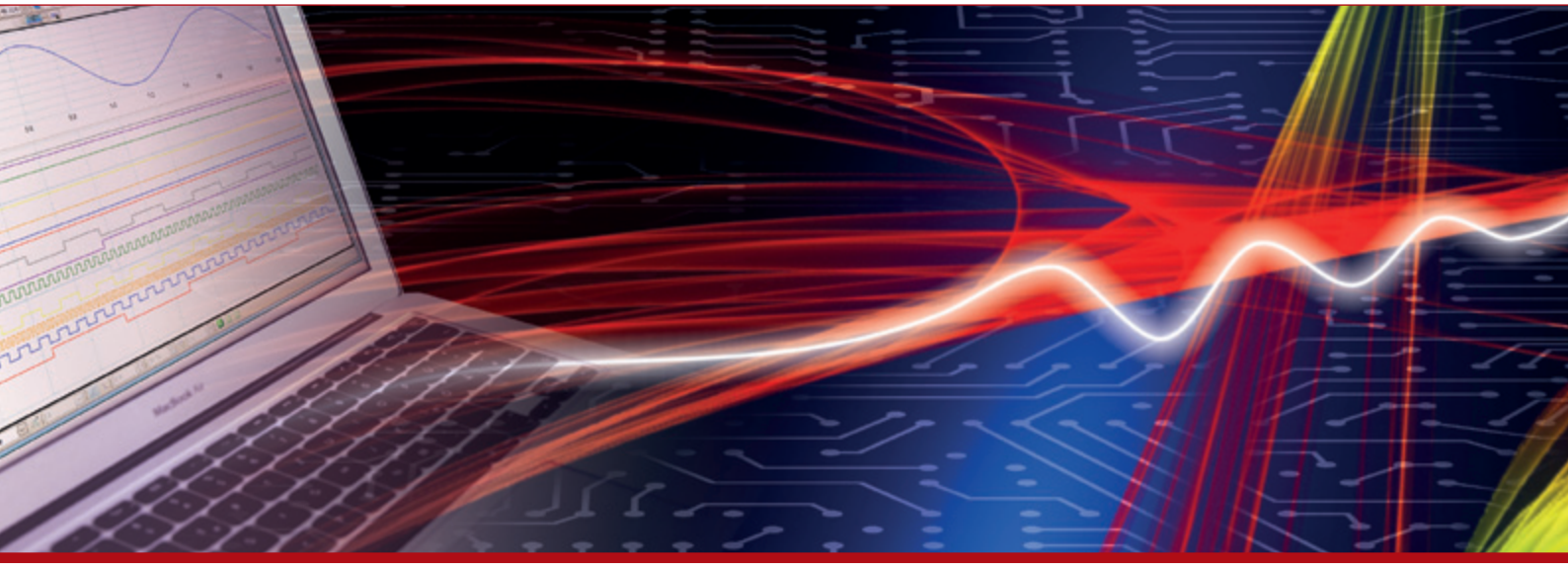
Product Datasheet - Technical Specifications



More information in our Web-Shop at ▸ **www.meilhaus.com**

Your contact

Technical and commercial sales, price information, quotations, demo/test equipment, consulting:

Tel.: **+49 - (0)81 41 - 52 71-0**

E-Mail: **sales@meilhaus.com**

Meilhaus Electronic GmbH
Am Sonnenlicht 2
82239 Alling/Germany
Tel. **+49 - (0)81 41 - 52 71-0** E-Mail **sales@meilhaus.com**

www.meilhaus.com

Product Brochure

SEFELEC 506-D

The EATON Dielectric Meter

The **SEFELEC 506-D** is the new generation EATON dielectric meter (hipot and insulation test) 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-D** 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.

SEFELEC 506-D: features and benefits:

Dielectric strength up to 5kVAC 500VA or 6kVDC

Insulation measurement up to 2TΩ at 1000 VDC
Adjustable voltage from 10 to 1000 VDC
by steps of 1V

Programmable test ramps
Up, Steady, Down
Multi-ramps mode for hipot test multirampe en rigidité

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

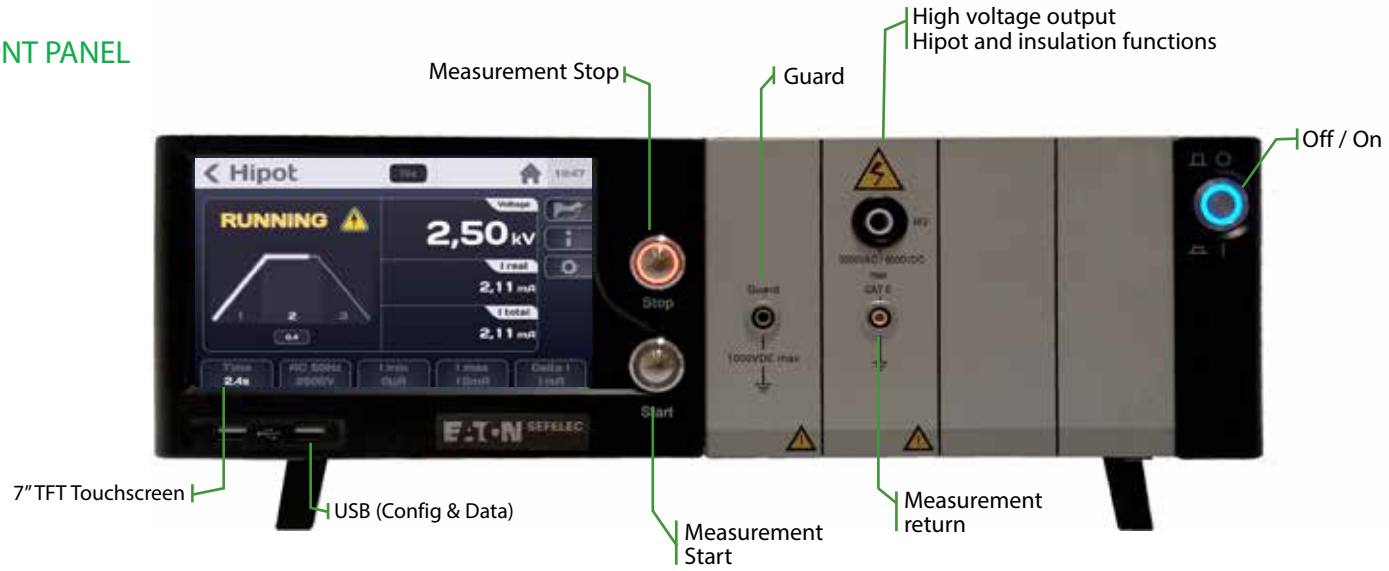
IEC 61010-2-034 full compliance, specific safety standard for insulation and dielectric strength meters

- Native Ethernet / RS232 / USB / PLC / 0-10 V
- IEEE488-2 interface as an option
- Bus CAN for external additional modules (Scanners)
- SIL2 double safety loop
- Automatic measurement range selection
- Sequence mode to combine several successive tests (i.e.: Insulation / Hipot / Insulation)

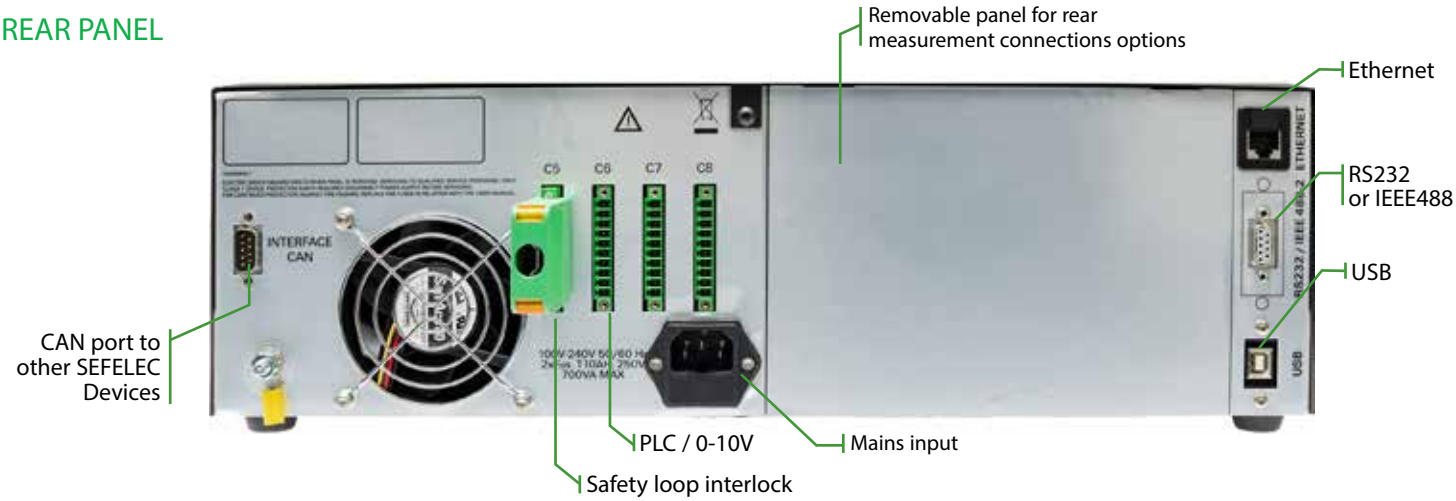
EATON
Powering Business Worldwide

SEFELEC 506-D : Dielectric Meter - overview

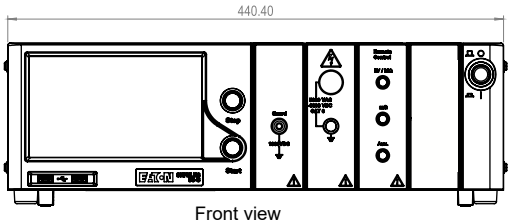
FRONT PANEL



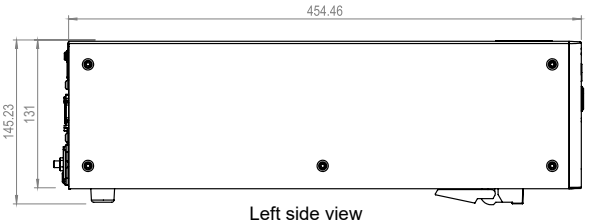
REAR PANEL



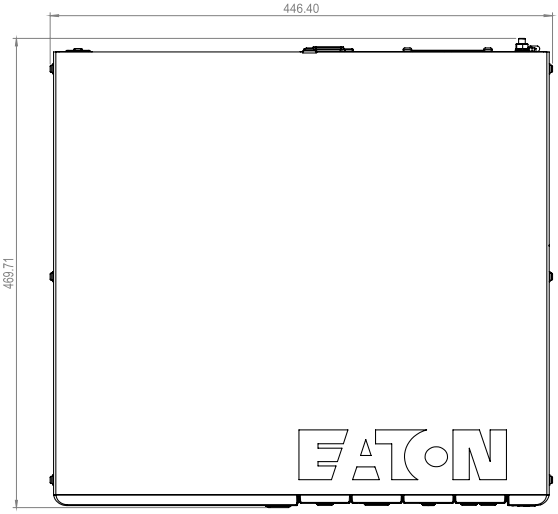
DIMENSIONAL DIAGRAMS



Front view



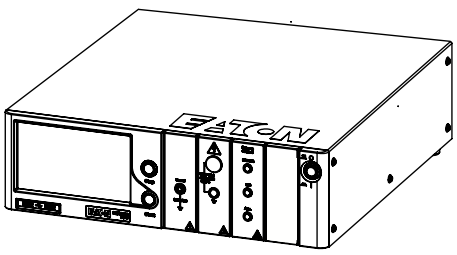
Left side view



Top view

Rack-Mount operation requires SEFA-KR adaptor.

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



SEFELEC 506-D : Touchscreen overview


Hipot function


Insulation function


Permanent Measurement mode


Passed test


Failed test


Hipot manual mode


Communication configuration


Measurement parameters configuration


Sequence mode

SEFELEC 506-D : Accessories & Options

SEFA-TE65-02

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
SEFO-5X3MA	3mA max. output current limitation (Hipot function)

SEFELEC 506-D TECHNICAL SPECIFICATIONS

General Specifications				
Mains	230 VAC ±10 % 50 to 60 Hz / single phase			
Mains protection	Temporized double fuse T10AH 250V			
Input Power	700 VA max.			
Temperature range	Storage			Operation
	-10°C à +60°C			0°C à +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 mmm	approx. 18 kg

Dielectric Strength Function (hipot)	
Voltage range	100 ... 5 000 VAC / 100 ... 6 000 VDC - Positive pole connected to bond in DC
Voltage generator accuracy	± (3 % + 5 V) over full voltage range and with a current below 1 mA
DC voltage ripple	< 1% with a current < 1 mA
Max D.U.T. capacitance	< 1µF (discharge time < 10 sec.) Discharge resistor in DC = 1,5 MΩ
Voltage measurement accuracy	Through a kilovoltmeter directly connected to output. ± (1,5% + 5 Volts) resolution: 600 pts
Short-circuit max. current	≥ 200 mA AC / ≥ 100mA DC
Default detection modes	Current variation ΔI / Max-Min current / without detection
ΔI detection mode current range	Adjustable from 10 mA ±10 % to 100 mA ± 10% by 10 mA steps, pulse 10 µS ±20 %.
Min/Max detection mode current range	adjustable from 0,1 mA to 110 mA by 0,1mA steps
Permanent total current measurement	Resolution 1 000 digits with a shunt installed in the test circuit. Value displayed is true RMS current: $\sqrt{(I_{AC}^2+I_{DC}^2)}$
Total current accuracy (in AC and DC)	± (2,5 % + 0,2 mA)
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.

Insulation Resistance Function				
Measurement voltage	20 - 1000 VDC, accuracy ±(1% + 1V), positive pole grounded			
Maximum current in measurement circuit :	2 mA - 20% / +0%			
Max D.U.T. capacitance	< 100µF (discharge time < 10 sec.), Discharge resistor 2,2 kΩ			
Display resolution	1 999 points - Displayed units: kΩ, MΩ, GΩ, TΩ			
Measurement range	100V	250V	500 V	1000V
	100 kΩ à 20 GΩ	250 kΩ à 50 GΩ	500 kΩ à 100 GΩ	100 kΩ à 200 GΩ
Measurement range with 2 TΩ option	100 kΩ à 200 GΩ	250 kΩ à 500 GΩ	500 kΩ à 1 TΩ	100 kΩ à 2 TΩ
Normal mode accuracy	Standard version 200 GΩ : ± (1,5% +1 digit)			
	Option 2 TΩ and $U_{test} \leq 200$ V DC : ± (2% +1 digit)			
	Option 2 TΩ avec $U_{test} > 200$ V DC : ± (1% x U_{test} / 100 +1 digit)			
Capacitance mode accuracy	(normal mode accuracy) ±100kΩ			
Ramp Up - Dwell - Fall duration	0,1 à 9999,0 sec. by steps of 0,1sec, accuracy +/- 20 msec.			
Thresholds range	50 kΩ to 200 GΩ (or 2 TΩ)			
Thersholds types	1 high and 1 low			

Test results with thresholds (examples)	Low Limit (LL)	$R_{measured}$	High Limit (HL)
PASS : $R_{measured} \geq$ LL and HL desabled	10 MΩ	26,1 MΩ	- - -
PASS : $R_{measured} \leq$ HL and LL desabled	- - -	98, 0 MΩ	100 MΩ
PASS : LL $\leq R_{measured} \leq$ HL	25 MΩ	63,2 MΩ	70 MΩ
FAIL : $R_{measured} \geq$ HL	45 MΩ	110 MΩ	80 MΩ

FTEN-SEFELEC 506-D version 1.0 Oct. 2019

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