

# ST

## Technical Data Sheet

# *Insu 5Dt*



*STI Insu 5Dt* is a 5KV Digital Insulation Tester with selectable test voltage upto 5KV and Insulation Resistance measurement upto 2 T $\Omega$ . Ideal for insulation testing of cables, motors and transformers. It comes with a facility to measure PI, DAR, Step Voltage, Ramp test.

### Special Features

- Backlit Facility
- Selectable SC current i.e 1.2mA and 3mA
- User selectable digital filters
- Noise Rejection 3 mA
- Operates on rechargeable Li-ion battery and Mains as well
- Bluetooth or USB connectivity for data logging
- Touch screen TFT colour Display
- Audio Read-out
- Selectable Test voltages in step of 25V
- Measurement of DC and AC voltages from 20V ~ 600V
- Three programmable timers
- Insulation leakage current measurement
- PI, DAR, Step voltage & Ramp Test



## Application

Digital Insulation tester Rish Insu 5Dt is used for testing the electrical insulation of long cables, Electric generators, motors, transformers, etc.

Its advance features like Bluetooth connectivity, audio read out, touch screen TFT color display makes it never before user friendly. It can store the data on its inbuilt memory with real time stamp. Data can be transferred to computer for future analysis purpose.

## Product Features

<b>Selectable Test Voltage up to 5000 V</b>	• Test voltages can be set to any desired value from 100V to 5000V	<table border="1"> <tbody> <tr> <td><b>Software and Mobile Application</b></td> <td>• It has data logging and monitoring software for window system and an interactive mobile application for android</td> </tr> <tr> <td><b>Internal Datalogging</b></td> <td>• It has internal datalogging feature and can log upto 2000 reading with customer information and time stamp</td> </tr> <tr> <td><b>File Explorer</b></td> <td>• It has file explorer to view the datalog file on TFT display</td> </tr> <tr> <td><b>Audio Read-Out</b></td> <td>• Audible test result on completion of test for awkward locations</td> </tr> <tr> <td><b>Rechargeable Battery</b></td> <td>• Li-Ion 3 Cell Battery with charging current of 1A</td> </tr> <tr> <td><b>Selectable test time</b></td> <td>• We can set the test time to any desired test time from 45sec to 99 min 59 sec</td> </tr> </tbody> </table>	<b>Software and Mobile Application</b>	• It has data logging and monitoring software for window system and an interactive mobile application for android	<b>Internal Datalogging</b>	• It has internal datalogging feature and can log upto 2000 reading with customer information and time stamp	<b>File Explorer</b>	• It has file explorer to view the datalog file on TFT display	<b>Audio Read-Out</b>	• Audible test result on completion of test for awkward locations	<b>Rechargeable Battery</b>	• Li-Ion 3 Cell Battery with charging current of 1A	<b>Selectable test time</b>	• We can set the test time to any desired test time from 45sec to 99 min 59 sec
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<b>Selectable test time</b>	• We can set the test time to any desired test time from 45sec to 99 min 59 sec													
<b>High Insulation resistance measurement</b>	• Insulation resistance measurement from 50kΩ to 2TΩ													
<b>Noise rejection - 3mA</b>	• High Noise immunity allows accurate measurement under noisy environment													
<b>Polarization Index</b>	• Polarization index (PI) testing is an extension of the insulation resistance test and is designed to check specific issues such as moisture and insulation deterioration													
<b>Dielectric Absorption Ratio</b>	• DAR measurement is a diagnostic test similar to the Polarization Index (PI), but DAR takes the ratio of the Insulation Resistance usually measured at 30 sec and 1 min (other time settings are possible)													
<b>Step Voltage Test</b>	• Step Voltage Test is designed as a controlled over-voltage or proof test to provide an additional evaluation of the insulation system integrity													
<b>Ramp Diagnostic Test</b>	• The Ramp Test is performed with a slowly rising voltage													
<b>Software Selectable Filter</b>	• User selectable software filter can be used depending on noise levels. This help in accurate reading in noisy environment													
<b>Capacitance Measurement</b>	• Capacitance can be measured from 1nF to 50uF													
<b>Go- NoGo Function</b>	• Depending on insulation resistance limit the user can be alarmed about the quality of insulation													
<b>Insulation Resistance Graph Display</b>	• Insulation Resistance can be displayed over the time in graphical form													
<b>Communication Interface</b>	• Bluetooth 2.0 & 4.0 Class II and electrically isolated USB 2.0 communication													

## Specification

Nominal Voltage	Maximum Resistance	Maximum Resistance
100V	2GΩ	5% ± 1D
250V	10GΩ	5% ± 1D
	100GΩ	20% ± 1D
500V	200GΩ	5% ± 1D
	200GΩ	20% ± 1D
1000V	40GΩ	5% ± 1D
	500GΩ	20% ± 1D
2500V	100GΩ	5% ± 1D
	1TΩ	20% ± 1D
5000V	200GΩ	5% ± 1D
	2TΩ	20% ± 1D

## Technical Specifications

### Test voltage accuracy

+7% ± 10V

### Direct and Alternating Voltage Measurement

Measuring range	Frequency	Intrinsic error
20V-600V AC DC	45 Hz-500Hz	3%+10D

### Capacitance Measurement

1nF to 50uF; Accuracy +10% + 5 digits

### Insulation Leakage Current Measurement

0.01nA to 3mA; Accuracy +5% +0.2 nA

### Guard terminal

2% error guarding 500 kΩ leakage, 100 MΩ load

### Timer Range for IR test

Time: 45s - 99 min 59 sec with three programmable timers

Tests: IR(t),DAR,PI,Step Voltage, Ramp voltage

### Ambient Conditions

Operating Temperature	-20 °C ... +50 °C
Storage Temperature	-20 °C ... +70 °C
Relative Humidity	max. 90% (condensation must be avoided)
Elevation	up to 2000m
Protection	IP 52

### Applicable Standards

Standard	Norms
IEC 61010-1	Safety regulations for electrical measurement, control, regulation and lab devices
IEC 61557	Measuring and monitoring facilities for testing the electrical safety in lines with nominal voltages up to AC1000V and DC1500V
PART-1	General
PART-2	Insulation resistance measuring devices

### Reference Conditions

Ambient Temperature	+ 23 °C + 2K
Relative Humidity	45 ... 55%
Measured Quantity	50Hz + 10Hz
Frequency	(for voltage measurements)
Line Voltage Waveform	Sine wave
Battery Voltage	11.1V + 1%
Operating position	Horizontal
Power Supply Voltage (Mains)	230V + 15%, 50/60 Hz

### Power Supply (Battery)

Battery	11.1V, 4Ah Li-ion Battery
Battery service life	3 Hrs continuous testing at 5kV 100MΩ
Battery charging time	4 Hrs

### Power Supply (Mains)

Nominal Power (Mains)	230V AC + 15%, 50/60 Hz
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### Electromagnetic Compatibility (EMC)

IEC61326 - 1

### Immunity

IEC 61000-4-2 : 8 KV atmosphere discharge  
4 KV contact discharge  
IEC 61000-4-3 : 3 V/m

### Electrical Safety

Overvoltage Category	600V CAT IV
Test Voltage	7.4kV~
Pollution degree	2

### Mechanical Design

Dimensions (L x W x H)	290mm x 250mm x 140mm
Weight	approx 5kg

## Accessories

### Standard Scope of Supply without leads

- 1 In built Li-ion rechargeable battery
- 1 Operating instructions
- 1 Power cord
- 1 USB cable for communication and software CD (with USB and bluetooth communication interface)

### Test lead options (one to be selected)

- Test lead set with 3m test leads with crocodile clips (+ve, -ve & Guard lead)
- Test lead set with 3m test leads (+ve, -ve & Guard lead) with 3 clamps with 50mm jaw opening
- Test lead set with 10m test leads (+ve, -ve & Guard lead) with 3 clamps with 50mm jaw opening
- Test lead set with 15m test leads (+ve, -ve & Guard lead) with 3 clamps with 50mm jaw opening

## Ordering information

DT08-1N1300000000 : STI Insu 5Dt 5kV Digital Insulation Tester (standard set w/o leads)

**Accessories Code :**

- SPAR-SD00-0772: 3m Test leads set (+ve, -ve, Gaurd) with crocodile clips
- SPAR-SD00-0774: 3m Test leads set (+ve, -ve, Gaurd) with 50mm jaw clamps
- SPAR-SD00-0775: 10m Test leads set (+ve, -ve, Gaurd) with 50mm jaw clamps
- SPAR-SD00-0776: 15m Test leads set (+ve, -ve, Gaurd) 50mm jaw clamps



**sifam tinsley**  
PRECISION INSTRUMENTATION

**Sifam Tinsley Instrumentation Inc.**  
3105, Creekside Village Drive,  
Suite No. 801, Kennesaw,  
GA 30144 (USA)  
**E-mail Id :** [psk@sifamtinsley.com](mailto:psk@sifamtinsley.com)  
**Web :** [www.sifamtinsley.com](http://www.sifamtinsley.com)  
**Contact No. :** +1 404 736 4903

**Sifam Tinsley Instrumentation Ltd**  
Unit 1 Warner Drive,  
Springwood Industrial Estate  
Braintree, Essex, UK, CM72YW  
**E-mail:** [sales@sifamtinsley.com](mailto:sales@sifamtinsley.com)  
**Web:** [www.sifamtinsley.com/uk](http://www.sifamtinsley.com/uk)  
**Contact:** +44(0)1803615139