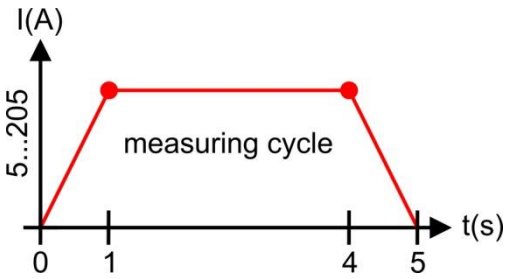
Portable Micro-Ohmmeter

VG-BAT-150
VG-BAT-200
VG-BAT-300

- Battery powered
- Lightweight and compact
- Real measuring current over whole measuring cycle
- Measures with both sides grounded
- Sunlight readable 4.3" graphic LCD
- USB PC-Interface
- USB logger
- Optional thermal printer
- Optional mobile phone control



Technical description

The portable micro-ohmmeters VG-BAT-x00 are used for resistance measurements of high power switches etc. The strengths of the instruments are the easy handling, battery powered, rugged design and low weight.

The VG-BAT-x00 enables a real direct current measurement for highest accuracy. The current rises linear for 1 second than holds the preset current for 3 seconds and falls back within another 1 second.

The advanced build-in $LiFePO_4$ battery offers maximum power with excellent safety and outstanding life.

The 4.3" LCD graphic display enables measurements in darkness, coldness and full sunlight.

Measurement data is saved directly to a USB stick.

The USB PC-Interface is used to control the device or read out the results automatically by computer.

Read out the device history or start a measurement with an Android phone or tablet. Send the data directly to your office.

The VG-BAT-200, with a weight of 5.1kg only is very handy and easy transportable.

Typical applications are ohmic tests of:

- Circuit breakers
- Disconnecting switches
- High current busbar joints
- Railway parts
- Cable splices
- Welding joints
- Ground connections

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Technical data

Type:	VG-BAT-150	VG-BAT-200	VG-BAT-300
Measuring ranges:	0...20.00µΩ, 0...200.0µΩ, 0...2.000mΩ, 0...20.00mΩ, 0...200.0mΩ, 0...999.9mΩ		
Display:	Sunlight readable LCD 4.3"graphic display with a resolution of 480x272 dots		
Display resolution:	0.01µΩ ... 0.1mΩ		
General Accuracy:	0 ...1000µΩ @ 200A / 25°C = ±0.05% FS 1 ... 25mΩ @ 200A / 25°C = ±0.2% FS 25 ... 999mΩ @ 5 - 200A / 25°C = ±0.5% FS		
Calculate measurement accuracy at a specific measuring point:	a) Calculate sense voltage: sense voltage[V] = EUT[Ω] * measurement current[A] Example 1: 500µΩ * 200A = 100mV Example 2: 50 µΩ * 100A = 5mV Example 3: 10 µΩ * 100A = 1mV b) Determine the absolute amplifier error for the desired measurement		
Reproducibility:	<0.1%		
Measuring current:	5 - 155A, 3 adjustable preset currents	5 - 205A, 3 adjustable preset currents	5 - 305A, 3 adjustable preset currents
Maximum test voltage:	5.5V		
Current ramp:	The test current rises following a linear ramp, holds the preselected value and falls with a linear ramp.		
Battery: Charging:	LiFePO4, 41Wh CCCV, approx. 1.5hours	LiFePO4, 82Wh CCCV, approx. 2 hours	LiFePO4, 82Wh CCCV, approx. 2 hours
Measuring interval:	No limitation of the number of current cycles		
Result data logging:	The last 100 data sets are stored internally. Unlimited data sets for the external USB stick.		
Data logger:	Accepts FAT32 formatted USB sticks		

Sense Voltage a)	Max. Error Sense Voltage	Absolute Error in [V]
200.1mV – 5.000V	+/- 0.1%	+/- 5mV
20.01 – 200.0mV	+/- 0.05%	+/- 100µV
2.001 – 20.00mV	+/- 0.1%	+/- 20µV or +/- 0.1µΩ whichever is greater
0.00 – 2.000mV	+/- 0.2%	+/- 4µV or +/- 0.1 µΩ whichever is greater

c) Divide the absolute error in [V] from the table b) by the measurement current
Example 1: 100µV / 200A = +/- 0.5µΩ absolute sense amplifier error
Example 2: 20uV / 100A = +/- 0.2µΩ absolute sense amplifier error
Example 3: 4uV / 100A = +/- 0.04µΩ absolute sense amplifier error

d) Additional security margin due to the current amplifier
Example 1: +/- 0.5µΩ * 2 = **+/- 1µΩ**
Example 2: +/- 0.2µΩ * 2 = **+/- 0.4µΩ**
Example 3: +/- 0.04µΩ * 2 = **+/- 0.08µΩ** → **+/- 0.1µΩ**

Number of Measurements:		**200A**	**100A**	**50A**
Typical for VG-BAT-200/300	**27mΩ**	60#	250#	1000#
→ for VG-BAT-150 divide by 2	**5mΩ**	335#	1350#	>2000#
	1mΩ	1690#	>2000#	>2000#

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Type:	VG-BAT-150	VG-BAT-200	VG-BAT-300
Automatic power switch-off:	Default 2 minutes		
Sense input: Input voltage: Input impedance:	Independent polarity with banana jacks on front panel Max. ±5V >200kΩ		
Current Clamp input: Input voltage: Input sensitivity: Input impedance:	Independent polarity with banana jacks on front panel Max. ±1V Adjustable 0.1 – 20mV/A >1MΩ		
Shunt output:	100µV/A +/-1%, banana jacks on front panel		
Data interface:	USB, various measuring protocols may be set (VG-CS Win, data output, data control)		
Pass/Fail:	Display signalization, 3 preset limits. Optional alarm contacts		
Date/time:	The instrument has a battery buffered real time clock		
Buzzer:	An acoustic click for keyboard operation or an ongoing test		
Ambient temperature:	-20.0°C ... +50.0°C		
IP Code:	IP54 (closed case cover) IP30 (open case cover)		
Humidity:	Max. 95% non-condensing		
LVD:	RL2014-35-EU, EN 61010-1:2011		
EMC:	RL2014-30-EU, EN 61326:2013, EN61000-6-1/2/3/4:2019		
Printer:	Optional, 24-characters standard thermal paper (58x32mm diameter)		
Unit manipulations:	Keyboard, external PC or Android phone/tablet		
Manipulations:	Menu operated, easy to use		
Power supply (battery charger):	100...240V, 1.3A, 50-60Hz		
CE-conformity:	Fulfilled		
Dimensions:	L x W x D: 300 x 248 x 195 mm		
Weight:	4.9 kg	5.1 kg	5.2 kg
Warranty:	2 Years		
Software (optional):	PC-software to transfer and log stored data sets, Order No: VG-CS WIN		
Special accessories:	-Customer specific changes -Current clamp (for example 20mV/A) to measure dual grounded systems -USB stick		

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Accessories:

Transport carrying case type VG-CS-TRK
VG-CS 2-600: Order No: VG-CS-TRK2-600

Cable bag type VG-CS-TRT
44cm x 32cm x 15cm
Order No: VG-CS-TRT

Sense cable 2.5mm² type VG-CS-SNE2.5/6
L=6m with test probe & clips
Red: Order No: VG-CS-SNE2.5/6R
Black: Order No: VG-CS-SNE2.5/6B

Sense cable extension 2.5mm² type VG-CS-SNEV2.5/10
L=10m with one 4mm connector and one 4mm plug
Red: Order No: VG-CS-SNEV2.5/10R
Black: Order No: VG-CS-SNEV2.5/10B

Current cable 35/50mm² type VG-CS-STRxx/xTR
single cable with one connector and one clamp
L=0.6m: Order No: VG-CS-STR35/0.6TR
L=5.0m: Order No: VG-CS-STR35/5TR
L=10.0m: Order No: VG-CS-STR50/10TR

Current cable extension 50mm² type VG-CS-STRV50/xTR
single cable with one connector and one cable plug
L=5.0m: Order No: VG-CS-STRV50/5TR
L=10.0m: Order No: VG-CS-STRV50/10TR

PE grounding cable 2.5mm² type VG-CS-EK2.5
single cable with one cable socket and one clamp
L=1.5m: Order No: VG-CS-EK2.5/1.5
L=6.0m: Order No: VG-CS-EK2.5/6
L=15.0m: Order No: VG-CS-EK2.5/15

Wireless Remote control type VG-CS-Fern-BT
Remote control dongle for an Android device from Android 5.0 and up
Order No: VG-CS-Fern-BT
For dongle with fully feature set:
Order No: VG-CS-WIN+

PC-software type VG-CS-WIN
The Windows software makes it easy to manage and save all test results.
Order No: VG-CS-WIN