DATA SHEET
3-447-080-03
6/9.25

GOSSEN METRAWATT
GMC-INSTRUMENTS GROUP

SECUTEST ST BASE(10) / SECUTEST ST PRO / SECUTEST ST PRIME AND SECULIFE ST BASE(25)

TEST INSTRUMENTS FOR TESTING THE ELECTRICAL SAFETY OF DEVICES

- Integrated test sequences for quickly testing operating equipment (preconfigured standards-compliant series of individual tests with subsequent documentation)
- Quick access to measuring and test functions via the double rotary switch, direct selection keys and softkeys
- Automatic detection of DUT connection and protection category
- Unique multiple measurement permits convenient recording of several measuring points.
- Testing of various types of PRCDs such as PRCD-S and PRCD-K via integrated test sequences (including protective conductor resistance measurement for variants with switched PE as well)
- Comprehensive, legally secure preparation of test reports
- Extensive data management and storage concept for test results and single measurements (up to 50,000 data records*) – allocation of measurements/tests to instruments and customers
- USB interfaces for data entry and transmission
- High-resolution, brilliant 4.3" TFT color display
- Compact, impact resistant housing with integrated rubber protector
- Can be optimized for use by trained persons within the test team
- Extensive setting options for international use (language, keypad, character set, date, time)
- SECUTEST ST PRIME Supports high-voltage tests (single test) per DIN EN 61010/DIN EN 60335

* 1 data record = 1 DUT or location node or customer or individual measurement



Optional

SECUTEST DB+ Database Expansion (Z853R or feature KB01)

- **Remote control** via PC (IZYTRONIQ) is possible.
- Up to **24 user-defined test sequences** (up to a total of 1200 test steps) can be created in IZYTRONIQ and uploaded to the test instrument.
- **Additional database elements:**
  - Property, building, floor and room for better structuring of large data sets
  - Department and cost center
  - Individual test interval for each **test object**
- Multi-print – **print out several/all test reports** (to a connected Z721S thermal printer or USB stick) which are available for a device under test by pressing just one key
- **Report template** adjustable directly in the test instrument, including company logo
- **Export** all data (master data and measured values) as a file to a USB flash drive or directly in IZYTRONIQ
- **Import** all test object master data (no measured values) to the test instrument from IZYTRONIQ, or from a USB flash drive

Database Extension SECUTEST DB COMFORT (Z853S or feature KD01)

- **Additional database elements:**
  - **Medical test object** for medical DUTs, with extended entry options
  - Individual test interval for each **test object**
- **Touch-Edit** – editing can be started by pressing and holding the detail view of a test object in the main screen.
- Searches started with the **"Search All" softkey** scan the new "UDI" field (unique device identification) for medical devices as well.
- **Move** test objects – "moving" (medical) devices within the tree can be initiated by pressing and holding the respective element in the tree display.
- **QuickEdit** – when setting up a new DUT, not only can the ID be entered – all other fields can also be filled in at the same time as well.
- **Auto-Store** – results of automatic test sequences are saved immediately under the selected test object.
- **Push-Print** – sends measured values / test results directly to the PC (IZYTRONIQ). (Data are not stored at the instrument).

Measuring Functions

Switch Position	Measuring functions Test Current/Voltage		Measurement type Connection type
Single measurements, *rotary switch level: green*			
RPE	R_{PE}	Protective conductor resistance	PE(TS) - P1 Active: PE(TS) - P1 PE(mains) - P1 PE(mains) - P1 clamp [1] P1 - P2 [2]
	I_{Te}	Test current 200 mA **SECUTEST ST BASE10/PRO** & SECULIFE ST BASE: 10 A [3] (feature G01) & SECULIFE ST BASE25: 25 A [3] (feature G02)	
RINS	R_{INS}	Insulation resistance	LN(TS) - PE(TS) LN(TS) - P1 P1- P2 [2] PE(mains) - P1 PE(TS) - P1 LN(TS) - P1//PE(TS)
	U_{INS}	Test voltage	
UHV [4]	U_{HVDC}	**High-voltage test** (PC I/PC II)	LN(TS) - P1 LN(TS) - P1//PE(TS) PHV - P1 [5]
	U_{min}	Minimum voltage value determined during the set test time	
	U_{GEN}	Test voltage	
IPE	$I_{PE\simeq}$	**Protective conductor current, RMS**	Direct Differential Alternative AT3-Adapter [1] Clamp [1]
	$I_{PE\sim}$	AC component	
	$I_{PE=}$	DC component	
	U_{LPE}	Line voltage	
	U_{Gen}	Test voltage (alternative method)	
IT	$I_{T\simeq}$	**Touch current, RMS**	Direct P1 Differential P1 Alternative P1 Permanent connection P1 Alternative P1–P2
	$I_{T\sim}$	AC component	
	$I_{T=}$	DC component	
	U_{LPE}	Line voltage	
	U_{Gen}	Test voltage (alternative method)	
IE	$I_{E\simeq}$	**Device leakage current, RMS**	Direct Differential Alternative AT3-Adapter [1] Clamp [1]
	$I_{E\sim}$	AC component	
	$I_{E=}$	DC component	
	U_{LPE}	Line voltage	
	U_{Gen}	Test voltage (alternative method)	
IA	$I_{A\simeq}$	**Leakage current from the applied part, RMS**	Direct P1 Alternative P1 Permanent connection P1
	U_{LPE}	Line voltage	
	U_{Gen}	Test voltage	
IP	$I_{P\simeq}$	**Patient leakage current, RMS**	Direct P1 Permanent connection P1
	$I_{P\sim}$	AC component	
	$I_{P=}$	DC component	
	U_{LPE}	Line voltage	
U	$U_{\simeq}$	**Measuring voltage, RMS**	PE - P1 PE - P1 (with mains*) V – COM V – COM (with mains*) * Polarity setting
	$U_{\sim}$	Alternating voltage component	
	$U_{=}$	Direct voltage component	
t_{PRCD} [6]	t_t	PRCD time to trip for 30 mA PRCDs	
	U_{LN}	Line voltage at the test socket	
P	**Function test at the test socket**		Polarity setting
	I	Current between L and N	
	U	Voltage between L and N	
	f	Frequency	
	P	Active power	
	S	Apparent power	
	PF	Power factor	
Special measuring functions			
EL1 [7]	Function test for extension cords: Continuity, short-circuit, polarity (wire reversal [8])		EL1 adapter AT3-IIIE adapter VL2E adapter
EXTRA	Reserved for expansion within the framework of software updates		
	°C	Temperature measurement [1] with Pt100 / Pt1000	V – COM
	I_{CL}	Current clamp measurement [1] with Current Clamp Sensor	V – COM
	Relay continuity check [4]		N(TS) L(TS) PHV [5]

[1] Measuring inputs only with test instruments including feature I01 (e.g. SECUTEST ST PRO and SECULIFE ST BASE(25)).

[2] Connection for 2nd test probe for 2-pole measurement with test instrument including feature H01 only (e. g. SECUTEST ST PRO and SECULIFE ST BASE(25)).

[3] 10/25 A RPE measurements are only possible with line voltages of 115/230 V and line frequencies of 50/60 Hz.

[4] Only SECUTEST ST PRIME.

[5] Only with feature F02.

[6] Measurement of time to trip isn't possible in IT systems.

[7] With SECUTEST ST PRIME in EXTRA rotary switch position.

[8] No checking for reversed wires when the EL1 adapter is used.

Key:

Alternative	= alternative measurement (equivalent leakage current measurement)
Differential	= differential current measurement
Direct	= direct measurement
LN(TS)	= short-circuited L and N conductors at test socket
PHV	= measurement with high-voltage test pistol (only with feature F02)
P1	= measurement with test probe P1
P1-P2	= 2-pole measurement with test probes P1 and P2
PE-P1	= measurement between PE and test probe P1
PE(TS)	= protective conductor at the test socket
PE(mains)	= protective conductor at the mains connection

Integrated Test Sequences

The test instrument includes preconfigured, integrated test sequences. The integrated test sequences can be used to comply with the following standards:

- EN 50699 / VDE 0702
  Recurrent Test of Electrical Equipment
- EN 50678 / VDE 0701
  General Procedure for Verifying the Effectiveness of the Protective Measures of Electrical Equipment After Repair
- IEC 62353 / EN 62353 / VDE 0751-1
  Medical electrical equipment –
  Recurrent test and test after repair of medical electrical equipment
- VDE 0701-0702 (withdrawn) / ÖVE E 8701 / SNR 462638
  Inspection after repair, modification of electrical appliances – Periodic inspection on electrical appliances
- IEC 60974-4 / EN 60974-4 / VDE 0544-4
  Arc welding equipment
  Part 4: Periodic inspection and testing
- NEN 3140
  Bedrijfsvoering van elektrische installaties – Laagspanning
- IEC 62368 / EN 62368 / VDE 0868-1
  Audio/video, information and communication technology equipment
- IEC 62911 / EN 62911 / VDE 0868-911
  Audio, video and information technology equipment – Routine electrical safety testing in production

Availability of the individual integrated test sequences depends on the test instrument type (SECUTEST ST ... or SECULIFE ST ...), the selected features (order features) and the enabled extensions (activations).

The integrated test sequences are run in the orange rotary switch position. They're freely assignable, i.e. they can be individually assigned to the rotary switch positions (because there are more integrated test sequences than rotary switch positions).

The test instrument is preconfigured upon delivery and its configuration depends on numerous factors. Due to the great variety of possible combinations, listing them would go beyond the scope of this data sheet and has therefore been omitted.

Mains connection check

Line voltage and frequency are measured and compared with the reference in the setup menu. For instance, if the test voltage is standardized per the reference, it is required for calculating the measured values for the leakage current measurement.

Automatic Detection of Mains Connection Errors

The device automatically recognizes mains connection errors if the conditions in the following table have been fulfilled. The user is informed of the type of error, and all measuring functions are disabled in the event of danger.

Type of Mains Connection Error	Message	Condition	Measurements
Voltage at protective conductor PE to finger contact (**START**/STOP key)	Display	Press **START**/STOP key U > 25 V key → PE: < 1 MΩ [1]	All measurements disabled
Protective conductor PE and phase conductor L reversed and/or neutral conductor N interrupted		Voltage at PE > 100 V	Not possible (no supply power)
Line voltage < 180 V / < 90 V (depending on mains)		U_{L-N} < 180 V U_{L-N} < 90 V	Possible under certain circumstances [2]
Test for IT/TN system	Display	Connection N → PE > 20 kΩ	Possible under certain circumstances

1) If the location impedance of the tester is very high, the following error message may appear: "Interference voltage at mains connection PE"

2) 10/25 A RPE measurements are only possible with line voltages of 115/230 V and line frequencies of 50/60 Hz.

Analysis of DUT Connection and Condition

Depending on the measurement or how the DUT is connected, the following states are checked and displayed before measurement is begun:

Test Function		Condition [1]
Short-circuit test L–N [2]	Short-circuit / DUT starting current	R ≤ 2.5 Ω
	No short-circuit (AC test)	R > 2.5 Ω
Open-circuit voltage U_0 4.3 V, short-circuit current I_{SC} < 250 mA		
Short-circuit test LN–PE	Short-circuit	R ≤ 2 kΩ
	No short-circuit (AC test)	R > 2 kΩ
Open-circuit voltage U_0 230 V AC, short-circuit current I_{SC} < 1.5 mA		
On test	On (DUT passive)	R < 250 kΩ
	Off (DUT active)	R > 300 kΩ
Open-circuit voltage U_0 230 V AC, short-circuit current I_{SC} < 1.5 mA		
Switching test	Mains power switched on automatically	R > 500 Ω
	Popup (switch off DUT first)	R < 500 Ω
Probe test	No probe	R > 2 MΩ
	Probe detected	R < 500 kΩ
Protection Class Detection (only with country-specific variant [3])		
	Protective conductor found: PC I	R < 1 Ω
	No protective conductor: PC II	R > 10 Ω
Safety shutdown		
Triggered at following residual current value (selectable)		> 10 mA / > 30 mA
Triggered at following probe current valuesFor leakage current measurement		> 30 mA [4]
	During protective conductor resistance measurement	> 250 mA
Connection test (only with country-specific variant [3])		
Checks whether the DUT is connected to the test socket.		
	DUT power cable found	R < 1 Ω
	No DUT power cable	R > 10 Ω
Insulation test	DUT set up in a well-insulated fashion	R ≥ 500 kΩ
	DUT set up in a poorly insulated fashion	R < 500 kΩ
PE mains – PE socket: Open-circuit voltage U_0 50 V_{DC}, I_{SC} < 2 mA		
Overcurrent protection		
Shutdown in the event of a continuous flow of current via the test socket at: Our SECUTEST ST BASE10/PRO, SECUTEST ST PRIME and SECULIFE ST BASE(25) test instruments permit active testing of instruments with nominal current (load current) of up to 16 A. The test socket on the respective test instrument is equipped with 16 A fuses to this end, and the switching capacity of the internal relays is also 16 A. Starting current of up to 30 A is permissible. In the case of test objects for which a starting current of greater than 30 A can be expected, we urgently recommend the use of a test adapter for larger starting currents, e.g. a test adapter from the AT3 series.		I > 16.5 A

1) The specified values of instruments with features F01 and F02 are be interpreted as reference values.

2) Not for instruments with features F01 and F02.

3) Applies to M7050 with features B00 and B09.

4) Firmware version 3.2.0 and lower: 12 mA

Features

The test instruments are available with various features. These can be selected when placing an order. The basic instruments include the following features:

	Features	SECUTEST ST BASE	SECUTEST ST PRO	SECUTEST ST PRO BT	SECUTEST ST PRIME	SECULIFE ST BASE	SECULIFE ST BASE25
Touchscreen / keyboard	E01		•	•		•	•
High-voltage test, LN–PE/P1	F01				•		
High-voltage test, LN–PE/P1 and PHV–P1	F02				○		
10 A RPE test current	G01		•	•	○	•	
25 A RPE test current	G02				•		•
2nd Test probe (connection for 2nd test probe)	H01		•	•	○	•	•
Voltage measuring input *	I01		•	•	○	•	•
Integrated test sequences for EN 50678 / VDE 0701, EN 50699 / VDE 0702, IEC 62368 / EN 62368 / VDE 868-1, IEC 62911 / EN 62911/ VDE 868-911	KE	•	•	•	•	•	•
Additional test sequences IEC 61010 / IEC 60335 (in preparation)	KA02				•		
SECUTEST DB+	KB01	○	•	•	•	•	•
SECUTEST DB COMFORT	KD01	○	○	•	○	○	•
Bluetooth®	M01	○	○	•	○	○	○
Antimicrobial housing	—					•	•

* For voltage measurement or for connecting a current clamp sensor or an AT3 adapter, and for temperature measurement via RTD

Key • included ○ optional

Detailed information regarding features and accessories can be found under "Order Information" on page 15.

Automatic Detection of Measuring Point Changes

During protective conductor measurement, the test instrument recognizes whether or not the test probe is in contact with the protective conductor, which is indicated by means of two different acoustic signals. This function is very useful where several protective conductor connections need to be tested.

Creating a Database

A test structure with data regarding customers and test objects can be created in the test instrument. This structure makes it possible to save single measurements or test sequences to devices under test belonging to various customers. Manual single measurements can be grouped together into a so-called “manual sequence”.

Electrical medical devices can be entered as test objects (Medical Instrument) with the SECUTEST DB COMFORT database expansion (Z853S or feature KD01), and individual test dates can be assigned to all DUTs.

The SECUTEST DB+ database expansion (Z853R or feature KB01) extends the structure to include buildings, floors and rooms. Furthermore, the test structure can be set up conveniently at a PC with the help of IZYTRONIQ software (see "IZYTRONIQ Software" on page 4), and subsequently transferred to the test instrument.

Logging Functions

All of the values required for approval reports or instrument logbooks for electrical DUTs (e.g. per ZVEH) can be measured by and stored in the test instrument. A due date for the next test is also determined.

Measurement data can be documented and archived thanks to the measurement and test report that can be printed with a thermal printer which has been connected to the USB port, or stored to a USB flash drive as an HTML report (see "Data Interfaces" on page 4).

Alternatively, stored measurement data can be transferred to IZYTRONIQ software (see "IZYTRONIQ Software" on page 4) in order to archive the data, add comments and create reports.

IZYTRONIQ Software

Suitable, database-driven test software is available, namely IZYTRONIQ. This software facilitates test organization and the management of test data from a broad range of test instruments.

It also provides extended functions such as remote control in connection with the respective test instrument – support for extended functions depends on the test instrument and its order features or enabled extensions (activations).

The software is included with test equipment sets (see "Order Information" on page 15). If this is not the case or if you would like to take advantage of a variant with a larger scope of functions, you can purchase IZYTRONIQ separately. Detailed information can be found on our website:

https://www.gossenmetrawatt.de/en/products/software-and-accessories/software

Display with Selectable Language

The display panel consists of a color LCD with LED backlighting at which menus, setting options, measurement results, instructions and error messages, as well as schematics and wiring diagrams appear. Sample screenshots are shown on the next page.

The display and user prompting can be set to the desired language depending on the country in which the test instrument is used.

Data Entry

Data can be entered via a softkey keyboard which appears at the display, or a convenient touch screen for test instruments including feature E01 (e.g. SECUTEST ST PRO and SECULIFE ST BASE(25)). The menu is controlled via softkeys.

Compatible barcode readers, RFID scanners, USB keyboards and printers can also be connected via USB.

Data Interfaces

The test instrument is equipped with USB interfaces which can be used for various purposes:

- Structures set up in, and measurement data saved to the test instrument can be transferred to IZYTRONIQ database software.
  Data can then be archived in the program, comments can be added and reports can be generated.
- Connection of compatible external input and output devices (see "Data Entry" on page 4)
- Data backup and restore with USB flash drive
- Report printing to USB flash drive or external printer

In the case of test instruments with Bluetooth® (feature M01), data can be transmitted to IZYTRONIQ and the push-print function can be used.

A Bluetooth® keyboard can also be connected to these test instruments. Only Bluetooth® keyboards that support Bluetooth® Classic mode (3.0) are compatible.

Keyboards that can only connect to Bluetooth® Low Energy hosts (as of Bluetooth® 4.x) are not supported (including Bluetooth® Low Energy (LE)).

Antimicrobial properties

The test instrument is furnished with antimicrobial properties. This is intended to inhibit the growth of germs, counteract microbial colonization and destroy microorganisms.

Updates

The test instrument is future-proof because firmware/software updates are released on a regular basis.

Scope of Delivery

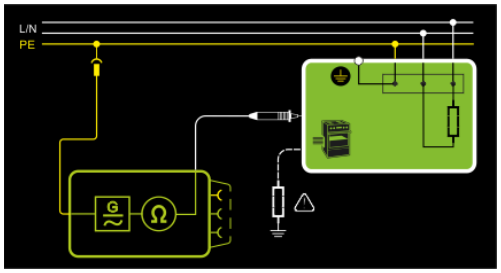
The scope of delivery varies depending on which test instrument variant has been ordered, and is country-specific. Information concerning the scope of delivery can be found under "Order Information" on page 15.

Sample Displays at Color LCD with LED Backlighting

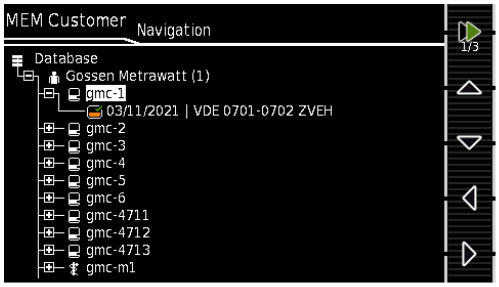
Single test – Initial screen with parameters display



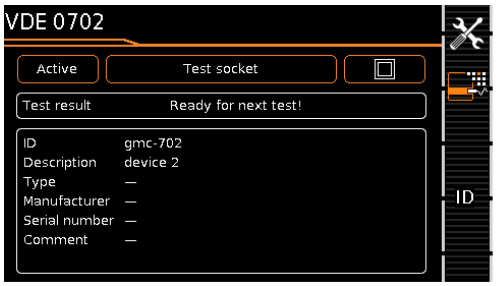
Help – Schematic and Wiring Diagram



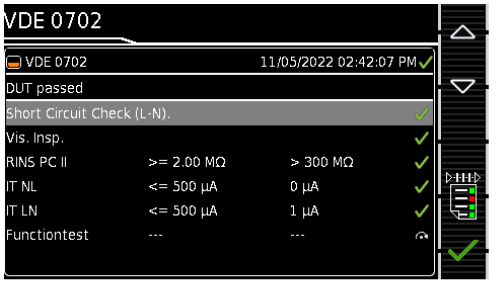
Database structure – Customer list



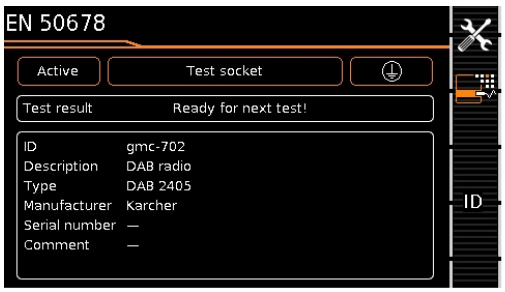
Test Sequence – Start (EN 50699 / VDE 0702)



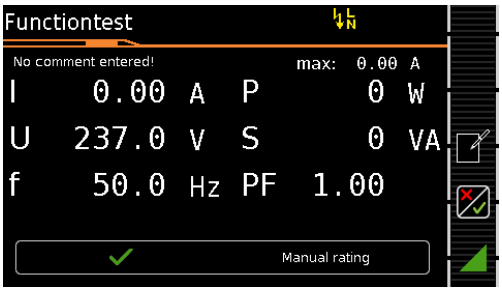
Test Sequence – Test Results (EN 50699 / VDE 0702)



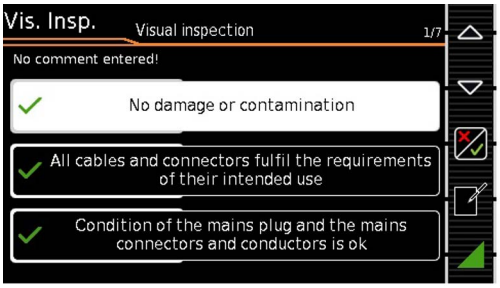
Test Sequence – Start (EN 50678 / VDE 0701)



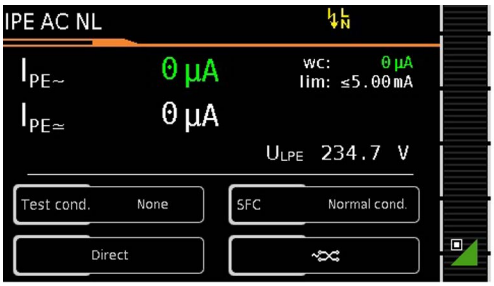
Test Sequence– Function Test



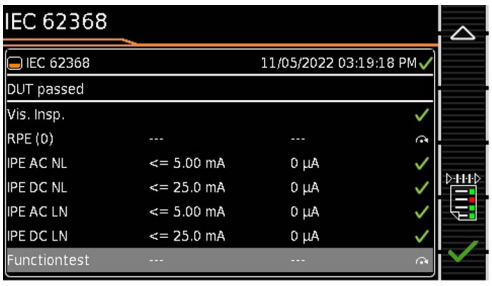
Test Sequence – Visual Inspection



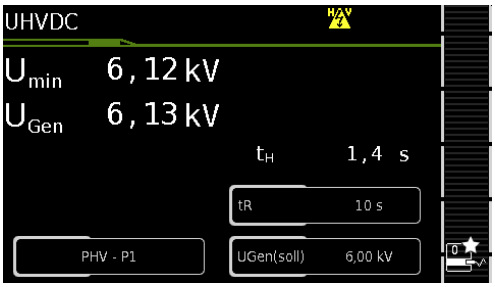
Test Sequence – IPE Measurement (IEC 62368 / EN 62368 / VDE 0868-1)



Test Sequence – Test Results (IEC 62368 / EN 62368 / VDE 0868-1)



HV Test (only with feature F01/F02)



Characteristic Values

Function	Measured Quantity	Display range [1]/ Nominal Range of Use	Resolution	Nominal Voltage U_N	Open-Circuit Voltage U_0	Nominal Current I_N	Short-Circuit Current I_{SC}	Internal Resistance R_I	Reference Resistance R_{REF}	Measuring Uncertainty [2]	Intrinsic Uncertainty [2]	Overload Capacity Value	Overload Capacity Time
Tests	Protective conductor resistance **RPE**	1 mΩ … 999 mΩ	1 mΩ	—	< 6 V AC or DC	—	> 200 mA AC / DC > 10 A AC [3] > 25 A AC [4]	—	—	±(15% rdg.+ 10 d) > 10 d > 10.0 Ω: ±(10% rdg.+ 10 d)	±(10% rdg.+ 10 d) > 10 d	264 V 250 mA / 16 A [3]	Cont.
		1.00Ω … 9.99Ω	10 mΩ										
		10.0Ω … 27.0Ω	100 mΩ									> 42 A AC [4]	15 s
	Insulation resistance [5] **RINS**	10 kΩ … 999 kΩ	1 kΩ	50 … 500 V DC	1.0 × U_N ... 1.5 × U_N As of U_N > 100 V	> 1 mA	< 2 mA	—	—	±(5% rdg.+ 4 d) > 10 d ≥ 20 mΩ: ±(10% rdg.+ 8 d)	±(2.5% rdg.+2 d) > 10 d ≥ 20 mΩ: ±(5% rdg.+4 d)	264 V	Cont.
		1.00 MΩ … 9.99 MΩ	10 kΩ										
		10.0 MΩ … 99.9 MΩ	100 kΩ										
		100 MΩ … 300 MΩ	1 MΩ										
	Leakage current alternative Measurement [6] **IPE, IT, IE, IA**	0 µA … 99 µA	1 µA	—	50 … 250 V~ – 20/+10%	—	< 1.5 mA	> 150 kΩ	1 kΩ ±10 Ω	±(5% rdg.+ 4 d) > 10 d > 15 mA: ±(10% rdg.+ 8 d)	±(2% rdg.+2 d) > 10 d > 15 mA: ±(5% rdg.+ 4 d)	264 V	Cont.
		100 µA … 999 µA	1 µA										
		1.00 mA … 9.99 mA	10 µA										
		10.0 mA … 30.0 mA	100 µA										
	Leakage current Direct measurement [7] **IPE, IT, IE, IA, IP**	Only IP: 0.0 µA … 99.9 µA	100 nA	—	—	—	—	1 kΩ ±10 Ω	1 kΩ	±(5% rdg.+ 10 d) > 10 d	±(2.5% rdg.+5 d) > 10 d	264 V	Cont.
		0 µA … 99 µA	1 µA							±(5% rdg.+ 4 d) > 10 d	±(2.5% rdg.+2 d) > 10 d		
		100 µA … 999 µA	1 µA										
		1.00 mA … 9.99 mA	10 µA										
		10.0 mA … 30.0 mA	100 µA										
	Leakage current Differential Current Measurement [8] [9] **IPE, IT, IE**	0 µA … 99 µA	1 µA	—	—	—	—	—	—	±(5% rdg.+ 10 d) > 10 d	±(2.5% rdg.+2 d) > 10 d	264 V	Cont.
		100 µA … 999 µA	1 µA							±(5% rdg.+ 4 d) > 10 d			
		1.00 mA … 9.99 mA	10 µA										
		10.0 mA … 30.0 mA	100 µA										
Function Test at the Test Socket	Line voltage U_{L-N} [10]	90.0 V~ … 264.0 V~	0.1 V	—	—	—	—	—	—	—	±(2% rdg.+2 d)	264 V 16 A 20 A	Cont. Cont. <10 min
	Load current I_L	0 A_{RMS} … 20.00 A_{RMS}	10 mA	—	—	—	—	—	—	—	±(2% rdg.+2 d)		
	Active power P	0 W … 999 W	1 W	—	—	—	—	—	—	—	±(5% rdg.+10 d) > 20 d		
		1.00 kW … 4.50 kW	10 W										
	Apparent power S	0 VA … 999 VA	1 VA	Calculated value, $U_{L-N} \times I_L$							±(5% rdg.+10 d) > 20 d		
		1.00 kVA … 4.50 kVA	10 VA										
	Power factor PF with sinusoidal waveform: cosφ	0.00 to 1.00	0.01	Calculated value, P / S, display > 10 W							±(10% rdg.+5 d)		
	Line frequency f	0 Hz … 420.0 Hz	0.1 Hz	—	—	—	—	—	—	—	±(2% rdg.+2 d)		
t PRCD	Time to trip	0.1 ms … 999.0 ms	0.1 ms	—	—	30 mA ±2%	—	—	—	±5 ms	—	264 V	Cont.
Voltage Measurement	Probe Voltage (probe P1 to PE) ⎓, ~ and ≂	0.0 V … 99.9 V	100 mV	—	—	—	—	3 MΩ	—	—	±(2% rdg.+2 d)	264 V	Cont.
		100 V … 264 V	1 V										
	Measuring voltage (V-COM sockets [11]) ⎓, ~ and ≂	0.0 V … 99.9 V						1 MΩ			±(2% rdg.+2 d) > 45 Hz … 65 Hz ±(2% rdg.+5 d) > 65 Hz … 10 kHz ±(5% rdg.+5 d) > 10 kHz … 20 kHz	300 V	
		100 V … 300 V											
$I_{Leakage}$	Leakage current via AT3-IIIE adapter Z745S [11] [12] ~	0.00 mA … 0.99 mA	0.01 mA	—	—	—	—	—	—	—	±(2% rdg.+2 d) > 10 d without adapter	253 V	Cont.
		1.0 mA … 9.9 mA	0.1 mA										
		10 mA … 20 mA	1 mA										
Temp	Temperature with Pt100 sensor	– 200.0 °C … +850.0 °C	0.1 °C	—	< 20 V		1.1 mA	—	—	—	±(2 % rdg. +1 °C)	10 V	Cont.
	Temperature with Pt1000 sensor	– 150.0 °C … +850.0 °C											

Function	Measured Quantity	Display range [1]/ Nominal Range of Use	Resolution	Nominal Voltage U_N	Open-Circuit Voltage U_0	Nominal Current I_N	Short-Circuit Current I_{SC}	Internal Resistance R_I	Reference Resistance R_{REF}	Measuring Uncertainty [2]	Intrinsic Uncertainty [2]	Overload Capacity	
												Value	Time
I_{Clamp}	Current via current clamp sensor [1 mV : 1 mA] (V-COM sockets [11) 13)]) ~	1 mA … 99 mA	1 mA (1 mV)	—	—	—	—	—	—	—	±(2% rdg.+2 d) > 10 d 20 Hz … 20 kHz without clamp	253 V	Cont.
		0.1 … 0.99 A	0.01 A (10 mV)										
		1.0 A … 9.9 A	0.1 A (100 mV)										
		10 A … 300 A	1 A (1 V)										
	Current via current clamp sensor [10 mV : 1 mA] (V-COM sockets [11)13)]) ~	0.1 mA … 9.9 mA	0.1 mA (1 mV)	—	—	—	—	—	—	—			
		10 mA … 99 mA	1 mA (10 mV)										
		0.10 A … 0.99 A	0.01 A (100 mV)										
		1.0 A … 30.0 A	0.1 A (1 V)										
	Current via current clamp sensor [100 mV : 1 mA] (V-COM sockets [11)13)]) ~	0.01 mA … 0.99 mA	0.01 mA (1 mV)	—	—	—	—	—	—	—			
		1.0 mA … 9.9 mA	0.1 mA (10 mV)										
		10 mA … 99 mA	1 mA (100 mV)										
		0.10 A … 3.00 A	0.01 A (1 V)										
	Current via current clamp sensor [1000 mV : 1 mA] (V-COM sockets [11)13)]) ~	1 µA … 99 µA	1 µA (1 mV)	—	—	—	—	—	—	—			
		0.10 mA … 0.99 mA	0.01 mA (10 mV)										
		1.0 mA … 9.9 mA	0.1 mA (100 mV)										
		10 mA … 300 mA	1 mA (1 V)										

1) Under certain circumstances, the display range may be changed only if the value has fallen below the hysteresis range.
2) "> 10D" means that the specified value only applies as of a display of > 10 digits (the same applies whenever ">XXD" is specified).
3) only with feature G01 (e. g. SECUTEST ST BASE10/SECUTEST ST PRO and SECULIFE ST BASE).
4) only with feature G02 (e. g. SECULIFE ST BASE25).
5) The upper range limit depends on the selected test voltage.
6) Known as equivalent leakage current or equivalent patient leakage current from previous standards.
7) Protective conductor current, touch current, device leakage current, patient leakage current
8) Protective conductor current, touch current, device leakage current
9) In the case of DUTs with high power consumption, direct measurement is necessary for measuring touch currents in medical devices.
10) Voltage at the test socket may be lower than measured line voltage due to components which limit inrush current.
11) Only with feature I01 (e. g. SECUTEST ST PRO and SECULIFE ST BASE).
12) Measurement types IPE_AT3 adapter and IE_AT3 adapter
13) Measurement types IPE_clamp and IE_clamp.

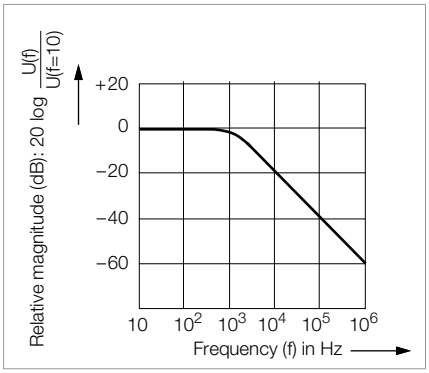
Key: rdg. = reading (measured value), d = digit(s)

Testing Times, Automatic Sequence

Testing times ("measurement duration …" parameter) can be set separately for each rotary switch position during configuration of the sequence parameters. Testing times are neither tested nor calibrated.

Leakage Current Measurement

For all leakage current measurements (**IPE**, **IT**, **IE**, **IP**,) (direct, differential, alternative), the frequency response is factored in accordance with the adjacent figure.



Emergency Shutdown During Leakage Current Measurement

As of 10 mA of differential current (can also be set to 30 mA), automatic shutdown ensues within 500 ms. This shutdown does not take place during leakage current measurement with clamp meter or adapter.

High-voltage Test (SECUTEST ST PRIME only)

SECUTEST ST PRIME with integrated high-voltage test facilitates manufacturer testing within the scope of IEC 61010 / IEC 60335. With feature F02 (optional high-voltage connection, optional high-voltage test pistol Z746H), a test voltage of up to 6 kV DC can be used to test electrical components. Feature KB01 (SECUTEST DB+) also makes it possible to control the test instrument or integrate it into customer-specific test systems using the remote control.

High-voltage source

Test voltage ⎓	U_{Gen} adjustable in 50 V steps	0.50 … 6.00 kV*
Open-circuit voltage	U_0	$(U_{Gen} \times 1.011) + 60$ V
Accuracy of open-circuit voltage		±(2.5% U_0 + 5 digits) (Resolution: 0.01 kV)
Nominal current ⎓	Per EN 50191	< 3 mA
Short-circuit current	Discharging current based on 6 × 2.7 nF	> 5 A at 5 kV
Interference voltage withstand		None

*) - See following table
- Adjustable rise time and test time

Maximum adjustable test voltage (U_{Gen}) as a function of the measurement type and test socket

Test socket [Country]	Measurement type	Max. test voltage
B00 [Germany]	LN(TS) – PE(TS)||P1	Max. 3.00 kV [1)]
	LN(TS) - P1	Max. 6.00 kV
B01 [Great Britain]	LN(TS) – PE(TS)||P1	max. 3.00 kV [1)]
	LN(TS) - P1	Max. 6.00 kV
B03 [France, Czech Republic, Poland]	LN(TS) – PE(TS)||P1	max. 3.00 kV [1)]
	LN(TS) - P1	Max. 6.00 kV
B04 [China]	LN(TS) – PE(TS)||P1	max. 3.00 kV [1)]
	LN(TS) - P1	Max. 6.00 kV
B05 [USA]	LN(TS) – PE(TS)||P1	max. 3.00 kV [1)]
	LN(TS) - P1	Max. 4.00 kV
B06 [Australia]	LN(TS) – PE(TS)||P1	max. 3.00 kV [1)]
	LN(TS) - P1	Max. 6.00 kV
B07 [Denmark]	LN(TS) – PE(TS)||P1	max. 3.00 kV [1)]
	LN(TS) - P1	Max. 6.00 kV
B09 [Switzerland, with detection of connection and protection category]	LN(TS) – PE(TS)||P1	max. 3.00 kV [1)]
	LN(TS) - P1	Max. 6.00 kV
B00 - B09 With feature F02, optional high-voltage connection (for HV test pistol Z746H)	PHV–P1	Max. 6.00 kV

[1)] As from firmware 3.6.1; previously 2.25 kV

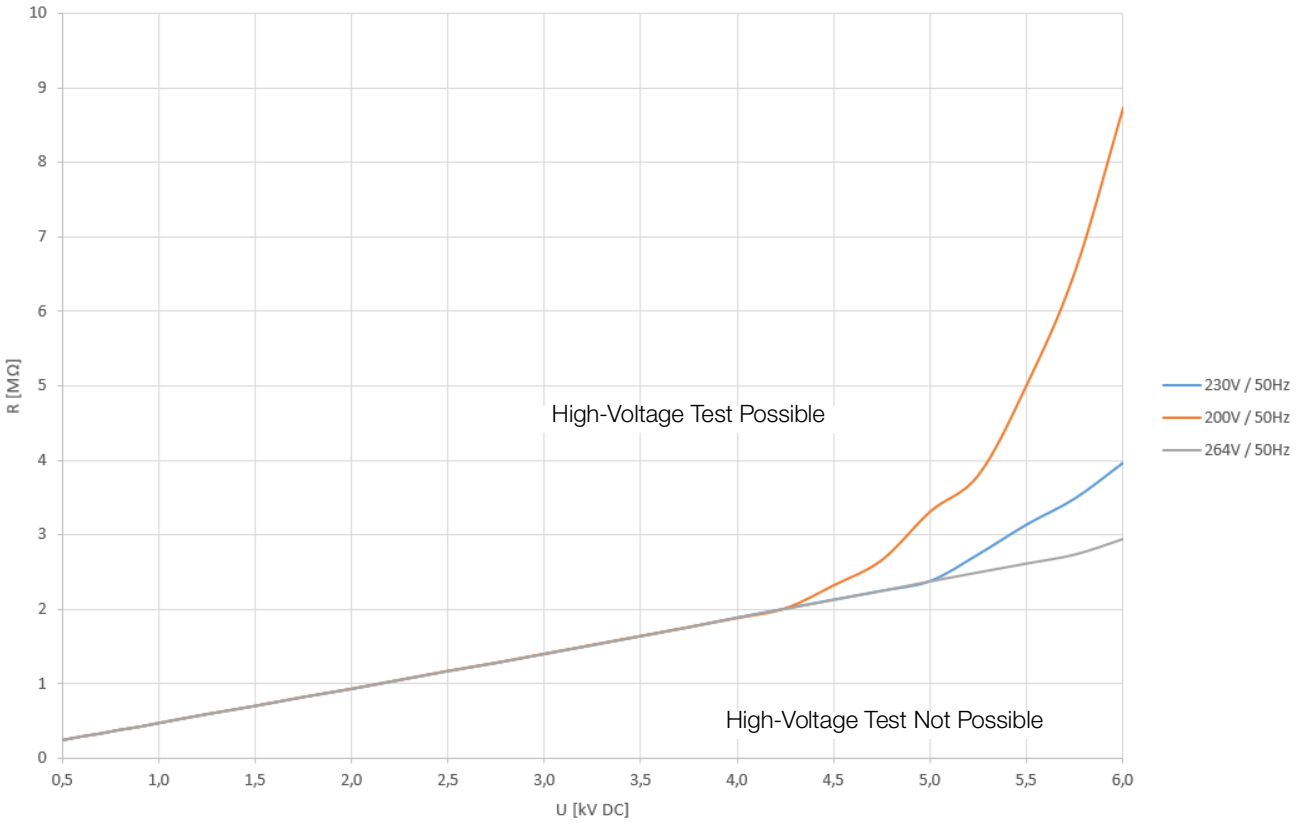
Voltage measurement

Measuring Range	Display Range	Resolution	Accuracy
0 … U_{0max} ⎓	0.00 … 9.99 kV	0.01 kV	±(2.5% rdg. + 5 digits)

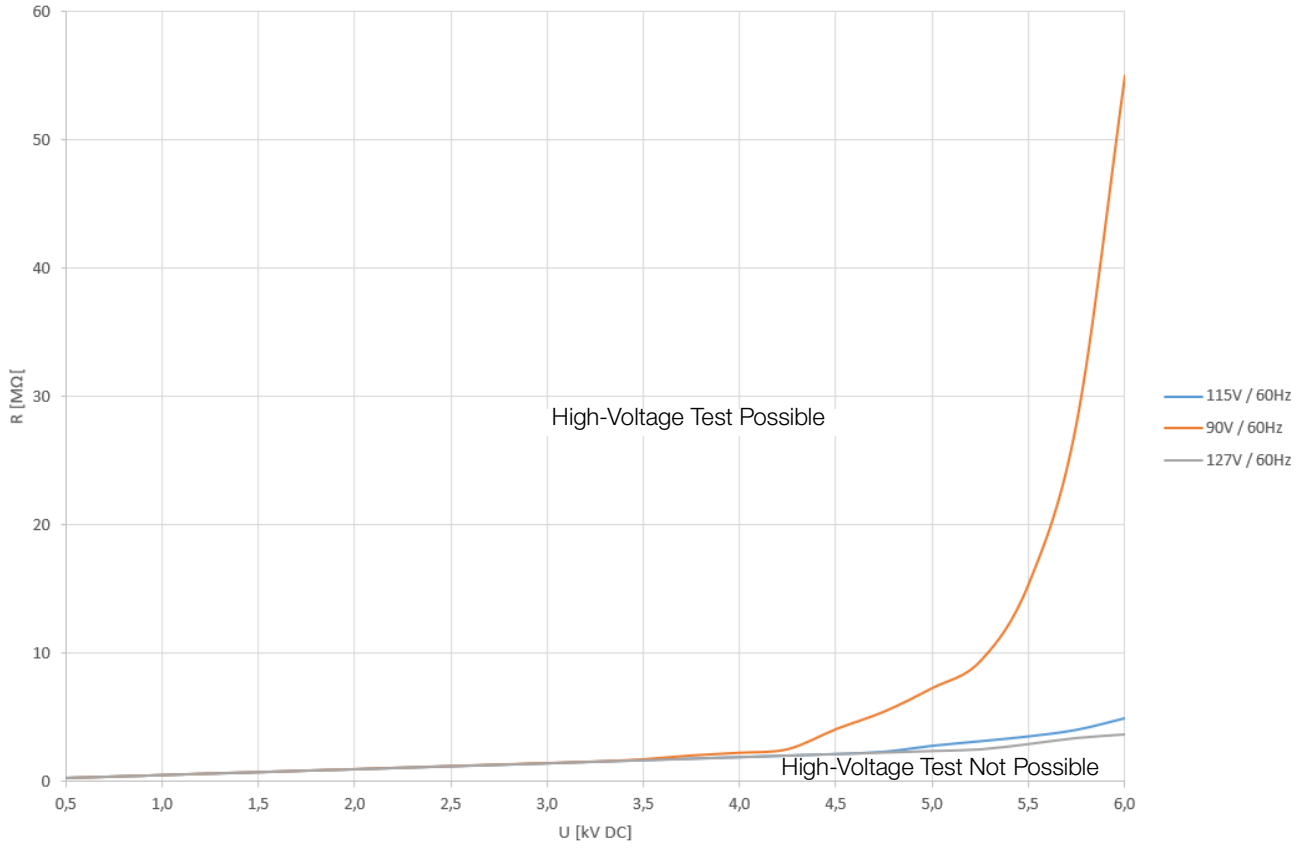
Lower Supply Limit for High Voltage Test

In order to be able to conduct high-voltage tests, load must always be greater than the respective characteristic curve (see following diagrams).

Typical Maximum Load for the HV Source as a Function of Supply Voltage at 50 Hz



Typical Maximum Load for the HV Source as a Function of Supply Voltage at 60 Hz



Reference Ranges

Line voltage	230 V AC ±0.2%
Line frequency	50 Hz ±2 Hz
Waveform	Sine (deviation between RMS and rectified values < 0.5%)
Ambient temperature	+23 °C ±2 K
Relative humidity	40 to 60%
Load resistors	Linear

Nominal Ranges of Use

Nominal line voltage	90 V … 264 V AC
Nominal line frequency	50 Hz … 400 Hz
Line voltage waveform	Sinusoidal
Temperature	0 °C … + 40 °C

Ambient Conditions

Operating temperature	0 °C … + 40 °C
Storage temperature	– 20 °C … + 60 °C
Relative humidity	Max. 75%, no condensation allowed
Elevation	Max. 2000 m
Place of use	Indoors, except within specified ambient conditions

Power Supply

Supply network	TN, TT or IT
Line voltage	90 V … 264 V AC
Line frequency	50 Hz … 400 Hz
Power consumption	200 mA DUT: Approx. 32 VA 10 A DUT: Approx. 105 VA 25 A DUT: Approx. 280 VA
Mains to test socket (e.g. during function test)	Continuous max. 3600 VA, power is conducted through the instrument only, Switching capacity ≤ 16 A, ohmic load, the AT3-IIS32 (Z745X) adapter (for example) can be used for current > 16 A AC

Electrical Safety

Protection class	I per EN 61140
Nominal voltage	230 V
Test voltage	2.3 kV AC 50 Hz or 3.3 kV DC (mains circuit / test socket to mains PE terminal, USB, finger contact, probe, test socket)
Measuring category	Designed for 300 V CAT II (but reduced to 250 V CAT II through the use of fuses for increased user safety. The user-friendly fuses are replaceable, and replacements are easily obtainable.)
Pollution degree	2
Safety shutdown	At DUT differential current of > 10 mA, shutdown time: < 500 ms, can also be set to > 30 mA with following probe current during: – Leakage current measurement > 30 mA [1]~/< 500 ms – Protective conductor resistance measurement: > 250 mA~/< 1 ms in case of continuous current I > 16.5 A
Fuse links	Mains fuses: 2 ea. T 500V/16A Probe fuse: M 250V/250mA 10 A RPE test current (feature G01 only): 1 ea. FF 500V/16A

[1] Firmware version 3.2.0 and lower: 12 mA

Electromagnetic Compatibility

Product standard DIN EN 61326-1
DIN EN 61326-2-2

Interference emission		Class
EN 55011		B
IEC 61000-3-2		B
IEC 61000-3-3		B
Interference immunity	**Test value**	**Evaluation criterion**
EN 61000-4-2	Contact/atmos. – 4 kV/8 kV	B
EN 61000-4-3	10 V/m (80 MHz … 1 GHz)	A
EN 61000-4-4	Mains connection – 2 kV	B
EN 61000-4-5	Mains connection – 1 kV (LN), 2 kV (LPE)	B
EN 61000-4-6	Mains connection – 3 V	A
EN 61000-4-8	30 A/m	A
EN 61000-4-11	0%: 1 period	B
	0%: 250/300 periods	C
	40%: 10/12 periods	C
	70%: 25/30 periods	C

USB Data Port

Type	USB slave for PC connection / remote control [1]
Type	2 ea. USB master for data entry devices [2] with HID boot interface, for USB flash drive for data backup, for USB flash drive for saving reports as HTML files, for printers[2]

[1] Remote control only with extension “Remote Control via PC (IZYTRONIQ)” (included as a standard feature with SECUTEST ST PRO or available with SECUTEST DB+ (Z853R or feature KB01).

[2] See the following page for compatible instruments

Bluetooth® data interface 2.1 + EDR (test instruments with feature M01 only)

Frequency range	2400 … 2483.5 MHz
Transmission intensity	Max. 2.5 mW (class II)

Mechanical Design

Display	4.3" color LCD with LED backlighting (9.7 × 5.5 cm), 480 × 272 pixels with 24-bit color depth (true color)
Dimensions	W × H × D: 295 × 145 ×150 mm Height with handle: 170 mm SECUTEST ST PRIME: W × H × D: 295 mm × 145 mm × 240 mm Height with handle: 170 mm
Weight	SECUTEST ST BASE(10)/PRO: approx. 2.5 kg SECULIFE ST BASE25: approx. 4.0 kg (depending on test instrument version) SECUTEST ST PRIME: approx. 6.0 kg
Protection	Housing: IP 40 (protection against ingress of solid foreign objects ≥ 1.0 mm in diameter; no protection against ingress of water), Test socket: IP 20 (protection against ingress of solid foreign objects ≥ 12.5 mm in diameter; no protection against ingress of water) (per EN 60529) All SECULIFE ST: Housing with antimicrobial properties per JIS standard Z 2801

Database

Number of data records	50,000 (1 data record = 1 DUT or location node or customer or individual measurement)

Regulations and standards in accordance with which the test instrument is manufactured and tested:

EN 61010-1	Safety requirements for electrical equipment for measurement, control and laboratory use – Part 1: General requirements
EN 60529/	Test instruments and test procedures Degrees of protection provided by enclosures (IP code)
EN 61326-1	Electrical equipment for measurement, control and laboratory use – EMC requirements – Part 1: General requirements
EN 61326-2-2	Electrical equipment for measurement, control and laboratory use – EMC requirements – Part 2-2: Particular requirements – Test configurations, operational conditions and performance criteria for sensitive test and measurement equipment for EMC unprotected applications
EN 61557-16	Electrical safety in low voltage distribution systems up to 1000 V AC and 1500 V DC – Equipment for testing, measuring or monitoring of protective measures – Part 16: Devices for testing the effectiveness of protective measures of electrical devices and/or electrical medical devices

Accessories

The accessories listed below are usually not included in the scope of delivery. This does not apply in the case of instrument sets which include accessories.

Order information for accessories can be found under "Order Information" on page 15.

Barcode scanner (Z751A)



For reading 1 and 2D codes, for example barcodes and QR codes. This makes it possible to conveniently insert the ID numbers of DUTs into single measurements and test sequences.

This device is based on the concept of an instinctive scanning distance and provides best possible reading performance. Green Spot technology provides a “good-read” projection directly on the code. The device is connected via USB.

Barcode Printer (Z721E)



For printing barcode labels*:* Code39, Code128, EAN13, text, QR Code*, Micro QR Code, DataMatrix, Aztec.

The device is connected via USB.

Thermal Printer (Z721S)



For printing test reports on thermal paper (accessory Z722S).

The device is connected via USB.

SCANBASE RFID (Z751E) (RFID reader/writer)



Compact device for reading and writing RFID tags (13.56 MHz transponder in accordance with ISO 15693).

The device is connected via USB.

CEE Adapter for Testing Single and 3-Phase Electrical Devices (Z745A)

The Z745A CEE adapter allows for quick and efficient testing of devices equipped with a CEE plug. The adapter is equipped with the following CEE attachment outlets: 5-pole 16 A, 5-pole 32 A and 3-pole 16 A. Furthermore, the adapter includes five 4 mm safety sockets to which 3-phase devices without permanently attached plug or conventional measurement cables can be connected, e.g. by means of quick clamp terminals (not included).

The following tests can be performed on devices with CEE plugs with the help of the adapter:

- Protective conductor continuity test
- Insulation resistance, alternative leakage current (equivalent leakage current)
- Function test (3-pole CEE outlet only)

The Z745A CEE adapter may also be used as an adapter for connecting devices with 3-pole CEE plugs to common earthing contact outlets.

VL2 E (Z745W) / VL2 E CH (Z744B)

Test adapter with single and 3-phase plug connectors up to CEE 32A for the performance of measurements and tests at electrical devices and extension cords with CEE plug connectors.



AT16-DI (Z750A) 3-phase 16 A differential current adapter

Devices which are equipped with a 5-pole, 16 A / 6 h CEE plug can be quickly and efficiently tested with the AT16-DI CEE adapter.



The following tests can be performed on devices with CEE plugs with the help of the AT16-DI CEE adapter:

- Protective conductor continuity test
- Insulation resistance, alternative method
- Measuring the protective conductor current using: direct method / differential current method
- Measuring the device leakage current using: direct method (The differential current method is not supported with the AT16-DI – use our “AT3” adapter series for this purpose.)
- Measuring the touch current
- Function test

This active test adapter is also available in a variant with a 5-pole 32 A / 6 h CEE plug with the designation AT32-DI.

AT3-III-E (Z745S) / AT3-III-CH phase current adapter (Z744A)

Test adapter for active and passive testing of single and three-phase electrical devices and extension cords in conjunction with the test instrument.



Operation is simple and safe. The test adapter is connected to a 3-phase 16 A mains outlet, and to the respective test instrument. Testing is performed without reversing polarity at the device under test, either automatically or manually, and is controlled by the test sequence of the utilized test instrument. Safety shutdown occurs if the default residual current value is exceeded.

The following tests can be performed:

- Protective conductor continuity test
- Insulation resistance
- Measuring the protective conductor current using: direct method / differential current method / alternative method
- Measuring the device leakage current with the following method: direct method / differential current method / alternative method
- Measuring the touch current
- Function test
- Testing of single and 3-phase extension cords

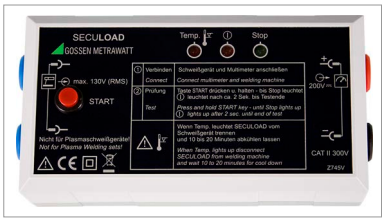
EL1 Adapter for Testing Single-Phase Extension Cords (Z723A)



HV Test Pistol for M7050 (Z746H) (only for SECUTEST ST PRIME with feature F02)



SECULOAD-N Test Adapter (Z745R)



Test adapter for testing open-circuit voltage at welding units per IEC 60974-4 / EN 60974-4 / VDE 0544-4.

In combination with a test instrument, the test adapter is used for testing welding units per IEC 60974-4 / EN 60974-4 / VDE 0544-4. The standards stipulate that peak values for open-circuit voltage may not exceed the limit values, regardless of the utilized settings.

A test sequence for testing welding units with the help of this adapter is integrated into the test instrument.

The peak-value rectifier in the SECULOAD-N uses the 1N4007 rectifier diode recommended in the standard. This is a mains rectifier diode which, due to its design, is only suitable for voltage sources with low cycle rates within the range of the line frequency, or for voltage sources with conventional transformer.

SECU-cal 10 Calibration Adapter (Z715A)



The calibration adapter is used for testing the measuring uncertainty of test instruments in accordance with DIN EN 61557-16 / VDE 0413-16 (previously DIN VDE 0404). As a rule, these instruments must be tested once each year, as well as for certification in accordance with the ISO 9000 quality standard, as set forth by DGUV accident prevention regulation 3.

All limit values for the required tests per DIN VDE such as protective conductor resistance, insulation resistance, equivalent leakage current, differential and/or touch as well as housing leakage current, must be tested.

SORTIMO L-BOXX (Z503D)

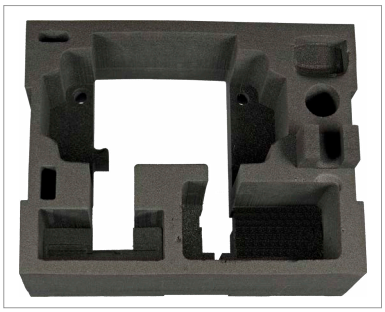


(not for SECUTEST ST PRIME)

Plastic system case, outside dimensions:
W × H × D:
450 × 255 × 355 mm

Z701D foam insert for test instrument and accessories must be ordered separately (see below).

Foam Insert for SORTIMO L-BOXX (Z701D)



(not for SECUTEST ST PRIME)

Foam insert for test instrument and accessories.

F2030 System Soft-Case (Z700H)

(not for SECUTEST ST PRIME)



Outside dimensions:
W × H × D:
393 × 275 × 248 mm
(without handle and carrying strap)

F2000 Universal Carrying Pouch (Z700D)



Outside dimensions:
W × H × D:
380 × 310 × 200 mm
(without buckles, handle or carrying strap)

F2010 Universal Carrying Pouch (Z700G)

(not for SECUTEST ST PRIME)





Outside dimensions: W × H × D: 380 × 230 × 270 mm (without carrying strap)

F2020 Universal Carrying Pouch (Z700F)





Sample Content

Outside dimensions: W × H × D: 430 × 310 × 300 mm (without buckles, handle or carrying strap)

Further information regarding accessories can be found:

- our Measuring Instruments and Testers catalog
- On the Internet at www.gossenmetrawatt.de/en

Order Information

SECUTEST ST BASE, SECUTEST ST PRO, SECUTEST ST PRIME, SECULIFE ST BASE and **SECULIFE ST BASE25** test instruments are available with various features and accessories, and can be ideally matched to your requirements. When ordering you can select from amongst:

- A standard model (frequently selected combinations of basic instruments and features)
- An instrument set (instrument with features and accessories which are ideally matched to a specific application
- A customized variant (instrument with features you select yourself)

Accessories can of course be purchased individually along with your instrument or at a later point in time.

Standard Models

Standard Models	Article Number	Features
SECUTEST ST BASE	M707A	Schuko variant (test socket and mains plug), selectable user interface language (default setting: German), protective conductor test current: 200 mA
SECUTEST ST PRO	M707B	Same as M707A but with 10 A protective conductor test current, with touchscreen, voltage measuring inputs, connection for 2nd test probe and SECUTEST DB+ database expansion
SECUTEST ST PRO BT comfort	M707C	Same as M707B but with Bluetooth® port and SECUTEST DB COMFORT database expansion
SECUTEST ST PRIME	M707H	Schuko variant (test socket and mains plug), selectable user interface language (default setting: German), protective conductor test current: 200 mA and 25 A AC, high-voltage test between LN test socket and PE test socket / probe P1. SECUTEST DB+ database expansion. Test sequences prepared for IEC 61010 and IEC 60335.
Included with each instrument: Mains power cable, test probe, USB cable, plug-on alligator clip, KS17-ONE cable set for voltage measuring inputs (only with SECUTEST ST PRO and SECULIFE ST BASE(25)), condensed operating instructions in printed format (complete operating instructions available for download from Internet), DAkkS calibration certificate in German, English and French, **IZYTRONIQ BUSINESS Starter** database and report generating software for PC (with Professional version) (as registration card for access to download from the Internet)		

Instrument Sets

Instrument Sets		STARTER PACKAGE	PRO PACKAGE	COMFORT PACKAGE	WELDER's/ 3-PHASE CURRENT PACKAGE	
	Article Number →	M708A	M708B	M708C	M708D	
SECUTEST ST BASE	SECUTEST variant	■				
SECUTEST ST PRO	SECUTEST variant		■		■	
SECUTEST ST PRO BT COMFORT	SECUTEST variant			■		
Accessories						**Article Number**
IZYTRONIQ BUSINESS ADVANCED		■				
IZYTRONIQ BUSINESS PROFESSIONAL			■	■	■	
SORTIMO L-BOXX	Plastic system case	■	■	■	2 × ■	Z503D
Foam SORTIMO L-BOXX Secutest4	Foam insert for SORTIMO L-BOXX with compartments for test instrument and accessories	■	■	■	■	Z701D
FOAM SORTIMO L-BOXX Adapter	Foam insert for SORTIMO L-BOXX with compartment for adapter				■	Z701E
EL1	Adapter for testing single-phase extension cords	■	■	■	■	Z723A
Brush probe	Probe for measuring protective conductor resistance, e.g. at rotating devices under test	■	□	□	□	Z745G
SECULOAD N	Test adapter for testing welding units in accordance with IEC 60974-4 / EN 60974-4 / VDE 0544-4	□	□	□	■	Z745R
AT16-DI	3-phase 16 A differential current adapter	□	□	□	■	Z750A
PC2	Probe with test tip and 2 m probe cable	□	■	■	■	Z745D
Adapter cable CEE16/CEE32	Adapter cable, red CEE 5-pole 16 A plug to red CEE 5-pole 32 A coupling	□	□	□	■	Z750F
Barcode reader	Barcode reader for 1 and 2D codes (e.g. barcodes and QR codes), with USB connection	□	■	■	■	Z751A
		Key: ■ included, □ optional				

Features List for Freely Configured Instruments (customer-specific)

Basic Instrument Article Number			M7050					
Device Variants			SECUTEST ST BASE (M7050 AA06	SECUTEST ST BASE10 (M7050 AA07	SECUTEST ST PRO (M7050 AA08	SECUTEST ST PRIME (M7050 AA09	SECULIFE ST BASE (M7050 A01	SECULIFE ST BASE 25 (M7050 A01
		Variant →	AA06	AA07	AA08	AA09	AA11	AA12
		Feature ↓						
Connections – country-specific mains plug and test socket								
	Germany with detection of connection and protection class	B00	■	■	■	■	■	■
	UK	B01	▷	▷	▷	▷	▷	▷
	FR/CZ/PL	B03	▷	▷	▷	▷	▷	▷
	China	B04	▷	▷	▷	▷	▷	▷
	USA	B05	▷	▷	▷	▷	▷	▷
	AUS	B06	▷	▷	▷	▷	▷	▷
	DK	B07	▷	▷	▷	▷	▷	▷
	CH with detection of connection and protection category	B09	▷	▷	▷	▷	▷	▷
	Universal adapter for test socket, Germany (B00) (for DUTs with different country-specific plugs)	B11	□	□	□	□	□	□
User interface language (default language which can be subsequently changed to any of the other languages listed below)								
	German	C00	■	■	■	■	■	■
	English	C01	▷	▷	▷	▷	▷	▷
	French	C02	▷	▷	▷	▷	▷	▷
	Italian	C03	▷	▷	▷	▷	▷	▷
	Spanish	C04	▷	▷	▷	▷	▷	▷
	Czech	C05	▷	▷	▷	▷	▷	▷
	Dutch	C06	▷	▷	▷	▷	▷	▷
	Polish	C07	▷	▷	▷	▷	▷	▷
	Portuguese	C12	▷	▷	▷	▷	▷	▷
Data entry via touchscreen								
	None	E00	■	■		■		
	Included	E01	□	□	■	□	■	■
High-voltage test								
	HV test, LN–PE/P1	F01				■		
	HV test, LN–PE/P1 and PHV–P1	F02				□		
R-PE test current for protective conductor measurement								
	200 mA	G00	■					
	200 mA and 10 A [1] (not in combination with G02)	G01		■	■	□	■	
	200 mA and 25 A	G02	□			■		■
Connection for 2nd test probe								
	None	H00	■	■		■		
	Included	H01			■	□	■	■
DVM function (digital voltmeter) with 2 additional measuring inputs, COM–V								
	None	I00	■	■		■		
	Included	I01			■	□	■	■
Jacks for applied parts								
	None	J00	■	■	■	■	■	■
	Included	J01						

Basic Instrument Article Number			M7050					
Device Variants			SECUTEST ST BASE (M7050 AA06	SECUTEST ST BASE10 (M7050 AA07	SECUTEST ST PRO (M7050 AA08	SECUTEST ST PRIME (M7050 AA09	SECULIFE ST BASE (M7050 A01	SECULIFE ST BASE 25 (M7050 A01
		Variant →	AA06	AA07	AA08	AA09	AA11	AA12
		Feature ↓						
Additional test sequences								
	None	KA00	■	■	■		■	■
	IEC 61010 / IEC 60335 [2]	KA02				■		
SECUTEST DB+ database expansion (corresponds to Z853R)								
	None	KB00	■	■				
	Included	KB01	□	□	■	■	■	■
SECUTEST DB COMFORT database expansion (corresponds to Z853S)								
	None	KD00	■	■	■	■	■	
	Included	KD01	□	□	□	□	□	■
Bluetooth®								
	None	M00	■	■	■	■	■	■
	Included	M01	□	□	□	□	□	□
DAkkS calibration certificate (language combinations)								
	In D/GB/F	P00	■	■	■	■	■	■
	In D/GB/PL	P01	▷	▷	▷	▷	▷	▷
	In D/GB/IT	P02	▷	▷	▷	▷	▷	▷

Key: ■ default, □ optional, ▷ alternative

[1] 10/25 A R_{PE} measurements are only possible with line voltages of 115/230 V and line frequencies of 50/60 Hz.
[2] Instrument is prepared for test sequences in accordance with IEC 61010 / IEC 60335

Sample Order

SECUTEST ST PRIME with English user interface =
M7050 AA09 C01 G02 F01

AA09: Instrument variant SECUTEST ST PRIME;
C01: English user interface, keyboard layout and test sequences
G02: R-PE test current for protective conductor measurement: 200 mA and 25 AC
F01: with HV DC test

Accessories

Designation	Type	Article Number
Mains cable		
Cable set for connecting test instruments to the mains without using a an earthing contact outlet, and for connecting DUTs. Consists of coupling socket with 3 permanently connected cables, 3 measurement cables, 3 plug-on pick-up clips and 2 plug-on test probes.	KS13	GTY3624065P01
Adapter for Testing 3-Phase Current Consumers		
Adapter for connecting DUTs: 3-pole 16 A, 5-pole 16 A + 32 A, 5 ea. 4 mm socket – For all tests without mains voltage For single and 3-phase electrical devices – For leakage current measurement, direct or differential current method	CEE adapter	Z745A
16 A/32 A 3-phase current adapter (test case) – For all tests with and without mains voltage For single and 3-phase electrical devices – For tests at single and 3-phase extension cords – For leakage current measurement, direct method – For leakage current measurements according to the differential current method [1]	AT3-III-E [2] AT3-III-CH [2]	Z745S Z744A
Test adapter for testing devices with CEE16 and CEE32 connectors (max. load capacity: 20 A)	AT3-II S [1] [2]	Z745T
Test adapter for testing devices with CEE16 and CEE32 connectors (max. load capacity: 32 A)	AT3-II S32 [1] [2]	Z745X
3-phase 16 A differential current adapter	AT16-DI	Z750A
3-phase 32 A differential current adapter	AT32-DI	Z750B

Designation	Type	Article Number
Test adapter with single and 3-phase plug connectors up to CEE 32A – For all tests without mains voltage For single and 3-phase electrical devices – For tests at single and 3-phase extension cords	VL2E VL2E CH	Z745W Z744B
Adapter cable, red CEE 5-pole 16 A plug to red CEE 5-pole 32 A coupling, 0.5 m, 5 × 1.5 mm²	CEE16/CEE32 adapter cable	Z750F
Adapter for Testing Single-Phase Extension Cords		
Adapter for testing single-phase extension cords including earth contact and inlet plug inserts	EL1	Z723A
Plug insert for using the EL1 adapter in Switzerland	PRO-CH	GTZ3225000R0001
Adapter for Testing Welding Units		
Test adapter in combination with SECUTEST ST ... for testing welding units in accordance with IEC 60974-4 / EN 60974-4 / VDE 0544-4. The peak-value rectifier in the SECULOAD-N uses the 1N4007 rectifier diode recommended in the standard. This is a mains rectifier diode which, due to its design, is only suitable for voltage sources with low cycle rates within the range of the line frequency, or for voltage sources with conventional transformer. Includes 4 measurement cables and 2 alligator clips.	SECULOAD-N	Z745R
Calibration Adapter		
Calibration adapter for test instruments per DIN EN 61557-16 / VDE 0413-16 (previously DIN VDE 0404) (max. 200 mA) **not for use with 10 A/ 25 A protective conductor test current**	SECU-cal 10	Z715A

Designation	Type	Article Number
Probe Cables		
Probe cable with test probe and 2 m probe cable (not coiled), 300 V CAT II 16 A	PC2	Z745D
Probe cable with test probe and 2 m probe cable (coiled), 300 V CAT II 16 A	SK2W	Z745N
5 m probe cable for protective conductor measurement, 300 V CAT II up to 25 A	SK5-25A	Z746C
Probe with test tip and 15 m probe cable (not coiled), 300 V CAT II up to 25 A (suitable for 10 A test current / devices with feature G01)	SK15-25A	Z746D
Probe cable with test probe and 2 m probe cable (not coiled), 300 V CAT II 25 A (suitable for 25 A test current / devices with feature G02)	SK2-25A	Z746E
Brush probe	Z745G	Z745G
Distributor for connecting five 4 mm and five 2 mm test probes for measuring multiple, accessible housing parts or applied parts	SV5	Z745J
Cable set (1 pair of measurement cables) 1.2 m, with VDE-GS mark, 600 V CAT IV 1 A *, 1000 V CAT III 1 A * 1000 V CAT II 16 A ** * With plugged on safety caps ** Without plugged on safety caps	KS17-2	GTY3620034P0002
2 pieces in a plastic bag, diameter: 4 mm, length: 1.0 m, 1000 V CAT III, 19 A, blue	Measuring cable set, blue	Z746A
2 pieces in a plastic bag, diameter: 4 mm, length: 1.0 m, 1000 V CAT III, 19 A, black/red	Measuring cable set, black/red	Z746B
Current clamp sensors for SECUTEST ST PRO/SECULIFE ST BASE(25)		
Switchable current clamp sensor, 1 mA … 15 A and 1 A … 150 A, frequency range: 45 …65 … 500 Hz, transformation ratio: 1 mV/mA and 1 mV/A, clamp opening : ∅ max. cable dia. 15 mm	WZ12C [2]	Z219C
Leakage current clamp meter (current clamp sensor) for SECUTEST ST PRO 0.1 mA … 25 mA AC Frequency range: 50 Hz … 1 MHz, transformation ratio: 100 mV / mA, Clamp opening:: ∅ max. cable dia. 40 mm	SECUTEST CLIP [2]	Z745H
Test pistol for SECUTEST ST PRIME [3]		
HV test pistol for M7050	PHV	Z746H
Temperature sensors for SECUTEST ST PRO/SECULIFE ST BASE(25)		
Temperature sensor Pt100, –40 … +500 °C for surface and immersion measurements	Z3409	GTZ3409000R0001
Pt1000 temperature sensor, class B, for measurement in gases and liquids, -50 … +220 °C	TF220	Z102A
Oven sensor Pt100, –50 … +550 °C	TF550	GTZ3408000R0001
Dip-stick oil temperature sensor, Pt1000 class B, –50 … +500 °C, sensor 3 mm ∅ × 810 mm long	TF400CAR	Z102C
Pouches and Cases		
Carrying pouch for test instrument	F2000 [2]	Z700D
Large carrying pouch for test instrument sets	F2020	Z700F
Universal carrying pouch with flexible compartments and display guard for test instrument (not for SECUTEST ST PRIME)	F2010	Z700G
System soft-case (not for SECUTEST ST PRIME)	F2030	Z700H
Plastic system case (not for SECUTEST ST PRIME)	SORTIMO L-BOXX	Z503D
Foam insert for SORTIMO L-BOXX with compartments for test instrument and accessories (not for SECUTEST ST PRIME)	Foam SORTIMO L-BOXX Secutest4	Z701D
Foam insert for SORTIMO L-BOXX GM with compartment for adapter	Foam SORTIMO L-BOXX adapter	Z701E

Designation	Type	Article Number
Data Storage Accessories		
Database expansion: Remote control, 24 user-defined test sequences, additional database elements, individual test interval, multi-print, user-defined report templates, data import/export	SECUTEST DB+	Z853R [4]
Database expansion: Medical test object, individual test interval, Touch-Edit, move test objects, QuickEdit, auto-store, push-print – sends data directly to the PC (IZYTRONIQ).	SECUTEST DB COMFORT	Z853S [4]
Report Generating Accessories		
RFID system		
RFID reader/writer for USB connection (frequency: 13.56 MHz)	SCANBASE RFID	Z751E
RFID tag per ISO 15693, dia. approx. 22 mm, self-adhesive, 500 pcs.	Z751R	Z751R
RFID tags per ISO 15693, dia. approx. 30 mm, 2 mm thick with hole, dia. 3 mm, 500 pcs.	Z751S	Z751S
RFID tag per ISO 15693, pigeon ring, dia. approx. 7.5 mm, 250 pcs.	Z751T	Z751T
Barcode Scanner		
Barcode scanner for USB connection	Z751A	Z751A
Barcode Printer		
Barcode and label printer including software with USB connection for PC or test instrument Encryption: Code39, Code128, EAN13, Text, QR Code, Micro QR Code, DataMatrix, Aztec	Z721E	Z721E
Label set for Z721D barcode and label printer (qty. × width: 3 × 24 / 1 × 18 / 1 × 9 mm, each 8 m long)	Z722D	Z722D
Label set for Z721D barcode and label printer (qty. × width: 5 × 18 mm, 8 m long)	Z722E	Z722E
Thermal Printer		
Thermal printer for printing test reports including user manual on CD-ROM, lithium battery, power pack and mains cable, USB cable, 1 roll of thermal paper	Z721S	Z721S
Thermal paper for Z721S, 10 rolls of thermal paper, 12/50 mm dia., 30 m × 112 mm, coating on outside	Z722S [2]	Z722S
See also separate ID systems data sheet for RFID scanner, barcode reader and printer		

[1] only with feature I01(e.g. SECUTEST ST PRO and SECULIFE ST BASE)
[2] Data sheet available
[3] only with feature F02
[4] The test instrument's serial number must be included with the order.

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