

## Product Datasheet - Technical Specifications



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# 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 ( $\Delta I$ )

**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

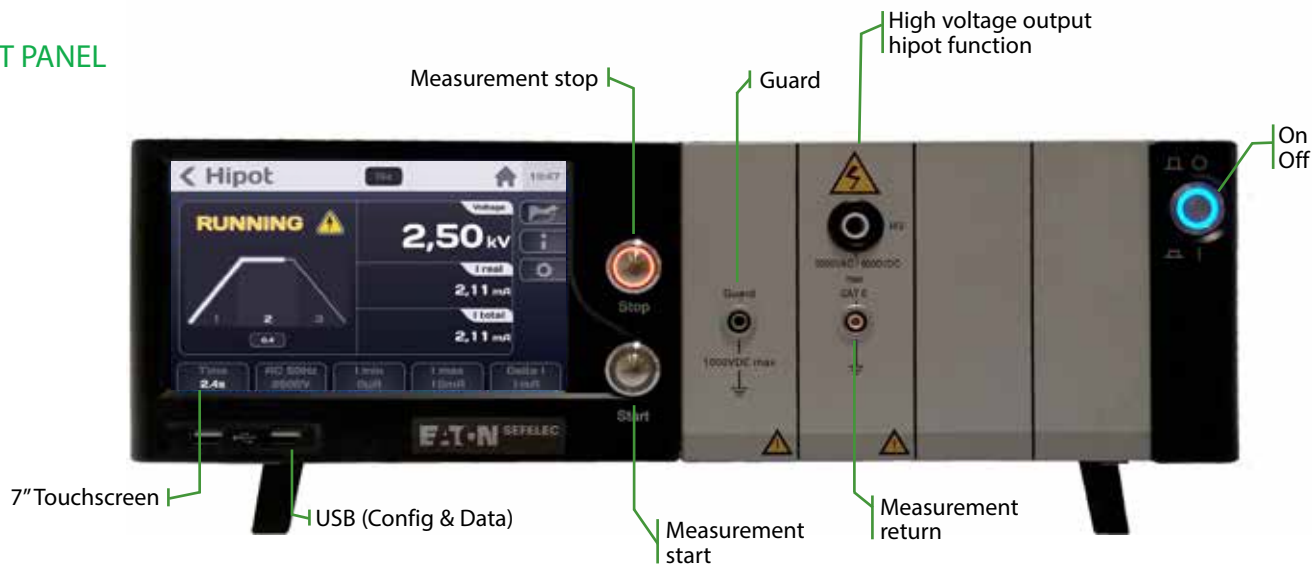


**EATON**

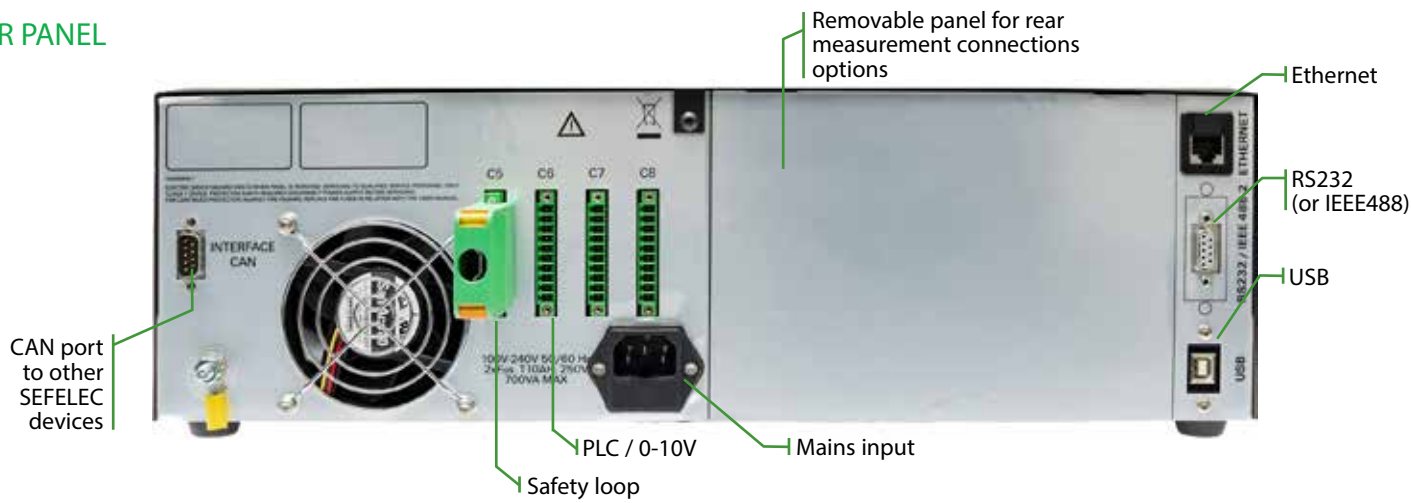
Powering Business Worldwide

# SEFELEC 506-H : Dielectric Withstand Tester - General Overview

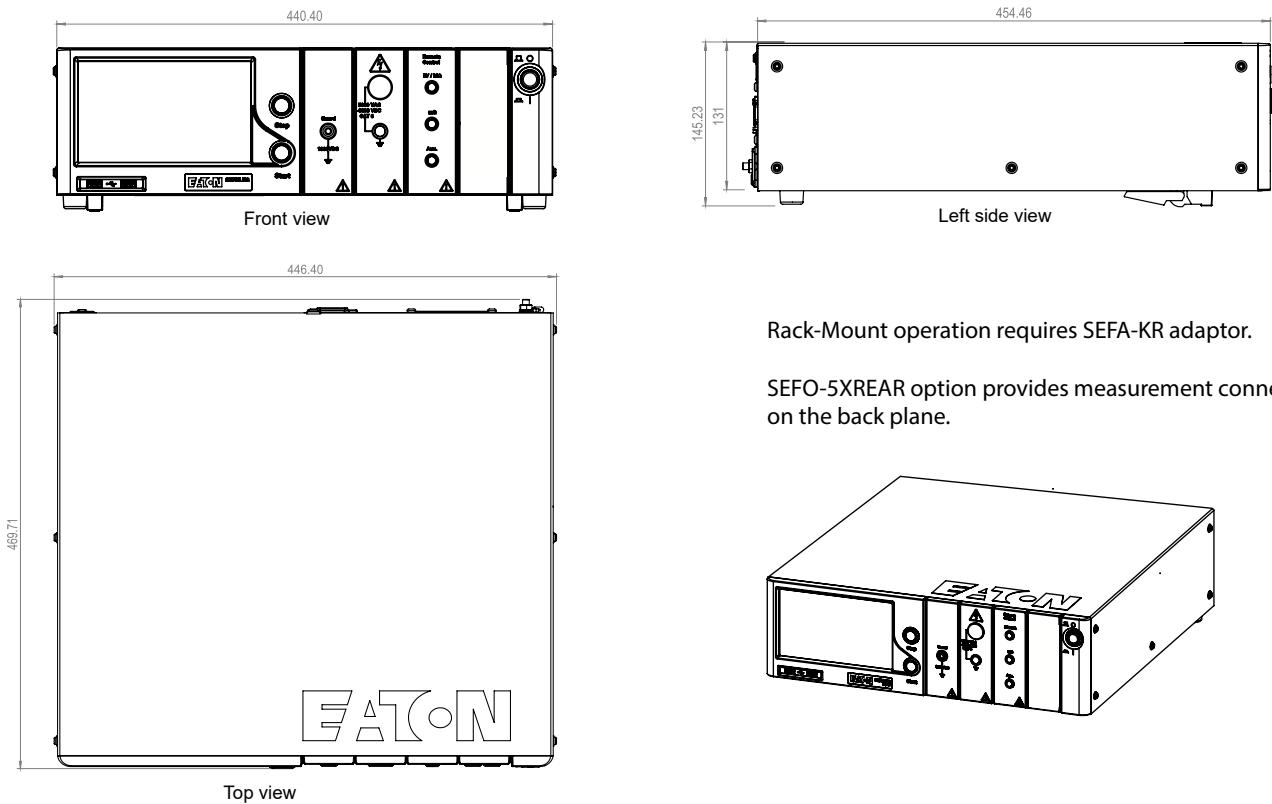
## FRONT PANEL



## REAR PANEL

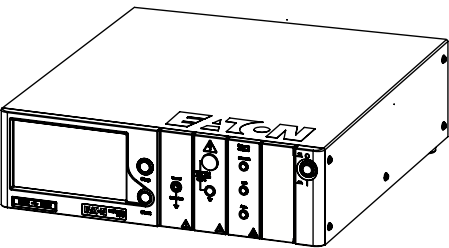


## DIMENSIONAL DIAGRAMS



Rack-Mount operation requires SEFA-KR adaptor.

SEFO-5XREAR option provides measurement connectors on the back plane.





## 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

### Accessories

- SEFA-TE65-02** <sup>(1)</sup> High voltage probe and test lead length. 2 meters
- SEFA-CO175-02** <sup>(1)</sup> Return lead with 4mm termination - length 2 metres.
- SEFA-CO180-02** <sup>(1)</sup> 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

<sup>(1)</sup> 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

SEFA-TE65



SEFO-IEEE488



### 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 ±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	Weight
	131 mm	440 mm	455 mm	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 < ±3%			
DC voltage ripple	< 1% with a current < 1 mA			
Generator accuracy	± ( 3 % + 5 V) with a current < 1 mA over full range in AC or DC			
Max D.U.T. capacitance	< 1 µF (discharge time < 10 s)			
Discharge resistor	1,5 MΩ in DC - D.U.T. and internal capacitor discharge			
Voltage Measurement				
Through a kilovoltmeter directly connected to output				
Accuracy	± (1,5% + 5 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 <sub>MAX</sub> fault current stored in the display and memory.				
<b>Flashover Current Mode ΔI</b> : 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 <sub>default</sub>				
Ajustement range	from 10 mA ± 10 % to 100 mA ± 10 % by steps of 10 mA			
Pulse width	>10 µs ± 20%			
<b>Current Threshold Mode I<sub>MAX</sub></b> : 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.			
<b>Current Threshold Mode I<sub>MIN</sub></b> : It is possible to specify a minimum value of current flowing through the D.U.T. . The I <sub>MIN</sub> value can be set from 0,0 mA to 109 mA. I <sub>MIN</sub> mode use ensures that the D.U.T. is correctly connected to the tester.				
<b>Without Detection Mode</b> : 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)	± (2,5 % + 0,2 mA) - True RMS current is displayed $\sqrt{(I_{AC}^2 + I_{DC}^2)}$			
Accuracy in DC current for a load > 1 MΩ				
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			