

Product Datasheet - Technical Specifications



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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

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SEFELEC 1500M

The EATON Tera-Ohmmeter / Pico-Ammeter

SEFELEC 1500M features and benefits:

Tera-Ohmmeter from 100 Ω to 2000 T Ω

Pico-Ammeter from 20,00 pA to 20,00 mA

Measurement voltage adjustable volt by volt from 1 V to 1500 VDC

Up to 100kV measurement voltage with an external DC source

7" TFT Multi touch screen 16 M colors

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

DSP measurement speeds the test

WIFI capabilities for wireless connection to industrial networks

IEC 61010-2-034 new safety standard compliant

The **SEFELEC 1500M** is a new generation EATON Tera-Ohmmeter / Pico-Ammeter, 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 MQ x km function makes the **SEFELEC 1500M** easy to use for cable manufacturers.

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
- SIL2 double safety loop
- Automatic and manual range selection
- Large internal memory for configurations and measurement data storage
- Measurement speed selectable from 1 to 10 readings/sec
- Humidity and temperature measurement

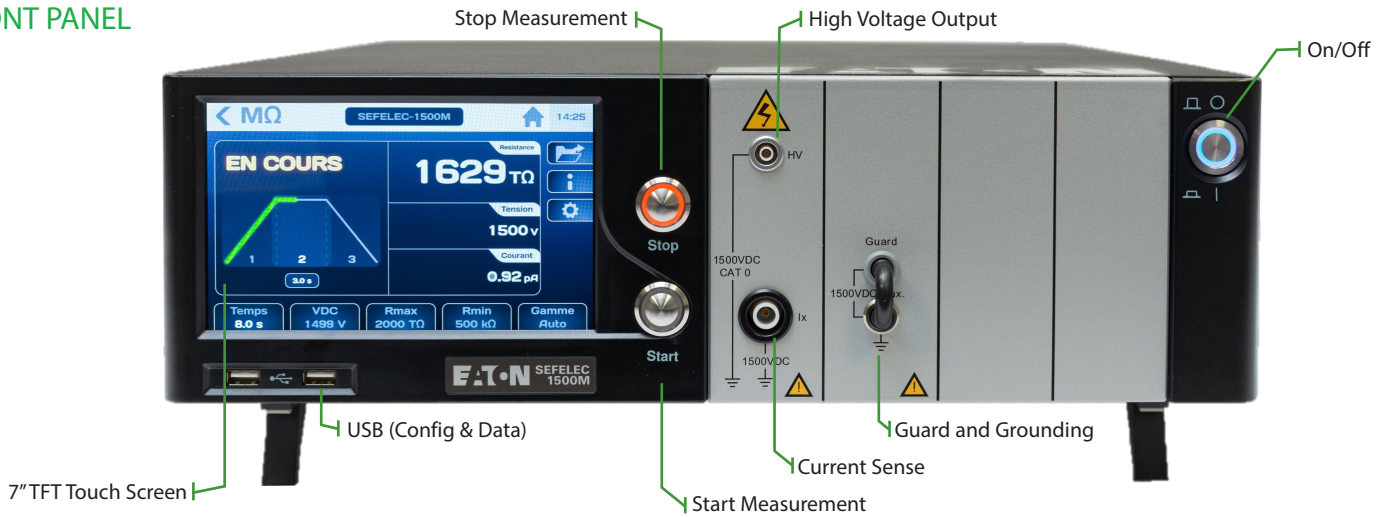


EATON

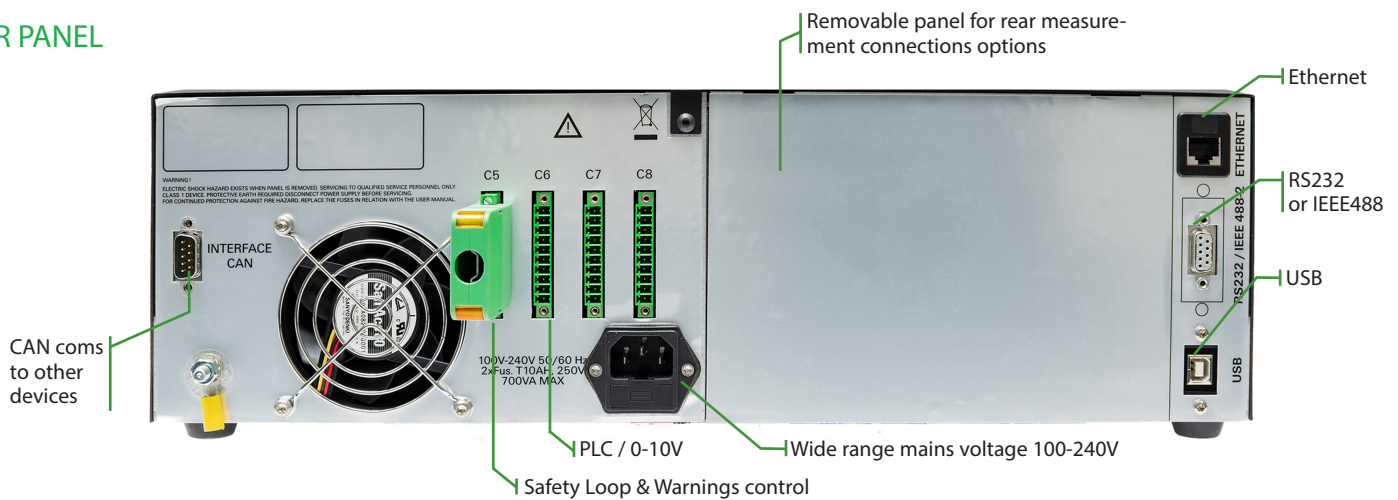
Powering Business Worldwide

SEFELEC 1500M : Tera-Ohmmeter / Pico-Ammeter overview

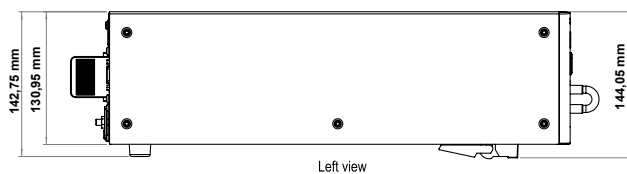
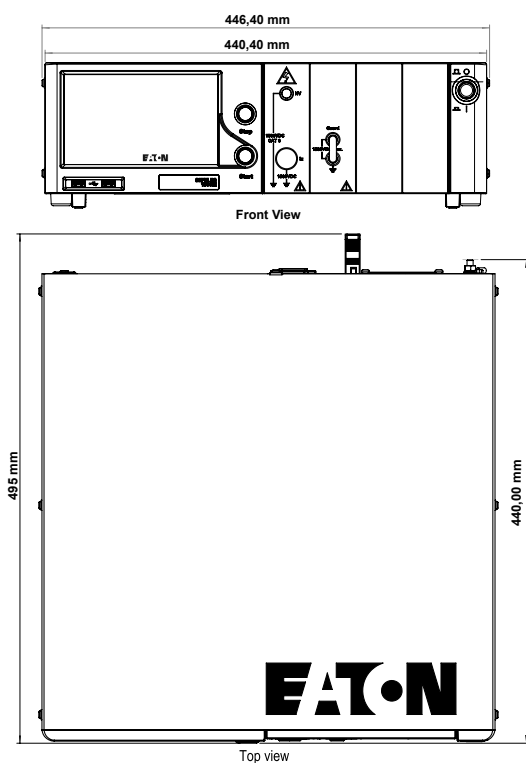
FRONT PANEL



REAR PANEL



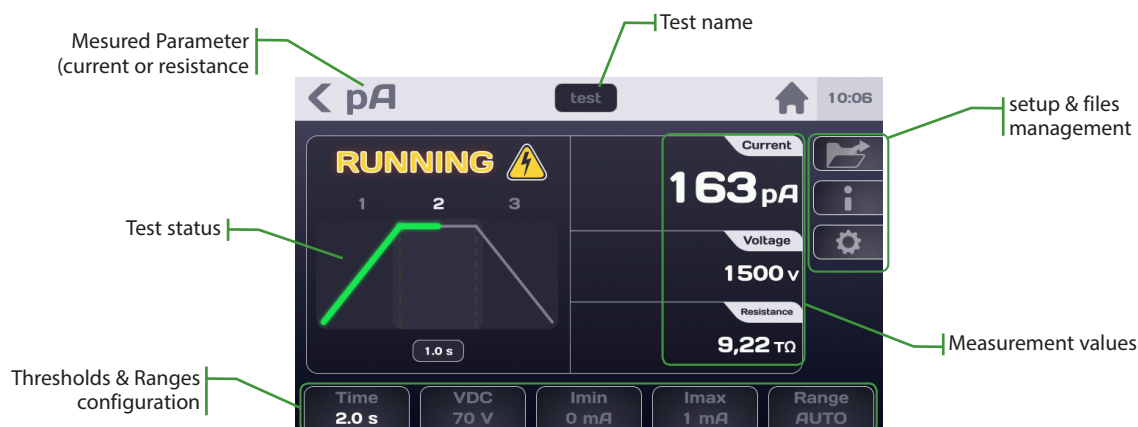
DIMENSIONAL DIAGRAMS



Rack-Mount operation requires SEFA-KR adaptor.

SEFO-1500REAR option provides measurement connectors on the back plane.

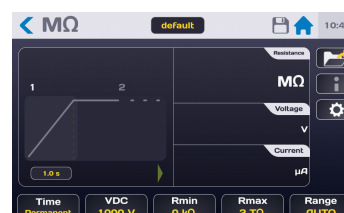
SEFELEC 1500M : Touch-Screen overview



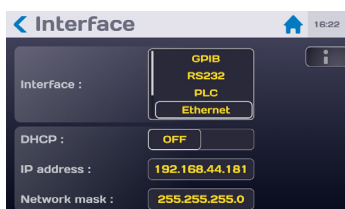
Passed test end



Failed test end



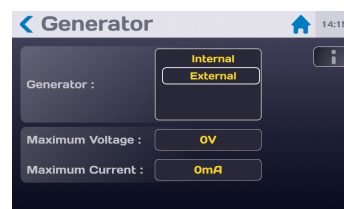
Permanent mode



Communication configuration



Measurement Configuration



Generator Selection

SEFELEC 1500M : Accessories & Options

SEFA-SE15



SEFA-HV15



SEFA-1500MRHT



SEFO-IEEE488



Accessories

SEFA-SE15	Sense cable end with probe - 1,5 meter + Lemo Connector
SEFA-HV15	High Voltage cable, end with 4mm plug - 1,5m + Lemo Connector
SEFA-HVSE15-10	Set of 2 x 10m length cable for test bench integration
SEFA-KR	SEFELEC Series 19" Rack Mounting Adaptors
SEFA-1500MRHT	Humidity and Temperature measurement probe for SEFELEC Series / USB

Options

SEFO-IEEE488	IEEE488-2 communication interface
SEFO-1500REAR	Rear connections
SEFO-CO160	Green/red safety lamp

TECHNICAL SPECIFICATIONS

General Specifications				
Mains	100-240 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 to +60°C		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 mmm	approx. 15 kg
Output voltage				
Voltage range	adjustable by step of 1 volt from 1 V _{DC} to 1500 V _{DC}			
Accuracy	± (0.5 % + 0.5 V)			
Short circuit current	20 mA (±10 %) can be limited to 3 mA			
Dynamic stability	> 1.10 ⁻⁶ for mains variation of ±15 %			
Nominal current	from 1 V to 10 V	from 11 V to 1000 V	from 1000 V to 1500 V	
	1 mA (±0.5 mA)	10 mA (±10 %)	5 mA (±10 %)	
Polarity	Positive pole to HV terminal or Negative pole to guard terminal Possibility to ground positive or negative high voltage pole			
Voltage ripple	± 100 mV peak to peak for 10 mA ouput current			
Noise 0,01Hz à 10H z	100 µV max (20°C)			
Temperature coefficient	0.001 %/°C			
Max D.U.T. capacitance	< 1 mF			
Discharge resistance	2.2 kΩ			
Tera-Ohmmeter specifications				
Measurement range	from 0,100 kΩ to 2 000 TΩ with 10 measurement current ranges			
Temperature coefficient	± 0.1 %/°C			
Display resolution	3 ^{1/2} digits			
Test voltage (ex.)	10 V	100 V	1 500 V	
	from 10 ³ to 2.10 ¹³ Ω	from 10 ⁴ to 2.10 ¹⁴ Ω	from 3.10 ⁵ to 2.10 ¹⁵ Ω	
Accuracy	± [current range accuracy + (50/Test Voltage) % + 1 digit] of read value			
Threshold	x2. High and low from 0,100 kΩ to 2000 TΩ			
Pico-Ammeter specifications				
Ranges	500 fA to 20 mA in 10 ranges / automatic or manual range selection			
	Range	Minimum value	Resolution	Accuracy @25°C
	20,00 pA	0.50 pA	10 fA	0.3 % reading + 500 fA
	200,0 pA	19.8 pA	100 fA	0.2 % + 0,3 pA
	2,000 nA	0.198 pA	1 pA	0.2 % + 2 pA
	20,00 nA	1.98 nA	10 pA	0.2 % + 20 pA
	200,0 nA	19.8 nA	100 pA	0.2 % + 200 pA
	2,000 µA	0.198 µA	1 nA	0.2 % + 2 nA
	20,00 µA	1.98 µA	10 nA	0.2 % + 20 nA
	200,0 µA	19.8 µA	100 nA	0.2 % + 200 nA
	2,000 mA	0.198 mA	1 µA	0.2 % + 2 µA
	20,00 mA	1.98 mA	10 µA	0.2 % + 20 µA
	Nota: 1 pA = 0.001 nA = 0.000 001µA = 0.000 000 001 mA = 1x10 ⁻¹² A			
	Display resolution	3 ^{1/2} digits		
Input impedance	Range		Impedance	
	20 mA		9 Ω 1 %	
	2 mA		90 Ω 1 %	
	Others		9 kΩ 1 %	
Threshold	x2. High and low from 00.50 pA to 20.00 mA			
External voltage source	up to 100 kV DC with BAPA option RLHT50 or RLHT70 limitation resistors for sources > 10 kV DC			