

# SCITS100

## Secondary Current Injection Test Set



- Test outputs to 100 A a.c., 240 V a.c., 240 V d.c.
- Auxiliary output to 120 V a.c. for directional relays
- Integral custom timer for testing IDMT relays or circuit breakers
- Automatic protection against current or thermal overload

### DESCRIPTION

The SCITS100 Secondary Current Injection Test Set has a maximum rating of 100 A/1,8 kVA and a built-in timer unit. The test set is constructed in a rugged metal case with large carrying handles for practical field operations. The SCITS100 will test instantaneous relays, IDMT relays, directional relays, moulded circuit breakers and metering.

Current or voltage at each of the three main sets of a.c. terminals is completely variable by use of the main output control. The outputs from these terminals are:

- 0 to 100 A a.c. or 0 to 24 V a.c.
- 0 to 30 A a.c. or 0 to 80 V a.c.
- 0 to 10 A a.c. or 0 to 240 V a.c.

The rms current output, flowing via the common terminal, is measured to a resolution of 10 mA. Also incorporated are a variable 0 to 240 V d.c. output and an independently controlled 0 to 120 V a.c. output to allow directional relays to be tested.

Two digital LED displays are used, one to show the level of the output voltage or current (in conjunction with a meter range switch) and the other to record the readings from the built-in timer. A SET/TEST switch is provided so that the appropriate test current can be set up before the test is actually carried out, and to avoid damage to relay coils by disconnecting the test current after the relay has operated.

The timer facility has three custom operating modes: NORMAL, RUNBACK and MANUAL. These enable the

function of a protective relay to be fully tested. Separate terminals are provided for connecting to the tripping contacts of the relay. The counter has a RESET pushbutton and two manual tripping pushbuttons, one of which is a remote hand-held control for use when testing relays situated high up on switchgear.

A bimetallic sensor on the main output transformer prevents overheating and a thermomagnetic resettable cutout gives instrument protection in the event of an overload.

An SF30 Filter Unit is available for use when testing saturating core-type relays to ensure that the test current has a substantially sinusoidal waveform. It is connected in series with the output of SCITS100 and corrects the waveform distorted by saturated cores in the device under test. (See the waveform diagram).

### APPLICATIONS

Protective devices such as relays, overload coils and circuit breakers must be checked on installation and at regular intervals while in service to ensure that they are always ready to operate correctly if a fault should occur in the equipment that they are protecting. Routine current injection testing will quickly detect faulty or incorrectly adjusted protection devices. Also, it will possibly prevent serious damage to plant equipment and maybe injury to personnel.

The SCITS100 is suitable for all these applications and particularly for testing protective relays, including IDMT relays.

As well as checking that a protective device functions correctly, it is usually necessary to measure its operating time. The SCITS100 has its own built-in timer unit with the option of control by a remote pushbutton.

Current injection test sets are ideal for any application in which it is necessary to supply a low-impedance load with a controlled and measured heavy current.

### FEATURES AND BENEFITS

- Test outputs to 100 A a.c., 240 V a.c., 240 V a.c.
- Auxiliary output to 120 V a.c. for directional relays
- Integral custom timer for testing IDMT relays or circuit breakers
- Automatic protection against current or thermal overload
- Digital display of output current or voltage, and time
- Optional filter unit available for waveform correction
- Optional transportation trolley

### SPECIFICATION

#### Current Output

0 to 100 A at 0 to 24 V a.c.

0 to 30 A at 0 to 80 V a.c.

0 to 10 A at 0 to 240 V a.c.

Maximum currents are short-term values. (Each of these outputs has a separate terminal referred to one common terminal.)

#### Duty Cycle

For Maximum Short-Term Current

1 min on circuit and 15 min off circuit

For Half-Maximum Short-Term Current

5 min on circuit and 15 min off circuit

For Quarter-Maximum Short-Term

#### Current:

Continuous operation

#### Voltage Output

0 to 240 V d.c., 1 A

(This is not a floating output.)

0 to 120 V a.c., 0,5 A

(This output is fully floating and under normal loading is in phase with the current to within 10%.)

Each of these outputs has a separate pair of terminals.

#### Displays

##### Current/Voltage:

3½-digit LED

#### Counter

5-digit LED, crystal controlled (3,2768 MHz) 9 minutes 59,99 seconds with overrange indication

#### Dimensions

368 H x 500 W x 310 D mm

(14 H x 19 W x 12 D in. approx)

#### Weight

41 kg (90 lb approx)

#### SF30 Filter Unit Specifications

##### Ranges

0 to 1 A

1 to 2 A

2 to 5 A

5 to 10 A

10 to 30 A

All outputs are relative to a common terminal.

#### Dimensions

490 H x 165 W x 270 D mm

(19 H x 6 W x 10 D in. approx)

**Weight**

13 kg (30 lb approx)

**Instrument Protection**

**Input Circuits**

1 A, 20 x 5 mm HBC (T) fuse to IEC 127 standard sheet III  
10 A, 32 x 6 mm HBC fuse

**Output Circuits**

**240 V d.c.:**

1 A, 20 x 5 mm HBC fuse

**120 V a.c.:**

0,5 A, 20 x 5 mm HBC fuse

Thermal switch operates when current transformer temperature >80°C (176°F).

Thermomagnetic contact operates when main output control current >7,5 A.

**Supply Voltage**

220/240 V ±10%, 50/60 Hz

**Safety**

The test set will, in general, meet the requirements of the BS 4743 (1979), IEC 348 (1978), BS 5458 (1977) and IEC 414 (1973) specifications.

**Temperature Range**

**Operating:**

0 to +40°C (32 to 104°F)

**Storage:**

-20 to +70°C (-4 to 158°F)

**Humidity Range**

**Operating:**

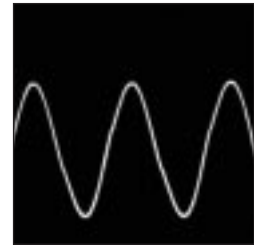
80% RH at 40°C (104°F)

Storage: 93% RH at 40°C (104°F)

Current waveform (without filter)



Current waveform (with filter)



**ORDERING INFORMATION**

Item (Qty)	Order No.	Item (Qty)	Order No.
Secondary Current Injection Test Set	SCITS100	<b>Optional Accessories</b>	
<b>Included Accessories</b>		Output leads, 3 m long,	
Remote counter control switch, 2 m	6231-216	100 A, LEADS/100 (1 set)	6220-303
Spare fuses (1 set)	6121-181	Transportation trolley	6320-224
Lead storage bag, cotton-reinforced PVC	6220-302	SF30 Filter Unit, 30 A	6410-223
Cover, black ABS plastic	5310-245		
Operating instruction book	6171-148		

**UK**

Archcliffe Road Dover  
CT17 9EN England  
T +44 (0) 1304 502101  
F +44 (0) 1304 207342

**UNITED STATES**

4271 Bronze Way  
Dallas TX 75237-1088 USA  
T 800 723 2861 (USA only)  
T +1 214 333 3201  
F +1 214 331 7399

**OTHER TECHNICAL SALES OFFICES**

Norristown USA, Toronto CANADA,  
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**SCITS100\_DS\_en\_V10**

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