GOSSEN METRAWATT

PROFITEST PRIME, PRIME AC

Testers for IEC 60364-6, EN 50110-1, IEC 60204-1, IEC 61439-1, DIN EN 62446-1 and DIN EN 61851-1

3-349-932-03
6/3.19

- Measurement in **AC/DC systems**
- Measurement of **internal system 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, 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**
- **Testing for dielectric strength 2.5 kV AC**, 500 VA
  with **PROFITEST PRIME AC**
  standard sequence, ramp function and pulse control mode
- **PROFITEST PRIME AC:** work safety concept for inspector per DIN EN 50191 and EN 61557-14 with indicator lamp, emergency stop switch and key switch
- **Mains and battery operation** (with limited functionality)
- Bluetooth (i. a. for connecting a keyboard) and USB interfaces
- **Push-print function** – transmission of measured value after measurement



Applications

The **PROFITEST PRIME** is the first all-in-one test Instrument for electrical equipment in AC and DC systems for testing the effectiveness of protective measures and more.

- 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 / insulation measurement up to 100 GΩ

Features

Display with Selectable Language

The LCD panel consists of a backlit dot matrix at which menus, setting options, measurement results, tables, instructions and error messages, as well schematic diagrams appear.
The display can be set to the desired language depending on the country in which the test instrument is used.

Operation

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.

Error Indication

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

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Battery Monitoring and Self-Test

Battery monitoring is conducted while the instrument is subjected to an electrical load. Results are displayed both numerically and with a symbol. Test images can be called up one after the other, and LEDs can be tested during the self-test. The tester is shut down automatically when the batteries are depleted.

RS 232 Port

Barcode scanners or temperature/humidity sensors can be connected to the RS 232 port.

USB and Bluetooth Communication Interfaces

Measurement data are transmitted to a PC via the integrated interfaces, at which they can be printed in report form and archived.

User PC Software

This software offers a wide variety of support options for data acquisition and management.

- Amongst other things, the software acquires all important data for reports per IN IEC 60364-6/DIN VDE 0100, part 600.
- Test reports (ZVEH) can be generated automatically.
- Distribution structures with electrical circuit and RCD data can be individually defined.
- Created structures can be saved to memory and loaded to the test instrument as required via the USB port.

Software Update

The test instrument can always be kept current thanks to firmware which can be updated via the USB port. Software is updated during the course of recalibration by our service department, or directly by the customer.

Optional Remote Control

The active Z506T (4 m) or Z506U (12 m) probes makes it possible to control the test instrument over considerable distances.

The probe is equipped with **Start-Stop / IΔ_N / Save-Send** and measuring point illumination keys. Integrated LEDs indicate the current status of the measurement and permit limit value evaluation.

PROFITEST... (article number)	**PRIME** (M506A)	**PRIME AC** (M506C)
Voltage and Frequency Measurement up to 1 kV		
In single-phase AC/DC systems	X	X
In 3-phase systems (UL1-L3, UL1-L2, UL2-L3)	X	X
Phase sequence testing	X	X
Measurement of Protective Conductor Resistance RLO		
With 0.2 A measuring current: constant/ramp, polarity and test time can be selected	X	X
With 25 A measuring current	X	X
Measurement of Insulation Resistance RINS		
With constant DC test voltage (50 …1000 V)	X	X
With DC ramp function	X	X
Testing of Residual Current Devices		
General and selective including RCD, SRCD, PRCD, G/R and RCBO variants	X	X
Testing of AC/DC sensitive RCDs, types B, B+ and EV	X	X
Measurement of fault voltage without tripping the RCD	X	X
Tripping current measurement with ramp function	X	X
Measurement of time to trip	X	X
Simultaneous measurement of tripping current and time to trip with “intelligent ramp”	X	X
Loop Impedance Measurement		
Measurement with full-wave, test current: 10 A AC/DC	X	X
Measurement in 690 V systems	X	X
Measurement in DC systems	X	X
Without tripping the RCD (type AC, A) by means of “DC saturation process”	X	X
Combined process without tripping the RCD: “impedance Z + R”	X	X
Without tripping the RCD: 15 mA process	X	X
Display of permissible fuse types in a table	X	X
Residual Voltage Test	X	X
Testing of Insulation Monitoring Devices (IMDs)	X	X
Testing of Residual Current Monitoring Devices (RCMs)	X	X
Leakage Current Measurement (direct)	X	X
Current Measurement (with optional current clamp sensor)	X	X
Measurement of Temperature and Atmospheric Humidity	X	X
Voltage Drop Measurement ΔU	X	X
Documentation of Charging Station Tests	X	X
Documentation of Fault Simulations at PRCDs with the Profitest|PRCD Adapter	X	X
HV AC Testing for Dielectric Strength 2.5 kV / 200 mA		
With test voltage AC constant	—	X
Breakdown voltage measurement with ramp function	—	X
Defect location with pulse control mode	—	X
Features		
Automatic test sequence function	X	X
Selectable menu language: D, GB, F, NL, I, E, CZ, NO	X	X
Push-print function (storage or transmission via Bluetooth)	X	X
Database (max. 30,000 objects can be saved)	X	X
Operation via optional control probe: (Start/IΔ_N/Save/Light)	0	0
RS 232 port for RFID/barcode reader	X	X
Interface for data transmission via Bluetooth®	X	X
Interface for data transmission via USB	X	X
IZYTRONIQ BUSINESS Starter database and report software for PC	X	X
Measuring category for basic measuring functions: 600 V CAT III / 300 V CAT IV	X	X
HV AC terminals: 2.5 kV / 200 mA	—	X
DAkkS calibration certificate	X	X

X: included
0: available as option
—: not available

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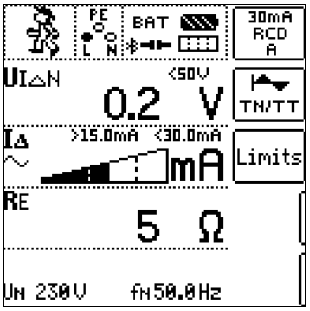
Sample Displays

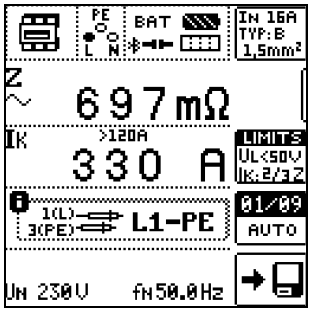
PROFITEST PRIME Test Instruments

Softkeys allow for convenient selection of sub-functions and parameter settings. Unavailable sub-functions and parameters are automatically prevented from appearing at the display.

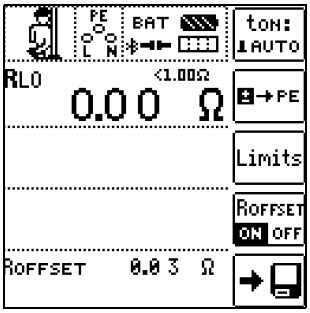
RCD Measurement Display



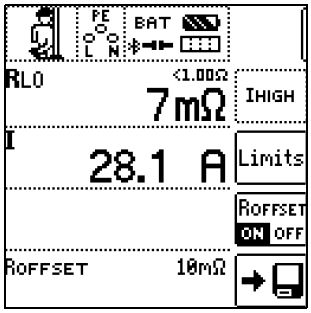
Loop Resistance Display



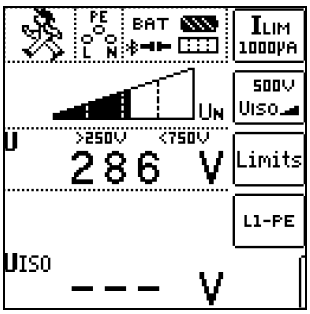
Low-Resistance Display, 0.2 A



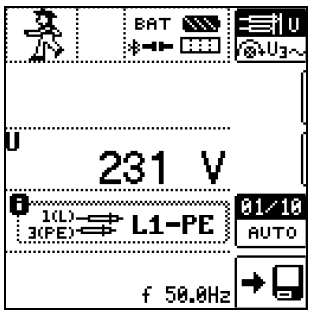
Low-Resistance Display, 25 A



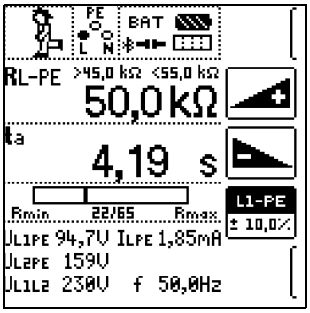
Insulation Measurement Display



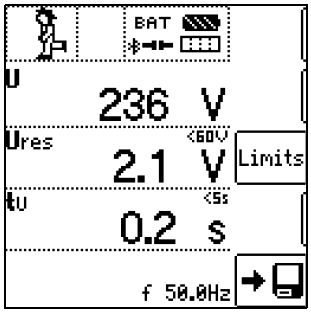
Voltage Measurement Display



IMD Test Display



Residual Voltage Display



Applicable Regulations and Standards

IEC 61010 **DIN EN 61010** **VDE 0411**	Safety requirements for electrical equipment for measurement, control and laboratory use Part 1: General requirements (IEC 61010-1:2010 + Cor. :2011) Part 2-030: Particular requirements for testing and measuring circuits Part 031: Safety requirements for hand-held probe assemblies for electrical measurement and test Part 2-032: Particular requirements for hand-held and hand-manipulated current sensors for electrical test and measurement
IEC 61557 **DIN EN 61557** **VDE 0413**	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 Part1: General requirements (IEC 61557-1:2007) Part 2: Insulation resistance (IEC 61557-2:2007) Part 3: Loop impedance (IEC 61557-3:2007) Part 4: Resistance of earth connection and equipotential bonding (IEC 61557-4:2007) Part 6: Effectiveness of residual current devices (RCD) in TT, TN and IT systems (IEC 61557-6:2007) Part 7: Phase sequence (IEC 61557-7:2007) Part 10: 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 (IEC 61557-10:2000) Part 14: Equipment for testing the safety of electrical equipment of machinery
DIN EN 61326 **VDE 0843-20**	Electrical equipment for measurement, control and laboratory use – EMC requirements Part 1: General requirements Part 2-2: Particular requirements – Test configurations, operational conditions and performance criteria for portable test, measuring and monitoring equipment used in low-voltage distribution systems
IEC 60364-6 **VDE 0100-600**	Low-voltage electrical installations – Part 6: Tests
EN 50110-1 **VDE 0105-100**	Operation of electrical installations – Part 100: General requirements
IEC 60364-7-710 **VDE 0100-710**	Low-voltage electrical installations – Requirements for special installations or locations – Part 710: Medical locations

IEC 61439-1 **DIN EN 61439-1** **VDE 0660-600-1**	Low-voltage switchgear and controlgear assemblies Part 1: General rules
IEC 60204–1 **DIN EN 60204–1** **VDE 0113-1**	Safety of machinery – Electrical equipment of machines Part 1: General requirements
DIN EN 60060–1, HD 588.1 **VDE 0432-1**	High-voltage test techniques Part 1: General definitions and test requirements
DIN VDE 0472	Testing of cables, wires and flexible cords

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Characteristic Values

Function	Measured Quantity	Display range	Resolution	Input Impedance / Test Current	Measuring Range	Nominal Values	Measuring Uncertainty	Intrinsic Uncertainty	Connections 1(L)	2(N)	3(PE)	Clamp	Other
U	U	0.0 ... 99.9 V 100 ... 999 V	0.1 V 1 V	5 MΩ	2.0 ... 99.9 V_{RMS} 100 ... 999 V_{RMS}		±(2% rdg.+5d) ±(2% rdg. + 1d)	±(1% rdg.+5d) ±(1% rdg.+1d)	●		●		
	$U_{3\sim}$	0.0 ... 99.9 V 100 ... 999 V	0.1 V 1 V		2.0 ... 99.9 V_{RMS} 100 ... 999 V_{RMS}		±(3% rdg.+5d) ±(3% rdg. + 1d)	±(2% rdg.+5d) ±(2% rdg.+1d)	●	●	●		
	f	DC; 15.0 ... 99.9 Hz 100 ... 999 Hz	0.1 Hz 1 Hz		DC, 15.4 ... 420 Hz		±(0.2%rdg.+1d)	±(0.1%rdg.+1d)	●		●		
RLO 0.2 A	RLO	0.00 … 9.99 Ω 10.0 … 99.9 Ω 100 … 199 Ω	0.01 Ω 0.1 Ω 1 Ω	I ≥ 200 mA DC	0.10 … 5.99 Ω	U_q = 4.5 V	±(4% rdg. + 2d)	±(2% rdg. + 2d)	●		●		PRCD adapter
				I < 260 mA DC	6.00 … 99.9 Ω								
	ROFFSET	0.00 … 9.99 Ω	0.01 Ω	I ≥ 200 mA DC	0.10 … 5.99 Ω								
				I < 260 mA DC	6.00 … 99.9 Ω								
RLO 25 A	RLO	1 m ... 999 mΩ 1.00 … 9.99 Ω 10.0 … 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								
	ROFFSET	1 m ... 999 mΩ	1 mΩ	I ≥ 25 A AC [1]	10 mΩ ... 50 mΩ 51 mΩ ... 999 mΩ								
RINS	RINS	1 ... 999 kΩ 1.00 ... 9.99 MΩ 10.0 ... 49.9 MΩ	1 kΩ 0.01 MΩ 0.1 MΩ	I_K < 1.6 mA (for U_{INS} = 15 V ... 1.00 kV)	50 ... 999 kΩ 1.00 ... 49.9 MΩ	U_N = 50 V I_N = 1 mA	±(5% rdg.+10d) ±(5% rdg. + 2d)	±(3% rdg.+10d) ±(3% rdg.+1d)	●		●		
		1 ... 999 kΩ 1.00 ... 9.99 MΩ 10.0 ... 99.9 MΩ	1 kΩ 0.01 MΩ 0.1 MΩ		50 ... 999 kΩ 1.00 ... 99.9 MΩ	U_N = 100 V I_N = 1 mA	±(5% rdg.+10d) ±(5% rdg. + 2d)	±(3% rdg.+10d) ±(3% rdg.+1d)					
		1 ... 999 kΩ 1.00 ... 9.99 MΩ 10.0 ... 99.9 MΩ 100 ... 200 MΩ	1 kΩ 0.01 MΩ 0.1 MΩ 1 MΩ		50 ... 999 kΩ 1.00 ... 200 MΩ	U_N = 250 V I_N = 1 mA	±(5% rdg.+10d) ±(5% rdg. + 2d)	±(3% rdg.+10d) ±(3% rdg.+1d)					
		1 ... 999 kΩ 1.00 ... 9.99 MΩ 10.0 ... 99.9 MΩ 100 ... 999 MΩ 1.00 ... 1.20 GΩ	1 kΩ 0.01 MΩ 0.1 MΩ 1 MΩ 0.01 GΩ		50 ... 999 kΩ 1.00 ... 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 UINS	10 ... 999 V– 1.00 ... 1.19 kV	1 V 0.01 kV		25 V ... 1.19 kV	U_N = 50, 100, 250, 325, 500, 1000 V DC	±(3% rdg. + 1d)	±(1.5% rdg. + 1d)					
RINS	U UINS	10 ... 999 V– 1.00 ... 1.19 kV	1 V 0.01 kV	I_K < 1.6 mA	25 V ... 1.19 kV	U_N = 50, 100, 250, 325, 500, 1000 V	±(3% rdg. + 1d)	±(1.5% rdg. +1 d)	●		●		
RCD IF	UIΔN	0.0 ... 70.0 V	0.1 V	0.33 · $I_{\Delta N}$ $I_{\Delta N}$ = 10 mA ... 1000 mA	5.0 ... 70.0 V	$U_{I\Delta N}$ = 25, 50, 65 V	+(1% rdg. + 1d) ... +(10% rdg.+1d)	+(1% rdg.+1d) ... +(9% rdg.+1d)	●	● [2]	●		PRCD adapter
	RE	10 ... 999 Ω 1.00 ... 6.51 kΩ	1 Ω 0.01 kΩ	$I_{\Delta N}$ = 10 mA · 1.05	Value calculated from $R_E = U_{I\Delta N} / I_{\Delta N}$								
		3 … 999 Ω 1.00 ... 2.17 kΩ	1 Ω 0.01 kΩ	$I_{\Delta N}$ = 30 mA · 1.05									
		1 … 651 Ω	1Ω	$I_{\Delta N}$ = 100 mA · 1.05									
		0.3 … 99.9 Ω 100 … 217 Ω	0.1 Ω 1 Ω	$I_{\Delta N}$ = 300 mA · 1.05									
		0.2 … 9.9 Ω 10 … 130 Ω	0.1 Ω 1 Ω	$I_{\Delta N}$ = 500 mA · 1.05									
		0.2 … 9.9 Ω 10 … 65 Ω	0.1 Ω 1 Ω	$I_{\Delta N}$=1000 mA·1.05									
	I_Δ	3.0 ... 99.9 mA 100 ... 999 mA 1.00 ... 2.50 A	0.1 mA 1 mA 0.01 A	~ (0.3 ... 1.3) x $I_{\Delta N}$ ⌒ (0.3 ... 1.4) x $I_{\Delta N}$ ⎍ (0.2 ... 2.5) x $I_{\Delta N}$ $I_{\Delta N}$ = 10 mA ... 1000 mA	3.0 mA ... 2.50 A	U_N = 120/230/400 V f_N = 16.7/50/60/ 200/400 Hz	±(5% rdg.+3d)	±(3.5% rdg. + 2 d)					
	U	0.0 ... 99.9 V 100 ... 999 V	0.1 V 1 V	5 MΩ	2.0 ... 99.9 V 100 ... 440 V	$I_{\Delta N}$ = 10/30/100/ 300/500/1000 mA	±(2% rdg.+5d) ±(2% rdg. + 1 d)	±(1% rdg.+5d) ±(1% rdg.+1d)					
	f	15.0 ... 99.9 Hz 100 ... 999 Hz	0.1 Hz 1 Hz		15.4 ... 420 Hz		±(0.2% rdg.+1d)	±(0.1% rdg.+1d)					

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Function	Measured Quantity	Display range	Resolution	Input Impedance / Test Current	Measuring Range	Nominal Values	Measuring Uncertainty	Intrinsic Uncertainty	Connections 1(L)	2(N)	3(PE)	Clamp	Other
RCD $I\Delta N$	$U_{I\Delta N}$	0.0 ... 70.0V	0.1 V	0.33 · $I_{\Delta N}$ $I_{\Delta N}$ = 10 mA ... 1000 mA	5.0 ... 70.0V	$U_{I\Delta N}$ = 25, 50, 65 V	+1% rdg. + 1 d ... +10% rdg. + 1 d	+(1% rdg.+1d) ... +(9% rdg.+1d)	●	● [2]	●		PRCD adapter
	R_E	10 ... 999 Ω 1.00 ... 6.51 kΩ	1 Ω 0.01 kΩ	$I_{\Delta N}$ = 10 mA · 1.05	Value calculated from $R_E = U_{I\Delta N} / I_{\Delta N}$								
		3 … 999 Ω 1.00 ... 2.17 kΩ	1 Ω 0.01 kΩ	$I_{\Delta N}$ = 30 mA · 1.05									
		1 … 651 Ω	1Ω	$I_{\Delta N}$ = 100 mA · 1.05									
		0.3 … 99.9 Ω 100 … 217 Ω	0.1 Ω 1 Ω	$I_{\Delta N}$ = 300 mA · 1.05									
		0.2 … 9.9 Ω 10 … 130 Ω	0.1 Ω 1 Ω	$I_{\Delta N}$ = 500 mA · 1.05									
		0.2 … 9.9 Ω 10 … 65 Ω	0.1 Ω 1 Ω	$I_{\Delta N}$=1000 mA·1.05									
	I_T			0.5x: 0,95 · 0.5 · $I_{\Delta N}$		U_N = 120/230/400 V f_N = 16.7/50/60/ 200/400 Hz	(0.5·$I_{\Delta N}$) -10% ... +0%	(0.95·0.5·$I_{\Delta N}$) ±3.5%					
				1x: 1.05 · $I_{\Delta N}$ 1.4x: 1.47· $I_{\Delta N}$ 2x: 2.1· $I_{\Delta N}$ 5x: 5.25 · $I_{\Delta N}$			(X·$I_{\Delta N}$)+0% ... +10%	(1.05·X·$I_{\Delta N}$)±3.5%					
	ta	0 ... 999 ms	1 ms	[5] 0.5x, 1x, 2x, 5x [5] 0.5x, 1x [5] 1x $I_{\Delta N}$ = 10 mA ... 1000 mA	0 ... 999 ms		±4 ms	±3 ms					
	U	0.0 ... 99.9V 100 ... 999 V	0.1 V 1 V		2.0 ... 99.9V 100 ... 440 V	$I_{\Delta N}$ = 10/30/100/ 300/500/1000 mA	±(2% rdg.+5d) ±(2% rdg. + 1d)	±(1% rdg.+5d) ±(1% rdg.+1d)					
	f	15.0 ... 99.9 Hz 100 ... 999 Hz	0.1Hz 1Hz		15.4 ... 420 Hz		±(0.2%rdg.+1d)	±(0.1% rdg.+1d)					
RCD I_F + $I\Delta N$	$U_{I\Delta N}$	0.0 ... 70.0V	0.1 V	0.33 · $I_{\Delta N}$ $I_{\Delta N}$ = 10 mA ... 1000 mA	5.0 ... 70.0V	$U_{I\Delta N}$ = 25, 50, 65 V	+(1% rdg. + 1d) ... +(10% rdg.+1d)	+(1% rdg.+1d) ... +(9% rdg.+1d)	●		●		PRCD adapter
	R_E	10 ... 999 Ω 1.00 ... 6.51 kΩ	1 Ω 10 Ω	$I_{\Delta N}$ = 10 mA · 1.05	Value calculated from $R_E = U_{I\Delta N} / I_{\Delta N}$								
		3 … 999 Ω 1.00 ... 2.17 kΩ	1 Ω 0.01 kΩ	$I_{\Delta N}$ = 30 mA · 1.05									
		1 ... 651 Ω	1Ω	$I_{\Delta N}$ = 100 mA · 1.05									
		0.3 … 99.9 Ω 100 … 217 Ω	0.1 Ω 1 Ω	$I_{\Delta N}$ = 300 mA · 1.05									
		0.2 … 9.9 Ω 10 … 130 Ω	0.1 Ω 1 Ω	$I_{\Delta N}$ = 500 mA · 1.05									
		0.2 … 9.9 Ω 10 … 65 Ω	0.1 Ω 1 Ω	$I_{\Delta N}$=1000 mA·1.05									
	ta	0 ... 999 ms	1 ms	(0.3 ... 1.3) x $I_{\Delta N}$ $I_{\Delta N}$ = 10 mA ... 1000 mA	0 ... 999 ms	U_N = 120/230/400 V f_N = 16.7/50/60/ 200/400 Hz $I_{\Delta N}$ = 10/30/100/ 300/500/1000 mA AC	±4 ms	±3 ms					
	I_Δ	3.0 ... 99.9mA 100 ... 999mA 1.00 ... 1.30A	0.1 mA 1 mA 0.01 A		3.0 mA ... 1.30 A		±(5% rdg.+3d)	±(3.5% rdg.+2d)					
	U	0.0 ... 99.9V 100 ... 999 V	0.1 V 1 V		2.0 ... 99.9V 100 ... 440 V		±(2% rdg.+5d) ±(2% rdg. + 1d)	±(1% rdg.+5d) ±(1% rdg.+1d)					
	f	15.0 ... 99.9 Hz 100 ... 999 Hz	0.1Hz 1Hz		15.4 ... 420 Hz		±(0.2%rdg.+1d)	±(0.1% rdg.+1d)					
ZLOOP AC/DC	Z	0 ... 999 mΩ 1.00 … 9.99 Ω	1 mΩ 0.01 Ω	≥ 10 A AC/DC for U=120V (-0%) U=230V (-0%) U=400V (-0%) U=690V (-0%) U=850V DC (-0%)	50 ... 999 mΩ 1.00 ... 5.00 Ω [3]	U_N = 120/230 V 400/690 V AC U_N = 850 V DC f_N = DC/16.7/50/ 60/200/400 Hz	±(10% rdg.+10d) ±(6% rdg. +4 d)	±(5% rdg.+10d) ±(3% rdg.+3d)	●		●		
	I_K	0.0 ... 9.9A 10 ... 999A 1.00 ... 9.99kA 10.0 ... 50.0kA	0.1 A 1 A 0.01 kA 0.1 kA		Value calculated from $I_K = U/Z$		Value calculated from $I_K = U/Z$	Value calculated from $I_K = U/Z$					
	U	0.0 ... 99.9V 100 ... 999 V	0.1 V 1 V		2.0 ... 99.9V 100 ... 725 V AC 100 ... 850 V DC		±(2% rdg.+5d) ±(2% rdg. + 1d)	±(1% rdg.+5d) ±(1% rdg.+1d)					
	f	DC; 15.0 ... 99.9 Hz 100 ... 999 Hz	0.1Hz 1Hz		DC; 15.4...420 Hz		±(0.2%rdg.+1d)	±(0.1% rdg.+1d)					
ZLOOP DC+	Z	0 ... 999 mΩ 1.00 … 9.99 Ω 10.0 … 29.9 Ω	1 mΩ 0.01 Ω 0.1 Ω	≥ 10 A AC for U=120V (-0%) U=230V (-0%) U=400V (-0%) and 0.5 A DC (DC-L) 2.5 A DC (DC-H)	250 ... 999 mΩ 1.00 … 5.00 Ω	U_N = 120/230 V 400 V f_N = 16.7/ 50/ 60/ 200/ 400 Hz	±(18%rdg.+30d) ±(10% rdg.+5 d)	±(6% rdg.+50d) ±(6% rdg.+5 d)	●	●	●		
	I_K	0.0 ... 9.9A 10 ... 999A 1.00 ... 9.99kA 10.0 ... 50.0kA	0.1 A 1 A 0.01 kA 0.1 kA		Value calculated from $I_K = U/Z$		Value calculated from $I_K = U/Z$	Value calculated from $I_K = U/Z$					
	U	0.0 ... 99.9V 100 ... 999 V	0.1 V 1 V		2.0 ... 99.9V 100 ... 440 V		±(2% rdg.+5d) ±(2% rdg. + 1d)	±(1% rdg.+5d) ±(1% rdg.+1d)					
	f	15.0 ... 99.9 Hz 100 ... 999 Hz	0.1Hz 1Hz		15.4 ... 420 Hz		±(0.2%rdg.+1d)	±(0.1% rdg. +1d)					

PROFITEST PRIME, PRIME AC
Testers for IEC 60364-6, EN 50110-1, IEC 60204-1, IEC 61439-1, DIN EN 62446-1 and DIN EN 61851-1

Function	Measured Quantity	Display range	Resolution	Input Impedance / Test Current	Measuring Range	Nominal Values	Measuring Uncertainty	Intrinsic Uncertainty	Connections 1(L)	2(N)	3(PE)	Clamp	Other
ZLOOP Z+RLO	Z	0.00 … 9.99 Ω 10.0 … 99.9 Ω	0.01 Ω 0.1 Ω	I_{LN} ≥ 10 A AC for U=120V(-0%) U=230V(-0%) U=400V(-0%) $I_{NPE} = I_{\Delta N}/2$	0.50 … 9.99 Ω 10.0 … 99.9 Ω	U_N = 120/230 V 400 V f_N = 16.7/50/60/ 200/400 Hz	±(10%rdg.+10d) ±(8% rdg. + 2 d)	±(4% rdg.+5 d) ±(1% rdg.+1 d)	●	●	●		
	I_K	0.0 ... 9.9A 10 ... 999A 1.00 ... 9.99kA 10.0 ... 50.0kA	0.1 A 1 A 0.01 kA 0.1 kA		Value calculated from I_K = U/Z		Value calculated from I_K = U/Z	Value calculated from I_K = U/Z					
	U	0.0 ... 99.9V 100 ... 999 V	0.1 V 1 V		2.0 ... 99.9V 100 ... 440 V		±(2% rdg.+5d) ±(2% rdg. + 1d)	±(1% rdg.+5d) ±(1% rdg.+1d)					
	f	15.0 ... 99.9 Hz 100 ... 999 Hz	0.1Hz 1Hz		15.4 ... 99.9 Hz 100 ... 420 Hz		±(0.2%rdg.+1d)	±(0.1% rdg.+1d)					
ZLOOP	Z	0.6 … 99.9 Ω 100 … 999 Ω	0.1 Ω 1 Ω	$I_{\Delta N}/2$	10.0 … 99.9 Ω 100 … 999 Ω	U_N = 120/230 V 400 V f_N = 16.7/50/60/ 200/400 Hz	±(10%rdg.+10d) ±(8% rdg. + 2 d)	±(2% rdg.+2 d) ±(1% rdg.+1 d)			●		
	I_K	0.10 ... 9.99A 10.0 ... 99.9A 100 ... 999A	0.01 A 0.1 A 1 A		Value calculated from I_K = U/Z		Value calculated from I_K = U/Z	Value calculated from I_K = U/Z	●				
	U	0.0 ... 99.9V 100 ... 999 V	0.1 V 1 V		2.0 ... 99.9V 100 ... 440 V		±(2% rdg.+5d) ±(2% rdg. + 1d)	±(1% rdg.+5d) ±(1% rdg.+1d)					
	f	15.0 ... 99.9 Hz 100 ... 999 Hz	0.1Hz 1Hz		15.4 ... 420 Hz		±(0.2%rdg.+1d)	±(0.1% rdg.+1d)					
Ures	U, Ures	0.0 ... 99.9V 100 ... 999 V	0.1 V 1 V	5 MΩ	2.0 ... 99.9V 100 ... 999 V		±(2% rdg.+5d) ±(2% rdg. + 1d)	±(1% rdg.+5d) ±(1% rdg.+1d)					
	f	DC; 15.0 ... 99.9 Hz 100 ... 999 Hz	0.1Hz 1Hz		DC; 15.4 ... 99.9 Hz 100 ... 420 Hz		±(0.2%rdg.+1d)	±(0.1% rdg.+1d)	●		●		
	t_U	0.0 ... 99.9 s	0.1 sec.		0.4 ... 99.9 s		±(2% rdg. + 2d)	±(1% rdg.+1d)					
IMD	R_{L-PE} [6]	15.0 ... 99.9 kΩ 100 ... 574 kΩ 2.50 MΩ	0.1 kΩ 1 kΩ 0.01 MΩ		15.0 ... 199 kΩ 200 ... 574 kΩ 2.50 MΩ	U_{N-IT} = 120/230 V 400/690 V f_N = 16.7/50/60/ 200/400 Hz	± 7% ± 17% ± 3%	± 5% ± 15% ± 2%					
	ta	0.00 ... 9.99 s 10.0 ... 99.9 s	0.01 sec. 0.1 sec.		0.00 ... 9.99 s 10.0 ... 99.9 s		±(2% rdg. + 2d)	±(1% rdg. + 1d)					
	UL1PE, UL2PE, UL1L2	0.0 ... 99.9V 100 ... 999 V	0.1 V 1 V		2.0 ... 99.9V 100 ... 690 V		±(3% rdg.+5d) ±(3% rdg. + 1 d)	±(2% rdg.+5d) ±(2% rdg. + 1 d)	●	●	●		
	f	15.0 ... 99.9 Hz 100 ... 999 Hz	0.1Hz 1Hz		15.4 ... 420 Hz		±(0.2%rdg.+1d)	±(0.1% rdg.+1d)					
	I_{L-PE}	0.00 ... 9.99mA 10.0 ... 99.9mA	0.01 mA 0.1 mA		0.10 ... 9.99mA 10.0 ... 25.0mA		±(6% rdg. + 2d)	±(3.5% rdg.+2d)					
RCM	$U_{I\Delta N}$	0.0 ... 70.0V	0.1 V	0.33 · $I_{\Delta N}$ $I_{\Delta N}$ = 10 mA ... 1000 mA	5.0 ... 70.0V	U_N = 120/230/400 V f_N = 16.7/ 50/60/ 200/400 Hz $I_{\Delta N}$ = 10/30/100/300/ 500/1000 mA	+(1% rdg. + 1d) ... +(10% rdg.+1d)	+1% rdg. + 1 d ... +(9% rdg.+1d)					
	R_E	10 ... 999 Ω 1.00 ... 6.51 kΩ	1 Ω 0.01 kΩ	$I_{\Delta N}$ = 10 mA · 1.05	Value calculated from $R_E = U_{I\Delta N} / I_{\Delta N}$								
		3 … 999 Ω 1.00 ... 2.17 kΩ	1 Ω 0.01 kΩ	$I_{\Delta N}$ = 30 mA · 1.05									
		1 … 651 Ω	1Ω	$I_{\Delta N}$ = 100 mA · 1.05									
		0.3 … 99.9 Ω 100 … 217 Ω	0.1 Ω 1 Ω	$I_{\Delta N}$ = 300 mA · 1.05									
		0.2 … 9.9 Ω 10 … 130 Ω	0.1 Ω 1 Ω	$I_{\Delta N}$ = 500 mA · 1.05					●	● [2]	●		
	ta	0.0 ... 10.0 s	0.1 sec.	$I_{\Delta N}$ = 10 mA ... 1000 mA [5] 0.5x, 1x [5] 0,5x, 1x [5] 1x	0.5 ... 10.0 s		±(2% rdg. + 2d)	±(1% rdg. + 1d)					
	I_Δ	0.0 ... 99.9mA 100 ... 999mA 1.00 ... 2.50A	0.1 mA 1 mA 0.01 A		3.0 mA ... 2.50 A		±(5% rdg.+3 d)	±(3.5% rdg.+2d)					
	UL1PE, UL2PE, UL1L2	0.0 ... 99.9V 100 ... 999 V	0.1 V 1 V		2.0 ... 99.9V 100 ... 440 V		±(2% rdg.+5 d) ±(2% rdg. + 1d)	±(1% rdg.+5d) ±(1% rdg.+1d)					
	f	15.0 ... 99.9 Hz 100 ... 999 Hz	0.1Hz 1Hz		15.4 ... 99.9 Hz 100 ... 420 Hz		±(0.2%rdg.+1d)	±(0.1% rdg.+1d)					
IL	I_L	1 ... 999 µA 1.00 ... 9.99mA 10.0 ... 16.0mA	1 µA 0.01 mA 0.1 mA	Rs = 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.+3d)	●		●		
	f	15.0 ... 99.9 Hz 100 ... 999 Hz	0.1Hz 1Hz		15.4 ... 99.9 Hz 100 ... 420 Hz		±(0.2% rdg.+1d)	±(0.1% rdg.+1d)					
≤1V≅ [4]	$I_{L/AMP}$	0.00 ... 9.99mA	0.01 mA	337 kΩ	0.20 ... 9.99mA		±(15%rdg.+4d)	±(2% rdg.+5d)				PROFITEST CLIP 100mV/mA	
T% r.h.	ϑ	–99.9 ... 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 ΔU	Z_{L-N} ZOffset	0 ... 999 mΩ 1.00 ... 9.99 Ω	1 mΩ 0.01 Ω	≥ 10 A AC/DC for U=120 V(-0%) U=230 V (-0%) U=400 V (-0%) U=690 V (-0%) U=850 V DC (-0%)	50 ... 999 mΩ 1.00 … 5.00 Ω	U_N = 120/230 V 400/690 V AC U_N = 850 V DC f_N = DC/16.7/50/ 60/200/400 Hz	±(10% rdg.+10d) ±(6% rdg. +4 d)	±(5% rdg.+10d) ±(3% rdg.+3d)					
	ΔU ΔU_{offset}	0.00 ... 9.99%	0.01%		Calculated value $\Delta U=(I_N \cdot Z_{LN}) / U_N \cdot 100\%$		Calculated value $\Delta U=(I_N \cdot Z_{LN}) / U_N \cdot 100\%$	Calculated value $\Delta U=(I_N \cdot Z_{LN}) / U_N \cdot 100\%$	●		●		
	U	0.0 ... 99.9V 100 ... 999 V	0.1 V 1 V		2.0 ... 99.9V 100 ... 725 V AC 100 ... 850 V DC		±(2% rdg.+5 d) ±(2% rdg. + 1d)	±(1% rdg.+5 d) ±(1% rdg.+1d)					
	f	DC; 15.0 ... 99.9 Hz 100 ... 999 Hz	0.1Hz 1Hz		DC; 15.4 ... 99.9 Hz 100 ... 420 Hz		±(0.2%rdg.+1d)	±(0.1% rdg.+1d)					

[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 AC for protective conductor testing. The limit value is 0.1 Ω.
[2] Only required when testing with direct current
[3] Depending on max. permissible touch voltage
[4] Measuring range of the signal input at the test instrument, UE:
0 ... 1.0 V_{RMS} (0 ... 1,4 V_{Peak}) AC/DC
[5] Tripping test conducted with:
– ∿: as specified
– ◡: 0.7 / 1.4 X $I_{\Delta N}$
– ⎍: 2 X $I_{\Delta N}$
Max. test current: 2.50 A. All entries are RMS values.
[6] Resistance value R_{L-PE} is a setting value, not a measured value.

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

The following also applies to the PROFITEST PRIME AC (M506C).

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

Influencing Quantities and Influence Error

			EN61557-4	EN61557-2	EN61557-3	EN61557-6	EN61557-6
Abbreviation	Influencing Quantity	U	R_{LO}	R_{INS}	Z_{LOOP} ∿	RCD I_F ◢	RCD $I_{\Delta N}$
A	Intrinsic uncertainty	U: ±(1% rdg. +5 d) for 2.0 ... 99.9 V ±(1% rdg. +1 d) for 100 ... 999 V	±(2% rdg. + 2 d) for 0.10 ... 5.99 Ω	±(3% rdg. + 10 d) for 50 k ... 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 ... +40 °C	0.5%	1%	2.5%	1%	2.5%	5%
E4	Series interference voltage						
E5	Probe resistance					0%	0%
E6	Phase angle: 0° ... 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%		

Fields with gray background: not relevant

Testers for IEC 60364-6, EN 50110-1, IEC 60204-1, IEC 61439-1, DIN EN 62446-1 and DIN EN 61851-1

Reference Conditions

Line voltage	230 V, deviation: ≤ 0.1%
Line frequency	50 Hz, deviation: ≤ 0.1%
Measured quantity frequency	45 ... 65 Hz
Waveform	Sine (deviation between effective and rectified value ≤ 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 resistance	Linear, strictly ohmic

Ambient Conditions

Charging temperature range	+10 °C ... + 45 °C
Storage temperature range	-20 °C ... + 60 °C
Operating temperature range	-5 °C ... + 50 °C
Accuracy	0 °C ... + 40 °C
Protective shutdown	> 75 °C
Relative humidity	Max. 75%, no condensation allowed
Elevation	To 2000 m

Nominal Ranges of Use

Voltage U_N

120 V (108 ... 132 V)
230 V (196 ... 253 V)
400 V (340 ... 440 V)
690 V (656 ... 725 V)
850 V DC (765 ... 893 V)

Frequency f_N

16,7 Hz (15.4 ... 18 Hz)
50 Hz (49.5 ... 50.5 Hz)
60 Hz (59.4 ... 60.6 Hz)
200 Hz (190 ... 210 Hz)
400 Hz (380 ... 420 Hz)

Line voltage waveform	Sinusoidal
Temperature range	0 °C ... + 40 °C
Line impedance angle	Corresponds to cosφ = 1 ... 0.95

Overload Capacity

Measurement Type	Overload Capacity
U, Ures	1100 V_{RMS} continuous
RLO	Electronic protection prevents starting a measurement when interference voltage > 12 V is present.
RLOHP	Electronic protection prevents starting a measurement when interference voltage > 12 V is present. Measurement is aborted in case of test current of > 31 A. 10 s on-time, 30 s off-time
RINS	1200 V DC continuous
IdN, IF, IdN+IF, RCM	440 V continuous
ZLOOP	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.)
ZLOOP , , $I_{\Delta N}/2$	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
IL	15 mA_{RMS} continuous, measurement is stopped in case of interference voltage > 60 V
	1 V_{RMS} continuous

Electromagnetic Compatibility

Product standard: DIN EN 61326-1:2013
DIN EN 61326-2-2: 2013

Interference Emission		Class
EN 55011		A
Interference Immunity	**Test Value ***	**Evaluation Criterion**
EN 61000-4-2	Contact/atmos. – 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

* Excerpts from EN 61326-1, table 2

Testers for IEC 60364-6, EN 50110-1, IEC 60204-1, IEC 61439-1, DIN EN 62446-1 and DIN EN 61851-1

Power Supply

Mains operation

Auxiliary power (mains)	85 V ... 264 V 16.7 Hz ... 50 Hz ... 400 Hz
Power consumption	**PROFITEST PRIME**: < 300 VA **PROFITEST PRIME AC**: < 800 VA
Mains disconnection	Mains connection terminal with power switch

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	– For RLO, 0.2 A: approx. 500 – For RINS: approx. 1000
Standby time	32 hours

Scope of Functions Depending on Type of Power Supply

Auxiliary Power (source)	Scope of Functions					
	Load	Basic functions	RLO 25 A	HV AC	HV DC	RCD DC [1]
Battery operation	✘	✔	✘	✘	✘	✔[2]
Mains operation 230/240 V ±10% 50/60 Hz ±1 Hz	✔	✔	✔	✔	✔	✔
Mains operation 115 V ±10% 50/60 Hz ±1 Hz	✔	✔	✔	✘	✔	✔
Mains operation 85 ... 264 V / 16.7 ... 400 Hz	✔	✔	✘	✘	✔	✔

✔ Function available
✘ Function not possible or not sensible

[1] Functions for RCD type B, B+ and loop with DC disabling (Loop+DC)
[2] Measurement of ZLOOP DC+ (DC-H), RCD IF and RCD IΔN with DC test current is not advisable unless battery charge level is equal to or higher than 50%

Quick Charging Mode

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

Data Interfaces

Type	USB slave for PC connection
Type	RS 232 for barcode reader and T/F sensor
Type	*Bluetooth*® for connection to a PC

Electrical Safety

Protection category	I and II per IEC 61010-1/ DIN EN 61010-1/VDE 0411-1
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 / signal lamp combination externally 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)
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 HV DC potential: 5 kV
Pollution degree	2
Safety shutdown	In case of interference voltage and device overheating

Fuses

Mains connection	2 ea. M3.15/250V
Measuring inputs	Basic measuring functions: min. breaking capacity: 30 kA

F1	F2	F3	F4
1 kV/20 A	1 kV/10 A	1 kV/2 A	1 kV/440 mA
3-578-319-01	3-578-264-01	3-578-318-01	3-578-317-01

PRIME+AC meas. inputs **HV AC test pistols:** 5 kV, 200 mA AC

Mechanical Design

Display	Multiple display with dot matrix, b&w, 128 x 128 pixels, illuminated
Protection	Device connections: IP 40 Closed case: IP 65 per DIN EN 60529/VDE 0470-1

Excerpt from Table on the Meaning of IP Codes

IP XY (1st digit X)	Protection Against Foreign Object Ingress	IP XY (2nd digit Y)	Protection Against Water Ingress
4	≥ 1.0 mm dianater	0	Not protected

Dimensions	50 x 41 x 21cm (W x D x H)
Weight	**PROFITEST PRIME**: 10.15 kg **PROFITEST PRIME AC**: 15.10 kg

PROFITEST PRIME, PRIME AC
Testers for IEC 60364-6, EN 50110-1, IEC 60204-1, IEC 61439-1, DIN EN 62446-1 and DIN EN 61851-1

Scope of Delivery, Accessories

Accessories		PROFITEST PRIME	PROFITEST PRIME AC
	Article No.	(M506A)	(M506C)
Probe with “active L” 4-wire measuring technology, Start/Stop/Save, 4 m [1]	Z506T	❍	❍
Probe with “active L” 4-wire measuring technology, Start/Stop/Save, 12 m [1]	Z506U	❍	❍
Probe for L with test probe and 4 m probe cable and alligator clip [1]	—	✔	✔
Probe for N with test probe and 4 m probe cable and alligator clip [1]	—	✔	✔
Probe for PE with test probe and 4 m probe cable and alligator clip [1]	—	✔	✔
USB cable, 1 m, A to B	—	✔	✔
Mains power cable, 1.5 m	—	✔	✔
Accessories pouch, 400 x 350 x 50	—	✔	✔
Condensed operating instructions	—	✔	✔
Safety data sheet	—	✔	✔
DAkkS calibration certificate	—	✔	✔
Probe for PE with interchangeable test tip and 25 m probe cable	Z506S	❍	❍
High-voltage pistol for HV-AC	Z506V	✘	❍ [2]
Cable set with HV measuring probes for DC	Z506W	✘	✘
Signal lamp combination (red/green), SIGNAL PROFITEST PRIME AC	Z506B	✘	❍ [2]
Cable connected emergency off switch, STOP PROFITEST PRIME AC	Z506D	✘	❍ [2]
Barrier set for dielectric strength test, CLAIM PROFITEST PRIME AC	Z504G	✘	❍ [2]
Temperature/moisture sensor	Z506G	❍	❍
PROFITEST CLIP	Z506H	❍	❍
Trolley for case system	Z506F	❍	❍
Guard cable for DC high-voltage	On request	✘	✘
Cable connected barcode scanner	Z502F	❍	❍
Card with registration key for the software IZYTRONIQ Business Starter		✔	✔

[1] Measuring category with safety cap: 300 V CAT IV, 600 V CAT III, 1 A; Measuring category without safety cap: 600 V CAT II 16 A
[2] indispensable accessory for dielectric strength test with **PROFITEST PRIME AC**

Key
✔ Included
✘ Feature not possible or not sensible
❍ Optional accessory (see also order information as of page 14)



PROFITEST PRIME in case
(included)

General accessories for all 3 device variants



Probe for L, 4 m probe cable
(included)

Probe for N, 4 m probe cable
(included)

Probe for PE, 4 m probe cable
(included)

Each probe is equipped with coded plugs so that it can only be connected to the input for L, N or PE.

Measuring category with safety cap: 300 V CAT IV, 600 V CAT III, 1 A;
Measuring category without safety cap: 600 V CAT II 16 A



Accessories pouch
(included)

Accessories

I-SK4/12-PROFITEST-PRIME (Z506T/Z506U) *



Probe with “active L” 4-wire measuring technology with keys for **Start-Stop/IΔ_N/Save-Send,** with 4 or 12 m connector cable

SK4-L/N/PE and SK12-L/N/PE (Z506L ... Z506R) *



Probe with 4-wire measuring technology for connection to L, N or PE, SK4 with 4 m and SK12 with 12 m connector cable

SK25-PE (Z506S) *



Probe with 4-wire measuring technology for connection to PE, with 25 m connector cable

* Measuring category with safety cap: 300 V CAT IV, 600 V CAT III, 1 A; Measuring category without safety cap: 600 V CAT II 16 A



Alligator Clip with Bayonet Lock

Alligator clip with sliding sleeve for reliable securing and locking to the test probe, can be plugged on to series I-SK4/12 and SK4/12/25 test probes (included respectively).



PRIME Cable Lug (Z506X)

Cable lug with sliding sleeve for reliable securing and locking to the test probe, can be plugged on to test probes.



Z506Y

Screw-on replacement test probe (set of 5) for Z506L, M, N, O, P, R, S, T and U probe cables

3-Phase Current Adapter 7-pole

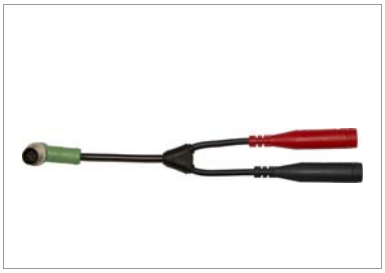


A3-16 Shielded and A3-32 Shielded 3-phase adapters are used for trouble-free connection of test instruments to 7-pole CEE outlets. The two variants differ with regard to plug size, which corresponds respectively to 7-pole CEE outlets with current ratings of 16 and 32 A. Testing the effectiveness of safety measures is conducted via seven 4 mm sockets with touch protection.



PROFITEST CLIP (Z506H)

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



ADAPTER-Z506J-PROFITEST-PRIME (Z506J)

Adapter for connecting current clamp sensors with output via banana plug

Testers for IEC 60364-6, EN 50110-1, IEC 60204-1, IEC 61439-1, DIN EN 62446-1 and DIN EN 61851-1

T/F sensor (Z506G)



Adapter for measuring temperature and humidity with magnetic retainer.

Measurement data transmission and **power supply** (5 V DC ±10%) via connection to the test instrument's 9-pin RS 232 port.

Characteristic Values

Measured Quantity	Measuring Range	Inherent Error
T (**T**emp)	-10.0 ... +50.0 °C	±2 °C (at 50% relative humidity)
r.H. (**rH**um)	10.0 ... 90.0%	±5% (at 23 °C)

EMC interference emission	EN 61326-1:2013, class B
EMC interference immunity	EN 61326-1:2013
Ambient conditions	Same as test instrument
Protection	IP 20
Dimensions	70 x 40 x 15 mm (L x W x H) Connector cable length: 4.85 m
Weight	30 g without connector cable 211 g with connector cable



Trolley not included

PRIME CASE (Z506A)

Case for accessories with internal pocket and mount for trolley (Z506F)



TROLLEY for PRIME hard case system (Z506F)

TROLLEY for PROFITEST PRIME case system

Accessories for Dielectric Strength Testing with the PROFITEST PRIME AC



SIGNAL PROFITEST PRIME AC (Z506B)

Signal lamp combination for dielectric strength testing per DIN EN 50191/ VDE 0104 and DIN EN 61557-14/ VDE 0413-14



STOP PROFITEST PRIME AC (Z506D)

Emergency off switch for dielectric strength testing per DIN EN 50191/ VDE 0104 and DIN EN 61557-14/ VDE 0413-14



CLAIM PROFITEST PRIME AC (Z504G)

Barrier set for dielectric strength testing consisting of case with chain, stands and warning signs per DIN EN 50191/VDE 0104 and DIN EN 61557-14/ VDE 0413-14



HV-P PROFITEST PRIME AC (Z506V)

High-voltage pistol for dielectric strength testing with coded plugs

(1 piece per article number)

Testers for IEC 60364-6, EN 50110-1, IEC 60204-1, IEC 61439-1, DIN EN 62446-1 and DIN EN 61851-1

E-Mobility Accessories

PRO-TYP I (Z525B)



Vehicle Simulation (CP)
Vehicle states A through E are selected with a rotary switch.
Cable Simulation (PP)
via permanently wired cable coding
Fault Simulation
Simulation of a short-circuit between CP and PE by means of a rotary switch
Indication of Phase Voltages via LEDs

PRO-TYP II (Z525A)



Vehicle Simulation (CP)
Vehicle states A through E are selected with a rotary switch.
Cable Simulation (PP)
The various codings for charging cables with 13, 20, 32 and 63 A, as well as “no cable connected”, can be simulated with the help of a rotary switch.
Fault Simulation
Simulation of a short-circuit between CP and PE by means of a rotary switch

Indication of Phase Voltages via LEDs
Depending on the charging station, either one or three phases can be active.
Testing of electrical charging stations with permanently connected charging cable due to extended CP test pin

Adapter PRO-TYPII-TYPI (Z525C)



Type II Inlet — Type I Inlet

Order Information

Designation	Type	Article Number
Basic Devices		
Test instrument per DIN EN 61557/ VDE 0413 for testing the effectiveness of protective measures in electrical installations per DIN IEC 60364/ DIN VDE 0100-600, machines per DIN EN 60204/VDE 0113-1, PV systems per DIN EN 62446/VDE 0126-23 and electric charging stations per VDE 0122-1, voltage measurement: 1000 V AC/DC, Z_{L-PE} 690 V AC/ 800 V DC, R_{LO} 200 mA/25 A, R_{INS} up to 1000 V, testing of RCD types A, AC, F, EV, B, B+, and MI, as well as PRCDs, IMDs, and RCMs, leakage current, touch current, integrated memory, freely programmable test sequences, sensor input, USB, Bluetooth interface	**PROFITEST PRIME**	M506A
Test instrument per DIN EN 61557/ VDE 0413 for testing the effectiveness of protective measures in electrical installations per DIN IEC 60364/ DIN VDE 0100-600, machines per DIN EN 60204/VDE 0113-1, PV systems per DIN EN 62446/VDE 0126-23 and electric charging stations per VDE 0122-1, voltage measurement: 1000 V AC/DC, HV AC (up to 2500 V / 500 VA, adjustable in steps, key switch, connection for signal lamps and emergency off switch), Z_{L-PE} 690 AC/ 800 V DC, R_{LO} 200 mA/25 A, R_{INS} up to 1000 V, testing of RCD types A, AC, F, EV, B, B+, and MI, as well as PRCDs, IMDs, and RCMs, leakage current, touch current, integrated memory, freely programmable test sequences, sensor input, USB, Bluetooth interface (for the testing of dielectric strength the following accessories are required: Z506V, Z506B, Z506D, Z504G)	**PROFITEST PRIME AC**	M506C
Scope of delivery per tester: test instrument in measuring case and accessories pouch with measurement cables, USB cable, mains power cable, condensed operating instructions, complete operating instructions for download from Internet, **DAkkS calibration certificate**		
Accessories for PROFITEST PRIME AC		
Indicator / signal lamp combination with 5 m connector cable for dielectric strength testing with the **PROFITEST PRIME AC** (M506C) per DIN EN 50191/VDE 0104 and DIN EN 61557-14/ VDE 0413-14	SIGNAL PROFITEST PRIME AC	Z506B
Extension cable 10 m for SIGNAL PROFITEST PRIME AC	E-SK10 SIGNAL	Z516E
Emergency off switch with 5 m connector cable for dielectric strength testing with the **PROFITEST PRIME AC** (M506C) per DIN EN 50191/VDE 0104 and DIN EN 61557-14/ VDE 0413-14	STOP PROFITEST PRIME AC	Z506D
Extension cable 10 m for STOP PROFITEST PRIME AC	E-SK10 STOP	Z516D
Barrier set for dielectric strength testing with the **PROFITEST PRIME AC** (M506C) consisting of case with chain, stands and warning signs per DIN EN 50191/VDE 0104	CLAIM PROFITEST PRIME AC	Z504G

Testers for IEC 60364-6, EN 50110-1, IEC 60204-1, IEC 61439-1, DIN EN 62446-1 and DIN EN 61851-1

Designation	Type	Article Number
Key blank for key switch **PROFITEST PRIME AC** (Note: The key number is on the inside of the case's cover.)	KEY PROFITEST PRIME AC	Z506E
1 High-voltage pistol with integrated test triggering (switch), 4 m connector cable, max. 5 kV AC for **PROFITEST PRIME AC** (for the testing of dielectric strength 2 pistols are required)	HV-P PROFITEST PRIME AC	Z506V
Accessory Test Probes and Sensors		
Intelligent test probe, 4 m, with remote triggering and interchangeable test tip, measuring point illumination and multi-LED as status display for the momentary measurement, as well as storage for PROFITEST PRIME. 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), alligator clip with bayonet lock	I-SK4-PROFITEST-PRIME	Z506T
Intelligent test probe, 12 m, with remote triggering and interchangeable test tip, measuring point illumination and multi-LED as status display for the momentary measurement, as well as storage for PROFITEST PRIME. 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), alligator clip with bayonet lock	I-SK4-PROFITEST-PRIME	Z506U
Leakage current clamp meter for PROFITEST PRIME, leakage or fault current as of 0.1 mA, direct or differential current measurement up to 25 mA, 1 kHz filter per VDE 0413-16/DIN EN/ IEC 61557-16, ASI plug, LED for monitoring operating state, measuring category CAT III 300 V / CAT II 600 V	PROFITEST CLIP	Z506H
Adapter with M12 angle plug and two 4 mm safety sockets for connecting current clamp sensors to PROFITEST PRIME, PRIME DC and PRIME AC test instruments (M506A/B/C).	ADAPTER-Z506J-PROFITEST-PRIME	Z506J
T/F sensor with 5 m connector cable for **PROFITEST PRIME**, measuring ranges: temperature from -10.0 °C to +50.0 °C and humidity from 10.0% to 90.0%	T/F Sensor PROFITEST PRIME	Z506G
Accessory Probe Cable, Cable Lug and Replacement Test Tips		
Probe for L with interchangeable test tip and 4 m probe cable for PROFITEST PRIME, 300 V CAT IV, 25 A for short periods, 16 A continuous load (suitable for 25 A short-circuit operation, 10 s on-time, 30 s off-time), alligator clip with bayonet lock	SK4-L *	Z506L

Designation	Type	Article Number
Probe for N with interchangeable test tip and 4 m probe cable for PROFITEST PRIME, 300 V CAT IV, 25 A for short periods, 16 A continuous load (suitable for 25 A short-circuit operation, 10 s on-time, 30 s off-time), alligator clip with bayonet lock	SK4-N *	Z506N
Probe for PE with interchangeable test tip and 4 m probe cable for PROFITEST PRIME, 300 V CAT IV, 25 A for short periods, 16 A continuous load (suitable for 25 A short-circuit operation, 10 s on-time, 30 s off-time), alligator clip with bayonet lock	SK4-PE *	Z506P
Probe for L with interchangeable test tip and 12 m probe cable for PROFITEST PRIME, 300 V CAT IV, 16 A (suitable for 25 A short-circuit operation, 10 s on-time, 30 s off-time), alligator clip with bayonet lock	SK12-L *	Z506O
Probe for N with interchangeable test tip and 12 m probe cable for PROFITEST PRIME, 300 V CAT IV, 16 A (suitable for 25 A short-circuit operation, 10 s on-time, 30 s off-time), alligator clip with bayonet lock	SK12-N *	Z506M
Probe for PE with interchangeable test tip and 12 m probe cable for PROFITEST PRIME, 300 V CAT IV, 16 A (suitable for 25 A short-circuit operation, 10 s on-time, 30 s off-time), alligator clip with bayonet lock	SK12-PE *	Z506R
Probe for PE with interchangeable test tip and 25 m probe cable for PROFITEST PRIME, 300 V CAT IV, 16 A (suitable for 25 A short-circuit operation, 10 s on-time, 30 s off-time), alligator clip with bayonet lock	SK25-PE *	Z506S
Probe for PE with interchangeable test tip and 50 m probe cable mounted on cable drum for PROFITEST PRIME, 300 V CAT IV, 16 A (suitable for 25 A short-circuit operation, 10 s on-time, 30 s off-time), alligator clip with bayonet lock	SK50-PE *	Z516A
Probe for PE with interchangeable test tip and 75 m probe cable mounted on cable drum for PROFITEST PRIME, 300 V CAT IV, 16 A (suitable for 25 A short-circuit operation, 10 s on-time, 30 s off-time), alligator clip with bayonet lock	SK75-PE *	Z516B
Probe for PE with interchangeable test tip and 100 m probe cable mounted on cable drum for PROFITEST PRIME, 300 V CAT IV, 16 A (suitable for 25 A short-circuit operation, 10 s on-time, 30 s off-time), alligator clip with bayonet lock	SK100-PE *	Z516C
The cable lug can be plugged onto test probes in order to contact the measurement cable via the screw at the terminal, 600 V CAT III, 16 A (suitable for 25 A short-circuit operation, 10 s on-time, 30 s off-time)	PRIME cable lug	Z506X
5 replacement test tips for **PROFITEST PRIME** probe cables (Z506L, M, N, O, P, R, S, T and U probe cables)	PRIME replacement test probes	Z506Y
Three-phase adapter shielded, 7-pin for CEE socket outlets 16 A, CAT III 300 V – 10 A	A3-16 Shielded	Z513A

Testers for IEC 60364-6, EN 50110-1, IEC 60204-1, IEC 61439-1, DIN EN 62446-1 and DIN EN 61851-1

Designation	Type	Article Number
Three-phase adapter shielded, 7-pin for CEE socket outlets 32 A, CAT III 300 V – 10 A	A3-32 Shielded	Z513B
Set of test probes (red/black) CAT III / 600 V, 1 A, test probe working range: 68 mm – diameter: 2.3 mm	Probe set	Z503F
Flat test clip for contacting busbars quickly and safely. Good contact at the front and back of the busbar thanks to time-tested contact blades. Rigid 4 mm socket in the handle, suitable for the insertion of spring-loaded 4 mm plugs with rigid insulating sleeve. 1000 V CAT IV/32 A	PRO-PE Clip	Z503G
Telescoping rod for RLO and RINS measurements, CAT III 600 V / CAT IV 300 V, 1 A, retracted: 53.5 cm, extended: 120 cm, 190 g	TELEARM 120 D)	Z505C
Telescoping rod for RLO and RINS measurements, CAT III 600 V / CAT IV 300 V, 1 A, retracted: 73.5 cm, extended: 180 cm, 250 g	TELEARM 180 D)	Z505D
Transport Accessories		
TROLLEY for **PROFITEST PRIME** case system	TROLLEY for PRIME hard case system	Z506F
PRIME case with internal pocket and mount for trolley (Z506F), also for accessories for **PROFITEST PRIME** and METRISO PRIME 10 test instruments	PRIME CASE	Z506A

Designation	Type	Article Number
Instrument and Accessory Sets		
PROFITEST PRIME (M506A), trolley for case system (Z506F), I-SK4 intelligent probe, 4 m (Z506T)	PRIME starter package	M506D
PROFITEST PRIME (M506A), PRIME CASE (Z506A), trolley for PRIME case system (Z506F), I-SK4-PROFITEST-PRIME (Z506T), PROFITEST CLIP (Z506H)	PRIME master package	M506E
PROFITEST PRIME AC (M506C), trolley for PRIME case system (Z506F), HV-P PROFITEST PRIME AC (2 ea. Z506V), SIGNAL PROFITEST PRIME AC (Z506B), STOP PROFITEST PRIME AC (Z506D), PRIME CASE (Z506A)	PRIME professional package	M506F
HV package: (2 ea. Z506V), SIGNAL PROFITEST PRIME AC (Z506B), STOP PROFITEST PRIME AC (Z506D)	HV package, PRIME AC	Z506Z
E-Mobility Accessories		
Single phase test adapter with type 1 plug	PRO-TYP I D	Z525B
Single and 3-phase test adapter with type 2 plug	PRO-TYP II D	Z525A
Single and 3-phase test adapter with type 2 plug; Version with swiss type socket	PRO-TYP II-CH	Z525D
Test adapter PRO TYP II to TYP I	PRO-TYPII-TYPI	Z525C
Report Generating Accessories		
Cable connected barcode scanner	Z502F	Z502F

* Measuring category with safety cap: 300 V CAT IV, 600 V CAT III, 1 A; Measuring category without safety cap: 600 V CAT II 16 A

D Data sheet available

For additional information regarding accessories please refer to:

- *Measuring Instruments and Testers catalog*
- *www.gossenmetrawatt.com*

PROFITEST PRIME, PRIME AC
Testers for IEC 60364-6, EN 50110-1, IEC 60204-1, IEC 61439-1, DIN EN 62446-1 and DIN EN 61851-1