

Diversification
2007

BENNING

World Class Test Equipment



Testing, Measuring and Safety Instruments

The whole range of testers from one supplier

Voltage testers which are used on electric systems of up to 1000 V have to comply with the standard IEC/EN 61243-3.



Decide now on a
DUSPOL® voltage tester
Approved according to IEC/EN 61243-3!



IEC/EN 61243-3
DIN VDE 0682-401



Top-class test equipment DUSPOL® voltage testers – the testers with the VDE mark of conformity

The international standard for voltage testers IEC/EN 61243-3 (DIN 0682-401) increases safety for work under voltage.

Your work as an expert requires safe testing. Therefore, you should not make any compromises concerning safety! Voltage testers which are used on electrical systems of up to 1000 V have to comply with the standard IEC/EN 61243-3 (DIN 0682-401). The voltage testers are divided according in voltage class A (up to AC 500 V/ DC 750 V) and voltage class B (up to AC 1000 V/ DC 1500 V). The standard creates uniform testing and safety criteria on an international level and remarkably which concentrates on user safety.

An essential safety aspect of the international standard requires that voltage testers which load the measuring point with an operating current higher than AC 3.5 mA or DC 10 mA either have to be equipped with a push button on each test probe to activate the measurement or with a protective cap in order to protect the contact electrodes against accidental contact.



All testers of the *DUSPOL*® generation of voltage testers load the measuring point by actuating the two membrane push buttons. Thus, irritating inductive and capacitive voltages can be suppressed.

A vibrating motor can be activated additionally. The vibrating power of this motor increases proportionally to the applied voltage. This is an additional indication of voltage being applied.

The *DUSPOL*® voltage tester generation underlines once again the BENNING expertise in the field of testing, measuring and safety technology. With a *DUSPOL*® voltage tester you acquire an innovative product which has been tested and approved by the independent VDE Test and Certification Institute.

The NEW generation DUSPOL® voltage testers

Product safety on the highest level:

- vibrating alarm for safe voltage detection
- load connection via two membrane push buttons
- continuity check via buzzer and LED or LCD respectively
- precise illumination of the measuring point

Safety device

BENNING 700

BENNING 700

Appliance Tester for safety and repetitive tests according to DIN VDE 0701/0702 and UVV BGV A3

- DIN VDE 0701: tests on repaired and modified electric devices
- DIN VDE 0702: repetitive tests on electric devices
- standard with measuring value memory, PC interface, connection possibility for barcode reader and optional software *BENNING PC-Win 700*
- test run either in automatic or manual mode
- indication of the respective testing steps by means of LED as well as indication of measuring value and limiting value by means of LC display
- helpful accessories: test unit identification via barcode reader/barcode labels for repetitive tests
- including high-quality service case and testing lead



on demand:
BENNING 700 info CD
free of charge

BENNING 700

BENNING 700 set offer

- tester *BENNING 700*
- software *BENNING PC-Win 700*
- barcode reader
- barcode labels (320 pieces)
- test badges (300 pieces)



BENNING 700 Appliance Tester VDE 0701/0702

	BENNING 700
measuring according to DIN VDE 0701/0702, UVV BGV A3	protective conductor resistance, insulating resistance, protective conductor current, contact current, compensating leakage current, voltage neutrality test
indicating range	99999 digits
functional test	230 V/16 A
measuring value memory	199 test units
interface	RS 232 + barcode reader
optional accessories	software <i>BENNING PC-Win 700</i> , barcode reader/barcode labels, test badges, 16 A/32 A three-phase measuring adapter
item no.	050305

Top-class test equipment DUSPOL® expert, the measure of all things

Top-class test equipment

DUSPOL® voltage testers

- tested and approved according to the international standard IEC/EN 61243-3 (DIN VDE 0682-401), voltage class B
- vibrating alarm for safe voltage detection
- no measuring errors due to irritating capacitive and inductive voltages by means of intended load connection via push buttons
- intended release of a 30 mA FI safety switch
- acoustic continuity check via buzzer and LED/LCD
- phase-sequence indication with arrows „ Ω , Ω “
- safe single-pole phase test
- precise illumination of the measuring point
- shock-resistant, dust-proof and splash-proof housing (protection class IP 64)
- LC display illumination that is activated automatically by means of a light sensor



Voltage testers which are used on electric systems of up to 1000 V have to comply with the standard IEC/EN 61243-3.



Voltage and Continuity Tester

	DUSPOL® digital plus	DUSPOL® analog	DUSPOL® expert	DUSPOL® master	DUSPOL® combi	DUSPOL® compact
indication	LCD digital	plunger system/LED	LED/LCD	LED/LCD	LED/LCD	LED
indication steps	1.5 - 750 V	12 - 690 V	12 - 690 V	12 - 690 V	12 - 690 V	12 - 690 V
continuity test	-	-	buzzer + LED 108 k Ω	-	LCD 600 k Ω	-
phase-sequence test	yes/LCD	yes/LCD	yes/LCD	yes/LCD	-	-
single-pole phase test	yes/LCD	yes/LCD	yes/LCD	yes/LCD	yes/LCD	-
polarity test	yes/LCD	yes/LCD	yes/LCD	yes/LCD	yes/LCD	yes/LCD
load connection via push buttons	I _s = 200 mA (750 V _{DC})	I _s = 50 mA (750 V _{DC})	I _s = 200 mA (750 V _{DC})	I _s = 200 mA (750 V _{DC})	I _s = 200 mA (750 V _{DC})	I _s = 200 mA (750 V _{DC})
30 mA FI triggering via push button	yes	-	yes	yes	yes	yes
vibrating alarm	yes	-	yes	yes	yes	-
measuring point illumination	yes/LED	-	yes/LED	-	-	-
protection class	IP 64	IP 64	IP 64	IP 64	IP 64	IP 64
item no.	050255	050256	050253	050252	050254	050251

tested and approved



Digital Multimeter BENNING MM 1-1 – MM 1-3, MM 1 – MM 4 reliable and precise in each and every situation

BENNING MM 1-1, MM 1-2 and MM 1-3 Digital Multimeters with non-contact volt sensor

Innovative Digital Multimeter series with volt sensor for non-contact localization of the phase voltage

- The integrated Volt sensor signals phase voltages by means of an acoustic signal and a red LED signal
- It localizes cable breaks and defective lamps in exposed cables (cable reel, light chains) via the feeding side of the phase
- It combines all basic measurement types and temperature measurement in an extremely compact housing



MM 1

MM 2

MM 3

BENNING MM 1, MM 2, MM 3 and MM 4 Digital Multimeter

Technology that inspires, Quality that convinces

Million fold proven as well as tested and approved by the independent VDE Test and Certification Institute according to current international standards.

- basic measuring for current, voltage, resistance, continuity, diode, capacity and frequency
- automatic and/or manual measuring range selection
- safe current measuring up to 300 A AC via attachable current clamp adapter (MM 4)

tested and approved



Digital Multimeter

	BENNING MM 1-1	BENNING MM 1-2	BENNING MM 1-3	BENNING MM 1	BENNING MM 2	BENNING MM 3	BENNING MM 4
indicating range	2000	2000	2000	3200	2000	2000	4200
basic accuracy	0.5 %	0.5 %	0.5 %	0.5 %	0.5 %	0.5 %	0.5 %
AC voltage	0.1 mV - 750V	0.1 mV - 750V	0.1 mV - 750V	1 mV - 600V	0.1 mV - 750V	0.1 mV - 600V	1 mV - 600V
DC voltage	0.1 mV - 1000V	0.1 mV - 1000V	0.1 mV - 1000V	0.1 mV - 600V	0.1 mV - 1000V	0.1 mV - 600V	1 mV - 600V
AC current	-	1 mA - 10 A	1 mA - 10 A	-	0.1 µA - 20 A	0.1 µA - 20 A	0.1 A - 300 A
DC current	-	1 mA - 10 A	1 mA - 10 A	0.1 µA - 3.2 mA	0.1 µA - 20 A	0.1 µA - 20 A	-
resistance	0.1 Ω - 20 MΩ	0.1 Ω - 20 MΩ	0.1 Ω - 20 MΩ	0.1 Ω - 32 MΩ	0.1 Ω - 20 MΩ	0.1 Ω - 20 MΩ	0.1 Ω - 42 MΩ
continuity/diode	yes/yes	yes/yes	yes/yes	yes/yes	yes/yes	yes/yes	yes/yes
frequency	-	1 Hz - 20 MHz	1 Hz - 20 MHz	-	-	1 Hz - 200 kHz	-
capacity	-	1 pF - 2 mF	1 pF - 2 mF	-	-	1 pF - 200 µF	-
temperature	-	-	-20 °C up to +800 °C	-	-	-	-
volt sensor	yes	yes	yes	-	-	-	-
interface	-	-	-	-	-	-	-
software	-	-	-	-	-	-	-
memory	HOLD	HOLD, MAX/MIN	HOLD, MAX/MIN	HOLD	-	-	HOLD
Data Log function	-	-	-	-	-	-	-
measuring method	RMS	RMS	RMS	RMS	RMS	RMS	RMS
measuring category	CAT III 600 V	CAT III 600 V	CAT III 600 V	CAT III 600 V	CAT III 600 V	CAT III 300 V	CAT III 300 V
item no.	044081	044082	044083	044027	044028	044029	044073



MM 4

Digital Multimeter **BENNING MM 5 – MM 11** safety and functional diversity without any compromises

BENNING MM 5, MM 6, MM 7 Digital Multimeter for precise and reproducible measuring results

- TRUE RMS measuring method for industrial applications
- reliable and precise measuring results even in case of distorted or non-sinusoidal signal behaviour
- basic measurings for current, voltage, resistance, continuity, diode, capacity, frequency and temperature
- LC display with analog bar graph indication with back illumination

BENNING MM 11 Precision Digital Multimeter with extraordinary features of performance

- highest measuring accuracy of 0.06 % due to TRUE RMS measuring method and 20000 digit resolution
- an ideal measuring device for recording of measuring processes
- large memory capacity of 1000 storage locations and 40000 storage locations for Data Log functions
- transmitting measuring results via optical RS 232 interface
- delivery including software *BENNING PC-Win MM 11*

RS 232



TRUE RMS

MM 11

Software *PC-Win MM 10/MM 11*



BENNING PC-Win MM 10/MM 11 Software for logging and analysis

- software for reading and logging of measurement series
- visualisation of measurement series via line diagram and table
- scanning rate variable from 0.5 sec. up to 10 min.
- storage of measurement series as text file

RS 232



MM 5

TRUE RMS

MM 6

TRUE RMS

MM 7



CAT IV 600 V

MM 8

CAT IV 600 V

TRUE RMS

MM 9

CAT IV 600 V

TRUE RMS

MM 10

tested and approved



IEC/EN 61010-1 (DIN VDE 0411-1)

BENNING MM 8, MM 9, MM 10 Digital Multimeter of the highest measuring category CAT IV

- highest measuring category CAT IV 600 V allows measurements direct at the source of the low-voltage installation
- precise due to TRUE RMS measuring method
- transmitting measuring results via optical RS 232 interface
- delivery including software *BENNING PC-Win MM 10*

Digital Multimeter

	BENNING MM 5	BENNING MM 6	BENNING MM 7	BENNING MM 8	BENNING MM 9	BENNING MM 10	BENNING MM 11
indicating range	3400	4000	4000	6000	6000	6000	20000
basic accuracy	0.25 %	0.25 %	0.25 %	0.5 %	0.5 %	0.5 %	0.06 %
AC voltage	1 mV - 750V	1 mV - 750V	1 mV - 750V	0.1 mV - 750V	0.1 mV - 750V	0.1 mV - 750V	1 µV - 750V
DC voltage	0.1 mV - 1000V	0.1 mV - 1000V	0.1 mV - 1000V	0.1 mV - 1000V	0.1 mV - 1000V	0.1 mV - 1000V	1 µV - 1000V
AC current	10 µA - 10 A	10 µA - 10 A	10 µA - 10 A	–	0.1 µA - 10 A	0.1 µA - 10 A	1 µA - 10 A
DC current	10 µA - 10 A	10 µA - 10 A	10 µA - 10 A	0.1 µA - 6 mA	0.1 µA - 10 A	0.1 µA - 10 A	1 µA - 10 A
resistance	0.1 Ω - 30 MΩ	0.1 Ω - 40 MΩ	0.1 Ω - 40 MΩ	0.1 Ω - 60 MΩ	0.1 Ω - 60 MΩ	0.1 Ω - 60 MΩ	10 mΩ - 2 GΩ
continuity/diode	yes/yes	yes/yes	yes/yes	yes/yes	yes/yes	yes/yes	yes/yes
frequency	1 Hz - 30 MHz	1 Hz - 40 MHz	1 Hz - 40 MHz	1 Hz - 60 MHz	1 Hz - 60 MHz	1 Hz - 60 MHz	0.01 Hz - 1 MHz
capacity	–	1 pF - 40 mF	1 pF - 40 mF	1 pF - 6 mF	1 pF - 6 mF	1 pF - 6 mF	1 pF - 40 mF
temperature	–	–	-20 °C up to +800 °C	–	–	–	-200 °C up to +1200 °C
volt sensor	–	–	–	–	–	–	–
interface	–	–	–	–	–	RS 232	RS 232
software	–	–	–	–	–	<i>PC-Win MM 10</i>	<i>PC-Win MM 11</i>
memory	HOLD	HOLD	HOLD, MAX/MIN	HOLD, MAX/MIN	HOLD, MAX/MIN	HOLD, MAX/MIN	1000 memory locations
Data Log function	–	–	–	–	–	–	40000 memory locations
measuring method	RMS	TRUE RMS	TRUE RMS	RMS	TRUE RMS	TRUE RMS	TRUE RMS
measuring category	CAT III 600 V	CAT III 600 V	CAT III 600 V	CAT IV 600 V	CAT IV 600 V	CAT IV 600 V	CAT III 600 V
item no.	044074	044075	044076	044077	044078	044079	044080



All Digital Multimeters including protective case, safety leads and battery set.



Digital Current Clamp Multimeter

BENNING CM 1-1 – CM 1-3, CM 1 – CM 3, CC 1

BENNING CM 1-1, CM 1-2, CM 1-3 and CM 1

Digital Current Clamp Multimeter for AC current

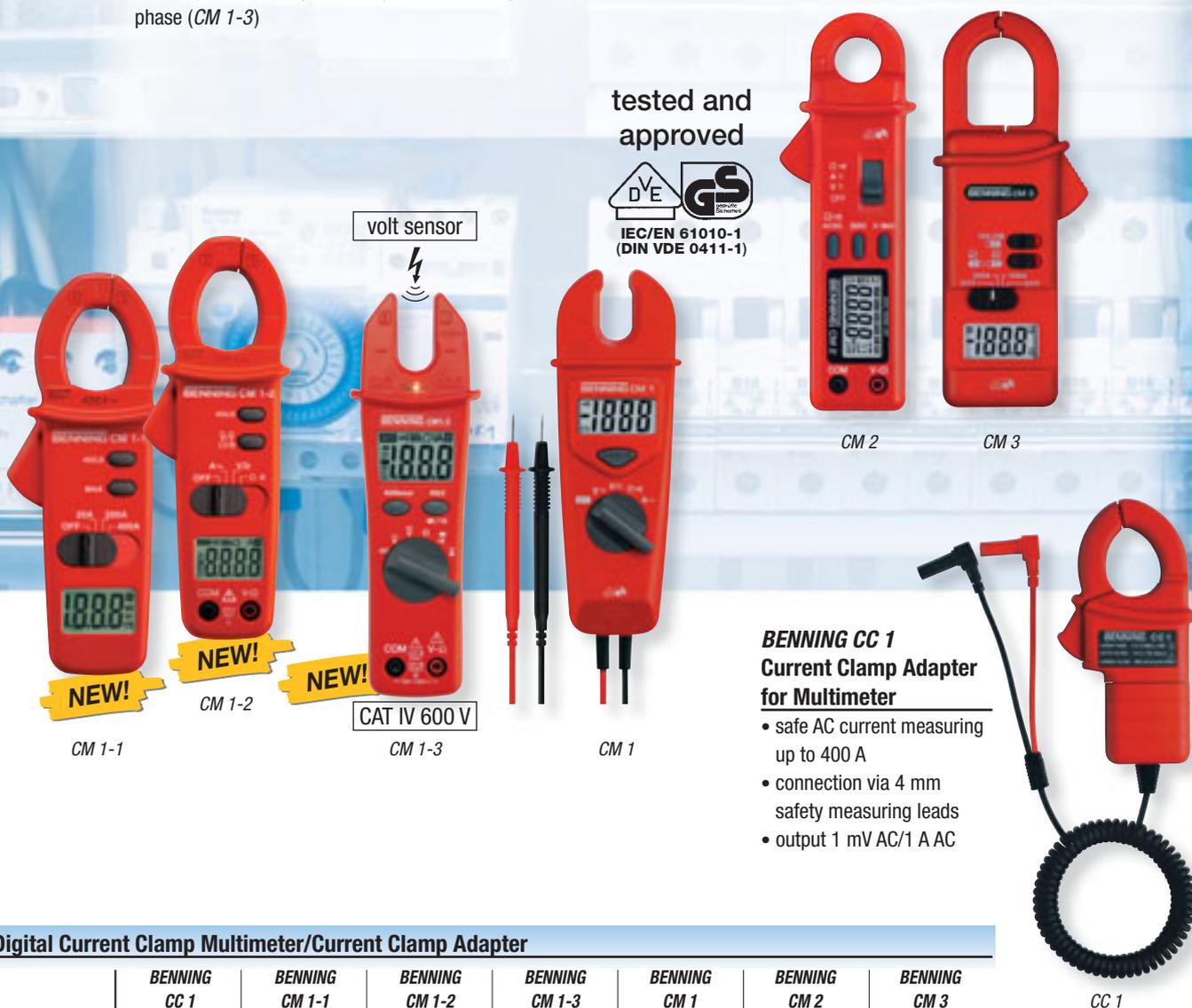
Innovative technology, practical design

- safe current measuring up to 400 A AC
- measuring inputs for voltage, current, resistance, continuity and diode test
- integrated volt sensor signalises phase voltages by means of an acoustic signal and a red LED signal (CM 1-3)
- it localizes cable breaks and defective lamps in exposed cables (cable reel, light chains) via the feeding side of the phase (CM 1-3)

BENNING CM 2, CM 3

Digital Current Clamp Multimeter for AC/ DC current

- safe and non-contact measuring of high currents
- DC and AC current measuring up to 600 A
- measuring inputs for voltage, current, resistance, continuity and diode test (CM 2)



tested and approved



CM 2

CM 3

CM 1-1

CM 1-2

CM 1-3

CM 1

CC 1

Digital Current Clamp Multimeter/Current Clamp Adapter

	BENNING CC 1	BENNING CM 1-1	BENNING CM 1-2	BENNING CM 1-3	BENNING CM 1	BENNING CM 2	BENNING CM 3
indicating range	–	2000	2000	2000	2000	4000	2000
basic accuracy	1.9 %	2 %	1 %	1 %	1 %	0.5 %	1.9 %
AC voltage	–	–	0.1 V - 600 V	0.1 V - 750 V	1 V - 600 V	0.1 mV - 600 V	–
DC voltage	–	–	0.1 V - 600 V	0.1 V - 1000 V	1 V - 600 V	0.1 mV - 600 V	–
AC current	1 A - 400 A	10 mA - 400 A	0.1 A - 400 A	0.1 A - 200 A	0.1 A - 200 A	10 mA - 300 A	0.1 A - 600 A
DC current	–	–	–	–	–	10 mA - 300 A	0.1 A - 600 A
resistance	–	–	0.1 Ω - 20 MΩ	0.1 Ω - 20 MΩ	1 Ω - 2000 Ω	0.1 Ω - 40 MΩ	–
continuity/diode	–/–	–/–	yes/–	yes/yes	yes/–	yes/–	–/–
frequency	–	–	–	–	–	–	–
effective power	–	–	–	–	–	–	–
power factor (cos φ)	–	–	–	–	–	–	–
temperature	–	–	–	–	–	–	–
volt sensor	–	–	–	Ja	–	–	–
memory	–	HOLD, MAX	HOLD	HOLD	HOLD	HOLD, MAX	HOLD
measuring method	RMS	RMS	RMS	RMS	RMS	RMS	RMS
max. clamp opening	30 mm	30 mm	30 mm	16 mm	12.5 mm	25 mm	38 mm
measuring category	CAT III 300 V	CAT III 600 V	CAT III 600 V	CAT IV 600 V	CAT III 600 V	CAT III 300 V	CAT III 300 V
item no.	044037	044061	044062	044063	044034	044035	044031

Digital Current Clamp Multimeter

BENNING CM 4 – CM 8

BENNING CM 4 - CM 7

Digital Current Clamp Multimeter of the highest measuring category

Safety without any compromises

- multi-functional and powerful due to TRUE RMS measuring method for industrial applications
- safe current measuring up to 1000 A AC/DC
- highest measuring category CAT IV 600 V allows measurements directly at the source of the low-voltage installation
- LC display and background illumination for all types

BENNING CM 8

Power Current-Clamp Multimeter

Power analysis for single-phase and three-phase mains

- TRUE-RMS measurements up to 1000 V, 600 A AC/DC
- Effective power measurements up to 600 kW
- Calculation of the power factor $\cos \varphi$
- Indication of the load type (inductive, capacitive)
- Bipolar phase sequence test in three-phase mains
- Measuring inputs for voltage, current, resistance, continuity, diode, frequency and temperature
- Measurement of inrush currents (motors etc.)



CM 4

TRUE RMS

CM 5

CAT IV 600 V

CM 6

CAT IV 600 V

CM 7

TRUE RMS

NEW!

TRUE RMS

CM 8

tested and approved



IEC/EN 61010-1
(DIN VDE 0411-1)

Digital Current Clamp Multimeter

	BENNING CM 4	BENNING CM 5	BENNING CM 6	BENNING CM 7	BENNING CM 8
indicating range	4000	4000	4000	4000	6000
basic accuracy	0.7 %	0.7 %	0.7 %	0.7 %	0.7 %
AC voltage	0.1 V - 600 V	0.1 V - 600 V	0.1 V - 750 V	0.1 V - 750 V	10 mV - 1000 V
DC voltage	0.1 V - 600 V	0.1 V - 600 V	0.1 V - 1000 V	0.1 V - 1000 V	10 mV - 1000 V
AC current	0.1 A - 600 A	0.1 A - 600 A	0.1 A - 1000 A	0.1 A - 1000 A	0.1 A - 600 A
DC current	-	0.1 A - 600 A	-	0.1 A - 1000 A	0.1 A - 600 A
resistance	0.1 Ω - 400 Ω	0.1 Ω - 400 Ω	0.1 Ω - 400 Ω	0.1 Ω - 400 Ω	0.1 Ω - 20 kΩ
continuity/diode	yes/-	yes/-	yes/-	yes/-	yes/yes
frequency	1 Hz - 400 Hz	1 Hz - 400 Hz	1 Hz - 400 Hz	1 Hz - 400 Hz	0.1 Hz - 400 Hz
effective power	-	-	-	-	1 W - 600 kW
power factor (cos φ)	-	-	-	-	± 0.00 - 1.00
temperature	-	-	-	-	-50 °C up to +1000 °C
volt sensor	-	-	-	-	-
memory	HOLD, MAX/MIN PEAK	HOLD, MAX/MIN PEAK, ZERO	HOLD, MAX/MIN PEAK	HOLD, MAX/MIN PEAK, ZERO	HOLD, MAX/MIN PEAK, INRUSH
measuring method	RMS	TRUE RMS	RMS	TRUE RMS	TRUE RMS
max. clamp opening	37 mm	45 mm	53 mm	53 mm	40 mm
measuring category	CAT III 600 V	CAT III 600 V	CAT IV 600 V	CAT IV 600 V	CAT III 600 V
item no.	044056	044057	044058	044059	044064



All Digital Current Clamps Including protective case, Safety measuring leads and battery set.

Safety device

BENNING IT 100

BENNING IT 100

Insulation and Resistance Measuring Device

- safety tests on electric systems and equipment
- measuring of the insulating resistance with testing voltages of 250 V, 500 V and 1000 V
- low-impedance measurements with testing current of 200 mA for continuity tests of protective conductors and equipotential bonding conductors
- measuring of the residual battery capacity in %
- large LC display with analogous bar graph indication and background illumination
- including service case, measuring leads, crocodile clips and battery set



IT 100

BENNING IT 100

Insulation/Resistance Measuring Device VDE 0100

	BENNING IT 100
measuring according to DIN VDE 0100/0105	insulation (250 V, 500 V, 1000 V), low-impedance resistance (200 mA)
indicating range	2000 digits (illumination)
AC/DC voltage	1 V - 1000 V
insulating resistance	0.01 MΩ - 2000 MΩ
low-impedance resistance	0.01 Ω - 20 Ω
resistance	1 Ω - 2000 Ω
continuity test	buzzer/30 Ω
internal battery capacity	0 - 100 %
measuring category	CAT III 600 V
item no.	044032



Voltage, Continuity, Load Tester Phase-Sequence Indicator

PROFIPOL®

Universal voltage tester

- indicating DC and AC voltage within the range of 6 - 400 V
- indicating steps 6, 12, 50, 230, 400 V
- polarity test for DC voltage
- shock-resistant, dust-proof and splash-proof housing, protection class IP 65

Z-TESTER

Load tester for testing low-voltage meters

- testing of the meter starting capability
- functional control by power connection of 50 W/100 W
- control of phase voltages (230/400 V)
- overload protection by means of integrated temperature monitoring

TRITEST® control

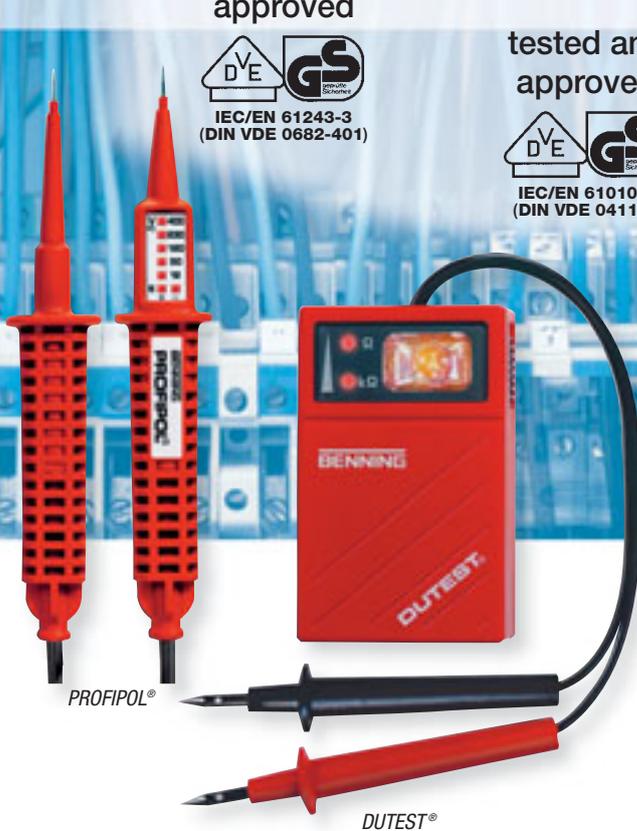
Phase-sequence indicator for testing the phase sequence in three-phase mains

- indication of clockwise and anti-clockwise phase sequence
- indication of the phase voltages L1, L2 and L3
- voltage range: 400 - 690 V (50 - 60 Hz)
- bright LED pocket lamp function
- including safety probe tips and alligator clip

tested and approved



tested and approved



PROFIPOL®

DUTEST®

Z-TESTER

TRITEST® control



DUTEST®

Continuity and line tester

- reliable detection of faulty wiring, contacting errors and cable interruptions
- high- and low-impedance continuity tests
- acoustic indication by means of loud testing buzzer
- visual indication by means of high-contrast light-emitting diodes (LED)
- powerful torch function
- protected against external voltages of up to 400 V

Voltage, Continuity, Load Tester and Phase-Sequence Indicator

	PROFIPOL®	DUTEST® continuity tester	Z-TESTER load tester	TRITEST® control
<i>indication</i>	LED	LED	LED	LED
<i>AC voltage</i>	6 - 400 V	-	230/400 V	400 - 690 V
<i>DC voltage</i>	6 - 400 V	-	-	-
<i>continuity test</i>	-	buzzer + LED 900 Ω/90 kΩ	-	-
<i>Phase-sequence test</i>	-	-	-	yes/LED
<i>Phase voltage indication</i>	-	-	-	yes/LED
<i>Pocket lamp function</i>	-	yes/bulb	-	yes/white LED
<i>polarity test</i>	yes/LED	-	-	-
<i>load connection via push button</i>	-	-	50 W/100 W I _S = 270/470 mA	-
<i>protection class</i>	IP 65	IP 30	IP 20	IP 30
<i>item no.</i>	020022	050155	050190	020050

Your specialist dealer

BENNING