GOSSEN METRAWATT
GMC-INSTRUMENTS GROUP

PROFITEST PRIME / PROFITEST PRIME AC

MEASURING/TEST INSTRUMENTS FOR STANDARDS-COMPLIANT TESTING OF PROTECTIVE MEASURES

ilac-MRA DAkkS Deutsche Akkreditierungsstelle D-K-15080-01-00

- Measurement in AC/DC systems
- Measurement of internal line resistance and fault loop resistance with high test current up to 690 V_{AC} / 800 V_{DC} without tripping RCD types A and B
- Low-resistance measurement for protective and equipotential bonding conductors with 200 mA, automatic polarity reversal and 25 A
- Testing of RCD types A, AC, F, B, B+, EV, MI and G/R, as well as SRCDs and PRCDs
- Combined RCD test with continuously rising ramp, time to trip, tripping current
- Insulation measurement up to 1000 V with rising ramp
- Testing of RCMs and IMDs
- Measurement of leakage and differential current
- Measurement of temperature and humidity
- Additionally with PROFITEST PRIME AC
  - Testing for dielectric strength, 2.5 kV_{AC}, 500 VA: Standard sequence, ramp function and pulse control mode
  - Work safety concept for the inspector
- Mains and battery operation (with limited functionality)
- Bluetooth® (e.g. for keyboard) and USB port
- Push-print function – measured value transmission after measurement

APPLICATION

PROFITEST PRIME / PROFITEST PRIME AC are versatile all-in-one test instruments for use in AC and DC networks for market-compliant testing of the effectiveness of protective measures at electrical systems/installations, electric machines, PV systems and electric charging stations. The PROFITESTPRIME AC can also be used for high-voltage testing.

All of the values required for approval reports (e.g. per ZVEH) can be measured.

PROFITEST PRIME / PROFITEST PRIME AC are ideal for installation, initial startup, periodic testing and troubleshooting.

Their broad range of applications includes:

- Machinery manufacturing
- Switchgear fabrication
- Industrial systems up to 690 V
- Wind power turbines up to 690 V
- E-mobility charging infrastructure, AC/DC systems
- IT networks up to 690 V
- Insulation monitors up to 690 V
- High voltage and insulation measurement up to 100 Ω

INCLUDED FEATURES

PROFITEST	PRIME	PRIME AC
Voltage and frequency measurement up to 1 kV		
In single-phase AC/DC systems	✓	✓
In 3-phase systems (UL1-L3, UL1-L2, UL2-L3)	✓	✓
Phase sequence testing	✓	✓
Measurement of protective conductor resistance RLO		
With 0.2 A test current: constant/ramp, polarity and test time can be selected	✓	✓
With 25 A measuring current	✓	✓
Measurement of insulation resistance RINS		
With constant DC test voltage (50 V …1000 V)	✓	✓
With DC ramp function	✓	✓
Testing of residual current devices		
General and selective including RCD, SRCD, PRCD, G/R and RCBO (FI-LS) variants	✓	✓
Testing of AC/DC sensitive RCDs, types B, B+, B-MI and B+MI	✓	✓
Testing of 6 mA RDC-DDs and RCMBs	✓	✓
Measurement of residual voltage without tripping the RCD	✓	✓
Measurement of tripping current with ramp function	✓	✓
Tripping time measurement	✓	✓
Simultaneous measurement of tripping current and time to trip with “intelligent ramp”	✓	✓
Loop impedance measurement		
Measurement with full-wave, test current: 10 $A_{AC/DC}$	✓	✓
Measurement in 690 V systems	✓	✓
Measurement in DC systems up to 840 V_{DC}	✓	✓
without tripping the RCD (type AC, A) by means of “DC saturation process”	✓	✓
Combined process without tripping the RCD: “impedance Z + R”	✓	✓
Without tripping the RCD: 15 mA method	✓	✓
Display of permissible fuse types in a table	✓	✓
Residual voltage test	✓	✓
Testing of insulation monitoring devices (IMDs)	✓	✓
Testing of residual current monitors (RCMs)	✓	✓
Leakage current measurement (direct)	✓	✓
Current measurement (with optional current clamp sensor)	✓	✓
Power measurement (with optional current clamp sensor)[1)]	✓	✓
Measurement of temperature and atmospheric humidity	✓	✓
Voltage drop measurement ΔU	✓	✓
Documentation of charging station tests	✓	✓
Documentation of fault simulations at PRCDs with the PROFITEST PRCD PRO adapter	✓	✓
HV AC dielectric strength test, 2.5 kV / 200 mA		
With constant AC test voltage	—	✓
Breakdown voltage measurement with ramp function	—	✓
Pulse control mode for troubleshooting	—	✓
Features		
Automatic test sequence function	✓	✓
Selectable menu language	✓	✓
Push-print function (storage or transmission via Bluetooth or USB)	✓	✓
Database (up to 30,000 objects can be stored)	✓	✓
Operation via optional control probe (Start/$I\Delta_N$/Save/Light)	❍	❍
RS 232 port for RFID/barcode reader	✓	✓
Bluetooth®	✓	✓
USB port	✓	✓
IZYTRONIQ PC database and report generating software	✓	✓
Measuring category for basic measuring functions: 600 V CAT III/ 300 V CAT IV	✓	✓
HV AC terminals: 2.5 kV / 200 mA	—	✓
DAkkS calibration certificate	✓	✓

1. Apparent power; as from firmware 04.01.00

✓ available ❍ optional — not available

DESCRIPTION OF FEATURES

TEST STANDARDS

PROFITEST PRIME / PROFITEST PRIME AC are test instruments for standards-compliant testing of the effectiveness of protective measures in accordance with:

- VDE 0100-600 / DIN VDE 0100-600 / IEC 60364-6
  Electrical installations / systems
- VDE 0105-100 / DIN VDE 0105-100 / EN 50110-1
  Electrical installations / systems
- OVE E 8101
  Electrical installations / systems
- NIV / SN 411000
  Electrical installations / systems
- VDE 0113-1 / DIN EN 60204-1 / IEC 60204-1
  Electric machines / systems
- VDE 0126-23-1 / DIN EN 62446-1 / IEC 62446-1
  PV systems
- VDE 0122-1 / DIN EN 61851-1 / IEC 61851-1
  Electric charging points
- VDE 0100-710 / DIN VDE 0100-710 / IEC 60364-7-710
  low-voltage systems in medical facilities

Additionally with PROFITEST PRIME AC

- VDE 0660-600-1 / DIN EN IEC 61439-1
  Low-voltage switchgear and controlgear assemblies
- VDE 0432-1 / DIN EN 60060-1 / IEC 60060-1
  High-voltage test techniques
- VDE 0472 / DIN VDE 0472 (all parts)
  Testing of cables, wires and flexible cords
- Work safety concept for the inspector (with indicator lamp, emergency stop switch and key switch) in accordance with VDE 0104 / DIN EN 50191 and VDE 0413-14 / DIN EN 61557-14 / IEC 61557-14

EASY OPERATION AND EFFICIENT WORK

Intuitive

Device functions are selected directly with the help of a rotary selector switch. Softkeys allow for convenient selection of sub-functions and parameter settings. Unavailable functions and parameters are automatically prevented from appearing at the display.

Schematic diagrams, measuring ranges and help texts can be displayed for all basic functions and sub-functions.

User-Friendly

the measurement cables don’t have to be manually replugged and coded plugs prevent measurement cable mix-ups. The predefined test sequences ensure structured testing.

Optional Remote Control

Intelligent measuring probes I-SK4-PROFITEST-PRIME (4 m) and I-SK12-PROFITEST-PRIME (12 m) make it possible to control the test instrument over considerable distances.

The probe is equipped with START-STOP / $I\Delta_N$ / SAVE-SEND and measuring point illumination keys. Integrated LEDs indicate the current status of the measurement and permit limit value assessment.

Error Indication

The following errors are displayed for the purpose of support and quick troubleshooting:

- The instrument automatically detects instrument-to-system connection errors, which are indicated at the display.
- Errors within the electrical system (no mains or phase voltage, tripped RCD) are indicated by means of 4 LEDs, and at the display.

Selectable Language

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

Available languages: D, GB, F, NL, I, E, CZ, NO.

BATTERY OPERATION WITH BATTERY MONITORING

The instrument is equipped with an integrated rechargeable battery for versatile use. During battery operation, the instrument can be used without mains power (with limited functionality).

The charge level of the integrated battery is monitored and a warning is displayed when voltage is low. Automatic shutdown takes place when the battery is depleted.

RUGGED

The instrument includes a compact, impact-resistant measuring case (with trolley mount) for easy transport.

EXTENSIVE ACCESSORIES

The diverse range of accessories is ideally matched to all requirements for standards-compliant testing.

SELF-TEST

Instrument functionality can be checked at any time: test patterns can be called up one after the other in order to check the display for errors. The indicator LEDs can also be tested.

INTERFACES

The measuring/test instrument is equipped with various interfaces: USB, Bluetooth® and RS 232.

A connection to the PC can be established via USB for data transfer and push-print function.

The push-print function can also be used via Bluetooth®, and a keyboard can be connected. 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 (also: Bluetooth® Low Energy (LE)).[1]

A barcode scanner or a temperature/humidity sensor can be connected to the RS-232 port.

INSTRUMENT UPDATES

The test instrument is future-proof thanks to the provision of firmware/software updates. The measuring/test instrument can be easily updated via the USB port.

DATA MANAGEMENT AND DOCUMENTATION

Customer and Measurement Data Management

System structures can be created – from the system all the way down to the measuring points – and the associated customers can be managed, either directly at the instrument or conveniently at a PC using IZYTRONIQ software with subsequent transfer to the test instrument.

After completing a measurement/test for a structure element, it can be saved and viewed later on.

All data can be transferred from the test instrument to IZYTRONIQ software. Additional information can be entered here subsequently for the individual measurements/tests. Reports can be created and data exported in just a few steps.

IZYTRONIQ PC Database and Report Generating Software

IZYTRONIQ is newly developed test software with which the entire testing scenario can be visualized, managed and documented in an audit-proof, instrument-independent fashion.

And thus for the first time ever, measurement and test data from various test instruments and multimeters can be combined into a single test and documented. Intuitive operation and a modern look assure quick access to all functions.

The software is available on different scales and in different versions for the commercial trades, for industry and for training applications.

IZYTRONIQ is capable of managing the PROFITEST PRIME / PROFITEST PRIME AC and documenting their measured values.

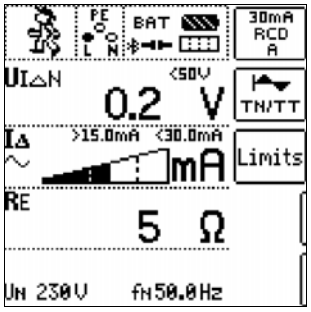
Further information regarding user software is available on the Internet at:

www.izytron.com

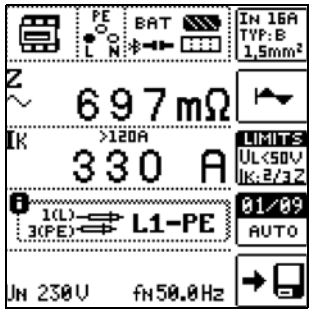
1. The following keyboard models have been successfully tested: Rapoo E6080, Logitech K380,Keychron K3. We offer no guarantee for other devices.

SAMPLE DISPLAYS

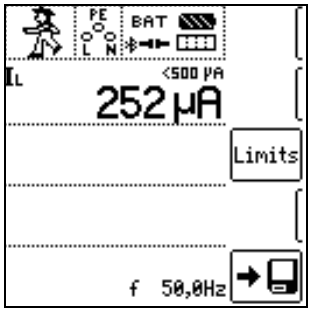
RCD Measurement



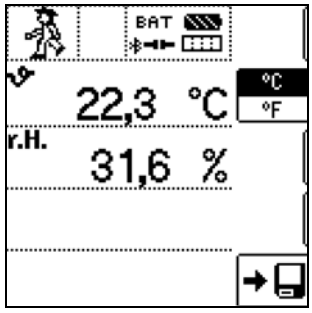
Loop Resistance Measurement



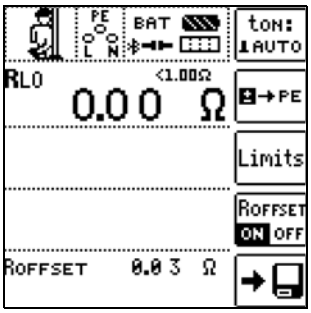
Leakage Current Measurement



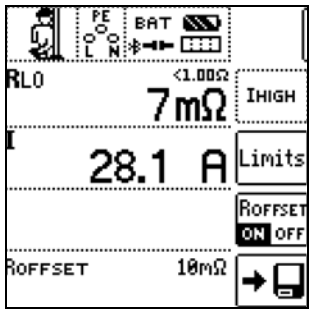
Measurement of Temperature and Relative Humidity



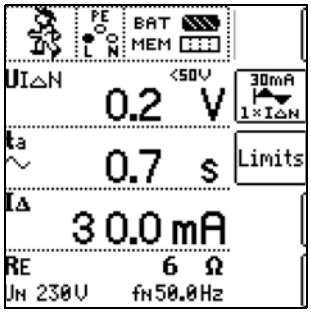
Low-Resistance Measurement, 0.2 A



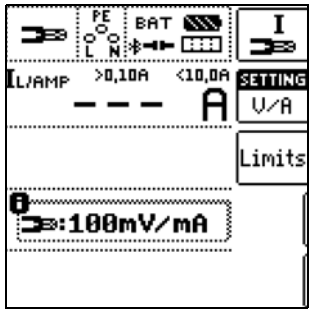
Low-Resistance Measurement, 25 A



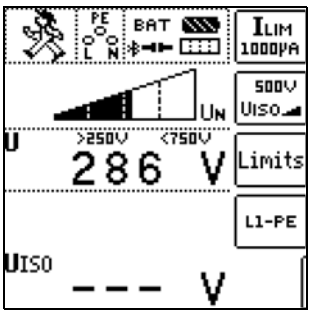
RCM Test



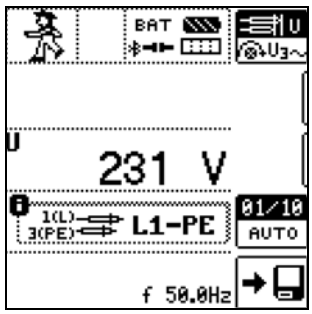
Current Measurement with Current Clamp Sensor



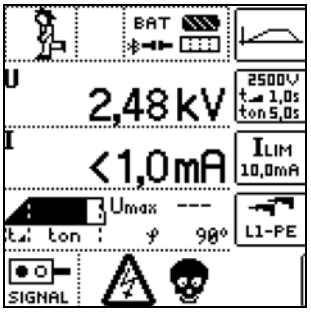
Insulation Measurement



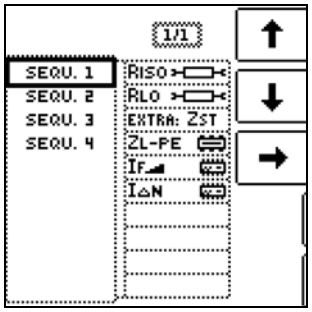
Voltage Measurement



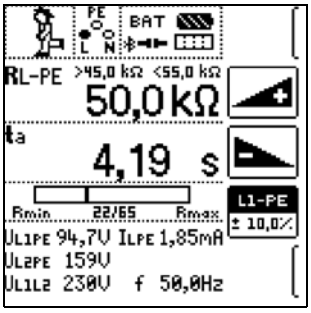
High Voltage Measurement (PROFITEST PRIME AC only)



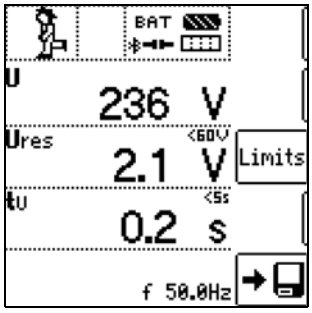
Test Sequences (automatic test runs)



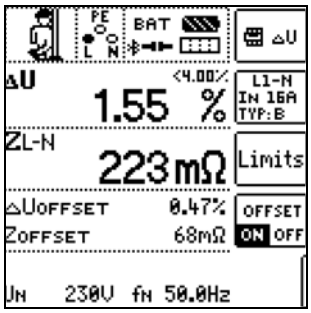
IMD Test



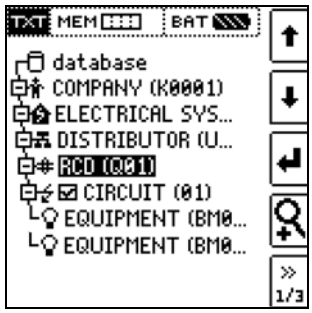
Residual Voltage Measurement



Voltage Drop Measurement



Database



TECHNICAL DATA

Power Supply	Mains operation:	Auxiliary power (mains connection):	85 V … 264 V 16.7 Hz … 50 Hz … 400 Hz
		Power consumption:	PROFITEST PRIME: < 300 VA PROFITEST PRIME AC: < 800 VA
		Mains interrupt:	Mains connection socket with line disconnector
	Battery operation:	Battery pack:	3 lithium-ion cells (permanently installed, type: FEY PA-LN1038.K01.R001), charging current: 1,9 A, charging voltage: 12.3 V, charging time (switch position): 1.5 hrs., nominal range of use: 9.7 V … 10.8 V … 12.3 V
		Number of measurements:	R_{LO} 0.2 A: approx. 500 measurements R_{INS}: approx. 1000 measurements
		Standby time:	32 hours
Ambient Conditions	Operating temperatures:	+5 °C … +50 °C	
	Accuracy:	0 °C … +40 °C	
	Storage temperatures:	-20 °C … +60 °C	
	Charging temperature range:	+10 °C … +45 °C	
	Protective shutdown:	> 75 °C	
	Relative atmospheric humidity:	Max. 75%, no condensation allowed	
	Elevation:	Max. 2000 m	
Electrical Safety	Measuring category:	Power supply: CAT II 300 V Measuring circuit / probes, basic measuring functions: 600 V CAT III / 300 V CAT IV, (without safety caps: 600 V CAT II) HV measuring circuit: 2500 V, 200 mA, HV AC potential: 2.5 kV	
	Nominal voltage:	230 V	
	Test voltage:	5.4 kV 50 Hz (measurement connections, probe L-N-PE to mains/PE)	
	HV AC test voltage:	Mains / PE / key switch / external signal lamp combination to high voltage measurement connections: 7.1 kV AC, 50 Hz Mains to PE: 3.0 kV AC Mains to external signal lamps: 3.0 kV AC Impedance to earth: ≥ 1 MΩ (typ. ~ 15 MΩ)	
	Pollution degree:	2	
	Protection category:	I and II	
	Safety shutdown:	In case of interference voltage and device overheating	
	Fuses:	Mains connection:	2 × M3.15 / 250 V
		Measuring inputs:	F1: 1 kV / 20 A (3-578-319-01 [1)]) F2:1 kV / 10 A (3-578-264-01 [1)]) F3:1 kV / 2 A (3-578-318-01 [1)]) F4: 1 kV / 440 mA (3-578-317-01 [1)]) Basic measuring functions: min. shutdown power: 30 kA
		HV AC test pistols:	5 kV / 200 mA AC

Electromagnetic Compatibility (EMC)	Interference emission:	EN 55011 class A
	Interference immunity:	DIN EN 61326-1 / IEC 61326-1 DIN EN 61326-2-1 / IEC 61326-2-1 EN 61000-4-2 contact / atmospheric: 4 kV / 8 kV B EN 61000-4-3 10 V/m A EN 61000-4-4 mains connection 2 kV B EN 61000-4-5 mains connection: 2 kV B EN 61000-4-6 mains connection: 3 V A EN 61000-4-8 30 A/m A EN 61000-4-11 1; 250/300 periods / 100% C
Mechanical Design	Protection:	Instrument connections: IP 40 (protection against ingress of solid foreign objects: ≥ 1.0 mm diameter, protection against ingress of water: not protected) Closed case: IP 65 (protection against ingress of solid foreign objects: dust-proof dia., protection against ingress of water: protection against water jets (nozzle) from any angle) per DIN EN 60529 / IEC 60529
	Housing (W × H × D):	approx. 50 cm × 21 cm × 41 cm
	Weight:	PROFITEST PRIME: 10.15 kg PROFITEST PRIME AC: 15.10 kg
	Display:	Multiple display with dot matrix, b&w, 128 × 128 pixels, illuminated
Data Interfaces	Bluetooth®:	Frequency range: 2400 MHz … 2483.5 MHz Transmission intensity: max. + 3 dBm
		For push-print function and connection option for a Bluetooth® keyboard (Bluetooth® Classic Modus 3.0 only[2])
	USB:	Slave for PC connection (USB type B socket)
	RS-232:	for barcode reader and T/H sensor
Internal Memory	Max. 50,000 objects	

1. Can only be ordered from GMC-I Service GmbH.
2. The following keyboard models have been successfully tested: Rapoo E6080, Logitech K380, Keychron K3. We offer no guarantee for other devices.

RELEVANT STANDARDS

The instrument complies with the relevant requirements specified in the following standards:

DIN EN 60529 IEC 60529	Test instruments and test procedures – Degrees of protection provided by enclosures (IP code)
DIN EN 61010-1 IEC 61010-1	Safety requirements for electrical equipment for measurement, control and laboratory use – Part 1: General requirements
DIN EN 61010-2-030 IEC 61010-2-030	Safety requirements for electrical equipment for measurement, control and laboratory use – Part 2-030: Particular requirements for devices with testing or measuring circuits
DIN EN 61010-2-032 IEC 61010-2-032	Safety requirements for electrical equipment for measurement, control and laboratory use – Part 2-032: Particular requirements for hand-held and hand-manipulated current sensors for electrical test and measurement
DIN EN 61010-031 IEC 61010-031	Safety requirements for electrical equipment for measurement, control and laboratory use – Part 031: Safety requirements for hand-held and hand-manipulated probe assemblies for electrical test and measurement
DIN EN 61326-1 IEC 61326-1	Electrical equipment for measurement, control and laboratory use – EMC requirements – Part 1: General requirements
DIN EN 61326-2-1 IEC 61326-2-1	Electrical equipment for measurement, control and laboratory use – EMC requirements – Part 2-1: Particular requirements – Test configurations, operational conditions and performance criteria for sensitive test and measurement equipment for EMC unprotected applications
DIN EN 61557-1 IEC 61557-1	Electrical safety in low voltage distribution systems up to 1 000 V AC and 1 500 V DC – Devices for testing, measuring or monitoring protective measures – Part 1: General requirements
DIN EN 61557-2 IEC 61557-2	Electrical safety in low voltage distribution systems up to 1 000 V AC and 1 500 V DC – Devices for testing, measuring or monitoring protective measures – Part 2: Insulation resistance
DIN EN 61557-3 IEC 61557-3	Electrical safety in low voltage distribution systems up to 1 000 V AC and 1 500 V DC – Devices for testing, measuring or monitoring protective measures – Part 3: Loop resistance measurement
DIN EN 61557-4 IEC 61557-4	Electrical safety in low voltage distribution systems up to 1 000 V AC and 1 500 V DC – Devices for testing, measuring or monitoring protective measures – Part 4: Resistance of earth conductors, protective conductors and equipotential bonding conductors
DIN EN 61557-6 IEC 61557-6	Electrical safety in low voltage distribution systems up to 1 000 V AC and 1 500 V DC – Devices for testing, measuring or monitoring protective measures – Part 6: Effectiveness of residual current devices (RCDs) in TT, TN and IT systems
DIN EN 61557-7 IEC 61557-7	Electrical safety in low voltage distribution systems up to 1 000 V AC and 1 500 V DC – Devices for testing, measuring or monitoring protective measures – Part 7: Rotary field
DIN EN 61557-10 IEC 61557-10	Electrical safety in low voltage distribution systems up to 1 000 V AC and 1 500 V DC – Devices for testing, measuring or monitoring protective measures – Part 10: Combined measuring equipment for testing, measuring or monitoring protective measures
DIN EN 61557-11 IEC 61557-11	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 11: Effectiveness of residual current monitors (RCM) in TT, TN and IT systems
DIN EN 61557-14 IEC 61557-14	Electrical safety in low voltage distribution systems up to 1 000 V AC and 1 500 V DC – Devices for testing, measuring or monitoring protective measures – Part 14: Equipment for testing the safety of electrical equipment of machinery

CHARACTERISTIC VALUES

Legend for the following tables:
D = digit(s) / rdg. = reading (measured value) / ● = required connections / light gray areas are not relevant

U

Measured quantity	Display Range	Resolution	Input Impedance / Test Current	Measuring Range	Nominal Values	Measuring Uncertainty	Intrinsic Uncertainty	Connections 1(L)	2(N)	3(PE)	Current Clamp	Other
U	0.0 V to 99.9 V 100 V … 999 V	0.1 V 1 V	5 MΩ	2.0 V_{TRMS} … 99.9 V_{TRMS} 100 V_{TRMS} … 999 V_{TRMS}		±(2% rdg. + 5 d) ±(2% rdg. + 1 d)	±(1% rdg.+5d) ±(1% rdg.+1d)	●		●		
$U_{3\sim}$	0.0 V … 99.9 V 100 V … 999 V	0.1 V 1 V		2.0 V_{TRMS} … 99.9 V_{TRMS} 100 V_{TRMS} … 999 V_{TRMS}		±(3% rdg.+5d) ±(3% rdg.+1d)	±(2% rdg.+5d) ±(2% rdg.+1d)	●	●	●		
f	DC: 15.0 Hz… 99.9 Hz 100 Hz… 999 Hz	0.1 Hz 1 Hz		DC: 15.4 Hz… 420 Hz		±(0.2% rdg.+1d)	±(0.1% rdg.+1d)	●		●		

R_{LO} 0.2 A

Measured quantity	Display Range	Resolution	Input Impedance / Test Current	Measuring Range	Nominal Values	Measuring Uncertainty	Intrinsic Uncertainty	Connections 1(L)	2(N)	3(PE)	Current Clamp	Other
R_{LO}	0.00 Ω … 9.99 Ω 10.0 Ω … 99.9 Ω 100 Ω … 199 Ω	0.01 Ω 0.1 Ω 1 Ω	I≥ 200 mA_{DC}	0.10 Ω … 5.99 Ω	U_q = 4.5 V	±(4% rdg.+2d)	±(2% rdg.+2d)	●		●		PRCD Adapter
			I < 260 mA_{DC}	6.00 Ω … 99.9 Ω								
R_{OFFSET}	0.00 Ω … 9.99 Ω	0.01 Ω	I ≥ 200 mA_{DC}	0.10 Ω … 5.99 Ω								

R_{LO} 25 A

Measured quantity	Display Range	Resolution	Input Impedance / Test Current	Measuring Range	Nominal Values	Measuring Uncertainty	Intrinsic Uncertainty	Connections 1(L)	2(N)	3(PE)	Current Clamp	Other
R_{LO}	1 MΩ … 999 MΩ 1.00 Ω … 9.99 Ω 10.0 Ω … 20.0 Ω	1 mΩ 0.01 Ω 0.1 Ω	I 25 A_{AC} [1)]	10 mΩ … 50 mΩ	U_q < 8.8 V_{AC}	±(4% rdg.+2d)	±(2% rdg.+2d)	●		●		
			I < 25 A_{AC} [1)]	51 mΩ … 20.,0 Ω								
R_{OFFSET}	1 MΩ … 999 MΩ	1 mΩ	I ≥ 25 A_{AC} [1)]	10 mΩ … 50 mΩ 51 mΩ … 999 mΩ								

1. With a load of < 50 mΩ: auxiliary power: 230 V (-0% +10%), 50 Hz and the included 4 m probe cables. EN 61439-1 specifies a test current of > 10 A AAC for protective conductor testing. The limit value is 0.1 Ω.

R_{INS}

Measured quantity	Display Range	Resolution	Input Impedance / Test Current	Measuring Range	Nominal Values	Measuring Uncertainty	Intrinsic Uncertainty	Connections 1(L)	2(N)	3(PE)	Current Clamp	Other
R_{INS}	1 kΩ … 999 kΩ 1.00 MΩ … 9.99 MΩ 10.0 MΩ … 49.9 MΩ	1 k Ω 0.01 MΩ 0.1 MΩ	I_K < 1.6 mA (for U_{INS} = 15 V … 1.00 kV)	50 kΩ … 999 kΩ 1.00 M Ω… 49.9 MΩ	U_N = 50 V I_N = 1 mA	±(5% rdg.+10d) ±(5% rdg.+2d)	±(3% rdg.+10d) ±(3% rdg.+1d)	●		●		
	1 kΩ … 999 kΩ 1.00 MΩ … 9.99 MΩ 10.0 MΩ … 99.9 MΩ	1 k Ω 0.01 MΩ 0.1 MΩ		50 kΩ … 999 kΩ 1.00 M Ω… 99.9 MΩ	U_N = 100 V I_N = 1 mA	±(5% rdg.+10d) ±(5% rdg.+2d)	±(3% rdg.+10d) ±(3% rdg.+1d)					
	1 kΩ … 999 kΩ 1.00 MΩ … 9.99 MΩ 10.0 MΩ … 99.9 MΩ 100 MΩ … 200 MΩ	1 k Ω 0.01 MΩ 0.1 MΩ1 MΩ		50 kΩ … 999 kΩ 1.00 M Ω… 200 MΩ	U_N = 250 V I_N = 1 mA	±(5% rdg.+10d) ±(5% rdg.+2d)	±(3% rdg.+10d) ±(3% rdg.+1d)					
	1 kΩ … 999 kΩ 1.00 MΩ … 9.99 MΩ 10.0 MΩ … 99.9 MΩ 100 MΩ … 999 MΩ 1.00 GΩ … 1.20 GΩ	1 k Ω 0.01 MΩ 0.1 MΩ 1 MΩ 0.01 GΩ		50 kΩ … 999 kΩ 1.00 M Ω… 499 MΩ 500 MΩ… 1.20 GΩ	U_N = 325 V U_N = 500 V U_N = 1000 V I_N = 1 mA	±(5% rdg.+10d) ±(5% rdg.+2d) ±(10% rdg.+2d)	±(3% rdg.+10d) ±(3% rdg.+1d) ±(6% rdg.+1d)					
U U_{ISO}	10 V_{DC} … 999 V_{DC} 1.00 kV … 1.19 kV	1 V 0.01 kV		25 V … 1.19 kV	U_N = 50 V_{DC} / 100 V_{DC} / 250 V_{DC} / 325 V_{DC} / 500 V_{DC} / 1000 V_{DC}	±(3% rdg.+1d)	±(1.5% rdg. + 1 d)					

R_{INS}

Measured quantity	Display Range	Resolution	Input Impedance / Test Current	Measuring Range	Nominal Values	Measuring Uncertainty	Intrinsic Uncertainty	Connections 1(L)	2(N)	3(PE)	Current Clamp	Other
U U_{ISO}	10 V_{DC} … 999 V_{DC} 1.00 kV … 1.19 kV	1 V 0.01 kV	I_K < 1.6 mA	25 V … 1.19 kV	U_N = 50 V / 100 V / 250 V / 325 V / 500 V / 1000 V	±(3% rdg.+1d)	±(1.5% rdg. + 1 d)	●		●		

RCD I_F

Measured quantity	Display Range	Resolution	Input Impedance / Test Current	Measuring range	Nominal Values	Measuring Uncertainty	Intrinsic Uncertainty	Connections 1(L)	2(N)	3(PE)	Current Clamp	Other
$U_{I\Delta N}$	0.0 V … 70.0 V	0.1 V	0.33 × $I_{\Delta N}$ $I_{\Delta N}$ = 10 mA … 1000 mA	20.0 V … 70.0 V	$U_{I\Delta N}$ = 25 V / 50 V / 65 V	+(1% rdg. + 1 d) … +(10% rdg. + 1 d)	+(1% rdg. + 1 d) … +(9% rdg. + 1 d)	●	● 1)	●		PRCD Adapter
R_E	10 Ω … 999 Ω 1.00 kΩ … 6.51 kΩ	1 Ω 0.01 k Ω	$I_{\Delta N}$ = 10 mA × 1.05	Calculated value based on $R_E = U_{I\Delta N} : I_{\Delta N}$								
	3 Ω … 999 Ω 1.00 kΩ… 2.17 kΩ	1 Ω 0.01 k Ω	$I_{\Delta N}$ = 30 mA × 1.05									
	1 Ω … 651 Ω	1 Ω	$I_{\Delta N}$ = 100 mA × 1.05									
	0.3 Ω … 99.9 Ω 100 Ω … 217 Ω	0.1 Ω 1 Ω	$I_{\Delta N}$ = 300 mA × 1.05									
	0.2 Ω … 9.9 Ω 10 Ω … 130 Ω	0.1 Ω 1 Ω	$I_{\Delta N}$ = 500 mA × 1.05									
	0.2 Ω … 9.9 Ω 10 Ω … 65 Ω	0.1 Ω 1 Ω	$I_{\Delta N}$ = 1000 mA × 1.05									
I_Δ	3.0 mA … 99.9 mA 100 mA … 999 mA 1.00 A … 2.50 A	0.1 mA 1 mA 0.01 A	~ (0.3 … 1.3) × $I_{\Delta N}$ ⌒ (0.3 … 1.4) × $I_{\Delta N}$ ⊓ (0.2 … 2.5) × $I_{\Delta N}$ $I_{\Delta N}$ = 10 mA … 1000 mA	3.0 mA … 2.50 A	U_N = 120 V / 230 V / 400 V f_N = 16.7 Hz / 50 Hz / 60 Hz / 200 Hz / 400 Hz $I_{\Delta N}$ = 10 mA / 30 mA / 100 mA / 300 mA / 500 mA / 1000 mA	±(5% rdg.+3d)	±(3.5% rdg. + 2 d)					
U	0.0 V … 99.9 V 100 V … 999 V	0.1 V 1 V	5 MΩ	2.0 V … 99.9 V 100 V … 440 V		±(2% rdg.+5d) ±(2% rdg.+1d)	±(1% rdg.+5d) ±(1% rdg.+1d)					
f	15.0 Hz … 99.9 Hz 100 Hz … 999 Hz	0.1 Hz 1 Hz		15.4 Hz … 420 Hz		±(0.2% rdg.+1d)	±(0.1% rdg.+1d)					

1. Only required when testing with direct current.

RCD $I_{\Delta N}$

Measured quantity	Display Range	Resolution	Input Impedance / Test Current	Measuring Range	Nominal Values	Measuring Uncertainty	Intrinsic Uncertainty	Connections 1(L)	2(N)	3(PE)	Current Clamp	Other
$U_{I\Delta N}$	0.0 V … 70.0 V	0.1 V	0.33 × $I_{\Delta N}$ $I_{\Delta N}$ = 10 mA … 1000 mA	20.0 V … 70.0 V	$U_{I\Delta N}$ = 25 V / 50 V / 65 V	+1% rdg. + 1 d … +10% rdg. + 1 d	+ (1% rdg. + 1 d) … + (9% rdg. + 1 d)	●	● [1]	●		PRCD Adapter
R_E	10 Ω … 999 Ω 1.00 kΩ … 6.51 kΩ	1 Ω 0.01 k Ω	I_N = 10 mA × 1.05	Calculated value based on $R_E = U_{I\Delta N} : I_{\Delta N}$								
	3 Ω … 999 Ω 1.00 kΩ … 2.17 kΩ	1 Ω 0.01 k Ω	I_N = 30 mA × 1.05									
	1 Ω … 651 Ω	1 Ω	I_N = 100 mA × 1.05									
	0.3 Ω … 99.9 Ω 100 Ω … 217 Ω	0.1 Ω 1 Ω	I_N = 300 mA × 1.05									
	0.2 Ω … 9.9 Ω 10 Ω … 130 Ω	0.1 Ω 1 Ω	I_N = 500 mA × 1.05									
	0.2 Ω … 9.9 Ω 10 Ω … 65 Ω	0.1 Ω 1 Ω	$I_{\Delta N}$ = 1000 mA ×1.05									
I_T			0.5 times: 0.95 × 0.5 × $I_{\Delta N}$		U_N = 120 V / 230 V / 400 V f_N = 16.7 [2] / 50 Hz / 60 Hz / 200 Hz / 400 Hz	(0.5 × $I_{\Delta N}$) -10% ... +0%	(0.95 × 0.5 × $I_{\Delta N}$) ±3.5 %					
			1×: 1.05 × $I_{\Delta N}$ 1.4×: 1.47 × $I_{\Delta N}$ 2×: 2.1 × $I_{\Delta N}$ 5×: 5.25 × $I_{\Delta N}$			(X × $I_{\Delta N}$) + 0 % … +10 %	(1.05 × X × I_{Δ}N) ±3.5%					
t_a	0 ms … 999 ms	1 ms		0 ms … 999 ms		±4 ms	±3 ms					
U	0.0 V … 99.9 V 100 V … 999 V	0.1 V 1 V	∿ [5] 0.5 ×, 1 ×, 2 ×, 5 ×	2.0 V … 99.9 V 100 V … 440 V		±(2% rdg. + 5 d) ±(2% rdg. + 1 d)	±(1% rdg. + 5 d) ±(1% rdg. + 1 d)					
f	15.0 Hz … 99.9 Hz 100 Hz … 999 Hz	0.1 Hz 1 Hz	∿ [5] 0.5 ×, 1 × ⊓ [5] 1 × $I_{\Delta N}$ = 10 mA … 1000 mA	15.4 Hz … 420 Hz	$I_{\Delta N}$ = 10 mA / 30 mA / 100 mA / 300 mA / 500 mA / 1000 mA	±(0.2% rdg. + 1 d)	±(0.1% rdg. + 1 d)					

1. Only required when testing with direct current.
2. Depending on maximum permissible contact voltage.

RCD I_F ◢ + $I_{\Delta N}$

Measured quantity	Display Range	Resolution	Input Impedance / Test Current	Measuring Range	Nominal Values	Measuring Uncertainty	Intrinsic Uncertainty	Connections 1(L)	2(N)	3(PE)	Current Clamp	Other
$U_{I\Delta N}$	0.0 V … 70.0 V	0.1 V	0.33 × $I_{\Delta N}$ $I_{\Delta N}$ = 10 mA … 1000 mA	20.0 V … 70.0 V		+ (1% rdg. + 1 d) … + (10% rdg. + 1 d)	+ (1% rdg. + 1 d) … + (9% rdg. + 1 d)					
R_E	10 Ω … 999 Ω 1.00 kΩ … 6.51 kΩ	1 Ω 10 Ω	$I_{\Delta N}$ = 10 mA × 1.05	Calculated value based on R_E = $U_{I\Delta N}$: $I_{\Delta N}$	$U_{I\Delta N}$ = 25 V / 50 V / 65 V							
	3 Ω … 999 Ω 1.00 kΩ … 2.17 kΩ	1 Ω 0.01 k Ω	$I_{\Delta N}$ = 30 mA × 1.05									
	1 Ω … 651 Ω	1 Ω	$I_{\Delta N}$ = 100 mA × 1.05									
	0.3 Ω … 99.9 Ω 100 Ω … 217 Ω	0.1 Ω 1 Ω	$I_{\Delta N}$ = 300 mA × 1.05									
	0.2 Ω … 9.9 Ω 10 Ω … 130 Ω	0.1 Ω 1 Ω	$I_{\Delta N}$ = 500 mA × 1.05									
	0.2 Ω … 9.9 Ω 10 Ω … 65 Ω	0.1 Ω 1 Ω	$I_{\Delta N}$ = 1000 mA × 1.05									
t_a	0 ms … 300 ms	1 ms		0 ms … 300 ms	U_N = 120 V / 230 V / 400 V	±4 ms	±3 ms	●		●		PRCD Adapter
I_Δ	3.0 mA … 99.9 mA 100 mA … 999 mA 1.00 A … 1.30 A	0.1 mA 1 mA 0.01 A		3.0 mA … 1.30 A		±(5% rdg. + 3 d)	±(3.5% rdg. + 2 d)					
U	0.0 V … 99.9 V 100 V … 999 V	0.1 V 1 V		2.0 V … 99.9 V 100 … 440 V	f_N = 16.7 Hz / 50 Hz / 60 Hz / 200 Hz / 400 Hz	±(2% rdg. + 5 d) ±(2% rdg. + 1 d)	±(1% rdg. + 5 d) ±(1% rdg. + 1 d)					
f	15.0 Hz … 99.9 Hz 100 Hz … 999 Hz	0.1 Hz 1 Hz	∿ (0.3 … 1.3) × $I_{\Delta N}$ $I_{\Delta N}$= 10 mA … 1000 mA	15.4 Hz … 420 Hz	$I_{\Delta N}$ = 10 mA_{AC} / 30 mA_{AC} / 100 mA_{AC} / 300 mA_{AC} / 500 mA_{AC} / 1000 mA_{AC}	±(0.2% rdg. + 1 d)	±(0.1% rdg. + 1 d)					

Z_{LOOP} AC/DC

Measured quantity	Display Range	Resolution	Input Impedance / Test Current	Measuring Range	Nominal Values	Measuring Uncertainty	Intrinsic Uncertainty	Connections 1(L)	2(N)	3(PE)	Current Clamp	Other
$Z_{AC/DC}$ [1]	0 MΩ … 999 MΩ 1.00 Ω … 9.99 Ω	1 mΩ 0.01 Ω	≥ 10 $A_{AC/DC}$ where U = 120 V (-0%) U = 230 V (-0%) U = 400 V (-0%) U = 690 V (-0%) U = 850 V_{DC} (–0 %)	50 MΩ … 999 MΩ 1.00 … 5.00 Ω [2]	U_N = 120 V / 230 V 400 V_{AC} / 690 V_{AC} U_N = 850 V_{DC} f_N = DC 16.7 Hz / 50 Hz / 60 Hz / 200 Hz / 400 Hz	±(10% rdg. + 10 d) ±(6% rdg. + 4 d)	±(5% rdg. + 10 d) ±(3% rdg. + 3 d)					
Z_{DC} [3]	0.00 Ω … 9.99 Ω 10.0 Ω … 99.9 Ω	0.01 Ω 0.1 Ω	≥ 5 $A_{AC/DC}$ where U = 120 V (-0%) U = 230 V (-0%) U = 400 V (-0%) U = 690 V (-0%) U = 850 V_{DC} (–0 %)	0.50 Ω … 9.99 Ω 10.0 Ω … 40.0 Ω	U_N = 120 V / 230 V 400 V_{AC} / 690 V_{AC} U_N = 850 V_{DC} f_N = DC	±(10% rdg. + 10 d) ±(8% rdg. + 2 d)	±(5% rdg. + 10 d) ±(3% rdg. + 3 d)	●		●		
I_{SC}	0.0 A … 9.9 A 10 A … 999 A 1.00 kA … 9.99 kA 10.0 kA … 50.0 kA	0.1 A 1 A 0.01 kA 0.1 kA	≥ 10 $A_{AC/DC}$ where U = 120 V (-0%) U = 230 V (-0%) U = 400 V (-0%) U = 690 V (-0%) U = 850 V_{DC} (–0 %)	Calculated value based on I_K = U : Z	120 V / 230 V 400 V_{AC} / 690 V_{AC} U_N = 850 V_{DC} f_N = DC 16.7 Hz / 50 Hz / 60 Hz / 200 Hz / 400 Hz	Calculated value based on I_K = U : Z	Calculated value based on I_K = U : Z					
U	0.0 V … 99.9 V 100 V … 999 V	0.1 V 1 V		2.0 V … 99.9 V 100 V_{AC} … 725 V_{AC} 100 V_{DC} … 850 V_{DC}		±(2% rdg. + 5 d) ±(2% rdg. + 1 d)	±(1% rdg. + 5 d) ±(1% rdg. + 1 d)					
f	DC: 15.0 Hz … 99.9 Hz 100 Hz … 999 Hz	0.1 Hz 1 Hz		DC: 15.4 Hz … 420 Hz		±(0.2% rdg. + 1 d)	±(0.1% rdg. + 1 d)					

1. With 100% test current
2. Depending on maximum permissible contact voltage.
3. With 50% test current

Z_{LOOP} DC+

Measured quantity	Display Range	Resolution	Input Impedance / Test Current	Measuring Range	Nominal Values	Measuring Uncertainty	Intrinsic Uncertainty	Connections 1(L)	2(N)	3(PE)	Current Clamp	Other
Z	0 MΩ … 999 MΩ 1.00 Ω … 9.99 Ω 10.0 Ω … 29.9 Ω	1 mΩ 0.01 Ω 0.1 Ω	≥ 10 A_{AC} where U = 120 V (-0%) U = 230 V (-0%) U = 400 V (-0%) and 0.5 A_{DC} (DC-L) 2.5 A_{DC} (DC-H)	250 … 999 mΩ	U_N = 120 V / 230 V 400 V f_N = 16.7 Hz / 50 Hz / 60 Hz / 200 Hz / 400 Hz	±(18% rdg. + 30 d)	±(6% rdg. + 50 d)	●	●	●		
				1.00 … 5.00 Ω		±(10% rdg. + 5 d)	±(6% rdg. + 5 d)					
I_{SC}	0.0 A … 9.9 A 10 A … 999 A 1.00 A … 9.99 kA 10.0 kA … 50.0 kA	0.1 A 1 A 0.01 kA 0.1 kA		Calculated value based on $I_K = U : Z$		Calculated value based on $I_K = U : Z$	Calculated value based on $I_K = U : Z$					
U	0.0 V … 99.9 V 100 V … 999 V	0.1 V 1 V		2.0 V … 99.9 V 100 V … 440 V		±(2% rdg. + 5 d) ±(2% rdg. + 1 d)	±(1% rdg. + 5 d) ±(1% rdg. + 1 d)					
f	15.0 Hz … 99.9 Hz 100 Hz … 999 Hz	0.1 Hz 1 Hz		15.4 Hz … 420 Hz		±(0.2% rdg. + 1 d)	±(0.1% rdg. + 1 d)					

Z_{LOOP} Z+R_{LO}

Measured quantity	Display Range	Resolution	Input Impedance / Test Current	Measuring Range	Nominal Values	Measuring Uncertainty	Intrinsic Uncertainty	Connections 1(L)	2(N)	3(PE)	Current Clamp	Other
Z	0.00 Ω … 9.99 Ω 10.0 Ω … 99.9 Ω	0.01 Ω 0.1 Ω	I_{LN} ≥ 10 A_{AC} where U = 120 V (-0%) U = 230 V (-0%) U = 400 V (-0%) $I_N = I_{\Delta N} : 2$	0.50 Ω … 9.99 Ω 10.0 Ω … 99.9 Ω	U_N = 120 V / 230 V 400 V f_N = 16.7 Hz / 50 Hz / 60 Hz / 200 Hz / 400 Hz	±(10% rdg. + 10 d) ±(8% rdg. + 2 d)	±(4% rdg. + 5 d) ±(1% rdg. + 1 d)	●	●	●		
I_{SC}	0.0 A … 9.9 A 10 A … 999 A 1.00 kA … 9.99 kA 10.0 kA … 50.0 kA	0.1 A 1 A 0.01 kA 0.1 kA		Calculated value based on $I_K = U : Z$		Calculated value based on $I_K = U : Z$	Calculated value based on $I_K = U : Z$					
U	0.0 V … 99.9 V 100 V … 999 V	0.1 V 1 V		2.0 V … 99.9 V 100 V … 440 V		±(2% rdg. + 5 d) ±(2% rdg. + 1 d)	±(1% rdg. + 5 d) ±(1% rdg. + 1 d)					
f	15.0 Hz … 99.9 Hz 100 Hz… 999 Hz	0.1 Hz 1 Hz		15.4 Hz … 99.9 Hz 100 Hz … 420 Hz		±(0.2% rdg. + 1 d)	±(0.1% rdg. + 1 d)					

Z_{LOOP} *

Measured quantity	Display Range	Resolution	Input Impedance / Test Current	Measuring Range	Nominal Values	Measuring Uncertainty	Intrinsic Uncertainty	Connections 1(L)	2(N)	3(PE)	Current Clamp	Other
Z	0.6 Ω … 99.9 Ω 100 Ω … 999 Ω	0.1 Ω 1 Ω	$I_{\Delta N} : 2$	10.0 Ω … 99.9 Ω 100 Ω … 999 Ω	U_N = 120 V / 230 V 400 V f_N = 16.7 Hz / 50 Hz / 60 Hz / 200 Hz / 400 Hz	±(10% rdg. +1 0 d ±(8% rdg. + 2 d)	±(2% rdg. + 2 d) ±(1% rdg. + 1 d)	●		●		
I_{SC}	0.10 A … 9.99 A 10.0 A … 99.9 A 100 A … 999 A	0.01 A 0.1 A 1 A		Calculated value based on $I_K = U : Z$		Calculated value based on $I_K = U : Z$	Calculated value based on $I_K = U : Z$					
U	0.0 V … 99.9 V 100 V … 999 V	0.1 V 1 V		2.0 V … 99.9 V 100 V … 440 V		±(2% rdg. + 5 d) ±(2% rdg. + 1 d)	±(1% rdg. + 5 d) ±(1% rdg. + 1 d)					
f	15.0 Hz … 99.9 Hz 100 Hz… 999 Hz	0.1 Hz 1 Hz		15.4 Hz … 420 Hz		±(0.2 % rdg.+ 1 d)	±(0.1% rdg. + 1 d)					

* Specifications apply to selected RCD types ≥ 30 mA $I_{\Delta N}$

U_{RES}

Measured quantity	Display Range	Resolution	Input Impedance / Test Current	Measuring Range	Nominal Values	Measuring Uncertainty	Intrinsic Uncertainty	Connections 1(L)	2(N)	3(PE)	Current Clamp	Other
U, U_{res}	0.0 V … 99.9 V 100 V … 999 V	0.1 V 1 V	5 MΩ	2.0 V … 99.9 V 100 V … 999 V		±(2% rdg. + 5 d) ±(2% rdg. + 1 d)	±(1% rdg. + 5 d) ±(1% rdg. + 1 d)	●		●		
f	DC, 15.0 Hz … 99.9 Hz 100 Hz… 999 Hz	0.1 Hz 1 Hz		DC, 15.4 Hz … 99.9 Hz 100 Hz … 420 Hz		±(0.2% rdg. + 1 d)	±(0.1% rdg. + 1 d)					
t_U	0.0 s … 99.9 s	0.1 s		0.4 s … 99.9 s		±(2% rdg. + 2 d)	±(1% rdg. + 1 d)					

IMD

Measured quantity	Display Range	Resolution	Input Impedance / Test Current	Measuring Range	Nominal Values	Measuring Uncertainty	Intrinsic Uncertainty	Connections 1(L)	2(N)	3(PE)	Current Clamp	Other
R_{L-PE} [1)]	15.0 kΩ … 99.9 kΩ 100 kΩ … 574 kΩ 2.50 MΩ	0.1 k Ω 1 k Ω 0.01 MΩ		15.0 kΩ … 199 kΩ 200 kΩ … 574 kΩ 2.50 MΩ	U_{N-IT} = 120 V / 230 V 400/ 690 V f_N = 16.7 Hz / 50 Hz / 60 Hz / 200 Hz / 400 Hz	±7% ±17% ±3%	±5% ±15% ±2%	●	●	●		
t_a	0.00 s … 9.99 s 10.0 s … 99.9 s	0.01 s 0.1 s		0.00 s … 9.99 s 10.0 s … 99.9 s		±(2% rdg. + 2 d)	±(1% rdg. + 1 d)					
U_{L1PE}, U_{L2PE}, U_{L1L2}	0.0 V … 99.9 V 100 V … 999 V	0.1 V 1 V		2.0 V … 99.9 V 100 V … 690 V		±(3% rdg. + 5 d) ±(3% rdg. + 1 d)	±(2% rdg. + 5 d) ±(2% rdg. + 1 d)					
f	15.0 Hz … 99.9 Hz 100 Hz … 999 Hz	0.1 Hz 1 Hz		15.4 Hz … 420 Hz		±(0.2% rdg. + 1 d)	±(0.1% rdg. + 1 d)					
I_{L-PE}	0.00 … 9.99 mA 10.0 … 99.9 mA	0.01 mA 0.1 mA		0.10 mA … 9.99 mA 10.0 mA … 25.0 mA		±(6% rdg. + 2 d)	±(3.5% rdg. + 2 d)					

1. Resistance value R_{L-PE} is a setting value, not a measured value.

RCM

Measured quantity	Display Range	Resolution	Input Impedance / Test Current	Measuring Range	Nominal Values	Measuring Uncertainty	Intrinsic Uncertainty	Connections 1(L)	2(N)	3(PE)	Current Clamp	Other
$U_{I\Delta N}$	0.0 V … 70.0 V	0.1 V	0.33 · $I_{\Delta N}$ $I_{\Delta N}$ = 10 mA … 1000 mA	20.0 V … 70.0 V	U_N = 120 V / 230 V / 400 V f_N = 16.7 /50 Hz / 60 Hz / 200 Hz / 400 Hz $I_{\Delta N}$ = 10 mA / 30 mA / 100 mA / 300 mA / 500 mA / 1000 mA	+ (1% rdg. + 1 d) … + (10% rdg. + 1 d)	+ (1% rdg. + 1 d) … + (9% rdg. + 1 d)	●	● [1)]	●		
R_E	10 Ω … 999 Ω 1.00 kΩ … 6.51 kΩ	1 Ω 0.01 k Ω	$I_{\Delta N}$ = 10 mA · 1.05	Calculated value based on $R_E = U_{I\Delta N} : I_{\Delta N}$								
	3 Ω … 999 Ω 1.00 kΩ … 2.17 kΩ	1 Ω 0.01 k Ω	$I_{\Delta N}$ = 30 mA · 1.05									
	1 Ω … 651 Ω	1 Ω	$I_{\Delta N}$ = 1 00 mA · 1.05									
	0.3 Ω … 99.9 Ω 100 Ω … 217 Ω	0.1 Ω 1 Ω	$I_{\Delta N}$ = 300 mA · 1.05									
	0.2 Ω … 9.9 Ω 10 Ω … 130 Ω	0.1 Ω 1 Ω	$I_{\Delta N}$ = 500 mA · 1.05									
t_a	0.0 s … 10.0 s	0.1 s	$I_\Delta N$ = 10 mA … 1000 mA ~ [2)] 0.5 ×, 1 × ~ [2] 0.5 ×, 1 × ⎍ [2] 1 ×	0.5 s … 10.0 s		±(2% rdg. + 2 d)	±(1% rdg. + 1 d)					
I_Δ	0.0 mA … 99.9 mA 100 mA … 999 mA 1.00 A … 2.50 A	0.1 mA 1 mA 0.01 A		3.0 mA … 2.50 A		±(5% rdg. + 3 d)	±(3.5% rdg. + 2 d)					
U	0.0 V … 99.9 V 100 V … 999 V	0.1 V 1 V		2.0 V … 99.9 V 100 V … 440 V		±(2% rdg. + 5 d) ±(2% rdg. + 1 d)	±(1% rdg. + 5 d) ±(1% rdg. + 1 d)					
f	15.0 Hz … 99.9 Hz 100 Hz … 999 Hz	0.1 Hz 1 Hz		15.4 Hz … 99.9 Hz 100 Hz… 420 Hz		±(0.2 % rdg.+ 1 d)	±(0.1% rdg. + 1 d)					

1. Only required when testing with direct current.
2. Tripping test conducted with:
   – ~ : as specified
   – ~ : 0.7/1.4 × $I_\Delta N$
   – ⎍: 2 × $I_\Delta N$
   Max. Test current: 2.50 A. All figures are TRMS values.

I_L [1]

Measured quantity	Display Range	Resolution	Input Impedance / Test Current	Measuring Range	Nominal Values	Measuring Uncertainty	Intrinsic Uncertainty	Connections 1(L)	2(N)	3(PE)	Current Clamp	Other
I_L	1 µA … 999 µA 1.00 mA … 9.99 mA 10.0 mA … 16.0 mA	1 µA 0.01 mA 0.1 mA	R_S = 2 kΩ ± 20 Ω	15 µA … 999 µA 1.00 mA … 9.99 mA 10.0 mA … 16.0 mA		±(3% rdg. + 4 d)	±(2% rdg. + 3 d)	●		●		
f	15.0 Hz … 99.9 Hz 100 Hz … 999 Hz	0.1 Hz 1 Hz		15.4 Hz … 99.9 Hz 100 Hz … 420 Hz 2)		±(0.2% rdg. + 1 d)	±(0.1% rdg. + 1 d)					

[1] I_L = leakage current

[2] Frequency is only displayed as of a level of I_L > 100 µA.

≤1V≅ [1)]

Measured quantity	Display Range	Resolution	Input Impedance / Test Current	Measuring Range	Nominal Values	Measuring Uncertainty	Intrinsic Uncertainty	Connections 1(L)	2(N)	3(PE)	Current Clamp	Other
$I_{L/AMP}$	0.00 mA … 9.99 mA	0.01 mA	337 k Ω	0.20 mA … 9.99 mA		±(15% rdg. + 4 d)	±(2% rdg. + 5 d)				PROFITEST CLIP 100 mV/mA	
S	0 VA … 999 VA	1VA		U = 0.3 V … 600 V $U_{Esensor}$ = 0 V_{eff}… 1.0 V_{eff}	U_N = 120 V / 230 V / 400 V f_N = 50 Hz / 60 Hz	Calculated value from S = U × I						
	1.00 kVA … 9.99 kVA	0.01 kVA										
	10.0 kVA … 99.9 kVA	0.1 kVA										
	100 kVA … 999 kVA	1 kVA										
	1.00 MVA … 9.99 MVA	0.01 MVA										

1. Measuring range of the signal input at the test instrument, U_E: 0 V_{TRMS} … 1.0 V_{TRMS} (0 V_{peak} … 1.4 V_{peak}) AC/DC

T % R.H.

Measured quantity	Display Range	Resolution	Input Impedance / Test Current	Measuring Range	Nominal Values	Measuring Uncertainty	Intrinsic Uncertainty	Connections 1(L)	2(N)	3(PE)	Current Clamp	Other	Other
ϑ	-99.9 °C … +99.9 °C	0.1 °C		-10.0 °C … +50.0 °C		±2 °C	±2 °C						T/H sensor
r. h.	0.0% ... 99.9%	0.1%		10.0% ... 90.0%		±5 %	±5 %						

EXTRA$_{\Delta U}$

Measured quantity	Display Range	Resolution	Input Impedance / Test Current	Measuring Range	Nominal Values	Measuring Uncertainty	Intrinsic Uncertainty	Connections 1(L)	2(N)	3(PE)	Current Clamp	Other
Z_{L-N} Z_{Offset}	0 m Ω … 999 mΩ 1.00 Ω … 9.99 Ω	1 mΩ 0.01 Ω	≥10 $A_{AC/DC}$ where U = 120 V (– 0%) U = 230 V (– 0%) U = 400 V (– 0%) U = 690 V (– 0%)	50 mΩ … 999 mΩ 1.00 Ω … 5.00 Ω	U_N = 120/230 V 400/690 V_{AC} U_N = 850 V_{DC} f_N = DC 16.7 Hz / 50 Hz / 60 Hz / 200 Hz / 400 Hz	±(10% rdg. + 10 d) ±(6% rdg. + 4 d)	±(5% rdg. + 10 d) ±(3% rdg. + 3 d)	●		●		
ΔU ΔU_{Offset}	0.00% ... 9.99%	0.01%		Calculated value ΔU = (I_N · Z_{LN}) / U_N · 100%		Calculated value ΔU = (I_N · Z_{LN}) / U_N · 100%	Calculated value ΔU = (I_N · Z_{LN}) / U_N · 100%					
U	0.0 V … 99.9 V 100 V … 999 V	0.1 V 1 V	U = 850 V_{DC} (– 0 %)	2.0 V … 99.9 V 100 V_{AC} … 725 V_{AC} 100 V_{DC} … 850 V_{DC}		±(2% rdg. + 5 d) ±(2% rdg. + 1 d)	±(1% rdg. + 5 d) ±(1% rdg. + 1 d)					

HV (PROFITEST PRIME AC ONLY)

Measured quantity	Display Range	Resolution	Input Impedance / Test Current	Measuring Range	Nominal Values	Measuring Uncertainty	Intrinsic Uncertainty	Connections 1(L)	2(N)	3(PE)	Current Clamp	Probe HV-P	Probe HV-P
U	10 V … 999 V 1.00 kV … 2.55 kV	1 V 10 V	Impedance to earth: ≥1 MΩ (typ. ~ 15 MΩ)	200 V … 999 V 1.00 kV … 2.50 kV	1.0 kV / 1.5 kV / 2.0 kV / 2.5 kV	±(5% rdg. + 5 d) ±(5% rdg. + 5 d)	±(2.5% rdg. + 5 d) ±(2.5% rdg. + 5 d)					●	●
I	1.0 mA … 99.9 mA 100 mA … 200 mA	0.1 mA 1 mA		1.0 mA … 99.9 mA 100 mA … 200 mA		±(7% rdg. + 5 d) ±(7% rdg. + 5 d)	±(5% rdg. + 5 d) ±(5% rdg. + 5 d)					●	●
φ	0° to 90°	1°		0° to 90°		±(12% rdg. + 10 d)	±(10% rdg. + 10 d)					●	●

INFLUENCING QUANTITIES AND INFLUENCE ERROR

Abbreviation	Influencing Quantity	U	EN61557-4 R_{LO}	EN61557-2 R_{INS}	EN61557-3 Z_{LOOP}	EN61557-6 RCD I_F	EN61557-6 RCD $I_{\Delta N}$
A	Intrinsic Uncertainty	±(1 % v.M. + 5 d) for 2.0 V … 99.9 V ±(1 % rdg. + 1 d) for 100 V … 999 V	±(2 % rdg. + 2 d) for 0.10 Ω … 5.99 Ω	±(3 % rdg. + 10 d) for 50 kΩ … 999 kΩ ±(3 % rdg. + 1 d) for 1.00 MΩ … 1.20 GΩ	±(5 % rdg. +10 d) for 50 mΩ … 999 mΩ ±(3 % rdg. + 3 d) for 1.00 Ω … 5.00 Ω	±(3.5 % rdg. + 2 d) for 3.0 mA … 2.50 A	±3 ms for 5.0 ms … 999 ms
E1	Reference position ±90°	0%	0%	0%	0%	0%	0%
E2	Supply voltage	0%	1%	1%	1%	1%	1%
E3	Temperature 0 °C … +40 °C	0.5%	1%	2.5%	1%	2.5%	5%
E4	Series interference voltage						
E5	Probe resistance					0%	0%
E6	Phase angle 0° to 18°				1%		
E7	Line frequency 99% ... 101% of nominal frequency				1%		
E8	Line voltage 85% ... 110% of nominal voltage				1%		
E9	Mains harmonics				1%		
E10	DC component				1%		

light gray areas are not relevant

REFERENCE CONDITIONS

Line voltage	230 V, deviation: ≤ 0.1%
Line frequency	50 Hz, deviation: ≤ 0.1%
Frequency of measured quantity	45 … 65 Hz
Line voltage	Sine (deviation between RMS and rectified values ≤ 0.1%)
Line impedance angle	cosφ = 1
Probe resistance	< 10 Ω
Auxiliary power (mains)	230 V, deviation: ≤ 10%
Auxiliary power (battery)	10.8 V, deviation: ≤ 10%
Ambient temperature	+23 °C, deviation: ≤ ±2 K
Relative humidity	40% ... 60%
Extraneous field strength	< 0.1 A/m
Load resistors	Linear, strictly ohmic

NOMINAL RANGES OF USE

Voltage	120 V (108 V … 132 V) 230 V (196 V … 253 V) 400 V (340 V … 440 V) 690 V (656 V … 725 V) 850 V_{DC} (765 V_{DC} … 893 V_{DC})	
Frequency f_N	16.7 Hz (15.4 Hz … 18 Hz) 50 Hz (49.5 Hz … 50.5 Hz) 60 Hz (59.4 Hz … 60.6 Hz) 200 Hz (190 Hz … 210 Hz) 400 Hz (380 Hz … 420 Hz)	
	Line voltage waveform:	Sinusoidal
	Temperature range:	0 °C ... + 40 °C
	Supply impedance angle:	Corresponds to cos φ = 1… 0.95

OVERLOAD CAPACITY

U, U_{res}	1100 V_{TRMS} continuous
R_{LO}	Electronic protection prevents starting a measurement when interference voltage > 12 V is present.
R_{LO}HP	Electronic protection prevents starting a measurement when interference voltage > 12 V is present. Measurement aborted at test currents > 31 A. 10 s “on-time”, 30 s “off-time”.
R_{INS}	1200 V_{DC} continuous
$I_{\Delta N}$, IF , $I_{\Delta N}$+I_F , RCM	440 V continuous
Z_{LOOP}	725 V_{AC}, 893 V_{DC} (Limits the number of measurements and pause duration. If overload occurs, the measuring function is disabled by means of a thermostatic switch.)
Z_{LOOP}	440 V (Limits the number of measurements and pause duration. If overload occurs, the measuring function is disabled by means of a thermostatic switch.)
IMD	690 V, I_{LPE} < 25 mA continuous
I_L	15 mA_{TRMS} continuous, measurement is stopped in case of interference voltage > 60 V
	1 V_{TRMS} continuous

SCOPE OF FUNCTIONS DEPENDING ON TYPE OF POWER SUPPLY

Auxiliary Power (source)	Charge	Basic Functions	R_{LO} 25 A	HV_{AC}	HV_{DC}	RCD_{DC} [1]
Battery operation	–	✓	–	–	–	–[2]
Mains operation, 230 V/240 V ±10 % / 50/60 Hz ±1 Hz	✓	✓	✓	✓	✓	✓
Mains operation, 115 V ±10% / 50/60 Hz ±1 Hz	✓	✓	✓	–	✓	✓
Mains operation, 85 V … 264 V / 16.7 Hz … 400 Hz	✓	✓	–	–	✓	✓

1. Functions for RCD type B, B+ and loop with DC disabling (Loop+DC)
2. Performance of Z_{LOOP} DC+ (DC-H), RCD I_F and RCD $I_{\Delta N}$ measurements with DC test current is only recommended with a battery charge level of 50%.

Key ✓ Function available – Not possible/sensible

QUICK CHARGING MODE

No measurements can be conducted during the quick charging process. This is assured by the “Charge” position at the rotary switch.

SCOPE OF DELIVERY

Standard Scope of Delivery:

1 Measuring/test instrument (PROFITEST PRIME M516A or PROFITEST PRIME AC M516C)
1 Mains power cable, 1.5 m
1 Probe for L with test tip, 4 m probe cable and alligator clip [1))]
1 Probe for N with test tip, 4 m probe cable and alligator clip [1)]
1 Probe for PE with test tip, 4 m probe cable and alligator clip [1)]
1 Accessories pouch, 400 × 350 × 50
1 USB cable
1 Condensed operating instructions (this document)
1 DAkkS calibration certificate
1 Card with registration key for IZYTRONIQ software[2)]

1. Measuring category with safety cap attached: 300 V CAT IV, 600 V CAT III, 1 A;
   Measuring category without safety cap attached: 600 V CAT II, 16 A
2. IZYTRONIQ Business Starter. In some cases Business Starter is replaced by another version, e.g. for packages.

Available accessories ⇨ "Optional Accessories" 🗎20.

Instrument sets with additional accessories ⇨ "Order Information" 🗎26.

OPTIONAL ACCESSORIES

PROBES & PROBE ACCESSORIES

I-SK4-PROFITEST-PRIME (Z516T)
I-SK12-PROFITEST PRIME (Z516U)

Intelligent measuring probe with remote triggering and replaceable test tip, measuring point illumination, LED status display. Keys for triggering and saving. With plug-on alligator clip.

Measuring category with safety cap attached:
300 V CAT IV, 600 V CAT III, 1 A
Measuring category without safety cap attached:
600 V CAT II, 16 A
(suitable for 25 A short-circuit operation, 10 s “on-time”, 30 s “off-time”)

I-SK4-PROFITEST-PRIME (Z516T): 4 m connection cable.
I-SK12-PROFITEST-PRIME (Z516U): 12 m connection cable.

SK4-L (Z516L)
SK12-L (Z516O)

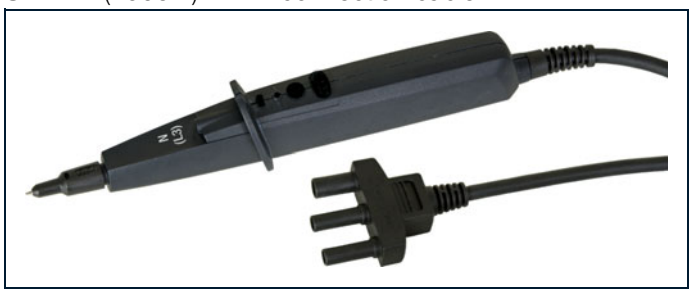
Probe for L with replaceable test tip. 300 V CAT IV, 25 A intermittently, 16 A continuous load. With plug-on alligator clip.

SK4-L (Z516L): 4 m connection cable.
SK12-L (Z516O): 12 m connection cable.

SK4-N (Z506N)
SK12-N (Z506M)

Probe for N with replaceable test tip. 300 V CAT IV, 16 A. With plug-on alligator clip.

SK4-N (Z506N): 4 m connection cable.
SK12-N (Z506M): 12 m connection cable.



SK4-PE (Z506P)
SK12-PE (Z506R)
SK25-PE (Z506S)
SK50-PE (Z516A)
SK75-PE (Z516B)
SK100-PE (Z516C)

Probe for PE with replaceable test tip. 300 V CAT IV, 16 A. With plug-on alligator clip.

SK4-PE (Z506P): 4 m connection cable.
SK12-PE (Z506R): 12 m connection cable.
SK25-PE (Z506S): 25 m connection cable.
SK50-PE (Z516A): 50 m connection cable.
SK75-PE (Z516B): 75 m connection cable.
SK100-PE (Z516C): 100 m connection cable.

REPLACEMENT TEST TIPS PRIME (Z506Y)

Replacement test tips for probes Z516L, Z506M, Z506N, Z516O, Z506P, Z506R, Z506S, Z516A, Z516B, Z516C, Z516T, Z.

Quantity: 5.

PRO-PE CLIP (Z503G)

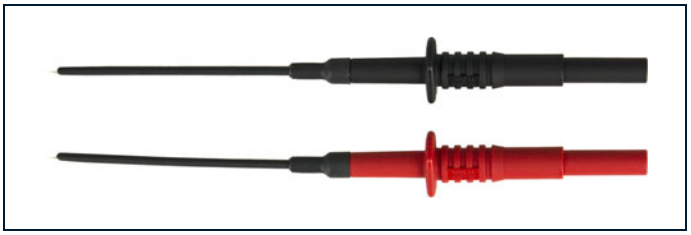
Flat test clip for contacting busbars quickly and safely. Opening: 0 to 12 mm.

CAT IV 1000 V, 32 A.

PROBE SET (Z503F)

Set of test tips. Working range: 68 mm. 2.3 mm dia.

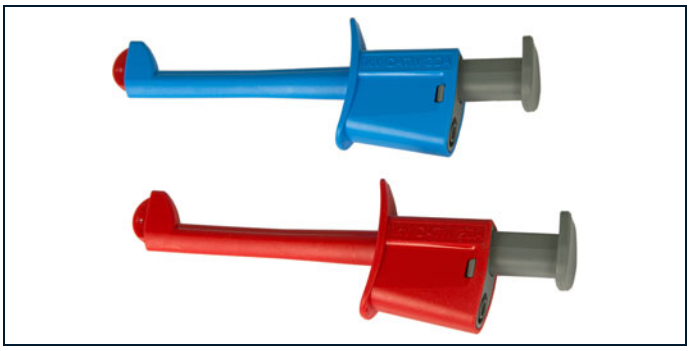
CAT III 600 V, 1 A.



SAFETY CLIP (Z503W)

Special safety clips (red/blue) with hook.

1 kV CAT IV, 20 A.



PRIME CABLE LUG (Z506X)

The cable lug can be plugged onto test probes in order to contact the measurement cable via the screw at the terminal. With sliding sleeve for reliable securing and locking to the test probe.

600 V CAT III, 16 A.

MEASURING ACCESSORIES

PROFITEST CLIP (Z506H)

Clamp meter for leakage or fault current as of 0.1 mA, direct or differential current up to 25 mA.

METRAFLEX P300 (Z502E)

Flexible current sensors for 3 A / 30 A / 300 A,
1 V … 10m V/A, 450 mm loop circumference.

PROFITEST-PRIME ADAPTER (Z506J), required for connection (➪🗎23).

Z3512A (Z225A)

Current clamp sensor: 1 A_{AC}/10 A_{AC}/100 A_{AC}/1000 A_{AC}, switchable.

PROFITEST-PRIME ADAPTER (Z506J), required for connection (➪🗎23).

WZ12C (Z219C)

Current clamp sensor: 1 mA …15 A / 1 … 150 A_{AC}, switchable.

PROFITEST-PRIME ADAPTER (Z506J), required for connection (➪🗎23).

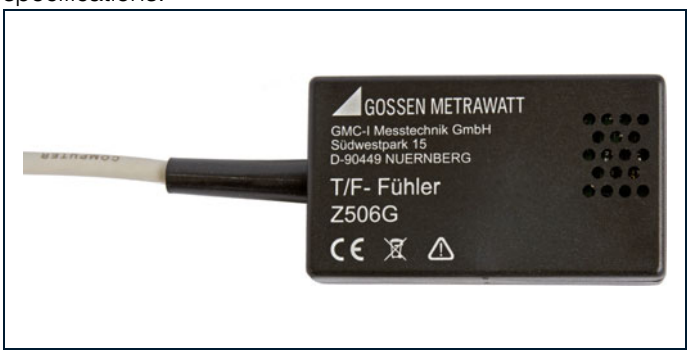
PROFITEST PRCD PRO (M512S)

Adapter for standards compliant testing of type S and K PRCDs by simulating faults per DIN EN 50678,
DIN EN 50699,BGI / GUV-I 608 and manufacturer's specifications.

T/F-SENSOR PROFITEST PRIME (Z506G)

Temperature/moisture sensor. The base plate is magnetic and can be attached to switch cabinet walls, for example. Connection via RS 232.

Measuring ranges: -10.0 … + 50.0 °C / 10.0 … 90.0%
Please refer to the product documentation further technical specifications.

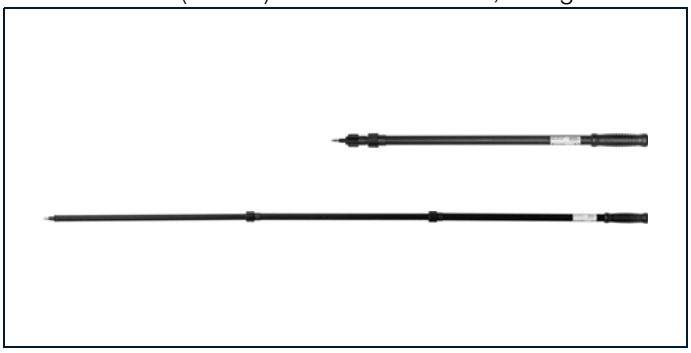


TELEARM 120 (Z505C)
TELEARM 180 (Z505D)

Telescoping rod for R_{LO} and R_{INS} measurements.

CAT III 600 V / CAT IV 300 V, 1 A.

TELEARM 120 (Z505C): 53.5 cm / 120 cm, 190 g.
TELEARM 180 (Z505D): 73.5 cm / 180 cm, 250 g.



CONNECTION ADAPTER

A3-16 SHIELDED (Z513A)

3-phase current adapter for connection to 7-pole CEE outlets. Nominal current: 16 A.

Testing the effectiveness of safety measures is conducted via seven 4 mm sockets with touch protection.

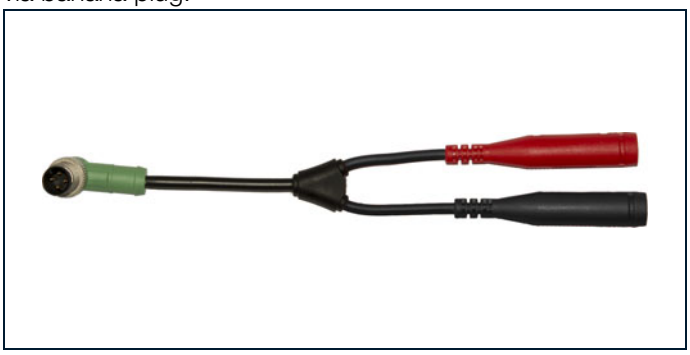
A3-32 SHIELDED (Z513B)

3-phase current adapter for connection to 7-pole CEE outlets. Nominal current: 32 A.

Testing the effectiveness of safety measures is conducted via seven 4 mm sockets with touch protection.

PROFITEST-PRIME ADAPTER (Z506J)

Adapter for connecting current clamp sensors with output via banana plug.



REPORT GENERATING ACCESSORIES

BARCODE PROFISCANNER RS232 (Z502F)

Barcode reader/scanner with laser and RS 232 port.

Reads 1D codes and 2D codes[1] at distances of up to 35 cm and confirms successful reading.

1. Please refer to the ID systems data sheet (available on our website) concerning supported codes.

E-MOBILITY

PROFITEST H+E EXPERT CHECK (M525R)

Tester for the testing of AC charging points in accordance with DIN EN / IEC 61851-1 (VDE 0122-1) with function tests, fault simulations and the visualization of the PWM signal. In combination with a PROFITEST MF / PROFITEST PRIME AC test instrument, the effectiveness of protective measures of AC charging points can be checked.

PROFITEST EMOBILITY (M513R)

Adapter for standards-compliant testing of single and 3-phase, mode 2 and 3 charging cables with simulation of faults in accordance with DIN EN 50678, VDE 0701 / DIN EN 50699, VDE 0702 and the manufacturer's specifications.

Some measurements/tests can be performed with the adapter alone, others require a compatible test instrument such as the PROFITEST PRIME / PROFITEST PRIME AC or accessories.

METRALINE PRO-TYP EM II (Z525G)

Single and 3-phase test adapter with type 2 plug for testing the effectiveness of protective measures at electric charging points by simulation of fictitiously connected electric vehicles and simulation of current-carrying capacity per IEC 61851-1. Extended CP test pin for testing charging points with permanently attached charging cable. With additional earthing contact socket.

PROFITEST PRIME AC – ACCESSORY FOR TESTING DIELECTRIC STRENGTH

SIGNAL PROFITEST PRIME AC (Z506B)

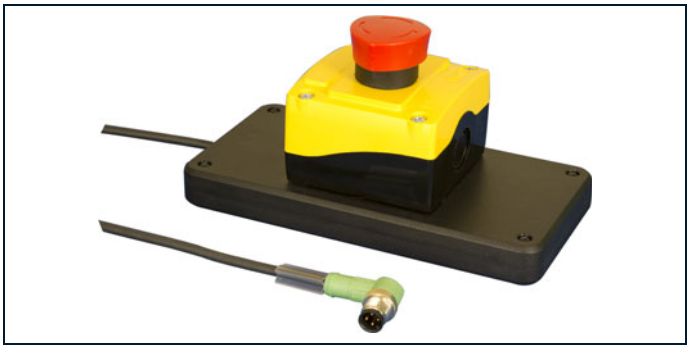
Indicator/signal lamp combination with 5 m connection cable in accordance with DIN EN 50191 / VDE 0104 and DIN EN 61557-14 / VDE 0413-14.

E-SK 10 SIGNAL (Z516E)

10 m extension cord for SIGNAL PROFITEST PRIME AC (Z506B).

STOP PROFITEST PRIME AC (Z506D)

Emergency off switch with 5 m connection cable in accordance with DIN EN 50191 / VDE 0104 and DIN EN 61557-14 / VDE 0413-14.



E-SK 10 STOP (Z516D)

10 m extension cord for STOP PROFITEST PRIME AC (Z506D).

CLAIM PROFITEST PRIME AC (Z504G)

Set of various items used to warn unauthorized persons and for securing large areas, machines or machine components during high-voltage test procedures. In accordance with DIN EN 50191 / VDE 0104 and DIN EN 61557-14 / VDE 0413-14.

HV-P PROFITEST PRIME AC (Z506V)

High-voltage pistol with integrated test triggering (switch), 4 m connection cable, max. 5 kV AC.

Quantity: 1 piece.

HV PACKAGE, PRIME AC (Z506Z)

Set including SIGNAL PROFITEST PRIME AC (Z506B), STOP PROFITEST PRIME AC (Z506D) and 2 ea. HV-P PROFITEST PRIME AC (Z506V).

POUCHES/CASES

PRIME CASE (Z506A)

Case with internal pocket for accessories and trolley mount (Z506F, not included).

TROLLEY (Z506F)

Trolley for PROFITEST PRIME, PROFITEST PRIME AC PRIME CASE (Z506A). Height: 61 or 97 cm.

TELEARM CASE (Z505E)

Rugged, universal carrying pouch for TELEARM 120 (Z505C) / TELEARM 180 (Z505D) with additional pockets for measuring accessories. 920× 170 mm.

INSTRUMENT

KEY PROFITEST PRIME AC (Z506E)

Key blank for PROFITEST PRIME AC key switch.

(The key number is on the inside of the case's cover. A new key can be made by a locksmith after providing him with the key blank and the key number).

ORDER INFORMATION

Note

Article Numbers for Test Instruments

The instrument's individual number can be found on the rating plate. This cannot be used for ordering – only the article numbers shown here for instruments with standard scope of delivery or for instrument sets can be used when placing orders.

INSTRUMENTS

Type	Description	Article Number
PROFITEST PRIME	PROFITEST PRIME test instrument (M516A) with standard scope of delivery ⇨🗎20.	M516G
PROFITEST PRIME AC	PROFITEST PRIME AC test instrument (M516C) with standard scope of delivery ⇨🗎20.	M516H

SETS

Type	Description	Article Number
PROFITEST PRIME Starter Package	PROFITEST PRIME (M516A; see above) with TROLLEY (Z506F), I-SK4-PROFITEST-PRIME (Z516T) and IZYTRONIQ BUSINESS Starter	M516K
PROFITEST PRIME Master Package	PROFITEST PRIME (M516A; see above) with PRIME CASE (Z506A), TROLLEY (Z506F), I-SK4-PROFITEST-PRIME (Z516T), PROFITEST CLIP (Z506H) and IZYTRONIQ BUSINESS Advanced	M516L
PROFITEST PRIME AC Profi Package	PROFITEST PRIME AC (M516C; see above) with PRIME CASE (Z506A), TROLLEY (Z506F), HV-P PROFITEST PRIME AC (Z506V), SIGNAL PROFITEST PRIME AC (Z506B), STOP PROFITEST PRIME AC (Z506D) and IZYTRONIQ BUSINESS Professional.	M516M

ACCESSORIES

PROBES & PROBE ACCESSORIES

Type	Description	Article Number
I-SK4-PROFITEST-PRIME	Intelligent measuring probe with remote triggering and replaceable test tip, measuring point illumination, LED status display. Keys for triggering and saving. With plug-on alligator clip. 4 m connection cable. 3300 V CAT IV, 600 V CAT III, 1 A with safety cap. 600 V CAT II, 16 A without safety cap. Suitable for 25 A short-circuit operation, 10 s "on-time", 30 s "off-time").	Z516T
I-SK4-PROFITEST-PRIME	Intelligent measuring probe with remote triggering and replaceable test tip, measuring point illumination, LED status display. Keys for triggering and saving. With plug-on alligator clip. 12 m connection cable. 3300 V CAT IV, 600 V CAT III, 1 A with safety cap. 600 V CAT II, 16 A without safety cap. Suitable for 25 A short-circuit operation, 10 s "on-time", 30 s "off-time".	Z516U
SK4-L	Probe for L with replaceable test tip. With plug-on alligator clip. 4 m connection cable. 300 V CAT IV. Suitable for 25 A short-circuit operation, 10 s "on-time", 30 s "off-time".	Z516L
SK12-L	Probe for L with replaceable test tip. With plug-on alligator clip. 12 m connection cable. 300 V CAT IV. Suitable for 25 A short-circuit operation, 10 s "on-time", 30 s "off-time".	Z516O

Type	Description	Article Number
SK4-N	Probe for N with replaceable test tip. With plug-on alligator clip. 12 m connection cable. 300 V CAT IV. Suitable for 25 A short-circuit operation, 10 s “on-time”, 30 s “off-time”.	Z506N
SK12-N	Probe for N with replaceable test tip. With plug-on alligator clip. 12 m connection cable. 300 V CAT IV. Suitable for 25 A short-circuit operation, 10 s “on-time”, 30 s “off-time”.	Z506M
SK4-PE	Probe for PE with replaceable test tip. With plug-on alligator clip. 4 m connection cable. 300 V CAT IV. Suitable for 25 A short-circuit operation, 10 s “on-time”, 30 s “off-time”.	Z506P
SK12-PE	Probe for PE with replaceable test tip. With plug-on alligator clip. 12 m connection cable. 300 V CAT IV. Suitable for 25 A short-circuit operation, 10 s “on-time”, 30 s “off-time”.	Z506R
SK25-PE	Probe for PE with replaceable test tip. With plug-on alligator clip. 25 m connection cable. 300 V CAT IV. Suitable for 25 A short-circuit operation, 10 s “on-time”, 30 s “off-time”.	Z506S
SK50-PE	Probe for PE with replaceable test tip. With plug-on alligator clip. 50 m connection cable. 300 V CAT IV. Suitable for 25 A short-circuit operation, 10 s “on-time”, 30 s “off-time”.	Z516A
SK75-PE	Probe for PE with replaceable test tip. With plug-on alligator clip. 75 m connection cable. 300 V CAT IV. Suitable for 25 A short-circuit operation, 10 s “on-time”, 30 s “off-time”.	Z516B
SK100-PE	Probe for PE with replaceable test tip. With plug-on alligator clip. 100 m connection cable. 300 V CAT IV. Suitable for 25 A short-circuit operation, 10 s “on-time”, 30 s “off-time”.	Z516C
Replacement test probes PRIME	Replacement test tips for probesZ516L, Z506M, Z506N, Z516O, Z506P, Z506R, Z506S, Z516A, Z516B, Z516C, Z516T, Z516U. Quantity: 5	Z506Y
PRO-PE Clip	Clamp meter for leakage or fault current as of 0.1 mA, direct or differential current up to 25 mA.	Z503G
Probe set	Set of test tips. Working range: 68 mm. 2.3 mm dia. CAT III 600 V, 1 A	Z503F
Safety Clip	Special safety clips (red and blue) with hook. 1 kV CAT IV, 20 A.	Z503W
PRIME Cable Lug	The cable lug can be plugged onto test probes in order to contact the measurement cable via the screw at the terminal. With sliding sleeve for reliable securing and locking to the test probe. 600 V CAT III, 16 A.	Z506X

MEASURING ACCESSORIES

Type	Description	Article Number
PROFITEST CLIP	Clamp meter for leakage or fault current as of 0.1 mA, direct or differential current up to 25 mA.	Z506H
METRAFLEX P300	Flexible current sensors for 3 A / 30 A / 300 A, 1 V … 10m V/A, 450 mm loop circumference. PROFITEST-PRIME ADAPTER (Z506J), required for connection.	Z502E
Z3512A	Current clamp sensor: 1 A_{AC}/10 A_{AC}/100 A_{AC}/1000 A_{AC}, switchable. PROFITEST-PRIME ADAPTER (Z506J), required for connection	Z225A
WZ12C	Current clamp sensor: 1 mA …15 A / 1 … 150 A_{AC}, switchable. PROFITEST-PRIME ADAPTER (Z506J), required for connection	Z219C
PROFITEST PRCD PRO	Adapter for standards compliant testing of type S and K PRCDs by simulating faults per DIN EN 50678, DIN EN 50699, BGI / GUV-I 608 and manufacturers' specifications.	M512S
T/F Sensor PROFITEST PRIME	Temperature/moisture sensor. The base plate is magnetic and can be attached to switch cabinet walls, for example. Connection via RS 232.	Z506G
TELEARM 120	Telescoping rod for RLO and RINS measurements. 53.5 cm / 120 cm, 190 g. CAT III 600 V / CAT IV 300 V, 1 A. TELEARM 180 (Z505D): 73.5 cm / 180 cm, 250 g	Z505C
TELEARM 180	Telescoping rod for RLO and RINS measurements. 73.5 cm / 180 cm, 250 g CAT III 600 V / CAT IV 300 V, 1 A.	Z505D

CONNECTION ADAPTERS

Type	Description	Article Number
A3-16 Shielded	3-phase current adapter for connection to 7-pole CEE outlets. Nominal current: 16 A. Testing the effectiveness of safety measures is conducted via seven 4 mm sockets with touch protection.	Z513A
A3-32 Shielded	3-phase current adapter for connection to 7-pole CEE outlets. Nominal current: 32 A. Testing the effectiveness of safety measures is conducted via seven 4 mm sockets with touch protection.	Z513B
ADAPTER-PROFITEST-PRIME	Adapter for connecting current clamp sensors with output via banana plug.	Z506J

REPORT GENERATING ACCESSORIES

Type	Description	Article Number
Barcode Profiscanner RS 232	Barcode reader/scanner with laser and RS 232 port. Reads 1D codes and 2D codes at distances of up to 35 cm and confirms successful reading.	Z502F

E-MOBILITY

Type	Description	Article Number
PROFiTEST H+E EXPERT CHECK	Function tester for AC charging points, also with integrated cable in accordance with IEC 61851-1. Vehicle simulation CP, cable simulation PP and fault simulation.	M525R
PROFITEST EMOBILTY	Adapter for standards-compliant testing of single and 3-phase, mode 2 and 3 charging cables with simulation of faults in accordance with DIN EN 50678, VDE 0701 / DIN EN 50699, VDE 0702 and the manufacturer's specifications.	M513R
METRALINE PRO-TYP EM II	Test Adapter for Electric Charging Points (single/3-phase, type 2) with earthing contact socket.	Z525G

PROFITEST PRIME AC – ACCESSORY FOR TESTING DIELECTRIC STRENGTH

Type	Description	Article Number
SIGNAL PROFITEST PRIME AC	Indicator/signal lamp combination with 5 m connection cable in accordance with DIN EN 50191 / VDE 0104 and DIN EN 61557-14 / VDE 0413-14.	Z506B
STOP PROFITEST PRIME AC	Emergency off switch with 5 m connection cable in accordance with DIN EN 50191 / VDE 0104 and DIN EN 61557-14 / VDE 0413-14.	Z506D
CLAIM PROFITEST PRIME AC	Set of various items used to warn unauthorized persons and for securing large areas, machines or machine components during high-voltage test procedures. In accordance with DIN EN 50191 / VDE 0104 and DIN EN 61557-14 / VDE 0413-14.	Z504G
HV-P PROFITEST PRIME AC	High-voltage pistol with integrated test triggering (switch), 4 m connection cable, max. 5 kV AC. Quantity: 1 piece	Z506V
HV Package PRIME AC	Set including SIGNAL PROFITEST PRIME AC (Z506B), STOP PROFITEST PRIME AC (Z506D) and 2 ea. HV-P PROFITEST PRIME AC (Z506V).	Z506Z

POUCHES/CASES

Type	Description	Article Number
PRIME CASE	Case with internal pocket for accessories and trolley mount (Z506F, not included).	Z506A
TROLLEY	Trolley for PRIME CASE (Z506A). Height: 61 or 97 cm.	Z506F
TELEARM case	Rugged, universal carrying pouch for TELEARM 120 (Z505C) / TELEARM 180 (Z505D) with additional pockets for measuring accessories. 920× 170 mm.	Z505E

INSTRUMENT

Type	Description	Article Number
KEY PROFITEST PRIME AC	Key blank for key switch	Z506E

Further information is available:

- in our Measuring Instruments and Testers catalog
- on the Internet at www.gossenmetrawatt.com

GMC INSTRUMENTS

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