

Instruction manual

Electric Shock meter

Revision 1.0 January 2023



SKU: 46000-101



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SAFETY CONSIDERATIONS

Although this instrument has been designed with international safety standard, this manual contains information, cautions and warnings which must be followed to ensure safe operation and to retain the instrument in safe conditions.

Service and adjustments should be carried out by qualified personnel, authorized by Ugo Basile organization.

Any adjustment, maintenance and repair of the powered instrument should be avoided. If inevitable, it should be carried out by a skilled person who is aware of the hazard involved.

Capacitors inside the instrument may still be charged even if the instrument has been disconnected from its source of supply.



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CE CONFORMITY STATEMENT

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We hereby declare that

Instrument. **ELECTRIC SHOCK METER**
Catalog number **46000-101**

***is manufactured in compliance with the following European Union Directives
and relevant harmonized standards***

- *2014/30/UE relating to electromagnetic compatibility*
- *2011/65/UE and 2015/863/UE on the restriction of the use of certain hazardous substances in electrical and electronic equipment*

Account Manager

Mauro Uboldi

Nome / Name

January 2023

Date


Firma / Signature

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1 General

The Electric Shock Meter has been designed to measure the intensity of the electric shock stimulus generated by several Ugo Basile apparatus, to ensure researcher while using multiple devices in parallel that the electric shock intensity is delivered homogeneous on all the devices

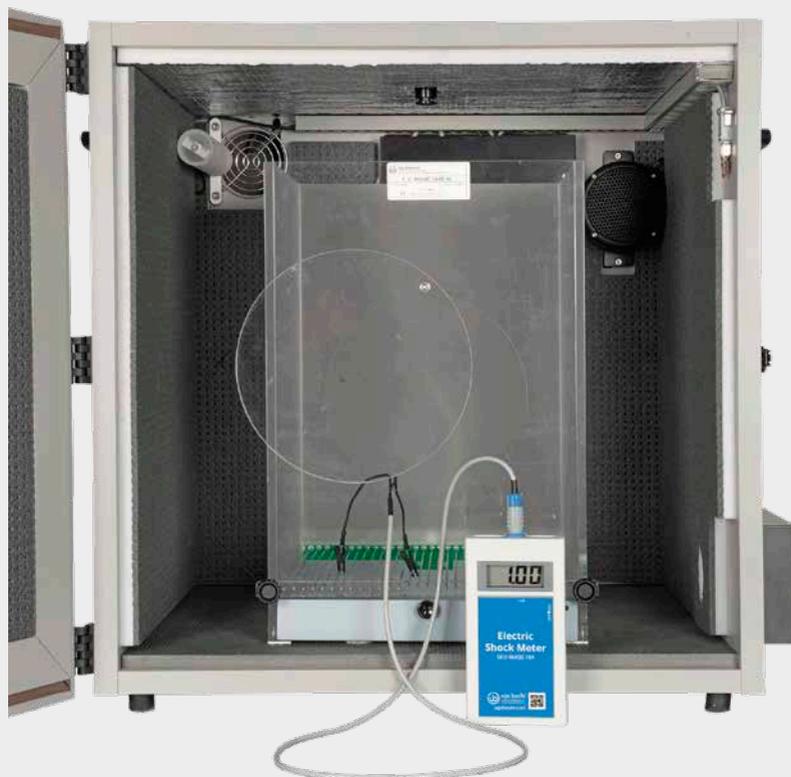
Product features and general information

The 46000-101 Electric Shock Meter is an essential measurement instrument for some of the Ugo Basile instrument having an electric shock stimulus for rodents.

Due to electric nature of the electric shock emission, measuring it using a common volt meter is practically impossible; the use of this device will ensure researcher a correct and homogeneous electric stimuli to all the instrument used in parallel.

The 46000-101 Electric Shock Meter can be used with the following Ugo Basile instruments:

- All the **Fear conditioning** Ugo Basile systems of any model.
- **Active Avoidance** set-up for Mice and Rats (Shuttle-Box)
- **Passive Avoidance** - Step Down for Mice (vibrating platform)



What's in the box

SKU: 46000-101 box contains:

1 (SKU 46000-101EL01) Electric Shock Meter main unit, with 9V battery inside (6LR61)

1 (SKU PRC46000-101CAVO1) Probe with 2 crocodile connectors

1 USB pen drive containing:

- This instruction manual
- The quality control and warranty certificate
- Ugo Basile catalogue

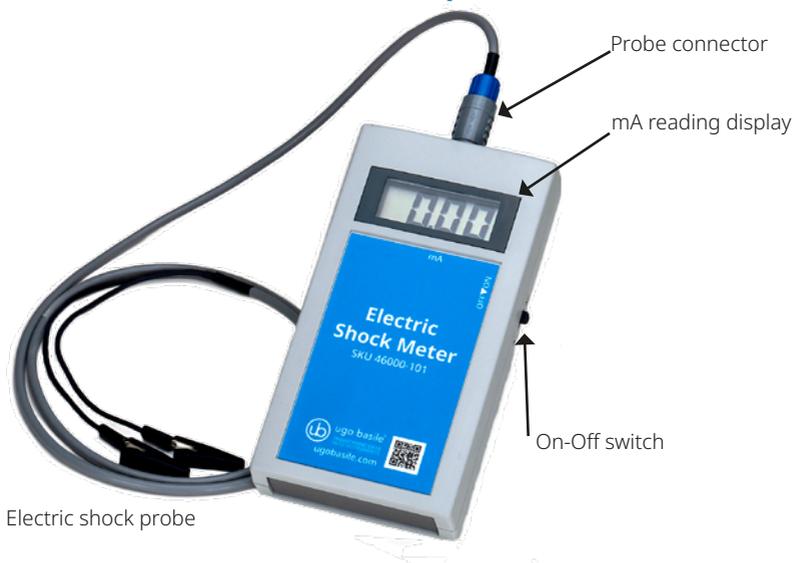
2 Instrument Description

The Electric Shock Meter is composed by:

The main instrument electronic unit

The electric shock probe which connect the measurement instrument with the electric grid that provide the electric shock.

2.1 Main instruments part



Electric shock probe

Front view

3 Installation

3.1 Unpacking & preliminary check

Check the content of the shipment for completeness and visually inspect the instrument as soon as you take it out of the packaging.

If the box looks damaged, inform the carrier and provide a conditional signature (not a full signature).

Once unpacking, if the instrument is damaged, notify our company, by writing an email to sales@ugobasile.com

If after a test, the instrument fails to meet the expected behaviour and performance, please contact our post-sales service at service@ugobasile.com.

Protect the environment: Dispose of packaging properly, according to existing and applicable waste management rules and regulation.

3.2 Notes on the Instruction Manual

This instruction manual included in the USB pen drive in PDF format, is necessary for a correct installation and operation of the instrument.

Please save the manual, keep it ready to be consulted by the qualified personnel using the instrument, and print it only if necessary.

3.3 Safety Instruction

The following guide lines must be followed to ensure safe operation.

- DO NOT attempt to open or perform any service work before having contacted Ugo Basile support team
- DO NOT use the device on human subjects

3.4 Assembling the instrument

This device is powered by one alkaline battery 9 volt 6LR61

Make sure the battery is correctly inserted in the rear battery holder before switching the instrument on.

Connect the provided probe to the probe connector paying attention to the insertion position; do not force the connector in. Rotate the connector to fit the correct position.

Switch the instrument on using the right side switch, the display will show 0.00 value.

4 Operation

While use an Ugo Basile apparatus, having the electric shock as a stimulus, you need to ensure that the set amount of shock in mA is delivered.

Due to the nature of the electric shock emission it is not possible to measure it using a common voltmeter, the Electric Shock Meter is designed to provide You a correct measurement.

Moreover while using multiple Ugo Basile apparatus in parallel (e.g. four Fear conditioning cages) it is a must to control that the same electric shock is delivered.

The following procedure can be used for all the Ugo Basile Fear conditioning systems (all models) and for the Active and Passive avoidance Ugo Basile systems.

- Carefully clean out the electric shock bars on the apparatus (Fear conditioning cage or passive/active avoidance) where you want to measure the current.
Animal feces and urine create an isolation film over the electric bars which can give you a false value. **THIS IS A VERY IMPORTANT TASK TO BE DONE BEFORE PROCEEDING.**
- Switch the Electric Shock Meter on (using the right side switch)
- Make sure the probe is correctly connected to the Electric Shock Meter and connect the 2 crocodile clamps to 2 adjacent electric shock bars of your Fear conditioning cage/Active/Passive avoidance set-up
IMPORTANT the 2 clamps of the measurement probe **MUST** be connected to 2 adjacent shock bars (one beside the other), if you connect them to 2 bars not beside the measurement can may result incorrect.
- Set the desired mA value into the software/hardware you use for controlling the experiment.
For the Fear Conditioning systems you may use the Ugo Basile touch screen, or the ANY-maze software or the Noldus Ethovision software.
For the Active and passive avoidance systems you need to set the electric shock stimulus on the Ugo Basile Touch Screen.
Set the value mA you intend to use for your experiment (e.g. 0.80 mA)
- Be sure to provide at least 10 seconds of shock before reading the mA value on the Electric Shock Meter, early readings may be not correct.
In ANY-maze software you will need to press the button several times during a 10 seconds period.
Please note that this instrument reading range is from 0.01 up to 3.00 mA
- Read the value on the display.

4 Readings validation

Compare the reading values on multiple cages to ensure the electric shock homogeneity; a tolerance of ± 0.10 mA is accepted.

If values differs from the given tolerance, first make sure the bars you use for the measurement are perfectly cleans and repeat the readings.

If after the second readings the values are still out of tolerance, contact your Ugo Basile local reseller or the ugo Basile service department. (service@ugobasile.com)



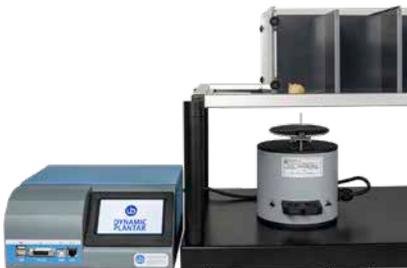
For other Ugo Basile products related to this device visit ugobasile.com web site for details



TGR - Thermal Gradient Ring (Zimmermann's method)



The original Plantar Test for thermal stimulation (Hargreaves Apparatus)



Dynamic Plantar Aesthesiometer (DPA) for mechanical stimulation



Thermal Place Preference (TPP Test) for Mice & Rats



Plethysmometer, the 1st and original device for measuring paw volume & oedema



Analgesy-Meter the 1st and original Randall-Selitto paw-pressure test

Ugo Basile SRL

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4 Readings validation [Electric Shock Meter instruction manual](#) > Page: 13



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Hot/Cold Plate for screening of thermal hyperalgesia/allodynia



e-VF Handheld Electronic Von Frey of original design



PAM Pressure Application Measurement (for joint pain)



Orofacial Stimulation Test (Fehrenbacher, Henry, Hargreaves method)



Tail-Flick Unit, thermal stimulation of the tail, according to D'Amour & Smith method



I.R. Heat-Flux Radiometer for Tail Flick and Plantar Test

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The 1st, original Mouse RotaRod for motory coordination studies



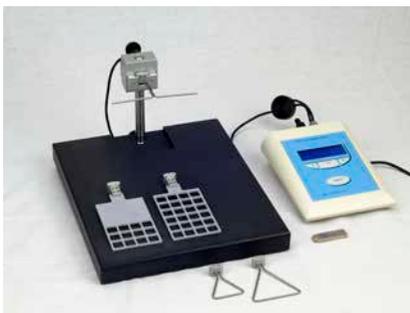
OPERON (Papaleo-Scheggia's method) for Attentional Set-Shifting Task



Fear Conditioning System - ANYmaze



Rodent Treadmill NG with interchangeable lane assembly for rats or mice



GSM Grip-Strength Meter for mice and rats



The Rota-Rod Family

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