



SEFELEC 506-H

The EATON Dielectric Strength Tester



SEFELEC 506-H features and benefits:

Dielectric withstand at 5kVAC 500VA and 6kVDC

Detection modes with Min/Max current thresholds or flashover detection (ΔI)

Burning function without current detection

Programmables test ramps

Rise, dwell, fall
Multi-ramp mode, up to 7 steps

7" TFT Multi touchscreen 16 million colors for programming, tests and results display

ARM-Dual core control & Nand 3D technologies inside for more accuracy, stability and repeatability

DSPs speeds up measurements and production tests

Large internal memory for configurations and test results storage

IEC 61010-2-034 full compliance, specific safety standard for insulation and dielectric strength meters

The **SEFELEC 506-H** is a new generation EATON dielectric strength tester (hipot) tester based and controlled by ARM-Dual Core and DSP technologies providing the best stability and repeatability.

The high accuracy and measurement speed are suitable for quality control or incoming inspection departments.

The sequence mode makes the **SEFELEC 506-H** easier to use and integrate in a control or a test-bench.

The new SEFELEC Series HMI, with its 7" dual-touch TFT screen, offers simple and intuitive operations.

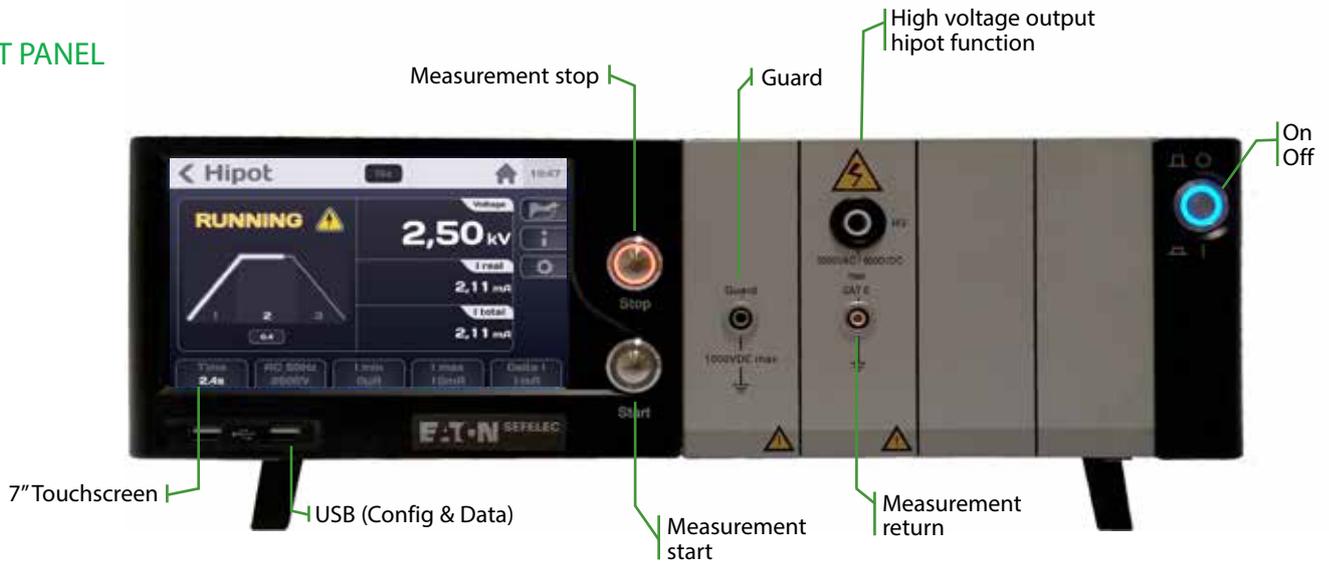
- Native Ethernet / RS232 / USB / PLC / 0-10 V / CAN IEEE488-2 interface in option
- IEEE488-2 Interface as on option
- CAN Bus CAN to drive extension modules (Scanners)
- SIL2 double safety loop
- Automatic measurement range selection
- Sequence mode to combine several successive tests



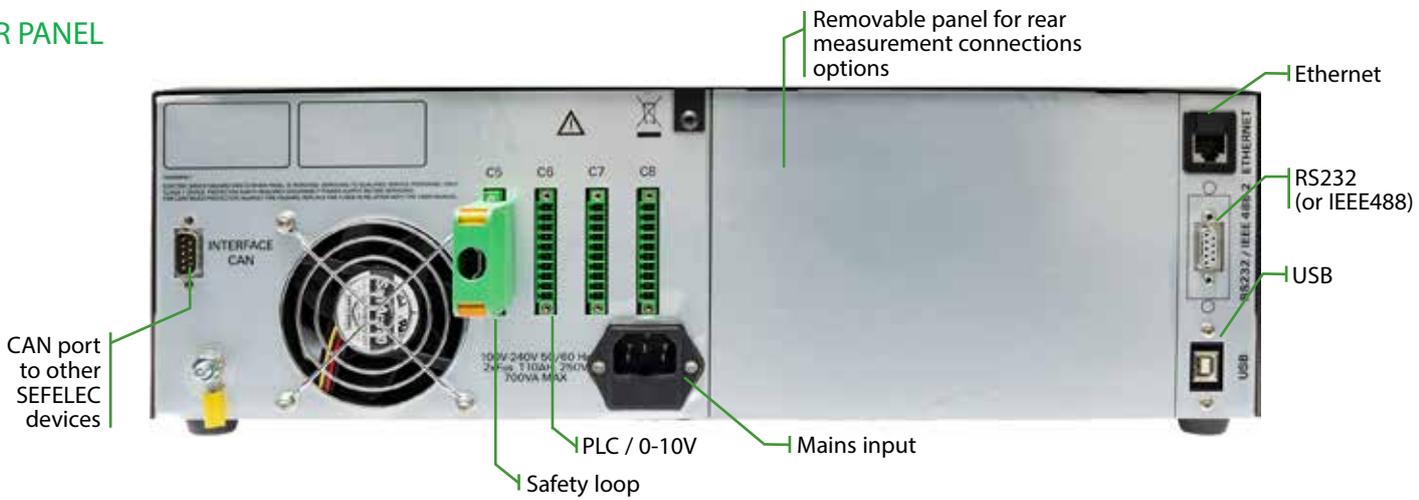
Powering Business Worldwide

SEFELEC 506-H : Dielectric Withstand Tester - General Overview

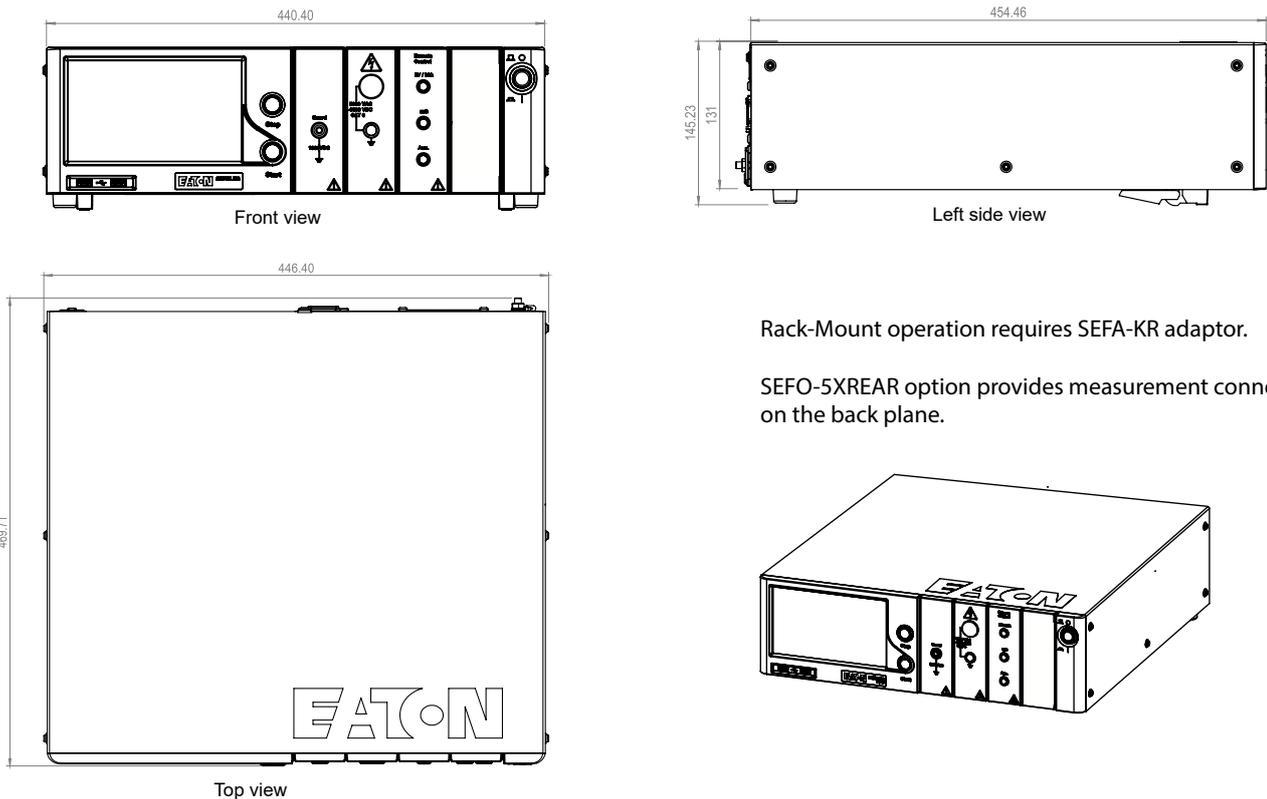
FRONT PANEL



REAR PANEL



DIMENSIONAL DIAGRAMS



SEFELEC 506-H : Touchscreen Overview



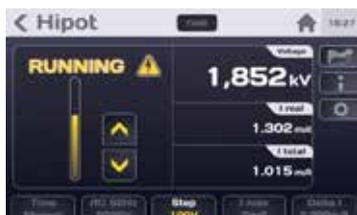
Passed test



Failed test



Permanent measurement mode



Manual mode



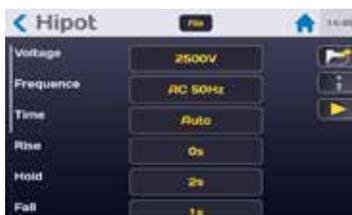
Multi-steps mode



Measurement mode selection



Communication configuration



Measurement parameters configuration



Sequence mode

SEFELEC 506-H : Accessories & Options

SEFA-TE65

SEFO-IEEE488



Accessories

- SEFA-TE65-02** ⁽¹⁾ High voltage probe and test lead length. 2 meters
- SEFA-CO175-02** ⁽¹⁾ Return lead with 4mm termination - length 2 metres.
- SEFA-CO180-02** ⁽¹⁾ High voltage lead without probe for hardwire connection, length 2 meters
- SEFA-KR** 19" rackmount adaptors for SEFELEC 5x series
- SEFA-CO160** Green / red safety lamp

⁽¹⁾ Models also available with leads 5m and 10m long. Part numbers as follows :
SEFA-TE65-05 / SEFA-TE65-10 / SEFA-CO180-05 / SEFA-CO180-10 / SEFA-CO175-05 / SEFA-CO175-10

Options

- SEFO-5XRC** Remote controls connection module
- SEFO-5X2TO** 2TΩ insulation measurement range
- SEFO-IEEE488** IEEE488-2 communication
- SEFO-5XREAR** Rear panel measurement connection

| General Specifications | | | |
|--|---|--------|---------------|
| Mains voltage | 230 VAC $\pm 10\%$ 50 to 60 Hz / single phase | | |
| Mains protection | Temporized double fuse T10AH 250V | | |
| Input power | 700 VA max. | | |
| Temperature range | Storage : -10°C to +60°C Operation : 0°C to +45°C Specified accuracy after 1/2 hour warm-up and RH<50 % | | |
| Altitude | Up to 2 000 m | | |
| Relative humidity | 80 % max. @ 31°C | | |
| Dimensions & weight | Height | Width | Depth |
| | 131 mm | 440 mm | 455 mm |
| | | | Weight |
| | | | approx. 21 kg |
| Output Withstand Voltage | | | |
| Signal | 50 Hz or 60 Hz sinus | | |
| Range | 100 V to 5 000 V AC 100 V to 6 000 V DC | | |
| DC polarity | Positive pole connected to the bond | | |
| Dynamic stability | for $\Delta V_{\text{mains}} = \pm 10\%$ measurement voltage variation $< \pm 3\%$ | | |
| DC voltage ripple | $< 1\%$ with a current < 1 mA | | |
| Generator accuracy | $\pm (3\% + 5\text{ V})$ with a current < 1 mA over full range in AC or DC | | |
| Max D.U.T. capacitance | $< 1 \mu\text{F}$ (discharge time < 10 s) | | |
| Discharge resistor | 1,5 M Ω in DC - D.U.T. and internal capacitor discharge | | |
| Voltage Measurement | | | |
| Through a kilovoltmeter directly connected to output | | | |
| Accuracy | $\pm (1,5\% + 5\text{ V})$ | | |
| Resolution | 600 digits | | |
| Short-Circuit Current | | | |
| at 5 000V AC | ≥ 200 mA | | |
| at 6 000V DC | ≥ 100 mA | | |
| Default Detection | | | |
| Fault indication with a message on the LCD display, LEDs and audible signal. Default voltage and I_{MAX} fault current stored in the display and memory. | | | |
| Flashover Current Mode ΔI : The ΔI detection (delta I) makes the subtraction between the normal current through the D.U.T. ($I = U/Z$) and the current that appears rapidly when there is a default : $I' = I + I_{\text{default}}$ | | | |
| Ajustement range | from 10 mA $\pm 10\%$ to 100 mA $\pm 10\%$ by steps of 10 mA | | |
| Pulse width | $> 10 \mu\text{s} \pm 20\%$ | | |
| Current Threshold Mode I_{MAX} : Adjustable from 0,1 mA to 110 mA by steps of 0,1 mA. The device continuously measures the total current flowing through the D.U.T. and compares it thresholds settings, 2 cases: | | | |
| High limit $> 0,000$ mA & Low limit set at 0,000mA | If the measured current is greater than or equal to the threshold, the test is declared FAIL : DIS-JUNCTION. If the current is lower than the High Limit, the test is declared PASS | | |
| Low limit $> 0,000$ mA et High limit $> Low$ limit | The measured current is within the range defined by the thresholds, the test result is PASS, outside the test is declared FAIL. | | |
| Current Threshold Mode I_{MIN} : It is possible to specify a minimum value of current flowing through the D.U.T. . The I_{MIN} value can be set from 0,0 mA to 109 mA. I_{MIN} mode use ensures that the D.U.T. is correctly connected to the tester. | | | |
| Without Detection Mode : There is no current control in this mode (burning mode). Generator is protected against overheat. | | | |
| Permanent Current Measurement | | | |
| The current measurement is done by a shunt installed in the test circuit. | | | |
| Resolution | 1 000 digits | | |
| Total current accuracy (in AC and DC) | $\pm (2,5\% + 0,2\text{ mA})$ - True RMS current is displayed $\sqrt{(I_{\text{AC}}^2 + I_{\text{DC}}^2)}$ | | |
| Accuracy in DC current for a load > 1 M Ω | | | |
| Ramp mode | | | |
| PERMANENT mode | The rise time duration set is active. The output voltage rises to the setpoint. Test stops if there is a fault or if pressing the red button on the front panel. | | |
| MANUAL mode | No rise time is set. Manual control pressing up and down arrows on the touch-screen. Test stops if there is a fault or if pressing the red button on the front panel. | | |
| AUTO mode | Test runs in 3 sequences : linear raise up to set voltage (Ramp Up), set output voltage remains applied (Dwell), progressive descent to 0V (Fall) | | |
| Ramp Up - Dwell - Fall duration | 0,1 à 9999,0 sec. by steps of 0,1sec | | |
| Accuracy | ± 20 msec | | |

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Please learn more about SEFELEC 5x series
on : Sefelec.com