

SEW

DIGITAL HIGH VOLTAGE INSULATION TESTER



- Test insulation resistance up to 2 TΩ (2000GΩ).
- Short-circuit current up to 5mA
- Microprocessor controlled.
- 30 insulation test voltages :

500V,	1kV,	1.5kV,	2kV,	2.5kV,	3kV,
3.5kV,	4kV,	4.5kV,	5kV,	5.5kV,	6kV,
6.5kV,	7kV,	7.5kV,	8kV,	8.5kV,	9kV,
9.5kV,	10kV,	10.5kV,	11kV,	11.5kV,	12kV,
12.5kV,	13kV,	13.5kV,	14kV,	14.5kV,	15kV
- AC/DC voltmeter (600V).
- PI (Polarization Index) indication.
- DAR (Dielectric Absorption ratio) indication.
- Auto-ranging on all insulation ranges.
- Backlight function.
- Bargraph indicates test voltage, rise and decay can be observed.
- Menu driven.
- Visual and audible warning if external voltage is present. ($\geq 30V_{ac}$ or $\geq 30V_{dc}$)
- Auto-hold function to freeze the reading.
- Overload protection.
- Adjustment for testing time (duration) : 1~30 minutes
- Auto-off.
- Calendar.
- Optical USB to RS-232 data transmission.
- 200 measurement results can be saved in the memory and recalled on the display.
- Safety standard : EN 61010-1 CAT IV 600V
EN 61010-2-030
EN 61326-1

- Insulation test voltage up to 15kV.
- Test Insulation Resistance up to 2 TΩ (2000GΩ).
- Short circuit current up to 5mA.

APPLICATIONS

For testing the insulation resistance of cables, motors, generators, transformers, insulators, high-pressure switches, wiring installations.....etc.

Instrument Layout

The diagram shows the front panel of a yellow High Voltage Insulation Tester. At the top, there are four terminals: -HV terminal (with -HV EARTH and a warning symbol), L.C.D. (pointing to the display), GUARD terminal, and +HV terminal (with +HV LINE and a warning symbol). Below the terminals are two sockets: a battery-charge socket (13) and a charge indicator (14). The central display area shows 'AUTO-RANGING' and 'AUTO-HOLD' modes. Below the display are four test voltage buttons: 15kV (5), 10kV (4), 5kV (3), and 1kV (2). To the right of these buttons is a 'SAFETY PRECAUTION!' section with instructions. Below the voltage buttons are control buttons: PI, DAR, AUTO OFF, ESC, +500V, ENTER, SAVE, TEST STOP, and ON/OFF. At the bottom, there is a 'MICROPROCESSOR CONTROLLED' label and a 'CAT IV 600V' rating. Numbered callouts 1-14 point to specific features: 1 (ON/OFF), 2 (1kV), 3 (5kV), 4 (10kV), 5 (15kV), 6 (+500V), 7 (-500V), 8 (TEST/STOP), 9 (ENTER/SAVE), 10 (ESC), 11 (BACKLIT), 12 (CA-232 socket), 13 (Battery-charge), and 14 (Charge indicator).

SAFETY PRECAUTION!

- Use only on de-energised and disconnected circuits or systems.
- Make sure all the test leads are ok, there is not any cracks or damages on the test leads before testing.
- Always earth circuit under test.
- After testing, allow a few seconds for the HV insulation tester to discharge circuit under test, Check the discharging status on the display.

OPERATING INSTRUCTIONS

- Depress "ON/OFF" to turn on the HV insulation tester.
- Connect the test leads to the HV insulation tester with the correct colors.
- Connect the BLACK test lead to the earth.
- Select the test voltage and follow the instructions on the display to do the operation.

① Power ON/OFF button

② Insulation resistance test at 1kV button

③ Insulation resistance test at 5kV button

④ Insulation resistance test at 10kV button

⑤ Insulation resistance test at 15kV button

⑥ To add (+500V) button to the selected test voltage

⑦ To subtract (-500V) button to the selected test voltage

⑧ TEST/STOP button

⑨ ENTER & SAVE button

⑩ ESC button

⑪ BACKLIT button

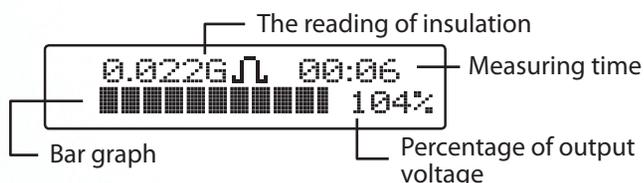
⑫ CA-232 connection socket

⑬ Battery-charge socket

⑭ Charge indicator

Display

2 Lines x 16 characters, large intelligent LCD module.



SPECIAL FUNCTIONS

Voltmeter

When testing insulation resistance while there is a presence of voltage (whether ACV or DCV) on the measured object, conventional insulation testers are highly susceptible to damage. With this new line of insulation testers, it has the ability to switch to voltage detection mode without damaging the instrument once it detects the presence of voltage. It will also display the voltage finding on the LCD screen. With this new and unique function, it will allow the user to safely rule out the possibility of any presence of voltage on the measured object prior to measuring its insulation.

DAR = Dielectric Absorption Ratio

The dielectric absorption ratio is the ratio of the insulation resistance measured at 1 min divided per the insulation resistance measured at 30 seconds. 30 seconds after starting a test, the tester will beep, indicating the operator that the resistance value measured at 30 seconds now has been saved internally. 1 minute after starting a test, the tester will beep again, indicating the user that the DAR result is now computed, and change the display format to now display the DAR result.

$$\text{DAR} : \frac{1\text{-min insulation resistance}}{30\text{-sec insulation resistance}}$$

PI = Polarization Index

The polarization index or PI is the ratio of the insulation resistance measured at 10 minutes divided per the insulation resistance measured at 1 minute. 10 minutes after starting a test, the tester will beep again, indicating the user that the PI result is now computed, and change the display format to now display the PI result.

$$\text{PI} : \frac{10\text{-min insulation resistance}}{1\text{-min insulation resistance}}$$

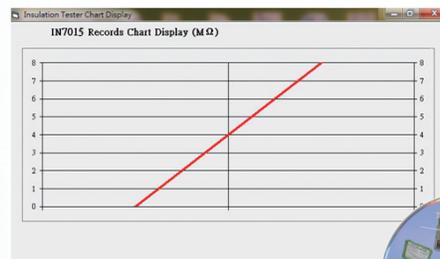
Lower insulation resistance tested takes longer test time, which would deteriorate the specimen. Thus, higher DAR or PI (as close to 1) would create better insulation grade of specimen.

SPECIFICATIONS

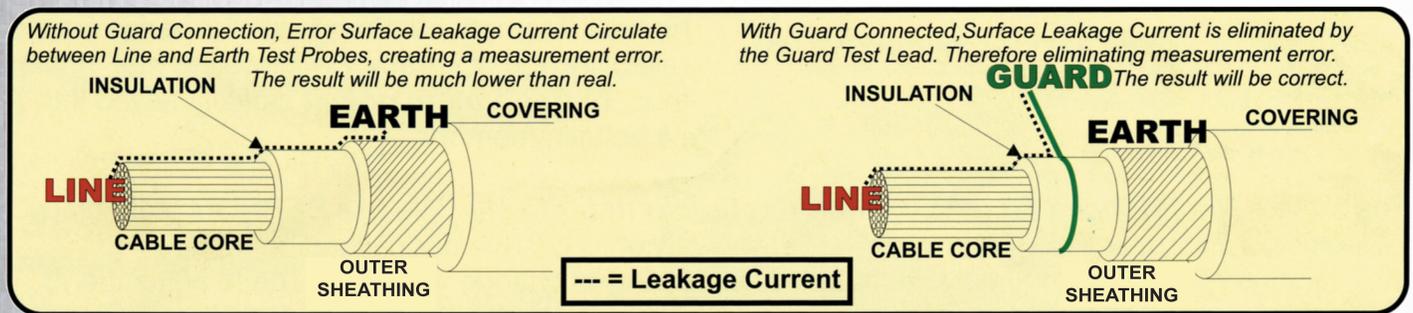
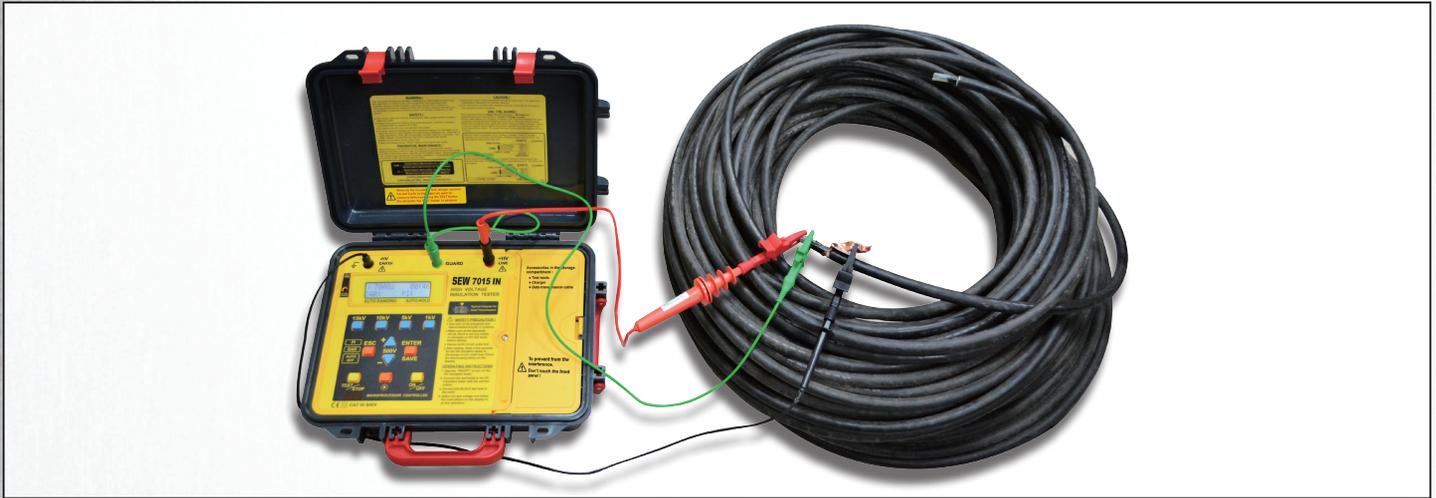
Test voltage	From 500Vdc to 15kVdc Adjustable in 500V steps
Preset buttons	1kV, 5kV, 10kV, 15kV
Insulation resistance	70GΩ/0.5kV 70GΩ at 0.5kV~2TΩ at 15kV
Accuracy	±(5%rdg+5dgt)
Resolution	2GΩ : 0.001GΩ 20GΩ : 0.01GΩ 200GΩ : 0.1GΩ 2TΩ : 1GΩ
Short circuit current	up to 5mA
PI (Polarization Index)	√
DAR (Dielectric Absorption Ratio)	√
Voltmeter	ACV : 0~600V (50/60Hz) DCV : 0~600V Accuracy : ±(2.0%rdg+3dgt) Resolution : 1V
Power source	Rechargeable battery
Adapter	Input : 100-240V~, 0.4A ,50-60Hz Output : 24V \equiv 0.62A
Dimensions	430(L) x 324(W) x 127(D)mm
Weight	Approx : 5kg
Accessories	Instruction manual Test leads (AL-58, AL-30AG,AL-30HB) Data transmission cable CA-232 Compact disk (CD) for PC interface Alligator clip (AL-23CA) Charger (CHA-7015) Test report

Data Communication Function

- Downloading saved data to a PC.
- Transferring and showing real-time data to a PC.
- 200 measurement results can be saved in the memory and recalled on the display.



Measure the insulation of cable



Accessories



A complete set of accessories : H.V test leads (AL-30AG AL-30HB), Alligator clip (AL-23CA). H.V Line probe with (AL-58), Data transmission cable (CA-232), Charger (CHA-7015), Compact disk(CD), Instruction manual, Test report.