



SEFELEC 56-D

Data sheet

DIELECTRIC TESTER

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. 18kg



ADVANTAGES OF THE SEFELEC 56-D

- ✓ **Dielectric strength:** Up to 5 kVAC 50 VA and 6 kVDC
- ✓ **Megohmmeter:** Up to 2 T Ω at 1000 VDC Voltage adjustable in 1 V steps from 10 to 1000 V
- ✓ **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
 - Control via Winpass software for test report generation
- ✓ **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 / API ports as standard
 - IEEE488-2 interface as an option
 - CAN bus for controlling extensions (scanners)



TECHNICAL SPECIFICATIONS

Dielectric Strength Function

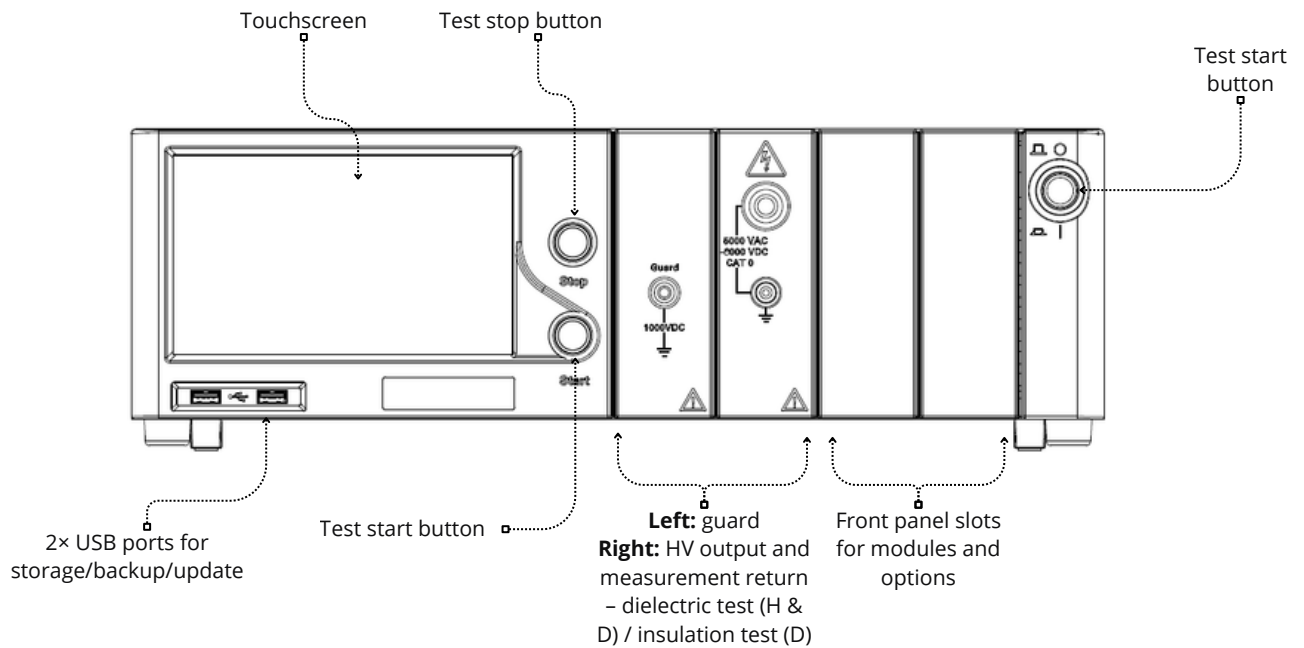
Voltage range	100 ... 5,000 VAC / 100 ... 6,000 VDC – positive pole connected to ground in DC
Voltage generation accuracy	± (2% + 5 V) over the entire voltage range and for current below 3 mA
Residual ripple in DC (according to IEC 61180)	< 3% for current < 3 mA
Maximum capacitance of the tested sample	< 1 µF (discharge time < 10 s), discharge resistor in DC = 1.5 MΩ
Voltage reading	Kilovoltmeter directly connected to output terminals Accuracy: ± (1.5% + 5 V), resolution: 6000 counts
Short-circuit current	< 20 mA AC / < 20 mA DC
Fault detection modes	ΔI current variation / Max-Min current thresholds / No detection
ΔI detection mode range	Adjustable amplitude from 1 mA ±10% to 10 mA ± (10% + 0.5 mA) in 100 µA steps (AC & DC) From 100 µA to 900 µA ±10% in 100 µA steps (AC, 100 VAC to 2500 VAC) 10 µs pulse ±20%
Current threshold detection mode	Adjustable from 0.001 mA to 9.999 mA in 0.001 mA steps
Total steady-state current measurement	Resolution: 9,999 counts via shunt directly in the test circuit
Accuracy	AC total/real current 0.001 mA to 9.999 mA → ± (1.5% + 2 µA) / ± (3% + 100 µA) DC total current 0.001 mA to 9.999 mA → ± (1.5% + 2 µA) (DC accuracy for load > 1 MΩ)
PERMANENT mode	Ramp time applies to the measurement. Output voltage equals the set value. Stop in case of fault or red front panel button activation
MANUAL mode	No timing applied. Manual control via up/down arrows on the screen. Stop in case of fault or red front panel button
AUTO mode	Three successive phases: • Linear ramp-up to target value • Hold phase at programmed value • Progressive return to 0
Programming	Ramp-up & ramp-down: 0.0 to 9999.0 s, 0.1 s step, accuracy ±20 ms Hold: 0.1 to 9999.0 s, 0.1 s step, accuracy ±20 ms

Insulation Resistance Function

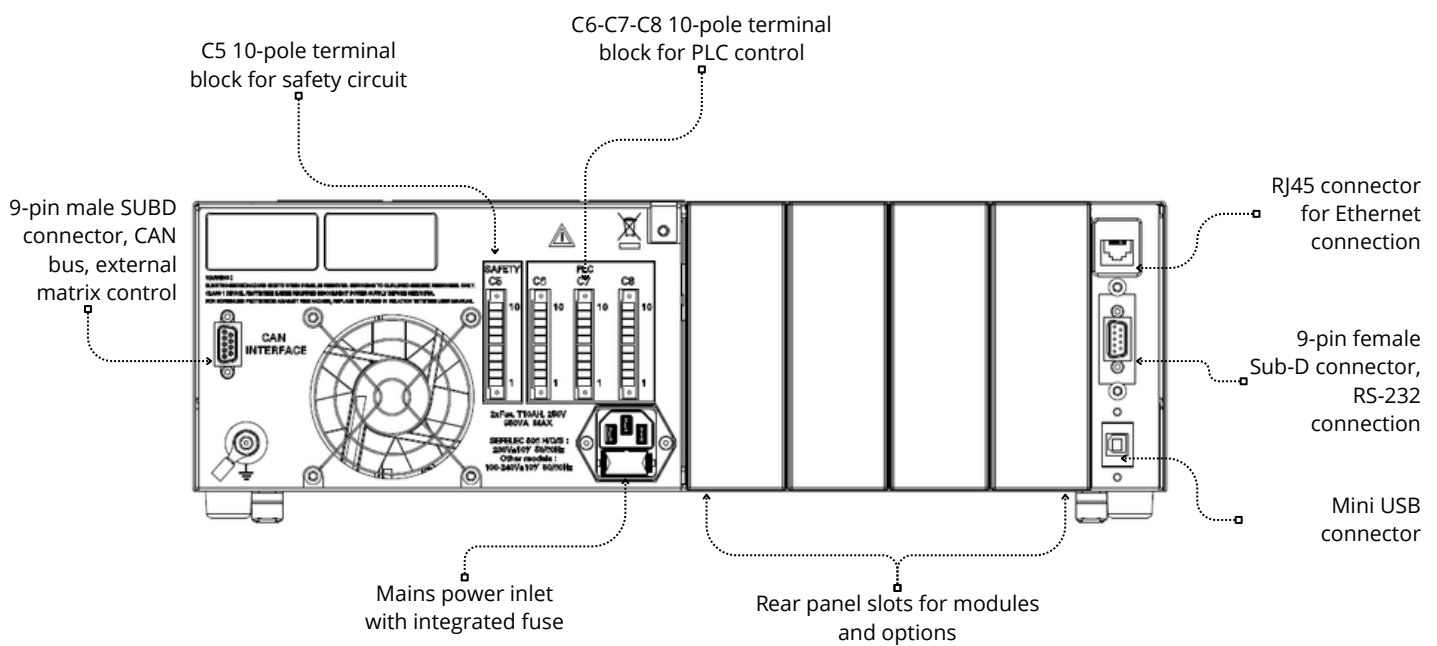
Test voltage	20 - 1000 VDC, accuracy $\pm(1\% + 1V)$, positive pole grounded				
Maximum current in measurement circuit	2 mA - 20% / +0%				
Maximum sample capacitance	< 100 μ F (discharge time < 10 sec.), discharge resistance 2.2 k Ω				
Display resolution	1,999 counts – Unit display in k Ω , M Ω , G Ω , T Ω				
Measurement range vs voltage	100V	250V	500V	1000V	
Standard version	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	
Accuracy in Normal mode	Standard version 200 G Ω : $\pm(1.5\% + 1 \text{ digit})$				
	2 T Ω option with test voltage $\leq 200 \text{ V DC}$: $\pm(2\% + 1 \text{ digit})$				
	2 T Ω option with test voltage $> 200 \text{ V DC}$: $\pm(1\% \times U_{\text{test}} / 100 + 1 \text{ digit})$				
Current measurement accuracy	$\pm(1\% + 1 \text{ digit})$. With 2 T Ω option: $\pm(1\% \times U_{\text{test}} / 100 + 5 \text{ digits})$				
Capacitance mode accuracy	Recommended for $R > 1 \text{ G}\Omega$: [Normal mode accuracy] $\pm 100 \text{ k}\Omega$ from 1 M Ω to 200 G Ω				
Timing Programming	Ramp-up & ramp-down: 0.0 to 9999.0 s, 0.1 s step, $\pm 20 \text{ ms}$ Hold: 0.1 to 9999.0 s, 0.1 s step, $\pm 20 \text{ ms}$				
Adjustment range	100 k Ω à 200 G Ω (or 2 T Ω)				
Threshold types	1 high threshold and 1 low threshold				
Test results according to thresholds (examples)	Lower threshold	Measured resistance		Upper threshold	
PASS: Measured $R \geq$ lower threshold (upper disabled)	10 M Ω	26,1 M Ω		---	
PASS: Measured $R \leq$ upper threshold (lower disabled)	---	98, 0 M Ω		100 M Ω	
PASS: $SB \leq$ Measured $R \leq SH$	25 M Ω	63,2 M Ω		70 M Ω	
FAIL: Measured $R \geq SH$	45 M Ω	110 M Ω		80 M Ω	

DESIGN

FRONT PANEL



REAR PANEL





CONFIGURE YOUR SEFELEC 56-D

ACCESSORIES AND OPTIONS

Accessories		Options	
SEFA-TE65-02	High-voltage probe and measuring cable – length 2 m	SEFO-5XRC	Remote control connection module
SEFA-TE58-02	High-voltage probe and measuring cable with remote control – length 2 m	SEFO-IEEE488	IEEE488-2 communication card
SEFA-CO175-02	Return cable with 4 mm plug – length 2 m	SEFO-5XREAR	Rear panel connection
SEFA-5XGUARD	4 mm plug cable for guard connection – length 2 m	SEFO-5X2TO	2 TΩ insulation measurement range
SEFA-CO180-02	High-voltage cable without termination – length 2 m	SEFO-5X500V	Insulation measurement limited to 500 V
SEFA-P5X-HRC-02	High-voltage gun with remote control – length 2 m	SEFO-5X3MA	Output current limited to 3 mA
SEFA-P5X-RT-02	Measurement return gun – length 2 m	SEFO-4WHV	4-wire detection of the device under test
SEFA-CO160	Red/Green safety lamp	SEFM-4IHV	Internal 4-channel high-voltage scanner module
SEFA-5XLIGHT	Magnetic Red/Green Safety Lamp	SEFM-8IHV	Internal 8-channel high-voltage scanner module
SEFA-CO200	Schuko/FR test socket, max. 1500 V		
SEFA-CO200HV	Schuko/FR high-voltage test socket, max. 5000 V		
SEFA-AO10	Two-hand control for test start		

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