

SEFELEC 1000-M

Data sheet



MEGHOMMETER

GENERAL SPECIFICATIONS

Mains power supply	100–240 VAC ±10%, 50 to 60 Hz / single-phase			
Mains protection	Dual time-delay fuse, type T10AH 250V			
Input power	700 VA max.			
Temperature range	Storage			Operation
	-10°C à +60°C			0°C à +45°C
	Specifications guaranteed after a 30-minute warm-up and with relative humidity < 50%			
Altitude	Up to 2000 m			
Relative humidity	80% max. @31°C			
Dimensions & weight	Height	Width	Depth	Weight
	131 mm	440 mm	455 mm	approx. 15kg



ADVANTAGES OF THE SEFELEC 1000-M

- ✓ **Megohmmeter:** up to 200 G Ω at 1000 VDC and 2 T Ω (optional)
- ✓ **Test voltage:** Adjustable in 1 V steps from 20 to 1000 VDC
- ✓ **Programmable test ramps:** Ramp-up, hold, and ramp-down
- ✓ **Embedded technologies ARM Dual-Core control & 3D NAND:** for enhanced accuracy, stability, and repeatability
- ✓ **Large internal memory:** For storing configurations and test results
- ✓ **Plug & Play solution:**
 - Real-time test visualization via 7" TFT touchscreen
 - Embedded DSP for increased test speed
 - Sequence mode to combine multiple successive tests
 - Automatic range selection
- ✓ **Compliance and safety:**
 - IEC 61010-2-034 (safety standard for insulation testers and dielectric strength test equipment)
 - Dual safety loop SIL2
- ✓ **Connectivity & Communication:**
 - Ethernet / RS232 / USB / PLC as standard
 - IEEE488-2 interface as an option
 - CAN bus for controlling extensions (scanners)



TECHNICAL SPECIFICATIONS

Test Voltage

Programming	20 ... 1000 V DC in 1 V steps
Voltage generation accuracy	$\pm (1\% + 1 \text{ V})$ over the full voltage range with current $< 100 \mu\text{A}$
Polarity	Generator positive terminal connected to ground
Dynamic stability	For mains variation $\Delta V = \pm 10\% \rightarrow$ test voltage variation $< \pm 1\%$
Maximum current in measurement circuit	2 mA $-20\% / +0\%$
Maximum capacitance of DUT (Device Under Test)	$< 100 \mu\text{F}$ (discharge time $< 10 \text{ s}$)
Discharge resistance	2,2 k Ω

Resistance Measurement Range

$(U_{\text{test}} / U_{\text{max generator}}) \times 200 \text{ G}\Omega$ (standard) $(U_{\text{test}} / U_{\text{max generator}}) \times 2 \text{ T}\Omega$ (with 2 T Ω option)

Test Voltage	100 V	250 V	500 V	1000 V
Standard range	100 k Ω to 20 G Ω	250 k Ω to 50 G Ω	500 k Ω to 100 G Ω	1 M Ω to 200 G Ω
With 2 T Ω option	100 k Ω to 200 G Ω	250 k Ω to 500 G Ω	500 k Ω to 1 T Ω	1 M Ω to 2 T Ω

Measurement Accuracy

Display resolution	2000 counts, with units: k Ω , M Ω , G Ω , T Ω
Accuracy	exprimée en % de la lecture, 1U = 1 point d'affichage
Standard version (200 G Ω)	$\pm (1,5\% + 1\text{U})$
With 2 T Ω option and $U_{\text{test}} \leq 200 \text{ V DC}$	$\pm (2\% + 1\text{U})$
With 2 T Ω option and $U_{\text{test}} > 200 \text{ V DC}$	$\pm (1\% \times U_{\text{essai}} / 100 + 1\text{U})$
Capacitance Mode (recommended for $R > 1 \text{ G}\Omega$)	Range: 1.00 M Ω to 200 G Ω Accuracy (normal mode): $\pm 100 \text{ k}\Omega$ Input impedance: 10 M $\Omega \pm 1\%$

Thresholds

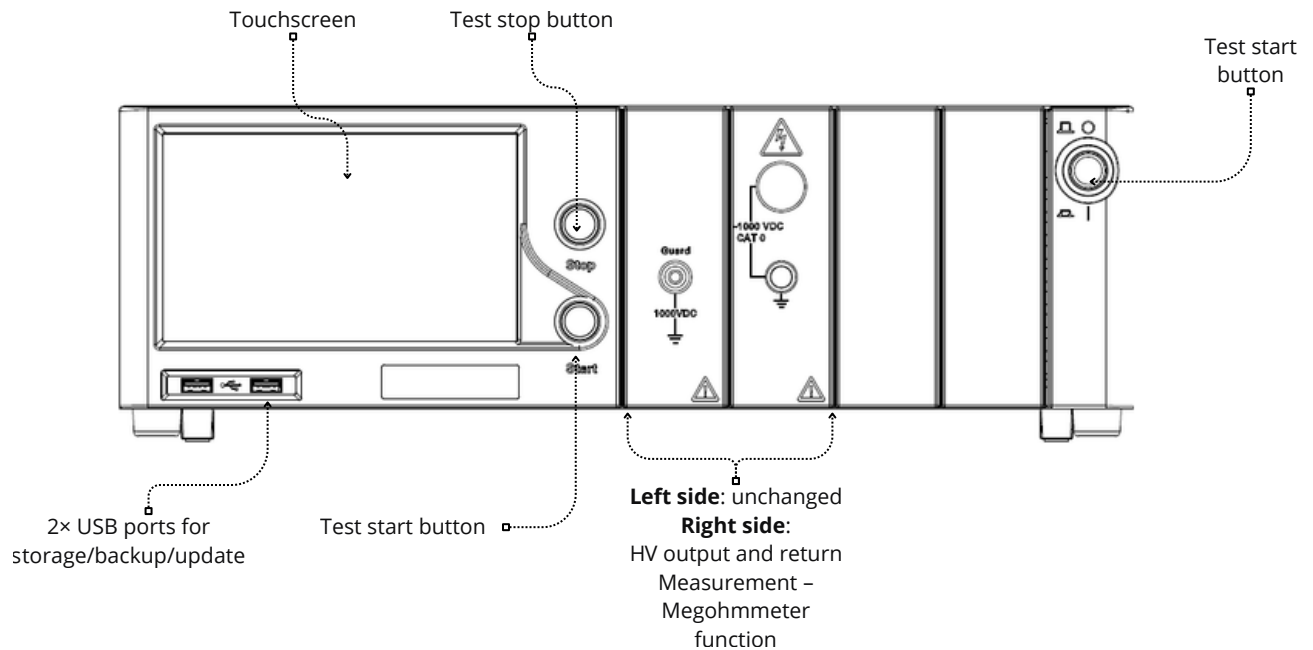
Adjustment range	50 k Ω to 200 G Ω (or 2 T Ω)
Threshold types	1 high threshold and 1 low threshold
Test Result Examples	Low Threshold (LT) Measured R High Threshold (HT)
PASS: $R \geq \text{LT}$ (HT disabled)	10 M Ω 26,1 M Ω - - -
PASS: $R \leq \text{HT}$ (LT disabled)	- - - 98,0 M Ω 100 M Ω
PASS: $\text{LT} \leq R \leq \text{HT}$	25 M Ω 63,2 M Ω 70 M Ω
FAIL: $R \geq \text{HT}$	45 M Ω 110 M Ω 80 M Ω

Timing

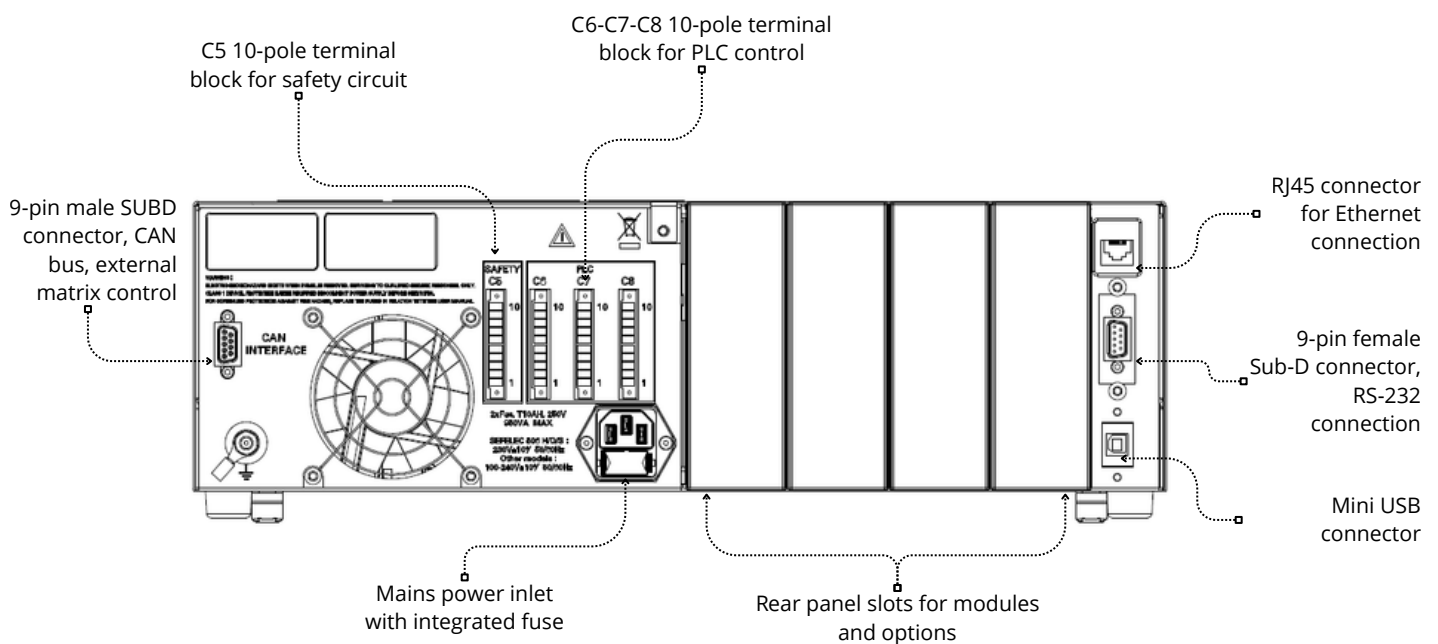
Continuous mode	Rise time is applied to the measurement. Output current equals the set value. Test stops in case of fault or front panel emergency stop button activation.
AUTO mode	The test consists of 3 successive phases: Linear ramp-up to set value (Rise), Hold at programmed value (Hold), Progressive return to 0 (Fall)
Programming	Rise & Fall: 0.0 to 9999.0 s in 0.1 s steps ($\pm 20 \text{ ms}$ accuracy) Hold: 0.1 to 9999.0 s in 0.1 s steps ($\pm 20 \text{ ms}$ accuracy)

DESIGN

FRONT PANEL



REAR PANEL





CONFIGURE YOUR SEFELEC 1000-M

ACCESSORIES AND OPTIONS

Accessories	
SEFA-TE65-02	High-voltage probe and measuring lead – length: 2 m
SEFA-TE58-02	High-voltage probe and measuring lead with remote control – length: 2 m
SEFA-CO175-02	Return lead with 4 mm plug – length: 2 m
SEFA-5XGUARD	Guard connection lead with 4 mm plug – length: 2 m
SEFA-CO180-02	High-voltage cable without termination – length: 2 m
SEFA-P5X-HRC-02	High-voltage gun with remote control – length: 2 m
SEFA-P5X-RT-02	Measurement return gun – length: 2 m
SEFA-KR	Adapters for 19" rack mounting
SEFA-CO160	Red/Green safety lamp
SEFA-5XLIGHT	Magnetic Red/Green safety lamp
SEFA-CO200	Schuko/FR test socket – max. 1500 V
SEFA-CO200HV	Schuko/FR test socket – max. 5000 V
SEFA-AO10	Two-hand test start control

Options	
SEFO-5XRC	Remote control connection module
SEFO-IEEE488	IEEE488-2 communication board
SEFO-5XREAR	Rear panel connection
SEFO-5X2TO	2 TΩ insulation measurement range
SEFO-5X500V	Insulation measurement limited to 500 V
SEFO-4WHV	4-wire detection of the device under test
SEFM-4IHV	4-channel internal high-voltage scanner module
SEFM-8IHV	8-channel internal high-voltage scanner module

Discover also

More info at www.sefelec.com



SCANNER 64-SC

- High density: 8 to 512 Channels
- Maximum voltage 5kVAC 500VA and 6kVDC
- Insulation up to 200GΩ under 1000 VDC
- Earth continuity under 32A AC max.
- Compliant IEC 61010-2-034



Automatic wiring testers SYNOR 5000

- From 8 to 140,000 test points
- Continuity in 2 and 4 wires up to 10A
- Insulation up to 5000V DC
- Dielectric strength up to 4000V AC and 5500V DC
- Configuration: cabinet or compact case, mobile or remote



Measuring instruments SEFELEC 5X

- Dielectric strength 5 kVAC and 6 kVDC with 50 or 500VA power
- Insulation measurement under 1000VDC for measurements up to 2 TΩ
- Earth continuity testing under 32A or 50AAC