

# 2100 Series Two Pole Voltage Testers

## 2100-Alpha | 2100-Beta | 2100-Gamma

The Beha-Amprobe 2100-Alpha, 2100-Beta and 2100-Gamma are rugged and reliable two pole voltage testers for voltage and continuity checks. Built tough for use in industrial and commercial environments, the 2100 Series is safety rated up to CAT III 1000 V / CAT IV 600 V and measures voltage range up to 1000 V AC and 1200 V DC (2100-Gamma only). Designed with reinforced components for dependable performance, the 2100 Series has an ingress protection degree of IP 64 and is built according to voltage tester standard EN 61243-3:2010 and is GS approved.



## 2100 Series Features

- **Automatic AC/DC voltage detection** with polarity indication
- **Voltage test** up to 1000 V AC / 1200 V DC (2100-Gamma)
- **Switchable load** and 10 mA or 30 mA RCD trip test with two push buttons
- **Automatic continuity test** with visual (LED)
- **Single pole test** to check phase polarity
- **Two pole phase rotation indication**
- **Robust, double insulated cable** with wear indication shows when the test leads are excessively worn or damaged and need replacement
- **Torch light / measurement area illumination** for working in poorly lit areas
- **Audible indication** when detected voltages above 50 V AC and 120 V DC
- **Single-phase voltage detection** using main probe - audible and visual signal when voltage detected
- **Auto power ON/OFF** and OFF button
- **Non-contact voltage indication/ electric field (NCV/EF) - Non-contact voltage detection function** 100-1000 V (2100-Gamma).
- **Resistance measurement** - Measures and displays resistance up to 1999 ohms (2100-Gamma).
- **IP 64 splash and dust proof**
- **GS approved**, built according to IEC 61243-3:2009, EN 61243-3:2010, DIN VDE 0682-401:2011
- **Safety rated** CAT IV 600 V / CAT III 690 (CAT III 1000 V 2100-Gamma)





### Two Button Switchable Load/ RCD Trip Test

When the two buttons are not pressed the unit is in high impedance mode, providing additional safety protection when testing live power sources, and avoiding accidental tripping of residual-current devices/earth leakage circuit breakers (RCD/ELCB). When the buttons are pressed the unit is in low impedance mode, eliminating inaccurate readings as result of ghost voltage. Additionally, in systems with RCDs you can press the buttons to intentionally trip 10 mA or 30 mA RCDs remotely and determine if they are wired correctly.

### Long, durable test leads with wear indicator

Extra-long 1.5 m test leads make testing fast and convenient. The two pole tester's rugged, durable test leads have two layers of insulation for added durability and safety. If the inner, contrasting-colored layer is showing, that's a sign that the test leads require replacement.

### Test probe protector cover with accessory storage

Store the 4 mm test probe extensions and GS38 protective probe caps, ensuring you always have them when needed. The test probe protector cover tip also helps to open UK electrical safety outlets.

## Quick Guide



| Features:  | 2100-Alpha               | 2100-Beta                | 2100-Gamma                    |
|--|--------------------------|--------------------------|-------------------------------|
| <b>Safety Rating</b><br>(overvoltage category)   | CAT III 690 / CAT IV 600 | CAT III 690 / CAT IV 600 | CAT III 1000 / CAT IV 600     |
| <b>Voltage Range</b>   | 12 - 690 V AC/DC         | 12 - 690 V AC/DC         | 6 - 1000 V AC / 6 - 1200 V DC |
| <b>Voltage Indication - LCD</b>  |                          | 12 - 690 V AC/DC         | 6 - 1000 V AC, 6 - 1200 V DC  |
| <b>Voltage Indication - LED (12 - 690 V)</b>   | •                        | •                        | •                             |
| <b>Continuity Test</b><br>(visual and audible indication)                              | •                        | •                        | •                             |
| <b>RCD Trip Test (10 mA or 30 mA)</b>  | •                        | •                        | •                             |
| <b>Single Pole Phase Test</b>  | •                        | •                        | •                             |
| <b>Full Range Polarity Detection</b>   | •                        | •                        | •                             |
| <b>Two Pole Phase Rotation Indication</b>  | Right                    | Right                    | Right/Left                    |
| <b>IP 64 Splash and Dust Proof</b>   | •                        | •                        | •                             |
| <b>Torch Light/Measurement Area Illumination</b>                                       | •                        | •                        | •                             |
| <b>Double Insulated Cable with Wear Indication</b>                                     | •                        | •                        | •                             |
| <b>4 mm Test Probe Extensions (screwable) and Removable GS38 Protective Probe Caps</b> | •                        | •                        | •                             |
| <b>Data Hold Function</b>  |                          | •                        | •                             |
| <b>Resistance Measurement and Low Resistance Indication</b>                            |                          |                          | •                             |
| <b>Non-Contact Voltage Detection</b>   |                          |                          | •                             |

|   | 2100-Alpha  | 2100-Beta  | 2100-Gamma   |
|---|---|--|--|
| <b>Voltage Test</b>   |   |  |  |
| LED voltage range   | 12... 690 V AC/DC   | 12... 690 V AC/DC  | 12... ≥690 V AC/DC   |
| LED indicator   | ±12, ±24, 50, 120, 230, 400, 690 V                              |  | ±12, 24, 50, 120, 230, 400, ≥690 V                                   |
| LED tolerances  | acc. to EN 61243-3:2010   |  |  |
| LCD voltage range   | –   | 12... 690 V AC/DC  | 6...1000 V AC / 6...1200 V DC  |
| LCD resolution  | –   | 1 V  |  |
| LCD tolerance   | –   | ± (3% rdg + 3 LSD)   |  |
| Frequency range   | DC, 16 2/3 Hz...400 Hz  |  |  |
| LED and LCD response time   | <1s   |  |  |
| Acoustic indication   | ≥50 V AC, ≥120 V DC   |  |  |
| Voltage detection   | Automatic (AC/DC)   |  |  |
| Polarity detection  | Full range  |  |  |
| Range detection   | Automatic   |  |  |
| Current I<br>(load buttons not activated)   | ≤3.5 mA AC/DC at 690 V AC/DC                                    |  | ≤3.5 mAAC at 1000 VAC /<br>≤4.5 mADC at 1200 VDC                     |
| Internal load<br>(load buttons not activated)                                       | Approximately 2.4 W at 690 V AC/DC                              |  | Approximately 3.5 W at 1000 VAC /<br>Approximately 5.4 W at 1200 VDC |
| Test current switchable load<br>(load buttons activated)                            | ≤350 mA AC/DC at 690 V AC/DC                                    |  | ≤300 mAAC at 1000 VAC /<br>≤350 mADC at 1200 VDC                     |
| Switchable load<br>(load buttons activated)   | Approximately 240 W at 690 V AC/DC                              |  | Approximately 300 W at 1000 VAC /<br>Approximately 420 W at 1200 VDC |
| Automatic power ON  | LED: >12 V (activated load buttons)<br>>24 V (w/o load buttons) | LED: >12 V (activated load buttons)<br>>24 V (w/o load buttons)<br>LCD: >12V | LED: >12 V<br>LCD: > 6V  |
| <b>Trip Test of RCD (earth leakage circuit breaker)</b>                             |   |  |  |
| Test current switchable load<br>(load buttons activated)                            | >30 mAAC at 230 VAC   |  |  |
| <b>Single Pole Phase Test</b>   |   |  |  |
| Voltage range   | 180...690 VAC against earth                                     |  | 100...1000 VAC against earth   |
| Frequency range   | 40 Hz...70 Hz   |  |  |
| Acoustic indication   | yes   |  |  |
| Indication  | Red LED   |  |  |
| <b>Continuity Test (Rx) / Diode Test</b>  |   |  |  |
| Range   | 0...500 kΩ  |  |  |
| Tolerance   | 0% to +50%  |  |  |
| Test current  | <5 μA   |  |  |
| Acoustic indication   | yes   |  |  |
| Diode test  | yes   |  |  |
| Indication  | Red LED   |  |  |
| Overvoltage protection  | 690 V AC/DC   |  | 1000 VAC/1200 VDC  |
| Automatic power ON  | < 500 kΩ  |  |  |
| <b>Phase Rotation Indication</b>  |   |  |  |
| Voltage range   | 340...440 V AC phase to phase                                   |  | 170...1000 V AC phase to phase                                       |
| Frequency range   | 47...63 Hz  |  | 40...70 Hz   |
| Indication  | Red LED   |  |  |
| <b>Resistance Measurement (Ω) / Low Resistance Indication "•" (2100-Gamma only)</b> |   |  |  |
| Resistance range on LCD   | 0...1999 Ω  |  |  |
| Resolution  | 1 Ω   |  |  |
| Tolerance   | ± (5% rdg + 10 LSD) at 20°C                                     |  |  |
| Temperature coefficient   | ± (5 LSD / 10 K)  |  |  |
| Test current  | <30 μA  |  |  |
| Low resistance indication   | Acoustic indication <10...50 Ω                                  |  |  |
| Overvoltage protection  | 690 V AC/DC   |  | 1000 VAC/1200 VDC  |
| <b>Non-Contact Voltage Indication/Electric Field (NCV/EF)</b>                       |   |  |  |
| Voltage range   | –   | –  | 100...1000 VAC   |
| Frequency range   | –   | –  | 50...60 Hz   |
| Indication  | –   | –  | 3 levels shown by LCD segments:<br>—    — =    — = =                 |
| <b>Data Hold</b>  |   |  |  |
| Data hold   | –   | only voltage measurement (12...690V AC/DC)                                   | voltage and resistance measurement, NCV                              |
| <b>Measurement Area Illumination / Torch Light</b>                                  |   |  |  |
| Torch light   | White LED   |  |  |
| <b>General Specifications</b>   |   |  |  |
| Operation time (DT)   | 30 s  |  |  |
| Recovery time   | 240 s   |  |  |
| Operating temperature   | -15°C to +55°C  |  |  |
| Storage temperature   | -15°C to +55°C  |  |  |
| Humidity  | Max. 95% RH   |  |  |
| Operating altitude  | Up to 2000 m  |  |  |
| Safety rating (overvoltage category)  | CAT IV / 600V, CAT III / 690V                                   |  | CAT IV / 600V, CAT III / 1000V                                       |
| Pollution degree  | 2   |  |  |
| Protection degree   | IP 64   |  |  |
| Safety regulations  | IEC 61243-3:2009, EN 61243-3:2010, DIN VDE 0682-401:2011        |  |  |
| Approvals, compliance   | GS mark from TÜV Rheinland, CE                                  |  |  |
| Power Supply  | Battery 2 x 1.5V (AAA/ IEC LR03)                                |  |  |
| Power consumption   | Approximately 60 mA   |  |  |
| Battery lifetime  | More than 10000 measurements (<5 s / per measurement)           |  |  |
| Dimensions (HxWxD)  | Approximately 280 x 78 x 35 mm (11.0 x 3.1 x 1.4 in)            |  |  |
| Weight  | Approximately 320 g (0.71 lb)                                   |  |  |