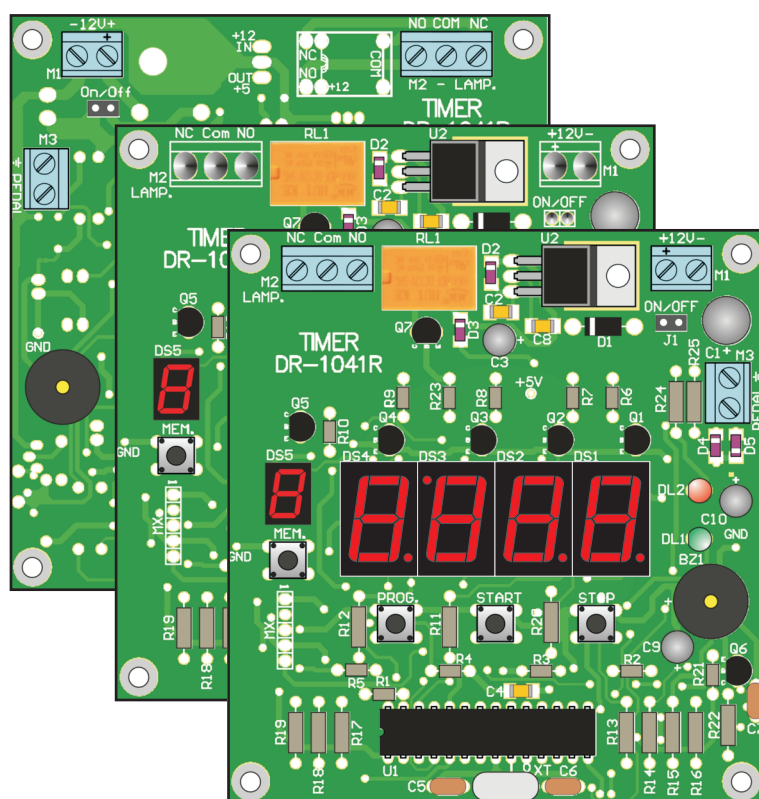




OWNER's MANUAL

BOARD for TIMER DR-1041R



Board DR-1041R
10 memories
Programmable
Darkroom Timer

TIMER DR-1041 R

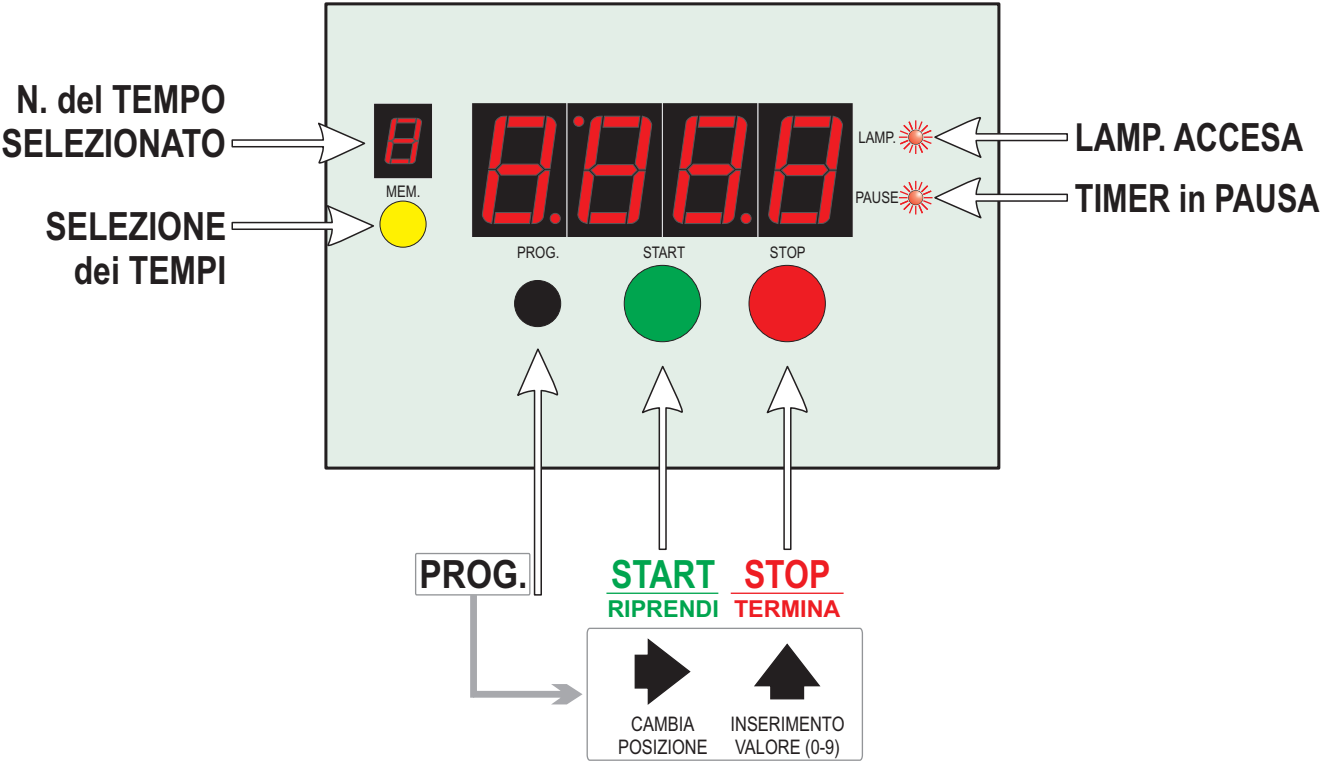
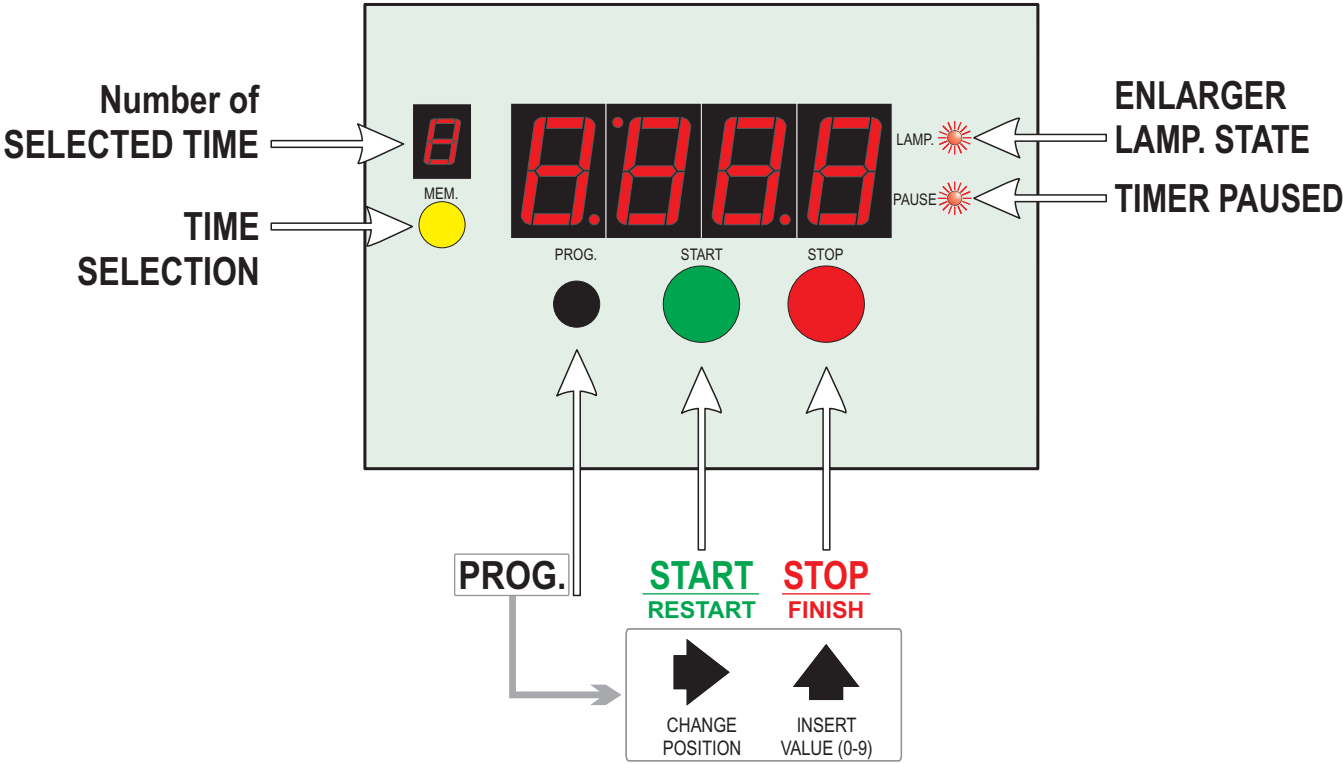
FEATURES

- Input Voltage: **12Vdc**.
- Management with **Microcontroller**.
- **Quartz** accuracy.
- **Countdown** Timer.
- **Easy** to use.
- **4** command buttons: **MEM. SELECT**, **PROG**, **START** and **STOP**.
- **10 programmable Times** from **0.1sec.** to **10 minutes** (**9min. 59sec. 9dec.**).
- **Programmable socket** for external pedal (for **FOCUS** or **Start/Stop**).
- **Buzzer on-board** for signalling counting end and for audio scanning of last 10 seconds.
- The times and setting are **stored** in the memory of Timer and retrieved during Power ON.
- **Red LED "LAMP"** for showing the **ENLARGER LAMP ON**.
- **Red LED "PAUSE"** for showing the Timer is **PAUSED**.
- **Small Display** to show the Time selected by the user (10 values, numbered from **0** to **9**).
- **3A/250V Relay output** and 3 way screw Terminal Block (**NO - Com - NC**).
- Can be activate enlarger LAMP up to **500 Watt**.
- Displaying: **50x19 mm**. Red Display 7-segment (H. 0.56" digit - 14 mm.).
- Board dimensions (mm.): **89 x 95**.

CARATTERISTICHE

- Tensione di alimentazione: **12Vcc**.
- Gestione a **Microcontrollore**.
- Precisione al **Quarzo**.
- Conteggio tipo **Countdown** (conto alla rovescia).
- **Facile** da utilizzare.
- **4** pulsanti di comando: **SELEZIONE MEMORIA**, **PROG**, **START** e **STOP**.
- **10 tempi programmabili** da **0.1sec.** fino a **10 minuti** (**9min. 59sec. 9dec.**).
- **Morsettiera Programmabile** per pedale esterno (funzione **FOCUS** oppure **Avvio/Arresto**).
- **Buzzer on-board** per segnalazione di fine conteggio e scansione audio degli ultimi 10 secondi.
- Tempi e impostazioni sono memorizzati nella **memoria** del Timer e recuperati all'accensione.
- **LED rosso "LAMP"** per visualizzazione stato ingranditore (**Acceso** o **Spento**).
- **LED rosso "PAUSE"** per visualizzazione del Timer in **PAUSA**.
- **Piccolo Display** per l'indicazione del tempo selezionato dall'utente (10 valori, da **0** a **9**).
- **Uscita relè: AC250V 3A** su morsettiera a vite (**NA - Com - NC**).
- Attivazione di lampade fino a **500 Watt**.
- Visualizzazione tempo su Display rosso **50x19 mm**. (0.56", altezza cifre 14 mm.).
- Dimensioni della scheda (mm.): **89 x 95**.

PANEL DESCRIPTION / PANNELLO COMANDI



USER's GUIDE

INTRODUCTION

The **DarkRoom Timer DR-1041R** manage times from **0.1 SECONDS** up to **10 MINUTES (9:59.9)** and the values to be programmed are 0.1 SECOND steps.

After Power ON, the **Timer** displays the last time used by user: so, by pressing the **START** button, the relay is activated (**red LAMP** is ON) and the Timer begins to countdown.

Alternatively, by pressing the **MEMORY SELECT (MEM.)** button, you can choose one of the **10 previously stored times** or, by pressing the **PROG.** button, enters the **TIME PROGRAMMING** mode: the number you are programming (or editing) is indicated by the value shown in the small left display (for example, if the small display shown number **5**, it means that you are programming Time number 5).

If there is a **blackout**, the Timer switches off completely (the relay deactivates): when the AC main is restored, the Timer displays the value of last time used by the user and it is ready to be activated again.

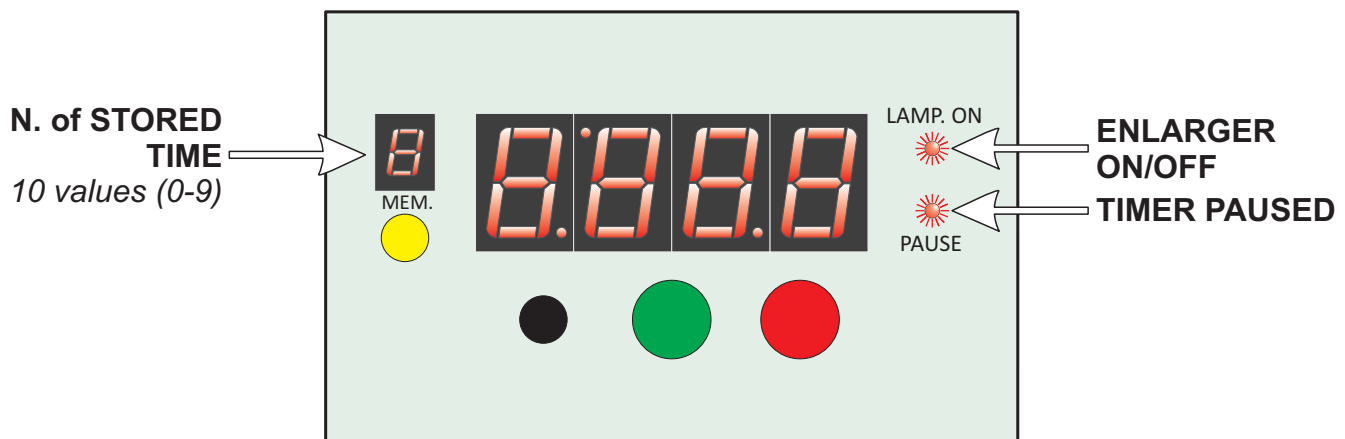
DEFAULT VALUES

When Power ON, the display always shows **the last time used by the user** (the time number is displayed on the small display on the left). If the Timer never been used, all default values at first Power ON are automatically sets to "**1:00.0**" (default values at first Power On).

THE LEDs of the TIMER

In the **Timer DR-1041R** there are a 4-digit display, a small single display (to the left) and two lights:

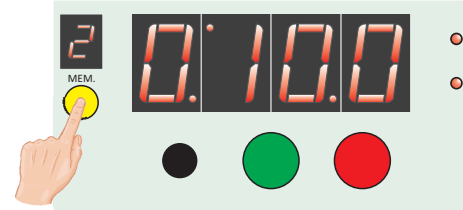
- **MEMORY DISPLAY** - The small display on the left indicates the selected **Time number** (from **0** to **9**).
- **LED "LAMP"** - This LED lights is ON when the enlarger lamp **is activated**.
- **LED "PAUSE"** - The PAUSE LED is ON when the **Timer is paused**.



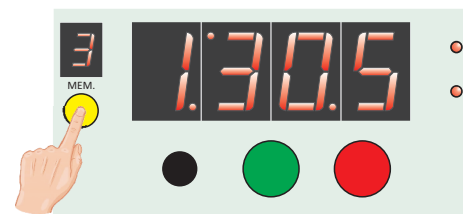
The COMMANDs BUTTON

CHOOSING the DESIRED TIME

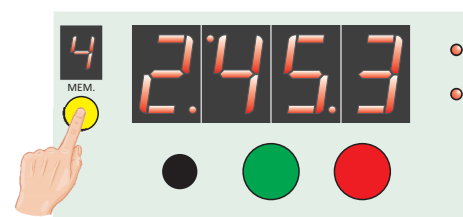
Before start the Timer, select (if necessary) the desired time by press one or more times the **MEMORY SELECT (MEM.)** button.



Each time the button is pressed, ONE of the **10 programmed times** will be shown on the display and the corresponding number will be indicated by value shown in the small display to the left (from **0** to **9**).

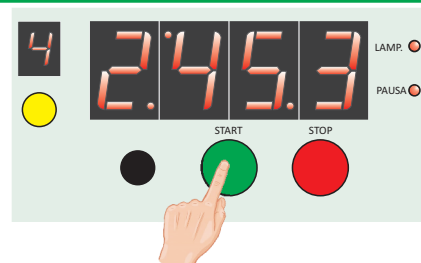


Once time number **9** has been reached, pressing the button again will restart from time number **0** and so on. The time currently shown on the 4-display group (with format **M:SS.d**) will be the one used by the Timer at startup (in the example on the right, the Time number **4** has been selected, which corresponds to 2 minutes, 45 seconds and 3 tenths).



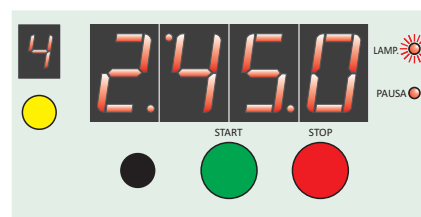
START / RESUME

This is the button for start the Timer. When the **START** button is pressed, the Timer activates the enlarger lamp and starts the countdown (starting from the time shown on the display).



During the countdown, the **red LED "LAMP"** is on, indicating that the enlarger lamp is activated.

Furthermore, the two separator small dots (at the left) flash at a frequency 1 Hz (dots separator for seconds) and the right small dot flash at 10 Hz (dot separator for tenths).



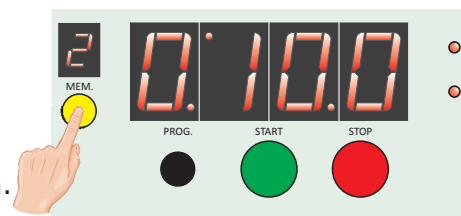
STOP / CANCEL

This button, pressed during the countdown, momentarily stops the Timer and turns off the enlarger lamp (the **red LED "PAUSE"** lights up to indicate that the Timer is PAUSED). To restart the Timer (and turn the enlarger lamp back on), press the **START** button otherwise, by pressing the **STOP** button again, the Timer will terminate the countdown and returning to the starting screen.



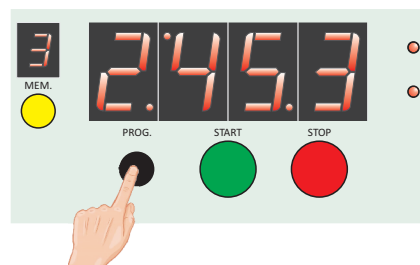
PROGRAMMING the TIMES

Before entering the PROGRAMMING mode, choose the Time number you want program (or Modify) by pressing the **MEMORY SELECT (MEM.)** button one or more times: the number of the Time is indicated by the value (0-9) shown in the small left Display. There are **10 times** that can be selected, so once you have reached the number **9**, pressing the button again restarts the sequence to **0** and so on.

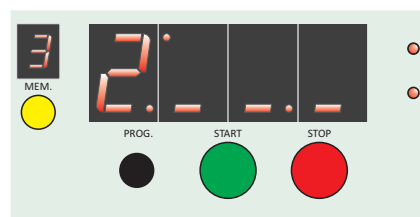


Once you have chosen the Time to program (or modify), press the **PROG.** button to enter the **PROGRAMMING** mode.

NOTE - To enter in the PROGRAMMING MODE, the Timer must be ready (so NOT in pause).



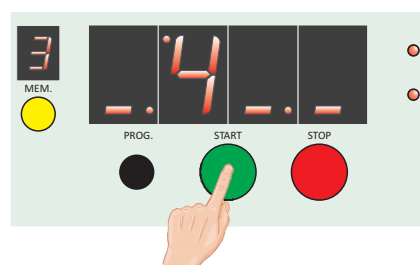
During programming the Time, ONLY one digit lights up on the display at a time (i.e. the one selected for entering the value to be programmed): the remaining digits on the display are "hidden" and their positions are indicated by **underscores**.



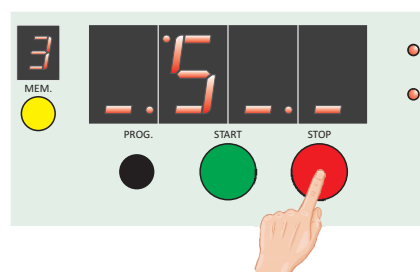
Select the POSITION and insert the VALUE

The **START** and **STOP** buttons have a double function: when entering the PROGRAMMING mode, these two buttons allow you to choose the position of the digit to be programming and the value to enter, as described below:

○ Button ► (**START**) - Each press of this button selects a different position on the display (from left to right). In correspondence with the selected position, the digit in which the value to be programmed will be entered will be displayed. After the fourth position, pressing the button again restarts the sequence from the first position and so on.



○ Button ▲ (**STOP**) - Each press of this button inserts a value from **0** to **9** to the selected position. Once the value **9** has been reached, pressing the button again restarts from the value **0** and so on.



To exit the **PROGRAMMING**, press a second time the **PROG.** button: in this way, the time appearing on the display will be saved in the memory with the number indicated in the small display at the left (for example, if upon exiting PROGRAMMING mode the value shown by small display is **3**, the time programmed will be saved in the memory as **Time number 3**). In the example on the figure, the Time number **3** has been selected, which corresponds to 2 minutes, 55 seconds and 3 tenths.



PROGRAMMING THE "PEDAL" SOCKET

The **PEDAL** socket can be set with TWO different working modes:

- **FOCUS**: turning the enlarger lamp ON and OFF without timing.
- **START/STOP** the Timer: to start and stop the Timer without using the buttons.

To correctly activate the **FOCUS** function or the **START/STOP** function, the external PEDALS or CONTACTS must be **Normally Open** type (**N.O.**).

To set one of the TWO operating modes of the PEDAL, press and hold the **STOP** button for at least 2 seconds until the number **0** or **1** as shown on the display, as specified in the following paragraphs.

NOTE - The operating mode of the PEDAL is memorized in the memory of the Timer: for this reason, after each Power-On, the Timer always operates with the last mode set by the user.

START/STOP function

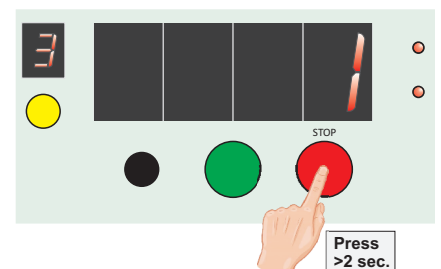
If the display shows the digit **1**, the **PEDAL** socket is programmed as **START/STOP** function. In this way the Timer can be started or stopped both by the **START** button or by the **PEDAL**.

To stop and finish the count, press the PEDAL a second time (otherwise, to put the Timer in PAUSE, press the **STOP** button).

NOTE - Even when the Timer has been started with the **START** button, it is possible to stop it with the **PEDAL**.

NOTE - The use of the Timer with **PEDAL** does not allow the **PAUSE** count: the pause can **ONLY** activate by the first pressure of the **STOP** button.

NOTE - If the count is **PAUSED**, to restore it, is necessary to press the **START** button because when the Timer **PAUSED**, the **PEDAL** socket is not active.



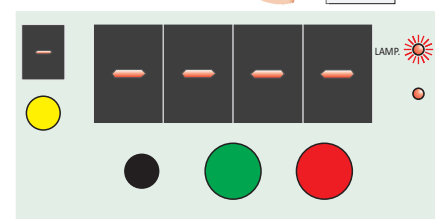
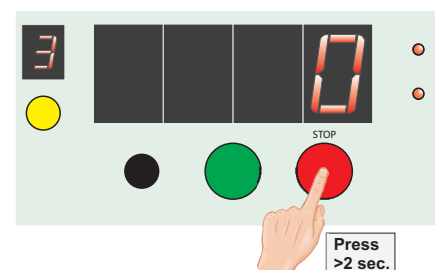
FOCUS function

If the display shows the digit **0**, the **PEDAL** socket is programmed as **FOCUS** function: in this case, the enlarger lamp can be activate/deactivate by PEDAL, without timing.

When the PEDAL socket is programmed as **FOCUS**, each pressure of the pedal (or of any other actuator connected to the **PEDAL** socket) turns on the enlarger lamp without timing.

When the lamp is ON with the **FOCUS** function, only dashes (----) are displayed on the displays.

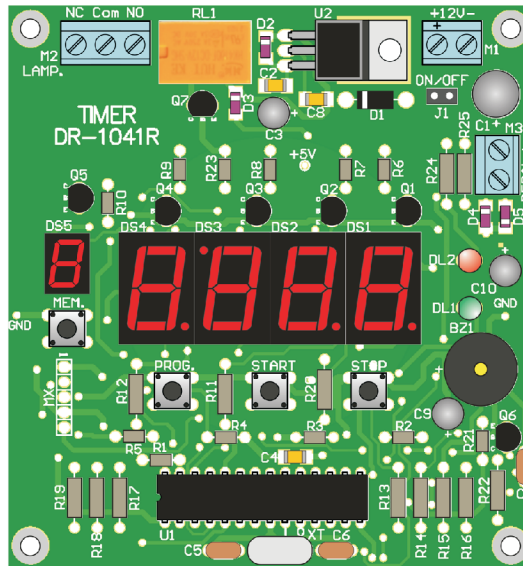
To turn off the enlarger lamp, press the PEDAL again (or press the **STOP** button) and the Timer will return to normal operating mode.



BOARD "A" VERSION

Note that when installing the board version "A" (DR-1041R/a) on the wall or on the bottom of a container, **ALL COMPONENTS** must be mounted to the same face of board, as shown in the following figure:

Board DR-1041R/s

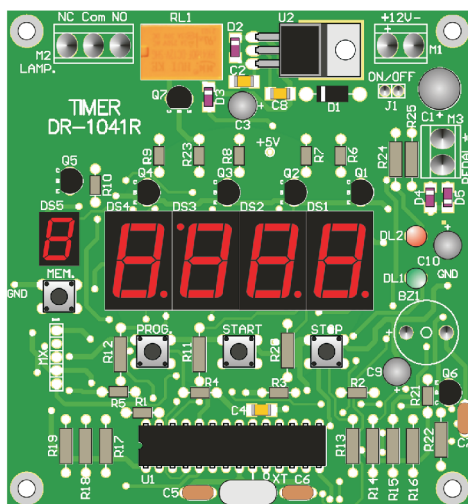


BOARD "S" VERSION (FOR MOUNTING TO THE PANEL)

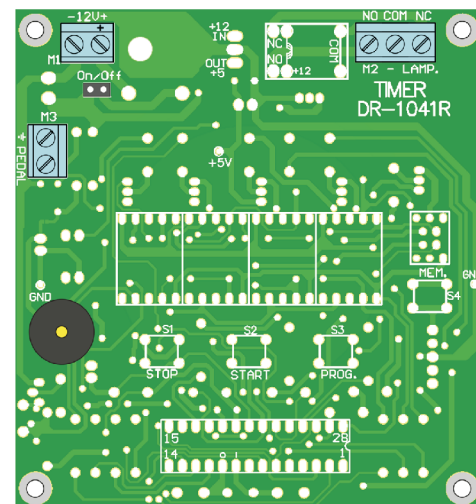
If you prefer to install the board to the panel (after having drilled the holes for the buttons, those for the LEDs and the openings for the displays), you need to build the board version "S" (DR-1041R/s): in this version, the 3 terminal blocks M1-M2-M3, the J1 connector and the buzzer are soldered on the opposite side of the board to allow easy access to these components once the board is installing to the panel (see the following figures).

NOTE - For both versions, it is advisable to use a small transparent red plexiglass screen (thickness 2 or 3 mm) to apply above the display: in this way, the contrast is increased and the display reading will be much clearer and more contrasted.

Board DR-1041R/s

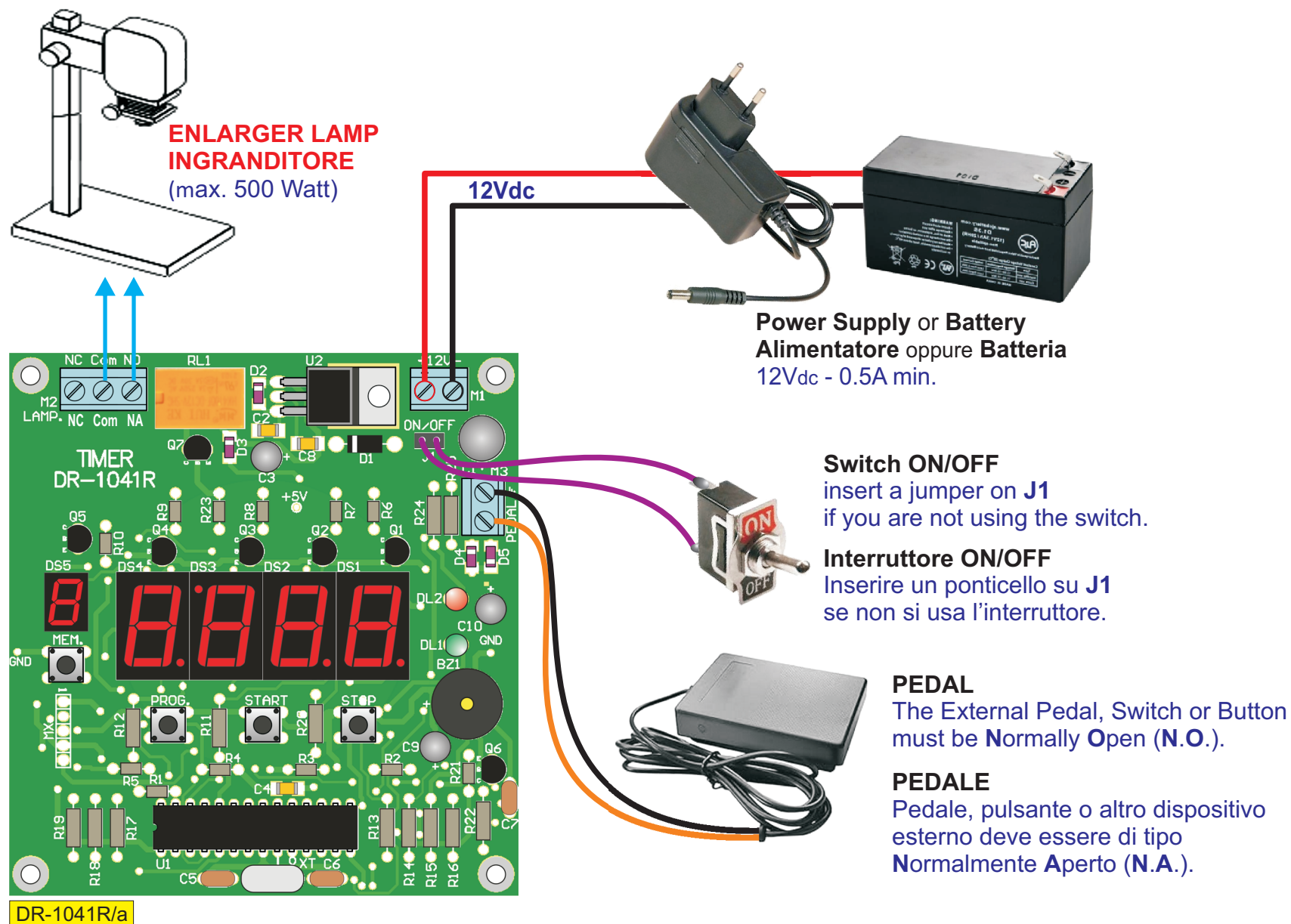


Top view

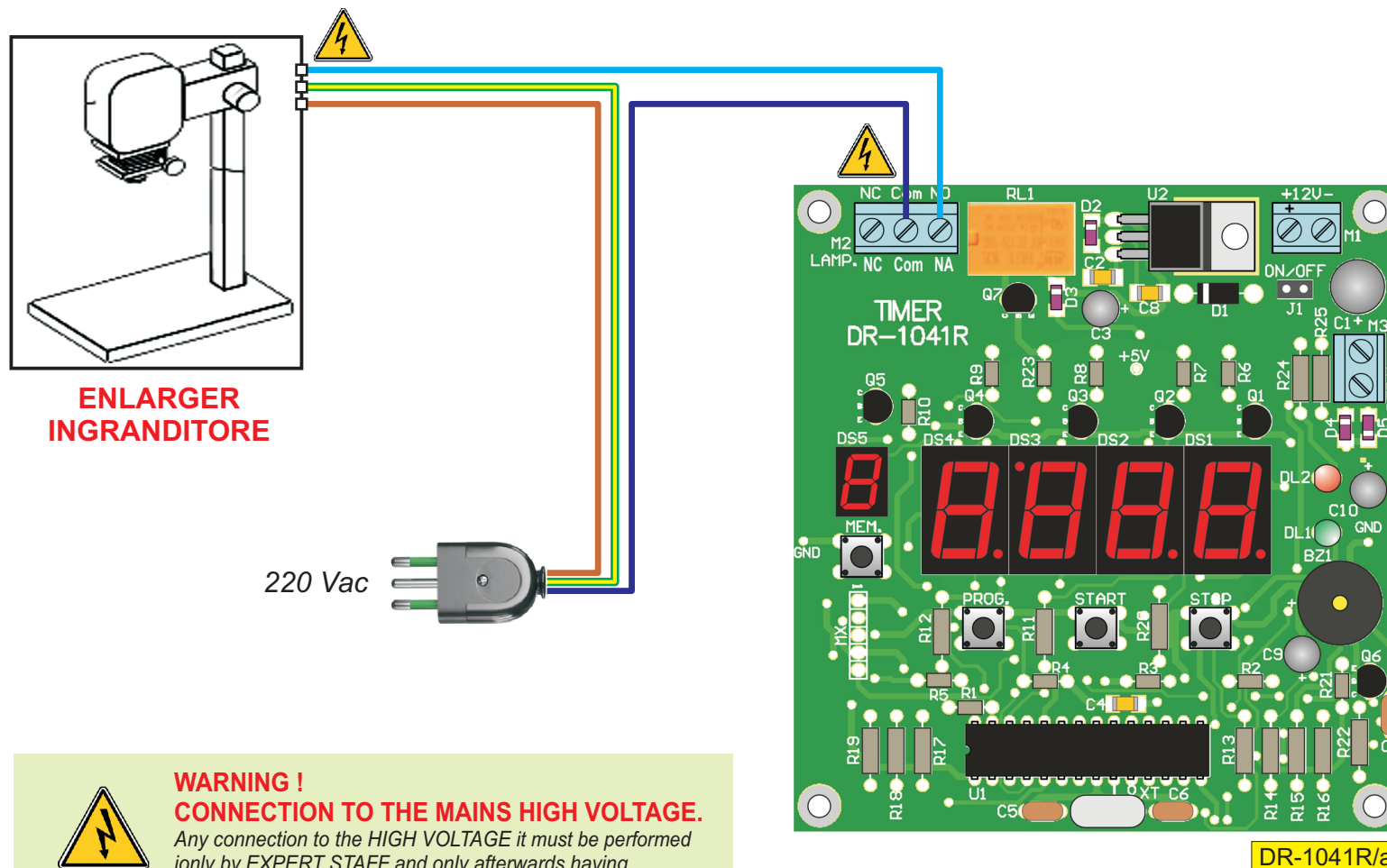


Bottom view

DR-1041R/a - WIRING DIAGRAM - SCHEMA COLLEGAMENTI



CONNECTING the ENLARGER - COLLEGAMENTO INGRANDITORE (DR-1041R/a)



WARNING ! **CONNECTION TO THE MAINS HIGH VOLTAGE.**

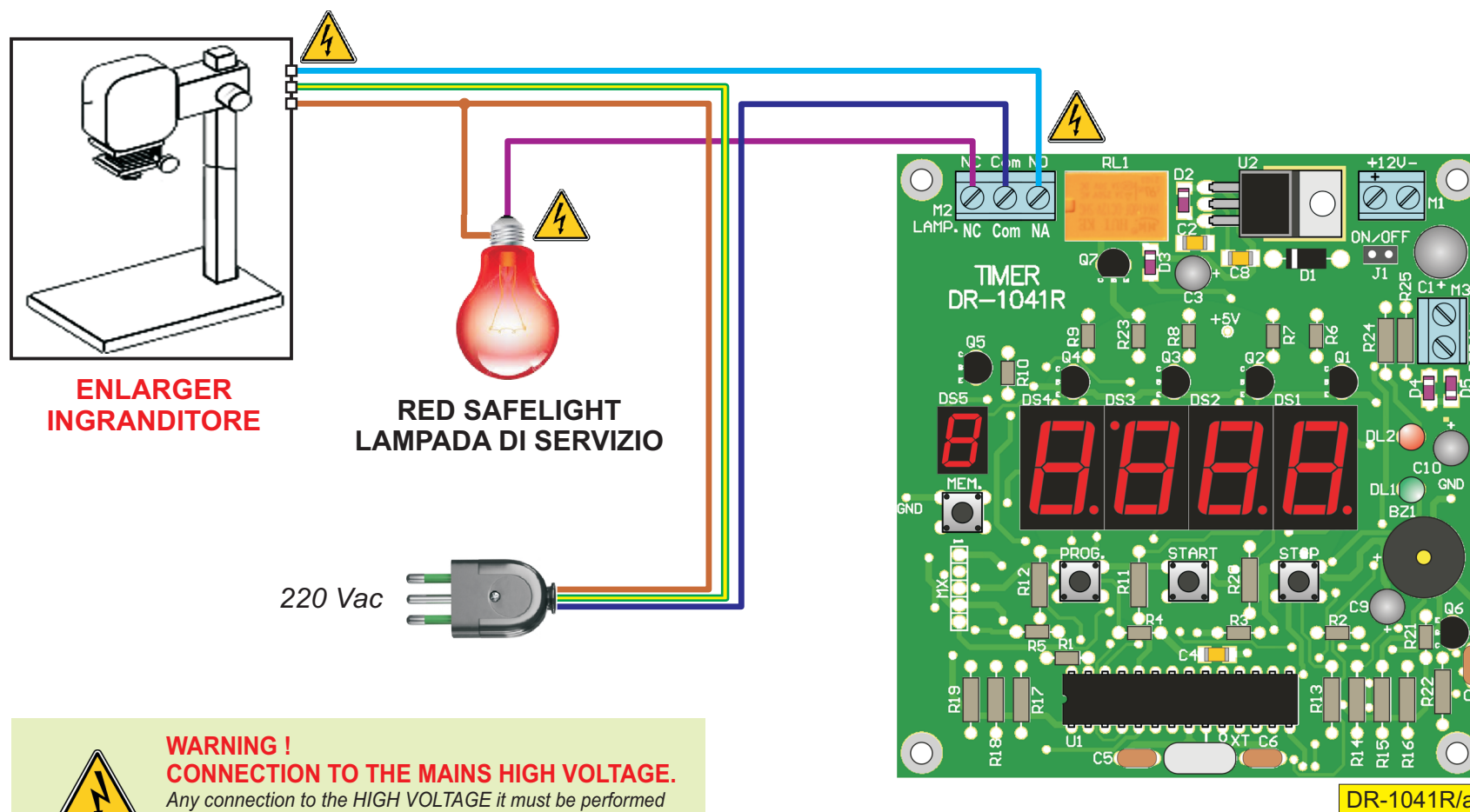
Any connection to the HIGH VOLTAGE it must be performed only by EXPERT STAFF and only afterwards having disconnected the device from the mains.



ATTENZIONE ! **COLLEGAMENTO ALLA TENSIONE DI RETE.**

Qualsiasi collegamento o intervento con l'ALTA TENSIONE va eseguito solo da PERSONALE ESPERTO e solo dopo aver scollegato il dispositivo dalla rete elettrica.

CONNECTING TWO LAMPs - COLLEGAMENTO DUE LAMPADE (DR-1041R/a)



**WARNING !
CONNECTION TO THE MAINS HIGH VOLTAGE.**

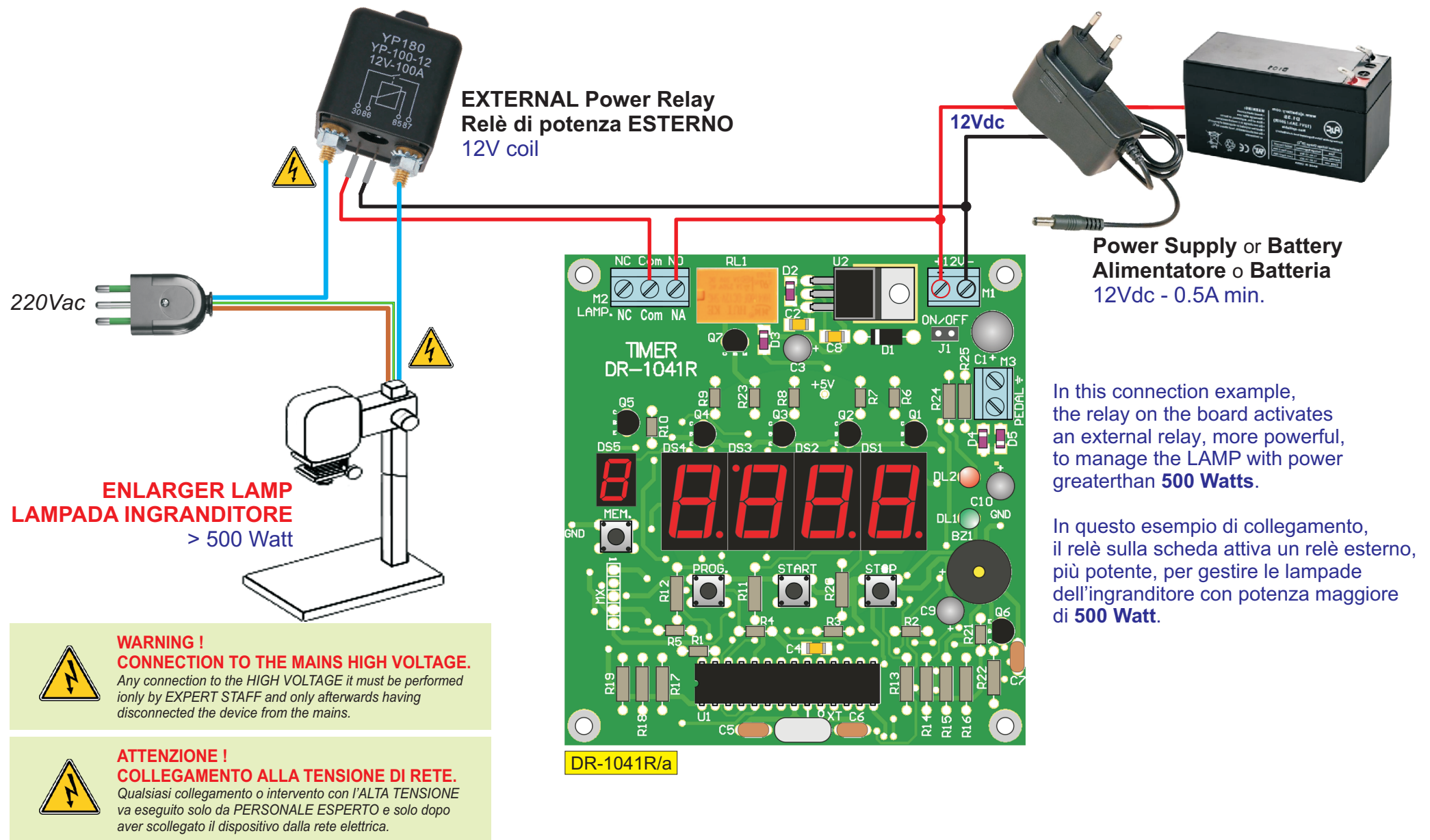
Any connection to the HIGH VOLTAGE it must be performed only by EXPERT STAFF and only afterwards having disconnected the device from the mains.



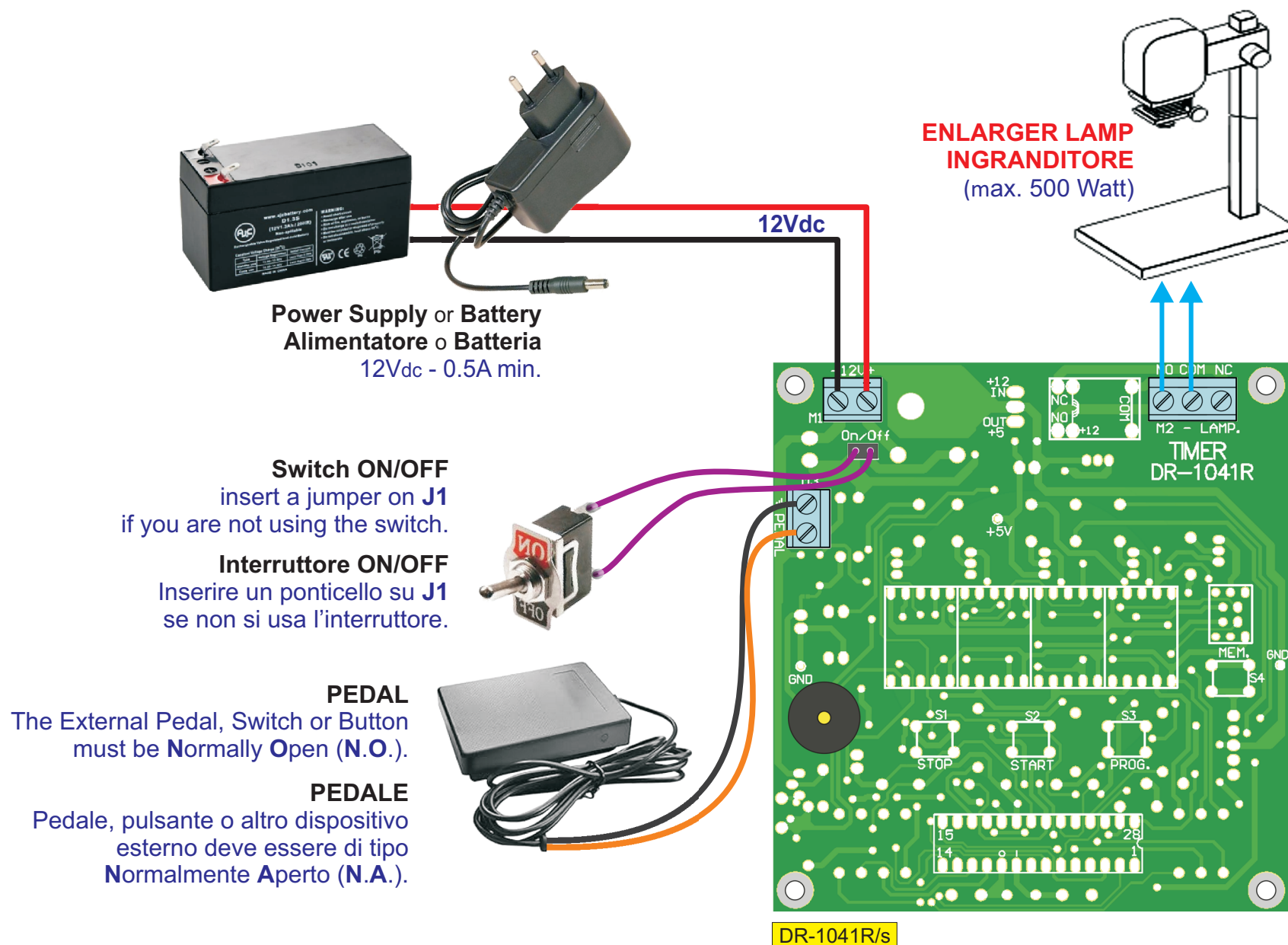
**ATTENZIONE !
COLLEGAMENTO ALLA TENSIONE DI RETE.**

Qualsiasi collegamento o intervento con l'ALTA TENSIONE va eseguito solo da PERSONALE ESPERTO e solo dopo aver scollegato il dispositivo dalla rete elettrica.

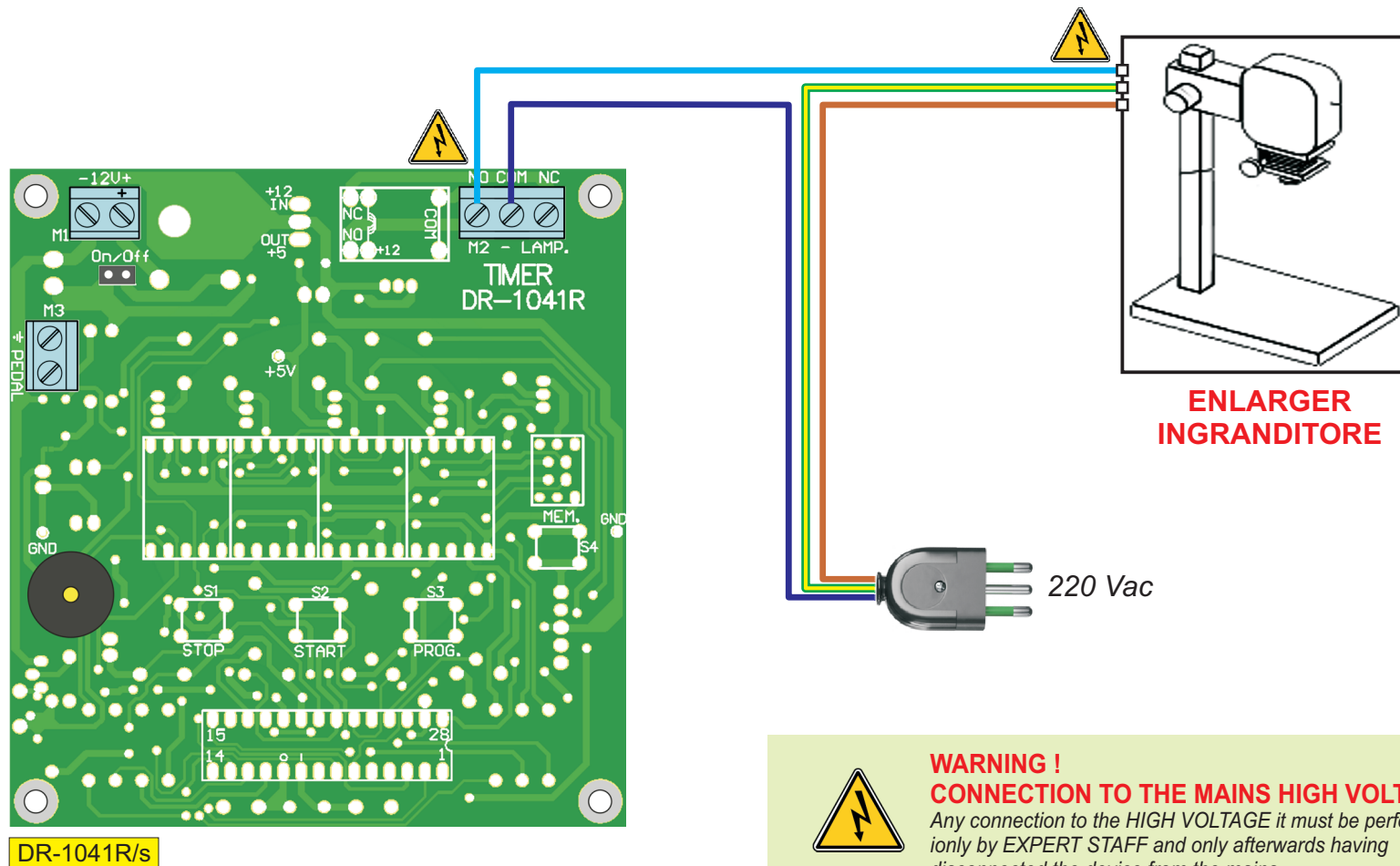
CONNECTING an EXTERNAL RELAY - COLLEGAMENTO di un RELE' ESTERNO (DR-1041R/a)



DR-1041R/s - WIRING DIAGRAM - SCHEMA COLLEGAMENTI



CONNECTING the ENLARGER - COLLEGAMENTO INGRANDITORE (DR-1041R/s)



WARNING ! CONNECTION TO THE MAINS HIGH VOLTAGE.

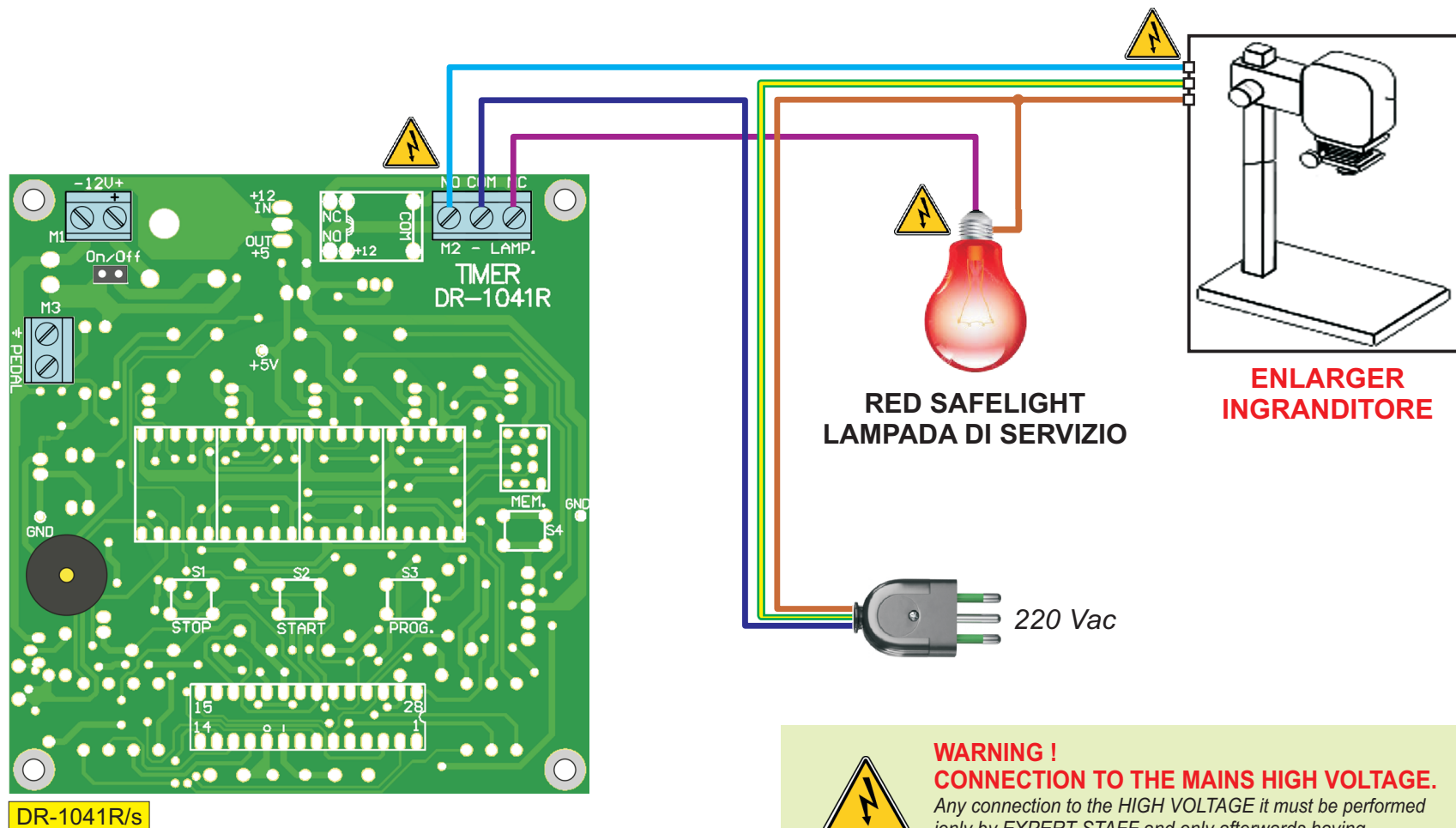
Any connection to the HIGH VOLTAGE it must be performed only by EXPERT STAFF and only afterwards having disconnected the device from the mains.



ATTENZIONE ! COLLEGAMENTO ALLA TENSIONE DI RETE.

Qualsiasi collegamento o intervento con l'ALTA TENSIONE va eseguito solo da PERSONALE ESPERTO e solo dopo aver scollegato il dispositivo dalla rete elettrica.

CONNECTING TWO LAMPs - COLLEGAMENTO DUE LAMPADE (DR-1041R/s)



WARNING ! CONNECTION TO THE MAINS HIGH VOLTAGE.

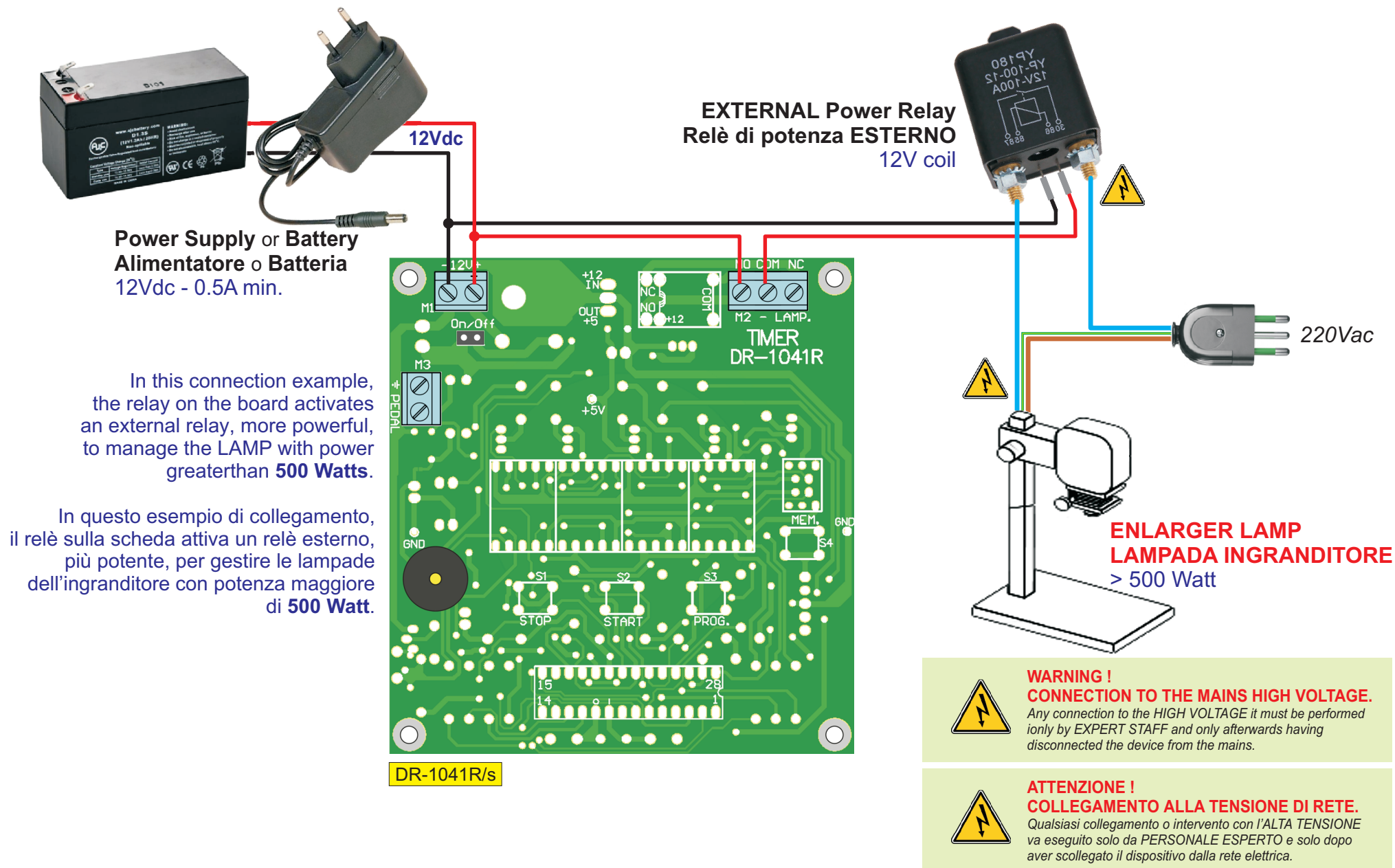
Any connection to the HIGH VOLTAGE it must be performed only by EXPERT STAFF and only afterwards having disconnected the device from the mains.



ATTENZIONE ! COLLEGAMENTO ALLA TENSIONE DI RETE.

Qualsiasi collegamento o intervento con l'ALTA TENSIONE va eseguito solo da PERSONALE ESPERTO e solo dopo aver scollegato il dispositivo dalla rete elettrica.

CONNECTING an EXTERNAL RELAY - COLLEGAMENTO di un RELE' ESTERNO (DR-1041R/s)



DIMENSIONS and HOLES / DIMENSIONI e FORI

