






CONTROLS:













-  Push button with warning light for turning INTERNAL LIGHTS on or off (*)
-  Push button with warning light for turning PUMP on or off(*)
-  Push button with warning light for turning EXTERNAL LIGHTS on or off (*)⁽¹⁾
- AUX**  Push button with warning light for turning AUX on or off (*)
-  Push button with warning light for turn on LOAD⁽²⁾
Hold on the button more than 2 second will turn off LOAD/ INTERNAL LIGHTS/ PUNP⁽²⁾
Hold on the button more than 5 second will turn off the control panel

(*) Green light colour active load, yellow light colour deactivate load

(1) On the back of control panel there is a 2way connector for additional push button to switch on or off the external light.

(2) Yellow light colour active load, flashing yellow light colour deactivate load



SCREENS:


-  The warning light goes on when the 230V mains is connected
-  The warning light goes on when the vehicle engine is running and the parallel batteries is active
-  Press the push button to see internal temperature on the display (IN), press the push button twice to view external temperature (OUT). If you get the message "UPE", the temperature sensor is not present. If the temperature probe is faulty the display will show " - ".
-  Press this Key for viewing the level percentage % (0, 25, 50, 75, 100) of the drinking water tank with the symbols S1. If S1 is empty, the display flashes. If the tank is wrongly connected, the display will show " - - - ".
-  Press this Key for viewing the level percentage % (0, 25, 50, 75, 100) of the recovery water tank with the symbols R1. If R1 is full, the display flashes. If the tank is wrongly connected, the display will show " - - - ".
-  Press the push button once to see the voltage on the service battery (B2), Press the push button again to see displays the % the remaining battery.
Only in the view as %, if there is  or  the displayed value is replaced with the moving segments to indicate the battery charge.
-  Press the push button once to see the voltage on the starter battery (B1), Press the push button again to see displays the % the remaining battery.
Only in the view as %, if there is  or  the displayed value is replaced with the moving segments to indicate the battery charge.
-  Press this key for viewing the current on the service battery (B2). If the current is positive (battery charging) will show the symbol +A; if the current is negative (battery discharging) will show the symbol -A.


The screen remains active for approx. 30 seconds. with the flashing light on the corresponding button pressed.

ALARMS:

Batteries: Car battery (B1) less than 11,8V or Service battery (B2) less than 10V.

In this case there is a bleep (if enabled) and the flashing battery button that have generated the alarm (for the first 30 seconds you see the value). Hold for more than 3 seconds () button can be disabled (show "FFF") or enabled (show "B1") the low car battery alarm. Hold for more than 3 seconds () button can be disabled (show "FFF") or enabled (show "B2") the low service battery alarm

Tanks: Tank S1 empty or Recovery tanks R1 full. In this case there is a bleep (if enabled) and the flashing symbol the corresponding tank that raised the alarm(for the first 30 seconds you see the value).
Hold for more than 3 seconds () button can be disabled (show "FFF") or enabled (show "S1") the alarm of all tanks

Beep: Hold for more than 3 seconds () button can be disabled (show "FFF") or enabled (show "B") the the confirmation beep button pressed, and alarm buzzers





This symbol appears when there is an error:

- E. 1 Serial cable connection is wrong
- E. 2 Pump output is short-circuited or overloaded
- E. 5 External light output is short-circuited or overloaded
- E. 1 Aux/heating_tank output is short-circuited or overloaded

CONSUMPTION:

To turn on the control panel you must touch for 1 sec. the right or left side panel where there are the keys.

The panel after 30 sec. switches to standby mode by turning off all symbols except the keys  and those of active loads. keys light up when you touch for 1sec. the right or left side panel. On stand by (no active controls) the control panel with module NE237 consumes a total of approx 40mA. When the key () 5 sec.) is pressed the control panel turns itself off and total consumption is reduced to just 4mA. If the service battery voltage drops below 10V, after 1 minute the control panel turns itself off, together with all live parts.

CONNECTIONS:

The back of the panel has a connector for serial connection (JP6), a connector for the optional external temperature probe (JP10), a connector for the optional remote internal temperature probe (JP8) and a connector for additional push button to external light switch (JP9).

ENABLE CLEANING GLASS:

Hold on the button () more than 5 sec will lock all the push button for 1 minute.

The module NE237 consists of a 230V battery charger and a 12V shunt section

12V SHUNT OPERATION SECTION:

Legend:

F1: 25A fuse connected to the service battery for auxiliary battery charger input.
 F2: 20A fuse connected to the car battery to power the fridge and solar panel input
 F3: 15A fuse connected to the service battery to power the solar panel
 F4: 15A fuse connected to master switch (control panel on) to power the fridge AES
 F5: 15A fuse connected to master switch (control panel on) to power the step
 F6: 10A fuse connected to master switch (control panel on) to power the heating
 F7: 25A fuse connected to the service battery for internal battery charger input.
 F8: 10A fuse connected to LUCI IN switch to power the Light 1
 F9: 10A fuse connected to LOAD switch to power the TV
 F10: 7,5A fuse connected to LUCI IN switch to power the Light 3
 F11: 10A fuse connected to LUCI IN switch to power the Light 2
 F12: 10A fuse connected to LOAD switch to power the SPARE
 F13: 5A fuse connected to the car battery to power the side marker lights

Attention:

When replacing faulty fuses, observe the correct amperage.

Power activated from control panel:

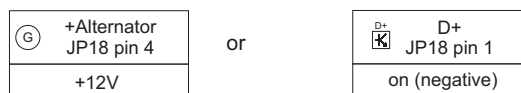
When you turn on the control panel are activated immediately Fridge Aes output, Supply fridge board output, step output and heating output.
 The outputs for Light in, Light out, Pump, Aux/heating_tank are activated directly by the relevant keys on the control panel.

-The external light goes out automatically when the engine is running

-If the service battery voltage remains under 9,5V for over a four minute, the NE237 module automatically turns off all the power for lights, pump, aux. and heater. To recharge press the relevant keys on the control panel. If the battery is still under 9,5V, it will be deactivated again after four minute.

Services activated by D+:

The coupler relay and fridge relay are enabled immediately in one of these two conditions:



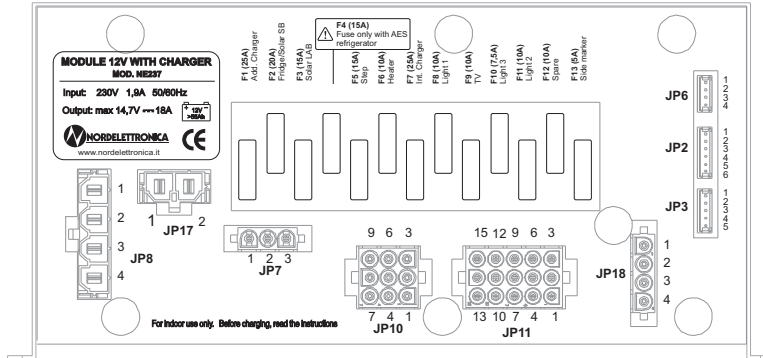
The coupler relay recharges the service battery with the alternator when the engine is running.
 The fridge relay powers the three-purpose fridge at 12V when the engine is running.

Side marker signal (SM):

The side-marker output can be activated with a negative control (negative) on the JP11 pin 1

Recharging car battery:

If there is the main supply 230V, the charger, as well as recharge the battery service, shall also charge the car battery with a current of about 5A.. The charge is activated automatically when the battery voltage exceeds the services of the car battery.

**JP2: TANKS (S1)**

1. 4/4 Drinking water tank S1
2. 3/4 Drinking water tank S1
3. 2/4 Drinking water tank S1
4. 1/4 Drinking water tank S1
5. NEGATIVE
6. free

JP3: RECYCLE TANK (S2)

1. 4/4 Recycle tank S2
2. 3/4 Recycle tank S2
3. 2/4 Recycle tank S2
4. 1/4 Recycle tank S2
5. NEGATIVE

JP6: CONTROL PANEL

1. Supply control panel (PTC max 0,5A)
2. Rx
3. Tx
4. NEGATIVE

JP7: SOLAR PANEL

1. NEGATIVE
2. Car battery (F2 20A)
3. Service battery (F3 15A)

JP8: FRIDGE OUTPUT

1. NEGATIVE
2. NEGATIVE
3. Frigde (F2 20A) / (F4 15A)
4. Step (F5 15A)

JP10: POWER OUTPUT 1

1. NEGATIVE
2. NEGATIVE
3. Light 1 (F8 10A)
4. 12V Output (PTC max 0,5A)
5. NEGATIVE
6. Pump (HSD max 5A)
7. NEGATIVE
8. External light (HSD max 5A)
9. Heating (F6 10A)

JP11: POWER OUTPUT 2

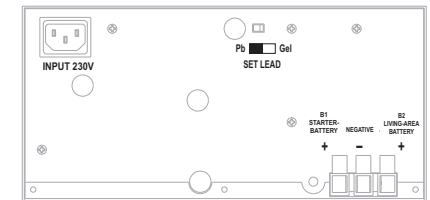
1. Side marker Input (negative)
2. Side marker Output (F13 5A)
3. 12V Output (LOAD) (F12 10A)
4. D+ Output (PTC max 1,1A)
5. NEGATIVE
6. Light 2 (F11 10A)
7. NEGATIVE
8. NEGATIVE
9. Light 3 (F10 7,5A)
10. NEGATIVE
11. NEGATIVE
12. TV (LOAD) (F9 10A)
13. NEGATIVE
14. Aux/Heating_tank (HSD max 5A)
15. Supply fridge board (PTC max 1,1A)

JP17: AUXILIARY BATTERY CHARGER

1. NEGATIVE
2. +Auxiliary battery charger (F1 25A)

JP18: D+ CONTROL INPUT, SUPPLY INPUT

1. D+ Input (negative)
2. NEGATIVE
3. 12V Supply MODULO NE237
4. +Alternator Input

B1: + CAR BATTERY INPUT (B1)**B2: + SERVICE BATTERY INPUT (B2)****- : NEGATIVE**

BATTERY CHARGER OPERATION SECTION:

Read the instructions carefully before charging. For internal use only/Do not expose to the weather

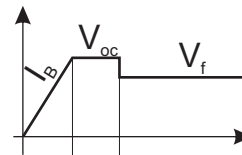
DESCRIPTION:

The battery charger within the module NE237 to charger for gel and lead acid batteries. The batteries should have a nominal voltage of 12V and a capacity of no less to 55Ah.

OPERATION:

The battery charger uses a combination of constant current CC and constant voltage TC. This makes possible to significantly reduce charging time and prevents permanent damage to the battery.

The battery charger starts charging with CC current until the battery reaches a voltage value of V_{oc} when it commutes to TC operation. At this stage the device provides constant voltage of V_{oc}/V_f , the recharge current gradually decreases and the battery can be left permanently connected to the charger with no risk of damage.

**CHARGING PROFILES:**

Use the switch located on the back of module NE237I to choose the charging profile according to the type of battery to be recharged.

ATTENZION:

- Keep the battery charger in a dry well-aired place.
- Always switch off the 230V power supply before carrying out maintenance.
- Do not obstruct the air inlet placed on the cover.
- Do not try to re-charge non-rechargeable batteries.
- Disconnect the power supply before connecting or disconnecting the battery connection.
- Lead-acid storage batteries produce internal explosive gasses when re-charging: take care not to cause flames or sparks and place the batteries in a well-aired place.

- If the power supply wire or connection clamps to the battery are damaged, replace them with similar items provided by the manufacturer or after-sales service.
- Before connecting the battery charger power supply to a generator, make sure that its 230V output is stabilized.
- When the internal red LED is ON, it's necessary switch off the main supply to reset the protection.

TECHNICAL CHARACTERISTICS:

Input:	230V \pm 20% 50/60Hz 1,9A
Maximum power:	260W
Maximum current output (I_b):	18A continuous
Connected battery capacity:	No less than 55Ah 12V
End of charging voltage with CC operation:	14,4V GEL 14,7V Pb
Voltage during TC operation (V_{oc}):	14,4V GEL 14,7V Pb
Maintenance voltage (V_f):	13,8V

PROTECTION:

Input fuse:	4A 250V delayed (internal fuse)
Protection against overloading	Si
Protection against short circuiting	Si (internal red Led)
Protection against overvoltage Output	Si (internal red Led)
Protection against overvoltage Input	Si
Microprocessor check	Si

CONNECTIONS:

Input 230V:	Socket type "IEC-EN60320 C14"
-------------	-------------------------------