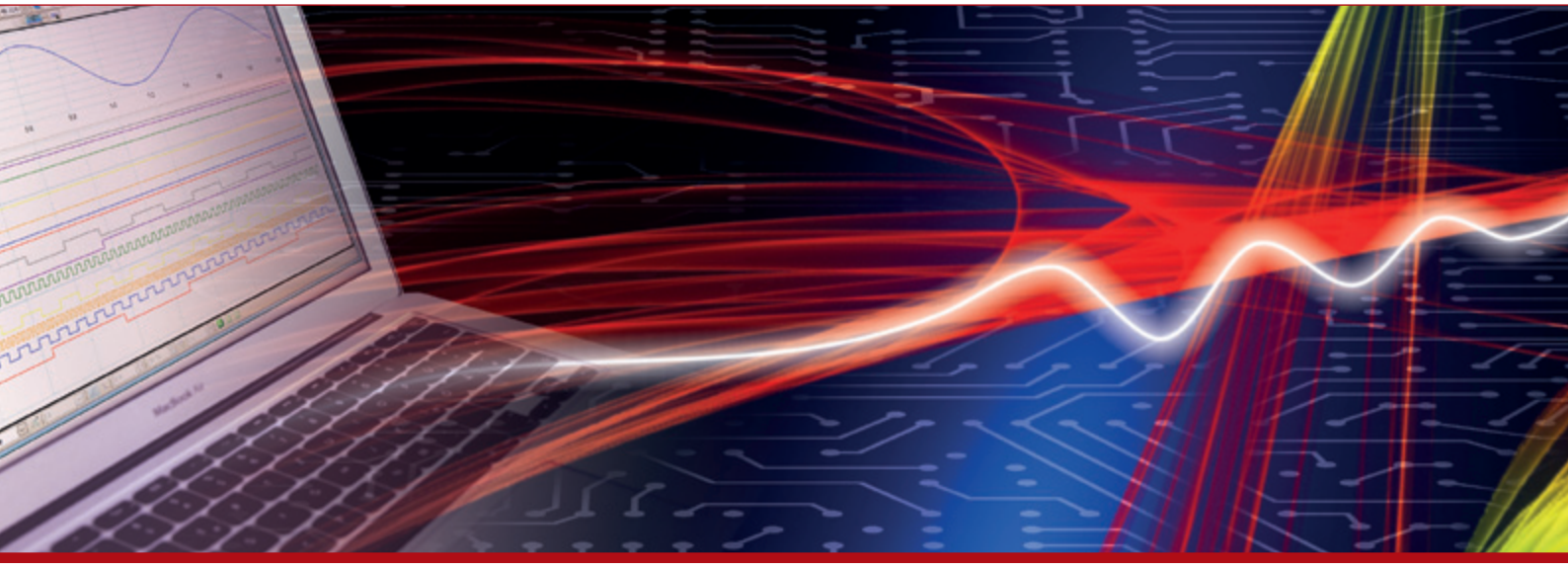
# Product Datasheet - Technical Specifications



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GOSSEN METRAWATT

# SECUTEST ST BASE(10) / PRO and SECULIFE ST BASE(25)

## Test Instruments for Measuring the Electrical Safety of Devices

3-447-080-03
3/5.22

- Integrated test sequences for quickly testing operating equipment (preconfigured standards-compliant series of individual tests with subsequent documentation)
- Suitable for use by trained persons
- 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 devices 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
- Extensive setting options for international use (language, keyboard, character set, date, time)


IQ Optimized for IZYTRONIQ

product design award 2014

i-NOVO AWARDS 2015 DESIGN

MADE IN GERMANY

ilac-MRA

DAkkS Deutsche Akkreditierungsstelle D-K-15080-01-01

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) which are available for a device under test by pressing just one key
- Create user-defined **report templates** and manage them in the test instrument, including company logo
- **Export** all data (master data and measured value) as a file to a USB flash drive
- **Import** all test object master data (no measured values) to the test instrument from IZYTRONIQ, or from a USB flash drive

## SECUTEST DB COMFORT database expansion (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** – send data directly to the PC (IZYTRONIQ) (data are not stored at the instrument).

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

# SECUTEST ST BASE(10) / PRO and SECULIFE ST BASE(25)
# Test Instruments for Measuring the Electrical Safety of Devices

## Included Features

### Measuring Functions

| Switch Position | Measuring Function<br>Test Current/Voltage | | Meas. Type, Connection Type |
|---|---|---|---|
| **Single measurements,** *rotary switch level: green* | | | |
| **RPE** | $R_{PE}$ | **Protective conductor resistance** | PE(TS) - P1 passive<br>PE(TS) - P1 active<br>PE(mains) - P1<br>PE(mains) - P1 clamp [2]<br>P1 - P2 [3] |
| | I | Test current (200 mA)<br>**SECUTEST ST BASE10/PRO**<br>& SECULIFE ST BASE: 10 A [1] (feature G01)<br>& SECULIFE ST BASE25: 25 A [1] (feature G02) | |
| **RINS** | $R_{INS}$ | **Insulation resistance (**PC I/PC II) | LN(TS) - PE(TS)<br>LN(TS) - P1<br>P1 - P2 [3]<br>PE(mains) - P1<br>PE(TS) - P1<br>LN(TS) - P1//PE(TS) |
| | $U_{INS}$ | Test voltage | |
| **IPE** | $I_{PE\simeq}$ | **Protective conductor current, RMS** | Direct<br>Differential<br>Alternative<br>AT3-Adapter [2]<br>Clamp [2] |
| | $I_{PE\sim}$ | AC component | |
| | $I_{PE=}$ | DC component | |
| | $U_{LN}$ | Test voltage | |
| **IT** | $I_{T\simeq}$ | **Touch current, RMS** | Direct<br>Differential<br>Alternative (P1)<br>Permanent conn.<br>Alternative (P1–P2) |
| | $I_{T\sim}$ | AC component | |
| | $I_{T=}$ | DC component | |
| | $U_{LN}$ | Test voltage | |
| **IE** | $I_{E\simeq}$ | **Device leakage current, RMS** | Direct<br>Differential<br>Alternative<br>AT3-Adapter [2]<br>Clamp [2] |
| | $I_{G\sim}$ | AC component | |
| | $I_{E=}$ | DC component | |
| | $U_{LN}$ | Test voltage | |
| **IA** | $I_{A\simeq}$ | **Leakage current from the applied part, RMS** | Direct (P1)<br>Alternative (P1)<br>Perm. conn. (P1) |
| | $U_A$ | Test voltage | |
| **IP** | $I_{P\simeq}$ | **Patient leakage current, RMS** | Direct (P1)<br>Perm. conn. (P1) |
| | $I_{P\sim}$ | AC component | |
| | $I_{P=}$ | DC component | |
| | $U_{LN}$ | Test voltage | |
| **U** | $U_{\simeq}$ | **Probe voltage, TRMS** | PE - P1<br>PE - P1 (with mains*)<br>* Polarity setting |
| | $U_{\sim}$ | Alternating voltage component | |
| | $U_{=}$ | Direct voltage component | |
| | $U_{\simeq}$ | **Measuring voltage, TRMS** [2] | V – COM<br>V – COM (with mains) |
| | $U_{\sim}$ | Alternating voltage component [2] | |
| | $U_{=}$ | Direct voltage component [2] | |
| **tPRCD** [4] | ta | 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** | Extension cord with adapter:<br>continuity, short-circuit, polarity (reversed wires [5]) | | EL1 adapter<br>EL1 adapter (continuity only)<br>AT3-IIIE adapter<br>VL2E adapter |
| **EXTRA** | Reserved for extensions within the framework of software updates | | |
| | °C | Temperature measurement [2] with Pt100/Pt1000 | V – COM |
| | IZ | Current clamp measurement with current clamp sensor | V – COM |

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

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

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

[5] No checking for reversed wires takes place 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 |
| 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:

- VDE 0701-0702 / ÖVE E 8701 / SNR 462638
  IInspection after repair, modification of electrical appliances – Periodic inspection on electrical appliances
- IEC 62353 / EN 62353 / VDE 0751-1
  Medical electrical equipment –
  Recurrent test and test after repair of medical electrical equipment
- 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
- EN 50678 / VDE 0701
  General procedure for verifying the effectiveness of the protective measures of electrical equipment after repair
- EN 50699 / VDE 0702
  Recurrent Test of Electrical Equipment
- 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 Analysis

Line voltage and frequency are measured and compared with the data specified in the setup menu. Momentary voltage or nominal voltage in accordance with the standard is required, for instance in order to calculate 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 [2] | 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 [1] |
| Test for IT/TN system | Display | Connection N → PE > 20 kΩ | Possible under certain circumstances |

[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] If the user of the test instrument is too well insulated, the following error message may appear: "Interference voltage at PE"

## 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 |
|---|---|---|
| **Short-circuit testL–N** | 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 $I_K$ < 250 mA | | |
| **Short-circuit testLN–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 $I_K$ < 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 $I_K$ < 1.5 mA | | |
| Switchable control | 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 [1]) | | |
| | 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 values | For leakage current measurement | > 30 mA [2] |
| | During protective conductor resistance measurement | > 250 mA |

| Test Function | | Condition |
|---|---|---|
| **Connection test** (only with country specific variant [1]) | | |
| 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, $I_K$ < 2 mA | | |
| **Overcurrent protection** | | |
| Shutdown in the event of a continuous flow of current via the test socket at:Our SECUTEST ST BASE10/**PRO** and SECULIFE ST BASE(25) test instruments permit active testing of devices 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] Applies to M7050 with feature B00, B09
[2] 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 BASE10 | SECUTEST ST PRO | SECULIFE ST BASE | SECULIFE ST BASE25 |
|---|---|---|---|---|---|---|
| **Touchscreen / keyboard** | E01 | | | • | • | • |
| **10 A RPE test current** | G01 | | • | • | • | |
| **25 A RPE test current** | G02 | | | | | • |
| **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 / EN62911/ VDE 868-911** | KE | • | • | • | • | • |
| **SECUTEST DB+** | KB01 | o | o | • | • | • |
| **SECUTEST DB COMFORT** | KD01 | o | o | o | o | • |
| **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, o Optional

Detailed information regarding features and accessories can be found under "Order Information" on page 12.

### 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”.

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

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 device logbooks for electrical DUTs (e.g. per ZVEH) can be measured and stored with 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 12). 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.gmc-instruments.de/en/products/software-and-accessories/software/

### Display with Selectable Language

The display panel consists of a backlit, color multi-display at which menus, setting options, measurement results, instructions and error messages, as well 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 displayed softkey keyboard 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 thus be transmitted to IZYTRONIQ and the push-print function can be used.

### Updates

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

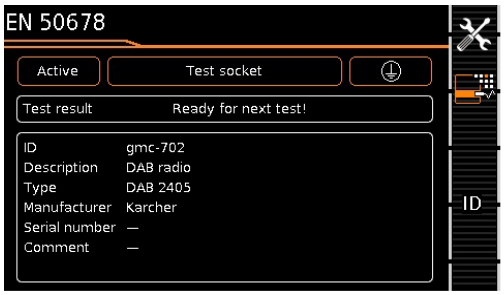
## Scope of Delivery

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 12.

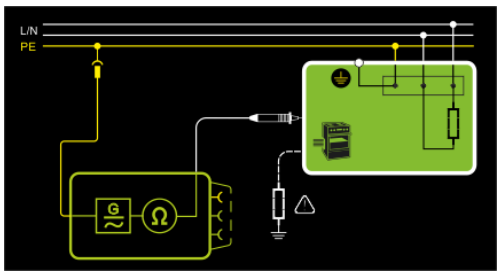
## Backlit Multi-Display Samples

*Single Test – Initial Screen with Parameters Display*

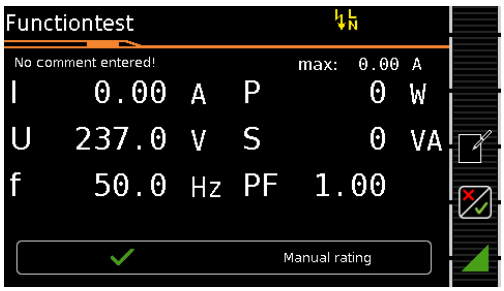

*Test Sequence – Start (EN 50678 / VDE 0701)*



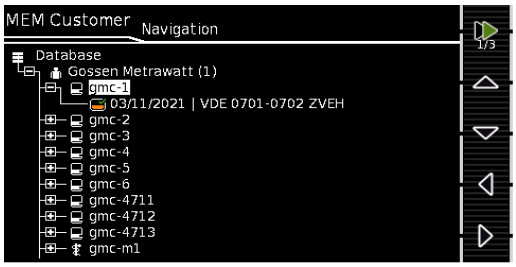

*Help – Schematic and Wiring Diagram*



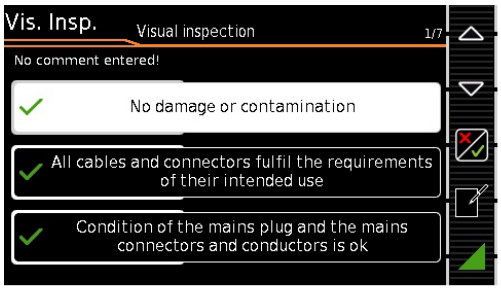

*Test Sequence – Function Test*



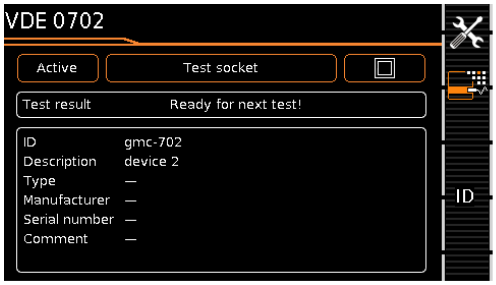

*Database Structure – Customer List*



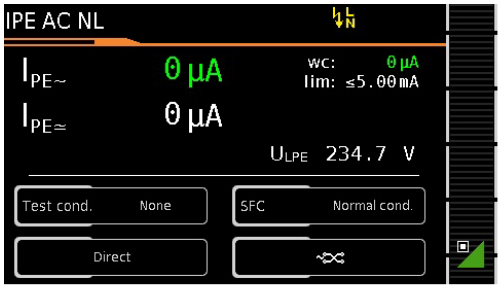

*Test Sequence – Visual Inspection*



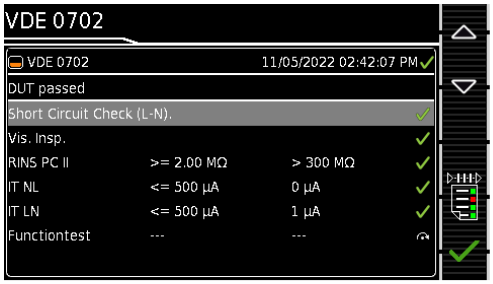

*Test Sequence – Start (EN 50699 / VDE 0702)*



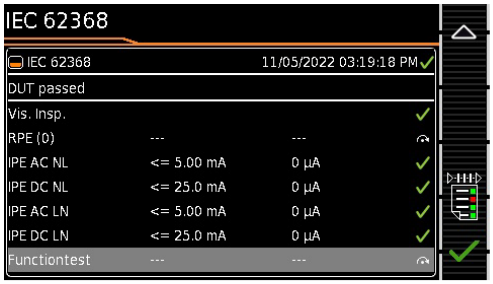

*Test Sequence – IPE Measurement (IEC 62368 / EN 62368 / VDE 0868-1)*




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




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



# SECU**TEST ST** BASE(10) / PRO and SECU**LIFE ST** BASE(25)
# Test Instruments for Measuring the Electrical Safety of Devices

## Characteristic Values

| Function | Measured Quantity | Display Range/ Nominal Range of Use | Resolution | Nominal Voltage $U_N$ | Open-Circuit Voltage $U_0$ | Nom. Current $I_N$ | Short-Circuit Current $I_{SC}$ | Internal Resistance $R_I$ | Reference Resistance $R_{REF}$ | Measuring Uncertainty | Intrinsic Uncertainty | Overload Capacity Value | Overload Capacity Time |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tests | Protective conductor resistance **RPE** | 1 … 999 mΩ | 1 mΩ | — | < 24 V AC or DC | — | > 200 mA AC / DC > 10 A AC [5] > 35 A AC [11] | — | — | ±(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 [5] | Cont. |
| | | 1.00 ... 9.99 Ω | 10 mΩ | | | | | | | | | | |
| | | 10.0 … 27.0 Ω | 100 mΩ | | | | | | | | | > 42 A AC [11] | 15 s |
| | Insulation resistance [9] **RINS** | 10 … 999 kΩ | 1 kΩ | 50 … 500 V DC | 1.0 • $U_N$ … 1.5 • $U_N$ | > 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 … 9.99 MΩ | 10 kΩ | | | | | | | | | | |
| | | 10.0 … 99.9 MΩ | 100 kΩ | | | | | | | | | | |
| | | 100 … 300 MΩ | 1 MΩ | | | | | | | | | | |
| | Leakage current, alternative measurement [2] **IPE, IT, IE, IA** | 0 ... 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 ... 999 µA | 1 µA | | | | | | | | | | |
| | | 1.00 ... 9.99 mA | 10 µA | | | | | | | | | | |
| | | 10.0 ... 30.0 mA | 100 µA | | | | | | | | | | |
| | Leakage current, direct measurement [3] **IPE, IT, IE, IA, IP** | Ip only: 0.0 ... 99.9 µA | 100 nA | — | — | — | — | 1 kΩ ±10 Ω | 1 kΩ | ±(5% rdg.+ 4 d) > 10 d | ±(2.5% rdg.+2 d) > 10 d | 264 V | Cont. |
| | | 0 ... 99 µA | 1 µA | | | | | | | | | | |
| | | 100 ... 999 µA | 1 µA | | | | | | | | | | |
| | | 1.00 ... 9.99 mA | 10 µA | | | | | | | | | | |
| | | 10.0 ... 30.0 mA | 100 µA | | | | | | | | | | |
| | Leakage current, differential current measurement [4] **IPE, IT, IG** | 0 ... 99 µA | 1 µA | — | — | — | — | — | — | ±(5% rdg.+ 4 d) > 10 d | ±(2.5% rdg.+2 d) > 10 d | 264 V | Cont. |
| | | 100 ... 999 µA | 1 µA | | | | | | | | | | |
| | | 1.00 ... 9.99 mA | 10 µA | | | | | | | | | | |
| | | 10.0 ... 30.0 mA | 100 µA | | | | | | | | | | |
| Function Test at the Test Socket | Line voltage $U_{L-N}$ [10] | 100.0 … 240.0 V~ | 0.1 V | — | — | — | — | — | — | — | ±(2% rdg.+2 d) | 264 V | Cont. |
| | Load current $I_L$ | 0 ... 16.00 A RMS | 10 mA | — | — | — | — | — | — | — | ±(2% rdg.+2 d) | 16 A | Cont. |
| | Active power P | 0 ... 3700 W | 1 W | — | — | — | — | — | — | — | ±(5% rdg.+10 d) > 20 d | 264 V | Cont. |
| | | | | | | | | | | | | 20 A | 10 min |
| | Apparent power S | 0 ... 4000 VA | 1 VA | Calculated value, $U_{L-N}$ • $I_V$ | | | | | | | ±(5% rdg.+10 d) > 20 d | 264 V | Cont. |
| | Power factor PF with sinusoidal waveform: cosφ | 0.00 ... 1.00 | 0.01 | Calculated value, P / S, display > 10 W | | | | | | | ±(10% rdg.+5 d) | 264 V | Cont. |
| | Line frequency f | 0 ... 420.0 Hz | 0.1 HZ | — | — | — | — | — | — | — | ±(2% rdg.+2 d) | 264 V | Cont. |
| t PRCD | Time to trip | 0.1 ... 999.0 ms | 0.1 ms | — | — | 30 mA | — | — | — | ±5 ms | — | 264 V | Cont. |
| Voltage Measurement | Probe voltage (probe P1 to PE) ⎓, ~ and ≂ | 0.0 ... 99.9 V | 100 mV | — | — | — | — | 3 MΩ | — | — | ±(2% rdg.+2 d) | 264 V | Cont. |
| | | 100 ... 264 V | | | | | | | | | | | |
| | Measuring voltage (V-COM sockets [6]) ⎓, ~ and ≂ | 0.0 ... 99.9 V | 1 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 ⎓, ~ and ≂ | |
| | | 100 ... 300 V | | | | | | | | | | | |
| $I_{Leakage}$ | Leakage current via AT3-IIIE adapter Z745S [6, 8] | 0.00 ... 0.99 mA ~ | 0.01 mA | — | — | — | — | — | — | — | ±(2% rdg.+2 d) > 10 d without adapter | 253 V | Cont. |
| | | 1.0 ... 9.9 mA ~ | 0.1 mA | | | | | | | | | | |
| | | 10 ... 20 mA ~ | 1 mA | | | | | | | | | | |
| Temp | Temperature, Pt100 sensor | – 200.0 ... +850.0 °C | 0.1 °C | — | < 20 V | | 1.1 mA | — | — | — | ±(2% rdg.+1 °C) | 10 V | Cont. |
| | Temperature, Pt1000 sensor | – 150.0 ... +850.0 °C | | | | | | | | | | | |

| Function | Measured Quantity | Display Range/ Nominal Range of Use | Resolution | Nominal Voltage $U_N$ | Open-Circuit Voltage $U_0$ | Nom. Current $I_N$ | Short-Circuit Current $I_{SC}$ | Internal Resistance $R_I$ | Reference Resistance $R_{REF}$ | Measuring Uncertainty | Intrinsic Uncertainty | Overload Capacity | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | Value | Time |
| $I_{Clamp}$ | Current via current clamp sensor [1 mV : 1 mA] (V-COM sockets [6, 7]) | 1 ... 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 ... 9.9 A ∼ | 0.1 A (100 mV) | | | | | | | | | | |
| | | 10 ... 300 A ∼ | 1 A (1 V) | | | | | | | | | | |
| | Current via current clamp sensor [10 mV : 1 mA] (V-COM sockets [6, 7]) | 0.1 ... 9.9 mA ∼ | 0.1 mA (1 mV) | — | — | — | — | — | — | — | | | |
| | | 10 ... 99 mA ∼ | 1 mA (10 mV) | | | | | | | | | | |
| | | 0.10 ... 0.99 A ∼ | 0.01 A (100 mV) | | | | | | | | | | |
| | | 1.0 ... 30.0 A ∼ | 0.1 A (1 V) | | | | | | | | | | |
| | Current via current clamp sensor [100 mV : 1 mA] (V-COM sockets [6, 7]) | 0.01 ... 0.99 mA ∼ | 0.01 mA (1 mV) | — | — | — | — | — | — | — | | | |
| | | 1.0 ... 9.9 mA ∼ | 0.1 mA (10 mV) | | | | | | | | | | |
| | | 10 ... 99 mA ∼ | 1 mA (100 mV) | | | | | | | | | | |
| | | 0.10 ... 3.00 A ∼ | 0.01 A (1 V) | | | | | | | | | | |
| | Current via current clamp sensor [1000 mV : 1 mA] (V-COM sockets [6, 7]) | 1 ... 99 µA ∼ | 1 µA (1 mV) | — | — | — | — | — | — | — | | | |
| | | 0.10 ... 0.99 mA ∼ | 0.01 mA (10 mV) | | | | | | | | | | |
| | | 1.0 ... 9.9 mA ∼ | 0.1 mA (100 mV) | | | | | | | | | | |
| | | 10 ... 300 mA ∼ | 1 mA (1 V) | | | | | | | | | | |

[2] Known as equivalent leakage current or equivalent patient leakage current from previous standards
[3] Protective conductor current, touch current, device leakage current, patient leakage current
[4] Protective conductor current, touch current, device leakage current
[5] Only with feature G01 (e.g. SECUTEST ST BASE10/SECUTEST ST PRO and SECULIFE ST BASE)
[6] Only with feature I01 (e.g. SECUTEST ST PRO and SECULIFE ST BASE)
[7] Measurement types IPE_clamp and IE_clamp
[8] Measurement types IPE_AT3 adapter and IE_AT3 adapter
[9] The upper range limit depends on the selected test voltage.
[10] Voltage at the test socket may be lower than measured line voltage due to components which limit inrush current.
[11] Only with feature G02, e.g. SECULIFE ST BASE25

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.

### 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.

### Influencing Quantities and Influence Error

| Influencing Quantity / Sphere of Influence | Designation per IEC 61557-16 | Influence Error ± … % rdg. |
|---|---|---|
| **Change of position** | E1 | — |
| **Change to test equipment supply voltage** | E2 | 2.5 |
| **Temperature fluctuation** | E3 | Specified influence error valid per 10 K temperature change |
| 0 ... 40 °C | | 2.5 |
| **Amount of current at DUT** | E4 | 2.5 |
| **Low frequency magnetic fields** | E5 | 2.5 |
| **DUT impedance** | E6 | 2.5 |
| **Capacitance during insulation measurement** | E7 | 2.5 |
| **Measured current waveform** | E8 | |
| 49 … 51 Hz | | 2 with capacitive load (for equivalent leakage current) |
| 45 … 100 Hz | | 1 (for touch current) |
| | | 2.5 for all other measuring ranges |

### 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 … 60% |
| Load resistors | Linear |

# SECUTEST ST BASE(10) / PRO and SECULIFE ST BASE(25)
# Test Instruments for Measuring the Electrical Safety of Devices

### 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

| | |
|---|---|
| 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<br>10 A test: Approx. 105 VA<br>25 A test: 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<br>(mains circuit / test socket to mains PE terminal, USB, finger contact, probe, test socket) |
| Measuring category | Designed for 300 V CAT II<br>(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,<br>can also be set to > 30 mA,<br>with following probe current during:<br>– Leakage current measurement:<br>> 30 mA[1]~/< 500 ms<br>– Protective conductor resistance measurement:<br>> 250 mA~/< 1 ms<br>in case of continuous current I > 16.5 A |
| Fuse links | Mains fuses: 2 ea. FF 500V/16A<br>Probe fuse: M 250V/250mA<br>10 A RPE test current (feature G01 only):<br>1 ea. FF 500 V/16 A |

[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**
Type 2 ea. USB master for data entry devices* with HID boot interface,
for USB flash drive for data backup,
for USB flash drive for saving reports as HTML files,
for printers*

* See the following page for compatible devices
** Remote control only with extension: "Remote Control via PC (IZYTRONIQ)" (included as standard feature with SECUTEST ST PRO and available with SECUTEST DB+ – Z853R or feature KB01).

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

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

### Mechanical Design

| | |
|---|---|
| Display | 4.3" multi-display (9.7 x 5.5 cm), backlit, 480 x 272 pixels at 24-bit color depth (true color) |
| Dimensions | W × H × D: 295 × 145 ×150 mm<br>Height with handle: 170 mm |
| Weight | SECUTEST ST BASE(10)/PRO: approx. 2.5 kg<br>SECULIFE ST BASE25: approx. 4.0 kg<br>(depending on test instrument version) |
| Protection | Housing: IP 40 (protection against ingress of solid foreign objects ≥ 1.0 mm diameter, no protection against ingress of water)<br>Test socket: IP 20 (protection against ingress of solid foreign objects ≥ 12.5 mm diameter, no protection against ingress of water) (per EN 60529)<br>SECULIFE ST BASE(25):<br>Housing with antimicrobial properties per JIS standard Z 2801 |

### Database

Number of data records 50000 (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<br>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 12.

### 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:

- Testing of protective conductor continuity
- 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) /

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:


- Testing of protective conductor continuity
- Insulation resistance, alternative leakage current (equivalent leakage current)
- Measurement of protective conductor resistance with the following methods: equivalent leakage current / residual current / direct
- Function test

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

# SECUTEST ST BASE(10) / PRO and SECULIFE ST BASE(25)
# Test Instruments for Measuring the Electrical Safety of Devices

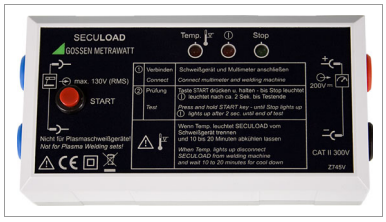
### AT3-III-E 3-Phase Current Adapter (Z745S)

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.

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

### SECULOAD-N Test Adapter (Z745R)



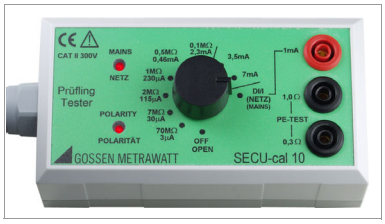

Test adapter for testing open-circuit voltage at welding units per IEC 60974-4 / EN 60974-4 / VDE 0544-4.

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. This standard stipulates 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.

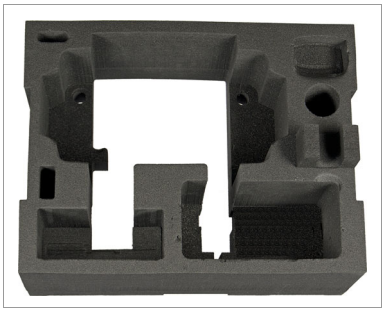
All limit values for the required tests per DIN VDE such as protective conductor resistance, insulation resistance, equivalent leakage current, differential and/or touch as well as housing leakage current, must be tested.

### SORTIMO L-BOXX (Z503D)


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)



Foam insert for test instrument and accessories.

### F2030 System Soft-Case (Z700H)

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)


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:

- In our Measuring Instruments and Testers catalog
- On the Internet at www.gossenmetrawatt.com

# SECUTEST ST BASE(10) / PRO and SECULIFE ST BASE(25)
# Test Instruments for Measuring the Electrical Safety of Devices

## Order Information

**SECUTEST ST BASE, SECUTEST ST PRO, 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 No. | 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 |
| **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)), travel adapter for international power supply, 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 (as registration card for access to download from the Internet) | | |

### Instrument Sets

| Type | Designation | | | | | Article No. |
|---|---|---|---|---|---|---|
| **Starter Package SECUTEST ST BASE** | See scope of delivery below. **Including IZYTRONIQ BUSINESS ADVANCED** | | | | | M708A |
| **PRO PACKAGE SECUTEST ST PRO** | See scope of delivery below. **Including IZYTRONIQ BUSINESS PROFESSIONAL** | | | | | M708B |
| **COMFORT PACKAGE SECUTEST PRO** | See scope of delivery below. **Including IZYTRONIQ BUSINESS PROFESSIONAL** | | | | | M708C |
| **WELDER's/ 3-PHASE CURRENT PACKAGE SECUTEST ST PRO** | See scope of delivery below. **Including IZYTRONIQ BUSINESS PROFESSIONAL** | | | | | M708D |
| | | | | | | |
| **Accessories** | For use with the following test packages: | **STARTER PACKAGE** | **PRO PACKAGE** | **COMFORT PACKAGE** | **WELDER's/ 3-PHASE CURRENT PACKAGE** | |
| **SECUTEST ST BASE** | SECUTEST variant | ■ | | | | |
| **SECUTEST ST PRO** | SECUTEST variant | | ■ | | ■ | |
| **SECUTEST ST PRO BT comfort** | SECUTEST variant | | | ■ | | |
| 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 | | | | |

* Including DB+ database expansion

## Order Features

| Basic Instrument Article Number | | | M7050 | | | | |
|---|---|---|---|---|---|---|---|
| Device Variants | | | SECUTEST ST BASE (M7050 AA06 E00 G00 H00 I00 J00 KB00 M00) | SECUTEST ST BASE10 (M7050 AA07 E00 G01 H00 I00 J00 KB00 M00) | SECUTEST ST PRO (M7050 AA08 E01 G01 H01 I01 J00 KB01 M00) | SECULIFE ST BASE (M7050 A01 AA11 E01 G01 H01 I01 J00 KB01 KC00 M00) | SECULIFE ST BASE 25 (M7050 A01 AA12 E01 G02 H01 I01 J00 KB01 KD01 M00) |
| | | Article No. → Feature ↓ | AA06 | AA07 | AA08 | AA11 | AA12 |
| **Connections – country-specific mains plug and test socket** | | | | | | | |
| | Germany with detection of connection and protection categories | B00 | ■ | ■ | ■ | ■ | ■ |
| | UK | B01 | ▷ | ▷ | ▷ | ▷ | ▷ |
| | FR/CZ/PL | B03 | ▷ | ▷ | ▷ | ▷ | ▷ |
| | China | B04 | ▷ | ▷ | ▷ | ▷ | ▷ |
| | USA | B05 | ▷ | ▷ | ▷ | ▷ | ▷ |
| | AUS | B06 | ▷ | ▷ | ▷ | ▷ | ▷ |
| | DK | B07 | ▷ | ▷ | ▷ | ▷ | ▷ |
| | IT | B08 | ▷ | ▷ | ▷ | ▷ | ▷ |
| | 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 | | | ■ | ■ | ■ |
| **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 measurement inputs, COM–V** | | | | | | | |
| | None | I00 | ■ | ■ | | | |
| | Included | I01 | | | ■ | ■ | ■ |
| **Jacks for applied parts** | | | | | | | |
| | None | J00 | ■ | ■ | ■ | ■ | ■ |
| **Additional test sequences** | | | | | | | |
| | None | KA00 | ■ | ■ | ■ | ■ | ■ |
| **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 | Fixed standard feature

[1] 10/25 A $R_{PE}$ measurements are only possible with line voltages of 115/230 V and line frequencies of 50/60 Hz.

### Sample Order

Sample order for a SECUTEST ST BASE10 with English user interface:
M7050 AA02 C01 G01

AA02: SECUTEST BASE10 device variant
C01: English user interface, keyboard layout and test sequences
G01: R-PE test current for protective conductor measurement: 200 mA and 10 A

## Accessories

| Designation | Type | Article No. |
|---|---|---|
| **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:<br>3-pole 16 A, 5-pole 16 A + 32 A,<br>5 ea. 4 mm socket<br>– For all tests without mains voltage<br>For single and 3-phase electrical devices<br>– For leakage current measurement,<br>direct or differential current method | CEE adapter | Z745A |
| 16 A/32 A 3-phase current adapter (test case)<br>– For all tests without mains voltage<br>For single and 3-phase electrical devices<br>– For tests at single and 3-phase extension cords<br>– For leakage current measurement, direct method<br>– For leakage current measurement, differential current method [1] | AT3-III-E [D] | Z745S |
| Test adapter for testing devices with CEE16 and CEE32 connectors (max. load capacity: 20 A) | AT3-IIS [D, 1] | Z745T |
| Test adapter for testing devices with CEE16 and CEE32 connectors<br>(max. load capacity: 32 A) | AT3-II S32 [D, 1] | Z745X |
| 3-phase 16 A differential current adapter | AT16-DI | Z750A |
| 3-phase 32 A differential current adapter | AT32-DI | Z750B |
| Test adapter with single and 3-phase plug connectors up to CEE 32A<br>– For all tests without mains voltage<br>For single and 3-phase electrical devices<br>– For tests at single and 3-phase extension cords | VL2E | Z745W |
| 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** | | |
| Leakage current clamp meter (current clamp) for SECUTEST ST PRO<br>0.1 mA … 25 mA AC<br>Frequency range: 50 Hz … 1 MHz,<br>transformation ratio: 100 mV / mA,<br>clamp opening: 40 mm max. cable dia. | SECUTEST CLIP | Z745H |
| 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.<br>The peak-value rectifier in the SECULOAD-N uses the 1N4007 rectifier diode recommended in the standard.<br>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.<br>Includes 4 measurement cables and 2 alligator clips. | SECULOAD-N | Z745R |

| Designation | Type | Article No. |
|---|---|---|
| **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 protective conductor test current** | SECU-cal 10 | Z715A |
| **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 16 A | PC5 | Z745O |
| 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,<br>600 V CAT IV 1 A *, 1000 V CAT III 1 A *<br>1000 V CAT II 16 A **<br>* With plugged on safety caps<br>** 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,<br>1 mA … 15 A and 1 A … 150 A,<br>frequency range: 45 … 65 … 500 Hz,<br>transformation ratio: 1 mV/mA and 1 mV/A,<br>clamp opening: 15 mm max. cable dia. | WZ12C [D] | Z219C |
| Leakage current clamp meter, 0.1 mA … 25 mA, 100 mV/mA | SECUTEST CLIP [D] | Z745H |
| **Temperature Sensors for SECUTEST ST PRO/SECULIFE ST BASE(25)** | | |
| Pt100 temperature sensor, -40 … +500 °C for surface and immersion measurements | Z3409 | GTZ3409000R0001 |
| Pt1000 temperature sensor, class B, for measurement in gases and liquids,<br>-50 … +220 °C | TF220 | Z102A |
| Pt100 oven sensor, -50 ... +550 °C | TF550 | GTZ3408000R0001 |
| Dip-stick oil temperature sensor, Pt1000 class B, -50 … +500 °C,<br>sensor: 3 mm dia. × 810 mm long | TF400CAR | Z102C |
| **Pouches and Cases** | | |
| Carrying pouch for the test instrument | F2000 [D] | Z700D |
| Large carrying pouch for test instrument sets | F2020 | Z700F |
| Universal carrying pouch with flexible compartments and display guard for the test instrument | F2010 | Z700G |
| System soft-case | F2030 | Z700H |
| Plastic system case | SORTIMO L-BOXX | Z503D |
| Foam insert for SORTIMO L-BOXX with compartments for test instrument and accessories | Foam SORTIMO L-BOXX Secutest4 | Z701D |
| Foam insert for SORTIMO L-BOXX GM with compartment for adapter | Foam SORTIMO L-BOXX adapter | Z701E |

# SECUTEST ST BASE(10) / PRO and SECULIFE ST BASE(25)
# Test Instruments for Measuring the Electrical Safety of Devices

| Designation | Type | Article No. |
|---|---|---|
| **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 * |
| 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 * |
| | | |
| **Report Generating Accessories** | | |
| **RFID System** | | |
| RFID reader/writer for USB connection (frequency: 13.56 MHz) | SCANBASE RFID | Z751E |
| RFID tags per ISO 15693, approx. 22 mm dia., self-adhesive, 500 pcs. | Z751R | Z751R |
| RFID tags per ISO 15693, approx. 30 mm dia., 2 mm thick with 3 mm hole, 500 pcs. | Z751S | Z751S |
| RFID tag per ISO 15693, pigeon ring, approx. 7.5 mm dia., 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, 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 [D] | Z722S |
| | | |
| See also separate ID systems data sheet for RFID scanner, barcode reader and printer | | |

* The test instrument's serial number must be included with the order.
D Data sheet available
1 Only with feature I01(e.g. SECUTEST ST PRO and SECULIFE ST BASE)

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