# 2017 | 2018

BEHA·AMPROBE®

# Product Catalog
# Electrical Test Equipment

## English

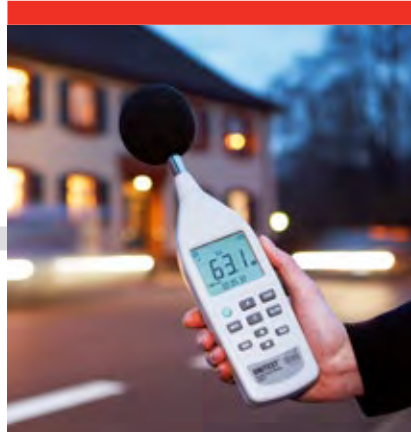# Table of Contents

V1X Mini
First Voltage
Continuity Tester

Megohmeter
First Multifunction Installation tester

NG 309

Unitest V1X

Unitest 380

0100-Multitester
(first multifunction
installation tester)

1975　　　　1980　　　　1985　　　　1990　　　　1995

# More than 40 years of Beha-Amprobe: milestones of the brand

Nearly 70 years ago, in 1948, the very first inductive clamp meter named "Amprobe" was invented in the United States by Pyramid Instrument Company. Soon after, the Amprobe name became so synonymous in the US with clamp meters that in 1960 the company name was formally changed to Amprobe Instrument Corporation.

Fourteen years later in Glottertal, Germany, Christian Beha invented the V1X, a continuity tester designed to replace his previous model after it failed on the job. An immediate success, the V1X ushered in a period of rapid growth for the company. By the mid-90s, Beha was a respected name in the electrical industry.

Recognizing the strength and quality of each brand, Danaher Corporation bought Beha and Amprobe in 2003 and 2006 respectively. Today, our combined legacies span over 100 years of bringing safety, speed and ease to the HVAC and electric professional with high-quality test and measurement tools.

From multimeters to voltage detectors, we are always improving on our designs to provide you with the very best quality in tools and support.

Machine Tester 0113

Hexagon 50

2000 Beta

Unitest Machine Tester 204

GT-800

AT-7000-EUR Series

AMP-25-EUR Mini Clamp

VP700

Telaris ProInstall 100

2000    2005    2010  2012    2015

## Innovative Testing Tools for Electricians

Our products are sold by a global network of trusted partners with a professional support team at your service, making Beha-Amprobe the natural choice. Whether you need test and measurement tools for industrial, commercial or residential applications, Beha-Amprobe offers innovative test equipment to fit your needs.

Every tool undergoes rigorous testing in our lab and by certified third-parties to ensure the rugged durability, quality and safety you've come to expect from us.

# Our new products and recommendations

## BAT-250-EUR
**Battery analyzer**

More information can be found on page 13

BAT-250-EUR
Article no. **4620297**

## AMP-25-EUR
**AC/DC TRMS
mini clamp**

More information can be found on page 38

AMP-25-EUR
Article no. **4588268**

Pocket-sized
14.7 cm height

## AMP-200-EUR series
**Clamp meters
True-RMS clamp meters**

*An alternative to our
previous products:*
**ACD-14 TRMS-PLUS,
ACD-10 TRMS-PLUS
ACDC-100 TRMS
ACDC-400**

More information can be found on page 38

AMP-210-EUR
Article no. **4560581**
AMP-220-EUR (illustrated here)
Article no. **4560590**

## 2100-Gamma
**Voltage and continuity tester
with phase sequence indication,
resistance measurement and NCV**

CAT III 1000 / CAT IV 600,
6 - 1000 V AC, 6 - 1200 V DC

More information can be found on page 11

2100-GAMMA
Article no. **4709243**

## AT-7000-EUR series
**Multi-function cable locator
Wire tracing reinvented**

More information can be found on page 20

AT-7020-EUR
Article no. **4542794**
AT-7030-EUR (illustrated here)
Article no. **4542782**

## AMP-300-EUR series
**Clamp meters
TRMS clamp meters
for motor maintenance**

*An alternative to our
previous products:*
**ACD-14 TRMS-PLUS
ACD-10 TRMS-PLUS
ACDC-100 TRMS
ACDC-400**

More information can be found on page 39

AMP-310-EUR
Article no. **4560603**
AMP-320-EUR
Article no. **4560615**

AMP-330-EUR
(illustrated here)
Article no. **4560626**

**BEHA·AMPROBE**®

## ACD-14-PRO-EUR
**Current clamp**
**with dual display (AC)**

*An alternative to our*
*previous products:*
**ACD-14 Plus**
**ACD-14 TRMS-PLUS**

More information can be found on page 40

ACD-14-PRO-EUR
Article no. **4718989**

## AM-500-EUR series
**Digital multimeter**

*An alternative to our*
*previous products:*
**5XP-A**
**30XR-A**     **33XR-A**
**34XR-A**     **35XP-A**
**37XR-A**     **38XR-A**

More information can be found on page 27

AM-550-EUR

| | | |
|---|---|---|
| AM-500-EUR | AM-520-EUR | AM-540-EUR |
| Article no. **4102332** | Article no. **4131281** | Article no. **4131308** |
| AM-510-EUR | AM-530-EUR | AM-550-EUR |
| Article no. **4102344** | Article no. **4131296** | Article no. **4131313** |

## PRM-5-EUR
**Phase sequence indicator**

*An alternative to our*
*previous products:*
**DR 100**

More information can be found on page 14

PRM-5-EUR
Article no. **4375961**

## PRM-6-EUR
**Motor and**
**Phase Rotation Indicators**

*An alternative to our*
*previous products:*
**DR 705**

More information can be found on page 14

PRM-6-EUR
Article no. **4633222**

## Light adapters
4854835 ADPTR-KIT1-EUR Light Check Adapter Kit EUR w/carrying case
4854847 ADPTR-E27-EUR Light Check Adapter E27
4854858 ADPTR-B22-EUR Light Check Adapter B22
4854864 ADPTR-E14-EUR Light Check Adapter E14
4854873 ADPTR-B15-EUR Light Check Adapter B15
4854886 ADPTR-GU10-EUR Light Check Adapter GU10
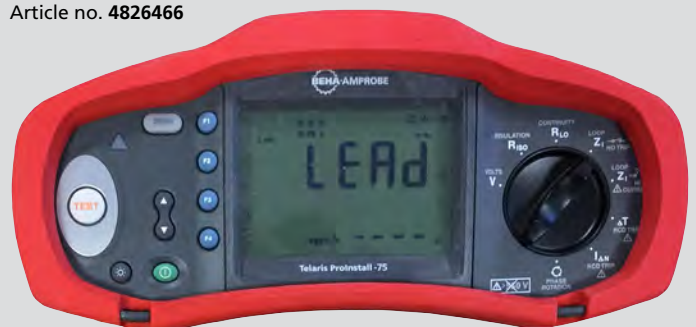
ADPTR-GU10-EUR                    ADPTR-PE-EUR

## Socket testers
4854820 ADPTR-SCT-UK Socket Check Adapter UK
4854899 ADPTR-SCT-EUR Socket Check Adapter Schuko
4854900 ADPTR-PE-EUR Socket Check Adapter Schuko PE

## ProInstall-75-UK
**Multifunction Installation Tester (for UK)**

ProInstall-75-UK
Article no. **4826466**

# Electric testing equipment

Our range of electric testing equipment covers standard equipment for any electrician, including the latest voltage detectors, non-contact voltage testers in a compact pen design, continuity phase rotation indicators for safely establishing the phase sequence, and motor rotation direction.

## Products

## Symbols used in this chapter

| Symbol | Description | Symbol | Description |
|---|---|---|---|
| **Rx** | Continuity test (optical and/or acoustic) | **~/− AC/DC** | DC and AC voltage |
| **RCD / FI** | Trip test or internal load for triggering a residual current circuit breaker (RCD/FI) | **L3 L1 L2** | Phase sequence indication |
| **LED** | Display with LED | **IP 65** | IP protection category (e.g. IP65) |
| **LCD** | Display with LCD | ⚠⚠ | Water-resistant (spray, jets of water) |
| 🔦 | Lighting of measurement points | ▦ | Dust-resistant |
| **0...2k** | Resistance measurement (e.g. 0...2 kΩ) | **Data Hold** | Measurement memory for barely visible or readable measurement results |
| ☼ | Back light | **V non contact** | Non-contact detection of AC voltage |
| **no battery** | No battery needed | 🧲 | Detecting magnetic fields |
| **~ AC** | Alternating current | •)) | Acoustic recognition of (alternating) current |
| **CAT IV 600 V** | Disclosure of measurement category in accordance with EN 61010, DIN VDE 0411 | | |

| | 2100-ALPHA | 2100-BETA | 2100-GAMMA | VOLTfix plus | VOLTfix Drill | MAGNO-VOLTfix |
|---|---|---|---|---|---|---|
| **Model** | 2100-ALPHA | 2100-BETA | 2100-GAMMA | VOLTfix plus | VOLTfix Drill | MAGNO-VOLTfix |
| **Model.** | 2100-ALPHA | 2100-BETA | 2100-GAMMA | 2052-D | 2054-D | 2050-D |
| **Display** | LED bar chart display | LED bar chart display LCD 3-1/2-digit | LED bar chart display LCD 3-1/2-digit | 1 LED | 2 LEDs | 2 LEDs |
| **Voltage test** | | | | | | |
| **Range/resolution** | 12, 24, 50, 120, 230, 400, 690 V | 12, 24, 50, 120, 230, 400, 690 V 12…690 V / 1 V | 12, 24, 50, 120, 230, 400, >690 V, 6…1000 V AC, 6…1200 V DC / 1 V | 50…600 V AC | 50…600 V AC | 50…600 V AC |
| **Tolerance AC/DC** | in accordance with DIN VDE 0682-401 | in accordance with DIN VDE 0682-401 | in accordance with DIN VDE 0682-401 | | | |
| **Test current (at voltage)** | < 3.5 mA (690 V) | < 3.5 mA (690 V) | <3.5 mA AC at 1000 V AC/ <4.5 mA DC at 1200 V DC | | | |
| **Basic load (at voltage)** | Approximately 2.4 W at 690 V | Approximately 2.4 W at 690 V | Approximately 3.5 W at 1000 V AC/approx. 5.4 W at 1200 V DC | | | |
| **Automatic turn-on threshold** | Approximately 12 V | Approximately 12 V | LED: >12 V, LCD: >6V | Approximately 50 V | Approximately 50 V | Approximately 50 V |
| **Measurement Category** | CAT IV / 600 V CAT III / 690 V | CAT IV / 600 V CAT III / 690 V | CAT IV / 600V CAT III / 1000 V | CAT III / 600V | CAT III / 600V | CAT III / 600V |
| **Frequency** | | | | | | |
| **Voltage test** | DC, 16.7... 400 Hz | DC, 16.7... 400 Hz | DC, 16.7...400 Hz | 50…500 Hz | 50…500 Hz | 50…500 Hz |
| **Polarity** | overall area | overall area | overall area | | | |
| **Phase sequence detection** | 340...400 VAC / 47....63 Hz | 340...400 VAC / 47....63 Hz | 170...1000 VAC / 40....70 Hz | | | |
| **Continuity test** | | | | | | |
| **Area/Signaling** | 0…500 kΩ optically/acoutically | 0…500 kΩ optically/acoustically | 0…500 kΩ optically/acoustically Low resistance indication: <10-50 Ω | | 0…3 MΩ | |
| **Test Current** | <5µA | <5µA | <5µA | | Approximately 0.3µA | |
| **Resistance Measurement** | | | 0...1999 Ω | | | |
| **Overall** | | | | | | |
| **Additional load** | Approximately 240 W at 690 V, ≤ 200 mA | Approximately 240 W at 690 V, ≤ 200 mA | Approximately 300 W at 1000 VAC / Approximately 420 W at 1200 VDC | | | |
| **On-time recovery time** | max. 30 s/240 s | max. 30 s/240 s | max. 30 s/240 s | constant | constant | constant |
| **Power supply** | 2 x 1.5 V, IEC LR03 | 2 x 1.5 V, IEC LR03 | 2 x 1.5 V, IEC LR03 | 2 x 1.5 V, IEC LR03 | 2 x 1.5 V, IEC LR03 | 2 x 1.5 V, IEC LR03 |
| **Voltage AC/DC testing** | ● | ● | ● | AC only | AC only | AC only |
| **Automatic range selection** | ● | ● | ● | | | |
| **Single-pole phase testing** | ● | ● | ● | | ● | |
| **Non-contact voltage indicator/ electrical field (NCV/EF)** | | | ● | ● | ● | ● |
| **Automatic internal nominal load** | ● | ● | ● | | | |
| **Accessory Case** | CC-VP-7xx | CC-VP-7xx | CC-VP-7xx | | | |
| **Features** | Continuity measurement, single-pole phase test, lighting of measurement points | Continuity measurement, single-pole phase test, lighting of measurement points, digital LCD | Resistance measurement range, low resistance continuity test, single-pole phase test, lighting of measurement points, digital LCD, NVC | | | |
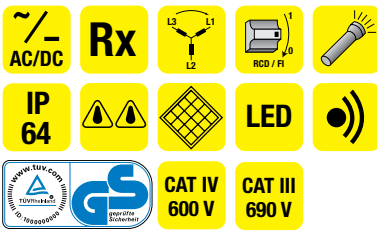
## 2100-ALPHA

**Voltage and continuity tester with phase sequence indication**

### Functions
- Voltage test
- Optical and acoustic continuity and voltage test
- Patented phase rotation indicator, no 3rd hand required
- Single-pole phase test
- Polarity

### Product information
- Switchable load (load tester) of 240 W via two push buttons, triggering a RCD/FI up to 30 mA
- IP 64, water and dust-resistant
- Integrated probe-tip protection for reducing the danger of injuries
- Fully functional voltage indicator even without batteries or if batteries are empty

### Product highlights
- No unintentional triggering of RCD/FI circuit breakers
- Fast single-handed testing of power sockets with 19 mm contact clearance, without the probe coming away from the unit
- Lighting of measurement points via white LED
- Extremely robust construction with doubly insulated wires

### Technical specifications

| | |
|---|---|
| Display | LED bar graph display ±12, ±24, 50, 120, 230, 400, 690 V |
| | Graphical LCD, 12…690 V AC/DC |
| Voltage range | 12...690 V AC/DC |
| Direct current / alternating current | automatic recognition |
| Frequency range | DC 16 2/3 Hz... 400 Hz |
| Internal nominal load | approx. 2.4 W at 690 V |
| Test current | ≤3.5 mA (without key activation) |
| Switchable load | approx. 240 W (at 690 V) |
| Test current with load | ≤ 350 mA |
| Rotating field definition | 340…440 V AC (phase conductor) |
| Frequency range | 47…63 Hz |
| Single-pole phase test | |
| Voltage range | 180 ... 690 V AC |
| Frequency range | 40…70 Hz |
| Continuity test | |
| Switching threshold | approx. 500 kΩ |
| Test current | <5 µA |
| Safety cert | DIN VDE 0682-401, EN 61243-3 |
| Measurement | CAT IV / 600 V, CAT III / 690 V |
| Pollution Degree | 2 |
| Protection Category | IP 64, water and dust-resistant |
| Power supply | 2 x battery 1.5 V Micro, IEC LR03 |
| Current consumption | max. 60 mA |
| Dimensions | approx. 280 x 78 x 35 mm |
| Weight | approx. 320 g |

## 2100-BETA

**Voltage and continuity tester with phase sequence indication**

As the 2100-ALPHA, also with:
- Digital LCD 12…690 V AC/DC

### Accessories:
Carrying case
Model CC-VP-7xx

Spare part: 2100-ACCS
4 mm probe extenders and probe tip covers
Model 2100-ACCS

### Scope of delivery 2100 ALPHA/BETA:
1 x 2100-ALPHA or 2100-BETA
2 x probe cover (GS38)
2 x 4-mm-probe extenders (screwable)
2 x batteries 1.5 V, IEC LR 03 (AAA), Micro
1 x user manual

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| 2100-ALPHA | 2100-ALPHA* | 4312495 |
| 2100-BETA | 2100-BETA* | 4312508 |
| Carrying case | CC-VP-7xx | 3889931 |
| 2100-ACCS (Spare part) | 2100-ACCS | 4736214 |

\* Packing unit of 10 items (also available individually)
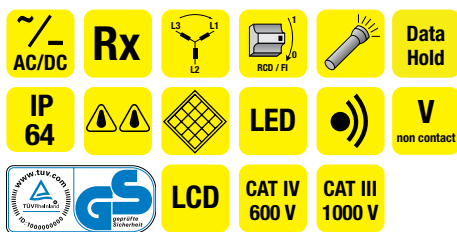
**Included:**

1 x 2100-GAMMA
2 x probe cover (GS38)
2 x 4-mm probe extenders (screwable)
2 x batteries 1.5 V, IEC LR 03 (AAA), Micro
1 x user manual



**Accessories:**

Carrying case
Model CC-VP-7xx



Spare part: 2100-ACCS
4 mm probe extenders and probe tip covers
Model 2100-ACCS



**Included:**

1 x LT-10-EUR
1 x antenna, 122cm
1 x adapter plate for fluorescent tubes
1 x antenna for sodium vapour lamps
1 x carrying case
1 x user manual

## 2100-GAMMA
### Voltage and continuity tester with phase sequence indication, resistance measurement and NCV

**Functions**
- Voltage test up to 1000 V alternating current and 1200 V direct current
- Digital LCD 12…1000 V AC/ 1200 V DC
- Measures resistance up to 1999 Ohm
- Optical and acoustic continuity and voltage test
- Low resistance continuity measurement <10...50 Ohm
- Patented phase rotation indicator, no 3rd hand required
- Single-pole phase test
- Polarity
- Non-contact voltage (NCV/EF) detection

**Product information**
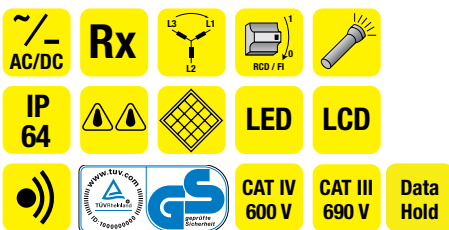- Switchable load (load tester) of 300 W at 1000 VAC / 420 W at 1200 VDC via two push buttons, triggering a RCD/FI up to 30 mA
- IP 64, water and dust-resistant
- Integrated probe-tip protection for reducing the danger of injuries

**Product highlights**
- No unintentional triggering of RCD/FI circuit breakers
- Fast single-handed testing of power sockets with 19 mm contact clearance, without the probe coming away from the unit
- Lighting of measurement points via white LED
- Extremely robust construction with doubly insulated wires

**Ordering Information:**

| Description | Model | Article no. |
|---|---|---|
| 2100-GAMMA | 2100-GAMMA* | 4709243 |
| Carrying case | CC-VP-7xx | 3889931 |
| 2100-ACCS (Spare part) | 2100-ACCS | 4736214 |

\* Packing unit of 10 items (also available individually)

## LT-10-EUR
### Lamp Tester

**Functions**
- Testing fluorescent lamps of various types
- Non-contact voltage detection
- Direct testing of lamp contacts

**Product information**
- Simple single-hand/1-button operation
- Extremely compact - pocket-size design
- Compatible with the most common fluorescent lamps:
  - T2, T4, T5, T8, T9, T10, T12
  - energy-saving fluorescent lamps
- Including sodium vapour lamp antenna for testing additional lamps:
  - Sodium vapour low-pressure lamps
  - Sodium vapour high-pressure lamps
  - Fluorescent tubes
  - Mercury vapour lamps
  - Halogen metal vapour lamps

**Device highlight**
- Integrated, highly-sensitive 122 cm antenna (can be removed and inserted) enables testing of both lamp and voltage without a conductor

### Technical specifications

| | |
|---|---|
| Display | LED bar graph display ±12, 24, 50, 120, 230, 400, ≥690V LCD, 6…1000 V AC/ 1200 V DC |
| Voltage range Direct/ | 6…1000 V AC/ 1200 V DC |
| Alternating current | automatic recognition |
| Frequency range | DC, 16 2/3 Hz…400 Hz |
| Internal nominal load | approx. 3.5 W at 1000 VAC / 5.4 at 1200 VDC |
| Test current | ≤3.5 mA at 1000 VAC / ≤4.5 mA at 1200 VDC (without key activation) |
| Switchable load | approx. 300 W at 1000 V AC/ Approximately 420 W at 1200 VDC |
| Test current with load | ≤300 mA AC at 1000 V AC/ ≤350 mA DC at 1200 V DC |
| Rotating field definition | 170…1000 V AC (phase conductor) |
| Frequency range | 40…70 Hz |
| Single-pole phase test | |
| Voltage range | 100 ... 1000 V AC |
| Frequency range | 40…70 Hz |
| Continuity measurement | of switching threshold approx. 500 kΩ |
| Test current | <5 µA |
| Resistance measurement | range/resolution 0...1999 Ω/1 Ω |
| Test current | <30 µA |
| Low resistance indication | acoustic indication <10…50 Ω |
| Overvoltage protection | 1000 V AC/1200 V DC |
| Non-contact voltage indicator (NCV/EF) | |
| Voltage range | 100…1000 V AC |
| Frequency range | 50…60 Hz |
| Display | Three-stage display via LCD segments |
| Safety cert | DIN VDE 0682-401, EN 61243-3 |
| Measurement | CAT IV / 600 V, CAT III / 1000V |
| Pollution Degree | 2 |
| Protection Category | IP 64, water and dust-resistant |
| Power supply | 2 x battery 1.5 V Micro, IEC LR03 |
| Current consumption | max. 60 mA |
| Dimensions | approx. 280 x 78 x 35 mm |
| Weight | approx. 320 g |

### Technical specifications

| | |
|---|---|
| Display | 1 LED |
| Test voltage (with new battery) | approx. 3 kV / 280 kHz |
| Non-Contact Field strength: | Approx. 100 µV/m at 260 - 300 kHz |
| Voltage test: Overall | AC 90 V to AC 600 V, 50/60 |
| Safety cert.: | EN61010/IEC61010 |
| Measurement category | CAT II/300 V, CAT I/600 V |
| Pollution Degree | 2 |
| Protection category | IP 40 |
| Power supply | 1 x battery 9V, 6LR61 |
| Dimensions | 170 x 40 x 24 mm |
| Weight | approx. 100g (incl. batteries) |

**Ordering Information:**

| Description | Model | Article no. |
|---|---|---|
| LT-10-EUR | LT-10-EUR | 4386345 |
| LT-10-ANT (Spare part) | LT-10-ANT | 4357839 |

## VOLTfix plus
### Non-contact volt probe

**Functions**
- Non-contact, optical and acoustic detection of AC voltages
- Fast, accurate detection of cable breaks in open-ended cables, e.g. cable drums or extension cables

**Product information**
- Reliable, automatic self-test of activated device with optical readiness indicator
- Compact, handy design that fits in any pocket
- Wide range of applications in trade and industry

**Device highlight**
- On/off switch

### Included:
1 x VOLT*fix plus*
2 x battery 1.5 V, IEC LR03
1 x user manual

**Technical specifications**

| | |
|---|---|
| Display | 1 LED |
| Voltage range | 50…600 V AC |
| Frequency range | 50...500 Hz |
| On-time | constant |
| Pollution degree | 2 |
| Measurement category | CAT III/600 V |
| Safety cert.: | DIN VDE 0411, EN 61010 |
| Power supply | 2 x battery 1.5 V, IEC LR03 |
| Dimensions | 140 x 24 x 20 mm |
| Weight | approx. 50 g |

**Ordering Information:**

| Description | Model | Article no. |
|---|---|---|
| VOLTfix plus | 2052-D* | **3454347** |

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## VOLTfix Drill
### Non-contact voltage probe with screwdriver insert

**Functions**
- Non-contact, optical and acoustic detection of AC voltages
- Direct voltage test via screwdriver blade
- Continuity test
- Fast, accurate detection of cable breaks in open-ended cables, e.g. cable drums, extension cables

**Product information**
- Reliable, automatic self-test of activated device with optical readiness indicator
- Compact, handy design that fits in any pocket

**Device highlight**
- Integrated, ultra-bright flashlight
- Fixed, high-quality screwdriver insert (chrome, vanadium, molybdenum blade)

### Included:
1 x VOLT*fix drill*
2 x battery 1.5 V, IEC LR03
1 x user manual

**Technical specifications**

| | |
|---|---|
| Display | 2 LEDs |
| Voltage range/ Frequency | 50…600 V AC |
| Voltage | 50…500 Hz |
| Continuity test | 0... 3 MΩ |
| Test current | approx. 0.3 µA |
| On-time | constant |
| Pollution degree | 2 |
| Measurement category | CAT III/600 V |
| Safety cert.: | DIN VDE 0411, EN 61010 |
| Power supply | 2 x battery 1.5 V, IEC LR03 |
| Dimensions | 160 x 25 x 21 mm |
| Weight | approx. 55 g |

**Ordering Information:**

| Description | Model | Article no. |
|---|---|---|
| VOLT*fix drill* | 2054-D* | **3454358** |

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## MAGNO-VOLTfix
### Non-contact voltage probe with magnetic field detection

**Functions**
- Non-contact, optical and acoustic detection of AC voltages
- Fast, accurate detection of cable breaks in open-ended cables, e.g. cable drums, extension cables
- Optical signal for detection of magnetic fields, e.g. on magnetic coils or permanent magnets

**Product information**
- Compact, handy design that fits in any pocket
- Wide range of applications in trade and industry

### Included:
1 x MAGNO-VOLT*fix*
2 x battery 1.5 V, IEC LR03
1 x user manual

**Technical specifications**

| | |
|---|---|
| Display | 2 LEDs |
| Voltage range/ Frequency | 50…600 V AC |
| Voltage | 50…500 Hz |
| On-time | constant |
| Pollution degree | 2 |
| Measurement category | CAT III/600 V |
| Safety cert.: | DIN VDE 0411, EN 61010 |
| Power supply | 2 x battery 1.5 V, IEC LR03 |
| Dimensions | 140 x 24 x 20 mm |
| Weight | approx. 50 g |

**Ordering Information:**

| Description | Model | Article no. |
|---|---|---|
| MAGNO-VOLT*fix* | 2050-D* | **3454335** |

\* Packing unit of 10 items (also available individually)

**Rx** | flashlight

### Included:

1 x TESTFIX without batteries
1 x spare lamp
1 x carrying case
2 x uninsulated crocodile clips
1 x user manual

## TESTFIX
### Continuity and circuit tester with flashlight function

Functions
• Acoustic continuity tester (summer)
• Optical continuity display (lamp)

Product information
• Low-resistance continuity tester
• For testing light bulbs, fuses, etc.
• Test wiring and grid networks

Product highlights
• Flashlight function with continuous light

### Technical specifications

| Continuity test | 0…10 Ω (optical), 0…100 Ω (acoustic) |
|---|---|
| Test current | approx. 200 mA (optical) Approx. 40 mA (acoustic) |
| Test voltage | < 4.5 V |
| Power supply | 3 x battery 1.5 V, IEC LR6 |
| Dimensions | 130 x 75 x 35 mm |
| Weight | approx. 180 g |

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| TESTFIX | 9023* | 2147430 |

\* Packing unit of 10 items (also available individually)



**Rx** | **LED**

### Included:

1 x Ohmtest
1 x battery 9 V, IEC 6LR61
1 x crocodile clip
2 x probes
1 x user manual

## Ohmtest
### Continuity tester

Functions
• Continuity tester with buzzer
• Optical continuity display
• External voltage display >50 V

Product information
• Range of applications: Resistance, semi-conductor, and polarity testing, light-bulbs, fuse, etc.

Device highlight
• Voltage-proof up to 600 V

### Accessories:



Carrying case
Model 1150

### Technical specifications

| Continuity test | 0...500 kΩ |
|---|---|
| Test current | approx. 5 µA |
| Test voltage | < 9 V |
| External voltage indicator | 50....600 V |
| Protection category | IP 40 |
| Power supply | 1 x battery 9 V, IEC 6LR61 |
| Dimensions | 110 x 58 x 24 mm |
| Weight | approx. 150 g |

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| Ohmtest | 9072-D* | 3454373 |
| Carrying case | 1150 | 2145755 |

\* Packing unit of 10 items (also available individually)



### Included:

1 x BAT-250-EUR
1 x user manual

## BAT-250-EUR
### Battery tester

Functions
• Test standard and rechargeable batteries
• Direct display of state of charge
• Analog display with colored areas

Product information
• Testing of Mignon (AA), Micro (AAA), Baby (C), and Mono (D) battery types
• Testing of 1.5 V button cells
• Testing of 9 V block batteries

Product highlights
• Ergonomic design, sliding contact for one-handed operation
• V-shaped battery holder on the side
• High-quality connections for 9 V block batteries
• No batteries required to operate

### Technical specifications

| Display | Analog display with colored areas Replace (REPLACE), Low (LOW), Good (GOOD) |
|---|---|
| Test current (typical) | 1.5 V: 375 mA, 9 V: 40 mA (at limit of measurement range) |
| Nominal load (typical) | 1.5 V: 4 Ω, 9 V: 215 Ω |
| Battery types | 9 V block battery, Micro (AAA), Mignon (AA), Baby (C), Mono (D) and 1.5 V button cells |
| Dimensions | approx. 110 x 74 x 29 mm |
| Weight | approx. 50 g |

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| BAT-250-EUR | BAT-250-EUR | 4620297 |

## PRM-5-EUR
### Phase Rotation Tester

**Functions**
• Phase sequence display with LEDs
• Display of a missing or incorrectly connected outer conductor

**Product information**
• Fast detection of phase sequence in three-phase supply
• Voltage range from 100 to 700 V, Frequency range 16 to 400 Hz

**Product highlights**
• No battery needed
• Robust housing with rubber protective cover
• Securely connected test leads
  Measurement category CAT IV, 600 V

### Technical specifications

| | |
|---|---|
| Display | LED for anticlockwise, clockwise, faulty connection |
| Voltage range | 100 ... 700 V |
| Frequency range | 16 ... 400 Hz |
| Test current | ≤3,5 mA |
| Safety cert | DIN VDE 0411/EN 61010-1/ DIN VDE 0413-7, EN 61557-7 |
| Measurement category | CAT IV / 600 V |
| Power supply | from test object |
| Dimensions | 137 x 65 x 33 mm |
| Weight | approx. 253 g |

### Included:

1 x PRM-5-EUR
3 x probes
1 x crocodile clip
1 x carrying case
1 x user manual

### Accessories

1324 Unidreh accessory set allows a perfect and easy connection to CEE 16 A and CEE 32 A sockets, safety cert.: CAT II, 1000 V

### Accessories:
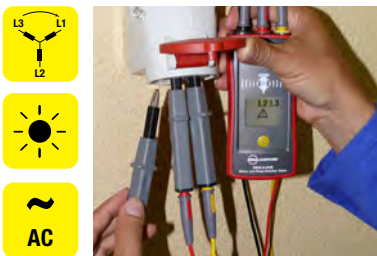
Unidreh accessory set
Model 1324

Carrying case
Model 1150

Crocodile clips for conductor rails
Model 391511 (red)
Model 391512 (black)

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| PRM-5-EUR | PRM-5-EUR | 4375961 |
| UNIdreh accessory set | 1324 | 2146183 |
| Carrying case | 1150 | 2145755 |
| Crocodile clip for conductor rail | | |
| Red | 391511 | 2146861 |
| Black | 391512 | 2146877 |

## PRM-6-EUR
### Motor and Phase Rotation Tester

**Functions**
• Phase sequence display with LCD
• Display of a missing or incorrectly connected outer conductor
• Non-contact motor rotation indicator when the motor is running
• De-energised identification of motor connections (U, V, W) via a manual drive

**Product information**
• Fast detection of phase sequence in three-phase supply
• Voltage range from 40 to 700 V, Frequency range 16 to 400 Hz

**Product highlights**
• Robust housing with rubber protective cover
• Detachable test leads
• Measurement category CAT IV, 600 V
• Back light
• Testing rotary field direction possible without batteries, or with empty batteries

### Technical specifications

| | |
|---|---|
| Display | LCD |
| Phase sequence indication | 40...700 V / 16....60 Hz 50...700 V / 60....400 Hz |
| Non-Contact Motor rotation indicator | 16....400 Hz |
| Detection of motor connections | >0.65 V / 2....100 Hz |
| Test current | ≤3,5 mA |
| Safety cert | DIN VDE 0411/EN 61010-1/ DIN VDE 0413-7, EN 61557-7 |
| Measurement category | CAT IV / 600 V |
| Power supply | 2x batteries 1.5 V, IEC LR 03 (AAA), Micro |
| Dimensions | 137 x 65 x 33 mm |
| Weight | approx. 170 g |

### Included:

1 x PRM-6-EUR
2 x batteries 1.5 V, IEC LR 03
3 x test leads
3 x probes
3 x crocodile clips
1 x carrying case
1 x user manual

### Accessories:

Unidreh accessory set
Model 1324

Carrying case
Model 1150

Crocodile clips for conductor rails
Model 391511 (red)
Model 391512 (black)

TL-PRM-6 test lead set for
PRM-6-EUR
Model TL-PRM-6

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| PRM-6-EUR | PRM-6-EUR | 4633222 |
| UNIdreh accessory set | 1324 | 2146183 |
| Carrying case | 1150 | 2145755 |
| Crocodile clip for conductor rail | | |
| Red | 391511 | 2146861 |
| Black | 391512 | 2146877 |
| TL-PRM-6 test lead set for PRM-6-EUR | | |
| (Spare part) | TL-PRM-6 | 4692870 |

# Measuring solar radiation

## Products

SOLAR-100                                            15

## Symbols used in this chapter

| | |
|---|---|
| **15 sec** | Fast measurement |
| **Data Hold** | Measurement Memory |
| **min / max** | Min/MAX memory |

## SOLAR-100
### Solar Power Meter

#### Functions
- Measuring solar radiation
- Establishing light transparency of windows and panes (g-factor)

#### Product information
- Display switchable between W/m² or BTU / (ft² x h)
- Manual range selection
- Integrated measurement memory (data hold)
- MAX/MIN function
- Manual zero adjustment

**15 sec**   **Data Hold**   **min / max**

### Included:

1 x SOLAR-100
1 x battery 9 V, IEC 6F22
1 x carrying case
1 x user manual

### Technical specifications

| | |
|---|---|
| Display | LCD, 3 ½ digit, 1999 digits |
| Measurement ranges | 0...200, 2000 W/m², 0…634 BTU / (ft² x h) |
| Resolution | 0.1, 1 W/m²; 0.1, 1 BTU |
| Accuracy | ±10W/m² (±3 BTU) or ±5 % |
| Power supply | 1 x battery 9 V, IEC 6F22 |
| Dimensions | 130 x 63 x 38 mm (unit) 80 x 55 x 29 mm (sensor) |
| Weight | approx. 230 g |

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| SOLAR-100 | SOLAR-100 | **3474979** |

# Locating and measuring wires/cables

Cable locators are useful for tracing and finding wires and cables.

This means that sockets and fuses can be assigned to circuits, hidden sockets and junction boxes in walls, floors, and ceilings can be traced, and interruptions in cables and short circuits can be located.

- Targeted locating of cables in walls, as well as interruptions and short circuits in cables
- Locating of fuses/machines and assignment to circuits
- Locating of accidentally concealed sockets and distribution boxes
- Locating of interruptions and short circuits in unshielded underfloor heating
- Tracing wires in ceilings and walls
- Tracing cables in soil

## Interesting facts

## Products

# AT-7000-EUR Features and Functions



Trace energised or de-energised wires by removing the junction box cover.

### Trace Wires Inside Conduit

Detect and trace energised and de-energised wires that are surrounded by metal conduits by removing the cover off the junction box and using the sensor tip of the AT-7000-RE receiver to identify the exact wire that transmits the signal generated by the AT-7000-TE transmitter. Wires in non-metal conduits can be traced directly without opening the junction box and using the AT-7000-RE Receiver's Smart Sensor™.



Induce signal with the current clamp when there is no bare conductor.

### Find energised wires without direct connection to wires, signal feed via current clamp

The SC-7000-EUR current clamp accessory can be used with the AT-7000-TE transmitter to induce a signal into energised and de-energised wires when direct access to the wires is neither possible, nor desired. Simply clamp around the desired wire to induce the signal, then begin tracing.
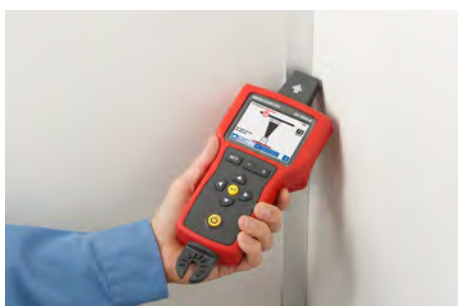


Use the Tip Sensor to trace wires in hard to reach areas.

### Use the Tip Sensor to trace wires in hard to reach areas

When used with the AT-7000-TE transmitter, the tip sensor pinpoints the location of energised and de-energised wires in tight, hard to reach spaces. It easily and accurately traces the targeted energised and de-energised wires in junction boxes, corners, walls, floors and ceilings to a depth of up to approx. 6 meters (20 feet).



Non-contact voltage (NCV) detection.

### Non-contact voltage (NCV) detection

The NCV feature extends functionality of the AT-7000-RE receiver by detecting energised wires from 90 to 600 V and 40 to 400 Hz without the use of the AT-7000-TE transmitter. Its adjustable sensitivity fits a range of applications, from detecting presence of voltage (higher sensitivity) to precisely pinpointing a hot wire in a bundle (lower sensitivity).

# Cable locator AT-7000-EUR



Transmitter



Receiver

## Theoretical operating principle

The cable locator consists of a transmitter and the receiver.

The signal generated by the transmitter consists of a modulated current, which generates an electromagnetic field around a conductor.

This electromagnetic field, that is set up around the conductor, induces a current in the nozzles on the receiver. The induced current is amplified by the receiver, decoded, converted into the original signal, and then appears in the display.

The transmitter must always be connected for such an application such that a closed circuit is the result.
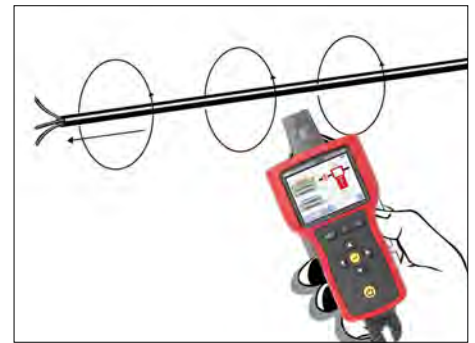


## Types of application

**1. Single-pole application: connection of the transmitter to only one conductor**

The receiver is powered by the built-in battery (rechargeable) in this operating mode. As the signal generated by the transmitter is of high-frequency origin, then only a single conductor can be searched or traced.

The second conductor replaces earth. In this arrangement a high-frequency current flows through the conductor via the air and back to earth in a similar manner as with a radio transmitter and radio receiver.

**2. Double-pole application: connection of transmitter to the grid**

The transmitter is powered by the grid. In such a case the modulation current flows from the transmitter, for example in the phase, to the transformer and then back to the transmitter via the neutral conductor.

A further opportunity is available for de-energised systems, where the transmitter is connected to the start of two cables and then the ends of the cables are short-circuited. This also results in a closed circuit. The transmitter is then powered by the built-in battery. The cable locator can only locate cables that are correctly connected in accordance with physical principles.
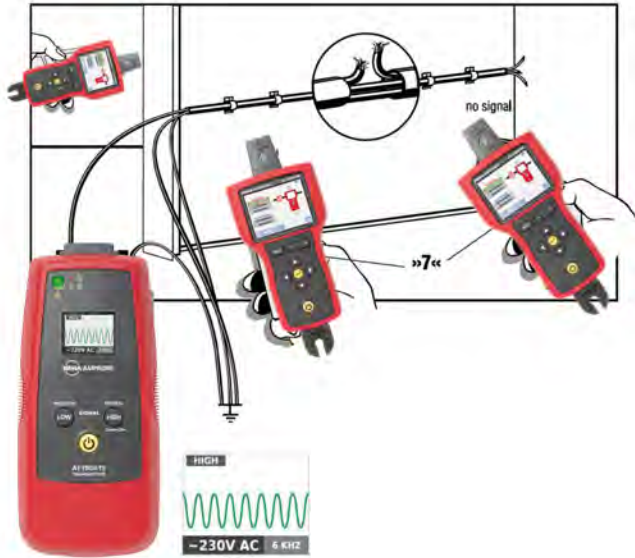
### Locating interruptions in cables (single-pole application)

The signal is transmitted to the wire that is suspected to be interrupted. The other wires are connected with the ground jack on the transmitter, and with an earth. The signal is traced with the receiver. The signal breaks off at the point where the interruption takes place.
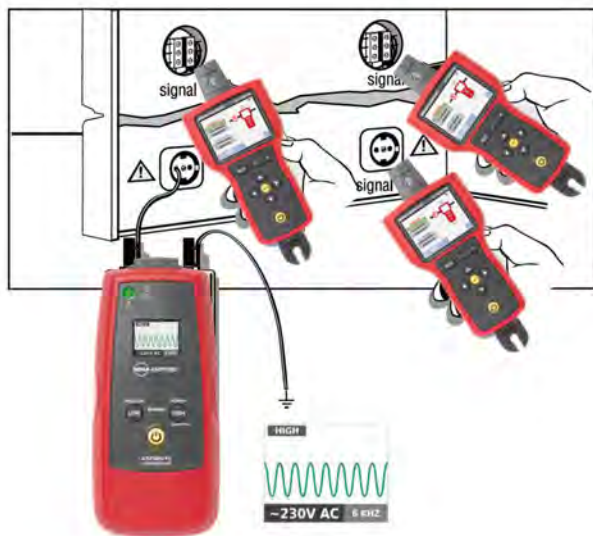
### In closed circuits (double-pole application)

Closed circuits are suitable, for example, for locating sockets, switches, fuses, etc. in domestic installations that are energised. This application is possible either when de-energised, or energised (from 90 - 270 V). The tracing depth is approximately 0. . . 10 cm.

### Tracing fuses

# AT-7000-EUR series
## Multi-function wire tracer

### Functions
- Targeted locating of cables in walls, as well as interruptions and short circuits in cables
- Locating fuses/machines and assignment to circuits
- Locating accidentally concealed sockets and dis-tribution boxes
- Locating interruptions and short circuits in unshielded underfloor heating
- Tracing metallic water and heating pipes

### Product information
- Set consisting of transmitter and receiver in a stable, shock-proof case
- Display of sender signal
- Clear, easy-to-follow instruction manual with application examples

### Product highlights
- All application areas (live or de-energised) are covered without the need for additional devices
- Receiver with high-resolution 8.9 cm (3.5") TFT-LCD color screen
- Display of position and direction of wire on LC screen
- Receiver with two antennas - "Smart Sensor™" and "Tip Sensor"
- Transmitter with two switchable transmission frequencies (6 kHz and 33kHz)
- Connection for optional current clamp to feed in a signal without direct connection to the wire.

## Technical specifications

| | |
|---|---|
| Display | TFT-LCD color screen, 8.9 cm (3.5"), 70 x 53 mm with backlit display |
| Resolution | 320 x 240 pixels |
| Measurement frequencies | energised: 6.25 kHz De-Energised: 32.768 kHz |
| Tracing depth | |
| Smart sensor | approx. 5 cm ... approx. 1.5 m |
| Tip sensor, energised | approx. 5 cm ... approx. 6.7 m |
| Tip sensor, de-energised | approx. 5 cm ... approx. 4.3 m |
| Non-Contact Voltage test | approx. 5 cm ... approx. 1.2 m |
| Non-contact voltage detection (NCV) | approx. 90 ... 600 V AC |
| Safety cert | DIN VDE 0411/EN 61010-1 |
| Measurement category | CAT IV / 600 V |
| Power supply | 4x batteries 1.5 V, IEC LR 06 (AA), Mignon |
| Energy intake | 2 W |
| Dimensions | 280 x 113 x 65 mm |
| Weight | approx. 540 g |
| Transmitter AT-7000-TE | |
| Display | TFT-LCD, 4.5 cm (1.77"), 28 x 35 mm with backlit display |
| Resolution | 128 x 160 pixels |
| Measurement frequencies | energised 6.25 kHz de-energised 32.768 kHz |
| Voltage measurement | 9 ... 300 V AC/DC 0 ... 400 Hz |
| Safety cert | DIN VDE 0411/EN 61010-1 |
| Measurement category | CAT IV / 300 V |
| Power supply | 6x batteries 1.5 V, IEC LR 06 (AA), |
| Energy consumption | 2 W |
| Dimensions | 216 x 100 x 56 mm |
| Weight | approx. 590 g |



# AT-7020-EUR
AT-7000-RE Receiver
Transmitter AT-7000-TE
3 test leads
2 x crocodile clips
2 x probes
10x batteries 1.5 V, IEC LR 06 (AA), Mignon
1 x carry case
1 x user manual

## Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| AT-7020-EUR | AT-7020-EUR | **4542794** |
| AT-7030-EUR | AT-7030-EUR | **4542782** |
| | | |
| Receiver | AT-7000-RE | **4542802** |
| Transmitter | AT-7000-TE | **4542816** |

### Recommended Accessories

| | | |
|---|---|---|
| Current clamp | SC-7000-EUR | **4542825** |
| Hanging strap for transmitter | HS-1 | **4594135** |
| Power pack for transmitter | BR-7000-T | **4467296** |
| Battery charger | BR-7000-C | **4544583** |
| Test lead 25 m | TL-7000-25M | **4634011** |



# AT-7030-EUR
AT-7000-RE Receiver
Transmitter AT-7000-TE
SC-7000-EUR Current clamp
BR-7000-T power pack
Hanging strap HS-1
3 test leads
2 x crocodile clips
2 x probes
10x batteries 1.5 V, IEC LR 06 (AA), Mignon
1 x carry case
1 x user manual

## Accessories:

1. Current clamp
   SC-7000-EUR

2. Hanging strap for transmitter
   HS-1

3. Power pack for transmitter
   BR-7000-T

4. Battery charger
   BR-7000-C

5. Test leads 25 m
   TL-7000-25M



1



2



3



4



5

# Cable Locator Set
## for live and de-energised circuits

### Functions
• Targeted locating of cables in walls, as well as interruptions and short circuits in cables
• Locating of fuses and assignment to circuits
• Locating of accidentally concealed sockets and distribution boxes
• Locating of interruptions and short circuits in unshielded underfloor heating
• Tracing of metallic water and heating pipes

### Product information
• Set consisting of transmitter and receiver in a robust, shock-proof case
• Transmitter signal is indicated optically and acoustically
• Clear, easy-to-follow instruction manual with application examples

### Product highlights
• All application areas (live or de-energised) are covered without the need for additional devices
• Accurate locating by means of displaying a specified letter on the receiver

## Included:

1 x cable locator receiver
1 x cable locator transmitter, code "F"
4 x test leads
3 x battery 9 V, IEC 6LR61
2 x crocodile clips
2 x probes
1 x carry case
1 x user manual

## Technical specifications

| | |
|---|---|
| Display | LED bar for intensity and 7-segment display on receiver for number or letter indicating the transmitter code |
| Tracing depth | 0...40 cm |
| Withstand voltage | 250 V |
| Measurement category | CAT II/250 V |
| Pollution degree | 2 |
| Safety cert.: | EN 61010-1/IEC 61010 |
| Power supply | 1 x battery 9 V, IEC 6LR61 (receiver) |
| | 2 x battery 9 V, IEC 6LR61 (transmitter) |
| Dimensions | 380 x 305 x 90 mm (case) |
| Weight | approx. 1.8 kg |

## Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| Cable locator set in case | 2032-D | **3454320** |

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# ECB50A
## Fuse finder for live circuits

### Functions
• Fast and accurate locating of fuses and assignment to circuits
• Locating and tracing of cables beneath plaster

### Product information
• Set consisting of transmitter and receiver in a robust carry case
• Transmitter signal is indicated optically and acoustically on the receiver
• Transmitter with built-in Schuko plug for simple contacting with the Schuko or UK socket
• Simple switching between fuse and cable search function
• Continuous sensitivity adjustment of receiver
• Coded signal enables precise identification from the receiver

\* This product is not available in Switzerland

\* For UK: circuit breaker finder ECB50A-E available with UK plug

\* For EUR (except UK): ECB50A-FGIS with Schuko plug

## Included:

1 x fuse finder transmitter
1 x fuse finder receiver
1 x battery 9 V, IEC 6LR61
1 x carry case
1 x user manual

## Technical specifications

| | |
|---|---|
| Receiver display | 2 LEDs and 7-segment display for letters for displaying the code from the transmitter |
| Tracing depth | Function fuse 0…10 cm Function wire 0…40 cm |
| Voltage range | 100…250 V AC (50…60 Hz) |
| Measurement category | CAT III/300 V |
| Pollution degree | 2 |
| Safety cert.: | EN 61010-1/IEC 61010 |
| Power supply | 1 x battery 9 V, IEC 6LR61 (receiver) network supply (transmitter) |
| Dimensions | 180 x 120 x 45 mm (case) |
| Weight | approx. 250 g (set) |

## Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| ECB50A-E | ECB50A-E | **3027097** |
| ECB50A-FGIS | ECB50A-FGIS | **3027106** |

# AT-3500
*Underground cable locator*

With the AT-3500 cable locator you can ensure that productivity remains high, whilst costs remain low. AT-3500 is a robust, cost-effective solution for locating live and de-energised wires, cables and pipes in soil.

The cable locator is, for example, suitable for car park and airport lighting, and shows the location of cables and pipes immediately on a digital, backlit multi-segment display, complete with acoustic indicators.

The AT-3500 cable locator functions at the frequency of 33 kHz, which is proven for the majority of tracing applications. In order to avoid wires on construction sites, the device also provides a highly-sensitive current mode and a radio mode. Depth measurements can be carried out by pressing the button.

**BEHA·AMPROBE®**

## AT-3500
### Underground Cable / Pipe Locator System

#### Functions
- Locating and tracing cables and pipes in the ground
- Simplified tracing function enables location of cable or pipe damage
- Determining the location, depth, and alignment of metal cables
- Optical and acoustic display

#### Product information
- Set consists of transmitter, receiver, and measuring accessories
- Various measurement functions allow for high levels of accuracy:
  - Passive via network frequency
  - Passive via radio signals
  - Active via signal generator
- Transmitter with voltage-proof output
- Comprehensive range of accessories available

#### Product highlights
- Large display with simple menu navigation and back light
- Robust construction for use in inclement weather and harsh environments

### Technical specifications

Transmitter T-3500

| | |
|---|---|
| Transmission power | 0.1 W/0.5 W (switchable) |
| Frequency | 32.768 kHz |
| Power supply | 6 x battery, IEC LR20 / D / Mono |
| Operating time | approx. 40 hours (for operation with interruptions and with alkali batteries at 20 °C) |
| Protection category | IP 56 |
| Dimensions | 260 x 255 x 140 mm |
| Weight | 1.7 kg (2.65 lb) |

Receiver R-3500

| | |
|---|---|
| Frequency ranges | Range 1: Radio 15 kHz to 23 kHz; Range 2: Power grid 50 / 60 Hz; Range 3: Transmitter 32.768 kHz |
| Sensitivity | Range 1: Radio > 20 µA; Area 2: Power grid > 7 mA; Range 3: Transmitter > 5 µA |
| Depth range | 0.1 m … 5 m |
| Resolution | 0.1 m |
| Power supply | 10 x battery 1.5 V, IEC LR6 / AA / Mignon |
| Operating time | approx. 40 hours (for operation with interruptions and with alkali batteries at 20 °C) |
| Protection category | IP 67 from the lower edge of the receiver to the lower edge of the battery compartment, and IP 56 for all parts for which this description is not relevant |
| Dimensions | approx. 99 x 660 x 252 mm |
| Weight | approx. 2.5 kg |

### Included:
1 x R-3500 receiver
1 x T-3500 transmitter
1 x user manual
2 x test leads
2 x crocodile clips
1 x earth spike
10 x battery 1.5 V, IEC LR6 / AA / Mignon
6 x battery 1.5 V, IEC LR20/D/Mono
1 x robust carry case

### Accessories:
MLS55-3, Pipe transmitter for AT-3500 order no. MLS55-3

SC-3500, Current clamp for AT-3500 order no. SC-3500

### Ordering Information:
| Description | Model | Article no. |
|---|---|---|
| AT-3500 | AT-3500 | **3435058** |
| MLS55-3 | MLS55-3 | **3435099** |
| SC-3500 | SC-3500 | **3435073** |

## LAN-1
### LAN Cable Tester

#### Functions
- Testing wiring faults of LAN cables
- Detection of cable breaks, short circuits, reversed and split pairs
- Check of shielding

#### Product information
- Test pin configuration for:
  - 10/100 base
  - 10 base-2 cables
  - RJ45 cables
  - AT&T 258A cables
  - EIA / TIA 568A/568B cables
  - Token ring cables
- Testing installed cable on wall plate or the patch panels by using an external coding plug
- Testing a cable loop or remote testing with a coding plug
- Acoustic error display

#### Product highlights
- Automatic and manual test procedure
- Recognition of split pairs

### Technical specifications

| | |
|---|---|
| Display | 2x 9 LED segments for cable occupation green output, red input |
| Connection | RJ45 and BNC |
| Max. cable length | >300 m |
| Power supply | battery 1 x 9 V, IEC 6F22 |
| Dimensions | 130 x 56 x 38 mm |
| Weight | approx. 600 g |

### Included:
1 x LAN-1
1 x remote coding plug
1 x battery 9 V, IEC 6F22
2 x adapter RJ45/BNC
1 x adapter RJ45/RJ45
2 x adapter BNC/BNC
1 x carrying case
1 x user manual

### Ordering Information:
| Description | Model | Article no. |
|---|---|---|
| LAN-1 | LAN-1 | **3052401** |

# Digital multimeters

Multimeters are measuring devices that can measure many variables. Our product portfolio ranges from compact multimeters for simple applications (e.g. troubleshooting) up to multimeters for more demanding situations such as in development or within industry, with a variety of functions and measurement options. This means that regardless of the application, we have the right multimeter offering excellent value for money.

## Products

| | | | |
|---|---|---|---|
| **battery test** | Battery test | ☀ | Back light |
| **°C** | Temperature measurement | •)) | Diode test and Continuity beeper |
| **Hz** | Frequency verification | **Data Hold** | Measurement Memory |
| ⊣⊢ | Capacitance measurement | **CAT IV 600 V** | Measurement Category |
| **PC** | PC interface | **True RMS** | True PC measurement |
| **Bargraph** | Digital bar graph display | **min / max** | Min/Max Hold |

| Model | AM-500-EUR | Hexagon 110 | Hexagon 120 | Hexagon 340 | 37 XR-A | 38 XR-A |
|---|---|---|---|---|---|---|
| |  |  |  |  |  |  |
| Display Digits | 3 1/2 digit, 1999 digits | 3¾ digit, 4000 digits | 3¾ digit, 4000 digits | ¾ digit, 5000 digits | 4 digit, 9999 digits | 4 digit, 9999 digits |
| True-RMS measurement | | | | AC | AC | AC+DC |
| Bar graph | | | | • | • | • |
| **Ranges** | | | | | | |
| Voltage AC | 1 mV... 600 V | 0.1 mV... 1000 V | 0.1 mV... 1000 V | 0.01 mV... 1000 V | 0.1 mV... 750 V | 0.1 mV... 750 V |
| Basic Accuracy* | (1.0% + 3D) | (1.5% + 5D) | (1.5% + 5D) | (0.5% + 3D) | (1.2% + 10D) | (1.2% + 10D) |
| Frequency | 45...400 Hz | 50...500 Hz | 50...500 Hz | 40 Hz...20 kHz | 45 Hz...2 kHz | 45 Hz...2 kHz |
| Voltage DC | 1 mV... 600 V | 0.1 mV... 1000 V | 0.1 mV... 1000 V | 0.01 mV... 1000 V | 0.1 mV... 1000 V | 0.1 mV... 1000 V |
| Basic Accuracy* | (0.8% + 3D) | (0.3% + 4D) | (0.3% + 4D) | (0.08% + 2D) | (0.1% + 5D) | (0.25% + 5D) |
| Current AC | 0.1 µA...10 A | 0.1 µA...10 A (20A for 30 s) | 0.1 µA...10 A (20A for 30 s) | 0.1 µA...10 A (20A for 30 s) | 0.01 µA... 10 A | 0.01 µA... 10 A |
| Basic Accuracy* | (1.5% + 3D) | (1.5% + 4D) | (1.5% + 4D) | (0.6% + 3D) | (1.5% + 10D) | (1.5% + 20D) |
| Frequency | 45...400 Hz | 50 Hz...500 Hz | 50...500 Hz | 40 Hz...1 kHz | 45 Hz...1 kHz | 45 Hz...1 kHz |
| Current DC | 0.1 µA...10 A | 0.1 µA...10 A (20A for 30 s) | 0.1 µA...10 A (20A for 30 s) | 0.1 µA...10 A (20A for 30 s) | 0.01 µA... 10 A | 0.01 µA... 10 A |
| Basic Accuracy* | (1.2% + 3D) | (1.2% + 3D) | (1.2% + 3D) | (0.2% + 4D) | (0.5% + 10D) | (0.5% + 10D) |
| Resistance | 1Ω...20 MΩ | 0.1Ω...40 MΩ | 0.1Ω...40 MΩ | 0.01Ω...50 MΩ | 0.1Ω...40 MΩ | 0.1Ω...40 MΩ |
| Diode and continuity test | • | • | • | • | • | • |
| Capacitance | | 0.01 nF...3000 µF | 0.01 nF... 3000 µF | 0.01 nF... 9999 µA | 0.01 nF... 400.0 µF | 0.01 nF... 400.0 µF |
| Frequency | | 5 Hz...1 MHz | 5 Hz...1 MHz | 5 Hz...125 kHz | 3.00Hz...10MHz | 3.00Hz...10MHz |
| Temperature | | | -20...+300 °C | -50...+1000 °C | | -20...+1300°C |
| **Range selection** | | | | | | |
| Automatic | • | | | • | • | • |
| Manual | • | | | • | • | • |
| Data Hold | • | | | • | • | • |
| Min/max value memory | | Max Hold | Max Hold | • | • | • |
| Peak Hold | | | | | | |
| Relative measurement | | • | • | | • | • |
| Data logger/interface | | | | - / RS-232 | - / RS-232 | - / RS-232 |
| Auto Power Off | | • | • | • | | |
| Battery | 1 x 9 V | 2 x 1.5 V | 2 x 1.5 V | 1 x 9 V | 1 x 9 V | 1 x 9 V |
| Measurement Category | CAT III/600 V | CAT III/600V, CAT II/1000 V | CAT III/600 V, CAT II/1000 V | CAT IV/600 V, CAT III/1000 V | CAT III/600V, CAT II/1000V | CAT III/600V, CAT II/1000V |
| Features | Battery test, 1.5 V/9 V | Acoustic warning signal for incorrect jack connection | Acoustic warning signal for incorrect jack connection incl. temperature probe | RS-232 interface Illuminated display Calibration and adjustment without opening the device Software optionally available | Inductance measurement Acoustic warning signal in case of incorrect jack connection logic test Magnetic hanger (MagneGrip™) | Current loop measurement (4....20mA) optionally available Magnetic hanger (MagneGrip™) |

* = Basic accuracy figures are with regard to the best level of accuracy of the relevant measurement function

| Model | HD 110C | HD 160C | AM-510-EUR | AM-520-EUR | AM-530-EUR | AM-540-EUR | AM-550-EUR |
|---|---|---|---|---|---|---|---|
| **Display Digits** | 4 digit, 9999 digits | 4 digit, 9999 digits | 3¾ digit, 3999 digits | 3¾ digit, 3999 digits | 3¾ digit, 3999 digits | 3¾ digit, 5999 digits | 3¾ digit, 5999 digits |
| **True-RMS measurement** | | AC | | | AC | | AC |
| **Bar graph** | | | • | • | | • | • |
| **Ranges** | | | | | | | |
| Voltage AC | 0.1 mV... 1000 V | 0.1 mV... 1000 V | 0.1 mV...600V | 400 mV...750V | 400 mV...750V | 1 mV...1000 V | 1 mV...1000 V |
| Basic Accuracy* | (1.2 % + 10 D) | (1.2 % + 10 D) | (1.0 % + 3 D) | (1.0 % + 3 D) | (1.0 % + 3 D) | (1.0 % + 3 D) | (1.0 % + 3 D) |
| Frequency | 45 Hz...2 kHz | 45 Hz...2 kHz | 45 Hz ... 400 Hz | 45 Hz...400 Hz | 45 Hz...400 Hz | 45 Hz... 400 Hz | 45 Hz... 400 Hz |
| Voltage DC | 0.1 mV...1500 V | 0.1 mV... 1500 V | 1 mV...600V | 0.1 mV...1000 V | 0.1 mV...1000 V | 0.1 mV...1000 V | 0.1 mV...1000 V |
| Basic Accuracy* | (0.1% + 5 D) | (0.1% + 5 D) | (0.8 % + 1 D) | (0.8 % + 1 D) | (0.8 % + 1 D) | (0.5 % + 2 D) | (0.5 % + 2 D) |
| Current AC | 0.01 µA...2 A | 0.01 µA...2 A | 0.1 µA...10 A | 0.1 µA...10 A | 0.1 µA...10 A | 0.1 µA...10 A | 0.1 µA...10 A |
| Basic Accuracy* | (0.8 % + 4 D) | (0.8 % + 4 D) | (1.2 % + 2 D) | (1.2 % + 3 D) | (1.2 % + 3 D) | (1.2 % + 5 D) | (1.2 % + 5 D) |
| Frequency | 45 Hz...1 kHz | 45 Hz...1 kHz | 45 Hz ... 400 Hz | 45 Hz...400 Hz | 45 Hz ...400 Hz | 45 Hz ...400 Hz | 45 Hz ...400 Hz |
| Current DC | 0.01 µA...2 A | 0.01 µA...2 A | 0.1 µA...10A | 0.1 µA...10 A | 0.1 µA...10 A | 0.1 µA...10 A | 0.1 µA...10 A |
| Basic Accuracy* | (1.5% + 10D) | (1.5% + 10D) | (1.0 % + 2 D) | (1.0 % + 2 D) | (1.0 % + 2 D) | (1.0 % + 2 D) | (1.0 % + 2 D) |
| Resistance | 0.1 Ω...40 MΩ | 0.1 Ω...40 MΩ | 0.1 Ω...40 MΩ | 0.1 Ω...40 MΩ | 0.1 Ω...40 MΩ | 0.1 Ω...60 MΩ | 0.1 Ω...60 MΩ |
| Diode and continuity test | • | • | • | • | • | • | • |
| Capacitance | | 0.01 nF...400.0 µF | 10 pF...100.0 µF | 10 pF...4000 µF | 10 pF...4000 µF | 60.00 nF...60 mF | 60.00 nF...60 mF |
| Frequency | | 0.01 Hz...10 MHz | 0.01 Hz...10 MHz | 0.01 Hz...10 MHz | 0.01 Hz...10 MHz | 0.01 Hz...600.0 kHz | 0.01 Hz...600.0 kHz |
| Temperature | | -20...+1300 °C | | -40...+1000 °C | -40...+1000 °C | -40...+1000 °C | -40...+1000 °C |
| **Range selection** | | | | | | | |
| Automatic | • | • | • | • | • | • | • |
| Manual | • | • | • | • | • | • | • |
| Data Hold | • | • | • | • | • | • | • |
| Min/max value memory | | • | | | • | • | • |
| Peak Hold | | | | | | | • |
| Relative measurement | • | • | | | | | |
| Data logger/interface | | | | | | | |
| Auto Power Off | • | • | • | • | • | • | • |
| **Battery** | 1 x 9 V | 1 x 9 V | 1 x 9 V | 1 x 9 V | 1 x 9 V | 1 x 9 V | 1 x 9 V |
| **Measurement Category** | CAT IV/1000V | CAT IV/1000V | CAT III/600 V | CAT III/600V, CAT II/1000 V | CAT III/600V, CAT III/1000 V | CAT IV/600 V, CAT III/1000 V | CAT IV/600 V, CAT III/1000 V |
| **Features** | Highest levels of safety CAT IV/1000V, Auto Power Off | Highest levels of safety CAT IV/1000V, Illuminated display, Auto power off | Non-contact voltage detection, battery test, duty cycle function | Non-contact voltage detection, min/max value memory | Non-contact voltage recognition, True RMS measurement (TRMS) | Low pass filter, Dual display, Duty cycle function, Peak value measurement (crest) | Low pass filter, True-rms reading, Dual display, Duty cycle function, Peak value measurement (crest) |

\* = Basic accuracy figures are with regard to the best level of accuracy of the relevant measurement function

**BEHA·AMPROBE**®

## LCR55A
### LCR Meter

#### Functions
- Measuring resistance
- Capacitance measurement
- Inductance measurement
- Transistor and diode measurement

#### Product information
- Manual range selection
- Integrated measurement memory (data hold and MAX hold)
- Shock-proof and impact-resistant thanks to standard protective holster
- Auto Power Off

#### Product highlights
- Large, clear display

| Manual Range | Data Hold |
|---|---|

### Technical specifications

| | |
|---|---|
| Display | LCD, 3½ digit, 1999 digits |
| Ranges | |
| Resistance | 0,01 Ω...20 MΩ |
| Basic accuracy | ±(0.5% rdg + 5 digits) |
| Continuity | R < 30 Ω |
| Inductance | 1 µH...200 H |
| Basic accuracy | ±(3.0% rdg. + 20 digits) |
| Capacitance | 1 pF...2000 µF |
| Basic accuracy | ±(1.0% rdg. + 3 digits) |
| Diode test | 0…3 V |
| Accuracy | ±(1.5% rdg. +1 digit) |
| Transistor test (NPN, PNP) hfe, Iceo | |
| Test current: | approx. 1 mA |
| Test voltage: | 3.0 V DC typical |
| Power supply | 1 x battery 9 V, IEC 6LR61 |
| Dimensions | 183 x 79 x 38 mm |
| Weight | approx. 311 g (incl. battery) |

### Included:
1 x LCR55A
2 x test leads
2 x crocodile clips
1 x battery 9 V, IEC 6LR61
1 x user manual

### Accessories:
Soft Case
Model CC-ACDC

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| LCR55A | LCR55A | **3026976** |
| CC-ACDC | CC-ACDC | **2732643** |

## AM-500-EUR
### Compact digital multimeter

#### Functions
- Voltage, current and resistance measurement
- Diode and acoustic continuity test

#### Device information
- Automatic and manual range selection
- Integrated measurement memory (data hold)
- Shock-proof and impact-resistant thanks to standard protective holster
- µA measurement range
- Auto Power Off

#### Product highlights
- 1.5 V and 9 V battery test

| Manual Range | CAT III 600 V | | battery test |
|---|---|---|---|

### Technical specifications

| | |
|---|---|
| Display | LCD, 3½ digit, 1999 digits |
| Ranges | |
| AC voltage | 1 mV...600 V |
| Basic accuracy | ±(1.0% rdg. + 3 digits) |
| Frequency range | 45...400 Hz |
| DC voltage | 1 mV...600 V |
| Basic accuracy | ±(0.8% rdg. + 3 digits) |
| Input resistance | 10 MΩ |
| AC current | 0.1 µA...10 A |
| Basic accuracy | ±(1.5% rdg. + 3 digits) |
| Frequency range | 45...400 Hz |
| DC current | 0.1 µA...10 A |
| Basic accuracy | ±(1.2% rdg. + 3 digits) |
| Resistance | 1 Ω...20 MΩ |
| Basic accuracy | ±(1.5% rdg. + 5 digits) |
| Pollution degree | 2 |
| Measurement category | CAT III/600V |
| Safety cert.: | DIN VDE 0411, EN 61010, IEC 61010 |
| Power supply | 2 x 1.5 V, LR3 |
| Dimensions | 150 x 83 x 40 mm |
| Weight | 290 g (incl. battery) |

### Included:
1 x AM-500-EUR
2 x test leads
2 x battery 1.5 V, LR3
1 x user manual

### Accessories:
Carrying case for devices with protective holster Model 1150

Safety set
Model 370003

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| AM-500-EUR | AM-500-EUR | **4102332** |
| Carrying case | 1150 | **2145755** |
| Safety set | 370003 | **2146666** |

| Auto/Manual Range | CAT III 600 V | CAT III 1000 V | •))) | Hz |
| Data Hold | ☀ | ⊣⊢ | Bargraph | min/max |
| °C | True RMS | | | |
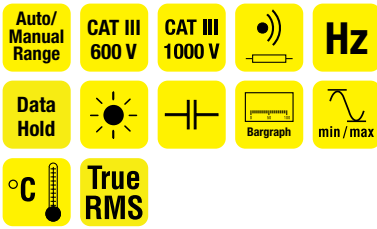
## Included with AM series:

1 x   AM-510-EUR, AM-520-EUR, AM-530-EUR, AM-535-EUR, AM-540-EUR, AM-550-EUR, AM-555-EUR
2 x   test leads
1 x   temperature probe (only AM-520-EUR, AM-530-EUR, AM-535-EUR)
2 x   temperature probes (only AM-520-EUR, AM-530-EUR, AM-535-EUR)
1 x   temperature adapter (only AM-535-EUR, AM-540-EUR, AM-550-EUR, AM-555-EUR)
1 x   hanging strap (only AM-520-EUR, AM-530-EUR, AM-540-EUR, AM-550-EUR)
1 x   battery 9 V, IEC 6LR61
1 x   carry case (only AM-520-EUR, AM-530-EUR, AM-535-EUR, AM-540-EUR, AM-550-EUR, AM-555-EUR)
1 x   user manual

### Accessories:

Safety set
Model 370003

VC221B carrying case
Material: Imitation leather, carrying strap
External dimensions: 220 x 115 x 60 mm
Model VC221B

2 x temperature probes with adapter
For AM-540-EUR and AM-550-EUR, AM-555-EUR
Model TPK-62

## AM-510-EUR

### Functions
• Voltage, current and resistance measurement
• Capacitance and frequency measurement
• Diode and acoustic continuity test
• Battery test 1.5 V and 9 V (AM-510-EUR only)

### Product information
• Automatic and manual range selection
• Integrated measurement memory (data hold)
• Illuminated display
• Relative measurement
• Auto Power Off

### Product highlights
• True RMS measurement (TRMS)
  (only AM-530-EUR and AM-550-EUR)
• Non-contact voltage detection
• Built-in LED flashlight

## AM-520-EUR

As AM-510-EUR, but with:
• Temperature measurement

### Product information
• Additional bar graph display (61 segments)
• MIN/MAX hold
• Carry case included

## AM-530-EUR

As AM-520-EUR, but with:
• True RMS measurement (TRMS)

## AM-540-EUR

As AM-520-EUR, but with:
• Low pass filter
• Peak value measurement

### Product highlights
• Two temperature inputs
• Duty cycle function
• Measurement category CAT IV / 600V, CAT III / 1000V

## AM-550-EUR

As AM-540-EUR, but with:
• True RMS measurement (TRMS)

## Technical specifications*

| Display | LCD, $3^3/_4$ digit, 5999 digits |
| Ranges | |
| AC voltage | 1 mV...1000 V |
| Basic accuracy | ±(1.0% rdg. + 3 digits) |
| Frequency range | 45 Hz...1 kHz |
| DC voltage | 0.1 mV...1000 V |
| Basic accuracy | ±(0.5% rdg. + 3 digits) |
| Input resistance | 10 MΩ |
| AC current | 0.1 µA...10 A |
| Basic accuracy | ±(1.2% rdg. + 5 digits) |
| Frequency range | 45 Hz...1 kHz |
| DC current | 0.1 µA...10 A |
| Basic accuracy | ±(1.0% rdg. + 2 digits) |
| Resistance | 0.1 Ω...60 MΩ |
| Basic accuracy | ±(1.0 % rdg. + 2 digits) |
| Continuity | R < 10 Ω |
| Frequency | 1.00 Hz...60 MHz |
| Basic accuracy | ±(0.1% rdg. + 3 digits) |
| Capacitance | 0.01 nF...60 mF |
| Basic accuracy | ±(3.0% rdg. + 5 digits) |
| Temperature | -40°C...1000°C |
| Basic accuracy | ±(1.0% rdg. + 8 °C) |
| Pollution degree | 2 |
| Measurement category | CAT III/600 V, CAT II/1000 V (AM-510, AM-520, AM-530) CAT IV / 600 V, CAT III / 1000 V (AM-540, AM-550) |
| Safety cert. | DIN VDE 0411, EN 61010, IEC 61010 |
| Power supply | 1 x battery 9 V, IEC 6LR61 |
| Dimensions | 182 x 90 x 45 mm |

\* Technical data relates to the highest model in the series. Data regarding individual modules can be found on our website www.beha-amprobe.com.

## Ordering Information:

| Description | Model | Article no. |
| --- | --- | --- |
| AM-510-EUR | AM-510-EUR | **4102344** |
| AM-520-EUR | AM-520-EUR | **4131281** |
| AM-530-EUR | AM-530-EUR | **4131296** |
| AM-535-EUR | AM-535-EUR | **4701027** |
| AM-540-EUR | AM-540-EUR | **4131308** |
| AM-550-EUR | AM-550-EUR | **4131313** |
| AM-555-EUR | AM-555-EUR | **4701030** |
| Safety set | 370003 | **2146666** |

| Model | AM-510-EUR | AM-520-EUR | AM-530-EUR | AM-535-EUR | AM-540-EUR | AM-550-EUR | AM-555-EUR |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Display | $3^3/_4$ digit, 3999 digits | $3^3/_4$ digit, 3999 digits | $3^3/_4$ digit, 3999 digits | $3^3/_4$ digit, 3999 digits | $3^3/_4$ digit, 5999 digits | $3^3/_4$ digit, 5999 digits | $3^3/_4$ digit, 5999 digits |
| True-RMS measurement | – | – | • | • | – | • | • |
| Bar graph | – | • | • | • | • | • | • |
| Temperature | – | • | • | • | • | • | • |
| Temperature inputs | 0 | 1 | 1 | 1 | 2 | 2 | 2 |
| Min/max value memory | – | • | • | • | • | • | • |
| Peak Hold | – | – | – | – | • | • | • |
| Battery test | • | – | – | – | – | – | – |
| Low pass filter | – | – | – | – | • | • | • |
| Duty cycle function | – | – | – | – | • | • | • |
| Measurement Category | CAT III / 600 V | CAT III / 600 V CAT II / 1000 V | CAT III / 600 V CAT II / 1000 V | CAT III / 600 V CAT II / 1000 V | CAT IV / 600 V CAT III / 1000 V | CAT IV / 600 V CAT III / 1000 V | CAT IV / 600 V CAT III / 1000 V |

Hexagon 110


Hexagon 120


Hexagon 340

| Auto/Manual Range | Hz | ⊣⊢ | •))) | Data Hold |
| CAT III 1000 V | CAT IV 600 V | ☀ | PC |

## Hexagon® 110
### Digital multimeter with extra large display

#### Functions
- Voltage, current and resistance measurement
- Capacitance and frequency measurement
- Diode and acoustic continuity test

#### Product information
- Automatic and manual range selection
- Integrated measurement memory (Data Hold) and Max Hold
- Relative measurement
- Auto Power Off
- Shock-proof and impact-resistant thanks to standard protective holster

#### Product highlights
- Digital multimeter with extra large display
- Acoustic warning signal and display message in case of incorrect jack connections (Hexagon 110 and 120 only)

## Hexagon® 120
### As Hexagon 110, but with:
- Temperature measurement

## Hexagon® 340A
### As Hexagon 120, but with:
- True RMS measurement (TRMS)
- Electrically isolated IR/RS-232 interface (software with adapter as option)
- 0.08 % best level of basic accuracy
- Additional analog bar graph with zoom function for evaluating trends
- Illuminated display

## Technical specifications*

| | |
|---|---|
| Display | LCD, 3¾ digit, 5000 digits |
| Ranges | |
| AC/DC voltage | 0.01 mV...1000 V |
| AC basic accuracy | ± (0.5 % rdg. + 3 D) |
| DC basic accuracy | ± (0.08 % rdg. + 2 D) |
| AC/DC current: 0.1 µA to 10 A (20 A, 30 s) | |
| AC basic accuracy | ± (0.6 % rdg. + 3 D) |
| DC basic accuracy | ± (0.2 % rdg. + 4 D) |
| AC frequency range | 40 Hz ... 20 kHz |
| Alternating current | 40 Hz...1 kHz |
| Resistance | 0.01 Ω...50 MΩ |
| Basic accuracy | ±(0.1 % rdg. + 2 D) |
| Temperature | -50°...1000° C |
| Basic accuracy | ±(0.3% rdg. + 3 digits) |
| Frequency | 5 Hz...125 kHz |
| Basic accuracy | ±(0.01% rdg. + 2 digits) |
| Capacitance | 0.01 nF...9999 µF |
| Basic accuracy | ±(0.8% rdg. + 3 digits) |
| Pollution degree | 2 |
| Measurement category | CAT III/600 V, CAT II/1000 V (110, 120) CAT IV/600 V, CAT III/1000 V (340) |
| Safety cert. | DIN VDE 0411, EN 61010, IEC 61010 |
| Power supply | 1 x battery 9 V, IEC 6LR61 |
| Dimensions | 198 x 97 x 55 mm |
| Weight | approx. 430 g |

* Technical data relates to the highest model in the series. Data regarding individual modules can be found on our website www.beha-amprobe.de or pages 31 and 32.

| Model | Hexagon 110 | Hexagon 120 | Hexagon 340A |
|---|---|---|---|
| Display | 3³/₄ digit, 4000 digits | 3³/₄ digit, 4000 digits | 3³/₄ digit, 5000 digits |
| True-RMS measurement | – | – | • |
| Bar graph | – | – | • |
| Temperature | – | • | • |
| Min/max value memory | Max Hold | Max Hold | • |
| Peak Hold | – | – | • |
| Illuminated display | – | – | • |
| RS-232 interface | – | – | • |
| Acoustic jack control | • | • | – |
| IR/RS-232 interface | – | – | • |
| Measurement Category | CAT III / 600 V | CAT III / 600 V | CAT IV / 600 V |

## Included with Hexagon:

1 x Hexagon 110, 120 or 340
1 x protective holster
2 x test leads
1 x temperature probe (0° C...+400° C) (120, 340)
1 x battery 9 V, IEC 6LR61 (340)
2 x battery 1.5 V, IEC LR03 (110, 120)
1 x user manual

## Accessories:

**For all Hexagon models**
Carrying case for devices with protective holster
Model 1150

Safety set
Model 370003

**For Hexagon 340:**
Software for transferring and displaying data on a PC
Model 1332

## Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| Hexagon 110 | 93523-D | **3454478** |
| Hexagon 120 | 93524-D | **3454484** |
| Hexagon 340A | 93497-D | **3454491** |
| Carrying case | 1150 | **2145755** |
| Safety set | 370003 | **2146666** |
| Software | 1332 | **3313506** |

## PM51A

### Pocket multimeter with frequency and capacitance measurement

Functions
• AC/DC voltage measurement
• Measuring resistance
• Diode and acoustic continuity test
• Capacitance and frequency measurement

Product information
• Automatic range selection
• Integrated measurement memory (data hold)
• With securely connected test leads
• Auto Power Off

Product highlights
• Compact digital multimeter in card format
• Large, clear display

Auto Range | CAT III 300 V | Data Hold

### Technical specifications

| | |
|---|---|
| Display | LCD, $3^3/_4$ digit, 4000 digits |
| Ranges | |
| AC voltage | 0.001 V...600 V |
| Basic accuracy | ±(2.0% rdg. + 5 digits) |
| Frequency range | 50 Hz...500 Hz |
| DC voltage | 0.1 mV...600 V |
| Basic accuracy | ±(1.0% rdg. + 2 digits) |
| Input resistance | 10 MΩ |
| Resistance | 0.1 Ω...40 MΩ |
| Basic accuracy | ±(1.5 % rdg. + 6 digits) |
| Continuity | R < 65 Ω |
| Frequency | 5 Hz...1 MHz |
| Basic accuracy | ±(0.5% rdg. + 4 digits) |
| Capacitance | 0.1 nF...3000 µF |
| Basic accuracy | ±(3.5 % rdg. + 6 digits) |
| Pollution degree | 2 |
| Measurement category | CAT III/300V, CAT II/600V |
| Safety cert. | DIN VDE 0411, EN 61010, IEC 61010 |
| Power supply | 1 x battery 3 V, IEC CR2032 |
| Dimensions | 113 x 53 x 10 mm |
| Weight | approx. 78 g (incl. battery) |

### Included:

1 x PM51A
1 x battery 3 V, IEC CR2032
1 x user manual

### Accessories:

Soft Field Case
Model VC30A

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| PM51A | PM51A | **2727700** |
| VC30A | VC30A | **3099130** |

## PM55A

### Pocket multimeter with non-contact voltage detection (VolTect™) and automatic function selection (AutoTect™)

Functions
• Voltage and resistance measurement
• Diode and acoustic continuity test
• Voltage measurement (AC/DC µA range)
• Capacitance and frequency measurement
• Non-contact voltage detection (VolTect™)

Product information
• Automatic range selection
• Includes rubber protective cover
• Auto Power Off

Product highlights
• Compact digital multimeter in card format
• Large, clear display
• Automatic function selection of voltage and resistance (AutoTect™)

Auto Range | CAT III 300 V | V non contact

### Technical specifications

| | |
|---|---|
| Display | LCD, $3^3/_4$ digit, 6000 digits |
| Ranges | |
| AC voltage | 0.001 V...600 V |
| Basic accuracy | ±(1.5% rdg. + 5 digits) |
| Frequency range | 50 Hz…60 Hz |
| DC voltage | 0.001 V...450 V |
| Basic accuracy | ±(0.5% rdg. + 3 digits) |
| Current AC | 0.1 µA...2000 µA |
| Basic accuracy | ±(1.5% rdg. + 3 digits) |
| Frequency range | 50 Hz…60 Hz |
| Current DC | 0.1 µA...2000 µA |
| Basic accuracy | ±(1.2% rdg. + 3 digits) |
| Resistance | 0.1 Ω...6,000 MΩ |
| Basic accuracy | ±(1.2 % rdg. + 6 digits) |
| Continuity | R < 175 Ω |
| Frequency | 10 Hz...30.00 kHz |
| Basic accuracy | ±(0.5% rdg. + 4 digits) |
| Capacitance | 0.1 nF...100.0 µF |
| Basic accuracy | ±(3.5 % rdg. + 6 digits) |
| Pollution degree | 2 |
| Measurement category | CAT III/300V, CAT II/600V |
| Safety cert. | DIN VDE 0411, EN 61010, IEC 61010 |
| Power supply | 1 x battery 3 V, IEC CR2032 |
| Dimensions | 113 x 53 x 10 mm |
| Weight | approx. 78 g (incl. battery) |

### Included:

1 x PM55A
1 x battery 3 V, IEC CR2032
1 x case
1 x user manual

### Accessories:

Soft Case
Model VC30A

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| PM55A | PM55A | **2727721** |
| VC30A | VC30A | **3099130** |

BEHA·AMPROBE®



| Auto/Manual Range | CAT IV 1000 V | •))) ⊏⊐ | Data Hold | Hz | IP 67 |

| ⊣⊢ | True RMS | ☀ | °C 🌡 | HIGHEST SAFETY RATING CAT IV/1000V |

## Included:

1 x HD160C
2 x test leads
1 x magnetic holder
1 x temperature probe
1 x battery 9 V, IEC 6LR61
1 x user manual

## Accessories:

Professional test lead set with silicone insulation
Model 1306

## HD160C
### Heavy-duty digital multimeter (TRMS)

**Functions**
• Voltage, current and resistance measurement
• Diode and acoustic continuity test
• Capacitance and frequency measurement
• Temperature measurement

**Product information**
• Automatic and manual range selection
• Integrated measurement memory (data hold)
• MIN/MAX, relative and average value measure-
  ment
• Illuminated display
• Shock-proof and impact-resistant thanks to stan-
  dard protective holster
• Auto Power Off

**Product highlights**
• True RMS measurement (TRMS)
• Highest safety rating of CAT IV/1000 V
• High voltages (1000 V AC and 1500 V DC)
• Protection category: IP67

## HD110C
### Robust multimeter for industrial applications

**Functions**
• Voltage, current and resistance measurement
• Diode and acoustic continuity test

**Product information**
• Manual range selection
• Integrated measurement memory (data hold)
• Shock-proof and impact-resistant thanks to stan-
  dard protective holster
• Auto Power Off

**Product highlights**
• Highest safety rating of CAT IV/1000 V
• High voltages (1000 V AC and 1500 V DC)
• Protection category: IP67

## Technical specifications

| | |
|---|---|
| Display | LCD, 4 digit, 9999 digits |
| Ranges | |
| AC voltage | 0.1 mV...1000 V |
| Basic accuracy | ±(1.2 % rdg. + 10 digits) |
| Frequency range | 45 Hz...2 kHz |
| DC voltage | 0.1 mV...1500 V |
| Basic accuracy | ±(0.1% rdg. + 5 digits) |
| Input resistance | 10 MΩ |
| AC current | 0.01 µA...2 A |
| Basic accuracy | ±(0.8 % rdg. + 4 digits) |
| Frequency range | 45 Hz...1 kHz |
| DC current | 0.01 µA...2 A |
| Basic accuracy | ±(1.5% rdg. + 10 digits) |
| Resistance | 0.1 Ω...40 MΩ |
| Basic accuracy | ±(1.0 % rdg. + 10 digits) |
| Continuity | R < 40 Ω |
| Frequency measurement | 0.01 Hz...10 MHz |
| Basic accuracy | ±(0.1% rdg. + 5 digits) |
| Capacitance measurement | 0.01 nF...400.0 µF |
| Basic accuracy | ±(3.0% rdg. + 10 digits) |
| Temperature | -20°C...1300°C |
| Basic accuracy | ±(1.0% rdg. + 3 °C) |
| Pollution degree | 2 |
| Measurement category | CAT IV / 1000 V |
| Safety cert. | DIN VDE 0411, EN 61010, IEC 61010 |
| Power supply | 1 x battery 9 V, IEC 6LR61 |
| Dimensions | 200 x 102 x59 mm |
| Weight | approx. 642 g (incl. battery) |

* Technical data relates to the HD160C model. Data
  regarding individual models can be found on our
  website www.beha-amprobe.com

## Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| HD160C | HD160C | **2670787** |
| HD110C | HD110C | **2670779** |
| Professional test lead set 1306 | | **3313458** |



| Auto Range | CAT III 300 V | CAT II 600 V | ▭ Bargraph | Data Hold | •))) ⊏⊐ |

## Included:

1 x DM73C
1 x test leads
1 x crocodile clip
1 x probe
2 x battery 1.5 V, IEC LR44
1 x user manual

## DM73C
### Pen Type Digital Multimeter

**Functions**
• Voltage and resistance measurement
• Diode and acoustic continuity test

**Product information**
• Automatic range selection
• Integrated measurement memory (data hold)
• Additional bar graph display
• Auto Power Off

**Product highlights**
• Compact multimeter in pen design



## Accessories:

Carrying case
Model VC30A

## Technical specifications

| | |
|---|---|
| Display | LCD, $3^3/_4$ digit, 3400 digits |
| Ranges | |
| AC voltage | 0.001 V...600 V |
| Basic accuracy | ±(1.5% rdg. + 8 digits) |
| Frequency range | 50 Hz...500 Hz |
| DC voltage | 0.1 mV...600 V |
| Basic accuracy | ±(0.5% rdg. + 2 digits) |
| Input resistance | 10 MΩ |
| Resistance | 0.1 Ω...34 MΩ |
| Basic accuracy | ±(1.0 % rdg. + 4 digits) |
| Continuity | R < 35 Ω |
| Pollution degree | 2 |
| Measurement category | CAT III/300V, CAT II/600V |
| Safety cert. | DIN VDE 0411, EN 61010, IEC 61010 |
| Power supply | 2 x battery 1.5 V, IEC LR44 |
| Dimensions | 198 x 29 x 35 mm |
| Weight | approx. 150 g (incl. battery) |

## Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| DM73C | DM73C | **2727739** |
| VC30A | VC30A | **3068280** |

## Our recommendation for training!

### Junior set A

consisting of:

- Hexagon 60 digital multimeter
- 2100-ALPHA
- Testfix 9023
- Test leads (red/black)
- Rugged carrying case

**Included:**

1 x Hexagon 60
1 x 2100-ALPHA
1 x Testfix 9023
2 x test leads
1 x robust carry case

**Ordering Information:**

| Description | Model | Article no. |
|---|---|---|
| Junior set A | AMPRB-EU-03-A | **4460579** |

### AMPRB-EU-01-A
**Standard kit**

Contents
- AM-510-EUR (Digital multimeter)
- ACD-10 PLUS (Digital current clamp)
- TPP1-C1 (contact thermometer)
- EU-200 (test lead set with 2 leads), 2 test prods (4 mm), 2 crocodile clips (CAT III/1000 V)
- Hard carrying case

**Included:**

1 x AM-510
1 x ACD-10 PLUS
1 x TPP1-C1
1 x EU-200
1 x Hard carrying case

**Ordering Information:**

| Description | Model | Article no. |
|---|---|---|
| Standard kit A | AMPRB-EU-01-A | **4460593** |

### AMPRB-EU-02-A
**Professional kit**

Contents
- AM-540-EUR (Digital multimeter)
- ACDC-100 TRMS (digital AC/DC current clamp)
- IR608A infrared thermometer
- EU-200 (test lead set with 2 leads), 2 test prods (4 mm), 2 crocodile clips CAT III/1000 V
- Hard carrying case

**Included:**

1 x AM-540-EUR
1 x ACDC-100 TRMS
1 x IR608A
1 x EU-200
1 x Hard carrying case

**Ordering Information:**

| Description | Model | Article no. |
|---|---|---|
| Professional kit A | AMPRB-EU-02-A | **4460587** |

# Current clamps

Our clamp meters and clamp adapters are suitable for measuring currents without interruption of the current flow.

They enable current measurements in units and systems from 1 mA up to 3000 A.

Our leakage current clamps, which enable a resolution of 0.01 mA AC, are ideal for troubleshooting insulation faults in systems and in equipment tests.

## Products

## Symbols used in this chapter

| Symbol | Description | Symbol | Description |
|---|---|---|---|
| min / max | Minimal or maximal value memory | PC | PC interface |
| Peak Hold | Peak value memory | ⚡ | Setting up UNINSULATED, HAZARDOUS, ACTIVE conductors and removal of these is permitted |
| Auflösung 10 µA AC | Best resolution (e.g. 10 µA AC) | data logger | Integrated measurement value recording (data logger) |
| 1000 A AC/DC | Information regarding the current measurement range (e.g. 1000 A AC) | ☀ | Back light |
| Output Analog | Analog output | True RMS | True-RMS measurement |
| °C | Temperature measurement | CAT IV 600 V | Measurement Category |
| Filter\ | Low pass filter | L3 L1 L2 | Phase sequence indication |
| ⊣⊢ | Capacitance measurement | 0...2k | Measuring resistance |
| Hz | Frequency verification | µA | Measurement of ionization current (uA DC range) in heating systems |
| )) | Acoustic continuity measurement (occasionally with diode test) | A | AMP tip |

## Interesting facts regarding current clamps and clamp adapters

Current clamps and clamp adapters are suitable for measuring AC and DC currents on units and systems without interrupting the current flow.

### Safety
Only use current clamps or clamp adapters that are suitable for the stated measurement category for the desired measurement. If, for example, you wish to carry out a measurement in a distribution cabinet within a building, then a multimeter with at least a measurement category of III (CAT III) must be used. A detailed description of the measurement categories can be found on page 106.

### Measuring current without interruptions
Switching off systems or individual units in order to separate the circuit is not generally possible in practice and is largely avoided. All hazards, such as, for example, the appearance of hazardous contact voltages or a potential polarity reversal upon closing the circuit can be effectively prevented.
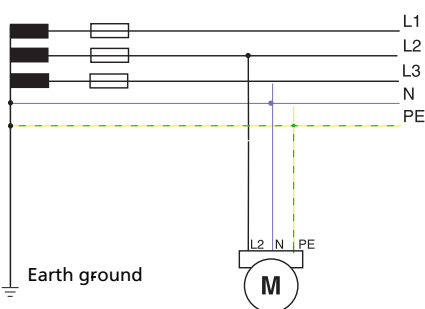
Measurement of current usage "Max-Hold" function of a single-phase motor

### Stray current measurement (leakage current measurement)
High-resolution current clamps for leakage currents over 10 µA are indispensable, particularly for troubleshooting or for testing units and systems in accordance with the Ordinance on Industrial Safety and Health (DGUV Regulation 3). Currents that do not flow back via an electrical

conductor (e.g. N) can be quickly, simply, and safely measured by covering all active conductors (e.g. L1, L2, L3, N, or L1, N).
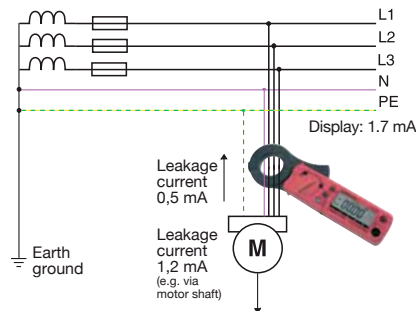
Differential current measurement with leakage current clamp

### Simple to use
Our current clamps and clamp adapters are characterized by being simple and intuitive. The individual conductor is fully surrounded by the current clamp. The measured value appears on the digital display and can be read off immediately.

### Storing the displayed reading (Hold) and measurement memory
After pressing the HOLD button, the value that is currently displayed is stored on the display. This is very useful if the display cannot be read during measurement. With some current clamps the minimum or maximum value (min/max data hold) of a measurement series can also be stored on the display.

### Peak value memory (Peak Hold)
Some clamp meters are equipped with a peak value memory (or measurement of inrush current). Due to the shorter response time it is possible to record current spikes in motors upon ignition, for example.
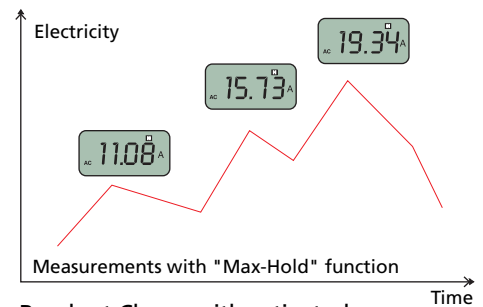
Readout Clamp with activated "MAX-HOLD" function

### True-RMS measurement
True-RMS measurement is necessary for the most precise recording of an alternating or mixed current.

The effective value plays an important part, especially with non-sinusoidal currents, e.g. phase angle control. The average value displayed by traditional current clamps is lower than the current that is actually available. Further information regarding the effective value can be found in "Things to know about multimeters".

### Power clamp meters
Measurement of apparent, active, reactive power and power factor cos is quick and simple with the BEHA-AMPROBE range of power clamp meters. Power consumers with load currents up to 1000 A can be measured.
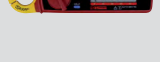
### Clamp adapters
Clamp adapters are suitable for applications which are solely aimed at recording measurements. Depending on the type of evaluating circuit, the primary flowing current can be converted into a considerably lower, safe secondary current or a voltage. Applications: e.g. switch cabinet construction, laboratory measurement circuits.

**BEHA·AMPROBE®**

| Model | AMP-25-EUR | AMP-210-EUR | AMP-220-EUR | AMP-310-EUR | AMP-320-EUR | AMP-330-EUR |
|---|---|---|---|---|---|---|
| Max. current | 300 A | 600 A | 600 A | 600 A | 600 A | 1000 A |
| Current type | AC/DC | AC | AC/DC | AC | AC/DC | AC/DC |
| True RMS measurement | • | • | • | • | • | • |
| Display | 3 ¾ digit, 6000 digits | 3 ¾ digit, 6000 digits | 3 ¾ digit, 6000 digits | 3 ¾ digit, 6000 digits | 3 ¾ digit, 6000 digits | 3 ¾ digit, 6000 digits |
| Current AC | 60.00 / 300.0 A | 60.00 / 600.0 A | 60.00 / 600.0 A | 60.00 / 600.0 A | 60.00 / 600.0 A | 60.00 / 1000 A |
| Basic Accuracy* | 1.5% + 5 counts | 2.2 % + 7 counts | 2.2 % + 7 counts | 2.2 % + 7 counts | 2.2 % + 7 counts | 1.8% + 5 counts |
| Frequency | 50...400 Hz | 50...400 Hz | 50...400 Hz | 50...400 Hz | 50...400 Hz | 40...400 Hz |
| Current DC | 60.00 / 300.0 A | | 60.00 / 600 A | | 60.00 / 600 A | 60.00 / 1000 A |
| Basic Accuracy* | 1.5% + 5 counts | | 2.0 % + 5 counts | | 2.0 % + 5 counts | 1.8% + 5 counts |
| Voltage AC | | 0.1...600.0 V | 0.1...600.0 V | 0.1...600.0 V | 0.1...600.0 V | 0.1...1000 V |
| Basic accuracy* | | 1.0% + 5 counts | 1.0% + 5 counts | 1.0% + 5 counts | 1.0% + 5 counts | 0.8% + 5 counts |
| Frequency | | 50...60 Hz | 50...60 Hz | 50...60 Hz | 50...60 Hz | 20...400 Hz |
| Voltage DC | | | 0.1...600.0 V | | 0.1...600.0 V | 0.1...1000 V |
| Basic Accuracy* | | | 1.2% + 7 counts | | 1.2% + 7 counts | 0.8% + 5 counts |
| Resistance | | 0.1 Ω...60,00 kΩ | 0.1 Ω...60,00 kΩ | 0.1 Ω...60,00 kΩ | 0.1 Ω...60,00 kΩ | 0.1 Ω...60,00 kΩ |
| Basic Accuracy* | | 1% + 5 counts | 1% + 5 counts | 1% + 5 counts | 1% + 5 counts | 1% + 5 counts |
| Continuity test | | R < 10 Ω | R < 10 Ω | R < 10 Ω | R < 10 Ω | R < 10 Ω |
| Frequency verification | | 5.00 Hz...999.9 Hz | 5.00 Hz...999.9 Hz | 5.00 Hz...999.9 Hz | 5.00 Hz...999.9 Hz | 5.00 Hz...999.9 Hz |
| Power measurement | | | | | | |
| Data Hold | • | • | • | • | • | • |
| MIN/MAX/Peak Hold | • | • | • | • | • | • |
| Capacitance measurement | | • | • | • | • | • |
| Jaw opening | 25 mm | 30 mm | 35 mm | 30 mm | 35 mm | 51 mm |
| Power supply | 2 x 1.5 V IEC LR44 | 2 x 1.5 V IEC LR03 | 2 x 1.5 V IEC LR03 | 2 x 1.5 V IEC LR03 | 2 x 1.5 V IEC LR03 | 2 x 1.5 V IEC LR6 |
| Auto Power Off | • | | | | | • |
| Measurement category | CAT III/600V | CAT III/600V | CAT III/600V | CAT III/600V | CAT III/600V | CAT IV 600V, III 1000V |
| Features | Back light Low pass filter Non-contact voltage recognition, measurement of inrush current | Diode test, Back light | Diode test, Back light | Diode test, back light thermometer -40°C to 400°C 3-phase and motor rotation indicator DC micro amps | Diode test, Back light Thermometer -40°C to 400°C 3-phase and motor rotation indicator DC micro amps | Diode test, back light thermometer -40°C to 400°C 3-phase and motor rotation indicator DC micro amps Flashlight function |

\* = Basic accuracy figures are with regard to the best level of accuracy of the relevant measurement function

| Model | ACD-10 PLUS | ACD-14-PRO-EUR | ACD-20SW | ACD-23SW | CHB 15 | CHB 35 | ACDC-100 | ACDC-100 TRMS |
|---|---|---|---|---|---|---|---|---|
| Max. current | 600 A | 600 A | 400 A | 400 A | 200 A | 400 A | 800 A AC/1000 A DC | 800 A AC/1000 A DC |
| Current type | AC | AC | AC | AC | AC/DC | AC/DC | AC/DC | AC/DC |
| True RMS measurement | | | | • | | • | | • |
| Display | 3¾ digit, 4000 digits | 3¾ digit, 4000 digits | 3¾ digit, 3999 digits | 3¾ digit, 3999 digits | 3¾ digit, 3999 digits | 3¾ digit, 3999 digits | 3¾ digit, 4000 digits | 3¾ digit, 4000 digits |
| Current AC | 0.01 A... 600 A | 0.01 A... 600 A | 0.01 A... 400 A | 0.01 A... 400 A | 0.01A...200 A | 0.001 A...400 A | 0.1 A...800 A | 0.1 A...800 A |
| Basic Accuracy* | 1.5% + 8 digits | 1.9% + 8 digits | 2% + 6 digits | 2% + 6 digits | 2% + 4 digits | 2% + 3 digits | 1.5% + 5 digits | 1.5% + 5 digits |
| Frequency | 50/60 Hz | 50/60 Hz | 50/60 Hz | 50/60 Hz | 40Hz...1kHz | 40Hz...1kHz | 40...200 Hz | 40...200 Hz |
| Current DC | | | | | 0.01 A...200 A | 0.01 A...400 A | 0.1 A...1000 A | 0.1 A...1000 A |
| Basic Accuracy* | | | | | 2% + 2 digits | 2% + 2 digits | 1.5% + 4 digits | 1.5% + 4 digits |
| Voltage AC | 0.001 V... 600 V | 0.001 V... 600 V | 1 mV... 600 V | 1 mV... 600 V | 0.1 V...400 V | | 0.1 mV...600 V | 0.1 mV...600 V |
| Basic Accuracy* | 1.5% + 5 digits | 1.5% + 5 digits | 1.2% + 5 digits | 1.2% + 5 digits | 2% + +2 | | 1% + 4 digits | 1% + 4 digits |
| Frequency | 50...500 Hz | 50...400 Hz | 50...500 Hz | 50...500 Hz | 40Hz...1kHz | | 50...500 Hz | 50...500 Hz |
| Voltage DC | 0.1 mV... 600 V | 0.1 V... 600 V | 0.1 mV... 600 V | 0.1 mV... 600 V | 0.1 V...400 V | | 0.1 mV...600 V | 0.1 mV...600 V |
| Basic Accuracy* | 0.5 % + 3 digits | 0.5 % + 3 digits | 0.5 % + 2 digits | 0.5 % + 2 digits | 2% + +2 | | 0.5 % + 3 digits | 0.5 % + 3 digits |
| Resistance | 0.1 Ω...40.00 MΩΩ | 0.1 Ω... 40.00 MΩΩ | 0.1Ω...40.00 MΩΩ | 0.1Ω...40.00 MΩΩ | 0.1 Ω...400 Ω | | 0.1 Ω...40 MΩ | 0.1 Ω...40 MΩ |
| Basic Accuracy* | 1.0% + 4 digits | 0.8% + 6 digits | 1.0% + 4 digits | 1.0% + 4 digits | 2% + 2 digits | | 0.8% + 6 digits | 0.8% + 6 digits |
| Continuity test | R < 120 Ω | R < 120 Ω | R < 25 Ω | R < 25 Ω | R < 40 ΩΩ | | R < 120 Ω | R < 120 Ω |
| Frequency verification | 0.001Hz...100kHz | 0.001Hz...100kHz | | | 0.01 Hz...50 kHz | 0.01 Hz...9.99 kHz | R < 120 Ω | R < 120 Ω |
| Power measurement | | | | | | | | |
| Data Hold | • | • | • | • | • | • | • | • |
| MIN/MAX/Peak Hold | • | • | | | • | • | | |
| Capacitance measurement | • | • | | • | | | | |
| Jaw opening | 25 mm | 26 mm | 30 mm | 30 mm | 23 mm | 23 mm | 50 mm | 50 mm |
| Power supply | 1 x 3V, IEC/CR2032 | 2 x 3 V, IEC/CR2032 | 2 x 1.5 V, IEC LR03 | 2 x 1.5 V, IEC LR03 | 2 x 1.5 V, IEC LR6 | 2 x 1.5 V, IEC LR6 | 2 x 1.5 V, IEC LR03 | 2 x 1.5 V, IEC R03 |
| Auto Power Off | • | • | • | • | | | • | • |
| Measurement Category | CATIII/600 V | CATIII/600 V | CATIII/600 V | CATIII/600 V | CATII/600 V | CATII/600 V | CATIII/600 V | CATIII/600 V |
| Features | Narrow jaws Measurement of inrush current | 2000 µA measurement range for direct measurement of ionization currents in heating systems | Non-contact voltage recognition, swivel clamp head (180°) | Non-contact voltage recognition, swivel clamp head (180°) | | Non-contact frequency measurement | Measurement of inrush current | Measurement of inrush current True-rms reading |

| Model | ACD-50NAV | ACDC-52NAV | ACDC-54NAV | ACDC-400 | ACDC-3400 IND | AC50A | CHB 5 | LH41A |
|---|---|---|---|---|---|---|---|---|
| Max. current | 600 A | 600 A | 1000 A AC/DC | 400 A | 1000 A | 60 A | 50 A | 40 A |
| Current type | AC | AC/DC | AC/DC | AC/DC | AC/DC | AC | AC | AC/DC |
| True RMS Measurement | • | • | • | • | • | • | • | |
| Display | 3¾ digit, 4000 digits | 3¾ digit, 4000 digits | 3¾ digit, 4000 digits | 3¾ digit, 3999 digits | 3¾ digit, 6600 digits | 3¾ digit, 3999 digits | 4 digit, 9999 digits | 4 digit, 4000 digits |
| Current AC | 0.01...600 A | 0.01...600A | 0.01...1000 A | 0.01 A... 400 A | 0.1 A...1000 A | 0.01 mA...60 A | 0.5 mA...50 A | 0.001...40 A |
| Basic Accuracy* | 1.5 % + 5 digits | 1.5 % + 5 digits | 1.5 % + 5 digits | 1.5%+3 digits | 2 % + 10 digits | 1.5% + 5 digits | 1.5% + 5 digits | 1.3% + 5 digits |
| Frequency | 50 Hz...400 Hz | 50 Hz...400 Hz | 50 Hz...400 Hz | 50/60 Hz | 50...1 kHz | 40 Hz...1 kHz | 45 Hz.. 1 kHz | 40...400 Hz |
| Current DC | | 0.01...600 A | 0.01...1000 A | 0.01 A...400 A | 0.1 A...1000 A | | | 0.001...40 A |
| Basic Accuracy* | | 1.5 % + 5 digits | 1.5 % + 5 digits | 1.5%+3 digits | 2 % + 5 digits | | | 1.3% + 5 digits |
| Voltage AC | 0.01...1000 V | 0.01...1000 V | 0.01...1000 V | 0.1 mV...600 V | 0.1 mV...750 V | 0.1 V...400 V | 0.1 V...600 V | |
| Basic Accuracy* | 1 % + 5 digits | 1 % + 5 digits | 1 % + 5 digits | 1% + 3 digits | 1.5 % + 8 digits | 2% + 4 digits | 0.5% + 5 digits | |
| Frequency | 50 Hz...500 Hz | 50 Hz...500 Hz | 50 Hz...500 Hz | 50...500 Hz | 50 Hz...1 kHz | 40 Hz...1 kHz | 50 Hz...1 kHz | |
| Voltage DC | 0.01...1000 V | 0.01...1000 V | 0.01...1000 V | 0.1 mV...600 V | 0.1 mV...1000 V | | | |
| Basic Accuracy* | 0.7 % + 2 digits | 0.7 % + 2 digits | 0.7 % + 2 digits | 0.8 % + 2 digits | 0.5% + 2 digits | | | |
| Resistance | 1 Ω...99.99 kΩ | 1 Ω...99.99 kΩ | 1 Ω...99.99 kΩ | 0.1 Ω...40 MΩ | 0.1 Ω...66.00 MΩ | 0.1 Ω...400 Ω | | |
| Basic Accuracy* | 1 % + 3 digits | 1 % + 3 digits | 1 % + 3 digits | 1% + 3 digits | 1% + 5 digits | 1 % + 2 digits | | |
| Continuity test | R < 30 Ω | R < 30 Ω | R < 30 Ω | R < 40 Ω Ω | R < 30 Ω | R < 40 Ω | | |
| Frequency verification | 20.00...9,999 kHz | 20.00...9,999 kHz | 20.00...9,999 kHz | | 0.01 Hz...1000 MHz | | 45 Hz...65 Hz | |
| Power measurement | 0...600 kW | 0...600 kW | 0...999 kW | | | | | |
| Data Hold | • | • | • | • | • | • | • | |
| MIN/MAX Peak Hold | • | • | • | • | • | • | • | • |
| Capacitance measurement | 0.01...4000 µF | 0.01...4000 µF | 0.01...4000 µF | 0.01...4000 µF | 0.001 nF...6.6 mF | | | |
| Jaw opening | 37 mm | 42 mm | 42 mm | 30 mm | 51 mm | 30 mm | 30 mm | 19 mm |
| Power supply | 9 V, IEC 6F22 | 9 V, IEC 6F22 | 9 V, IEC 6F22 | 2 x 1.5 V, IEC R03 | 1 x 9 V, IEC 6F22 | 2 x 1.5 V, IEC LR6 | 2 x 1.5 V, IEC LR6 | 1 x 9 V, IEC 6LR61 |
| Auto Power Off | • | • | • | | | • | | • |
| Measurement Category | CAT IV / 600 V CAT III / 1000 V | CAT IV / 600 V CAT III / 1000 V | CAT IV / 600 V CAT III / 1000 V | CATIII/600 V | CATIII/1000 V, CATIV/600 V | CATII/600 V | CATII/600V, CAT III/300 V | CATII/300 V |
| Features | Active power, cos φ, Harmonic content (THD), Bar graph | Active power, cos φ, Harmonic content (THD), Bar graph | Active power, cos φ, Harmonic content (THD), Temperature, Bar graph | Illuminated display | Relative value measurement, Illuminated display, Duty cycle function | Leakage current clamp, lowest resolution 0.01 mA | Leakage current clamp, lowest resolution 0.01 mA Harmonics measurement up to the 99th peak value measurement | Measurement of direct currents with 1 mA resolution |

* = Basic accuracy figures are with regard to the best level of accuracy of the relevant measurement function

## AMP-25-EUR
### Mini current clamp (AC/DC)

Pocket-sized
14,7 cm height

#### Functions
- True RMS current measurement
- Low pass filter
- Measurement of inrush current
- Non-contact voltage detection

#### Product information
- Automatic range selection
- Zero adjustment
- Integrated measurement memory (data hold)
- Jaw opening 25 mm
- Auto Power Off

#### Product highlights
- Very compact design
- Illuminated display

**True RMS** | **Peak Hold** | **Hz** | ⚡ | ☀ | **300 A AC/DC**

**Filter\** | **CAT III 600 V**

### Included:
1 x AMP-25
2 x batteries 1.5V, IEC LR 44
1 x carrying case
1 x user manual

### Technical specifications

| | |
|---|---|
| Display | LCD, 3¾ digit, 6000 digits |
| Ranges | |
| Current AC | 0.01 A... 60 / 300 A |
| Basic accuracy | ±(1.5% rdg. + 5 digits) |
| Frequency range | 50...400 Hz |
| Current DC | 0.01 A... 60 / 300 A |
| Basic accuracy | ±(1.5% rdg. + 8 digits) |
| Current AC | |
| (with low pass filter) | 0.01 A... 300 A |
| Basic accuracy | ±(3.5% rdg. + 5 digits) |
| Frequency range | 50...60 Hz |
| Pollution degree | 2 |
| Measurement category | CAT III/600 V |
| Safety cert.: | DIN VDE 0411/EN 61010/ |
| Jaw opening | approx. 25 mm |
| Power supply | 2x battery 1.5V IEC LR 44 |
| Dimensions | 147 x 60 x 32 mm |
| Weight | approx. 140 g |

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| AMP-25-EUR | AMP-25-EUR | 4588268 |
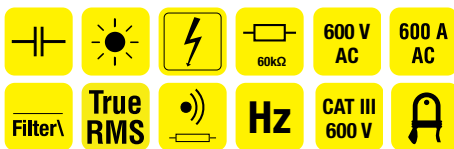
## AMP-210-EUR
### current clamp (AC)

#### Functions
- Current, voltage and resistance measurement
- Capacitance and frequency measurement
- Continuity beeper
- Low pass filter
- Measurement of inrush current
- Non-contact voltage detection

#### Product information
- Automatic range selection
- Zero adjustment, relative value measurement
- Integrated measurement memory (Data Hold, MIN/MAX)
- Jaw opening         30 mm (AMP-210-EUR), 35 mm (AMP-220-EUR)
- Auto Power Off

#### Product highlights
- Precise measurement of smaller currents (Amp-Tip)
- Illuminated display

⊣⊢ | ☀ | ⚡ | ▭ 60kΩ | **600 V AC** | **600 A AC**

**Filter\** | **True RMS** | •))) | **Hz** | **CAT III 600 V** | ⌂

### Technical specifications*

| | |
|---|---|
| Display | LCD, 3¾ digit, 6000 digits |
| Ranges | |
| Current AC | 0.01 A... 600 A |
| Basic accuracy | ±(1.8% rdg. + 5 digits) |
| Frequency range | 50...400 Hz |
| Current DC | 0.01 A... 600 A |
| Basic accuracy | ±(2.0% rdg. + 5 digits) |
| Current (Amp-Tip) AC/DC | 0.01 A... 60 A |
| Basic accuracy | ±(1.5% rdg. + 5 digits) |
| Frequency range | DC, 50...60 Hz |
| AC/DC voltage | 0.1 V...600 V |
| Basic accuracy | ±(1.0% rdg. + 5 digits) |
| Frequency range | DC, 50...60 Hz |
| Continuity | IN ≤ 10 Ω, OUT ≥ 250 Ω |
| Resistance | 0.01 ... 60.00 kΩ |
| Basic accuracy | ±(1.0% rdg. + 5 digits) |
| Capacitance | |
| measurement | 0.1 ... 2500 µF |
| Frequency measurement | 5.00 ... 999.9 Hz |
| Non-Contact | |
| Voltage measurement | 10 ...1000 V AC, 50/60Hz |
| Pollution degree | 2 |
| Measurement category | CAT III/600 V |
| Safety cert.: | DIN VDE 0411/EN 61010 |
| Jaw opening | approx. 30 mm (AMP-210-EUR), approx. 35 mm (AMP-220-EUR) |
| Power supply | 2x batteries 1.5 V, IEC LR 03 (AAA), Micro |
| Dimensions | 219 x 77 x 37 mm (AMP-210-EUR), 224 x 77x 37 mm (AMP-220-EUR) |
| Weight | approx. 208 g (AMP-210-EUR), approx. 254 g (AMP-220-EUR) |
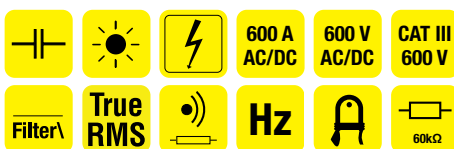
## AMP-220-EUR
### Current clamp (AC/DC)

#### As AM-210-EUR, but with:
- DC Current Function
- Display of mixed currents AC+DC (TRMS)
- Display of mixed voltages AC+DC (TRMS)
- Larger housing than AMP-220-EUR

⊣⊢ | ☀ | ⚡ | **600 A AC/DC** | **600 V AC/DC** | **CAT III 600 V**

**Filter\** | **True RMS** | •))) | **Hz** | ⌂ | ▭ 60kΩ

* Technical data relates to the highest model in the series. Data regarding individual modules can be found on our website www.beha-amprobe.com or the table on pages 41, 42, and 43.

### Included:
1 x AMP-210-EUR or AMP-220-EUR
2 x test leads
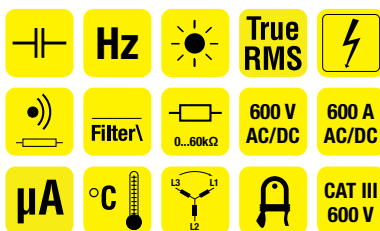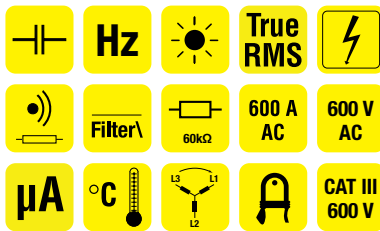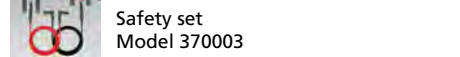2 x batteries 1.5 V, IEC LR 03
1 x carrying case
1 x user manual

### Accessories:
Safety set
Model 370003

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| AMP-210-EUR | AMP-210-EUR | 4560581 |
| AMP-220-EUR | AMP-220-EUR | 4560596 |
| Safety set | 370003 | 2146666 |

**BEHA·AMPROBE®**
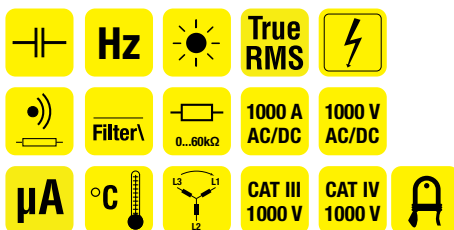
## AMP-310-EUR
### current clamp (AC)

#### Functions
- Current, voltage and resistance measurement
- Capacitance and frequency measurement
- Measurement of ionization current (µA DC range)
- Temperature measurement
- Continuity beeper
- Low pass filter
- Measurement of inrush current
- Non-contact voltage detection

#### Product information
- Automatic range selection
- Zero adjustment, relative value measurement
- Integrated measurement memory (Data Hold, MIN/MAX)
- Jaw opening 30 mm (AMP-310-EUR), 35 mm (AMP-320-EUR), 51 mm (AMP-330-EUR)
- Auto Power Off

#### Product highlights
- Precise measurement of smaller currents (Amp-Tip)
- Displays rotary field direction and motor rotation direction Illuminated display
- Measurement of ionization current (uA DC range) in heating systems

## AMP-320-EUR
### Current clamp (AC/DC)

As AM-310-EUR, but with:
- DC Current Function
- Display of mixed currents AC+DC (TRMS)
- Display of mixed voltages AC+DC (TRMS)

## AMP-330-EUR
### Current clamp (AC/DC)

As AMP-320-EUR, but with:
- Voltage measurement up to 1000 A AC/DC
- AC and DC voltage measurements to 1000 V
- Measurement categories CAT IV 600 V, CAT III 1000 V
- Larger housing than AMP-320-EUR

### Included:

1 x AMP-310-EUR or AMP-320-EUR
2 x test leads
2 x crocodile clips
1 x temperature probe
2 x battery 1.5 V, IEC LR 03 (or IEC LR 06)
1 x carrying case
1 x user manual

### Accessories:

Safety set
Model 370003

## Technical specifications*

| | |
|---|---|
| Display | LCD, 3¾ digit, 6000 digits |
| Ranges | |
| Current AC | 0.01 A... 600 A (or 1000 A) |
| Basic accuracy | ±(1.8% rdg. + 5 digits) |
| Frequency range | 50...400 Hz |
| Current DC | 0.01 A... 600 A (or 1000 A) |
| Basic accuracy | ±(2.0% rdg. + 5 digits) |
| Current (Amp-Tip) | |
| AC/DC | 0.01 A... 60 A |
| Basic accuracy | ±(1.5% rdg. + 5 digits) |
| Frequency range | DC, 50...60 Hz |
| AC/DC voltage | 0.1 V...600 V (or 1000 V) |
| Basic accuracy | ±(1.0% rdg. + 5 digits) |
| Frequency range | DC, 50...60 Hz |
| Continuity | IN ≤ 10 Ω, OUT ≥ 250 Ω |
| Resistance | 0.01 ... 60.00 kΩ |
| Basic accuracy | ±(1.0% rdg. + 5 digits) |
| Capacitance measurement | 0.1 ... 2500 µF |
| Frequency measurement | 5.00 ... 999.9 Hz |
| Non-Contact Voltage measurement | 10 ...1000 V AC, 50/60Hz |
| Ionization current | 0.1 µA... 2000 µA |
| Basic accuracy | ±(1.0% rdg. + 5 digits) |
| Temperature | -40 ... +400 °C |
| Basic accuracy | ±(1.0% rdg. + 0.8 °C) |
| Pollution degree | 2 |
| Measurement category | CAT III/600 V<br>CAT IV / 600 V, CAT III / 1000 V (AMP-330-EUR) |
| Safety cert.: | DIN VDE 0411/EN 61010 |
| Jaw opening | 30 mm (AMP-310-EUR)<br>35 mm (AMP-320-EUR)<br>51 mm (AMP-330-EUR) |
| Power supply | 2x battery 1.5 V, IEC LR 03 ( AAA), Micro<br>2x battery 1.5 V, IEC LR 06 (AA), Mignon (AMP-330-EUR) |
| Dimensions | 219 x 77x 37 mm (AMP-310-EUR)<br>224 x 77 x 37 mm (AMP-320-EUR)<br>258 x 94 x 44 mm (AMP-330-EUR) |
| Weight | approx. 208 g AMP-310-EUR,<br>approx. 254 g (AMP-320-EUR)<br>approx. 420 g (AMP-330-EUR) |

\* Technical data relates to the highest model in the series. Data regarding individual modules can be found on our website www.beha-amprobe. com or the table on pages 41, 42, and 43.

### Ordering information:

| Description | Model | Article no. |
|---|---|---|
| AMP-310-EUR | AMP-310-EUR | 4560603 |
| AMP-320-EUR | AMP-320-EUR | 4560615 |
| AMP-330-EUR | AMP-330-EUR | 4560626 |
| Safety set | 370003 | 2146666 |

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# ACD-10 PLUS
## current clamp (AC)

### Functions
- Current, voltage and resistance measurement
- Continuity beeper
- Diode test
- Capacitance and frequency measurement
- Measurement of inrush current (30 ms)

### Product information
- Automatic range selection
- Integrated measurement memory
  (Data hold and MAX hold)
- Jaw opening 25 mm
- Auto Power Off

### Product highlights
- Narrow jaws

| | |
|---|---|
| 600 A AC | 600 V AC/DC |
| 40MΩ | |
| Data Hold | Hz |
| Peak Hold | CAT III 600 V |

### Included:
1 x ACD-10 PLUS
2 x test leads
1 x battery 3 V, IEC CR2032
1 x carrying case
1 x user manual

### Accessories:
Safety set
Model 370003

### Technical specifications

| | |
|---|---|
| Display | LCD, 3¾ digit, 4000 digits |
| Ranges | |
| Current AC | 0.01 A... 600 A |
| Basic accuracy | ±(1.5% rdg. + 8 digits) |
| Frequency range | 50/60 Hz |
| AC voltage | 0.001 V...600 V |
| Basic accuracy | ±(1.5% rdg. + 5 digits) |
| Frequency range | 50...500 Hz |
| DC voltage | 0.1 mV...600 V |
| Basic accuracy | ±(0.5 % rdg. + 3 digits) |
| Continuity | R < 120 Ω |
| Resistance | 0.1 Ω... 40.00 MΩ |
| Basic accuracy | ±(1.0% rdg. + 4 digits) |
| Frequency measurement | 0.001 Hz...100 kHz |
| Capacitance measurement | 0.1 nF...3000 μF |
| Pollution degree | 2 |
| Measurement category | CAT III/600 V |
| Safety cert.: | DIN VDE 0411/EN 61010/ IEC 61010 |
| Jaw opening | approx. 25 mm |
| Power supply | 1 x battery 3 V, IEC CR2032 |
| Dimensions | 190 x 63 x 32 mm |
| Weight | approx. 150 g |

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| ACD-10 PLUS | ACD-10 PLUS | 3037808 |
| ACD-10 PLUS | ACD-10 PLUS-D* | 3454555 |
| Safety set | 370003 | 2146666 |

D* is German version

# ACD-14-PRO-EUR
## Current clamp with dual display (AC)

### Functions
- True RMS current measurement
- Voltage and resistance measurement
- Capacitance and frequency measurement
- Temperature measurement
- Continuity beeper
- Low pass filter
- Measurement of inrush current
- Non-contact voltage detection

### Product information
- Automatic range selection
- Integrated measurement memory (data hold)
- Jaw opening 30 mm
- Auto Power Off

### Product highlights
- Dual display with illumination
- Precise measurement of small AC currents
  (Amp-Tip)
- Measurement of ionization current
  (μA DC range) in heating systems
- True RMS measurement (TRMS)

| | | | |
|---|---|---|---|
| 600 A AC | μA | Peak Hold | Data Hold |
| °C | Hz | | True RMS |
| CAT III 600 V | | | Filter\ |

### Included:
1 x ACD-14-PRO-EUR
2 x test leads
1 x temperature probe
2 x batteries 1.5 V, IEC LR 03
1 x carrying case
1 x user manual

### Accessories:
Safety set
Model 370003

### Technical specifications

| | |
|---|---|
| Display | Dual-LCD, 3¾ digit, 6000 digits |
| Ranges | |
| Current AC | 0.01 A... 600 A |
| Basic accuracy | ±(1.8% rdg. + 5 digits) |
| Frequency range | 50...400 Hz |
| Current (Amp-Tip) AC | 0,01 A... 60 A |
| Basic accuracy | ±(1.5% rdg. + 5 digits) |
| Frequency range | 50...60 Hz |
| AC/DC voltage | 0.1 V...600 V (or 1000 V) |
| Basic accuracy | ±(1.0% rdg. + 5 digits) |
| Frequency range | DC, 50...60 Hz |
| Continuity | IN ≤ 10 Ω, OUT ≥ 250 Ω |
| Resistance | 0.01 ... 60.00 kΩ |
| Basic accuracy | ±(1.0% rdg. + 5 digits) |
| Capacitance measurement | 0.1 ... 2500 μF |
| Frequency measurement | 5.00 ... 999.9 Hz |
| Non-Contact Voltage measurement | 10 ... 550 V, 50/60 Hz |
| Ionization current | 0.1 μA... 2000 μA |
| Basic accuracy | ±(1.0% rdg. + 5 digits) |
| Temperature | -40 ... +400 °C |
| Basic accuracy | ±(1.0% rdg. + 0.8 °C) |
| Pollution degree | 2 |
| Measurement category | CAT III/600 V |
| Safety cert.: | DIN VDE 0411/EN 61010 |
| Jaw opening | 30 mm |
| Power supply | 2x batteries 1.5 V, IEC LR 03 (AAA), Micro |
| Dimensions | 219 x 77 x 37 mm |
| Weight | approx. 208 g |

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| ACD-14-PRO-EUR | ACD-14-PRO-EUR | 4718989 |
| Safety set | 370003 | 2146666 |

## ACD-20SW
### Swivel clamp meter (AC)

#### Functions
• Current, voltage and resistance measurement
• Continuity beeper
• Diode test

#### Product information
• Automatic and manual range selection
• Integrated measurement memory (data hold)
• Jaw opening approx. 30 mm
• Auto Power Off

#### Product highlights
• Clamp head swivels up to 180°
• Non-contact voltage detection

| 400 A AC | 600 V AC/DC | 40MΩ | CAT III 600 V | Data Hold | |

### Technical specifications

| | |
|---|---|
| Display | LCD, 3¾ digit, 3999 digits |
| Ranges | |
| Current AC | 0.01...400 A |
| Basic accuracy | ±(2% rdg. + 6 digits) |
| Frequency range | 50...60 Hz |
| AC voltage | 1.0 mV...600.0 V |
| Basic accuracy | ±(1.2% rdg. + 5 digits) |
| Frequency range | 50...500 Hz |
| DC voltage | 0.1 mV...600 V |
| Basic accuracy | ±(0.5% rdg. + 2 digits) |
| Continuity | R < 25 Ω |
| Resistance | 0.1 Ω... 40 MΩ |
| Basic accuracy | ±(1.0% rdg. + 4 digits) |
| Pollution degree | 2 |
| Measurement category | CAT lll / 600 V |
| Safety cert.: | DIN VDE 0411/EN 61010/ IEC 61010 |
| Jaw opening | approx. 30 mm |
| Power supply | 2 x battery 1.5 V, AAA IEC LR03 |
| Dimensions | 240 × 70 × 41 mm |
| Weight | approx. 220 g |

### Included:

1 x ACD-20SW
2 x test leads
2 x battery 1.5V, IEC LR03
1 x carrying case
1 x user manual

### Accessories:

Safety set
Model 370003

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| ACD-20SW | ACD-20SW | **3472723** |
| Safety set | 370003 | **2146666** |

## ACD-23SW
### Swivel clamp meter TRMS (AC)

#### Functions
• Current, voltage and resistance measurement
• Audible continuity and diode test
• Capacitance and temperature measurement

#### Product information
• Automatic and manual range selection
• Integrated measurement memory (data hold)
• Jaw opening approx. 30 mm
• Auto Power Off

#### Product highlights
• Clamp head swivels up to 180°
• Non-contact voltage detection
• True RMS measurement (TRMS)

| 400 A AC | 600 V AC/DC | 40MΩ | CAT III 600 V | Data Hold | |

True RMS

### Technical specifications

| | |
|---|---|
| Display | LCD, 3¾ digit, 3999 digits |
| Ranges | |
| Current AC | 0.01...400 A |
| Basic accuracy | ±(2% rdg. + 6 digits) |
| Frequency range | 50...60 Hz |
| AC voltage | 1.0 mV...600.0 V |
| Basic accuracy | ±(1.2% rdg. + 5 digits) |
| Frequency range | 50...500 Hz |
| DC voltage | 0.1 mV...600 V |
| Basic accuracy | ±(0.5% rdg. + 2 digits) |
| Continuity | R < 25 Ω |
| Resistance | 0.1 Ω... 40 MΩ |
| Basic accuracy | ±(1.0% rdg. + 4 digits) |
| Capacitance measurement | 0.01…4000 µF |
| Temperature measurement | -35...400°C |
| Pollution degree | 2 |
| Measurement category | CAT lll / 600 V |
| Safety cert.: | DIN VDE 0411/EN 61010/IEC 61010 |
| Jaw opening | approx. 30 mm |
| Power supply | 2 x battery 1.5 V, AAA IEC LR03 |
| Dimensions | 240 × 70 × 41 mm |
| Weight | approx. 220 g |

### Included:

1 x ACD-23SW
2 x test leads
2 x battery 1.5V, IEC LR03
1 x temperature probe
1 x carrying case
1 x user manual

### Accessories:

Safety set
Model 370003

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| ACD-23SW | ACD-23SW | **3804941** |
| Safety set | 370003 | **2146666** |
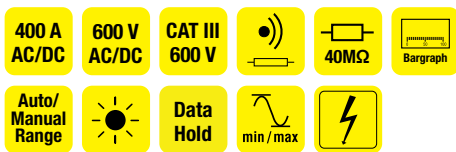
## ACDC-400
### Current clamp (AC/DC)

#### Functions
- Current, voltage and resistance measurement
- Continuity beeper

#### Product information
- Automatic and manual range selection
- Integrated measurement memory
  (data hold, MIN/MAX)
- Relative measurement
- Additional bar graph display
- Jaw opening 30 mm
- Auto Power Off

#### Product highlights
- AC/DC clamps are also suitable for automotive
  applications, emergency power supplies and
  solar technology.
- Illuminated display

| | | | | | |
|---|---|---|---|---|---|
| 400 A AC/DC | 600 V AC/DC | CAT III 600 V | •))) | 40MΩ | Bargraph |
| Auto/ Manual Range | ☀ | Data Hold | min / max | ⚡ | |

### Technical specifications

| | |
|---|---|
| Display | LCD, 3¾ digit, 3999 digits |
| Ranges | |
| Current AC | 0.01 A... 400 A |
| Basic accuracy | ±(1.5% rdg. + 3 digits) |
| Frequency range | 50/60 Hz |
| Current DC | 0.01 A... 400 A |
| Basic accuracy | ±(1.5% rdg. + 3 digits) |
| AC voltage | 0.1 mV...600 V |
| Basic accuracy | ±(1% rdg. + 3 digits) |
| Frequency range | 50...500 Hz |
| DC voltage | 0.1 mV...600 V |
| Basic accuracy | ±(0.8 % rdg. + 2 digits) |
| Continuity | R < 40 Ω |
| Resistance | 0.1 Ω... 40 MΩ |
| Basic accuracy | ±(1% rdg. + 3 digits) |
| Pollution degree | 2 |
| Measurement category | CAT III / 600 V |
| Safety cert.: | DIN VDE 0411/EN 61010/ IEC 61010 |
| Jaw opening | approx. 30 mm |
| Power supply | 2 x battery 1.5 V, IEC LR03 |
| Dimensions | 205 x 64 x 39 mm |
| Weight | approx. 280 g |

### Included:

1 x ACDC-400
2 x test leads
2 x battery 1.5 V, IEC LR03
1 x carrying case
1 x user manual



### Accessories:

Safety set
Model 370003

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| ACDC-400 | ACDC-400-D* | 3454596 |
| ACDC-400 | ACD-400 | 2730810 |
| Safety set | 370003 | 2146666 |
| *D is German version | | |



AMP-210-EUR AC clamp meter



AMP-320-EUR AC/DC clamp meter



AMP-330-EUR AC/DC clamp meter

## CHB15
### Current clamp (AC/DC)

Functions
- Current, voltage and resistance measurement
- Continuity beeper
- Frequency verification

Product information
- Manual range selection
- Integrated measurement memory (data hold)
- MIN/MAX and relative value measurement
- Additional bar graph display
- Jaw opening 23 mm

Product highlights
- AC/DC clamps are also suitable for automotive applications, emergency power supplies and solar technology.

| 200 A AC/DC | 400 V AC/DC | CAT II 600 V | 400Ω | ●))) | Data Hold |
| min/max | Hz | ⚡ | | | |
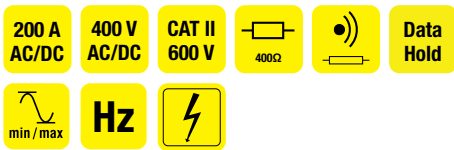
### Included:

1 x CHB15
2 x test leads
2 x battery 1.5 V, IEC LR6
1 x carrying case
1 x user manual

### Accessories:

Safety set
Model 370003

### Technical specifications

| Display | LCD, 3¾ digit, 3999 digits |
|---|---|
| Ranges | |
| Current AC | 0.01...200 A |
| Basic accuracy | ± (2 % rdg. + 4 digits) |
| Current DC | 0.01...200 A |
| Basic accuracy | ± (2 % rdg. + 2 digits) |
| Voltage AC | 0.1...400 V |
| Basic accuracy | ± (2 % rdg. + 2 digits) |
| DC voltage | 0.1 V...400 V |
| Basic accuracy | ± (2 % rdg. + 2 digits) |
| Frequency range for | |
| AC current/voltage | 40 Hz...1 kHz |
| Input resistance | 10 MΩ |
| Resistance | 0.1...400 Ω |
| Basic accuracy | ± (2 % rdg. + 2 digits) |
| Continuity | R < 40 Ω |
| Frequency measurement | 0.01 Hz…50 kHz |
| Basic accuracy | ± (1 % rdg. + 2 digits) |
| Pollution degree | 2 |
| Measurement category | CAT II/600 V |
| Safety cert.: | DIN VDE 0411/EN 61010/ IEC 61010 |
| Jaw opening | approx. 23 mm |
| Power supply | 2 x battery 1.5 V, IEC LR6 |
| Dimensions | 183 x 64 x 36 mm |
| Weight | approx. 190 g |

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| CHB15 | 93468-D | **3454457** |
| Safety set | 370003 | **2146666** |

## CHB35
### TRMS current clamp (AC/DC)

Functions
- Current measurement
- Frequency measurement (non-contact)

Product information
- Manual range selection
- Integrated measurement memory (data hold)
- MIN/MAX and relative value measurement
- Additional bar graph display
- Jaw opening 23 mm

Product highlights
- AC/DC clamps are also suitable for automotive applications, emergency power supplies and solar technology.
- True RMS measurement (TRMS)

| 400 A AC/DC | CAT II 600 V | Data Hold | min/max | Hz | True RMS |
| ⚡ | | | | | |

### Included:

1 x CHB35
2 x battery 1.5 V, IEC LR6
1 x carrying case
1 x user manual

### Technical specifications

| Display | LCD, 3¾ digit, 3999 digits |
|---|---|
| Ranges | |
| Current AC | 0.001...400 A |
| Basic accuracy | ± (2 % rdg. + 3 digits) |
| Current DC | 0.01...400 A |
| Basic accuracy | ± (2 % rdg. + 2 digits) |
| AC frequency | |
| range | 40 Hz ... 1kHz |
| Crest factor | <4 |
| Frequency measurement | 0.01 Hz...9.99 kHz |
| Basic accuracy | ± (1 % rdg. + 2 digits) |
| Pollution degree | 2 |
| Measurement category | CAT II/600 V |
| Safety cert.: | DIN VDE 0411/EN 61010/ IEC 61010 |
| Jaw opening | approx. 23 mm |
| Power supply | 2 x battery 1.5 V, IEC LR6 |
| Dimensions | 183 x 64 x 36 mm |
| Weight | approx. 190 g |

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| CHB35 | 93469-D | **3454469** |
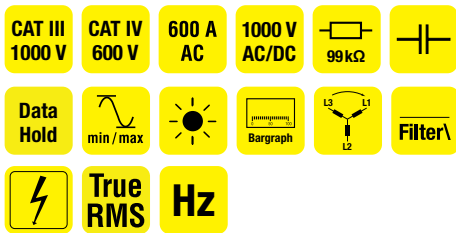
## ACD-50NAV
### CAT IV Navigator™ power clamp meter 600 A (AC) TRMS

#### Functions
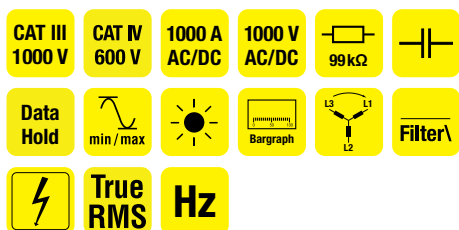- Current, voltage and resistance measurement
- Continuity beeper
- Capacitance and frequency measurement
- Measurement of active power
- Measuring the power factor cos φ
- Harmonics measurement for current and voltage values (up to the 25th harmonic)
- Measurement of total harmonic distortion (THD)
- Measurement of inrush current for motors

#### Product information
- Automatic and manual range selection
- Integrated measurement memory (MIN/MAX and Data Hold)
- Peak value memory (Peak Hold)
- Rotary field measurement
- Low pass filter for measurement of frequency converters
- Large digit display with backlit display and analog bar graph
- Jaw opening 37 mm
- Auto Power Off

#### Product highlights
- AC/DC true RMS measurement (TRMS)
- Automatic flashlight function on opening the jaws
- Non-contact voltage detection
- Functions can be selected via a joystick

CAT III 1000 V | CAT IV 600 V | 600 A AC | 1000 V AC/DC | 99kΩ | Data Hold | min/max | Bargraph | L1 L2 L3 | Filter\ | True RMS | Hz

#### Included:
1 x ACD-50NAV
2 x test leads
1 x battery 9 V, IEC 6F22
1 x carrying case
1 x user manual

#### Accessories:
Safety set
Model 370003

### Technical specifications

| | |
|---|---|
| Display | LCD, 3¾ digit, 4000 digits |
| Ranges | |
| Current AC | 0.01…600 A |
| Basic accuracy | ±(1.5 % rdg. + 5 digits) |
| Frequency range | 50 Hz…400 Hz |
| Voltage AC | 0.01...1000 V |
| Basic accuracy | ±(1 % rdg. + 5 digits) |
| Frequency range | 50 Hz…500 Hz |
| DC voltage | 0.01…1000 V |
| Basic accuracy | ±(0.7 % rdg. + 2 digits) |
| Active power | 0…600.0 kW |
| cos φ | -1.00…0.00…+1.00 |
| Harmonics | Up to 25th |
| total harmonic distortion (THD) | 0,1…100 % |
| Resistance | 1Ω…99.99 kΩ |
| Basic accuracy | ± (1 % rdg. + 3 digits) |
| Continuity | R < 30 Ω |
| Frequency measurement | 20.00…9,999 kHz |
| Capacitance measurement | 0.01…4000 µF |
| Pollution degree | 2 |
| Measurement category | CAT IV / 600 V, CAT III / 1000 V |
| Safety cert. | DIN VDE 0411/EN 61010/ IEC 61010 |
| Jaw opening | approx. 37 mm |
| Power supply | 1 x battery 9 V, IEC 6F22 |
| Dimensions | approx. 260 x 80 x 40 mm |
| Weight | approx. 480 g |

#### Ordering Information:
| Description | Model | Article no. |
|---|---|---|
| ACD-50NAV | ACD-50NAV | 3729945 |
| Safety set | 370003 | 2146666 |
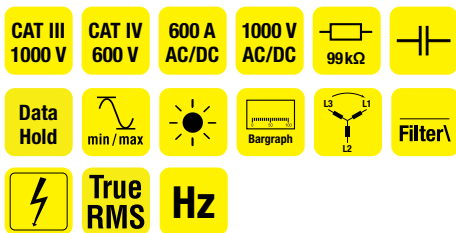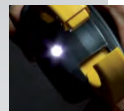
## ACDC-52NAV
### CAT IV Navigator™ power clamp meter 600 A (AC/DC) TRMS

#### Functions
- Current, voltage and resistance measurement
- Continuity beeper
- Capacitance and frequency measurement
- Measurement of active power
- Measuring the power factor cos φ
- Harmonics measurement for current and voltage values (up to the 25th harmonic)
- Measurement of total harmonic distortion (THD)
- Measurement of inrush current for motors

#### Product information
- Automatic and manual range selection
- Integrated measurement memory (MIN/MAX and Data Hold)
- Peak value memory (Peak Hold)
- Rotary field measurement
- Low pass filter for measurement of frequency converters
- Large digit display with backlit display and analog bar graph
- Jaw opening 42 mm
- Auto Power Off

#### Product highlights
- AC/DC true RMS measurement (TRMS)
- Automatic flashlight function on opening the jaws
- Non-contact voltage detection
- Functions can be selected via a joystick

CAT III 1000 V | CAT IV 600 V | 600 A AC/DC | 1000 V AC/DC | 99kΩ | Data Hold | min/max | Bargraph | L1 L2 L3 | Filter\ | True RMS | Hz

#### Included:
1 x ACDC-52NAV
2 x test leads
1 x battery 9 V, IEC 6F22
1 x carrying case
1 x user manual

#### Accessories:
Safety set
Model 370003

### Technical specifications

| | |
|---|---|
| Display | LCD, 3¾ digit, 4000 digits |
| Ranges | |
| Current AC | 0.01…600 A |
| Basic accuracy | ±(1.5 % rdg. + 5 digits) |
| Frequency range | 50 Hz…400 Hz |
| Current DC | 0.01...600 A |
| Basic accuracy | ±(1.5 % rdg. + 5 digits) |
| Voltage AC | 0.01...1000 V |
| Basic accuracy | ±(1 % rdg. + 5 digits) |
| Frequency range | 50 Hz…500 Hz |
| DC voltage | 0.01…1000 V |
| Basic accuracy | ±(0.7 % rdg. + 2 digits) |
| Active power | 0…600.0 kW |
| cos φ | -1.00…0.00…+1.00 |
| Harmonics | Up to 25th |
| total harmonic distortion (THD) | 0,1…100 % |
| Resistance | 1Ω…99.99 kΩ |
| Basic accuracy | ±(1 % rdg. + 3 digits) |
| Continuity | R < 30 Ω |
| Frequency measurement | 20.00…9,999 kHz |
| Capacitance measurement | 0.01…4000 µF |
| Pollution degree | 2 |
| Measurement category | CAT IV / 600V, CAT III / 1000 V |
| Safety cert. | DIN VDE 0411/EN 61010/ IEC 61010 |
| Jaw opening | approx. 42 mm |
| Power supply | 1 x battery 9 V, IEC 6F22 |
| Dimensions | approx. 260 x 80 x 40 mm |
| Weight | approx. 480 g |

#### Ordering Information:
| Description | Model | Article no. |
|---|---|---|
| ACDC-52NAV | ACDC-52NAV | 3729961 |
| Safety set | 370003 | 2146666 |

| CAT III 1000 V | CAT IV 600 V | 1000 A AC/DC | 1000 V AC/DC | 99 kΩ | |
| Data Hold | min / max | | Bargraph | L3 L1 L2 | Filter\ |
| ⚡ | True RMS | Hz | | | |

## Included:

1 x ACDC-54NAV
2 x test leads
1 x temperature probe
1 x battery 9 V, IEC 6F22
1 x carrying case
1 x user manual

# ACDC-54NAV

**CAT IV Navigator™ power clamp meter 1000 A (AC/DC) TRMS**

### Functions
• Current, voltage and resistance measurement
• Continuity beeper
• Capacitance and frequency measurement
• Temperature measurement
• Measurement of active power
• Measuring the power factor cos φ
• Harmonics measurement for current and voltage values (up to the 25th harmonic)
• Measurement of total harmonic distortion (THD)
• Measurement of inrush current for motors

### Product information
• Automatic and manual range selection
• Integrated measurement memory (MIN/MAX and Data Hold)
• Peak value memory (Peak Hold)
• Rotary field measurement
• Low pass filter for measurement of frequency converters
• Large digit display with backlit display and analog bar graph
• Jaw opening 42 mm
• Auto Power Off

### Product highlights
• AC/DC true RMS measurement (TRMS)
• Automatic flashlight function on opening the jaws
• Non-contact voltage detection
• Functions can be selected via a joystick

## Accessories:



Safety set
Model 370003

## Technical specifications

| | |
|---|---|
| Display | LCD, 3¾ digit, 4000 digits |
| Ranges | |
| Current AC | 0.01…1000 A |
| Basic accuracy | ±(1.5 % rdg. + 5 digits) |
| Frequency range | 50 Hz…400 Hz |
| Current DC | 0.01...1000 A |
| Basic accuracy | ±(1.5 % rdg. + 5 digits) |
| Voltage AC | 0.01...1000 V |
| Basic accuracy | ±(1 % rdg. + 5 digits) |
| Frequency range | 50 Hz…500 Hz |
| DC voltage | 0.01…1000 V |
| Basic accuracy | ±(0.7 % rdg. + 2 digits) |
| Active power | 0…999.9 kW |
| cos φ | -1.00…0.00…+1.00 |
| Harmonics | Up to 25th |
| total harmonic distortion (THD) | 0,1…100 % |
| Resistance | 1Ω…99.99 kΩ |
| Basic accuracy | ±(1 % rdg. + 3 digits) |
| Continuity | R < 30 Ω |
| Frequency measurement | 20.00…9,999 kHz |
| Capacitance measurement | 0.01…4000 µF |
| Temperature measurement | -50...1000°C |
| Pollution degree | 2 |
| Measurement category | CAT IV / 600V, CAT III / 1000 V |
| Safety cert. | DIN VDE 0411/EN 61010/ IEC 61010 |
| Jaw opening | approx. 42 mm |
| Power supply | 1 x battery 9 V, IEC 6F22 |
| Dimensions | approx. 260 x 80 x 40 mm |
| Weight | approx. 480 g |

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| ACD-54NAV | ACD-54NAV | **3729989** |
| Safety set | 370003 | **2146666** |

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| CAT III 1000 V | CAT IV 600 V | 1000 A AC/DC | 750 V AC/DC | 0…60 MΩ | |
| Peak Hold | Data Hold | Hz | | True RMS | ⚡ |

## Included:

1 x ACDC-3400 IND
2 x test leads
1 x battery 9 V, IEC 6F22
1 x carrying case
1 x user manual

# ACDC-3400 IND

**CAT IV TRMS clamp meter for industrial applications up to 1000 A (AC/DC)**

### Functions
• Current, voltage and resistance measurement
• Continuity beeper
• Frequency verification
• Capacitance measurement
• Peak value measurement
• Duty cycle function

### Product information
• Automatic and manual range selection
• Integrated measurement memory (Data hold and Peak hold)
• Additional bar graph display
• Illuminated display
• Auto Power Off
• Relative measurement
• Jaw opening: 51 mm

### Product highlights
• True RMS measurement (TRMS)

## Accessories:



Safety set
Model 370003



Test lead set with crocodile clips
Model TL36A

## Technical specifications

| | |
|---|---|
| Display | LCD, 3¾ digit, 6600 digits |
| Ranges | |
| Current AC | 0.1…1000 A |
| Basic accuracy | ± (2 % rdg. + 10 digits) |
| Frequency range | 50 Hz…1 kHz |
| Current DC | 0.1...1000 A |
| Basic accuracy | ± (2 % rdg. +5 digits) |
| AC voltage | 0.1 mV…750 V |
| Basic accuracy | ± (1.5 % rdg. + 8 digits) |
| Frequency range | 50 Hz…1 kHz |
| DC voltage | 0.1 mV…1000 V |
| Basic accuracy | ± (0.5% rdg. + 2 digits) |
| Continuity | R < 30 Ω |
| Resistance | 0.1 Ω…66.00 MΩ |
| Basic accuracy | ± (1 % rdg. +5 digits) |
| Frequency measurement | 0.01 Hz…1.000 MHz |
| Capacitance | 0.001 nF…6.6 mF |
| Duty cycle function | 5.0 %…95.0 % |
| Pollution degree | 2 |
| Measurement categories | CAT IV 600 V, CAT III 1000 V |
| Safety cert.: | EN 61010/IEC 61010 |
| Jaw opening | approx. 51 mm |
| Power supply | 1 x battery 9 V, IEC 6F22 |
| Dimensions | 281 x 105 x 53 mm |
| Weight | approx. 560 g |

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| ACDC-3400 IND | ACDC-3400 IND | **3434889** |
| TL36A | TL36A | **3034444** |
| Safety set | 370003 | **2146666** |

## AC50A
### Digital leakage current clamp (AC)

**Functions**
- Leakage current measurement
- Voltage and resistance measurement
- Continuity test with beeper

**Product information**
- Manual range selection
- Integrated measurement memory (data hold)
- MIN/MAX and relative value measurement
- Additional bar graph display
- Jaw opening 30 mm
- Auto Power Off

**Product highlights**
- Minimum resolution: 0.01 mA
- Range of applications: Measurement of leakage currents, e.g. stray or residual currents, current consumption of units in service or customer service sector without interruption to circuit

| CAT II 600 V | 60 A AC | Auflösung 10 µA AC | 400 V AC | Data Hold | ●))) |
|---|---|---|---|---|---|
| min / max | 400Ω | ⚡ | Filter\ | | |

**Included:**

1 x AC50A
2 x test leads
2 x battery 1.5 V, IEC LR6
1 x carrying case
1 x user manual

**Accessories:**

Adapters for stray current measurements:
Schuko/Schuko*
Model 1233

CEE 5-pole 16 A
Model 1235

CEE 5-pole 32 A
Model 1236

### Technical specifications

| | |
|---|---|
| Display | LCD, 3¾ digit, 3999 digits |
| Ranges | |
| Current AC | 0.01 mA...60 A |
| Tolerance | ±(1.5 % rdg. + 5 digits) |
| Voltage AC | 0.1...400 V |
| Tolerance | ±(2 % rdg. + 4 digits) |
| Frequency range for AC current/ voltage | 40 Hz...1 kHz |
| Input resistance | 10 MΩ |
| Tolerance | |
| Resistance | 0.1...400 Ω |
| Tolerance | ±(1 % rdg. + 2 digits) |
| Continuity | R<40 Ω |
| Pollution degree | 2 |
| Measurement category | CAT II/600 V |
| Safety cert.: | DIN VDE 0411/EN 61010/ IEC 61010 |
| Jaw opening | approx. 30 mm |
| Power supply | 2 x battery 1.5 V, IEC LR6 |
| Dimensions | 210 x 62 x 36 mm |
| Weight | approx. 230 g |

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| AC50A | AC50A | 3033017 |
| AC50A | AC50A-D* | 3454543 |
| D* is German version | | |
| Test adapter: | | |
| Schuko/Schuko* | 1233 | 2145900 |
| CEE 5-pin 16 A | 1235 | 2145921 |
| CEE 5-pin 32 A | 1236 | 2145939 |

\* only for countries with Schuko plug

## CHB5
### Digital leakage current clamp with harmonics measurement TRMS (AC)

**Functions**
- Leakage test
- Stray current measurement (leakage current measurement) TRMS
- Voltage measurement (TRMS)
- Frequency verification
- Harmonics measurement for current and voltage values (up to 99th harmonic)

**Product information**
- Integrated measurement memory (data hold)
- MIN/MAX value measurement
- Jaw opening 30 mm
- Auto Power Off

**Product highlights**
- Minimum resolution: 0.01 mA
- Harmonics measurement
- Range of applications: Measurement of leakage currents, e.g. stray or residual currents, current consumption of units in service or customer service sector without interruption to circuit

| 50 A AC | CAT II 600 V | CAT III 300 V | Auflösung 10 µA AC | 600 V AC | Data Hold |
|---|---|---|---|---|---|
| min / max | Hz | True RMS | ⚡ | Filter\ | |

**Included:**

1 x CHB5
2 x test leads
2 x battery 1.5 V, IEC LR6
1 x carrying case
1 x user manual

**Accessories:**

Adapters for stray current measurements:
Schuko/Schuko*
Model 1233

CEE 5-pole 16 A
Model 1235

CEE 5-pole 32 A
Model 1236

* only for countries with Schuko plug

### Technical specifications

| | |
|---|---|
| Display | LCD, 4 digit, 9999 digits |
| Ranges | |
| Current AC | 0.5 mA...50 A |
| Basic accuracy | ±(1.5 % rdg. + 5 digits) |
| Voltage AC | 0.1...600 V |
| Basic accuracy | ±(0.5 % rdg. + 5 digits) |
| Frequency range for AC current/ voltage | 45 Hz...1 kHz |
| Input resistance | 10 MΩ |
| Frequency measurement | 45…65 Hz |
| Basic accuracy | ±(0.2 Hz) |
| Harmonics | display up to 99th |
| Crest factor measurement | 1.00…99.99 |
| Basic accuracy | ±(5 % rdg. + 30 digits) |
| Pollution degree | 2 |
| Measurement category | CAT II/600 V, CAT III/300 V |
| Safety cert.: | DIN VDE 0411/EN 61010/ IEC 61010 |
| Jaw opening | approx. 30 mm |
| Power supply | 2 x battery 1.5 V, IEC L 6 |
| Dimensions | 210 x 62 x 36 mm |
| Weight | approx. 200 g |

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| CHB5 | 93570 | 3313218 |
| Measurement adapter: | | |
| Schuko/Schuko* | 1233 | 2145900 |
| CEE 5-pole 16 A | 1235 | 2145921 |
| CEE 5-pole 32 A | 1236 | 2145939 |

## LH41A
### Digital current clamp (AC/DC)

#### Functions
• Current measurement from 1 mA AC and DC

#### Product information
• Manual range selection
• Jaw opening 19 mm
• Automatic zero-point (DC measurement range)
• Integrated 5 s measurement memory (data hold)
• Auto Power Off

#### Product highlights
• Minimum resolution: 1 mA
• Shielded against external interference

| CAT III 300 V | 40 A AC/DC | Auflösung 1 mA AC/DC | Data Hold | ⚡ |
|---|---|---|---|---|

### Included:

1 x LH41A
1 x battery 9 V, IEC 6LR61
1 x user manual

### Technical specifications

| | |
|---|---|
| Display | LCD, 4 digit, 4000 digits |
| Ranges | |
| Current AC/DC | 0.001…40 A |
| Basic accuracy | ±(1.3 % rdg. + 5 digits) |
| Frequency range | 40...400 Hz |
| Pollution degree | 2 |
| Measurement category | CAT lll / 300 V |
| Safety cert.: | DIN VDE 0411/EN 61010/ IEC 61010 |
| Jaw opening | approx. 19 mm |
| Power supply | 1 x battery 9 V, IEC 6LR61 |
| Dimensions | 184 x 71 x 31 mm |
| Weight | approx. 235 g |

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| LH41A | LH41A | **3030898** |

## CT235A
### Current clamp adapter (AC/DC)

#### Functions
• Clamp adapter for extending the AC and DC ranges of multimeters up to 1000 A AC/DC

#### Product information
• Can be used with all common multimeters; also compatible with TRUE RMS multimeters and analogue recorders
• Output Signal: 1 mV corresponds to 1 A test current
• Jaw opening 32 mm
• Fixed test leads
• Zero adjustment

| CAT III 300 V | 1000 A AC/DC |
|---|---|

### Included:

1 x CT235A
1 x battery 9 V, IEC 6F22
1 x user manual

### Technical specifications

| | |
|---|---|
| Ranges | |
| Current AC/DC | 200 A, 1000 A |
| Basic accuracy | ± (1 % + 0.5 A) |
| Output voltage | 1mV/A |
| AC frequency range: | 50 Hz ... 10 kHz |
| Pollution degree | 2 |
| Measurement category | CAT III/300 V |
| Safety cert.: | DIN VDE 0411/EN 61010/ IEC 61010 |
| Jaw opening | approx. 32 mm |
| Length of connection cable | approx. 1.5 m |
| Power supply | 1 x battery 9 V, IEC 6F22 |
| Dimensions | approx. 195 x 70 x 30 mm |
| Weight | approx. 300 g |

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| CT235A | CT235A | **3026809** |

## CT237B
### Current clamp adapter (AC/DC)

#### Functions
• Clamp adapter for extending the AC and DC ranges of multimeters up to 200 A AC/DC

#### Product information
• Can be used with all common multimeters; also compatible with TRUE RMS multimeters and analogue recorders
• Output Signal: 10 mV corresponds to 1 A test current
• Jaw opening 20 mm
• Fixed test leads
• Zero adjustment

| CAT III 300 V | 200 A AC/DC |
|---|---|

### Included:

1 x CT237B
1 x battery 9 V, IEC 6F22
1 x user manual

### Technical specifications

| | |
|---|---|
| Ranges | |
| Current AC/DC | 20 A, 200 A |
| Basic accuracy | ± (1.2 % + 0.03 A) |
| Output voltage | 10 mV/A (20 A measurement range) 1 mV/A (200 A measurement range) |
| AC frequency range | 50 Hz ... 1 kHz |
| Pollution degree | 2 |
| Measurement category | CAT III/300 V |
| Safety cert.: | DIN VDE 0411/EN 61010/ IEC 61010 |
| Jaw opening | approx. 20 mm |
| Power supply | 1 x battery 9 V, IEC 6F22 |
| Length of connection cable | approx. 1.5 m |
| Dimensions | approx. 185 x 70 x 30 mm |
| Weight | approx. 280 g |

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| CT237B | CT237B | **3511514** |

# Measurement and test equipment in accordance with (inter)national standards

Measurement and test equipment in accordance with DIN/VDE and EN 61557 are used to check electrical safety in order to establish safety for people and objects. Our measurement and test equipment is divided into three groups in accordance with the tests that are to be performed:

- Testing electric machines (stationary) in accordance with DIN VDE 0100/0105 and EN 61557

- Testing electric equipment (portable) in accordance with DIN VDE 0701-0702 and EN 61557

- Testing electric machines in accordance with DIN VDE 0113 and EN 61557

This equipment was developed in accordance with the user's requirements and standards in order to carry out tests in a fast, simple, and safe manner.

Most of our measurement and test equipment also provide an integrated measurement memory for creating a measurement report to make logging along with our software packages much more effective.

See our full line of UK specific single and multifunction testers at beha-amprobe.com

## Symbols used in this chapter

| Symbol | Description | Symbol | Description |
|---|---|---|---|
| Low | Low ohm measurement | I∆ | Leakage test |
| R_S | Measurement of loop resistance | I_B | Measurement of touch current |
| R_i | Measurement of internal resistance | Optional Software | Software optionally available |
| RCD / FI | Trip test for residual current circuit breakers (RCD/FI) | Measurement Memory | Internal measurement memory |
| R_E | Earth Ground Testing | HS-high-voltage testing | High-voltage testing |
| I RCD-Test | RCD-FI test with increasing test current | no battery | No battery needed |
| ~ | Adjustable curve form of test current (RCD/FI) | LCD | Display with LCD |
| Timer | Adjustable test time | socket test | Integrated socket test with contact electrode |
| PC | PC interface | | Touch screen |
| SD | Uses SD card memory storage | AUTO TEST | Automatic test sequence |
| TYP B RCD-Test | Testing of AC/DC-sensitive RCD/FI | BARCODE | Connection for barcode scanner |
| PRCD | Testing of portable residual current circuit breakers (PRCD) | EXTERNAL current clamp | Connection of an external current clamp |

# KMP7010

## Ground Resistance Tester according to BS7671 IEE 17th Edition regulations

### Functions
- Measures Earth ground resistance
- Measure resistance of the grounding systems to verify that the system has low enough resistance to provide protection for people, equipment and structures

### Product information
- Measures Earth ground resistance
  - 3 point (fall of potential) or 2 point tests
- Voltage measurement prevents false measurements
- Built-in memory to store 20 measurements
- Safety CAT III 600V

### Product highlights
- Designed to allow testing to BS7671 IEE 17th Edition regulations, BS EN 61010-1 BS EN 61557-1, BS EN 61557-5, BS EN 61326-1 (EMC)
- Test leads, auxiliary electrodes are included for a complete instrument

### Technical specifications
(At 23°C ± 5°C. 45% to 75% RH)

| | | |
|---|---|---|
| Earth Resistance Measurement | 0.00Ω ~ 40.00Ω | ± (2% rdg + 20 LSD) |
| | 0.0Ω ~ 40.00Ω | ± (2% rdg + 3 LSD) |
| | 0Ω ~ 40.00Ω | ± (2% rdg + 3 LSD) |
| Voltage Measurement | 0Vac ~ 400Vac | ± (1% rdg + 6 LSD) @ 50/ 60 Hz |
| Operating Temperature | +5°C to +40°C. ≤80% RH, no condensation | |
| Storage Temperature | -20°C to +60°C. ≤90% RH, no condensation (without batteries) | |
| Power Supply | 1.5V Alkaline Battery (AA Battery) x 6 pcs | |
| Dimensions (L x W x H) | 160 x 101 x 71 mm (6.3 x 3.98 x 2.79 in) | |
| Product Weight | Approx. 500g (1.1 lb) with batteries installed | |
| Regulation Compliance | Designed to allow testing to BS7671 IEE 17th Edition regulations BS EN 61010-1 CAT III 400V BS EN 61557-1. BS EN 61557-5 BS EN 61326-1 (EMC) | |

### Included:

1 Pc. Test lead set for 3 point test
1 Pc. Auxiliary ground rods
1 Pc. Test lead set for 2 point test
1 Pc. Batteries (6 x AA)
1 Pc. User's manual
1 Pc. Strap and carrying case

### Accessories:

| Description | Model | Article no |
|---|---|---|
| Single function tester kit carry bag | KP1700 | 4160759 |

# KMP7021

## Digital RCD Tester according to BS7671 IEE 17th Edition regulations

### Functions
- Designed to check for correct operation of RCD devices

### Product information
- Three levels of trip currents (x1/2, x1, x5) for complete range of testing applications: Fast Trip Function and Ramp Test
- Phase switch selection 0° and 180° for positive and negative semi-cycle testing
- Large display
- Safety CAT III 300 V

### Product highlights
- 3-LED proper connection indicator Displays mains voltage before test
- Designed to allow testing to BS7671 IEE 17th Edition regulations, BS EN 61010-1 CAT III 300V, BS EN 61557-1, BS EN 61557-3, BS EN 61326-1 (EMC)

### Technical specifications
Specifications (At 23°C ± 5°C. 45% to 75% RH)

| | | |
|---|---|---|
| Operating Voltage | 230Vac, 50 Hz | +10% to -15% |
| Trip current @ X½ | 10/20/30/100/300/500mA (trip time 0 to 2000ms) | Trip current tolerance: -10% to +10% Trip time: ± (2% rdg + 2 LSD) |
| Trip current @ X1 | 10/20/30/100/300mA (trip time 0 to 10000ms) 500mA (trip time 0 to 300ms) | Trip current tolerance: 0% to +10% Trip time: ± (2% rdg + 2 LSD) |
| Trip current @ X5 | 10/20/30mA (trip time 0 to 40ms) | Trip current tolerance: 0% to +10% Trip time: ± (2% rdg + 2 LSD) |
| Fast Trip Current (KMP7021) | 250mA (trip time 0 to 40ms) | Trip current tolerance: 0% to +10% Trip time: ± (2% rdg + 2 LSD) |
| Ramp Test (KMP7021) | 10/20/30/100/300/500mA -10% to +10% Ramp increase by 10% Default nominal residual currents from 20% to 110% Maximum measuring time 300ms x 10 times | |
| Operating Temperature | +0°C to +40°C. ≤80% RH, no condensation | |
| Storage Temperature | -20°C to +60°C. ≤90% RH, no condensation | |
| Power Supply | AC mains 230V + 10% - 15%, 50 Hz | |
| Dimensions (L x W x H) | 160 x 101 x 71 mm (6.3 x 3.98 x 2.79 in) | |
| Product Weight | Approx. 450g (0.99 lb) | |
| Regulation Compliance | Designed to allow testing to BS7671 IEE 17th Edition regulations BS EN 61010-1 CAT III 300V BS EN 61557-1. BS EN 61557-6 BS EN 61326-1 (EMC) | |

### Included:

1 Pc. 3-Wires mains test cord
1 Pc. Test lead set with leads/probes/alligator clips
1 Pc. User manual
1 Pc. Strap and carrying case

### Accessories:

| Description | Model | Article no |
|---|---|---|
| Standard test lead set for KMP7030 | SL7030 | 4160744 |
| Single function tester kit carry bag | KP1700 | 4160759 |

\* Products are only available in UK

## KMP7030

### Loop Impedance Tester according to BS7671 IEE 17th Edition regulations

#### Functions
- Non Trip Loop test
- Loop testing is a quick, convenient, and highly specific method of evaluating an electrical circuit for its ability to engage protective devices (circuit breakers, fuses, RCDs)
- A ground loop determines the effectiveness of protective devices, therefore it is crucial to be able to measure it, in order to detect and correct problems

#### Product information
- Fast testing
- Instant reading
- Loop measurement ranges: 20, 200 & 2000Ω
- PSC measurement up to 20kA
- Backlight display
- Low Battery Indication
- CAT III 300V

#### Product highlights
- Displays mains voltage before test
- Instant correct wiring status check
- Designed to allow testing to BS7671 IEE 17th Edition regulations, BS EN 61010-1 CAT III 300V,   BS EN 61557-1, BS EN 61557-3, BS EN 61326-1 (EMC)

### Technical specifications
Specifications (At 23°C ± 5°C. 45% to 75% RH)

| | | |
|---|---|---|
| Operating Voltage | 230Vac, 45Hz ~ 65 Hz | +10% to – 15% |
| Loop Impedance 20/200/2000Ω | 0 ~ 19.99 / 199.9 / 1999 Ω | ±(3% rdg + 4 LSD) |
| AC Test Current | 25A Nominal at 20Ω | |
| AC Test Period | 10ms at 20Ω | |
| No Trip Loop Impedance 20 / 200Ω | 0 ~ 19.99 / 199.9 Ω (L – N im-pedance > 20 Ω) | ± (3% rdg + 6 LSD) |
| PSC Measurement 200A / 2000A / 20kA | 0.0 ~ 1999.9 / 1999 / 19.9kA | PSC accuracy derived from measured loop impedance spec-ification and measured voltage specification |
| Voltage Measurement | 100Vac ~ 300Vac | ± (2% rdg + 4 LSD) @ 50/60Hz |
| Operating Temperature | 0°C to +40°C. ≤85% RH, no condensation | |
| Storage Temperature | -20°C to +60°C. ≤90% RH, no condensation (without batteries) | |
| Power Supply | 1.5V Alkaline Battery (AA Battery) x 8 pcs | |
| Dimensions (L x W x H) | 189 x 168 x 85 mm (7.43 x 6.65 x 3.35 in) | |
| Product Weight | Approx. 450g (0.99 lb) | |
| Regulation Compliance | Designed to allow testing to BS7671 IEE 17th Edition regulations BS EN 61010-1 CAT III 300V BS EN 61557-1. BS EN 61557-3 BS EN 61326-1 (EMC) | |

### Included:

| | |
|---|---|
| 1 Pc. Mains test cord | 1 Pc. Alligator clip set |
| 1 Pc. Test lead set with IEC connector | 1 Pc. batteries (8 x AA) |
| | 1 Pc. user manual |
| 1 Pc. Test probe set, | 1 Pc. strap and carrying case |

### Accessories:

| Description | Model | Article no |
|---|---|---|
| Standard test lead set for KMP7030 | SL7030 | 4160744 |
| Single function tester kit carry bag | KP1700 | 4160759 |

## KMP7036

### Insulation-Continuity Tester according BS7671 IEE 17th Edition regulations

#### Functions
- Tests insulation of wires, cables, transformers and electrical motors

#### Product information
- Selectable test voltages 250V, 500V and 1000V
- Test button hold to perform the Dielectric Absorption Ratio Test
- Continuity test at 200mA short-circuit
- Built in voltmeter and red light warning for live circuit indication
- Automatic discharge of test object after completion of measurement
- Test lead resistance zero facility
- Safety CAT III 600V

#### Product highlights
- Designed to diagnose the breakdown of the insulation in various parts of the electrical system such as wires, transformers and motors
- Three testing voltages covering wide range of commercial and residential applications
- The quality of insulation is critical to assure proper, uninterrupted and safe functioning of electrical circuits
- Designed to allow testing to BS7671 IEE 17th Edition regulations BS EN 61010-1 CAT III 600V,      BS EN 61557-1 / -2 / -4 / -10, BS EN 61326-1 (EMC)

### Technical specifications
Specifications (At 23°C ± 5°C. 45% to 75% RH)

| | | |
|---|---|---|
| Insulation Resistance @ 250V/500/1000V (Test Current ≥1mA) | 0.00MΩ ~ 4.99MΩ | ± (3% rdg + 5 LSD) for 0.00MΩ ~ 99.9MΩ |
| | 5.0MΩ ~ 49.9MΩ | |
| | 50MΩ ~ 999Ω | ± (5% rdg + 5 LSD) for 100MΩ ~ 1.99GΩ |
| | 1.00GΩ ~ 1.99GΩ (Buzzer threshold: 4MΩ) | |
| Continuity @ IN ≥200mA, Uo=5Vdc (Nominal) | 0.00MΩ ~ 9.99MΩ | ± (2% rdg + 3 LSD) @ 50/ 60 Hz |
| | 10.0MΩ ~ 99.9MΩ | |
| Operating Temperature | 0°C to +35°C. ≤75% RH, no condensation | |
| Storage Temperature | -20°C to +60°C. ≤80% RH, no condensation (without batteries) | |
| Power Supply | 1.5V Alkaline Battery (AA Battery) x 6 pcs | |
| Dimensions (L x W x H) | 160 x 101 x 71 mm (6.3 x 3.98 x 2.79 in) | |
| Product Weight | Approx. 450g (0.99 lb) with batteries installed | |
| Regulation Compliance | Designed to allow testing to BS7671 IEE 17th Edition regulations BS EN 61010-1 CAT III 600V BS EN 61557-1 / -2 / -4 / -10 BS EN 61326-1 (EMC) | |

### Included:

| | |
|---|---|
| 2 Pc. Test leads | 1 Pc. batteries (6 x AA) |
| 2 Pc. Test probes | 1 Pc. user's manual |
| 2 Pc. alligator clips | 1 Pc. carrying case and strap |

### Accessories:

| Description | Model | Article no |
|---|---|---|
| Single function tester kit carry bag | KP1700 | 4160759 |

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| KPM7010 | KPM7010* | **3730256** |
| KPM7021 | KPM7021* | **3730301** |
| KPM7030 | KPM7030* | **3842833** |
| KPM7036 | KPM7036* | **3730274** |

* Products are only available in UK
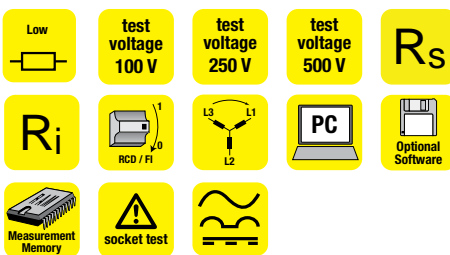
## TELARIS® ProInstall-100

### Combined installation measurement equipment

#### Functions
- Measurement of loop resistance
- Measurement of internal network resistance
- Measurement of short circuit current
- Low resistance and continuity measurement
- Insulation test
- RCD/FI measurement (contact voltage, trip time, trip current - increasing current)
- Voltage and frequency measurement

#### Product information
- Memory for approx. 400 readings with 3 levels for assignment of distribution list numbers and circuit numbers
- IR/USB interface for transferring the stored measurement values to a PC
- Software for logging is optionally available for printing out a test report
- Integrated socket test with contact electrode for identification of incorrectly connected sockets or missing protective earth
- Easy-to-read, large LC display with back lighting and an especially large viewing angle
- Auto Power Off

#### Product highlights
- Compact, robust construction enables work to take place even in harsh environments (weighs only 1500g)
- A simple to use and intuitive user interface enables you to work immediately and efficiently
- Probe with test button Included
- Measurement of loop resistance and short circuit current without tripping RCD/FI
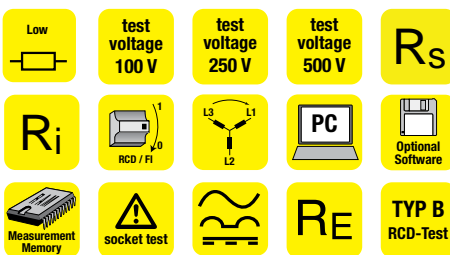
## TELARIS® ProInstall-200

### Combined installation measurement equipment

as the ProInstall-100, also with:
- Testing of AC/DC-sensitive RCD/FI (type B)
- Memory for approx. 1000 readings
- Earth measurement (optionally with probes)
- RCD/FI analysis for testing all RCD/FI parameters

### Included:

1 x ProInstall-100 or 200
3 x test leads
3 x crocodile clips
3 x probes
1 x probe with test button
1 x protective holster (integrated)
1 x hanging strap
1 x carrying case
6 x battery 1.5 V, IEC LR6
1 x quick start guide
1 x user manual on CD-ROM
1 x Schuko input line cord

### Recommended Accessories

| Software | | |
|---|---|---|
| Earth testing set | TL-EARTH | 4388671 |
| USB download cable | TL-USB | 4372676 |
| es control 0100 | 1312 | 2390062 |
| Beha-Amprobe | DL-SW-KIT | 4597359 |
| downloader software with cable | | |

### Technical specifications

| | |
|---|---|
| Display | LCD, 4 digit, 9999 digits |
| Measurement range/resolution | |
| Voltage | 50...500 V/1V AC |
| Frequency | 45.0...65.0 Hz/0.1 Hz |
| Loop resistance | 0.15…20/200/200 Ω 0.01/0.1/1 Ω |
| Short circuit current | 0...10 kA |
| Input voltage range | 100...500 V 50/60 Hz |
| Test current | approx. 7 A (at 230 V) |
| Internal network resistance | 0.15…20/200/200 Ω 0.01/0.1/1 Ω |
| Short circuit current | 0...10 kA |
| Input voltage range | 100...500 V 50/60 Hz |
| Test current | approx. 7 A (at 230 V) approx. 5 mA (at 230 V) |
| Insulation resistance | 0...1000 MΩ 0.01/ 0.1/1 MΩ |
| Test voltage | 100, 250, 500, 1000 V DC |
| Low ohm measurement | 0.05...20/200/2000 Ω 0.01/0.1/1 Ω |
| Test current | > 200 mA DC |
| RCD/FI rated residual currents- | 10, 30, 100, 300, 500, 1000 mA |
| Factors: | x1/2,  x1, x5 and AUTO |
| RCD/FI types: | Standard AC, selective, pulsating, B-type (only ProInstall-200) |
| Measurement functions | contact voltage, trip time, trip current test with rising test current |
| Contact voltage | 0...50 V |
| Trip time | 1...510 ms/1 ms |
| Trip current | 30...110% of $I_{DN}$ (in 10% increments) |
| Phase rotation test | |
| Input voltage range | 100...500 V 50/60 Hz |
| Earth resistance | 0.05...200 Ω / 2000 Ω |
| Probe resistance | 0.1...52 kΩ |
| Max. measurement current | approx. 3.5 mA |
| Measurement voltage | approx. 25 V |
| Frequency | 128 Hz/140 Hz |
| Overall | |
| Measurement memory values | approx. 400 to 1000 measurement |
| Interface | IR/USB |
| Safety cert.: | DIN VDE 0411/EN61010/ IEC61010 DIN VDE 0413/ EN61557/IEC61557 |
| Measurement category | CAT III/500 V, CAT IV/300 V |
| Pollution degree | 2 |
| Protection category | IP 40 |
| Power supply | 6 x battery 1.5 V, IEC LR6 |
| Dimensions | 110 × 260 × 130 mm |
| Weight | approx. 1500g (incl. batteries |

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| ProInstall-100-D | ProInstall-100-D | 4373971 |
| ProInstall-100-DK | ProInstall-100-DK | 4399247 |
| ProInstall-200-D | ProInstall-200-D | 4373980 |
| ProInstall-100-CH | ProInstall-100-CH | 4374484 |
| ProInstall-200-CH | ProInstall-200-CH | 4374491 |
| ProInstall-100-EUR | ProInstall-100-EUR | 4374504 |
| ProInstall-200-EUR | ProInstall-200-EUR | 4374519 |
| ProInstall-75-UK* | ProInstall-75-UK | 4826466 |

Please check which model is relevant for your country:

D version for Germany, Austria only

DK version for Denmark only

CH version for Switzerland only

UK version for UK/Ireland only

EUR version for other EU countries except for UK, Germany, Austria, Switzerland and Denmark.

Additional accessories can be found at the end of the chapter

* ProInstall-75-UK is not shown in this catalog, for information please visit our website **beha-amprobe.com**. Check for availability for your country with your local distributor.

## DGC-1000 A
### Clamp meter for earth loop measurement

#### Functions
- Earth loop measurement range: 0.025–1500 Ω
- Stray current measurement range 0.2...1000 mA
- Current measurement range: 0.2–30 A

#### Product information
- Measurement memory for 116 readings
- Recording interval 1...255 s
- Limit adjustment with alarm function
- Data hold function
- Jaw opening 23 mm
- Calibration loop included

#### Product highlights
- Earth measurement in closed earthing systems without setting of earth stakes
- TRMS current measurement

RE   A   mA

### Included:

1 x DGC-1000A
1 x battery 9 V, IEC LR6
1 x user manual
1 x calibration loop
1 x case

### Technical specifications

| | |
|---|---|
| Display | LCD, 4 digit, 9999 digits |
| Display ranges/Resolution | |
| Earth resistance | 0.025 ...1500 Ω |
| Stray current | 0.2…1.000/10.00/100.0/1000mA 0.001/0.01/0.1/1 mA |
| Current | 0.2 A...4.000 A/30 A 0.001/0.01 A |
| Measurement memory for 116 readings | |
| Recording interval | 1 ... 255 s |
| Overall | |
| Crest factor | < 3 |
| Pollution degree | 2 |
| Measurement category | CAT III/300 V, CAT II/600 V |
| Safety cert.: | DIN VDE 0411/IEC 61010 |
| Jaw opening | approx. 23 mm |
| Power supply | 1 x battery 9 V, IEC 6LR61 |
| Dimensions | 257 x 100 x 47 mm |
| Weight | approx. 640 g |

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| DGC-1000 A | DGC-1000 A | **2731217** |

## Earth loop measurement with a clamp meter

In the case of earthing systems with earths connected to each other that create a closed loop (e.g. the lightning protection system on a house), the earth resistance of every earth loop can be quickly and safely determined by means of a clamp meter for earth loop measurement (DGC-1000A).

The DGC-1000A clamp meter is a clamp with two current clamps in practical terms, which are installed within a housing. This clamp combines the two current clamps needed to perform the stakeless ground loop test in one compact and easy to use instrument.

A measurement current is induced in the earth loop with a current clamp, whilst the current running through the earth is measured with a second clamp in order to derive the resistance of the earth loop for the relevant earth.

**53**

## Schuko-Test FI/RCD
### Socket tester with RCD/FI tripping

#### Functions
- Fast and effective testing of 30 mA RCD/FI
- Testing for correct/incorrect wiring
- Connection test for individual conductors (L-N-PE)
- PE fault detection

#### Product information
- True PE fault detection via LCD and contact electrode
- Detection of wiring faults with classic protective earthing

#### Product highlights
- Clear and reliable indication of PE faults via LCD screen



👁 **Utility model**
29822508.5

### Included:

1 x Schuko test FI/RCD
1 x user manual

### Technical specifications

| | |
|---|---|
| Nominal voltage | 230 V AC ±10% |
| Frequency range | 50...60 Hz |
| RCD/FI test current | 30 mA |
| RCD/FI test time | < 300 ms |
| Contact voltage with break-off at monitoring | 20...25 V AC/DC |
| PE fault detection Response threshold | 25 V AC |
| Safety cert.: | DIN VDE 0411/EN 61010/ IEC 61010 |
| Measurement category | CAT II/300 V |
| Pollution degree | 2 |
| Power supply | from mains voltage |
| Dimensions | 70 x 55 x 86 mm |
| Weight | approx. 75 g |

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| Schuko test FI/RCD | 9080* | **3530534** |

\* Packing unit of 10 items (also available individually)
\* Tester is available for countries with a Schuko plug only

## Socket test

FI/RCD testers contain a display for testing the pin assignment specifically intended for testing an earthed socket.

With all RCD/FI testers, the contact voltage is monitored and any PE faults are clearly displayed.

## 93530
### Megohmmeter

#### Functions
• Insulation test
• Voltage measurement
• Resistance and continuity measurements
  with beeper

#### Product information
• Built-in measurement memory for 9 readings
• Lock function enables continuous operation
• Zero adjustment with resistance measurement
• Backlit display
• Additional bar graph display

| test voltage 100 V | test voltage 250 V | test voltage 500 V | Prüf-spannung 1000 V | 600 V AC/DC | 9999 Ω |
|---|---|---|---|---|---|

| Measurement Memory | | Bargraph |
|---|---|---|

### Technical specifications

| | |
|---|---|
| Display | LCD, 4 digit; 9999 digits |
| Display range/resolution | |
| Insulation resistance | 0...999.9 kΩ/0.1kΩ, |
| | 9.999 MΩ/0.001 MΩ, |
| | 99.99 MΩ/0.01 MΩ, |
| | 999.9 MΩ/0.1 MΩ, |
| | 9.999 GΩ/0.001 GΩ (at |
| | >250V) |
| Test voltage | 100, 250, 500, 1000 V |
| Test current | >1 mA |
| Voltage AC/DC | 0...600 V / 1 V |
| Continuity measurement | 0...999.9 Ω/0.1 Ω |
| | (sound at <40 Ω) |
| Resistance measurement | 0...9999 Ω/1 Ω |
| Safety cert.: | DIN VDE 0411/EN 61010/ |
| | IEC 61010, |
| | DIN VDE 0413, T. 2/ |
| | EN 61557-2/IEC 61557-2 |
| Measurement category | CAT III/600 V |
| Pollution degree | 2 |
| Power supply | 6 x battery 1.5 V, IEC LR6 |
| Dimensions | 200 x 95 x 48 mm |
| Weight | approx. 500 g |

### Included:

1 x insulation tester 93530
2 x test leads
1 x crocodile clip
1 x probe
1 x carrying case
6 x battery 1.5 V, IEC LR6
1 x user manual

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| 93530 | 93530-D | **3454416** |

## Things to know about insulation measurement:

One of the most important measurements of an electrical system is insulation measurement. It is the only measurement for fire and touch protection, amongst others. If electrical cables are energised then residual currents flow, which generate heat or electrolytic material migrations. If a limited residual current flows between two cables due to an insulation fault, then the current can lead to warming and in extreme cases to fire.

These residual currents are generally so small that preset protection systems such as RCD/FI protection systems or fuses do not detect them. The DIN VDE allows for a residual current with a heat output of 1mA/kW. The values that are measured in practice on a new unit are, however, considerably lower.

Insulation measurement is a measurement that does not require a mains connection and can therefore take place early, before, for example, a faulty wire is plastered in and where fault detection or elimination can be very demanding. If the readings are logged, then if a fault appears later on, it can be shown whether it was caused by other tradespeople involved with construction.

Insulation resistance is a complex form of resistance, comprising several different individual resistances and capacitances.
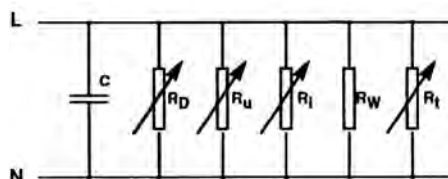


Replacement circuit diagram of the insulation resistor from L to N

The inflow from capacitor C is switched off when the measurement is carried out with direct current or direct voltage. In order to obtain a meaningful, comparable reading, the test voltages and the test currents are established so that the inflow of the current or voltage-dependent resistances ($R_u$, $R_i$) remain identical.

The resistance ($R_D$) of the dielectric is affected by moisture and the time-dependent resistance ($R_t$) is affected by the aging of the materials used ($R_w$), which can lead to different results for readings at different times. Measurement of the insulation resistance must be carried out between every active conductor and earth upon initial testing.

**AUTO TEST**

## GT-400

**Portable equipment tester in accordance with UK code of practice & DIN VDE 0701-0702**

### Functions
- Measurement of protective earth resistance
- Insulation resistance measurement
- Measurement of protective earth and touch current (alternative stray current procedure)

### Product information
- Automatic test sequence for equipment in protection class I, protection class II/III
- Automatic testing of extension cables, socket strips, and IEC cables
- Clear display via symbols in case of non-adherence to threshold values
- Preset threshold values in accordance with UK Code of Practice DIN VDE 0701-0702

### Product highlights
- Battery-operated - ideal for mobile use
- Suitable for trained people due to the Pass/Fail descriptive function
- Simple to use due to a rotary switch and start button

### Technical specifications

| | |
|---|---|
| Display | Graphic LCD |
| Measurement range Resolution | |
| Protective earth resistance | 0.10…2.00 Ω |
| Test current / voltage | > ± 200 mA DC / > 4 V |
| Test current/voltage | > 5 A / approx. 6 V AC |
| Insulation resistance | 0.1…20 MΩ |
| Test current / voltage | > 500 V DC / > 1 mA |
| Equivalent stray current | 0.1...20 mA |
| Test voltage | approx. 32 V AC |
| Overall limit value display | via symbols in LCD |
| | Safety cert.: DIN VDE 0404 DIN VDE 0411/EN 61010/ IEC 61010 DIN VDE 0413/EN 61557/ IEC 61557 |
| Measurement category | CAT II/300 V |
| Pollution degree | 2 |
| Protection class | II |
| Protection category | IP 40 |
| Power supply | 6 x 1.5 V battery, IEC LR6 (AA) |
| Dimensions (W*H*D) | approx. 265 x 110 x 50 mm |
| Weight | approx. 700g |

### Included:

1 x equipment tester GT-400
1 x measurement accessories set with safety test line, Safety crocodile clip and safety probe
6 x battery type AA
1 x IEC power cable 0.5m
1 x carry case
1 x user manual

### Accessories:



Leakage current clamp AC50A



Measurement adapter Schuko/Schuko 1233*

Test report 0701-0702 1279

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| GT-400-D | GT-400-D | 4380998 |
| GT-400-CH | GT-400-CH | 4381001 |
| GT-400-UK | GT-400-UK | 4381012 |

D version for Germany, Austria and all other countries using the Schuko plug

CH version for Switzerland only

UK version for UK only

Check for availability for your country with your local distributor.

### Recommended accessories

| | | |
|---|---|---|
| AC50A AC50A-D 3454543 | | |
| Schuko test adapter | 1233 | 2145900 |
| Test log 0701-0702 | 1279 | 3313435 |

Additional accessories can be found at the end of the chapter

## *Application example for a leakage test under mains voltage:*

Leakage current clamp AC50A and measurement adapter Schuko/Schuko 1233
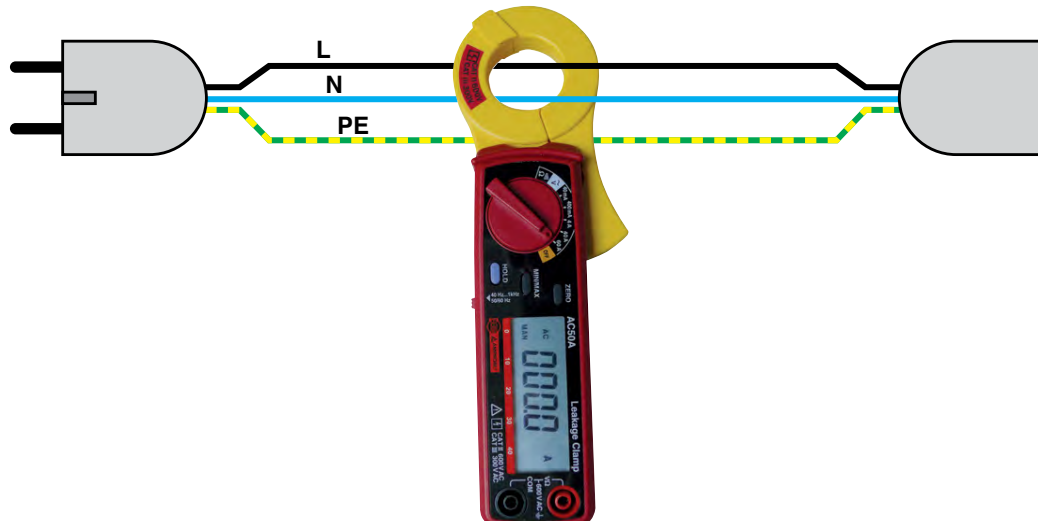


L
N
PE

**PC** | Optional Software | Measurement Memory | **AUTO TEST** | **BARCODE**

EXTERNAL current clamp | PRCD
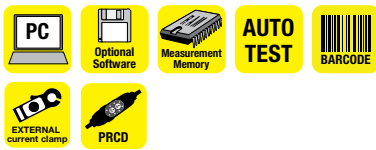
## Included:

1 x GT-600 with accessory case (fixed to device lid, removable)
1 x test lead
1 x probe
1 x crocodile clip
1 x interface cable (USB)
1 x user manual

# GT-600

## Equipment tester in accordance with DIN VDE 0701-0702

### Functions

• Measurement of protective earth resistance
• Insulation resistance measurement
• Measurement of equivalent stray current
• Measurement of protection earth current
• Measurement of touch current
• Performance measurement, load voltage, load current, power factor
• Direct testing of IEC cables without adapter device information

### Product information

• Memory for approx. 3800 readings, real-time clock
• 3 memory levels (client, location, department)
• Integrated interface (USB 2.0) for transferring measurements to PC
• Separate interface (USB 2.0) for connecting a barcode scanner and keyboard
• Graphical LCD for measured values, limit values and parameters
• Wiring diagrams and limit values on device lid
• Simple operation with rotary switch
• Manual test sequence
• Clear display "Test OK/not OK"
• Test lead compensation
• Compact and robust carrying case
• Convenient software with "es control professional" database for logging purposes available (optional)

### Product highlights

• 5-A and 0.2-A test current for protective earth resistance
• Differential current procedure for protective earth current
• Direct measuring procedure for touch current
• Fast safety and function check of IEC cables
• Connection for barcode scanner for reading in sample numbers and test sequences
• Suitable for trained people due to the good/bad descriptive function

## Technical specifications

| | |
|---|---|
| Display | graphical LCD, 128 x 64 pixels |
| Display ranges | |
| Protective earth resistance | 0.01...10.0 Ω |
| Test current/voltage | > 200 mA / approx. 6 V AC |
| Test current/voltage | > 5 A / approx. 6 V AC |
| Insulation resistance | 0.01...50 MΩ |
| Test current / voltage | 500 V DC / > 1 mA (250/500 V only GT-800) |
| Equivalent stray current | 0.25...20 mA |
| Test voltage / current | approx. 45 V AC / approx. 260 mA |
| Protective earth current | 0.25...20 mA (Differential current procedure) |
| Touch current | 0.02...2 mA (Direct measurement procedure) |
| Apparent power | 30 W...4.04 kVA |
| Active power | 30 W...4.04 kW |
| Load voltage | 195...253 V |
| Load current | 0...16 A |
| Power factor | 0...1 |
| Voltage measurement | |
| SELV/PELV | 10.0…150 V AC/DC |
| External current clamp input | 0.0 ... 20.0 mA 0.2 ... 60.0 A, for clamp adapter 1000:1 (only GT-800) |
| Test functions of PRCD (only GT-800) | |
| Protective earth, insulation, function, protective earth current, RCD test: | ½x I_N, 1x I_N, 5x I_N, and trip current (ramp) |
| PRCD types | 2-pole, 3-pole, and S-type |
| Mains fuse | 2 x T16 A |
| Overall Measurement memory | 3800 measurement values, corresponds to approx. 260 meter measurements for PC |
| Interface (USB 2.0) | |
| Interface (USB 2.0) | for barcode scanner and keyboard |
| Limit value display | optical and acoustic |
| Safety cert.: | DIN VDE 0404 parts 1, 2, DIN VDE 0411-1 / EN 61010-1 DIN VDE 0413/EN 61557 parts 2, 4 |
| Measurement category | CAT II/300 V |
| Protection category | IP 40 |
| Power supply | 230 V +10%/-15% 50/60 Hz |
| Power consumption | approx. 45 VA |
| Dimensions | 300 x 250 x 130 mm |
| Weight | approx. 4.5 kg |



Adapter cable ACF-6A

## Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| GT-600* | GT-600 | 4151632 |

**Recommended Accessories**

| | | |
|---|---|---|
| Leakage current clamp adapter CHB1 | 1311 | **2390055** |
| Adapter cable | ACF-6A | **2743889** |
| Barcode scanner BC-1250G | BC-1250G | **4377939** |
| Keyboard KBGE-MT204S | KBGE-MT204S | **3504388** |
| Software es control 0701-0702/0113 (without interface adapter) | 1314 | **2390081** |

Further accessories are at the end of the chapter

* only available for countries which use a Schuko plug

**BEHA·AMPROBE®**
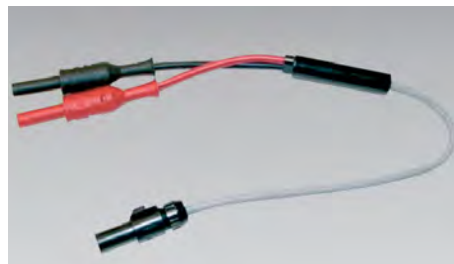
## GT-800
### Automatic equipment tester in accordance with DIN VDE 0701-0702

as the GT-600, also with:
- Automatic test sequence, with input from custom test sequences
- Connection for external current clamp adapter for measurement of protective earth currents, even on 3-phase samples
- Testing of portable residual current circuit breakers (RCDs)
- Test voltage for insulation measurement, switchable 250 / 500 V
- Automatic polarity of mains socket

PC | Optional Software | Measurement Memory | AUTO TEST | BARCODE

EXTERNAL current clamp | PRCD
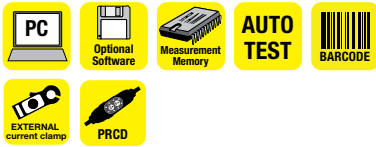
### Included:

1 x GT-800 with accessory case (fixed to device lid, removable)
1 x test lead
1 x probe
1 x crocodile clip
1 x interface cable (USB)
1 x user manual
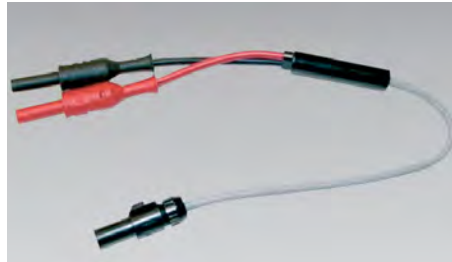
Adapter cable ACF-6A

## Technical specifications

| | |
|---|---|
| Display | graphical LCD, 128 x 64 pixels |
| Display ranges | |
| Protective earth resistance | 0.01...10.0 Ω |
| Test current/voltage | > 200 mA / approx. 6 V AC |
| Test current/voltage | > 5 A / approx. 6 V AC |
| Insulation resistance | 0.01...50 MΩ |
| Test current / voltage | 500 V DC / > 1 mA (250/500 V only GT-800) |
| Equivalent stray current | 0.25...20 mA |
| Test voltage / current | approx. 45 V AC / approx. 260 mA |
| Protective earth current | 0.25...20 mA (Differential current procedure) |
| Touch current | 0.02...2 mA (Direct measurement procedure) |
| Apparent power | 30 W...4.04 kVA |
| Active power | 30 W...4.04 kW |
| Load voltage | 195...253 V |
| Load current | 0...16 A |
| Power factor | 0...1 |
| Voltage measurement | |
| SELV/PELV | 10.0…150 V AC/DC |
| External current clamp input | 0.0 ... 20.0 mA |
| | 0.2 ... 60.0 A, for clamp adapter 1000:1 (only GT-800) |
| Test functions of PRCD (only GT-800) | |
| Protective earth, insulation, function, protective earth current, | |
| RCD test: | ½x I N, 1x I N, 5x I N, and trip current (ramp) |
| PRCD types | 2-pole, 3-pole, and S-type |
| Mains fuse | 2 x T16 A |
| Overall | |
| Measurement memory | 3800 measurement values, corresponds to approx. 260 meter measurements |
| Interface (USB 2.0) | for PC |
| Interface (USB 2.0) | for barcode scanner and keyboard |
| Limit value display | optical and acoustic |
| Safety cert.: | DIN VDE 0404 parts 1, 2, DIN VDE 0411-1 / EN 61010-1 DIN VDE 0413/EN 61557 parts 2, 4 |
| Measurement category | CAT II/300 V |
| Protection category | IP 40 |
| Power supply | 230 V +10%/-15% 50/60 Hz |
| Power consumption | approx. 45 VA |
| Dimensions | 300 x 250 x 130 mm |
| Weight | approx. 4.5 kg |

## Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| GT-800* | GT-800 | 4151644 |
| GT-800-CH** | GT-800-CH | 4460614 |

\* only available for countries which use a Schuko plug

\*\* Only available for Switzerland

### Recommended Accessories

| | | |
|---|---|---|
| Leakage current clamp adapter CHB1 | 1311 | **2390055** |
| Adapter cable | ACF-6A | **2743889** |
| Barcode scanner BC-1250G | BC-1250G | **4377939** |
| Keyboard KBGE-MT204S | KBGE-MT204S | **3504388** |
| Software es control 0701-0702/0113 | 1314 | **2390081** |

(without interface adapter)

Further accessories are at the end of the chapter

**BEHA·AMPROBE®**

## Earth measurement set

perfect for:
• e.g. Telaris ProInstall-200

Included:
1 x carrying case
2 x ground spikes (235 x ⌀ 10 mm)
1 x test lead, red, 25 m
1 x test lead, blue, 25 m
1 x test lead, green, 5 m
3 x test lead winders
3 x crocodile clips

**Ordering Information:**

| Description | Model | Article no. |
|---|---|---|
| Earth measurement set | TL-EARTH | **4388671** |
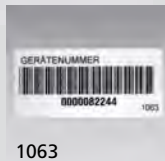
## Barcode Scanner
• For reading in barcoded sample numbers*
Model 1325 for:
• For MACHINEmaster (Model 9050)

Model BC-GT07XX for:
• for equipment tester GT-0751

Model BC-1250G for:
• for machine tester MT 204-S (Model 9085)
• for equipment tester GT600 and GT800

Barcode scanner
BC-1250G

1063

## Barcode sticker
• Abrasion-resistant numbered barcodes for
  identifying samples
• Consecutive numbering
• Barcoded (code 39) and clear text
• Size 54 x 15 mm
• For 0701/0702 test equipment
• For MACHINEmaster (Model 9050)

**Ordering Information:**

| Description | Model | Article no. |
|---|---|---|
| Barcode scanner | 1325 | **3223132** |
| Barcode scanner BC-GT07XX | BC-GT07XX | **3504434** |
| Barcode scanner BC-1250G | BC-1250G | **4377939** |
| Barcode sticker (250 pcs. on roll) | 1063 | **2389952** |

* for reading in code 39, code 128, code 2/5, EAN, UPC barcodes

## KBGE-MT204S
### USB keyboard
• For convenient entry of client/sample
  information on site
• For equipment tester GT600 and GT800

**Ordering Information:**

| Description | Model | Article no. |
|---|---|---|
| Keyboard | KBGE-MT204S | **3504388** |

## AC current clamp adapter
• Current measurement from approx. 1 mA to
  1000 A
• Jaw opening 48 mm
• Current output, output signal:
  1 mA corresponds to 1 A test current
• Fixed test lead
• No batteries required

**Ordering Information:**

| Description | Model | Article no. |
|---|---|---|
| AC current clamp adapter | 1226 | **3313401** |

**1000 A AC** | ⦿ **Output Analog**

**1233**

## Measurement adapter
### for stray current/
### leakage current measurement
- Measurement adapter for measuring differential current, protective earth current, load current, and neutral conductor current in portable consumers via a leakage current clamp
- All conductors are individually brought out

**Ordering Information:**

| Description | Model | Article no. |
|---|---|---|
| Measurement adapter: | | |
| Schuko/Schuko* | 1233 | 2145900 |
| CEE 5-pole 16 A | 1235 | 2145921 |
| CEE 5-pole 32 A | 1236 | 2145939 |

* only for countries with Schuko plug
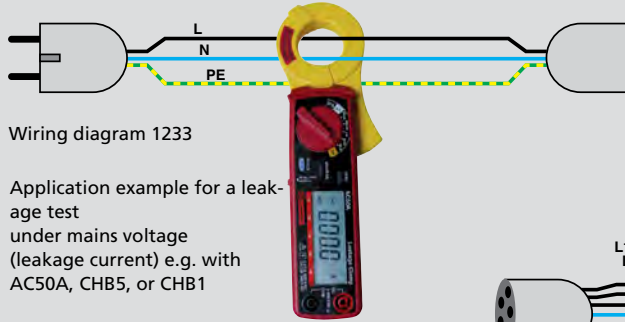
**1235**

**1236**

Wiring diagram 1233

Application example for a leakage test
under mains voltage
(leakage current) e.g. with
AC50A, CHB5, or CHB1

Wiring diagram 1235/1236
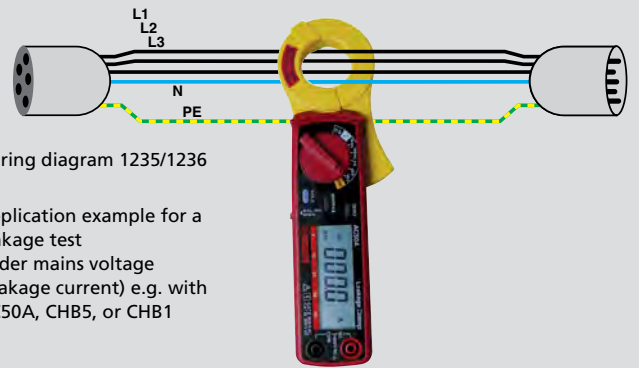
Application example for a
leakage test
under mains voltage
(leakage current) e.g. with
AC50A, CHB5, or CHB1

## VLP 5
### Three-phase current extension
### test adapter
- For testing portable equipment and extension cables with the plugs and couplings:
  · 16 A CEE 3-pole
  · 16 A CEE 5-pole
  · 32 A CEE 5-pole
  · IEC power cable and Schuko
- Measurement of protective earth resistance, insulation resistance, function of active conductors (L-N), and rotary field
- Suitable for all test equipment with an earthed socket and test probe

**Ordering Information:**

| Description | Model | Article no. |
|---|---|---|
| VLP5 | 1343 | 3313514 |

60

**BEHA·AMPROBE**®
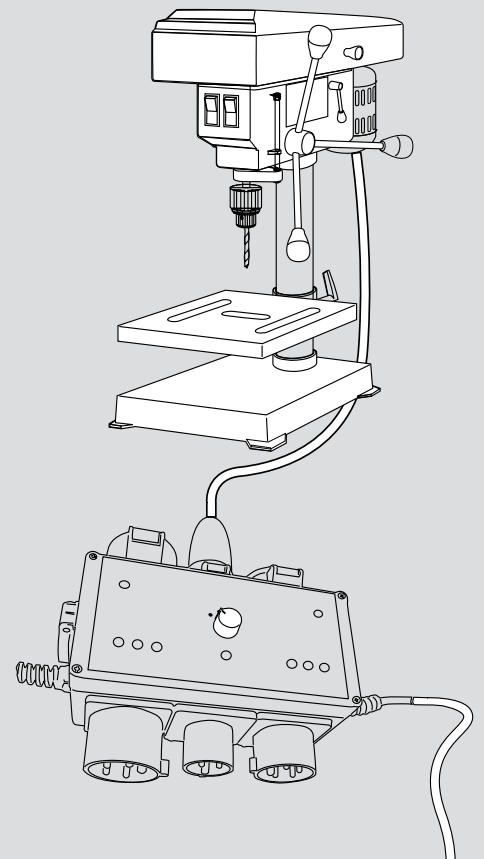
## DAA-16, DAA-32

### Three-phase adapter 16 A or 32 A

- Three-phase current plug CEE 16 A or CEE 32 A
- Connections via five separate 4 mm sockets for L1, L2, L3, N and PE
- For quick connection of test devices to three-phase sockets when testing according to DIN VDE 0100

DAA-16, DAA-32

**Ordering Information:**

| Description | Model | Article no. |
|---|---|---|
| DAA-16* | DAA-16 | **2743806** |
| DAA-32* | DAA-32 | **2743850** |
| * with Schuko plug | | |

## Three-phase adapter 1142

- For testing portable equipment with the plugs: 16 A CEE 3-pole, 16 A CEE 5-pole, and 32 A CEE 5-pole
- Measurement of protective earth resistance and insulation resistance
- Suitable for all test equipment with an earthed socket and test probe

**Ordering Information:**

| Description | Model | Article no. |
|---|---|---|
| Three-phase adapter* | 1142 | **3313394** |
| * with Schuko plug | | |

## Three-phase adapter 1240/1241

- For testing portal devices with three-phase current plug 16 A CEE 5-pole (1240) or 32 A CEE 5-pole (1241)
- Measurement of protective earth resistance and insulation resistance
- Suitable for all test equipment with an earthed socket

1240/1241

**Ordering Information:**

| Description | Model | Article no. |
|---|---|---|
| Three-phase adapter 16A* | 1240 | **3313412** |
| Three-phase adapter 32A* | 1241 | **3313420** |
| * with Schuko plug | | |

## CHB1

### Leakage current clamp adapter (AC)

**Functions**
- Clamp adapter for measuring leakage currents in conjunction with a multimeter
- Stray current measurement in connection with GT-800

**Product information**
- Current output, output signal: 1 mA corresponds to 1 A test current
- Jaw opening 30 mm
- Fixed test leads
- No batteries required
- Not suitable for earth measurements

**50 A AC**

**Output Analog**

### Technical specifications

Ranges
| | |
|---|---|
| Current AC | 1mA ...50 A |
| Basic accuracy | ± (6 % + 0.5 mA) |
| Output current | 1 mA/A |
| Frequency range | 40 Hz…10 kHz |
| Protection class | IP 30 |
| Pollution degree | 2 |
| Measurement category | CAT II/600 V |
| Safety cert.: | DIN VDE 0411/EN 61010/IEC 61010 |
| Jaw opening | approx. 30 mm |
| Length of connection cable | approx. 1.5 m |
| Dimensions | approx. 140 x 45 x 20 mm |
| Weight | approx. 75 g |

**Ordering Information:**

| Description | Model | Article no. |
|---|---|---|
| CHB1 | 1311 | **2390055** |

## PAT-BRUSH

### Brush probe

- Measurement of protective earth resistance and touch current
- Enables stray current measurement on moving or rotating parts
- Reduces transition resistance due to multiple contacting
- Simplifies measurement on refined or oxidized surfaces
- Max. test current 0.2 A
- 4 mm plug-in technology
- Total length 190 mm, brush dimensions 60 mm x Æ20 mm
- With protective packaging for safe storage
- Can be used for all testing equipment

**Ordering Information:**

| Description | Model | Article no. |
|---|---|---|
| Brush probe | PAT-BRUSH | **4151667** |

## ADAPTER-PE

### Adapters for protective earth

- Measurement of protective earth resistance with securely attached equipment
- Secure contacting of the protective earth to a Schuko socket
- 4 mm plug-in technology

**Ordering Information:**

| Description | Model | Article no. |
|---|---|---|
| Adapter for protective earth | ADAPTER-PE | **4151659** |

## PA-1

### Adapter for 3-pole plug

- Measurement of protective earth resistance and insulation
- For C5 power cable types (DIN VDE 0623, IEC/EN60320)

**Ordering Information:**

| Description | Model | Article no. |
|---|---|---|
| Adapter for 3-pole plug | PA-1 | **4362289** |

# Software packages for logging purposes

Test reports act as evidence of proper performance of the work carried out, and provide the client and the company that has been commissioned clear documentation regarding safety.

Software packages from Beha-Amprobe provide a convenient, practical solution in order to transfer data from measurement and testing equipment by quickly and easily creating a test report and archiving the measurement data.

Compared to manual creation this results in time being saved, particularly with repeat testing services and verifications.

**es control**

## Products

| | |
|---|---|
| es control professional Downloader Software | 64 |

| | Software | | | |
|---|---|---|---|---|
| | es control professional 0100 | es control professional 0701-0702/0113 | es control professional Complete | Beha-Amprobe Downloader Software |
| **Test equipment:** | Model 1312 | Model 1314 | Model 1316 | Model DL-SW-KIT |
| **PROINSTALL-100** | • | | • | • |
| **PROINSTALL-200** | • | | • | • |
| **GT-600** | | • | • | |
| **GT-800-CH** | | • | • | |
| **GT-0751** | | • | • | |
| **MACHINEmaster** | | • | • | |
| **MT 204-S** | | • | • | |

# DL-SW-KIT
## Downloader Software

### Key Features
- Software for logging measurement data in accordance with DIN VDE 0100 and 0105. Downloads data from supported meters:
  - ProInstall-100
  - ProInstall-200
- Displays downloaded data using form and table view for easy analysis
- Allows saving, retrieving and printing of the downloaded data
- Provides standard form templates to quickly log results with professional quality
- Exports data to other programs such as Microsoft Excel using the CVS format
- Provides utility to clear memory and to change meter setup
- Opto-isolated USB interface for user and computer safety
- Preview of the stored measurement values on the PC using Virtual Meter function

### System requirements
Operating System: Windows 7, 8 or 10.
Minimum recommended hardware: Pentium class microprocessor, 32 MB RAM, and up to 70 MB hard disk space (100 MB to install)

### Supported instruments
- ProInstall-100
- ProInstall-200

**Ordering Information:**

| Description | Model | Article no. |
|---|---|---|
| Downloader Software | DL-SW-KIT | 4597359 |

# es control professional
## Software packages

- Convenient, upgradeable software for logging measurement data in accordance with DIN VDE 0100, 0701-0702, 0751, and 0113
- Access authorization/user administration for four different user groups
- Comparison and update of different es control databases (replication)
- Interface to external barcode printing programs (Brother® P-Touch), allowing the sample number and test code to be printed as a barcode
- Result evaluation for tests in accordance with DIN VDE 0100 for quick evaluation of overall test
- Ideal software for all providers of repeat testing services according to BetrSichV (German Ordinance on Industrial Health and Safety) or in the field of facility management
- Interface cable not included in delivery (optional)

Software in English/German language version available.

**Ordering Information:**

| Description | Model | Article no. |
|---|---|---|
| es control professional 0100 (without interface cable) | 1312 | 2390062 |
| es control professional 0701-0702/0113 (without interface cable) | 1314 | 2390081 |
| es control professional Complete (without interface cable) | 1316 | 2390735 |
| USB download cable for ProInstall series | TL-USB | 4372676 |
| RS-232 on USB adapter | 1217 | 2389965 |
| Downloader Software DL-SW-Kit | DL-SW-KIT | 4597359 |

**BEHA·AMPROBE**®

## Recommended configuration for es control software

| | |
|---|---|
| Operating system | Win XP, Win 7, Win 8/8.1, Win 10 |
| Processor | Pentium IV or similar processor* |
| RAM | 256 MB or higher |
| Screen | VGA monitor or monitor with higher resolution; Super VGA recommended: Resolution 800 x 600 or greater available |
| Memory | 400 MB |
| Drive | CD-ROM |
| Interface | RS232; 9-pole or USB (dependent on tester) |

\* Windows 7, 8 and 10 are registered trademarks of the Microsoft Corporation

## Included:

1 x software on CD-ROM
(es control professional 0100,
es control professional 0701-0702/0113, or es control professional Complete)
1 x user manual
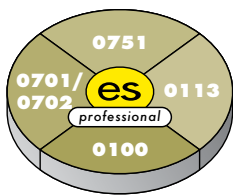
### Price advantage!

Save upon purchasing a complete package (all modules) compared to buying all individual modules separately.

| Model | es control professional 0100 | es control professional 0701-0702/0113 | es control professional Complete |
|---|:---:|:---:|:---:|
| DIN VDE 0100, 0105 | • | | • |
| DIN VDE 0701-0702, 0751-1/ EN 62353 and 0113 | | • | • |
| Clear and simple hierarchy | • | • | • |
| Data tree (client, unit, test, distributor, and circuit) | • | | • |
| Data tree (customer, location, department, sample, and test) | | • | • |
| Transfer of measured values from tester to PC | • | • | • |
| Automatic creation of new devices under test that are not yet in the database. Tests can thus be printed out quickly and easily. | • | • | • |
| Results of a standard test report for electrical systems | • | | • |
| Results of a test series can be printed out in form of a list or individual logs for each DUT | | • | • |
| Lists can be exported in text and Excel format | • | • | • |
| Assistant for reading in data and printing out reports | • | | • |
| Access authorization/user administration for four different user groups | • | • | • |
| Comparison and update of different es control databases (replication) | • | • | • |
| Result evaluation for tests in accordance with DIN VDE 0100 for quick evaluation of overall test | • | | • |
| Data export to external barcode printing programs (Brother® P-Touch), allowing the sample number and test code to be printed as a barcode | | • | • |

### Accessories:

USB adapter including driver
Model 1217

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| es control professional 0100 | 1312 | **2390062** |
| es control professional 0701-0702 / 0113 | 1314 | **2390081** |
| es control professional Complete (all modules) | 1316 | **2390735** |
| USB data cable for ProInstall series | TL-USB | **4372676** |
| RS-232 on USB adapter | 1217 | **2389965** |
| Beha-Amprobe Downloader Software with interface cable | DL-SW-KIT | **4597359** |

# Environmental testing: Temperature, light, sound, humidity, rotational speed

Within the field of environmental testing, we provide a wide range of thermometers and appropriate thermal sensors for every application.

In addition, our range of environmental testing products also features a selection of various meters such as moisture meters, sound level meters, and light meters for measuring illumination, e.g., in the workplace.

## Products

## Symbols used in this chapter

| Symbol | Description | Symbol | Description |
|---|---|---|---|
| NTC Typ | NTC as thermal element | IR | Infra-red measurement |
| K Typ | NiCr/Ni thermo-element (K-type) | data logger | Data Logger |
| Data Hold | Measurement memory   DATA HOLD | | Alarm function |
| min/max | Min/max value memory | PC | PC interface |
| | Back light | | Dew point measurement |

## IR608A
### Infrared thermometer

#### Functions
• Non-contact temperature measurement

#### Product information
• Switchable between °C and °F measurement
• Integrated measurement memory (data hold)
• Illuminated display
• Distance to spot size ratio: 8:1
• Auto Power Off

#### Product highlights
• Laser-based targeting
• Handy and compact design
  in pistol format

**IR**   **Data Hold**

### Included:
1 x IR608A
1 x battery 9 V, IEC 6LR61
1 x user manual

### Technical specifications

| | |
|---|---|
| Display | LCD, 4 digit |
| Measurement ranges | -18...+400°C |
| | 0 ... 750° F |
| Resolution | 0.2°C / 0.5°F |
| Basic accuracy | ±2% or ±2°C (±3.5°F) |
| Emissivity | 0.95 (preset) |
| Response time | 500 ms |
| Power supply | 1 x battery 9 V, IEC 6LR61 |
| Dimensions | 152 x 101 x 38 mm |
| Weight | approx. 227 g |

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| IR608 A | IR608A | **3015690** |

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## IR-450-EUR
### Mini infra-red thermometer with flashlight

#### Functions
• IR temperature measurement
• LED flashlight

#### Product information
• Ratio of spot size to distance 8:1
• °F / °C selectable
• Temperature is displayed for 10 seconds
• With pocket clip

#### Product highlights
• With laser pointer
• Small and compact

**IR**

### Included:
1 x IR-450-EUR
1 x battery 1.5 V, IEC LR03, AAA
1 x user manual

### Technical specifications

| | |
|---|---|
| Display | LCD, 3 digit |
| Measurement ranges | -30...+500° C; 20 ... 932° F |
| Resolution | 0.2° C / 0.5° F |
| Basic accuracy | ±1.5% or ±2° C (±3° F) |
| Emissivity | 0.95 (preset) |
| Response time | 500 ms |
| Power supply | 1 x battery 1.5 V, IEC LR03, AAA |
| Dimensions | 100 x 20 x 29 mm |
| Weight | approx. 50 g |

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| IR-450-EUR | IR-450-EUR | **4308539** |

**67**

## IR-710-EUR
### Infrared Thermometer 10:1

**Functions**
- Non-contact temperature measurement

**Product information**
- Temperature measurement from -18° to 380°C
- Integrated measurement memory (data hold)
- MIN/MAX measurement memory
- Illuminated display
- Distance to spot size ratio: 10:1
- Very fast response time
- Auto Power Off

**Product highlights**
- Laser-based targeting
- Handy and compact "pistol grip" design

IR-710-EUR

**IR** | **Data Hold** | | **min / max**

## IR-712-EUR
### Infrared Thermometer 12:1

as the IR-710-EUR, also with:
- Temperature measurement from -18° to 550°C
- Distance to spot size ratio: 12:1
- Continuously adjustable emissivity
- Integrated thread for tripod
- Measuring the average temperature

## IR-720-EUR
### Infrared Thermometer 20:1

as the IR-712-EUR, also with:
- Temperature measurement from -32° to 1050°C
- Distance to spot size ratio: 20:1

IR-712-EUR
IR-720-EUR
IR-730-EUR

**IR** | **Data Hold** | | **min / max**

## IR-730-EUR
### Infrared Thermometer 30:1

as the IR-720-EUR, also with:
- Temperature measurement from -32° to 1250°C
- Distance to spot size ratio: 30:1

## IR-750-EUR
### Infrared Thermometer 50:1

as the IR-730-EUR, also with:
- Temperature measurement from -50° to 1550°C
- Distance to spot size ratio: 50:1
- Adjustable alarm function
- Data memory up to 99 readings
- USB interface for transferring
  stored measurements to a PC
- Input for K-type test probe

IR-750-EUR

**IR** | **Data Hold** | | **min / max**
**PC** | | **K Typ**

## Technical specifications

| | |
|---|---|
| Display | LCD, 4 digit |
| Measurement ranges | -32...+1550°C |
| Resolution | 0.1°C < 999.9 °C / 1°C > 999.9 °C |
| Basic accuracy | ±1.8% or ±1.8° C |
| Emissivity | Adjustable between 0.10…1.00 |
| Response time | 250 ms |
| Ratio of spot size to distance | 50:1 |
| Laser | 1-point laser >1mW Class 2 |
| Power supply | 1 x battery 9 V, IEC 6LR61 |
| Dimensions | 183 x 147 x 57 mm |
| Weight | approx. 345 |
| | |
| Power supply | 1 x battery 9 V, IEC 6LR61 |
| Dimensions | 183 x 147 x 57 mm |
| Weight | approx. 345 |

\* Technical data relates to the highest model in the series (IR-750-EUR). Data regarding individual models can be found on our website www.beha-amprobe.com

## Included:

1 x IR-710-EUR, IR-712-EUR, IR-720-EUR, IR-730-EUR, IR-750-EUR
1 x battery 9 V, IEC 6LR61
1 x carry case (only for IR-712-EUR, IR-720-EUR, IR-730-EUR, IR-750-EUR)
1 x user manual
1 x USB cable (only IR-750-EUR)
1 x software on CD (only IR-750-EUR)
1 x hard carrying case (only IR-750-EUR)
1 x K-type wire probe (only IR-750-EUR)

## Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| IR-710-EUR | IR-710-EUR | **4308480** |
| IR-712-EUR | IR-712-EUR | **4308498** |
| IR-720-EUR | IR-720-EUR | **4308500** |
| IR-730-EUR | IR-730-EUR | **4308517** |
| IR-750-EUR | IR-750-EUR | **4308521** |

TMD-50

| K Typ | Data Hold | min/max | ☀ |

## TMD-50
### K-type digital thermometer with dual inputs

#### Functions
- Temperature measurement with inputs for two probes
- Measurement of temperature difference

#### Product information
- Input for two type K temperature probes
- Switchable between °C and °F measurement
- Integrated measurement memory (data hold)
- MIN/MAX and relative value measurement
- Measuring the average temperature
- Illuminated display
- Auto Power Off

#### Product highlights
- T1-T2 (temperature difference)
- Shock-proof and impact-resistant thanks to standard protective holster

### Technical specifications

| | |
|---|---|
| Display | LCD, 3½ digit, 1999 digits |
| Measurement range | Type K -180...+1350° C (-292...+1999° F) |
| Basic accuracy | |
| ±(0.1% v.M.+1°C) | from -60°C to 1350°C |
| ±(0.1% v.M.+2°C) | from -60°C to 200°C |
| ±(0.1% v.M.+2°F) | from -76°F to 1999°F |
| ±(0.1% v.M.+4°F) | from -76°F to -328°F |
| Resolution | 0.1 °C/°F |
| Power supply | 4 x battery 1.5 V, IEC R03, AAA |
| Dimensions | approx. 160 x 85 x 30 mm |
| Weight | approx. 280 g |


TMD-53

| K Typ | J Typ | Data Hold | min/max | ☀ | 🔔 |

## TMD-53
### K-type / J-type digital thermometer with dual input
as the TMD-50, also with:
- Connections for two temperature probes (for types K and J)
- Alarm function (optical and acoustic)
- Clear multi-functional display for T1, T2 and T1-T2 (temperature difference)

### TMD-53 specifications

| | |
|---|---|
| Display | LCD, 5 digit, 99999 digits |
| Measurement range | Type K -180...+1350° C (-292...+2462° F) |
| Basic accuracy | |
| ± (0.05% rdg. + 0.3°C) | at -50°C to 1350°C |
| ± (0.05% rdg. + 0.7°C) | at -50°C to -200°C |
| ± (0.05% rdg. + 0.6°F) | at -58°F to 2498°F |
| ± (0.05% rdg. + 1.4°F) | at -58°F to -328°F |
| Resolution | 0.1 °C/°F |
| Power supply | 4 x battery 1.5 V, IEC R03, AAA |
| Dimensions | approx. 160 x 85 x 30 mm |
| Weight | approx. 280 g |

### Included with TMD-50/TMD-53:
1 x TMD-50 or TMD-53
2 x K-type wire probe
4 x battery 1.5 V, IEC R03, AAA
1 x user manual


TMD-56

| K Typ | J, T Typ | R/S, N, E Typ | Data Hold | min/max |
| ☀ | 🔔 | PC | data logger | |
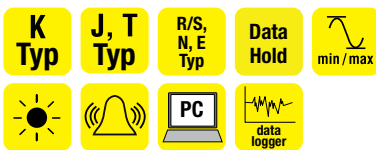
## TMD-56
### Digital thermometer with data logger and USB connection
as the TMD-53, also with:
- Inputs for two temperature probes (of types K, J, T, R/S, N and E)
- Built-in real-time clock and date
- Clear multi-functional display for date, time, T1, T2 and T1-T2 (temperature difference)
- USB interface
- Evaluation software included
- Data logger for 16,000 measurement values (various intervals can be selected)

### Technical specifications

| | |
|---|---|
| Display | LCD, 4½ digit, 19999 digits |
| Measurement range | Type K: -180°C to 1350°C (-292°F to 2462°F) |
| Basic accuracy | |
| Type K | |
| ± (0.05% rdg. + 0.3°C) | at -50°C to 1350°C |
| ± (0.05% rdg. + 0.7°C) | at -50°C to -210°C |
| ± (0.05% rdg. + 0.6°F) | at -58°F to 2501°F |
| ± (0.05% rdg. + 1.4°F) | at -58°F to -346°F |
| Resolution | 0.1 °C/°F |
| Power supply | 4 x battery 1.5 V, IEC R03, AAA |
| Dimensions | approx. 160 x 85 x 30 mm |
| Weight | approx. 360 g |

### Accessories:

Carrying case
Model 1150


Heat-conducting paste up to 250 °C (30 g)
Model 1032

### Included with TMD-56:
1 x TMD-56
2 x K-type wire probe
1 x USB cable
1 x software CD
4 x battery 1.5 V, IEC R03, AAA
1 x user manual

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| TMD-50 | TMD-50 | **3730150** |
| TMD-53 | TMD-53 | **3730085** |
| TMD-56 | TMD-56 | **3730138** |
| Carrying case | 1150 | **2145755** |
| Heat-conducting paste | 1032 | **2145689** |

# TPP1-C1
**Mini pocket thermometer with immersion probe**

### Functions
• Temperature measurement with integrated NTC sensor

### Product information
• Immersion probe
• Measurement memory (data hold)
• Compact design
• With protective sleeve/holder (TPP1-C1 only)

# TPP2-C1
**Mini pocket thermometer with surface probe**
• As TPP1-C1, but with:
   Surface probe without protective sleeve

TPP2-C1

| NTC Typ | Data Hold |
|---------|-----------|

### Accessories:
Heat-conducting paste
up to 250 °C (30 g)
Model 1032

### Included:
1 x TPP1-C1 or TPP2-C1
1 x battery 3 V, IEC 2032
1 x user manual

## Technical specifications

| | | |
|---|---|---|
| Display | LCD, 3½ digit | |
| Measurement range | -50 to +250°C | |
| Range | Resolution | Accuracy |
| -50...-20° C | 1° C | ±3° C |
| -19.9 ... +49.9° C | 0.1° C | ±2° C |
| +50.0 ... +199.9° C | 0.1° C | ±(3 % rdg. + 1°C) |
| +200 ... +250° C | 1° C | ±(3 % rdg. + 1°C) |
| Temperature change/ response time | > 5 K/s | |
| Probe dimensions | | |
| TPP1-C1 | 128 mm x Ø 3.8 mm | |
| TPP2-C1 | 125 mm x Ø 13.7 mm (tube Ø 3.8 mm) | |
| Power supply | 1 x battery 3 V, IEC 2032 | |
| Dimensions (with protective sleeve): | approx. 40 x 30 x 160 mm | |
| Weight | approx. 16 g | |

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| TPP1-C1 | TPP1-C1 | **2826634** |
| TPP2-C1 | TPP2-C1 | **2826652** |
| Heat-conducting paste | 1032 | **2145689** |

# TH-1
**Digital humidity and temperature meter**

### Functions
• Humidity measurement
• Temperature measurement

### Product information
• Probe integrated in device
• Switchable between °C and °F measurement
• Integrated measurement memory (data hold)
• MIN and MAX data hold
• Auto Power Off

### Product highlights
• Compact and handy design
• Dew point measurement
• Measurement of wet bulb temperature

| NTC Typ | Data Hold | min / max | |
|---------|-----------|-----------|---|

### Included:
1 x TH-1
1 x battery 3 V, CR2032
1 x user manual

## Technical specifications

| | |
|---|---|
| Display | Dual LCD |
| Humidity measurement | |
| Measurement range | 0 to 100% rel. humidity |
| Resolution | 0.1% |
| Accuracy | ± 3% rel. humidity |
| Temperature measurement | |
| Measurement range | -20 to +50°C / -4 to +122°F |
| Resolution | 0.1°C / 0.1°F |
| Accuracy | ± 0.6°C / ± 1F |
| Power supply | 1 x battery 3V, CR2032 |
| Dimensions | 175 x 42 x 16 mm |
| Weight | approx. 120 g |

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| TH-1 | TH-1 | **3311871** |

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## TH-3
### Digital humidity and temperature meter

#### Functions
• Humidity measurement
• Temperature measurement

#### Product information
• Probe integrated in device
• Switchable between °C and °F measurement
• Integrated measurement memory (data hold)
• MIN and MAX data hold
• Auto Power Off

### Technical specifications

| | |
|---|---|
| Display | LCD, 3½ digit |
| Humidity measurement | |
| Measurement range | 5...95% rel. humidity |
| Resolution | 0.1% |
| Accuracy | ± 3% rel. humidity |
| Response time | < 3 min. |
| Temperature measurement | |
| Measurement range | -20…+60°C / -4…+140°F |
| Resolution | 0.1°C / 0.1°F |
| Accuracy | ± 0.8°C / ± 1.6°F |
| Response time | < 10 sec. |
| Power supply | 1 x battery 9 V, IEC 6LR61 or 6F22 |
| Dimensions | 240 x 54 x 34 mm |
| Weight | approx. 180 g |

°C | min/max | Data Hold | ◆
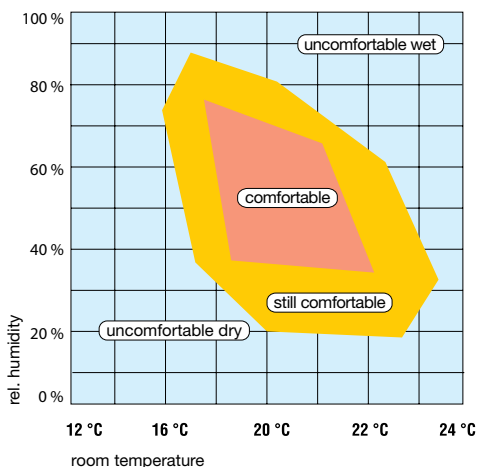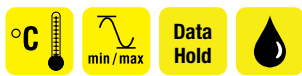
## THWD-3
### Digital humidity and temperature meter

As TH-3, but also with:
• Dew point measurement
• Measurement of wet bulb temperature



### Included:
1 x TH-3 or THWD-3
1 x carrying case
1 x battery 9 V, IEC 6LR61
1 x user manual

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| TH-3 | TH-3 | **3027060** |
| THWD-3 | THWD-3 | **3033042** |

## MT-10
### Moisture meters for construction and timber

#### Functions
• Moisture meters for construction and timber
• Temperature measurement

#### Product information
• Probe integrated in device
• Switchable moisture measurement for timber or construction materials
• Switchable temperature measurement in °C or °F
• Back light
• Auto Power Off

#### Product information
• Compact and handy design
• Quick and simple statement regarding the moisture content by means of 3 LEDs:
  · green:     air-dry environment
  · yellow:    increased moisture
  · red:       excessive moisture

### Technical specifications

| | |
|---|---|
| Display | LCD, 3½ digit and 3 LEDs |
| Humidity measurement | |
| Measurement principle of electric resistance | |
| Measurement range | |
|   Timber | 8…60% |
|   Construction material | 0.3…2.0% |
|   Temperature | 0…+40°C or +32…+99°F |
| Resolution | |
|   Timber | 0.1% |
|   Construction material | 0.01% |
|   Temperature | 0.1°C / 0.2°F |
| Accuracy | |
|   Timber | ±2% |
|   Construction material | ±0.1% |
|   Temperature | ±1°C / ±2°F |
| Power supply | 1 x battery 9 V, 6F22 |
| Dimensions | 145 x 60 x 31 mm |
| Weight | approx. 100 g |

°C

### Included:
1 x MT-10
1 x battery 9 V, 6F22
1 x user manual

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| MT-10 | MT-10 | **3503178** |

## Included:

1 x TR200-A
1 x user manual
1 x battery 3.0 V, IEC CR2
1 x USB cable
1 x CD with software (download suite)





## Included:

1 x TR300
1 x user manual
4 x battery 1.5 V, IEC LR6
1 x USB cable
1 x CD with software (download suite)



## Included:

1 x CM100
3 x batteries 1.5 V, IEC LR 03
1 x carrying case
1 x user manual

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## TR200-A
### Temperature / RH Data Logger with Digital Display

#### Functions
• Temperature measurement
• Relative Humidity measurement
• Data Logger

#### Product information
• Wall mountable
• Offers visible LEDs warnings to monitor IAQ condition
• Instrument for monitoring indoor temperature and humidity
• Selection of save slots: 1000, 2000, 4000, 8000, 12000, 16000 max. per function
• Auto shutoff
• Can only be used via PC!

#### Product highlights
• USB interface
• IP65 rated for dust and moisture
• Optical limit value display

### Accessories:

TPK-60, external temperature sensor
Model TPK-60

## TR300
### Temperature / RH Data Logger with Digital Display

#### Functions
• Temperature measurement
• Relative Humidity measurement
• Data Logger
• Dew point display

#### Product information
• Instrument for indoor air quality monitoring
• Wall mountable, self-standing or tripod mountable
• Displays temperature, relative humidity
• Air Temperature or Dew Point (DP) display and Celsius/Fahrenheit are selectable
• Offers visible LEDs warnings to monitor IAQ condition
• Small size design
• Selection of save slots: 1000, 2000, 4000, 8000, 12000, 16000

#### Product highlights
• Real time marking (date/time)
• USB interface
• Extra large digital display
• Alarm function

## CM100
### carbon monoxide meter

#### Functions
• Monitoring carbon monoxide concentrations with an alarm function
• Preset threshold value of 25 ppm for safe recognition of risks

#### Product information
• Adjustable threshold values: 25, 30, 35, 45, 50, 70, 100, and 200 ppm
• Display of measured value and maximum value
• Self-test function
• Auto Power Off

#### Product highlights
• Display of maximum carbon monoxide concentration
• Illuminated display

---

## Technical specifications

| | |
|---|---|
| Display | LCD, 3¾ digit, 1999 digits |
| LED display | red: Hi-Lo Alarm: yellow Recording |
| Measurement ranges Temperature | |
| Internal probe | -40 °C…+85 °C |
| External probe | -40 °C…+100 °C |
| Relative Humidity | 0.0…99.9 % |
| Tolerance | |
| Temperature | ±0.6 °C (-20 °C…+50 °C); otherwise ±1.2 °C |
| Relative Humidity | ±3 % at 25 °C; otherwise 5 % |
| Resolution temperature | 0.1 °C |
| Resolution RH | 0.1 % |
| Save slots | 1000, 2000, 4000, 8000, 12000, 16000 |
| Power supply | 1x battery 3.0 V, IEC CR2 |
| Protection category | IP54 |
| Dimensions | 75 x 55 x 23 mm |
| Weight | approx. 200 g |

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| TR200-A | TR-200-A | **3477302** |
| TPK-60 | TPK-60 | **3503184** |

## Technical specifications

| | |
|---|---|
| Display | LCD |
| Ranges | |
| Temperature range | -20…+70 °C |
| Relative Humidity | 0…100 % |
| Tolerance | |
| Temperature | ±0.6 °C at 0…50 °C; otherwise ±1.2 °C |
| Relative Humidity | ±3 % at 10…90 %; otherwise ±5 % |
| Resolution | |
| Temperature | 0.1 °C |
| Relative humidity | 0.1 % |
| Power supply | 4 x battery 1.5 V, IEC LR6 |
| Dimensions | 175 x 42 x 16 mm |
| Weight | approx. 200 g |

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| TR300 | TR300 | **3311844** |

## Technical specifications

| | |
|---|---|
| Display | LC display, 3 digit, 1000 digits |
| Measurement range/resolution | |
| Carbon monoxide (CO) | 0...999 ppm / 1 ppm |
| Accuracy | ± 20% at 0 – 100 ppm |
| | ± 15% at 100 – 500 ppm (at 20 °C +/-5%, 50 +/-20% RH) |
| Operating temperature range | -10 ... +60°C (5...99% rel. humidity) |
| Power supply (AAA), Micro | 3x batteries 1.5 V, IEC LR 03 |
| Dimensions | 175 x 47 x 28 mm |
| Weight | approx. 130 g |

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| CM100 | CM100 | **3311826** |

**BEHA·AMPROBE®**

## TPK-59

### flexible wire probe 4 mm plug

• with 4 mm plug (clearance 19 mm)
• Probe length approx. 0.9 m

K-type temperature sensor
Temperature range   -46 °C…+316 °C
Accuracy            ±1.5 °C

Ordering Information
Model: TPK-59 · Article no.: 2733660

## TPK-60

### temperature probe

• 2.5 mm jack plug
• Fits the TR100-A and TR200-A
• Cable length 115 mm
• Temperature range
  (see TR200-A on page 86)

Ordering Information
Model: TPK-60 · Article no.: 3503184

## TPK-62

### 2 x temperature probes with adapter

• 4 mm jacks, connection for K-type probe
• Suitable for AM-540-EUR and AMP-550-EUR
• Temperature range
  (see AM-540-EUR/AM-550-EUR on page 35)

Ordering Information
Model: TPK-62 · Article no.: 4160703

## TM-SWA

### Data Logging Software and RS232 Cable for TMA10A

• Real-time software logs and displays data from all
  measurement functions
• Record two channels simultaneously
• Air Flow and Temperature with TMA10 device
• Save results for subsequent analysis
• Automatic calculation of results including maximum,
  minimum, average, and standard deviation

Ordering Information
Model: TM-SWA · Article no.: 3027085

## 1032

### Heat-conducting paste

• Heat-conducting paste up to 250 °C (30 g)
• Contains silicone

Ordering Information
Model: 1032 · Article no.: 2145689

## Type 101

### K-type surface probe

| | |
|---|---|
| Temperature range | -50 °C…+450 °C |
| Response time | approx. 5.5 s (63.2 % of final temperature value) |
| Accuracy | ±1.5 °C |
| Connection cable | approx. 500 mm spiral cable |
| Dimensions | 130 x 4 mm |
| Weight | approx. 115 g |

Ordering Information
Model: 5795 · Article no.: 2147199

## Type 104

### K-type liquid sensor

| | |
|---|---|
| Temperature range | -50 °C…+1100 °C |
| Response time | approx. 12.0 s (63.2 % of final temperature value) |
| Accuracy | ±1.5°C (from 400 °C, 0.48 % rdg.) |
| Connection cable | approx. 500 mm spiral cable |
| Dimensions | 130 x 3 mm |
| Weight | approx. 105 g |

Ordering Information
Model: 5794 · Article no.: 2147186

## Type 106

### K-type immersion probe

| | |
|---|---|
| Temperature range | -50 °C…+600 °C |
| Response time | approx. 12.0 s (63.2 % of final temperature value) |
| Accuracy | ±1.5°C (from 400 °C, 0.48 % rdg.) |
| Connection cable | approx. 500 mm spiral cable |
| Dimensions | 130 x 3 mm |
| Weight | approx. 105 g |

Ordering Information
Model: 5793 · Article no.: 3313234

## Type 110

### K-type fast response surface probe

| | |
|---|---|
| Temperature range | -50 °C…+900 °C |
| Response time | approx. 2.3 s (63.2 % of final temperature value) |
| Accuracy | ±1.5 °C (from 400 °C, 0.48 % rdg.) |
| Connection cable | approx. 500 mm spiral cable |
| Dimensions | 130 x 8 mm |
| Weight | approx. 112 g |

Ordering Information
Model: 5797 · Article no.: 3313241

## Type 111

### K-type flexible wire probe

| | |
|---|---|
| Temperature range | -50 °C…+400 °C |
| Response time | approx. 5.0 s (63.2 % of final temperature value) |
| Accuracy | ±1.5 °C |
| Dimensions | 1000 x 2 mm |
| Weight | approx. 22 g |

Ordering Information
Model: 5790 · Article no.: 3313229

## 93560

**Digital light meter
with save function**

### Functions
• Illuminance measurement

### Product information
• Automatic range selection
• Silicon sensor
• Integrated measurement memory (data hold)

### Product highlights
• Measurement memory for 99 individual readings

**Measure 0,1…200 000 Lux**   **Data Hold**   **Measurement Memory**

### Technical specifications

| | |
|---|---|
| Display | LCD, 4 digit |
| Measurement ranges | 0…50 lx, 0…500 lx, 0…5000 lx, |
| (Auto range) | 0…50 klx, 0…200 klx |
| Resolution | 0.01 lx, 0.1 lx, 1 lx, 10 lx, |
| of the display | 100 lx |
| Measurement ranges | 0…5, 0…50, 0…500, |
| | 0…5000 fc, |
| | 0…20 kfc |
| Accuracy | < 10 % |
| Temperature drift | < 1%/K |
| Power supply | 6 x battery 1.5 V, IEC LR03 |
| Dimensions | 150 x 72 x 35 mm (unit) |
| | 92 x 60 x 29 mm  (sensor) |
| Weight | approx. 250 g |

### Included:

1 x 93560
6 x battery 1.5 V, IEC LR03
1 x carrying case
1 x user manual

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| 93560 | 93560 | **3222543** |

## LM-100

**Digital Lux Meter**

### Functions
• Light measurement

### Product information:
• Manual range selection
• Silicon sensor
• Integrated measurement memory (data hold)
• Max data hold (Max)

## LM-120

**Digital Lux Meter**

as the LM-100, also with:
• Automatic and manual range selection
• Minimum and maximum data hold (min/max)
• Auto Power Off
• Zero adjust knob

**Measure 0,1…200 000 Lux**   **Data Hold**   **Max Hold**

### Technical specifications

| | |
|---|---|
| Display | LCD, 3½ digit |
| Measurement range | 0…20 (only LM-120) |
| | 0...200, 2000, 20.000, |
| | 200,000 Lux |
| | 0–20, 200, 2000, |
| | 20,000 fc |
| Resolution | 0.1, 1, 10, 100 Lux |
| | 0.01, 0.1, 1, 10 Fc |
| Accuracy | < 10 % |
| Power supply | 1 x battery 9 V, IEC 6F22 |
| Dimensions | 130 x 63 x 38 mm (unit) |
| | 80 x 55 x 29 mm (sensor) |
| Weight | approx. 220 g |

### Included:

1 x LM-100 or LM-120
1 x battery 9 V, IEC 6F22
1 x carrying case
1 x user manual

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| LM-100 | LM-100 | **3052348** |
| LM-120 | LM-120 | **3052353** |

## TMULD-300
### Ultrasonic leak detector kit

#### Functions
- Pressurized air leaks (HGV pressurized air, braking and suspension systems), leaks in refrigeration, air-conditioning and heating systems, leaks in steam lines etc.
- Leaks in door and window seals, roofs
- Leaks in the automobile sector: Windscreens, door seals

#### Product information
- Kit consisting of ultrasonic leak detector (ULD-300) and ultrasonic transmitter (UT-300) in robust carrying case
- Leaks indicated optically and acoustically

#### INFO:
Sounds above 20 kHz cannot be heard by the human ear. Even the smallest leaks in pressurized air and gas systems cause turbulences, which in turn generate ultrasonic sounds.
The ULD-300 detects these sounds and pinpoints the exact location of the leak. The ULD-300 indicates leaks optically (10-stage LED scale) and acoustically (headphones) and features a thumb wheel for setting the device's sensitivity.

### Included:

1 x ultrasound leak detector ULD-300
1 x ultrasonic transmitter UT-300
1 x headphones
1 x extension and parabolic attachment
2 x batteries 9 V, IEC 6LR61
1 x carrying case
1 x user manual

### Accessories:

ULTRASONIC TRANSMITTER
Model    UT-300

### Technical specifications

| | |
|---|---|
| ULD-300 | 35 kHz...45 kHz ±6 dB |
| Power supply | 1 x battery 9 V, IEC 6LR61 (in any case) |
| Display | LED |
| Frequency | |
| UT-300 | 40 kHz |
| Dimensions | |
| ULD-300 | 65 x 185 x 25 mm |
| UT-300 | 65 x 165 x 25 mm |
| Weight | |
| ULD-300 | approx. 150 g (incl. battery) |
| UT-300 | approx. 160 g (incl. battery) |

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| TMULD-300 | TMULD-300 | **2731543** |
| Ultrasonic transmitter (accessories) | | |
| | UT-300 | **2734446** |

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## 93517
### Digital sound level meter with save function

#### Functions
- Measurement of sound level for a comparison with the guideline values for occupational safety (DGUV Regulation 6)

#### Product information
- Measurement according to frequency evaluation filters
  A and C, with direct display in dB
- Maximum data hold (Max Hold)
- Switchable between fast and slow response times
- Tripod connection

#### Product highlights
- DC and AC voltage output for connection to spectrum analyzers, level recorders, or FFT analyzers
- Measurement memory for 99 individual readings

**Output Analog** | **Measurement Memory** | **Max Hold**

### Included:

1 x 93517
1 x adjusting screwdriver
1 x 3.5 mm jack plug
1 x battery 9 V, IEC 6LR61
1 x carry case
1 x windbreak
1 x user manual

### Technical specifications

| | |
|---|---|
| Display | LCD, 4 digit, bar graph |
| Measurement ranges | |
| Resolution | 30...130 dB/0.1 dB |
| Frequency range | 31.5 Hz…8 kHz |
| Measurement accuracy | Class 2 in accordance with IEC 61672 |
| Response times | FAST (125 ms), SLOW (1s) |
| Recorder output | AC: 1 Vrms at 5 kΩ, DC: 10 mV/dB at 5 kΩ |
| Power supply | 1 x battery 9 V, IEC 6LR61 |
| Dimensions | 264 x 68 x 27 mm |
| Weight | approx. 260 g |

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| 93517 | 93517 | **3313290** |

## SM-10
### Digital sound level meter

**Functions**
• Measurement of sound level

**Product information**
• Measurement according to frequency evaluation filters A and C, with direct display in dB
• Integrated measurement memory (data hold, MAX)
• Switchable between fast and slow response times
• Back light

**Data Hold** · **Max Hold**

### Included:

1 x SM-10
1 x battery 9 V, IEC 6LR61
1 x carrying case
1 x windbreak
1 x user manual

### Technical specifications

| | |
|---|---|
| Display | LCD, 4 digit |
| Measurement range/resolution | |
| A: | 30…130 dB. / 0.1 dB |
| C: | 35…130 dB. / 0.1 dB |
| Frequency range | 31.5 Hz…8 kHz |
| Tolerance | ±1.5 dB |
| Response times | Fast (125 ms); Slow (15 ms) |
| Power supply | 1 x battery 9 V, IEC 6LR61 |
| Dimensions | 200 x 55 x 38 mm |
| Weight | approx. 230 g |

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| SM-10 | SM-10 | **3052366** |

## SM-20A
### Digital sound level meter

**Functions**
• Measurement of sound level

**Product information**
• Measurement according to frequency evaluation filters A and C, with direct display in dB
• Integrated measurement memory (data hold, MAX)
• Switchable between fast and slow response times
• Back light

**Product highlights**
• USB interface for PC connection
• Internal data logger for 14,000 readings

**Data Hold** · **Max Hold** · **PC** · **data logger**

### Included:

1 x SM-20A
1 x battery 9 V, IEC 6LR61
1 x interface cable
1 x software
1 x carrying case
1 x user manual

### Technical specifications

| | |
|---|---|
| Display | LCD, 4 digit |
| Measurement ranges | |
| A: | 30…30 dB. (resolution: 0.1 dB) |
| C: | 35…130 dB.(Resolution 0.1 dB) |
| Tolerance | ±1.5 dB |
| Frequency range | 31.5 Hz…8 kHz |
| Power supply | 1 x battery 9 V, IEC 6LR61 |
| Dimensions | 200 x 55 x 38 mm |
| Weight | approx. 230 g |

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| SM-20A | SM-20A | **3477333** |

## SM-CAL1
### Sound level calibrator

**Functions**
• Calibrator for sound level meters

**Product information**
• Two selectable areas: 94 dB and 114 dB
• Appropriate for 1/2" microphones

### Included:

1 x SM-CAL1
1 x $^1/_2$" adapter
1 x battery 9 V, IEC 6F22
1 x user manual

### Technical specifications

| | |
|---|---|
| Output signal | 94 dB, 114 dB |
| Accuracy | ± 0.5 dB |
| Frequency | 1 kHz (±4 %) |
| Power supply | 1 x battery 9 V, IEC 6F22 |
| Dimensions | Ø 48 x 125mm |
| Weight | approx. 285 g |

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| SM-CAL1 | SM-CAL1 | **3052382** |

# Anemometer

## Included:

1 x TMA5
1 x temperature probeTPK60
1 x battery 3.0 V, IEC CR 2032
1 x carrying case
1 x strap hanger
1 x user manual

## TMA5
### Mini anemometer

#### Functions
• Air velocity measurement (m/s)
• Temperature measurement
• Humidity measurement

#### Product information
• Automatic range selection
• Integrated measurement memory (data hold)
• Auto power-off (can be deactivated)

#### Product highlights
• External temperature sensor can be connected
• Dew point measurement
• Measurement of wet bulb temperature

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| TMA5 | TMA5 | **3503169** |

### Technical specifications

| | |
|---|---|
| Display | LCD, 3¾ digit, 3999 digits |
| Measurement ranges Air velocity | |
| | 1.1...20.0 m/s |
| | 0.7...72.0 km/h |
| | 0.5...44.7 mph |
| | 60...3937 ft/m |
| | 0.4...38.8 KNT |
| | 1...8 BF |
| Basic accuracy | ± 5% rdg or ± 5 digits |
| | (the higher value applies) |
| Temperature (int.) | 0°C...50°C |
| | 32°F...122°F |
| Resolution | 0.1 °C/°F |
| Basic accuracy | ± 1°C |
| Temperature (ext.) | -20°C...70°C |
| | -4°F...158°F |
| Resolution | 0.1 °C/°F |
| Basic accuracy | ± 0.6°C |
| Humidity | 5%...95% relative humidity |
| Resolution | 0.1% relative humidity |
| Basic accuracy | ± 3.5% relative humidity |
| Power supply | 1 x battery 3.0 V, IEC CR 2032 |
| Dimensions | 136 × 46 × 17 mm |
| Weight | approx.135 g |

## Included:

1 x TMA10A
1 x carry case
1 x battery 9 V, IEC 6LR61
1 x user manual

## TMA10A
### Anemometer

#### Functions
• Air velocity measurement (m/s)
• Airflow measurement (m³/s)
• Temperature measurement

#### Product information
• Integrated measurement memory (data hold)
• MIN/MAX and AVG value measurement
• Auto power-off (can be deactivated)
• Ideal for measurements in ventilation, air-conditioning and heating systems
• Flexible precision vane

#### Product highlights
• RS-232 interface for PC connection
• TM-SWA software (optional)

### Accessories:

TM-SWA data logging-software and RS232 cable
Model TM-SWA

### Technical specifications

| | |
|---|---|
| Display | LCD, 4 digit, 9999 digits |
| Measurement range (m/s) | 0.40–25.00 m/s |
| | (resolution: 0.01 m/s) |
| Basic accuracy | ±(3% rdg.) |
| Volume flow | 0.01…99.99 m3/s |
| | (Resolution 0.01 m3/s) |
| Temperature | 0...50 °C or 32...122 °F |
| | (Resolution 0.1 °F/°C) |
| Basic accuracy | ± 1.5 °F / 0.8 °C |
| Power supply | 1 x battery 9 V, IEC 6LR61 |
| Dimensions | 181 x 71 x 38 mm |
| Weight | approx. 360 g (incl. battery) |

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| TMA10A | TMA10A | **2817785** |
| TM-SWA | TM-SWA | **3027085** |

## Included:

1 x TMA-21HW
1 x telescopic probe
1 x carry case
6 x battery 1.5 V, IEC LR03
1 x USB cable
1 x software on CD
1 x user manual

## TMA-21HW
### Hot-wire anemometer

#### Functions
• Air velocity measurement (m/s)
• Airflow measurement (m3/s)
• Temperature and humidity measurement

#### Product information
• Integrated measurement memory (data hold)
• MIN/MAX and AVG value measurement
• Auto power-off (can be deactivated)
• Ideal for measurements in ventilation, air-conditioning and heating systems
• Large, illuminated display

#### Product highlights
• USB interface for transferring stored measurements to a PC
• 1.2m telescopic probe simplifies measuring
• Integrated data logger for records over a longer timeframe

### Technical specifications

| | |
|---|---|
| Display | LCD, 4 digit, 9999 digits |
| Measurement ranges (m/s) | 0.1…30.0 m/s |
| | (Resolution 0.1 m/s) |
| Basic accuracy | ± (3% rdg.) |
| Volume flow | 0.01…99.99 m3/s |
| | (Resolution 1 m3/s) |
| Temperature | -20...60 °C |
| | (Resolution 0.1 °C) |
| Basic accuracy | ± 0.5 °C |
| Memory | 512KB for 99 datasets |
| Power supply | 6 x battery 1.5 V, IEC LR03 |
| Dimensions | 150 x 72 x 35 mm (unit) |
| Weight | approx. 300 g (incl. battery) |

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| TMA-21HW | TMA-21HW | **3730239** |

## TACH20
### Digital tachometer

**Functions**
- Rotational speed measurement
- Surface speed measurement
- Length measurement

**Product information**
- Display of rotational speed
- Display of surface speed in m/min, ft/min and in/min
- Display of length measurement in m, ft and inch
- Integrated measurement memory
- Display shows last, maximum or minimum value
- Optical (non-contact) or mechanical, adapter-based measurement
- Visible optical measurement performed using infrared beam
- Auto power off after approx. 30 sec (data remains saved)

**Technical specifications**

| | |
|---|---|
| Display | LCD, 5 digit |
| Ranges | |
| Rotational speed | 1 ... 99,999  1min |
| Speed | 0.1 ... 1,999 m/min |
| Length | 0.02 … 99,999 m |
| Tolerance | ± 0.2 % |
| | ± 0.02 % (rpm) |
| Measurement time | 0.5 s/1 period at low rpm |
| Measurement distance | max. 350 mm |
| Power supply | 2 x battery 1.5 V, IEC LR6 |
| Dimensions | 180 x 60 x 25 mm |
| Weight | approx. 195 g |

**Included:**

1 x TACH20
1 x mechanical measurement adapter
1 x extension
2 x probes
2 x measuring wheel
10 x Reflex stickers
2 x batteries 1.5 V, IEC LR6
1 x case
1 x user manual

**Accessories:**

Reflex stickers
75 mm long (10 pcs.) Model 1154

**Ordering Information:**

| Description | Model | Article no. |
|---|---|---|
| TACH20 | TACH20 | **3311961** |
| Reflex stickers | 1154 | **2145762** |

## TACH-10
### Digital tachometer

**Functions**
- Rotational speed measurement
- Surface speed measurement

**Product information**
- Display of rotational speed
- Display of surface speed in m/min, ft/min and in/min
- The last value is shown in the display
- Optical (non-contact) or mechanical, adapter-based measurement
- Visible optical measurement performed using infrared beam
- Auto Power Off

**Technical specifications**

| | |
|---|---|
| Display | LCD, 5 digit |
| Ranges | |
| Rotational speed | 10 ... 99,999 1min |
| Speed | 1.000 ... 9,999 m/min |
| Tolerance | ± (0.1 % rdg. + 2 digits) |
| Measurement distance | 50-300 mm |
| Power supply | 1 x battery 9 V, IEC 6LR61 |
| Dimensions | 270 x 180 x 30 mm |
| Weight | approx. 550 g |

**Included:**

1 x TACH-10
1 x measuring wheel
1 x roll of Reflex stickers
1 x battery 9 V, IEC 6LR61
1 x user manual

**Accessories:**

Reflex stickers
75 mm long (10 pcs.) Model 1154

**Ordering Information:**

| Description | Model | Article no. |
|---|---|---|
| TACH-10 | TACH-10 | **3730008** |
| Reflex stickers | 1154 | **2145762** |

# Power and Energy Measurement

Energy costs have been rising at increasing speed for many years. For this reason, the notion of energy efficiency is more relevant than ever.

Using corresponding measuring equipment means it is not just possible to measure and document energy consumption, but it is also possible to establish the potential savings from your system.

## Products

## Power Analyzer PQ55A
### 3-phase power and energy analyzer

#### Functions
- Comprehensive real-time monitoring, recording and analysis of 3-phase systems
- Voltage measurement (true RMS)
- Current measurement (true RMS)
- Power factor measurement
- Phase angle measurement
- Power analysis (active, apparent and reactive power)
- 4. Current clamp for neutral line current measurement
- Suitable for use in housing construction, offices and small businesses

#### Product information
- Internal 512 kB data logger for long-term monitoring
- Internal measurement memory for max. 99 individual readings
- Multi-functional measured value display for all input signals
- Power supply via batteries or external mains adapter
- Current clamps 3…1000 A, jaw opening 40 mm
- Data transfer via optically isolated RS-232 interface
- Software for data analysis included

### Included:
1 x PQ55A
4 x current clamps
4 x crocodile clips
4 x test leads
8 x battery 1.5 V, IEC LR6
1 x mains adapter
1 x RS-232 cable
1 x carry case
1 x PC software (English) for Windows 2000/XP/
   Vista with in-depth manual (German)
1 x user manual

### Technical specifications

Voltage measurement:
3 input channels with common reference point "N"

| | |
|---|---|
| Measurement range | 0…600 Vrms |
| Resolution | 0.1 V |
| Accuracy | ± (1 % rdg. + 10 D) |
| | For voltages >80 V |
| Network frequency operation) | 50 Hz (excl. frequency inverter |

Current measurement:
Measurement range

| | |
|---|---|
| phase 1-3 | 3...1000 A |
| "N" measurement range | 3...250 A |
| Resolution | 0.1 A |
| Basic accuracy: | ± (2.5% rdg. + 15 digits) ±1% for currents > 3 A |
| Permissible overload | 10 % (for sinusoidal currents) |

Active power (P)
display range: 0–999.9 kW
Apparent power (S)
display range    0 to -999.9 kVA
Reactive power (Q)
display range    0–999.9 kVar
Power factor (PF)
display range    0 to +1
Phase angle
display range    0° to 90°
Frequency measurement (for voltage range >80 V)

| | |
|---|---|
| Measurement range | 45 ... 85 Hz |

Phase sequence detection (for conductor voltages > 80 V)
Energy measurement (active, apparent and reactive power)

| | |
|---|---|
| Accuracy | ±(3.5 % rdg. + 20 digits) |
| Data logger | 512 kB, non-volatile memory max. 20,000 readings, max. 10 measurement series max. 12,000 readings per measurement series |
| Sampling rate | adjustable: 5 s, 30 s, 1 min, 2 min |

Manual
measurement memory    max. 99 readings
General information

| | |
|---|---|
| Display | multi-functional LCD |
| Data transfer | via optically isolated RS-232 interface |
| Frequency range | 42–63 Hz |
| Power consumption | approx. 10 VA |
| Pollution degree | 2 |
| Protection class | II |
| Protection category | IP 30 |
| Measurement category | CAT III/600 V |
| Safety cert.: | DIN VDE 0411/ EN 61010/IEC 61010 |
| Power supply | 8 x batteries 1.5 V, IEC LR6 |
| Battery life | typ. 50 h |
| Mains adapter | Schuko 230 V/12…15 V, 300 mA |

Environmental conditions

| | |
|---|---|
| Operating temperature | 0 °C to +50 °C |
| Storage temperature | -10 °C to +60 °C |

Dimensions

| | |
|---|---|
| device (W x H x D) | 235 x 117 x 54 mm |
| Weight (incl. battery) | approx. 730 g |

### Ordering Information:

| Description | Model | Article no. |
|---|---|---|
| Power Analyzer PQ55A* | PQ55A | **3037739** |

* only available for countries with Schuko plug

# Measurement accessories for a secure connection

## Products

The right measurement and testing equipment, as well as the appropriate measurement accessories are important components for carrying out measurements in a safe, reliable manner.

The following measurement accessories contains various test leads, probes, and crocodile clips. This ensures that any user can find the necessary tools that is required for their measurement task.

## Symbols used in this chapter

| Symbol | Description | Symbol | Description |
|---|---|---|---|
| **4 mm** | Length of plug-in technology (e.g. 4 mm) | **S** | Silicone test lead |
| | Touch protection | **PVC** | PVC test lead |
| **CAT III 1000 V** | Disclosure of measurement category in accordance with EN 61010, DIN VDE 0411 | | Heat-resistant |
| **16 A** | Current-carrying capacity (e.g. 16 A) | | Cold-resistant |

# Test leads SML 4W
**4 mm safety plug-in technology**

### Accessory information
- Safety test lead, flexible 0.8 mm$^2$
- Current-carrying capacity 16 A
- Measurement category CAT III / 600 V

### Design

- PVC insulation
- Two-way safety plugs with onward connection capability in accordance with DIN VDE 0411/EN 61010/IEC 61010

**4 mm** | **600 V** | **16 A**

| Ordering Information: | | |
|---|---|---|
| Description | Model | Article no. |
| | | |
| Test lead ML 4W | | |
| red - 1000mm | 307111 | **2146495** |
| black - 1000mm | 307121 | **2146508** |
| red - 2000mm | 307112 | **3313550** |
| black - 2000mm | 307122 | **3313561** |
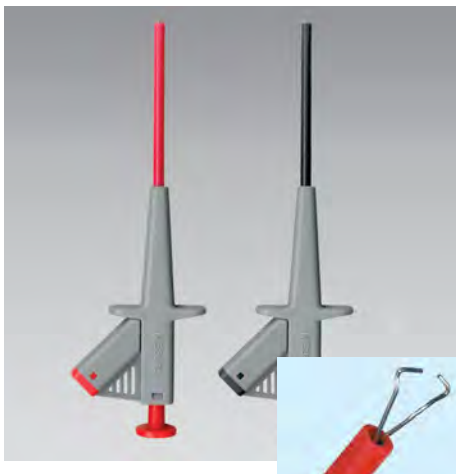


# Safety clamp-type test probe SKP 41 set
**4 mm plug-in technology**

### Accessory information
- Approx. 155 x 49 mm
- Current-carrying capacity 2 A
- Measurement category CAT III/1000 V

### Set, consisting of:
1 x SKP 41 gray/red
1 x SKP 41 gray/black

### Design
- Spring wire grabber with flexible, insulated shaft
- Safety clamp-type test probe with 4-mm safety jack in accordance with DIN VDE 0411/ EN 61010/IEC 61010

**4 mm** | **CAT III 1000 V** | **2A**

| Ordering Information: | |
|---|---|
| Model | Article no. |
| 370010 | **2146701** |



# High current safety clamp-type test probe HCP 41 set
**4 mm plug-in technology**

### Accessory information
- Approx. 160 x 60 mm
- Current-carrying capacity 10 A
- Measurement category CAT III/1000 V

### Set, consisting of:
1 x HCP 41 gray/red
1 x HCP 41 gray/black

### Design
- Safety clamp-type test probe with 4-mm safety jack in accordance with DIN VDE 0411/EN 61010/IEC 61010

**4 mm** | **CAT III 1000 V** | **10 A**

| Ordering Information: | |
|---|---|
| Model | Article no. |
| 370024 | **2146758** |

## Probes PSS set of 2

Accessory information
• Approx. 100 x 21 mm
• Current-carrying capacity 6 A
• Measurement category CAT III/1000 V

Set, consisting of:
1 x probe PSS 2 gray/red
1 x probe PSS 2 gray/black

Design
• Safety probe with
  4-mm safety jack in accordance with
  DIN VDE 0411/EN 61010/IEC 61010

**Ordering Information:**

| Model | Article no. |
|-------|-------------|
| 370008 | **2146694** |

**4 mm** | CAT III 1000 V | 6 A

## Probes PSK set of 2
### 2 mm probe, short version

Accessory information
• Approx. 102 x 10 mm
• Current-carrying capacity 16 A
• Measurement category CAT III/1000 V, CAT IV/600 V (with cover)
• Measurement category CAT II/1000 V (without cover)

Set, consisting of:
1 x probe PSK 2, gray/red (with cover)
1 x probe PSK 2 gray/black (with cover)

Design
• Safety probe with safety jack
  4-mm and 2 mm stainless steel probe in accordance with
  DIN VDE 0411/EN 61010/IEC 61010

**Ordering Information:**

| Model | Article no. |
|-------|-------------|
| 370004 | **2146675** |

**4 mm** | CAT III 1000 V | CAT IV 600 V | 16 A
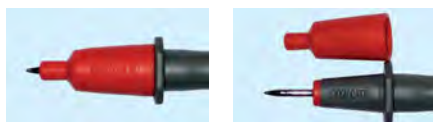
## TL-300
### Test lead set with crocodile clips (red, black, yellow), case, and temperature probe

**Technical specifications**

| | |
|---|---|
| Current-carrying capacity 10 A | |
| Current-carrying capacity 10 A | |
| Measurement Category | |
| Probes | CAT IV/1000 V (with cover) |
| | CAT II/1000 V (without cover) |
| Crocodile clips | CAT IV/600 V, CAT III/1000 V |
| Pollution degree | 2 |
| Safety cert.: | DIN VDE 0411/EN 61010/IEC 61010 |
| Temperature probes | K-type flexible wire probe |
| | 4 mm plug (distance 19 mm) |
| Probe length | approx. 0.9 m |
| Temperature range | -20 °C…+250 °C |
| Accuracy | -20…0 °C: ±2.5 °C or ±1.5% rdg. |
| | 0…250 °C: ±1.1 °C or ±0.4% rdg. |

**Ordering Information:**

| Model | Article no. |
|-------|-------------|
| TL-300 | **4588279** |

**PVC** | **K Typ**

**4 mm** | CAT III 1000 V | CAT IV 600 V | 10 A

# Safety crocodile clip KS 4L set
**4 mm plug-in technology**

Accessory information
• 94 x 42 mm
• Current-carrying capacity 16 A
• Measurement category CAT III/1000 V, CAT IV/600 V
• Opening: approx. 24 mm

Set, consisting of:
1 x KS4L gray/red
1 x KS4L gray/black

Design
• Safety crocodile clip with 4-mm safety jack in accordance with DIN VDE 0411/EN 61010/IEC 61010

**4 mm** | **CAT III 1000 V** | **CAT IV 600 V** | **16 A**

**Ordering Information:**

| | Model | Article no. |
|---|---|---|
| | 370012 | **2146712** |

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# Crocodile clips for conductor rails
**4 mm safety plug-in technology**

Accessory information
• 155 x 40.5 mm
• Current-carrying capacity 5 A
• For conductor rails up to 30 mm
• Measurement category CAT III/600 V
• Opening: 0...20 mm/10...30 mm

Design
• Crocodile clip for secure measurement on conductor rails
• 4 mm safety plug-in technology

**4 mm** | **CAT III 600 V** | **5 A**

**Ordering Information:**

| | Model | Article no. |
|---|---|---|
| red | 391511 | **2146861** |
| black | 391512 | **2146877** |

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# Unidreh accessory set
**4 mm plug-in technology**

Accessory information
• Self-retaining probes with clamping range ø 4...8 mm
• Safe contacting, e.g. in CEE 16 A- and CEE 32 A sockets
• Crocodile clip included

**Included:**

3 x probes, black
1 x crocodile clip, black
1 x carrying case

**4 mm** | **CAT II 1000 V**

**Technical specifications**

Current-carrying capacity 8 A
Measurement Category
Probes (Astaco)           CAT II/1000 V
Crocodile clip (KS4L)     CAT III/1000 V, CAT IV / 600 V
Pollution degree          2
Safety cert.:             DIN VDE 0411/EN 61010/ IEC 61010

**Ordering Information:**

| | Model | Article no. |
|---|---|---|
| UNIdreh accessory set | 1324 | **2146183** |

The solution for secure contacts with CES sockets.

**BEHA·AMPROBE®**

## Professional test lead set for multimeters
### 2 mm safety probes

**Accessory information**
- Test lead set with
  4 mm safety plug-in technology
- Ergonomic handle
- Silicone safety test lead
- Measurement category CAT IV / 1000 V
  (with cover)
- Measurement category CAT II / 1000 V
  (without cover)
- 2mm probes

**Included:**

2 x test leads, approx. 1 m long,
2 covers

| **4 mm** | | **CAT IV 1000 V** | **S** | ❄ | 〰 |

### Technical specifications

Current-carrying capacity max. 20 A
Measurement category CAT IV / 1000 V (with cover)
                     CAT II / 1000 V (without cover)
Pollution degree     2
Safety cert.:         DIN VDE 0411/EN 61010/
                   IEC 61010

### Ordering Information:

| | Model | Article no. |
|---|---|---|
| Professional test lead set with silicone insulation | 1306 | **3313458** |

**SATETY RATING CAT IV**

## Professional test lead set for multimeters
### 4 mm safety probes

**Accessory information**
- Test lead set with 4 mm safety plug-in technology
- Ergonomic handle
- Silicone safety test lead
- Measurement category CAT IV / 1000 V
  (with cover)
- Measurement category CAT II / 1000 V
  (without cover)
- 4mm probes

**Included:**

2 x test leads, approx. 1 m long,
2 x covers

| **4 mm** | | **CAT IV 1000 V** | **S** | ❄ | 〰 |

### Technical specifications

Current-carrying capacity max. 20 A
Measurement category CAT IV / 1000 V (with cover)
                     CAT II / 1000 V (without cover)
Pollution degree     2
Safety cert.:         DIN VDE 0411/EN 61010/
                   IEC 61010

### Ordering Information:

| | Model | Article no. |
|---|---|---|
| Professional test lead set with silicone insulation | 1307 | **2146176** |

**SATETY RATING CAT IV**

## Mini crocodile clips
### 2 mm plug-in technology (fits all 2 mm multimeter probes)

**Accessory information**
- 41.5 x 13 mm
- Max. voltage 33 V AC / 70 V DC
- Opening: approx. 7 mm

**Design**
- Miniature crocodile clip

### Ordering Information:

| | Model | Article no. |
|---|---|---|
| red | 390450 | **2406492** |
| black | 390451 | **2406509** |

| **2 mm** |

## TL36A

**Test lead set
with crocodile clips
2 mm safety probes**

Accessory information
• Test lead set with 4 mm safety technology
• PVC-insulated leads
• Threaded test probes
• Crocodile clips with thread connection,
  opening approx. 10 mm

**4 mm** | CAT III 1000 V | CAT IV 600 V | PVC

### Technical specifications

Measurement categories
Test lines CAT III/1000 V, CAT IV/600 V
                          (with cover)
                          CAT II / 1000 V
                          (without cover)
Current-carrying capacity 10 A
Crocodile clips          CAT III / 1000 V, CAT IV / 600 V
Pollution degree         2
Safety cert.:            DIN VDE 0411/EN 61010/
                         IEC 61010

**Included:**

2 x test leads, approx. 1 m long, with covers
2 x crocodile clips

**Ordering Information:**

| | Model | Article no. |
|---|---|---|
| | TL36A | **3034444** |

## TL35B

**Test lead set
with safety crocodile clips
2 mm safety probes**

Accessory information
• Test lead set with 4 mm safety technology
• PVC-insulated leads
• Threaded test probes
• Safety crocodile clips with thread connection,
  opening approx. 16 mm

**4 mm** | CAT III 1000 V | CAT IV 600 V | PVC

### Technical specifications

Measurement categories
Test lines CAT III/1000 V, CAT IV/600 V
                          (with cover)
                          CAT II / 1000 V
                          (without cover)
Current-carrying capacity 10 A
Crocodile clips          CAT III / 1000 V, CAT IV / 600 V
Pollution degree         2
Safety cert.:            DIN VDE 0411/EN 61010/
                         IEC 61010

**Included:**

2 x test leads, approx. 1 m long,
     with covers
2 x crocodile clips

**Ordering Information:**

| | Model | Article no. |
|---|---|---|
| | TL35B | **3068232** |

## EU-200

**Test lead set**

Accessory information
• Test lead set with 4 mm safety technology
• 4 mm test probes

**4 mm** | CAT III 1000 V | CAT IV 600 V | PVC

### Technical specifications

Measurement categories
Test leads               CAT III / 1000 V
Probes                   CAT IV / 600 V, CAT III / 1000 V
                         (with cover)
                         CAT II / 1000 V
                         (without cover)
Current-carrying capacity 16 A
Crocodile clips          CAT III / 1000 V, CAT IV / 600 V
Pollution degree         2
Safety cert.:            DIN VDE 0411/EN 61010/
                         IEC 61010

**Included:**

2 x test leads
2 x probes (with covers)
2 x crocodile clips

**Ordering Information:**

| | Model | Article no. |
|---|---|---|
| | EU-200 | **2745046** |

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## Safety set

**Accessory information**
• Test lead set with 4 mm safety technology

| **4 mm** | | **CAT III 1000 V** | **PVC** |

### Included:

1 x safety test lead, red
1 x safety test lead, black
1 x probe, red, with cover
1 x probe, black, with cover
1 x crocodile clip, red
1 x crocodile clip, black

### Technical specifications

Current-carrying capacity 16 A
Measurement Category
Safety test
leads                    CAT III/1000 V
Probes                   CAT III/1000 V, CAT IV / 600 V
                         (with cover)
                         CAT II / 1000 V
                         (without cover)
Crocodile clip           CAT III/1000 V
Pollution degree         2
Safety cert.:            DIN VDE 0411/EN 61010/
                         IEC 61010

### Ordering Information:

| | Model | Article no. |
|---|---|---|
| Safety set | 370003 | **2146666** |

## Electronics set

**Accessory information**
• Test lead set with 4 mm safety plug-in technology

| **4 mm** | | **CAT III 1000 V** | **PVC** |

### Included:

1 x safety test lead, red, 16A
1 s safety test lead, black, 16A
1 x crocodile clip, red, 16A
1 x crocodile clip, black, 16A
1 x safety clamp-type test probe, red, 2A
1 x safety clamp-type test probe, black, 2A
1 x safety probe, red, 6A
1 x safety probe, black, 6A

### Technical specifications

Current-carrying capacity 2A/6A/16A
Measurement Category
Safety test
leads                         CAT III/1000 V
Probes                        CAT III/1000 V
Crocodile clip                CAT III/1000 V
Clamp-type test probes  CAT III/1000 V
Pollution degree              2
Safety cert.:                 DIN VDE 0411/EN 61010/
                              IEC 61010

### Ordering Information:

| | Model | Article no. |
|---|---|---|
| Electronics set | 370001 | **3313577** |

## Electrician set

**Accessory information**
• Test lead set with 4 mm safety plug-in technology

| **4 mm** | | **CAT III 1000 V** | **PVC** |

### Included:

1 x safety test lead, red, 16A
1 s safety test lead, black, 16A
1 x safety probe, red, 6A
1 x safety probe, black, 6A
1 x safety clamp-type test probe, red, 10A
1 x safety clamp-type test probe, black, 10A
1 x crocodile clip, red, 16A
1 x crocodile clip, black, 16A

### Technical specifications

Current-carrying capacity 6A/10A/16A
Measurement Category
Safety test
leads                         CAT III/1000 V
Probes                        CAT III/1000 V
Crocodile clip                CAT III/1000 V
Clamp-type test probes  CAT III/1000 V
Pollution degree              2
Safety cert.:                 DIN VDE 0411/EN 61010/
                              IEC 61010

### Ordering Information:

| | Model | Article no. |
|---|---|---|
| Electrician set | 370000 | **2146653** |

## 1150
**Carrying case**

Material: Nylon, upholstered, fasteners,
Lanyard
Internal dimensions: 200 x 150 x 40 mm

Model: 1150
Article no.: 2145755

## 1175
**Carrying case**

Material: Nylon, upholstered, belt loop
Internal dimensions: 295 x 80 x 50 mm

Model: 1175
Article no.: 2145796

## CC-VP-7xx
**Carrying case**

Material: Nylon, upholstered, fasteners,
Hand Strap.
Suitable for 2100 series (Alpha/Beta/Gamma)
and the VP-700 series
Internal dimensions: 280 x 80 x 45 mm

Model: CC-VP-7xx
Article no.: 3889931

## 1193
**Professional carry case**

Material: Nylon, upholstered, fasteners,
Neck strap
Internal dimensions: 300 x 400 x 65 mm

Model: 1193
Article no.: 2145812

## VC30A
**Carrying case**

Material: Imitation leather, carrying strap
External dimensions: 200 x 80 x 45 mm

Model: VC30A
Article no.: 3068280

## VC221B
**Carrying case**

Material: Imitation leather, carrying strap
External dimensions: 220 x 115 x 60 mm

Model: VC221B
Article no.: 3068271

## CC-ACDC
**Carrying case**

Material: Nylon, carrying strap, belt loop
External dimensions: 300 x 120 x 60 mm

Model: CC-ACDC
Article no.: 2732643

## SV-U
**Carrying case**

Material: Nylon, carrying strap, belt loop
External dimensions: 300 x 120 x 60 mm

Model: SV-U
Article no.: 2733511

**Fuses**

| Nominal | Feature | Nominal voltage | Dimensions | Packing unit | Item Number |
|---------|---------|-----------------|------------|--------------|-------------|
| 500mA | fast-acting | 1000V | 6.3x32mm | 4-pack, FP 500 | 1990695 |
| 500mA | fast-acting | 500V | 6.3x32mm | FP520 | 2156748 |
| 500mA | fast-acting | 500V | 6.3x32mm | | 3504681 |
| 500mA | fast-acting | 1000V | 6.3x32mm | | 2156753 |
| 630mA | fast-acting | 500V | 6.3x32mm | | 4223534 |
| 1A | fast-acting | 600V | 10x38mm | | 4223398 |
| 10A | fast-acting | 600V | 6.3x32mm | | 3814230 |
| 10A | fast-acting | 500V | 6.3x32mm | | 3504670 |
| 10A | fast-acting | 1000V | 10x38mm | 2-pack, FP100 | 1990707 |
| 11A | fast-acting | 1000V | 10x38mm | | 803293 |
| 12.5A | fast-acting | 500V | 6.3x32mm | | 2156681 |
| 15A | fast-acting | 500V | 6.3x32mm | | 2156727 |

# Appendix

## Contents

## Things worth knowing about measurement categories, pollution degree, labeling, and symbols

### Measurement categories:

Measurement category was referred to as overvoltage category in an earlier publication of DIN VDE 0411-1:1994.

### 0 – no measurement category:

Several types of testing and measurement circuits are not intended for direct connection to the mains supply. These are circuits, which are not directly connected to the mains, e.g. circuits within devices after the input transformer. No standard values for overvoltage are defined for such circuits.

### CAT II - Measurement category II:

Operating or testing equipment that is connected between the sockets and the consumers. Only small overvoltages through lightning strikes have to be taken into account for CAT II measurement category equipment, although overvoltages caused by switching operations can arise. Short circuit currents of up to 10kA must be expected. Examples for operating equipment within this category include electrical equipment connected to sockets.

### CAT III - Measurement category III:

Operating or testing equipment that is connected between the energy meter and the sockets. In the case of such operating equipment, limited overvoltages can arise through lightning strikes, and short circuit currents of up to 50 kA must be expected. Examples for operating equipment in this category includes building installations, fuses, circuit breakers, residual current devices, switches, sockets, or permanently installed operating equipment.

### CAT IV - Measurement category IV:

Operating or testing equipment that is connected between the source of the low-voltage network outside the building and the energy meter. Stronger overvoltages and lightning strikes must be taken into account with such operating equipment. Examples of operating equipment belonging to measurement category IV include cables in front of the energy meter, service lines, overhead lines, and underground cables. Short circuit currents of over 50 kA must be expected.

### Pollution Degree

The insulation capability of measurement and testing equipment can be severely reduced by surface contamination. Particles of dust and soot, or water can create conductive connections and considerably reduce the surface resistance of the insulation.

### Pollution Degree 1

There is either no contamination, or only dry contamination with no conductivity.

This pollution has no effect.

### Pollution Degree 2

Usually, only non-conductive contamination is found. However, temporary conductivity due to condensation should be expected on occasion.

Operation site, e.g. industrial, or in a laboratory.

### Pollution Degree 3

Either conductive contamination takes place, or there is dry, non-conductive contamination which becomes conductive due to condensation that is expected.

Operation site, e.g. heavy industry, construction sites, brief usage in the open air.

### Labeling and symbols

⚠ Warning of a hazardous area, observe the instruction manual

⚠ Caution! Hazardous voltage, risk of electric shock

▣ Double or reinforced insulation in accordance with Class II IEC 61140 (Protection class II)

CE Conformity mark, confirms adherence to the relevant guidelines and regulations applicable to the respective equipment

### Protection types

In electronic measurement and test devices, and other operating equipment, the protection against foreign bodies (dirt) and water is indicated by two digits after the short form IPxx. The first digit can be from 0 to 6. This indicates the protection against the ingress of foreign bodies. 0 indicates no protection, 6 indicates protection against the ingress of dust. The second digit can be from 0 to 8. This indicates the protection against the ingress of water. 0 indicates no protection, 8 indicates protection against the ingress of water when submerged.

### Protection Levels

⏚ Protection class I: Protection via protective earth

▣ Protection class II: Protection via protective insulation

◇ Protection class III: Protection via safety extra-low voltage



**Measurement category –**

| 0 | II | III | IV |

Supply of access cables

counter

Supply of access cables

counter

Earth cable

Secondary building

Supply of access cables

Transformer

counter

Earth cable

Secondary building
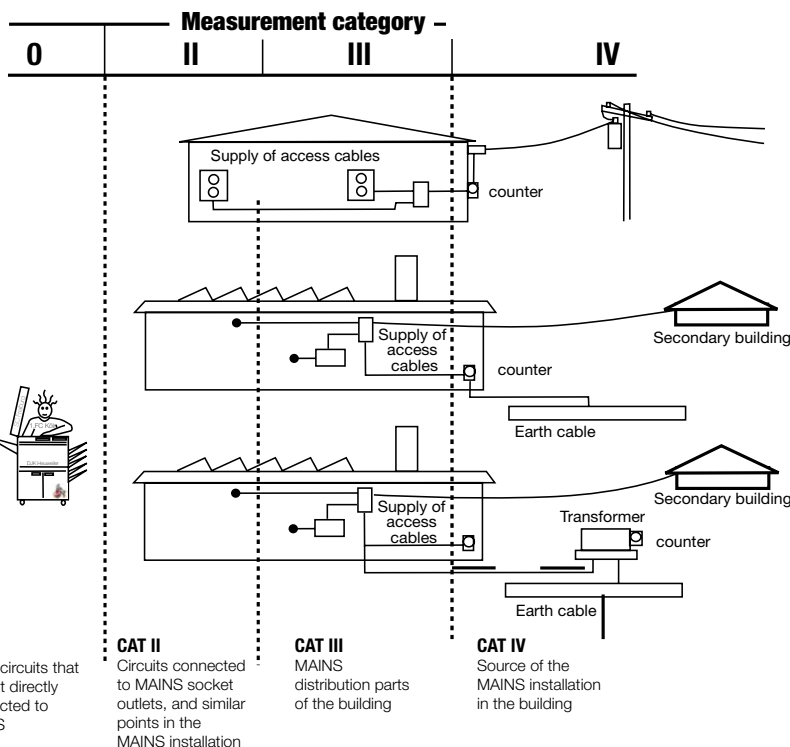
**0**
Other circuits that are not directly connected to MAINS

**CAT II**
Circuits connected to MAINS socket outlets, and similar points in the MAINS installation

**CAT III**
MAINS distribution parts of the building

**CAT IV**
Source of the MAINS installation in the building

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