

ORBIS

energía inteligente

VIARIS TESTER

ELECTRIC VEHICLE ALTERNATING CURRENT
CHARGER TESTER



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Safety warnings



This equipment must only be used by specialised, trained staff.

Maintain the VIARIS TESTER in good condition and undamaged. If you observe any damage, do not use it.

Read these instructions carefully as otherwise using the VIARIS TESTER may be dangerous for the operator, tester or electric vehicle power system.

Consider all the normal safety precautions when using the VIARIS TESTER to prevent electrical risks.

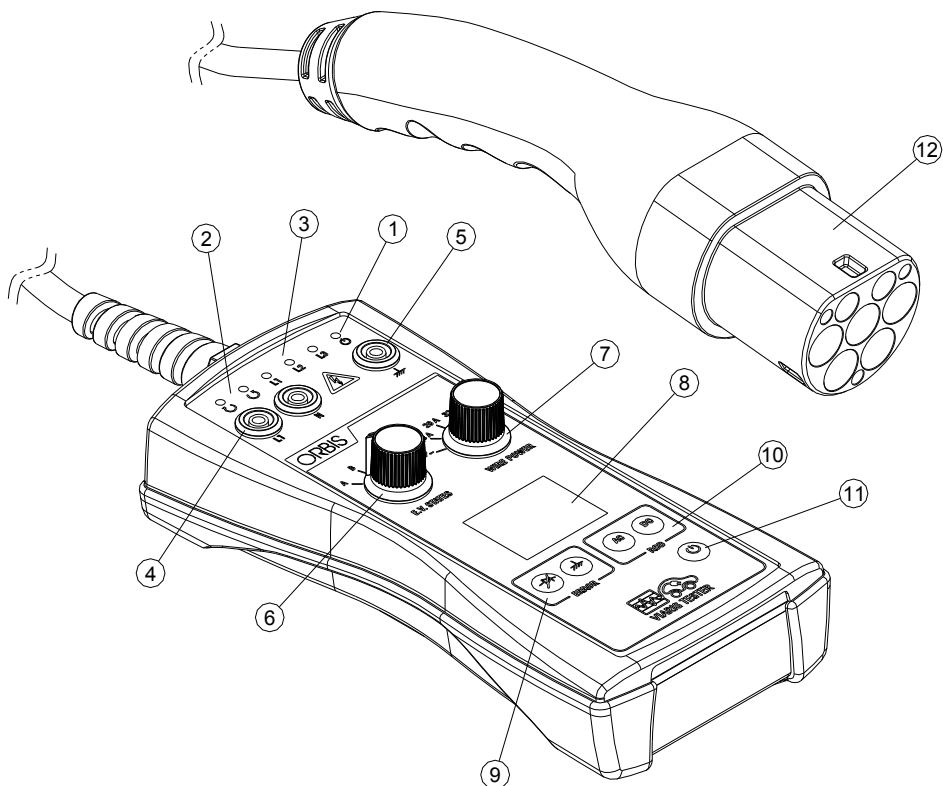
Warning signs used in this instruction manual

	ELECTRICAL RISK There is a risk of electrocution which can cause bodily injury or death if instructions are not followed
	CAUTION

Description

The VIARIS TESTER is a special electric vehicle power system tester. It permits the testing of several electric vehicle power system chargers simulating the electric vehicle. Charging mode 3 can be tested with Type 2 connectors.

Tester components



1. Tester ON indicator lamp
2. Phase sequence indicator lamp
3. Lamps indicating the presence of phases L1, L2 and L3 in the charger.
4. Test connectors to apply the charge (max. 8 A / 1800 W).
5. Grounding test connector
6. Vehicle status selector switch
7. Charging cable coding selector switch
8. Indicator display
9. Vehicle error recorder
10. Protection failure recorder
11. Tester ON/OFF button
12. Cable with Type 2 pin for connecting to the charging point

Power on / off



Turn on the Viaris Tester by pressing the ON/OFF button ⑪ and it will remain on as long as it is supplied with power from the charger or while the selector switches or buttons are being activated.

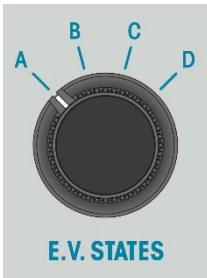
While the equipment is on, the led indicator lamp ① will light up.

After 2 minutes at rest with no power, the *Viaris Tester* will automatically go off.

Keep the ON/OFF ⑪ button pressed to turn off the *Viaris Tester*.

Vehicle status simulation (CP)

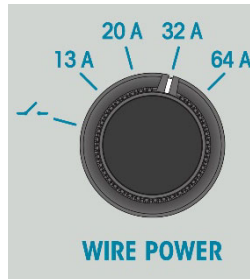
The different vehicle statuses may be simulated in the different selector switch positions ⑥:



Statuses	Description
A	Vehicle unplugged
B	Vehicle plugged in but not charging
C	Vehicle plugged in and charging
D	Vehicle plugged in and charging with ventilation

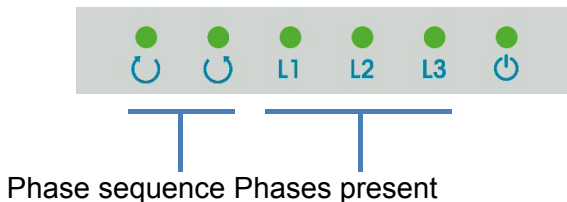
Cable coding simulation (PP)

The electric vehicle charger cables are encoded so that they do not exceed the vehicle maximum admissible current. Using the selector switch ⑦ the different cable coding can be simulated, from not coded to 64 A. When testing a charger with a hose, this selector switch is not operative and the current is the maximum charger current.



Phase presence and sequence

After vehicle charging simulation has started (Statuses B, C or D), the led indicator lamps ② will display the phases that are present and the led indicator lamps ③ will display their sequence. In the case of single-phase chargers, only L1 will be present.

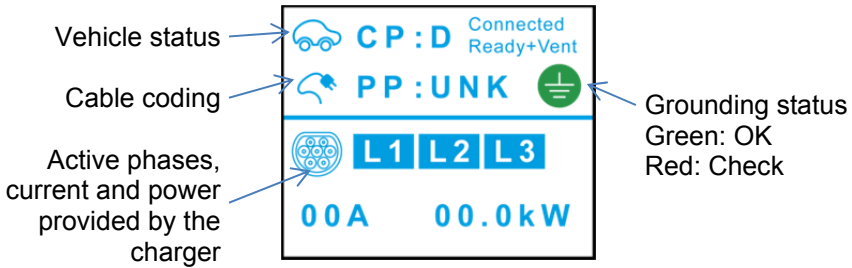


Display

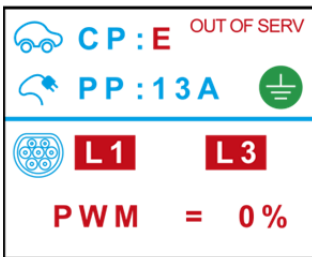
The display shows the charger statuses and technical details related to charging.

There are two data viewing modes. Tap the ON / OFF (11) button to switch to another screen.

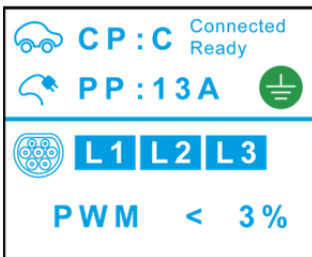
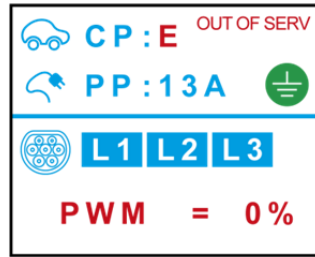
Screen 1:



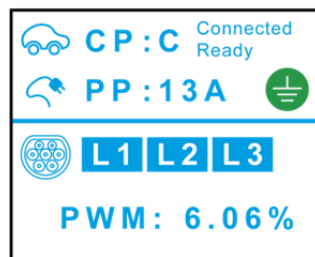
Screen 1 changes to display the current and power values, depending on the PWM value.



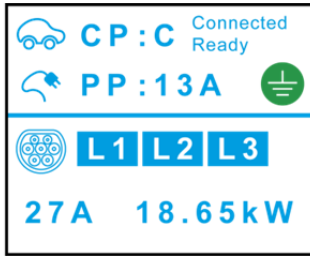
PWM = 0% when there is no PWM



PWM < 3% between 0 and 3%



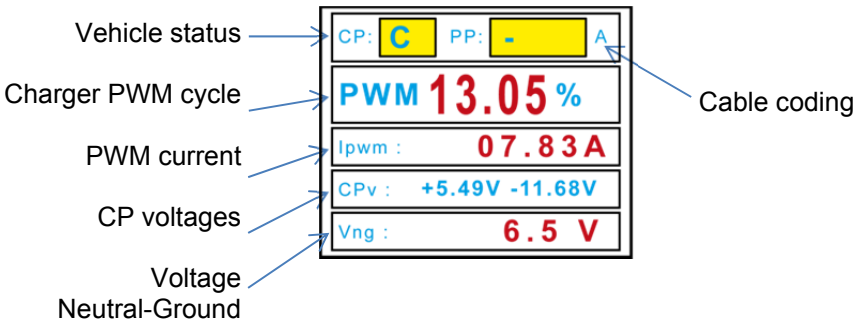
PWM = x% between 3 and 8%



Current and power values from 8%

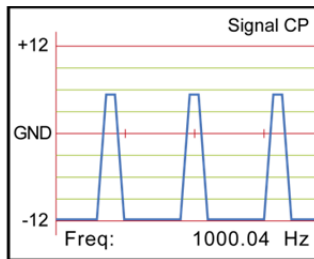
Below 8% there is normally no charge. To summarise, the PWM value shown is below 8% and the current and charge equivalent is above it.

Screen 2:



Screen 3:

CP oscilloscope. This screen monitors the CP signal.



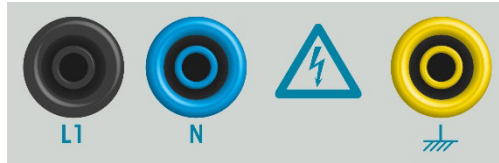


Connecting the real charge to the charger

Using the test terminals ④ located at the same distance as a standard Schuko pin, a charge can be connected such as a heater or an electric drill, to provoke a real flow of current to the charger.

WARNING: THE CHARGE CONNECTED TO THESE TERMINALS MUST NOT BE MORE THAN 8 A / 1800 W.

A grounding terminal is also available ⑤ to test the charger grounding.



Grounding test

The *Viaris Tester* continuously tests the grounding quality. If the installation grounding is correct, a green icon will be shown on the display.

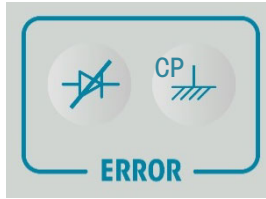


If, on the contrary, it is in poor condition, a red indicator lamp will flash on the display, indicating that the installation grounding must be checked.



Poor grounding will make it impossible for the electric vehicle to charge and return an error.

EV failure simulators



The ⑨ buttons simulate possible failures in the electric vehicle:



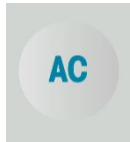
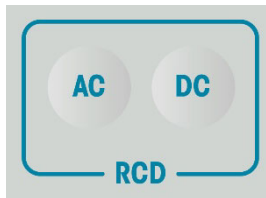
Shorted diode: The electric vehicle internal diode specified in standard 61851-1:2011 is damaged. When this failure is simulated, the charger must detect the problem and return an error.



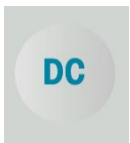
CP short circuit to ground: It simulates a short circuit of the CP signal to ground. When this failure is simulated, the charger must detect the problem and return an error.

Installation protection test

The ⑩ buttons simulate failures in the installation that must trigger the charger line protections:



Differential protection test of the maximum differential-residual current assigned of 30 mA. To generate the test, keep the button pressed for a few seconds.

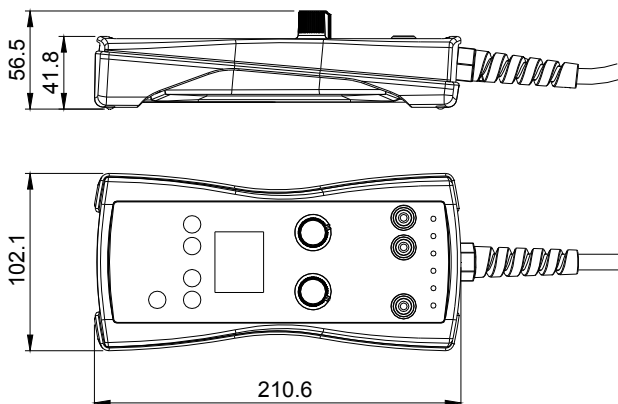


Leak current protection test with default direct current component higher than 6 mA. To generate the test, keep the button pressed for a few seconds.

Technical data sheet

Power:	6 V \approx 4 x 1.5 V LR6/AA
Connection:	Type 2 pin as specified in EN 62196-2:2012
Charging terminals:	8 A / 230 V~ (1800 W)
Grounding terminal:	Functional
Measuring category:	CAT II as specified in EN 61010-2-030
Current surge category:	II as specified in EN 61010-1
Operating temperature:	From 0 °C to +40 °C
Contamination grade:	2
Relative humidity:	Annual mean < 75%. Specific values 95%
Protection Rating:	IP40 as specified in EN 60529
Protection class:	II. Double insulation
Vehicle status simulation (CP):	Statuses A, B, C and D (short circuit of CP to ground and diode)
Cable coding simulation (PP):	Open, 13 A, 20 A, 32 A and 64 A
Installation protection test:	AC and DC
Cable length:	1 metre

External dimensions



Maintenance

No unauthorised person must open the VIARIS TESTER. There are no replaceable components inside the tester.

No special maintenance is required.

Clean the tester with a soft cloth dampened in soapy water or alcohol. Then leave the tester to dry completely before use.



Warnings:

*Do not use fluids that contain petrol or hydrocarbons.
Do not spill cleaning fluids on the tester*



WARNING: This product incorporates a battery. Do not dispose of the product without taking the precaution of disassembling the battery and depositing it in a container suitable for recycling

Reference Directives and Standards

Complies with the essential requirements of the following Directives:

Directive 2014/35/EU (LVD) on electrical material for use with certain voltage limits.

Electromagnetic Compatibility Directive (Directive 2014/30/EU).

Directive 2011/65/EC (RoHS) on the restriction of the use of certain hazardous substances in electrical and electronic equipment

In accordance with the following standards:

EN 61010-1:2010

EN 61010-2-030:2010

EN 61326-1:2013

EN 50581:2012

***Subject to technical changes – additional information available at
www.orbis.es***

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