

# SXS50 - 50VA

# SXS500 - 500VA



## Electrical safety testers

- ❑ Dielectric strength tester from 0 to 5 kVAC and 0 to 6 kVDC (SXS56, SXS506 models)
- ❑ Insulation resistance from 50 kΩ up to 200 GΩ (2 TΩ option)
- ❑ Ground continuity from 1 mΩ to 1500 mΩ
- ❑ Leakage current and power measurement (with FMG rack)
- ❑ 8 test step sequences
- ❑ 50 parameter sets storage
- ❑ Built in RS232C interface
- ❑ ETHERNET, PLC or IEEE488-2 interfaces on option

The SXS series electrical safety testers perform easily and simply all the electrical tests according to the VDE, UL, CSA standards and to the main EN European standards involved in the LOW VOLTAGE DIRECTIVE (LVD).

The SXS is a combination of a dielectric strength tester, a megohmmeter and a ground continuity tester. Together with the FMG rack, the SXS performs also leakage current measurement under nominal voltage, and power measurement, for single phase equipment as well as three phases equipment.

**EN 61010-1, EN 60335-1, EN 60950, EN 60598-1, EN 60601-1, EN 60204-1 standards**

## TECHNICAL CHARACTERISTICS

### DIELECTRIC STRENGTH TEST FUNCTION

#### Output voltage

- 0 to 5 kV AC (50 or 60 Hz).  
Limited to 4.2 kV AC with FMG501
- 0 to 6 kV DC (SXS56, SXS506)
- Accuracy:  $\pm (2\%+50 \text{ V})$  (SXS50) and  $\pm (3\%+50 \text{ V})$  (SXS500) of the preset value between 100 to 5000 V and for a current  $< 100 \mu\text{A}$  (SXS50) and  $< 1 \text{ mA}$  (SXS500) with the detection modes:  $\Delta I$ , IMAX or  $\Delta I$ +IMAX

#### Voltage reading

- On a digital kilovoltmeter connected on the output terminals
- Accuracy:  $\pm (1.5\% + 20 \text{ V})$
- Display: 600 digits

#### Stability

- Less than 1% for a mains variation of  $\pm 10\%$  (SXS50)
- Less than 3% for a mains variation of  $\pm 10\%$  (SXS500)

#### Current

- Short circuit  $< 13 \text{ mA AC}$  (SXS50/56) and  $< 9 \text{ mA DC}$  (SXS56) for the max. voltage adjustment
- Short circuit  $> 200 \text{ mA AC}$  (SXS500/506) and  $> 20 \text{ mA DC}$  (SXS506) for the max. voltage adjustment
- Short circuit duration limited to 5 seconds
- Nominal current :  $10 \text{ mA AC}$  (SXS50/56) and  $4 \text{ mA DC}$  (SXS56)
- Nominal current :  $110 \text{ mA AC}$  (SXS500/506) and  $10 \text{ mA DC}$  (SXS506)

#### Current reading

- On a shunt resistor inserted in the test circuit
- Accuracy:  $\pm (2.5\% + 2U)$   
 $1U = 0.01 \text{ mA}$  (SXS50)  
 $1U = 0.1 \text{ mA}$  (SXS500)
- Display: 1000 digits

#### Breakdown detection

- "DELTA TEST" detector adjusted for  $\Delta I = 1 \text{ mA} \pm 10\%$  (SXS50) and  $\Delta I = 10 \text{ mA} \pm 10\%$  (SXS500) with  $10 \mu\text{sec.} \pm 20\%$ . Total insensitivity to current due to the resistance and the capacitance of the device under test
- "IMAX" detection by maximum current adjustable from 0.01 to 10 mA, by 0.01 mA steps (SXS50) and from 0.1 to 110 mA by 0.1 mA steps (SXS500)
- DELTA TEST and IMAX mode combination

#### IMIN threshold function

- Detects whether the probe is properly connected to the specimen under test
- Adjustable from 0.01 to 10 mA (SXS50) and from 0.1 to 110 mA (SXS500)

#### DC voltage (SXS56, SXS506 models)

- Positive pole grounded
- Ripple  $< 1\%$  for  $I < 100 \mu\text{A}$  (SXS56) and  $I < 1 \text{ mA}$  (SXS506)

#### Breakdown indication

- By visual (LCD screen and LED) and sound signal
- Breakdown voltage and current are stored on the LCD display
- HV primary transformer shorted when the output voltage is switched off

#### Timer

- Rise, hold and fall time adjustment between 0 and 999 sec.
- Fast mode : (rise + hold)  $< 900 \text{ msec.}$

#### Storage

- 10 test parameter (voltage, threshold, time,...) sets can be stored

## MEGOHMMETER FUNCTION

### Measurement range

- 50 kΩ to 200 GΩ (2 TΩ option XS20)
- The maximum insulation resistance is given by :  $(U_{TEST}/U_{max}) \times 200 \text{ G}\Omega$

### Accuracy

- $\pm (1.5\% + 1U)$
- Display: 2000 digits

### Threshold

- A High limit (making specimen under test detection possible) and a Low limit adjustable from 50 kΩ to 200 GΩ (2 TΩ option XS20)

### Measurement voltage

Adjustable by 1 V DC step from :

- 10 to 500 V DC
- 20 to 1000 V DC (XS26 option)
- Accuracy:  $\pm (1\% + 2 \text{ V})$
- Short circuit  $\leq 2 \text{ mA DC}$

### Measurement time

- Adjustable from 0 to 999 sec. or permanent
- Rise time adjustable in Volt/sec.

### Storage

- 10 test parameter (voltage, time, threshold,...) sets can be stored

## GROUND CONTINUITY FUNCTION

### Measurement range

- 0.001 Ω to 1.500 Ω
- Display possible in voltage drop according to the EN60204 standard

### Accuracy

- $(2.5\% + 10 \text{ m}\Omega)$
- Display: 1500 digits

### Threshold

- High and Low limits adjustable from 0.001 Ω to 1.500 Ω
- Threshold adjustable in volt according to EN60204 standard

### AC current

- 5 to 30 A AC by 0.5 A steps, with load regulation
- Accuracy:  $\pm (1\% + 0.5 \text{ A})$
- Current can be progressively applied from 5 A to the maximum test value.

- Open circuit voltage: < 6 or 12 V AC
- Frequency: mains power supply (50 or 60 Hz)

### Measurement time

- Current rise time from 0 to 999 sec.
- Hold time from 0 to 999 sec. or permanent

### Storage

- 10 test parameter (current, threshold, time,...) sets can be stored



## LEAKAGE CURRENT MEASUREMENT

Refer to FMG501 data sheet

### SEQUENCE FUNCTION

- 8 test steps automatically sequenced among: Dielectric strength test, Insulation, Ground continuity, Leakage, Pause, Multiple continuity
- Each test function is linked to a parameter memory number.  
10 sequence setups storage
- Example of a sequence performing a Dielectric strength test with parameters stored in memory number 1, followed by an insulation test with parameters stored in memory number 0, followed by a Pause, then by a Ground continuity test made on 10 different points with parameters stored in memory number 5

L1: HIPOT 1

L2: MEGOHM 0

L3: PAUSE

L4: POINTS 10

L6: CONTI 5

SXSPRO software on a PC computer makes possible to perform as many tests as wished

### INTERFACE

- Built in talker and listener RS232C interface
- Start Test and PASS/FAIL signals

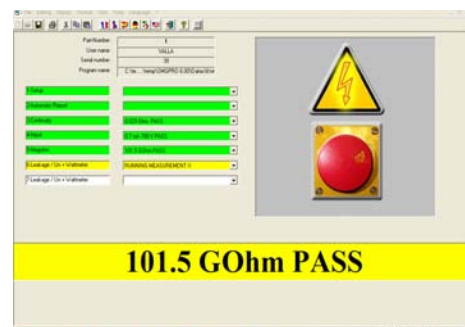
## REMOTE CONTROL SOFTWARE

### National Instruments Labview Drivers

- Software drivers which can be used in a Labview application to remote control the XS series unit through Ethernet, RS232C or IEEE488-2 interface
- Remote control of all the unit functions
- CD-R including install and uninstall files
- Measurement results in Excel format

### Application software

- SXSPRO: powerful software controlling the XS series according to your application (Access & Excel results, bar code management, customized test reports, customized user guidance through the test, user level management, production line oriented features, ...)
- Specific software on request
- Applications examples available with sources in Labview, Delphi, C++ and Java



## PROTECTIONS

### Instrument

By slow blow fuse

### Operator

- No HV or current on the outputs as long as the safety interlock is open
- Red/green lamp to indicate HV presence
- Double safety loop which can be used with safety bloc devices

### Device under test

- Fast breakdown detection
- HV primary cut off
- Output terminal shorted and capacitors discharged (DC option,  $t < 1 \text{ sec.}/\mu\text{F}$ )

## GENERAL CHARACTERISTICS

### Presentation

- Table top unit
- Metal case

### Dimensions

Height : 131 mm  
Width : 440 mm  
Depth : 450 mm

### Weight

28 kg

### Power

- 230 V or 115 V  $\pm 15\%$  single phase, 47-63 Hz
- Consumption: 70 to 600 VA depending on test

### Operating temperature

0°C to +45°C

### Storage temperature

-10°C to +60°C

### Over-voltage category

CATII

### Pollution degree

2

### Safety class

Class I (earth connection)



## OPTIONS

### XS02

PLC interface :

- START contact
- PASS / FAIL contacts
- FAULT contact
- END OF TEST contact

### XS03

0-10 Volts input/output :

- 0-10 Volts inputs to control the High Voltage
- 0-10 Volts output for voltage and current

### XS05 (RXS, DXS) & XS09 (SXS)

Rear panel outputs

### XS06

IEEE488-2 (Talker - Listener) interface

### XS80

Ethernet interface

### XS08

Option 02 + 03

### XS14

3 mA hardware limitation

### XS20

Insulation resistance measurement up to 2 TΩ

### XS22

Resistance display in MΩ x km

### XS26

Insulation resistance measurement from 20 up to 1000 V DC

### XS93

Remote control box (option XS02) is requested

## SOFTWARES

### XS95

EasyScan software for driving XS Series equipped with Switching matrix

### XS96

SXSPRO software for driving XS Series instruments

### XS99

Delphi & C++ program examples

## OPTIONNAL ACCESSORIES

**TE54 (SXS50) - TE65 (SXS500)**

Test probe (hipot + insulation)

**TE58-XS**

Test probe with remote control (hipot + insulation)

**TE86 (SXS50) - TE83 (SXS500)**

Test pistol (hipot + max. insulation 2 GΩ)

**TE81-XS**

2 wire ground continuity test probe with remote control push button and Pass-Fail LED (for multiple continuity)

**CO177 (SXS50) - CO180 (SXS500)**

Test lead without probe for test system connection (not removable)

**CO183**

2 wire ground continuity test lead with alligator clip

**CO210**

Pistol for return earth (hipot + insulation)

**CO175**

black ground return lead

**CO200 (SXS50) - CO201 (SXS500)**

Test box equipped with 1 schüco female socket

**CO202 (SXS50) - CO203 (SXS500)**

Test box equipped with 1 UK female socket

**CO204 (SXS50) - CO205 (SXS500)**

Test box equipped with 1 Swiss female socket

**CO206 (SXS50) - CO207 (SXS500)**

Test box equipped with 1 Italian female socket

**CO208 (SXS50) - CO209 (SXS500)**

Test box equipped with 1 US female

**CO193 (SXS50) - CO192 (SXS500)**

Test box with 6 international female sockets

**CO160-xx**

Red-Green lamp for HV indication

**AO10-XS**

Two user hands occupied with safety user buttons

**AO11-XS**

Remote control foot switch

**KRXS**

19" rack mount kit

**REMA0 to REMA8**

High value Standard resistors (from 1 MΩ up to 1 TΩ)

