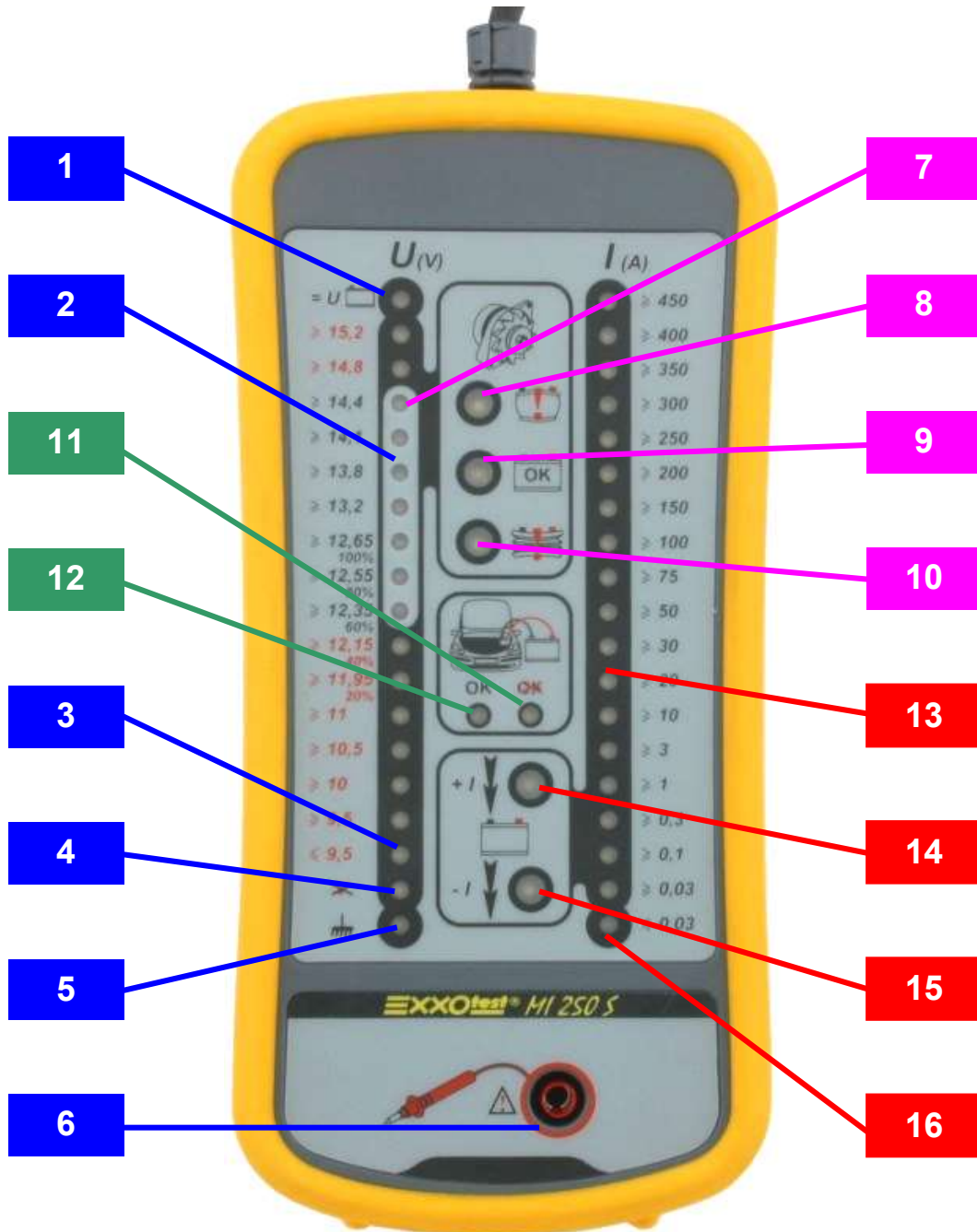




AUTOMOTIVE CONTROLLER EXXOTEST[®] MI250S

For the complete check and the diagnosis
of the charge and start-up circuits

USER GUIDE



www.exxotest.com

**WARRANTY: 2 years
(Parts and labour)**

ANNECY ELECTRONIQUE

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CAUTION BEFORE USING THE AUTOMOTIVE CONTROLLER MI250S

To make sure that the MI250S is used safely and so as not to damage it:

- The MI250S can only be used if the indications in this manual are followed so as to preserve its integrated protection.
- Do not use the MI250S if the unit or its measuring cords are damaged, or if the unit does not appear to work properly.
- Check proper operation of the MI250S by measuring a known continuous voltage. If in doubt, have the unit checked.
- Never apply voltage over 35 V.
- Do not use the unit near explosive gas, steam or dust.
- Follow all security measures regarding the equipment being tested.

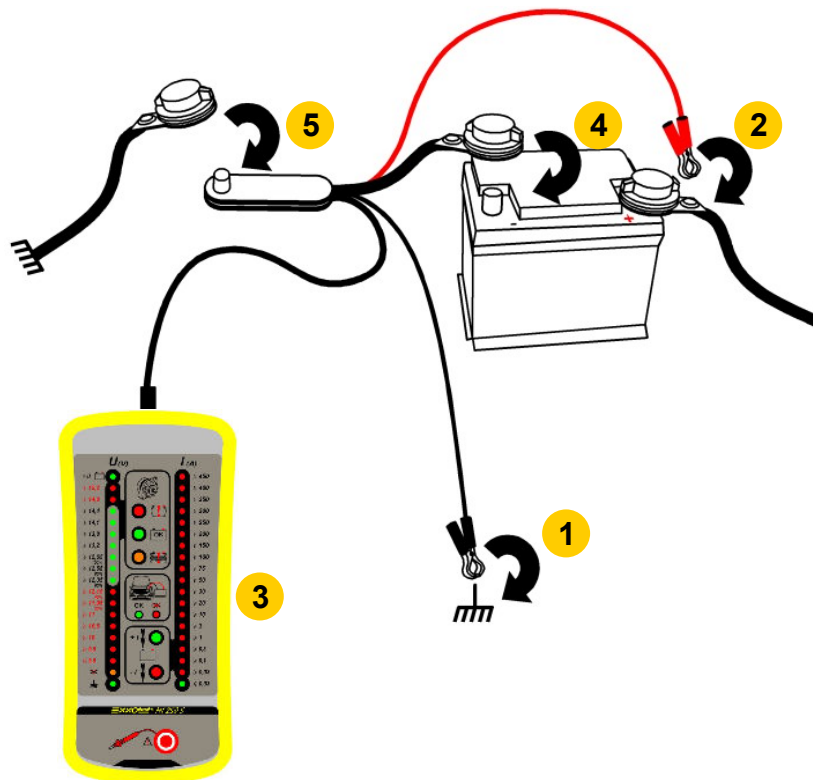
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❖ CONNECTING THE TESTER MI250S TO THE VEHICLE

IMPORTANT :

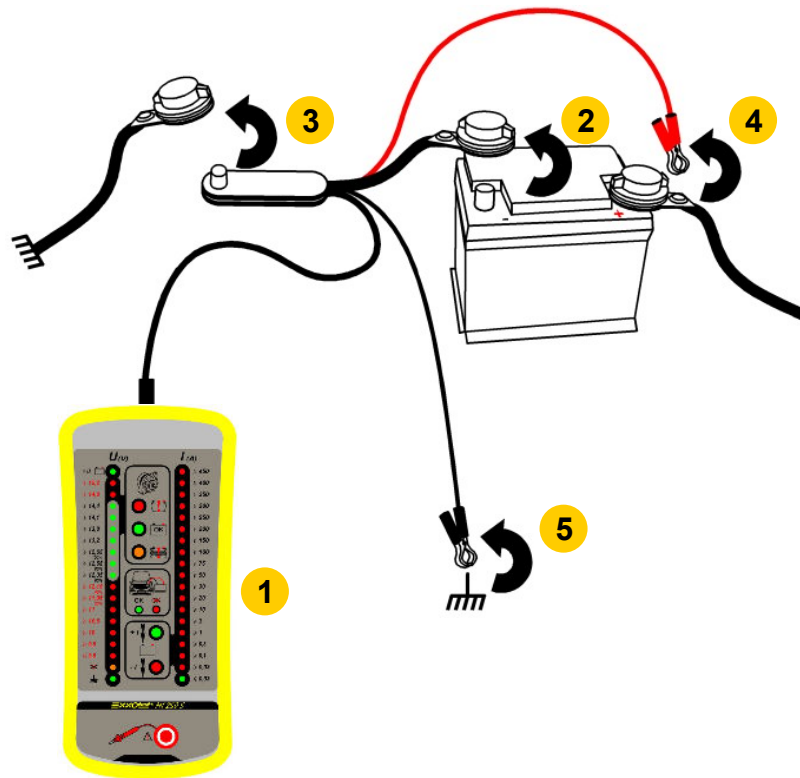
Before connecting EXXOTEST MI250S to the vehicle, make sure that there are no pirate consumers (map light on, ignition off, ...)



Proceed in the following order :

- 1 • Connect the black clamp to a good ground point
- 2 • Connect the red cable to the battery (+) by means of the red clamp, EXXOtest MI250S comes on. Do not handle either clamp any more until the test is completed.
- 3 • Check that the memory function is operational (green LED (12) on), make sure that there are no consumers present (**map light...**)
- 4 • Disconnect the battery ground cable from the (-) battery terminal and connect it to the shunt's terminal, **during this stage, the MEMORY PROTECTION function of the unit is activated (attention : this function is on for ONLY 2 minutes)**
- 5 • Connect the shunt in series to the battery ground.

❖ DISCONNECTION OF EXXOTEST MI250S



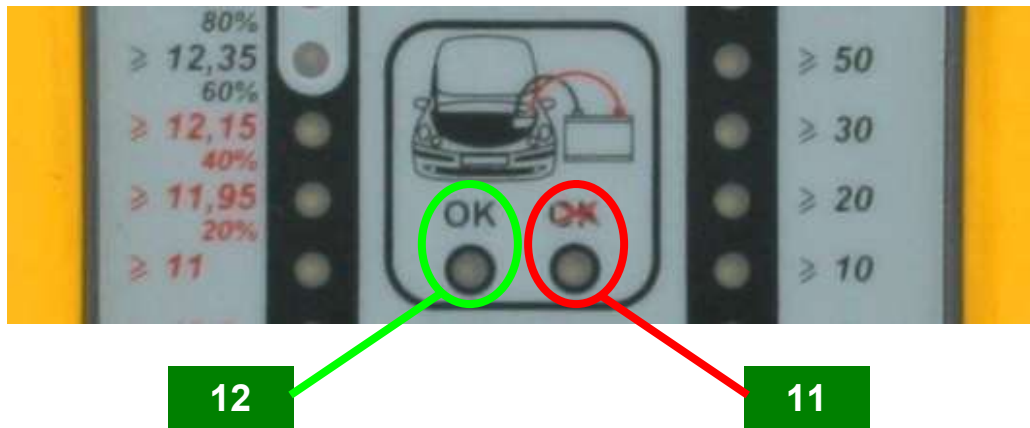
Proceed in the following order :

- 1 • Make sure that the memory function is operational (green LED (12) on), make sure that there are no consumers present (**map light...**)
- 2 • Disconnect the flat contact from the battery ground
- 3 • Disconnect EXXOtest MI250S's shunt's ground cable and re-connect it to the battery ground
- 4 • Disconnect the red cable from the (+) battery terminal
- 5 • Disconnect the black cable from the vehicle's bodywork

Turn off 'EXXOtest MI250S by bringing the two cables, red and black, in contact (a security function automatically turns off the unit after 2 minutes)

❖ MEMORY FUNCTION

THE MEMORY FUNCTION SUPPLIES A MINIMUM ENERGY LEVEL TO THE VEHICLE, THUS ALLOWING THE DIFFERENT ECUs TO KEEP THEIR MEMORY INTACT



The green LED «OK» (12) lights up after connecting to the vehicle if the memory protection battery integrated in EXXOtest MI250S is correctly charged. The memory will be kept **for 2 minutes maximum**.

The red LED «ERROR» (11) lights up :

- When connecting the red and black clamps if the memory protection battery is highly discharged. It is necessary to recharge the battery connecting both EXXOtest MI250S's red and black clamps to a 12v battery.
- During the memory protection stage, if a strong electric consumer is present, keeping the memory is not assured. We recommend restoring the battery ground as quickly as possible.
- Both LEDs (11) and (12) blink alternatively during the memory protection stage when there is a strong consumer and the memory protection battery finds itself on the limits of its protection capacity.
- The green LED (12) blinks while the memory protection battery is being charged. When the battery is properly charged, this led stops blinking and remains on.

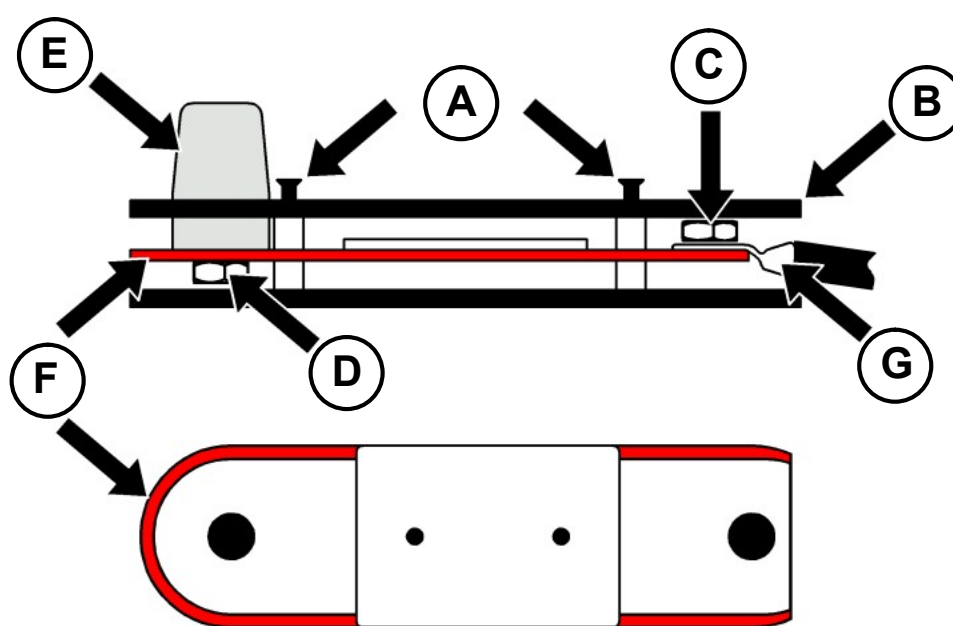
❖ SHUNT PLATE

Function of the shunt plate :

- **ALLOWS MEASURING THE INTENSITY**
- **PROTECTS THE UNIT**
-

Replacement :

The shunt plate must be replaced if EXXOTEST MI250S permanently indicates 450A when connected to the battery.



METALLIC SIDE UP

DISMANTLING :

- 1 Unscrew the 2 screws (A) with an Allen key 2mm
- 2 Remove plate (B)
- 3 Unscrew bolt (C) with a spanner 10 taking into account how terminal (G) has been mounted
- 4 Remove shunt plate (F)
- 5 Unscrew screw (D)

REASSEMBLING :

- 1 Reassemble terminal (E) against the metallic side of the new shunt plate (F)
- 2 Reassemble terminal (G) **in the same way as it was before dismantling**
- 3 Reassemble the other elements

❖ MEMORY PROTECTION BATTERY

THE TOOL'S INTERNAL MEMORY PROTECTION BATTERY CAN PROVIDE THE USER WITH THE REQUIRED POWER SUPPLY WHEN THE VEHICLE'S BATTERY IS DISCONNECTED

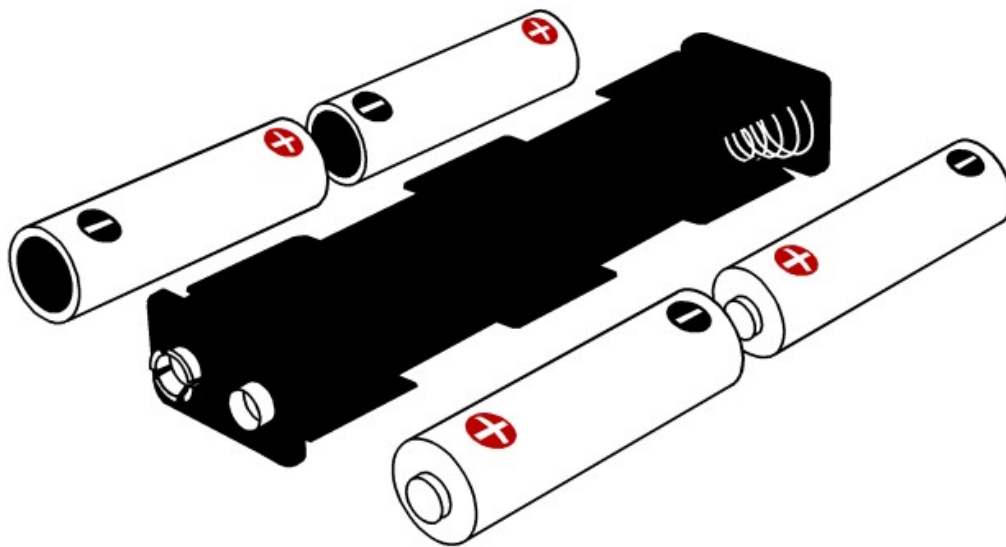
It is automatically recharged while the unit is being used, except during the memory protection stage.

It must be recharged if the red LED (11) remains on when the unit has been connected. In this case, memory protection is not assured.

REPLACEMENT:

It must be replaced if, despite the charge, the red LED (11) lights up frequently (battery worn out)

- Open the back of the unit with an appropriate tool
- Systematically replace the four batteries respecting the polarity as in the diagram below.



MEMORY PROTECTION SYSTEM CHECK :

After the batteries exchange, connect the black clamp to the shunt, then connect and disconnect the shunt and the red clamp to a car battery : the MI250S must remain on.

Otherwise, ensure about the charge level of the exchanged batteries.

❖ NOTICES

- **FOR A CORRECT FUNCTIONNING OF THE MI250S :
THE EQUIPMENT'S BATTERY MUST BE CHARGED**

 LED **12** on

- **CERTAIN SYSTEMS MAY DISTORT MEASUREMENTS
TAKEN WITH THE EXXOTEST MI250S**

Example :

On DIESEL vehicles equipped with a pre- and post-heating system, it is advised to take the measurement with the engine hot (pre- and post-heating sequence finished).

This system drives alternatively the glow plugs for a certain time after start-up, which causes important current peaks.

EXXOTEST MI250S reacts by making LEDs (14) and (16) blink.

No reliable measurement can be taken until the pre- and post-heating stages are completed.

❖ SPECIFICATIONS AND CHARACTERISTICS

TESTER	MI250S
VOLTAGE MEASUREMENT	Indication of 0 V then from <9,5 V à >15,2 V
CURRENT MEASUREMENT	From <0,03 A to <450 A
POWER SUPPLY	On 12V battery
APPLICATION	Multi - makes
CONNECTION	Shunt connected in series to the negative battery terminal (possibility of connecting to a battery with flat contacts) Clamp on the battery positive terminal
PRESENTATION AND ACCESSORIES	Casing with shockpro of bead (47X95X200mm), supplied in storage case with : <ul style="list-style-type: none"> • a spare shunt plate, • tester cord, • user instructions
STORAGE TEMPERATURE	From -10°C to 60°C
USE TEMPERATURE	From 2°C to 40°C

DECLARATION OF CONFORMITY

S.A.S. ANNECY ELECTRONIQUE

Parc Altaïs – 1, rue Callisto

F74650 CHAVANOD

Manufacturer :



Declares that the following product,

Brand name	Model	Name
EXXOTEST	MI250S	Charge and start-up circuits tester

Is in conformity with the requirements of the following European directives :

- Electromagnetic compatibility directive 89/336/CEE from May 3rd 1989, amended by 92/31/CEE and 93/68/CEE

And complies with the applicable requirements of the following norm :

NF EN 61326-1 from 07/1997 +A1 from 10/1998 +A2 from 09/2001
Measure, control and laboratory electrical equipments, instructions relating to the C.E.M.

Made in Saint-Jorioz on october 1st 2004

Managing director
S. SORLIN

	MARK	DESCRIPTION	
MULTIMETER FUNCTION	1	Indicator on : the measured voltage equals the battery voltage when the measuring cord is connected into the socket (6)	
	2	Voltage scale from 9,5 to 15,2 V. It indicates the voltage on the measuring cord.	
	3	If the battery tension <9,5 V, the rest of indications are not significant (the battery must be recharged)	
	4	No voltage on the measuring cord (cable in the air)	
	5	The measured voltage equals the battery ground	
	6	Voltage measurement socket, automatically turned on when connecting the measuring cord	
VOLTAGE MEASUREMENT	7	Voltage scale from 9,5 to 15,2 V. It indicates the voltage on the battery terminals, in absence of the measuring cord in socket (6) BLINKING : display of the following values : battery voltage minimum or maximum during a current or voltage peak.	
	ENGINE RUNNING	8	Battery voltage in charge >14,9 V (fault in the energizing or regulation circuits)
		9	Battery voltage in charge between 13,9 V and 14,9 V (normal charge)
		10	Battery voltage in charge <13,9 V (fault in the energizing or power circuits)
SAFEGUARD	11	<ul style="list-style-type: none"> This indicator lights up when connecting the red and black clamps. If the memory protection battery is seriously discharged, it must be recharged by connecting EXXOtest MI250S 's red and black clamps to a 12V power supply. This indicator may blink (see chapter MEMORY FUNCTION) 	
	12	<ul style="list-style-type: none"> Indicator ON: Memory protection battery charged, MI250S operational This indicator may blink (see chapter MEMORY) 	
CURRENT MEASUREMENT	13	Scale of charge or discharge current from 0,03 to 450 A BLINKING : displays value of maximum intensity when there is a current peak (during start-up for example)	
	14	The intensity appearing on the scale of current (13) charges the battery	
	15	The measured intensity is correct for a vehicle at rest: leak current under 30 mA (insignificant)	
	16	The intensity appearing on the scale of current (13) discharges the battery	

Equipment's description shown on first page

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