

Product Datasheet - Technical Specifications



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SYNOR 5000

AUTOMATIC CABLE TESTERS

OVERVIEW
2025



5000-P



5000-R



5000-H



5000-D



5000-C

SYNOR 5000 RANGE ADVANTAGES

- **Up to 140,000 simultaneous test points**
- **Customized solutions** based on your needs
- Our testers are **modular and adaptable**
- **SIL2 double safety loop**
- **Dielectric strength** tests up to 5500 VDC / 4000 VAC
- **Insulation measurement** from 50 kΩ to 5 GΩ under 2 VDC to 2120 VDC
- **Continuity tests** with 2 or 4 wires
- **Component tests** for diodes, zeners, transils, TVS, surge protectors, resistors, capacitors, shields, twisted pairs
- **Functional/stimulus tests** with specific voltages or currents available on request based on your needs
- **Standalone operation** for tests without a PC
- **11 models of switching cards** for all applications, which can be mixed in the same tester
- **WINPASS 5000 software** for test control and supervision, advanced functions, and complete test report generation
- **Compliance with testing standards for all industry segments:** Aerospace, defense, space, rail, EV, and automotive
- Standard Ethernet ports or optional RS232 / PLC

For over 60 years, SEFELEC has been manufacturing wiring testers, cable harness testers, and backplane testers.

Our goal is to offer advanced solutions that provide more benefits for our customers and for test organization.

Our wiring testers are designed to operate 24/7 on production lines in standalone mode (with or without a PC) or with an automated system to ensure the quality, compliance, and functionality of your products.

SYNOR 5000

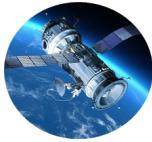
APPLICATIONS



AERONAUTIC



DEFENSE



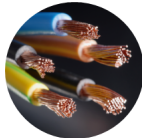
SPACE



RAIL



MACHINE BUILDERS



CABLE MANUFACTURER



HARNESSES & CONNECTORS



AUTOMOTIVE



HOUSEHOLD APPLIANCES

For over 60 years, our automatic high-voltage cable testers have been used worldwide in more than 26 countries, primarily in the following industries:

- **Aerospace** (satellites, launch vehicles, subassemblies, etc.)
- **Aeronautics** (airplanes, helicopters, optronics, unmanned aerial vehicles, subassemblies, etc.)
- **Railway** (trains, metro, trams, signaling systems, etc.)
- **Defense** (radars, missiles, UCAVs, submarines, aircraft, ships, etc.)
- **Connector manufacturers, telecommunications, electrical cabinets**

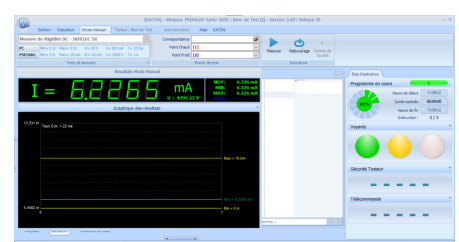
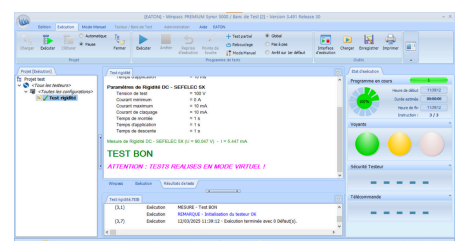
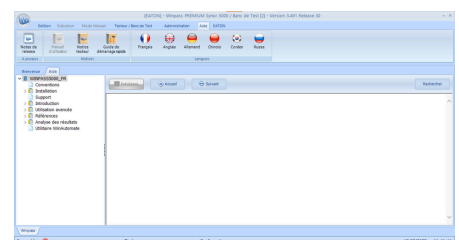
Thanks to the collaboration with our clients and our R&D department, we offer solutions that are always tailored to your needs and the requirements of your markets.

WINPASS SOFTWARE

The WINPASS and WINPASS Premium software control all SYNOR testers and simplify and automate all your tests in project mode, allowing you to generate customizable test reports. (See specific documentation on WINPASS 5000 software)

WINPASS offers:

- **Quality:** Self-testing of generators and internal equipment, safety markers, password access.
- **Compliance:** Quick import of test files from a database.
- **Ease of Use:** Self-learning to create test files without a programmer, minimalist display in production.
- **Editing and Testing:** Graphical and color editor, easy switching between editing and testing windows.
- **Testing and Correction:** Automatic and manual tests with diagnostic tools.
- **Traceability:** Printing of customized reports, saving results, production statistics.
- **Customizable Multilingual Interface:** Language on request.



TESTS PERFORMED BY THE SYNOR 5000

CONTINUITY TEST

Cables and connections conformity control

	2 WIRES	4 WIRES
Test voltage	0,1 V to 28 V \pm 5%	
Test current	10 mA to 2 A \pm 1%	
Test time	1ms to 99 s \pm 1ms	
Accuracy	\pm 2%	
High & low threshold values	1 Ω to 2 k Ω	1 m Ω to 2 k Ω

COMPONENTS TEST

DIODE TEST (2 & 4 WIRES)

Measurement current	de 10 mA à 2 A \pm 1%
Measurement voltage	de 100 mV à 20 V \pm 1%

ZENER DIODE TEST (WITH SY5000 HVDC OPTION)

Test voltage	de 2 V à 100 V \pm 5%
Zener voltage	de 2 V à 90 V \pm 5%

RESISTANCES MEASUREMENT

Measurement range	
• 2 wires	from 10 Ω to 10 M Ω \pm 2%
• 4 wires	from 100 m Ω to 10 M Ω \pm 2%

Measurement current	from 1 μ A to 10 mA \pm 2%
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Measurement time	1ms to 99 s \pm 1ms
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MEASUREMENT OF TRANSIL, TRANSORB, TVS DIODES, SURGE PROTECTORS

Test voltage	2VDC to 2121VDC \pm 5% (depending on the type of switching card)
Short-circuit current	2 V à 20 V : 40 mA 20 V à 2121 V : 10 mA
Breakdown current	500 μ A à 10 mA \pm 10%
Voltage measurement	\pm 5%

CAPACITOR MEASUREMENT

Capacitance	from 100pF to 10 mF \pm 5%
Accuracy	\pm 5% \pm 20pF

SHIELDING & TWISTED PAIR MEASUREMENT

Shielding	100 pF à 10 mF
Accuracy	\pm 5% \pm 10pF

ISOLATION TEST *

Cables and connections quality control

Test voltage	from 2 VDC to 2121 VDC \pm 5%
Rise time	500 ms to 60 s \pm 1ms
Hold time	20 ms to 99 s \pm 1ms
Measurement accuracy	
from 50 k Ω to 1 G Ω	\pm 5%
from 1 G Ω to 3 G Ω	\pm 8%
from 3 G Ω to 5 G Ω	\pm 15%
Breakdown current	adjustable from 500 μ A to 10 mA \pm 10%

FUNCTIONAL / STIMULI TESTS *

Functionality check performed after verifying the compliance and quality of the cables

Maximum switching voltage	Up to 2120 VDC / 1500 VAC
Maximum current	Up to 10A
Voltages / Currents	Available on request according to your needs

DIELECTRIC STRENGTH TEST (HIPOT) *

Quality control and specific defects of cables and connections

Test voltage	from 50 Veff to 1500 Veff \pm 5%
Rise time	1 ms to 60 s \pm 1ms
Hold time	1 ms to 99 s \pm 1ms
Breakdown current	adjustable from 500 μ A to 10 mA \pm 10%

* Option

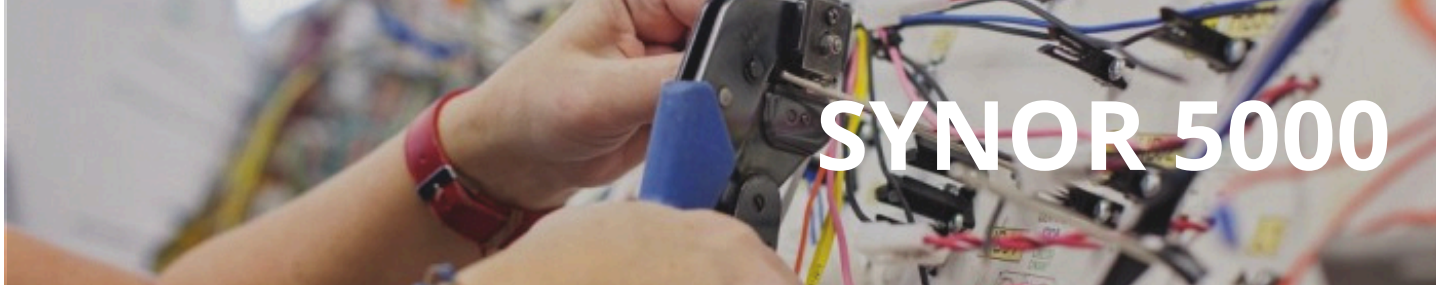


The WINPASS software allows you to add external devices during your tests with the SYNOR 5000, such as 5X measuring devices, MGR10 micro-ohmmeters, RLC bridges, and DASx (noise measurement).

It also offers the use of scripts, migration of old programs, and evolves according to your needs.









TECHNICAL AND GENERAL SPECIFICATIONS SYNOR 5000

SYNOR	5000-P	5000-R	5000-H	5000-D	5000-C
Test points max number	384 points	Up to 2048 points			Up to 11264 points
Maximum switching card number	3	16			88
Expandable with additional cabinets		RS	HS-DS-CS	DS-CS	CS
Tests types performed	Continuity, Insulation, Dielectric, Functional, and Components				
Main power supply	115-230 VAC ±15% 47 to 64 Hz / single-phase				
Entry power	40VA unloaded - 300 VA max. per box				According to the number of integrated racks x 300 VA
Temperature range	<ul style="list-style-type: none">• Storage: -10°C to +60°C• Operation: 0°C to +45°C• Specifications guaranteed after a preheating of 1/2 hour and relative humidity <50%				
Altitude	Up to 2 000 m				
Relative Humidity	90 % max. at 31°C				
Height Width Depth Weight	131 mm 450 mm 500 mm 13 kg	265 mm 437 mm 485 mm 12-21 Kg	375 mm 520 mm 560 mm 25 kg	dimensions and weight according to your project	13U à 36U 600 mm 800 mm ~100 kg
Security class	Class 1 (grounding connection)				
Overvoltage class	CAT II	CAT I	CAT II		
Pollution Degree	2				






SYNOR 5000

SWITCHING CARDS

Models	M128A5	M128A10	M64A15	M64A20	M22A20	M32A30	M24A42	M8A55
								
Number of switching points	128	128	64	64	22	32	24	8
Maximum DC voltage	500 VDC	1000 VDC	1500 VDC	2000 VDC	2000 VDC	3000 VDC	4200 VDC	5500 VDC
Maximum AC voltage	350 VAC	750 VAC	1000 VAC	1500 VAC	1500 VAC	2000 VAC	3000 VAC	4000 VAC
Maximum current	2 A	2 A	2 A	2 A	10 A	2 A	2 A	2 A
Relay technology	Electromeca.	Reed	Electromeca.	Reed	Electromeca.	Electromeca.	Electromeca.	Electromeca.

STIMULI & MIXED CARDS

Models	S22A20	S32A15	MS32A15
			
Number of switching points	22	32	32
Card type	Stimuli	Stimuli	Mixed
Maximum DC voltage	2000 VDC	2000 VDC	2000 VDC
Maximum AC voltage	2000 VAC	2000 VAC	2000 VAC
Maximum current for stimuli	10A	5A	5A
Minimum current for stimuli	-	-	2A
Relay technology	Electromeca.	Electromeca.	Electromeca.

OPTIONS & ACCESSORIES*

SY5000-HVDC	Measurement of dielectric strength and insulation from 20 to 2121 VDC
SY5000-HVAC	Measurement of dielectric strength from 50 to 1500 VAC
SY5000-FLT	Floating continuity measurement
SY5000-STD A	Standalone mode for SYNOR 5000-P
SY5000-LIGHTS	Red/Green Safety Lamp
SY5000-AUX	Auxiliary inputs for test & measurement equipment
SY5000-DESKTOP SY5000-LAPTOP SY5000-RACK PC1-3	Kits including a PC and a monitor according to your needs: rackable, internal, remote...
SY5000-PROBE	Contact probe
SY5000-MGR10 SY5000-M1501	Very low voltage tests Very high voltage tests
SY5000-Temp/hum	Automatic measurements of temperature and humidity levels
SY5000-DASx	Slip measurement, Noise measurement, continuity
SY5000-RLC	Resistance (R), Inductance (L), Capacitance (C) measurements

SERVICES & SUPPORTS*

SY5000-CAL	Calibration and adjustment kit
SY-WINTRANSFERT SY-WINREPORT	WINPASS software extension Data transfer to Excel or report creation
Maintenance contracts	Available upon request
SY5000P-A-SPARE SY5000R-A-SPARE SY5000-AC-SPARE	Maintenance kits available upon request
Training & User Support	
Programming services	

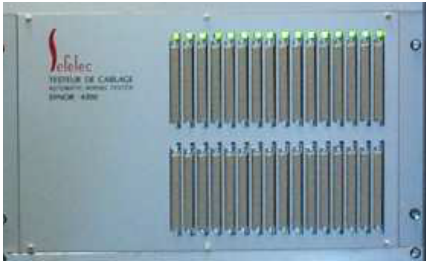
*Liste non exhaustive

SYNOR 5000

CONNECTOR OUTPUTS ON THE FRONT PANEL (OPTIONS)

STANDARD OUTPUTS

All testers are equipped with DIN41612 type connectors.



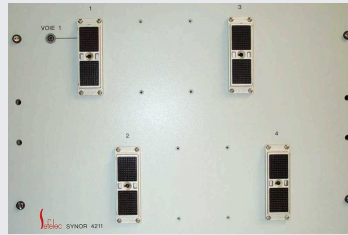
For applications requiring more robust connectors, Sefelec customizes connector outputs according to your needs.



OPTIONAL OUTPUTS

ITTC

ITT CANNON 264 pins: Connector commonly used in environments requiring a large number of simultaneous points.

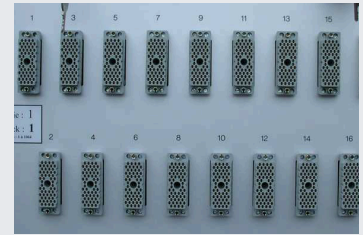


All output configurations are possible. Provide us with information on the desired connectors: FRB, SUBD, ZIF, SOURIAU...



EDAC

EDAC 56 or 120 pins: Connector commonly used in environments requiring simple and easily locatable connectors.



HAN

Harting 64 pins, 128 pins: Connector commonly used in environments requiring robust connections for demanding test conditions.

