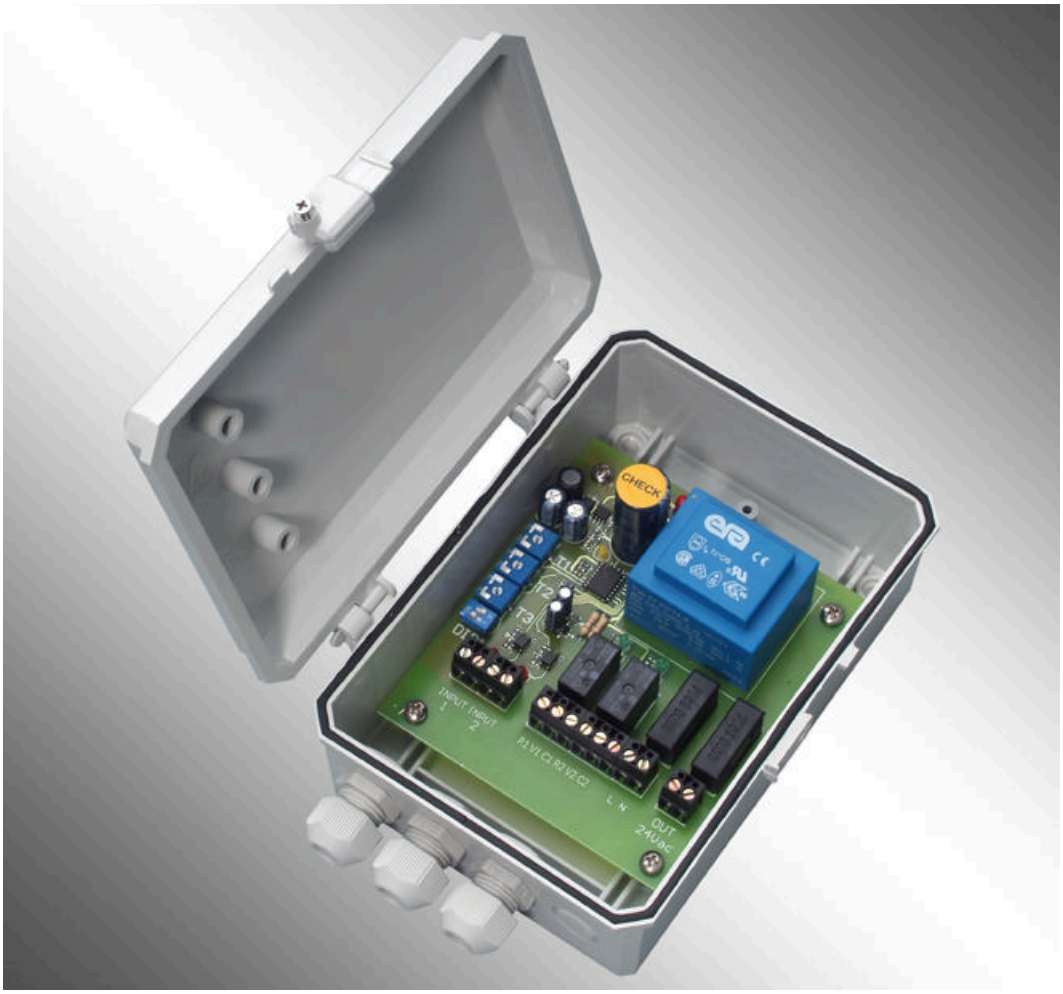


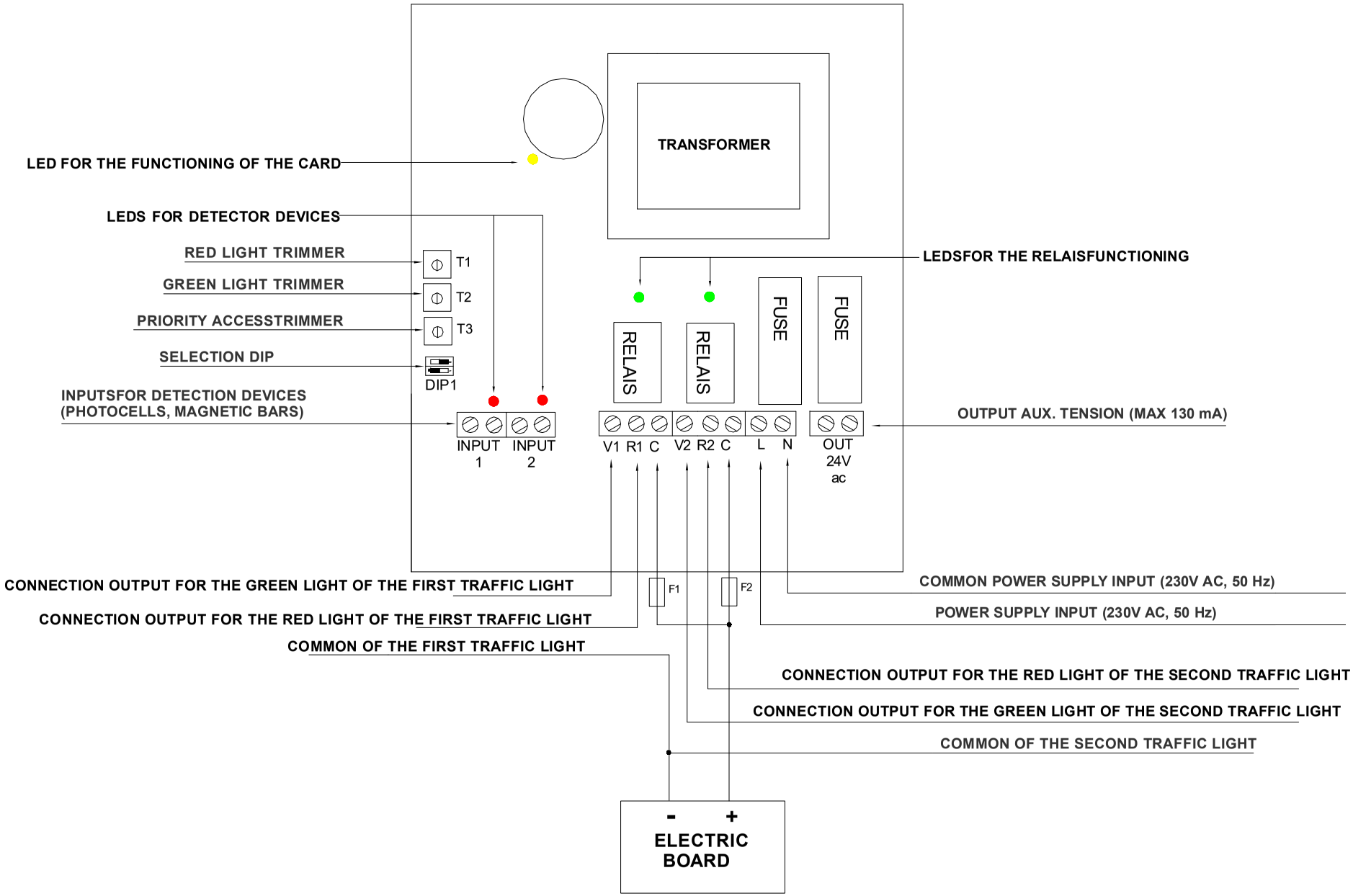
Control unit for traffic lights

STU960

CE

Attention !

- **The installation and the ordinary maintenance have to be made by qualified staff only.**
- **For the safety of the operator and to avoid damages to the electrical components the central unit does not have to be feed while connecting the cables.**
- **This central unit has been especially developed for the management of two traffic lights. The inappropriate use of the product for different purposes is strongly forbidden.**
- **Use original components only does not take upon any responsibility for damages caused by the inappropriate use of non-original components.**


TRANSFORMER
LED FOR THE FUNCTIONING OF THE CARD
LEDS FOR DETECTOR DEVICES
RED LIGHT TRIMMER
GREEN LIGHT TRIMMER
PRIORITY ACCESSTRIMMER
SELECTION DIP
INPUTSFOR DETECTION DEVICES
(PHOTOCELLS, MAGNETIC BARS)
T1
T2
T3
DIP1
INPUT 1
INPUT 2
LEDSFOR THE RELAISFUNCTIONING
RELAIS
RELAIS
FUSE
FUSE
V1 R1 C V2 R2 C L N
OUT 24V ac
OUTPUT AUX. TENSION (MAX 130 mA)
F1
F2
CONNECTION OUTPUT FOR THE GREEN LIGHT OF THE FIRST TRAFFIC LIGHT
CONNECTION OUTPUT FOR THE RED LIGHT OF THE FIRST TRAFFIC LIGHT
COMMON OF THE FIRST TRAFFIC LIGHT
COMMON POWER SUPPLY INPUT (230V AC, 50 Hz)
POWER SUPPLY INPUT (230V AC, 50 Hz)
CONNECTION OUTPUT FOR THE RED LIGHT OF THE SECOND TRAFFIC LIGHT
CONNECTION OUTPUT FOR THE GREEN LIGHT OF THE SECOND TRAFFIC LIGHT
COMMON OF THE SECOND TRAFFIC LIGHT
- +
ELECTRIC BOARD

DESCRIPTION OF THE PRODUCT

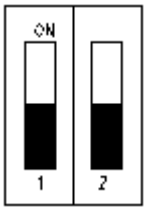
Traffic light control unit is commonly used to manage two traffic lights with two lights in car parks, residential hotels, and in all those buildings where the car access has to be properly regulated.
The central unit has two functioning logics:

1. ***Functioning logic with timer***. The duration of the green and red lights is determined by their respective trimmers. The use of photocells or other detection devices that can regulate the switching of the traffic lights according to the car access is not envisaged.
2. ***Functioning logic with detection devices*** (such as photocells). The duration of the green and red lights is determined by photocells or other detection devices.

MAIN TECHNICAL FEATURES

- 230V, 50 Hz, 5 VA power supply.
- 24Vac Auxiliary output (max 130 mA).
- One 160 mA protection fuse.
- One 160 mA protection fuse for auxiliary output
- Four 230V, max 2A relais outputs with clean switching contact.
- Two N.O. or N.C. inputs for setting control devices (photocells etc.)
- One micro switch (Dip 2) to select N.O. or N.C. inputs.
- One micro switch (Dip 1) to select the functioning logic with timer or with detection devices.
- One trimmer (T1) to set the timer of the red light (time range from 5 to 120 sec.)
- One trimmer (T2) to set the timer of green light (time range from 5 to 120 sec.)
- One trimmer (T3) to set the time of the priorities (time range from 5 to 120 sec).
- Five LED lamps to mark the inputs and outputs.

Central control unit has two micro switches (Dip) that allow to choose the functioning method of the central unit and the kind of contact for the incoming detection devices. Please find here enclosed all the different combinations:



- DIP1=OFF - DIP 2 = OFF: SETTING OF THE FUNCTIONING LOGIC WITH TIMER
- DIP1=ON - DIP 2 = OFF: SETTING OF THE FUNCTIONING LOGIC WITH N.O. DETECTION DEVICES.
- DIP1=ON - DIP 2 = ON: SETTING OF THE FUNCTIONING LOGIC WITH N.C. DETECTION DEVICES.

FUNCTIONING LOGIC WITH TIMER

Instructions to set the functioning logic with timer:

- Dip 1 in the OFF position.
- **Dip 2 = OFF.**
- The T1 trimmer is set to determine the time span in which both traffic lights have the red light on (from 5 to 120 seconds).
- The T2 trimmer is set to fix the time span in which both traffic lights have the green light on (from 5 to 120 seconds).
- The T3 trimmer is of no importance.

The functioning logic with timer envisages the following steps:

1. When the central control unit is switched on the two traffic lights have both the red light on for the time span set by the T1 trimmer (time T1).
2. When the T1 time span is over in the traffic light connected to the terminal board "1"t h e green turns on while in the traffic light with terminal board "2" the red light stays on.
3. The traffic lights remain in this working procedure for the whole time span set by the T2 trimmer (time span T2).
4. When the T2 time span is over, in both traffic lights the red light turns on for a T1 time span to allow the very last cars to free the entrance.
5. When the T1 time span is over, in the traffic light connected to the terminal board "1" the red light remains on, while in the traffic light connected to the terminal board "2" the green light turns on.
6. When the T2 time span is over, in both traffic lights the red light turns on for a T1 time span to allow the very last cars to free the entrance.
7. The cycle starts from step 2 and goes on endlessly.

FUNCTIONING LOGIC WITH DETECTION DEVICES

The functioning logic with detection devices envisages the following steps:

- Dip 1 is in the ON position.
- Dip 2 is in the OFF position, for N.O. contacts.
- Dip 2 is in the ON position, for N.C. contacts.
- The T1 trimmer is set to determine the time span in which both traffic lights have the red light on (from 5 to 120 seconds).
- The T2 trimmer is set to fix the time span in which both traffic lights have got green light. (from 5 to 120 seconds).
- The T3 trimmer is set to determine the time span necessary to stop a possible reset of the T2 time span due to the intensive use of one traffic light from one side of the passage, so that the users from the other side are allowed to have access too (from 5 to 120 seconds).

The functioning logic with detection devices envisages the following steps:

1. When the central control unit is switched on the two traffic lights have both the red light on for the time span set by the T1 trimmer (time T1).
2. When the T1 time is over the first detection device that is stimulated (such as for example a photocell) sends the impulse to the traffic light which turns the green light on for a time span set by the T2 trimmer, while the other traffic light turns the red light on.
3. The T2 time span is reset whenever the detection device is stimulated, that is until the other detection device is free, if not the cycle goes directly to step 7.
4. If the detection device is not stimulated after the T2 time span is over, both traffic lights turn the red light on.
5. Both traffic lights remain with the red light on for the whole T1 time span. If an activation impulse from one of the entrance ways should be sent during this phase it is automatically stored and processed after the T1 time span is over.
6. When the T1 time span in over the cycle starts again from step 2.
7. If the detection device at the other side of the entrance way is stimulated too, the counting of the T3 timer starts (T3time span).
8. When the T3 time span is over the reset of the T2 time span stops (due to the repeated passage from one of the two entrance ways managed by the traffic lights.
9. When the T2 time span is over both traffic lights remain with the red light on for the whole T1 time span.
10. When the T1 time span is over the green light turns on in the other traffic light and the cycle starts again from step 3.

NOTES

- The supply for the relays switching contacts , depends on which kind of traffic light you want to use: for 230V traffic lights you have to polarize relays switching contacts with a 230Vac voltage, while for our LED traffic lights, you need a 24V voltage.
- The dip-switches have to be set when the control unit is not feeded.
- The outputs of the control unit for the red light are connected to the N.C. contact of the relays, so if the electronic card is damaged the red light of the traffic lights will remain on.
- The inputs of the detection devices can reed only the changes detected by the device, so should a detection device brake down by sending the non-stop activation impulse (such as for example a photocell hit by a sunbeam), the access is ignored and the red light of the traffic light remains on.
- The electronic card does not need any particular maintenance. Check the good functioning of the traffic lights and the central control unit at least twice a year.
- It is advised to add a differential magnetothermic switch before connecting the control unit power supply and two F1 and F2 fuses with adequate capacity (max 2A) to the two commons of the traffic lights to protect the relays from possible short cut.