




# GLP2-BASIC

Safety and function testers



**21-in-1**

 Made in Germany

> Expect more.

# The GLP2-BASIC – the new standard!

With the single- or multi tester GLP2-BASIC all kinds of electronic products can be inspected with today's state-of-the-art technology. The 42 GLP2-BASIC types offer the perfect solution for a variety of measurement tasks and your individual requirements.

Due to its many intelligent features the tester covers all application fields in the modern safety- and function test technology. It is perfectly suited for production, laboratory, test bench, quality assurance, automation and more.

The possibility of flexible creation of test plans, entering test data e.g. the serial number, result storage, freely-configurable label print, barcode function and more features leave nothing to desire.

For most companies, the increase of energy efficiency regarding cost savings and acting in an environmentally-friendly manner, is of utmost importance. We consider it our responsibility to support our customers with sustainable and environmentally-friendly test technology, especially in the energy-intensive sector "production". For a clean eco-friendly result!

We are constantly making every effort to integrate latest test technology in our testers and give our customers the best possible benefit. With this philosophy, we have been the first who focused on a user-friendly working environment by installing touch displays in our testers.

Ergonomically optimized work stations increase the output significantly. That is why we revolutionized the cabinet design of our testers!

No matter if sitting or standing, a small or a tall person – our ergonomic design sets new standards for fatigue-free working. The view on the display, data entry as well as connection of test object to test socket are always perfect.

Great versatility and fast test technology combined with ergonomic design – SCHLEICH offers a safety- and function test technology that inspires!



Made in Germany

- › Single- or multi testers
- › Safety tests
- › 1-phase function test
- › Active- and apparent power measurement
- › Automatic switchover between test methods



## KEY-FACTS

- Up to 21 test methods in one single tester
- Ergonomic design, awarded with the "reddot award 2014"
- TRMS – true r.m.s. measurement and peak value measurements
- Active- and apparent power measurement
- Automatic switchover between the test methods
- Automatic test process with GO/NO GO comparison
- Manual testing for laboratory applications or at repair stations
- Intuitive operation via touch display or additionally via mouse and keyboard
- Integrated data base for numerous test plans and test results
- Interface for barcode scanner
- Interface for label printer
- Integration in your computer network
- Optimally suited for OEMs



# Application fields

## Laboratory | manual test program

The GLP2-BASIC is immediately ready to perform your measurements. With the unique manual mode, all integrated test methods can be directly started. A pre-parameterization of measurements is not necessary. Only the requested test method has to be selected and then the test process can be immediately started.

The software continuously provides the currently measured values, similar to a multimeter. Your test object can be immediately evaluated in detail.

Even long-term analyses, from hours to days and weeks, may be performed in this mode.



## Production | semi-automatic test program

During production, typical tests are carried out either manually with test probes and/or automatically. The GLP2-BASIC offers perfect conditions for convenient operator guidance for this special application.

On request, the tester prints a label as soon as the test is finished on an external printer.

Additionally, numerous order-relevant data can be entered and print out with the test results on the SCHLEICH standard protocol.

In our GLP2-BASIC you can set almost infinite test sequences for testing different test objects. Those test sequences can be selected and started via touch display, keyboard or barcode.



## Mass production | automatic test program

The GLP2-BASIC can be easily integrated in your production line as its dimension is based on a 19"-cabinet. Freely-configurable interfaces allow a complete remote control. The connection to a master PC or a PLC can be easily realized.

All test results may be called up via interface and can be stored via master computer in a central data base. Optionally, you can also store the test results locally on the tester or in the computer network.

For your different test objects, you can almost define any number of test sequences. Those can be selected via the interface and then test can be started.

For even more flexibility in automation or to control complex processes, we would like to recommend our GLP2-ce MODULAR. Both testers have been successfully applied in our system solutions.





# State-of-the-art technology combined with ergonomic design



**ROBUST INDUSTRIAL STANDARD**

Made in Germany

## Up to 21 test methods in one single tester

The integration of up to 21 test methods in one compact tester is unique in this tester class. The new GLP2-BASIC offers a clear presentation of the measurements and the intuitive operating concept significantly facilitates the daily work life.

The clear touch display has been perfectly integrated in the adjustable front and offers a functionality which nowadays could well be expected from a state-of-the art tester.

The GLP2-BASIC's test method combinations are as manifold as the different tasks and requirements in industry and testing institutes. You may choose from over 42 tester variants with different test method combinations.

The complete hard- and software has been developed by SCHLEICH and, according to our motto "Made in Germany", completely manufactured at our site in Hemer, Sauerland. Our innovations set new technological standards in state-of-the-art safety- and function test technology!

The excellent technology, the intuitive control concept and the great versatility combined with an awarded ergonomic design – this is the new standard of testing technology.

# The standard equipment

## Design

- Brilliant, high-contrast 7"-TFT-Color display 800 x 480 Pixel
- Color-marked test steps
- Color-marked test results for facilitated reading
- PCAP touch of the latest technology (capacitive touch display behind scratch-proof glass)
- Numerous languages to choose from
- Test socket installed on the front
- On request, additional test connections on the rear side
- Interface connections on the rear side

## Communication

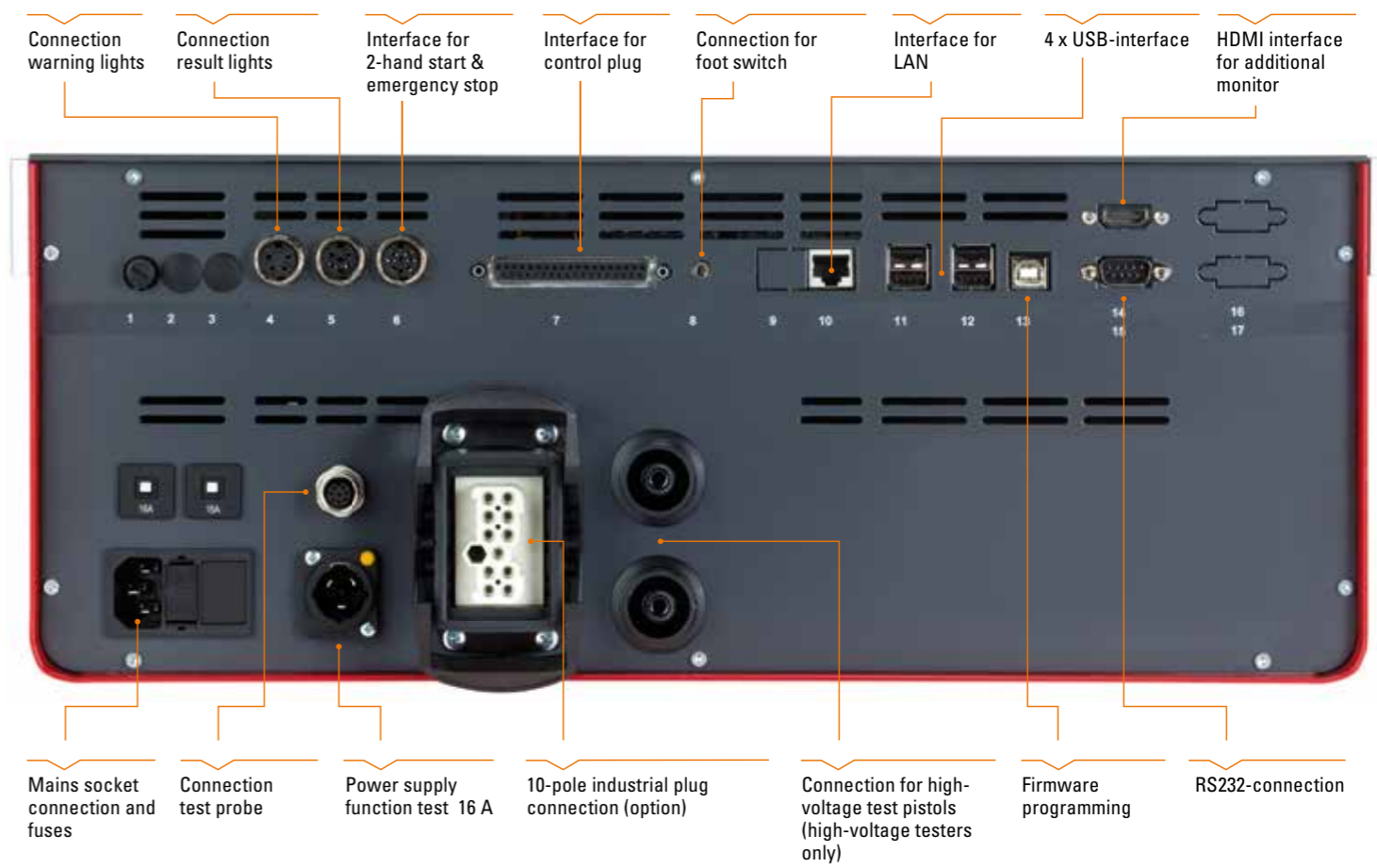
- 2 x USB on the front
- 4 x USB on the rear side
- LAN-interface
- 1 x RS232
- USB/RS232-COM automation interface
- Ethernet SCPI automation interface
- Ethernet interface for storing in the LAN-network
- Possibility for remote maintenance and calibration
- 4 x free 24 V input
- 16 x free 24 V output
- Communication with PC-software possible

## Functionality and technology

- Manual test sequence
- Semi-automatic test sequence
- Full automatic test sequence
- 4 GB database storage capacity
- Integrated test plan database for test plans with up to 10,000 test plans
- Integrated test result database for up to 250,000 test steps

## Safety

- Dual-circuit safety inputs according to EN 50191
- Warning lights connection
- Integrated plausibility check for all inputs
- Integrated help texts per input
- Safety- and warning messages



# Technical data

## Product overview

Model GLP2-	Ground Bond/Protective Earth	Insulation	High-voltage AC	High-voltage DC	Leakage current	Function	Test socket on the front side	Industrial plug connection   rear side	High-voltage sockets   rear side	Test probe connection   rear side	With key switch	Adjustable control panel	Article number
BASIC 320			HVAC 6/3				—	○	●	—	—	○	40108030
BASIC 330			HVAC 6/100				—	○	●	—	●	○	40108040
BASIC 440				HVDC 6/100			—	○	●	—	●	○	40108010
BASIC 530			HVAC 6/100	HVDC 6/100			—	○	●	—	●	○	40108210
BASIC 820		IR		HVDC 6/4			—	○	●	—	—	○	40108220
BASIC 920		IR	HVAC 6/3	HVDC 6/4			—	○	●	—	—	○	40108050
BASIC 930		IR	HVAC 6/100	HVDC 6/4			—	○	●	—	●	○	40108060
BASIC 940		IR	HVAC 6/100	HVDC 6/100			—	○	●	—	●	○	40108360
BASIC 1030	GB30	IR	HVAC 6/3				●	○	—	●	—	○	40108230
BASIC 1040	GB30	IR	HVAC 6/100				—	●	—	—	●	○	40108240
BASIC 1041	GB30	IR	HVAC 6/100				—	●	●	●	●	○	40108241
BASIC 1130	GB30	IR		HVDC 6/4			●	○	—	●	—	○	40108250
BASIC 1131	GB30	IR		HVDC 6/4			—	●	●	●	—	○	40108251
BASIC 1220	GB30	IR	HVAC 6/3	HVDC 6/4			●	○	—	●	—	○	40108070
BASIC 1230	GB30	IR	HVAC 6/100	HVDC 6/4			—	●	—	—	●	○	40108080
BASIC 1231	GB30	IR	HVAC 6/100	HVDC 6/4			—	●	●	●	—	○	40108081
BASIC 1240	GB30	IR	HVAC 6/100	HVDC 6/100			—	●	—	—	●	○	40108350
BASIC 1320	GB30	IR				Fct5	●	○	—	●	—	○	40108260
BASIC 1330	GB30	IR				Fct16	●	○	—	●	—	○	40108270
BASIC 1420	GB30	IR			LC	Fct5	●	○	—	●	—	○	40108090
BASIC 1430	GB30	IR			ELC	Fct16	●	○	—	●	—	○	40108150
BASIC 1520	GB30	IR	HVAC 6/3			Fct5	●	○	—	●	—	○	40108280
BASIC 1530	GB30	IR	HVAC 6/100			Fct5	—	●	—	—	●	○	40108290
BASIC 1540	GB30	IR	HVAC 6/3			Fct16	●	○	—	●	—	○	40108300
BASIC 1550	GB30	IR	HVAC 6/100			Fct16	—	●	—	—	●	○	40108310
BASIC 1620	GB30	IR	HVAC 6/3		LC	Fct5	●	○	—	●	—	○	40108100
BASIC 1630	GB30	IR	HVAC 6/100		LC	Fct5	—	●	—	●	●	○	40108110
BASIC 1640	GB30	IR	HVAC 6/3		ELC	Fct16	●	○	—	●	—	○	40108160
BASIC 1650	GB30	IR	HVAC 6/100		ELC	Fct16	—	●	—	—	●	○	40108170
BASIC 1720	GB30	IR		HVDC 6/4		Fct5	●	○	—	●	—	○	40108320
BASIC 1740	GB30	IR		HVDC 6/4		Fct16	●	○	—	●	—	○	40108330
BASIC 1820	GB30	IR		HVDC 6/4	LC	Fct5	●	○	—	●	—	○	40108120
BASIC 1840	GB30	IR		HVDC 6/4	ELC	Fct16	●	○	—	●	—	○	40108340
BASIC 1920	GB30	IR	HVAC 6/3	HVDC 6/4	LC	Fct5	●	○	—	●	—	○	40108130
BASIC 1930	GB30	IR	HVAC 6/100	HVDC 6/4	LC	Fct5	—	●	—	—	●	○	40108140
BASIC 1940	GB30	IR	HVAC 6/3	HVDC 6/4	ELC	Fct16	●	○	—	●	—	○	40108190
BASIC 1950	GB30	IR	HVAC 6/100	HVDC 6/4	ELC	Fct16	—	●	—	—	●	○	40108200



GB30:  
Earth/Ground-bond resistance test 30 A

IR:  
Insulation resistance test

HVAC 6/3:  
High-voltage test AC 50-6000 V, 3 mA  
safety current limiting

HVAC 6/100:  
High-voltage test AC 50-6000 V, 100 mA

HVDC 6/4:  
High-voltage test DC 50-6000 V, 4 mA  
safety current limiting

HVDC 6/100:  
High-voltage test DC 50-6000 V, 100 mA

LC:  
Leakage current test

ELC:  
Equivalent leakage current test

Fct5AC:  
Function test 5 A, AC

Fct5DC:  
Function test 5 A, DC

Fct16AC:  
Function test 16 A, AC

● basic equipment  
○ optionally available for an additional  
charge  
— not available

> Note:  
Further accessories please find  
from page 22 onwards

# Technical data

## Test methods

### Earth/Ground-bond resistance



The PE/GB test is carried out with an electronically-controlled, constant test current. The tester calculates the PE/GB resistance from the voltage drop and the flowing current. The PE/GB resistance may not exceed the maximum resistance defined in the standards. By means of a test probe (to be ordered separately) the operator contacts the test object's PE/GB connections one after another. The measurement is performed between the PE/GB-contact in the test socket and the test probe.

Resistance measurement	in 4-wire-technology
Measuring ranges	1 A to 10 A / 0 Ω to 1.2 Ω 10 A to 30A / 0 Ω to 0.4 Ω
Resolution	1 mΩ
Accuracy	± 1.25 % from measuring value and ± 1 digit
Test voltage	6 V or 12 V
Frequency	50 Hz or 60 Hz
Test current	1 A to 30 A   in 1 A steps
Test time	0.1 s to 180 s
Automatic test start when touched by test probe	•
Measuring locations	PE-test socket ↔ test probe

### Insulation resistance (IR)



The insulation resistance is measured with an electronically-controlled, constant test current. The tester calculates the insulation resistance from the insulation's voltage drop and the flowing current. The Insulation resistance may not fall below the minimum resistance defined in the standards. The IR may either be measured between all electric conductors (devices of protection class I) or between electric conductors to insulated parts of the housing (devices of protection class II). By means of the test probe, the operator successively contacts the parts of the housing. At the end of each test the test object is discharged.

Measuring range 1	100 KΩ to 99 MΩ
Resolution	0.1 MΩ
Accuracy	± 1 % from measuring value at min. 500 V
Measuring range 2	100 MΩ to 499 MΩ
Resolution	0.1 MΩ   1 MΩ
Accuracy	± 1.5 % from measuring value at min. 500 V
Measuring range 3	500 MΩ to 1 GΩ
Resolution	1 MΩ
Accuracy	± 2.5 % from measuring value at min. 500 V
Measuring range 4	1 GΩ to 10 GΩ
Resolution	10 MΩ
Accuracy	± 5 % from measuring value at min. 500 V
Test voltage	30 V to 1000 V   in 10 V steps
Rise time	0.1 s to 60 s
Test time	0.1 s to 600 s
Test current	max. 3 mA with safety current limiting
Measuring locations	L+N ↔ PE/GB, L ↔ PE/GB, N ↔ PE/GB, L ↔ N, L ↔ test probe, N ↔ test probe, L+N ↔ test probe

### High-voltage DC



The insulation is inspected with electronically-controlled, constant high-voltage. During the test the test current may not exceed a preset maximum value. In case the current exceeds the maximum value, the test procedure is automatically interrupted. The test object is discharged at the end of each test.

	Safety current limiting	without safety current limiting
Test voltage $U_{DC}$ (partly potential-free)	50 to 6000 V	50 to 6000 V
Resolution	1 V	1 V
Accuracy	± 1 %	± 1 %
Average value measurement $U_{AVG}$	•	•
Peak value measurement $\hat{U}$	•	•
Electronic HV generator	•	•
Ripple (Ohmic load)	<4 % (6 KV @ 4 mA)	<4 % (6 KV @ 4 mA)
Rise time	without and 0.1 s to 24 h	without and 0.1 s to 24 h
Test time	without and 0.1 s to 200 h	without and 0.1 s to 200 h
Test current $I_{DC}$	max. 10 mA	max. 100 mA
Resolution	0.001 mA	0.01 mA
Accuracy	0-10 mA: ± 1 % of measuring ranges end value	0-100 mA: ± 1 % of measuring ranges end value
Average value measurement $I_{AVG}$	•	•
Peak value measurement $\hat{I}$	•	•
Energy	max. 180 mJ	max. 360 mJ
Discharge control	•	•
Burning mode	•	•
Measuring locations	L+N ↔ PE/GB or test pistols*1	L+N ↔ PE/GB or test pistols*1

\*1 HV- test probes may only be used as option for HV-testers

# Technical data

## Test methods

### High-voltage AC



The insulation is inspected with electronically-controlled, constant high-voltage. During the test the test current may not exceed a preset maximum value. In case the current exceeds the maximum value, the test procedure is automatically interrupted. The test object is discharged at the end of each test.

	Safety current limiting	without safety current limiting
Test voltage $U_{\text{eff}}$ potential-free	50 to 6000 V	50 to 6000 V
Resolution	1 V	1 V
Accuracy	$\pm 2 \%$	$\pm 2 \%$
Real rms -measurement $U_{\text{TRMS}}$	•	•
Peak value measurement $\hat{U}$	•	•
Electronic HV-generator potential-free	•	•
HV-frequency	50 Hz or 60 Hz (like power supply)	50 Hz or 60 Hz (like power supply)
Rise time	without and 0.1 s to 24 h	without and 0.1 s to 24 h
Test time	without and 0.1 s to 200 h	without and 0.1 s to 200 h
Test current $I_{\text{eff}}$	max. 3 mA	max. 100 mA
Short circuit current $I_{\text{eff}}$	max. 3 mA	max. 200 mA
Resolution	0.001 mA	0.01 mA
Accuracy	$\pm 2 \%$ from measured value $\pm 5$ mA	$\pm 2 \%$ from measured value $\pm 0.1$ mA
Real rms -measurement $I_{\text{TRMS}}$	•	•
Peak value measurement $\hat{I}$	•	•
Apparent-, active- and idle current evaluation	•	•
Discharge control	•	•
Burning mode	•	•
Power	max. 25 VA	max. 500 VA
Measuring locations	L+N ↔ PE or test pistols*1	L+N ↔ PE or test pistols*1

\*1 HV- test probes may only be used as option for HV-testers

### ARC-Detection



During high-voltage tests with AC, tiny discharges occur in the form of arcs, current peaks of only 10µs duration. If at all, they influence the rms-value of the HV-current only marginally, so that they are almost not measurable in the conventional way. That is why the SCHLEICH ARC-detection is a useful addition to the high-voltage test AC.

Arc-detection	•
Measure and evaluate quantity of arcs	•
Discharge's pulse width	<10 µs measurable

### Function test



The function test is carried out with operating voltage based on the current consumption, on the  $\cos \varphi$  and/or the test object's power consumption. Set values and  $\pm$  tolerances may be determined to each measured value. In case the electric measuring value is within the tolerance, the test result is GO. The test voltage for the function test with 5 A is electronically generated in the tester. The function test 5 A is especially suited for very low currents. With this test, very small capacities e.g. at LED-lights can be measured and evaluated. The test voltage for the function 16 A test is not applied from the test object's mains connection but from a separate test lead on the tester's rear side. By this, different test voltage levels can be fed-in.

	Function test with max. 5 A	Function test with max. 16 A
Test voltage $U_{\text{RMS}}$	12 to 260 V electronic control	0 to 300 V fed-in externally
Resolution	0.1 V	0,1 V
Accuracy	$\pm 1.5 \%$ of measuring ranges end value	$\pm 1.5 \%$ of measuring ranges end value
True-RMS $U_{\text{TRMS}}$	•	•
Phases	1-phase L+N	1-phase L+N
Test voltage's frequency	50 Hz or 60 Hz	50 Hz or 60 Hz
Test's continuous current $I_{\text{RMS}}$ measuring range 1 and 2*	0 to 5 A / 0-0.5 A	0 to 16 A
Resolution measuring range 1 and 2*	1 mA / 10 µA	1 mA
Accuracy measuring range 1 and 2*	$\pm 1.5 \%$ of measuring ranges end value $\pm 1.5 \%$ of measuring ranges end value	$\pm 1.5 \%$ of measuring ranges end value
True-RMS $I_{\text{TRMS}}$	•	•
Apparent-, active- and idle current evaluation	•	•
$\cos \varphi$ measurement	0 to 1	0 to 1
Active power measuring range 1 and 2*	0 to 1300 W / 0 to 130 W	0 to 4800 W
Apparent power measuring range 1 and 2*	0 to 1300 VA / 0 to 130 VA	0 to 4800 VA
Idle power measuring range 1 and 2*	0 to 1300 VAR / 0 to 130 VAR	0 to 4800 VAR
Resolution measuring range 1 and 2*	0.1 W / 1 mW	1 W
Test time	0.1 s to 200 h	0.1 s to 200 h
Overcurrent protection	•	•
Measuring locations	L ↔ N	L ↔ N

\* measuring range 2 only at function test with 5 A

### Mathematical calculation



Based on the measured values you can perform further calculations. The calculation's formulas may be freely-defined by you. As example, the calculation's result could be a value to be compared with a set value and a  $\pm$  tolerance. If the calculated value is within the tolerance, the test result is GO. Based on this, you can freely-define further analyses and evaluations.

Freely-definable test steps with mathematical calculations	•
Compare calculations with upper and lower limit values	•
Compare calculations with set values and $\pm$ tolerances	•
Storing calculated results together with other test's results	•



# Technical data

## Test methods

### Leakage current



The leakage current test is performed during the function test. It is measured, if the leakage current from conductors L+N to PE (ground leakage current) or to insulating parts of the housing is not too large. The leakage current may not exceed the maximum current defined in the standards. To inspect the housing's leakage current, the operator contacts the housing parts to be tested one after another by means of a test probe.

Continuous test current at function test $I_{RMS}$	only for testers up to max. 5 A
Test voltage	Test voltage of function test 0 V to 260 V
Resolution	0.1 V
Leakage current $I_{RMS}$	max. 30 mA
Measuring ranges	5 with auto range
Resolution	1 $\mu$ A
Accuracy	1.5 % from measured value $\pm$ 1 $\mu$ A
Current measurement	$I_{TRMS}$ , $\hat{I}$ , $I_{DC}$ -component, $I_{AC}$ -component
Standards	EN 60990, EN 60601
Measuring circuits	3 MDs for EN 60990, 1 MD for EN 60601
Operating types	A1, A2, B
Leakage current frequency	max. 500 Hz
Over current protection	•
Measuring locations	L+N $\leftrightarrow$ PE, L+N $\leftrightarrow$ test probe

### Equivalent leakage current



The leakage current test is not performed during the function test. It is measured, if the leakage current from conductors L+N to PE (ground leakage current) is not too large. The leakage current may not exceed the maximum current defined in the standards. For the inspection a low AC voltage is applied to the test object's connections L+N against PE. The flowing current is then projected to the current normally flowing during operation.

Continuous test current at function test $I_{RMS}$	only for testers up to 16A
Test voltage	25 to 40 V, 50 Hz or 60 Hz
Calculated test voltage	25 V to 300 V
Leakage current $I_{RMS}$	max. 30 mA
Resolution	10 $\mu$ A
Accuracy	1.5 % + 10 $\mu$ A from the measured value
Calculated test current	10 $\mu$ A to 30 mA
Standards	DIN VDE 0701-0702
Measuring locations	L+N $\leftrightarrow$ PE, L+N $\leftrightarrow$ test probe

### Continuity and short-circuit



The continuity test serves to determine the ohmic resistance between two points. The resistance's evaluation is based on a set value with a  $\pm$  tolerance and an upper and lower limit. If the resistance is within the tolerance, the test result is GO. To inspect, if a short-circuit exists between conductors L and N, this test method is automatically carried out before the function test. If the resistance between L+N is too low, the function test will even not be carried out.



Resistance test	in 2-wire-technology
Measuring range 1	1 $\Omega$ to 1 K $\Omega$
Resolution	0,1 $\Omega$
Accuracy	$\pm$ 1.5 % from measured value $\pm$ 0.1 $\Omega$
Measuring range 2	1 k $\Omega$ to 10 K $\Omega$
Resolution	1 $\Omega$
Accuracy	$\pm$ 1.5 % from measured value $\pm$ 1 $\Omega$
Measuring range 3	10 K $\Omega$ to 100 K $\Omega$
Resolution	10 $\Omega$
Accuracy	$\pm$ 2.5 % from measured value $\pm$ 10 $\Omega$
Test voltage	approx. 4.5 V DC
Test current	max. 10 mA
L N Short-circuit test	•
Measuring locations	L $\leftrightarrow$ N, L $\leftrightarrow$ PE, N $\leftrightarrow$ PE, PE $\leftrightarrow$ test probe

### Visual inspection



The inspection may also be carried out in a visual way by the operator. For this purpose, the operator assesses different conditions of the test object, requested by the tester. The GO/NO GO results may be entered either via touch display, via external keyboard, via additionally installed switch or by pressing a button in the test probe.

Freely-definable visual test steps	•
Visual inspection by comparison with a picture	•
Result storage together with other test results	•

### Further technical data

Display 7"-TFT, 800 x 480 pixels	•
Internal clock with calendar function	•
Acoustic signals	•
Dimensions desktop device in new ergonomic design (W x D x H)	480 mm x 470 mm x 225 mm/18.9 x 18.5 x 8.9 inch
Dimensions 19"-installation device (W x D x H)	448 mm x 430 mm x 178 mm/17.6 x 16.9 x 7 inch
Including factory calibration certificate	•



# Switchover of test methods and mechatronics

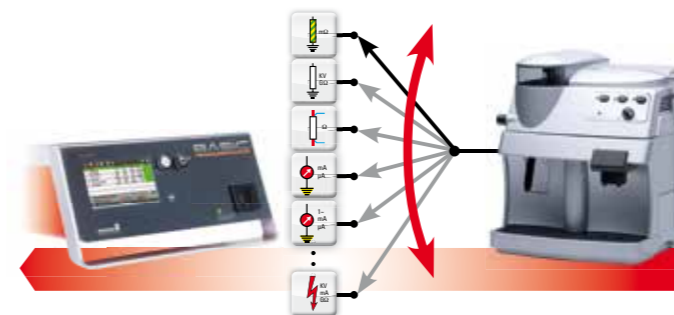


Test technology from SCHLEICH has already proven itself a thousand times in the daily work. It belongs to the most reliable products on the market and provides outstanding performance and accuracy. The aim should be, to carry out measurements as fast and as efficient as possible. Only this offers a considerable benefit for the operator.

To save time, all test object's connections are connected to the test socket. Afterwards the tester automatically performs all tests, one after another, between all connections, without the necessity to re-connect single leads. Test objects, typically being tested by the new BASIC tester, have a mains connection with L, N and PE/GB.

By means of the SCHLEICH-typical, automatic test method switchover, the different test methods are automatically switched to the connections and the test probe.

## Test method switchover



Consistent with the tester's design and features, the appropriate switchover is integrated. They assure a fast and automatic change between the different test methods.

As the voltage differences between single test methods may be significantly high, the safety aspect has to be especially considered during the switchover. A PE/GB-resistance test with 12 V has to be switched to the test object as reliably as a high-voltage test with 6000 V – not only to protect your test object but, of course, to also protect the operator. There is no room for compromises here! That is why we exclusively use proven, high-quality components from our own production and from well-known, German manufacturers for our switchovers and matrices.

## Mechatronics and automation

Besides the hardware, also the software offers enormous flexibility. Due to the integrated script commands you can realize additional PLC-functions in the tester. You can query inputs, set outputs and create logical links – just like a PLC.

The enormous advantage lies in the direct control of mechatronic functional sequences. You can activate valves, read limit switches, evaluate measured results by your own and much more. So the tester is able to generate additional, functional processes before, while and after a test as well as after single test steps. This is ideally suited for individual test setups, test systems or the integration into an automatic production line.



# PC-software for GLP2-BASIC testers Editor&Printer

## Editing test plans

Commonly, test programs are generated directly at the tester. Alternatively, you may also manage, edit and save test plans on a PC by using the Editor&Printer software.

Generating test plans on a PC offers the advantage, that the current production is not influenced by possible changes, as there are no interruptions at the single testers and the work may be continued. The PC-software's design and structure is similar to the one in the tester. So the operation is almost equal and thus easy to learn.

The software is used under two working conditions:

- Data exchange via USB-memory stick | Offline operation
- Data exchange in the PC-network | Online operation

## Printing test result

With this software you can also create and print test reports. To do so, the test results have to be read in from a tester, filtered for the tests to be printed and afterwards you can generate detailed and clear reports.

### Data exchange via USB-stick | Offline operation



The test sequences, edited on the PC by the Editor&Printer software, are stored on a USB memory stick. Afterwards the memory stick is inserted in the tester's USB-interface. The tester now automatically uploads new and/or modified test plans in the internal data base.

In case several identical testers are used, thus you can update one after another.

Alternatively, test plans may also be further generated and edited in the tester. But to avoid differences in the PC's test plans, we recommend, to also save them on the PC by means of the memory stick.

### Data exchange via network | Online operation



The implementation of testers in your computer network is a perfect solution! A central PC serves for saving test plans and test results in the network. The Editor&Printer may either be run on the central PC or on a separate server.

By using the network, there's no need for copying test plans by means of a memory stick. Both, test plans adjusted by the Editor&Printer, as well as test plans, directly changed in the tester are automatically saved on the central PC.

The network operation assures you a production in perfect accordance to the ISO 9001-standard.

### KEY-FACTS

- Editor – Editing test plans at a PC instead of at the tester
- Editing test plan for single or connected testers
- Exchanging data between tester and PC by a USB memory stick or automatically in your computer network
- Printout of single test plans
- Test plan management
- Integrated user management
- Generating test plans with additionally required release
- Printer – Searching, viewing and printing of clear, convincing test reports
- Exporting of test results into EXCEL®

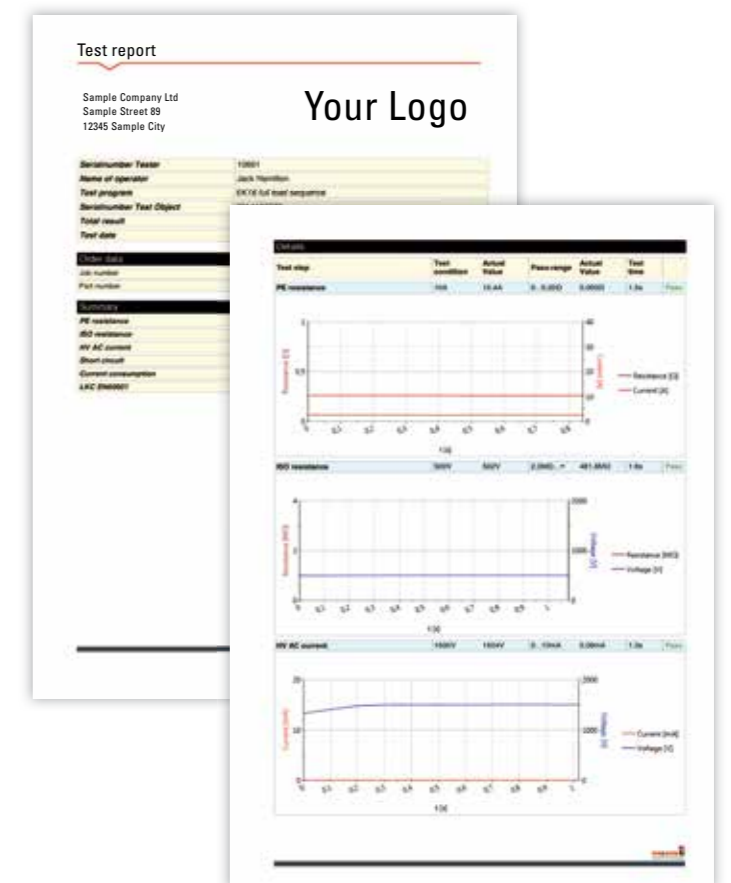
### Printing test reports during online -/offline operation



The Editor&Printer offers valuable characteristics when printing test results as not only the test plans are saved by means of a memory stick or directly in the network, but also the test results.

The filter option allows you to filter the test results, saved on the PC, according to different criteria. The filtered tests are clearly displayed by the Editor&Printer. You can either choose single or all tests from this list. Afterwards, these tests may either be immediately printed, shown in a preview, converted into a PDF or exported to an EXCEL-file.

The report may then either be printed in a compact short form or in a detailed long form and, if requested, in different languages. The test report may also be customized with your company data and your company logo.



## Generate and edit test plans – Print and export test results



# PC software for GLP2-BASIC testers

## Analyzer



## Statistical evaluation of test results

GLP2-BASIC testers store test results either internally in the tester or externally in a central storage location in the network. The storage format corresponds to the prevailed CSV-format. You can call up the CSV-files and analyze the test results in EXCEL.

However, it is easier and more elegant to have the test results displayed and analyzed by the Analyzer-software.

The Analyzer is based on a fast SQL-database, in which the results, stored by the testers, are imported. Afterwards you can statistically analyze the data according to numerous criteria and visualize them. A printout of the test reports showing the performed analyses is also provided.

The Analyzer opens up new dimensions – online and offline!

### Searching and printing test results

The precondition for searching for test results is that the test results are saved together with your DUT's (device under test) serial number. Only in case the test results are clearly identifiable in the database, searching them is possible.

The serial number to be searched for has to be entered in the Analyzer and the test results are displayed within no time due to the high speed SQL-database. Furthermore the default values to the single test results are indicated, with which the tests have been carried out.

The test results may either be printed in the classical way on a paper or as PDF-file. For printing, we also provide templates for printouts. You would like to create your individual printout design with your company data and logo? No problem! By exchanging the letterhead and inserting your logo you can easily adjust the test reports to your company's corporate design!

### The statistical analysis

When running an analysis, test results are summarized in a way, that you receive an overview over your production's quality.

To reduce the quantity of test results to be inspected, numerous filter criteria may be entered:

- Time period specification: Date from...to
- Time period specification: Time from...to
- Time period specification: Calendar week from...to
- Serial number from...to
- Test plan description
- Order data
- Definition of single testers
- Definition of tester groups

After entering the filter criteria the statistical analysis is provided within no time thanks to the powerful SQL-database. You can save the configuration of different filter combinations as template with a freely-definable description. The test results' analysis is automatically generated when a template with its specific criteria is called up.

Typical analyses are:

- Trend analysis
- Pareto-Analysis
- First Pass Yield
- Quantity analysis
- Distribution
- Statistics: min., max., deviation from standard, variance, average value...

The statistical evaluations may either be printed in the normal way on a paper or electronically as PDF-file. For printing purposes we provide already prepared templates which may also be adjusted and personalized by exchanging letterhead and logo!

### Data import via USB memory stick | Offline operation



In case of non-connected testers the test results are exported from the single testers to a USB memory stick. For this the GLP2-BASIC offers a corresponding command. The Analyzer imports the data from the USB memory stick to the PC and stores them in the database. Afterwards you can perform the requested evaluations and calculations.

### KEY-FACTS

- Storing test results on a PC
- Fast, effective Microsoft SQL-Express database
- Database suitable for one or more GLP2-BASIC testers
- Statistical evaluations with graphical charts
- Easy implementation of your logo in the printouts
- Test result printout in customizable report templates
- Printing test results in EXCEL®-report templates
- Printing statistical values in customizable report templates
- Printing statistical values in EXCEL®-report templates

### Data import via network | Online-operation



In the optimum operation environment the testers are integrated in your computer network. However, a network only makes sense in case the data is centrally stored. To do so, a PC or server has to be selected from your network.

The PC with the installed Analyzer-software is also part of this network. The software permanently queries, if new test results have been stored as CSV-file from the single testers. If this is the case, the Analyzer automatically imports the data into the database.

During online operation the running production's statistical results are permanently determined and displayed. Thus, you are not only comprehensively informed about your production's quality – you also get an overall picture about GO- and NO GO results and quantities tested at single testers, tester groups and your entire production.

That is what we call "perfect monitoring"!



# Accessories

## Housing variants



If you want to use your tester integrated in a rack or a 19"-cabinet, following modifications have to be ordered.

	Article number
Tester integrated in 19"-cabinet prepared for rack mounting	40108830
Tester integrated in 19"-cabinet, desktop device with pedestals	40108884

## Interfaces

	Article number
LabVIEW™ Driver	40108852
WLAN Communication module	40104165

## Test sockets



The front socket may be ordered suitable for the country of use.

In case the tester's single front socket is not sufficient for all requested types of contacting, a separate connection box is required. It contains various types of contacting. The connector for the connection box is on the rear side of the tester. The front socket is omitted.

		Article number
Front socket BE/FR/CZ/SK/PL	HV max. 2000 V AC, 2800 V DC	40108800
Front socket IT	10/16A   HV max. 2000 V AC, 2800 V DC	40108802
Front socket CH	Type 13   HV max. 2000 V AC, 2800 V DC	40108803
Front socket UK	HV max. 2000 V AC, 2800 V DC	40108804
Front socket DK	HV max. 2000 V AC, 2800 V DC	40108805
Front socket Franco-American	HV max. 2000 V AC, 2800 V DC	40108806
Front socket US/CAN	HV max. 3000 V AC, 3000 V DC	40108807
Front socket AUS/JPN	HV max. 2000 V AC, 2800 V DC	40108808
Connection socket on the rear side e.g. for connection box   delivery incl. mating plug*		40108809

\* when industrial plug connection is ordered – front socket is not available.

## Connection boxes up to 16 A



Model 2

Model 4

Model 5

Model 6



HV-adaptor

In case the test socket on the front panel is not needed or not sufficient for all requested types of contacting, a separate connection box can be ordered. It contains various types of contacting and can be connected on the rear side of the tester. Then, the front socket is omitted.

	Article number
Connection box Model 2 with 1 Earthed test socket (SCHUKO) <sup>1</sup> , 4 KV, 2 x High-voltage connection leads	400145
Connection box Model 2 with 1 Earthed test socket (SCHUKO), 6 KV, 2 x High-voltage connection leads	40104327
Connection box Model 4 with 1 Earthed test socket (SCHUKO) <sup>1</sup> , without high-voltage test, without leakage current test	40108820
Connection box Model 4 with 1 Earthed test socket (SCHUKO) <sup>1</sup> , without high-voltage test, with leakage current test	40108821
Connection box Model 4 with 1 Earthed test socket (SCHUKO) <sup>1</sup> , with high-voltage test, without leakage current test	40108822
Connection box Model 4 with 1 Earthed test socket (SCHUKO) <sup>1</sup> , with high-voltage test, with leakage current test	40108823
Connection box Model 4 with contacting pads for high-voltage test pistols	40108890
Connection box Model 5 with 4 Earthed test socket (SCHUKO) <sup>1,2</sup> , without high-voltage test, without leakage current test	40108825
Connection box Model 5 with 4 Earthed test socket (SCHUKO) <sup>1,2</sup> , ohne Hochspannungsprüfung, mit Ableitstromprüfung	40108882
Connection box Model 5 with 4 Earthed test socket (SCHUKO) <sup>1,2</sup> , without high-voltage test, without leakage current test	40108883
Connection box Model 5 with 4 Earthed test socket (SCHUKO) <sup>1,2</sup> , without high-voltage test, with leakage current test	40108878
Connection box Model 5 with contacting pads for high-voltage test pistols	40108891
Connection box Model 6 with 3 Earthed test socket (SCHUKO) <sup>1,3</sup> , without high-voltage test, without leakage current test	40108879
Connection box Model 6 with 3 Earthed test socket (SCHUKO) <sup>1,3</sup> , without high-voltage test, with leakage current test	40108824
Connection box Model 6 with 3 Earthed test socket (SCHUKO) <sup>1,3</sup> , with high-voltage test, without leakage current test	40108887
Connection box Model 6 with 3 Earthed test socket (SCHUKO) <sup>1,3</sup> , with high-voltage test, with leakage current test	40108888
Connection box Model 6 with contacting pads for high-voltage test pistols	40108892
Test socket (SCHUKO) up to 6 KV <sup>4</sup>	40108880
Test socket BE/FR/CZ/SK/PL <sup>4</sup>	40108869
Test socket IT 10/16A <sup>4</sup>	40108871
Test socket CH Typ 13 <sup>4</sup>	40108872
Test socket UK <sup>4</sup>	40108873
Test socket DK <sup>4</sup>	40108874
Test socket Franco-American <sup>4</sup>	40108875
Test socket USA/CAN <sup>4</sup>	40108876
Test socket AUS/JPN <sup>4</sup>	40108877
HV-adaptor: SCHUKO-High-voltage test pistol adapter	40002134

<sup>1</sup> These test sockets can be ordered to country-specific requirements. The test sockets marked with index <sup>4</sup> are available.

<sup>2</sup> 4 test sockets as standard configuration: SCHUKO, B/F/CR/CR/PL, UK, IT10/16A

<sup>3</sup> 3 test sockets as standard configuration: SCHUKO, IT10/16A, CEE16A

# Accessories

## High-voltage test pistols and high-voltage cables



The high-voltage test pistols are used to manually touch the device under test during high-voltage tests. To connect the test pistols additional test sockets are integrated on the rear side of the tester. However, these connections may only be used for certain variants. In the table on pages 8 and 9 is shown, for which testers the test pistols may be used.

	Article number
1 High-voltage test pistol, max. 10 KV DC, max. 8 KV AC, lead length: 2 m/6.6 ft	400121
1 High-voltage test pistol, max. 10 KV DC, max. 8 KV AC, lead length: 4 m/13.1 ft	40001179
1 High-voltage test pistol, max. 10 KV DC, max. 8 KV AC, lead length: 6 m/19.7 ft	4001103
1 High-voltage test pistol, max. 10 KV DC, max. 8 KV AC, lead length: 10 m/32.8 ft	4001102
2 High-voltage test pistol with integrated start button, max. 8 KV DC, max. 6 KV AC, lead length: 2 m/6.6 ft	40048
2 High-voltage test pistol without start button, max. 8 KV DC, max. 6 KV AC, lead length: 2 m/6.6 ft	4000993
2 High-voltage test pistol with integrated start button, max. 8 KV DC, max. 6 KV AC, lead length: 5 m/16.4 ft	4000299
2 High-voltage test pistol without start button, max. 8 KV DC, max. 6 KV AC, lead length: 5 m/16.4 ft	4000994
2 High-voltage test pistol with integrated start button, max. 8 KV DC, max. 6 KV AC, lead length: 10 m/32.8 ft	4000233
2 High-voltage test pistol without start button, max. 8 KV DC, max. 6 KV AC, lead length: 10 m/32.8 ft	40001972
3 High-voltage cable, max. 10 KV DC, max. 8 KV AC, lead length: 2 m/6.6 ft	40101776
3 High-voltage cable, max. 10 KV DC, max. 8 KV AC, lead length: 4 m/13.1 ft	40101775
3 High-voltage cable, max. 10 KV DC, max. 8 KV AC, lead length: 6 m/19.7 ft	4010229
3 High-voltage cable, max. 10 KV DC, max. 8 KV AC, lead length: 10 m/32.8 ft	40101777

## Test probes



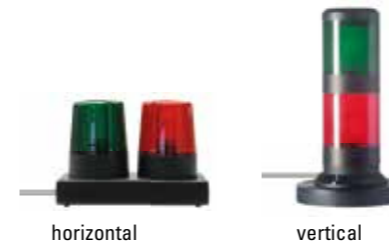
Earth/Ground-bond resistance : The test probe serves to manually touch the DUT's test points PE/GB connections one after another.  
The test lead with alligator clip serves for contacting the PE/GB connection.

Insulation resistance: The test probe serves to manually touch isolated housing parts at DUT's of protection class II.

Leakage current (housing): The test probe serves to manually touch isolated housing parts at DUT's of protection class II.

	Article number
1 Test probe without start button, lead length: 1.85 m/6.1 ft	40001945
1 Test probe without start button, lead length 5 m/16.4 ft	40001959
2 Test probe with integrated start button, lead length: 1.85 m/6.1 ft	40001946
2 Test probe with integrated start button, lead length: 5 m/16.4 ft	40001960
3 Connection lead with alligator clip, lead length: 2 m/6.6 ft	40001947
3 Connection lead with alligator clip, lead length: 5 m/16.4 ft	40001961

## Warning- and result lights



Warning lights are intended to indicate, if a test object is connected to voltage and danger to life exists.  
Red = Test object under voltage –danger to life! | Green = No voltage supplied – no danger!

As an alternative, the warning light function according to EN 50191 may also be configured in that way, that it is already warned, as soon as the tester is ready for operation. Red = Tester ready for operation – Danger to life! | Green = Tester not ready for operation – No danger!

Result lights indicate, if a test result is GO or NO GO. Green = test result GO | Red = test result NO GO

	Article number
Warning lights, horizontal, lead length: 2 m/6.6 ft	400184
Warning lights, vertical, lead length: 2 m/6.6 ft	4000224
Warning lights, vertical, red flash light, lead length: 2 m/6.6 ft	40001639
Result lights, horizontal, lead length: 2 m/6.6 ft	4000222
Result lights, vertical, lead length: 2 m/6.6 ft	4000225

## Black boxes



Model 10      Model 20      Model 30      Model 40

The daily checking of your tester by means of a black box (simulation of Go and NO GO conditions) ensures that your tester is properly working and that only safe, technically validated products leave your company.

Set value test dummy for simulation of tests

When the tester is checked with this black box, the tester measures the set value of the respective test method within a very tight  $\pm$  tolerance. If the test result is out of the tolerance limits, a fault exists.

The GO/NO GO black box simulates tests with and without faulty conditions. For each test method a GO and NO GO test result is simulated.

SCHLEICH black boxes can be used as set value dummies or GO/NO GO test dummies.

	Article number
Black box model 10: insulation, high voltage DC, high voltage AC to connect with a test socket	40001902
Black box model 20: earth/ground bond*, insulation, high voltage DC, high voltage AC to connect with a test socket	40001903
Black box model 30: earth/ground bond*, insulation, high voltage DC, high voltage AC, function to connect with a test socket	40001905
Black box model 40: earth/ground bond*, insulation, high voltage DC, high voltage AC for testing with high-voltage pistols or earth/ground bond test probe	40001904

\* Earth/ground bond has to be tested with test probes.

# Accessories

## Label printer



Thermal transfer label printers serve to mark a test object after a test has been successfully finished. The printer issues labels, e.g. label plates, to be attached on your test object. The software is intended for printers from company CAB (for other manufacturers, please contact us). The printer is delivered with software intended to design your own label layout. Please insert wildcards for variables, to be automatically inserted by the tester after a test has been finished.

	Article number
Software for label printout at the end of a test	40101515
Label printer Zebra-GX 430t incl. 2 m/6.6 ft serial connection cable to connect with the tester*	40001944
Label printer CAB-EOS1, with tear-off edge incl. 3 m/9.8 ft cross-over patch cable *	40001418
Label printer CAB-EOS4 with dispenser incl. 3 m/9.8 ft cross-over patch cable*	40001900
Label printer CAB-A4+ incl. dispenser and light barrier incl. 3 m/9.8 ft cross-over patch cable*	4000938

\* including advice and support

## Test covers



Model 0

Model 1

SCHLEICH test covers are equipped with dual-circuit safety switches and are conforming to latest standards. The test covers are made of solid, dimensionally stable aluminum to support even higher weights easily. Within this cover there is sufficient space to integrate plug connectors or special components. The transparent parts of the cover are made of break-proof LEXAN.

	Article number
Test cover model 0*   outer dimensions 260 x 400 x 280 mm/10.2 x 15.7 x 11 inch	40108853
Test cover model 1*   outer dimensions 546 x 775 x 520 mm/21.5 x 30.5 x 20.5 inch	40108854

\* including connection lead and connector within the test cover

> **Note:** More test covers on request, please have a look on our website.

## Control elements



	Article number
Foot switch to start and stop test process, lead length: 2 m/6.6 ft	4010611
Two-hand start with two separate switches, lead length: 2m/6.6 ft	40104328
Two-hand start in 2-hand housing incl. emergency stop, lead length: 2m /6.6 ft	40104338

## Barcode scanner



By means of a scanner the barcode and possible further order data is scanned from label plate and accompanying documents. Often information about the test object's type and serial number are contained in the barcode. It does not matter if the data is in the form of a barcode or as data matrix code. The scanned data serve for the automatic loading of the test program and to store the test results together with the serial number and possible additional order information. Up to two barcode scanners may be connected to the tester.

	Article number
Barcode-evaluation software	40103104
Barcode scanner, USB, lead length: 2 m	40103105
Barcode scanner, radio transmission	40103107
Barcode scanner for barcode and data matrix code, USB, lead length: 2 m	40103106

## PC-software



With the additional SCHLEICH-software you are able to manage test plans and test results on a PC or in a PC network. The creation of new and the maintenance and administration of existing test plans is the typical application of this software. The test plans may easily be created and parameterized, just like at the tester. Storing all test results serves to ensure a consistent documentation and traceability. Searching for test results, printing them and the statistical evaluation is a further typical task for this PC-software. Furthermore the test results may also be exported to other programs.

	Article number
Editor&Printer   Storing and editing test plans, printing test results	40103227
Analyzer   Statistical evaluation of test results	40103226

## SCHLEICH.Care for applications abroad



SCHLEICH-testers stand for perfect test engineering, durability and fulfill the highest quality standards. Despite extensive inspection and control procedures, it cannot be ruled out, as on any other technical good, that a malfunction occurs. The German warranty includes a comprehensive "carefree-package". With the additional SCHLEICH.Care-warranty you may also enjoy the advantages abroad.

	Article number
SCHLEICH.Care   Europe	40104161
SCHLEICH.Care Premium   Europe	40104162
SCHLEICH.Care   Worldwide	40103163
SCHLEICH.Care-Premium   Worldwide	40103164

## Packaging

Also the packaging for a high-end tester has to be of high quality and should be reusable

	Article number
Standard packaging	included
Seaworthy-/Air freight packaging	40101573
Additional costs for deliveries to China	4018623



# Expect more!

Whatever you want to test, SCHLEICH has the solution! As a leading supplier of electric safety and function test systems as well as motor and winding testers we offer solutions for any task in this sector. Our owner-managed company, founded more than 50 years ago, is present in over 40 markets all around the globe.

## Electrical safety- and function testers



## Electric motors- and winding testers



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