SA100R**, Switchgear Analyser
- ▶ **PS100**, Power Supply
- ▶ **MM100**, Micro-ohm Meter
- ▶ **RT100**, Secondary Injection Relay Test Set
- ▶ **SA200**, Automated Factory Test System



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## Operation & Connections



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## Specifications

### INPUTS

**Analogue:** 1 x Independently controlled trip (open) and close coil current inputs.  
**Analogue Accuracy:** <0.5% of fullscale.  
**Digital:** 6 x Contact status inputs providing timing of up to 3 main contacts and 3 resistive contacts ('dry' contacts).  
2 x User configurable input for 'wet' or 'dry' contact timing (24 - 250V DC or 0V DC).  
**Contact Threshold:** 15 - 10,000 ohms.  
**Digital Resolution:** 100µSec.  
**Connectors:** 4mm safety socket.

### OUTPUTS

**Coil Operation:** Solid state outputs for trip (open) and close.  
**Coil Peak Current:** 5A (accuracy 2.5mA) or 30A (accuracy 15mA) AC/DC measurement ranges selectable via input sockets.  
Other measurement ranges possible via optional external shunt; for example 50A Peak (up to 75mS duration) or 100A Peak (up to 50mS duration).  
**Coil Max. Voltage:** 5 - 400V peak AC/DC.

### RECORDING

**Resolution:** 12 bit A/D (1:4096) and 10 kHz sampling rate.  
**Recording Time:** Selectable up to 100 second.  
**Synchronisation:** All inputs sampled simultaneously.  
**Start trigger:** Coil current or selectable on any digital input.

### GENERAL SYSTEM

Backlit 4 line x 40 character LCD display to show the three phases of operate timing and differential time  
Built in thermal printer (57mm width) that could printed out the testing result, wave curve of operate timing, resistance contact timing, differential time and coil current.  
As the string printing in breaker type, model and number, and testing type  
Alpha / numeric keypad. RJ45 network port. RS232 serial port.  
Audible buzzer at 5 counting. Safety keyswitch to enable / disable coil operation. PS2 socket. VGA port.

### REAL-TIME CLOCK

**Range:** Time, date, leap year and day of the year with internal battery backup. 100mS resolution.

### PROGRAMMING - SETTABLE PARAMETERS

**User strings:** Site name, breaker number, breaker type, line name and operator name.  
**Test times:** Close, Open, Trip Free, Close-Open, Open-Close, Open-Close-Open.  
**Coil operate times:** Initial delay, trip coil "on-time", close coil "on-time", delay time between closing and opening, delay time between opening and closing.

### COMPUTED RESULTS

**Up to a sequence of 3 operations detailing 3-phase information:**  
Peak coil current, operate times and operate time spread (main / resistive), bounce time.

### OPERATING VOLTAGES

**Prime Power:** 100 to 370V DC, 90 to 264V AC auto-sensing via IEC power connection. Burden <20 VA.

### ENVIRONMENTAL

**Operating Temp.:** -20°C to +70°C (-4°F to +158°F)  
**Humidity:** 0 to 97% RH non-condensing.  
**Isolation:** 2kV rms for 1 minute (channel to channel, channel to earth).  
**Surge Withstand:** To IEC 801-5. 1.2/50µS.  
**(Transient)** Common Mode: Severity level class 4. Series Mode: Severity level class 3.  
**Fast Transient Burst:** To IEC 801-4 level 3.  
**RFI Immunity:** To IEC801-3 level 3. 10V/m 26-1000MHz.  
**Emissions:** To EN50081-1: 1992.

### MECHANICAL DETAILS

**Enclosure:** Reinforced aluminium, 370mm(W) x 245mm(H) x 180mm(D).  
**Weight:** <4kg.

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