

## Product Datasheet - Technical Specifications



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# SEFELEC 56-H

The EATON Dielectric Strength Tester



## SEFELEC 56-H features and benefits:

**Dielectric withstand** at 5kVAC 50VA 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

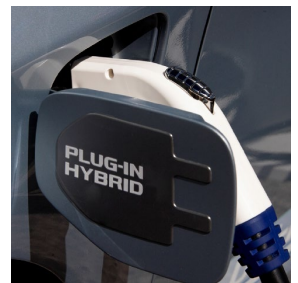
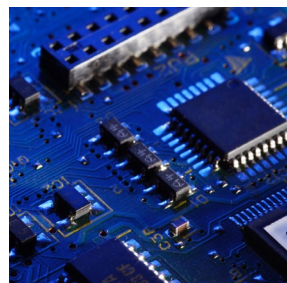
The **SEFELEC 56-H** is a new generation EATON dielectric strength tester (hipot tester) based and controlled by ARM-Dual Core and DSP technologies providing the best stability and repeatability.

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

The sequence mode makes the **SEFELEC 56-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.

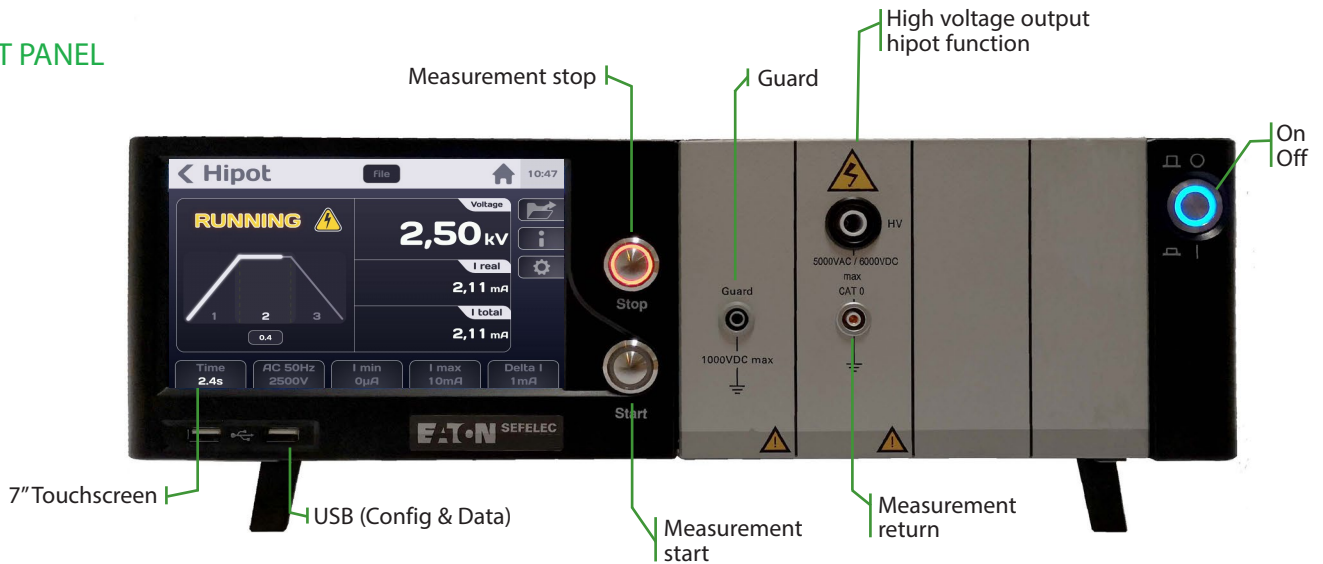
- Native Ethernet / RS232 / USB / PLC / 0-10 V / CAN IEEE488-2 interface in option
- IEEE488-2 Interface as on option
- CAN Bus CAN to drive extension modules (Scanners)
- SIL2 double safety loop
- Automatic measurement range selection
- Sequence mode to combine several successive tests



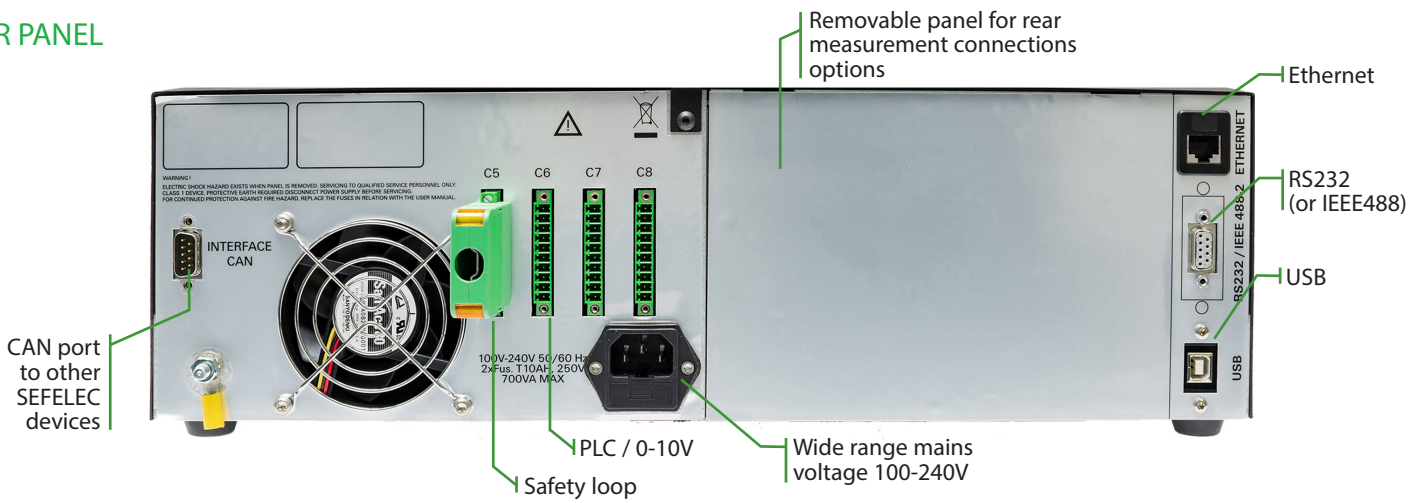
Powering Business Worldwide

# SEFELEC 56-H : Dielectric Withstand Tester - General Overview

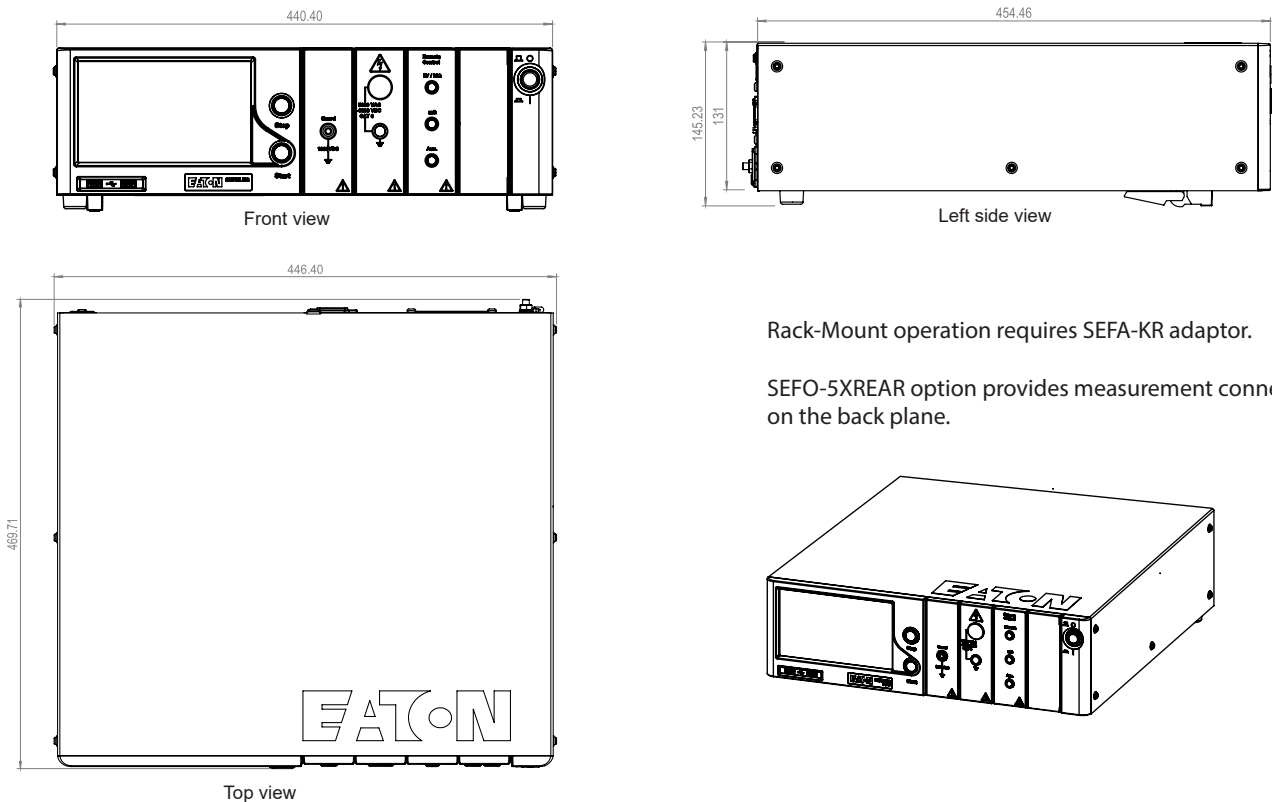
## FRONT PANEL



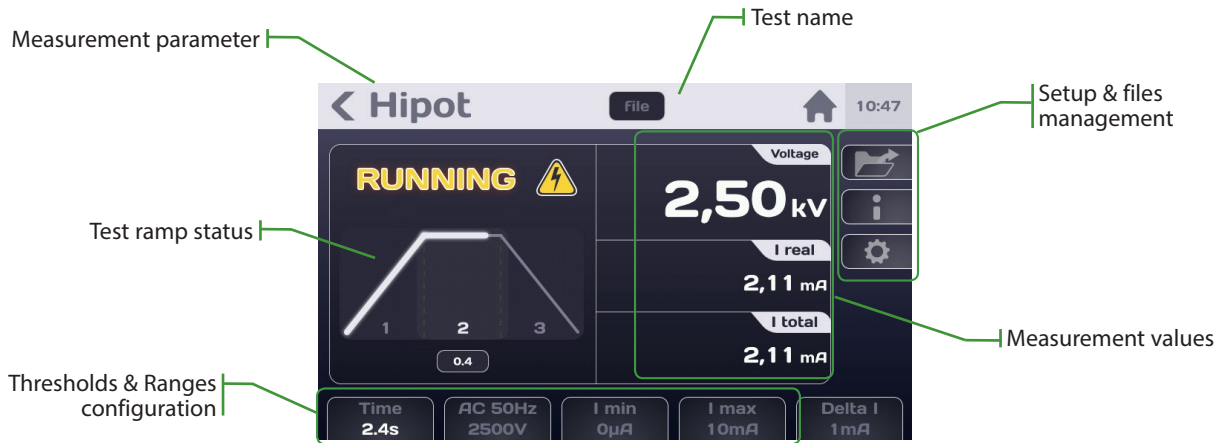
## REAR PANEL



## DIMENSIONAL DIAGRAMS



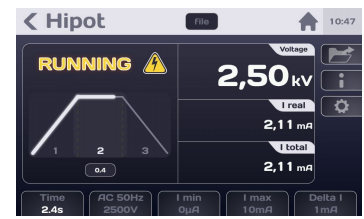
# SEFELEC 56-H : Touchscreen Overview



Passed test



Failed test



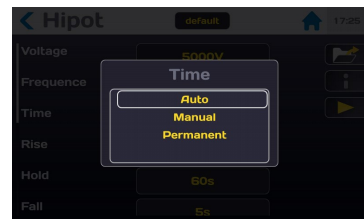
Permanent measurement mode



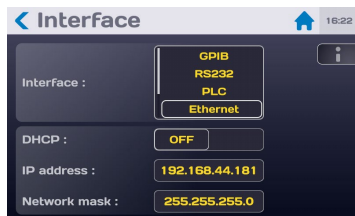
Manual mode



Multi-steps mode



Measurement mode selection



Communication configuration



Measurement parameters configuration



Sequence mode

# SEFELEC 56-H : Accessories & Options

SEFA-TE65



SEFO-IEEE488



## 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

## Options

- SEFO-5XRC** Remote controls connection module
- SEFO-5X2TO** 2TΩ insulation measurement range
- SEFO-IEEE488** IEEE488-2 communication
- SEFO-5XREAR** Rear panel measurement connection
- SEFO-5X3MA** 3mA max. output current limitation (Hipot function)

General Specifications			
Mains voltage	100-240 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. 15 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 $< \pm 1\%$		
DC voltage ripple	$< 1\%$ with a current $< 100 \mu\text{A}$		
Generator accuracy	$\pm (2\% + 5\text{ V})$ with a current $< 100 \mu\text{A}$ over full range in AC or DC		
Max D.U.T. capacitance	$< 1 \mu\text{F}$ (discharge time $< 10\text{ s}$ )		
Discharge resistor	1,5 M $\Omega$ 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	$< 20\text{ mA}$		
at 6 000V DC	$< 20\text{ mA}$		
Default Detection			
Fault indication with a message on the LCD display, LEDs and audible signal. Default voltage and $I_{\text{MAX}}$ fault current stored in the display and memory.			
<b>Flashover Current Mode <math>\Delta I</math></b> : The $\Delta I$ 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 1 mA $\pm 10\%$ to 10 mA $\pm 10\%$ by steps of 1 mA		
Pulse width	$> 10 \mu\text{s} \pm 20\%$		
<b>Current Threshold Mode <math>I_{\text{MAX}}</math></b> : The device continuously measures the total current flowing through the D.U.T. and compares it thresholds settings, 2 cases:			
High limit $> 0,000\text{ mA}$ & 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 $> 0,000\text{ mA}$ et High limit $> \text{Low limit}$	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 <math>I_{\text{MIN}}</math></b> : It is possible to specify a minimum value of current flowing through the D.U.T. . The $I_{\text{MIN}}$ value can be set from 0,000 mA to 9,999 mA. $I_{\text{MIN}}$ 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	9 999 points		
Total current accuracy (in AC and DC)	0,001 mA to 9,999 mA	$\pm (2\% + 3 \mu\text{A})$	
	10,00 mA to 20,00 mA	$\pm (2\% + 0,05\text{ mA})$	
Accuracy in DC current for a load $> 1\text{ M}\Omega$			
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	$\pm 20\text{ msec}$		