ACNSEM3L

I - Centralina controllo semafori a due o tre luci

F - Centrale de contrôle pour les feux

GB - Control board for traffic lights two-three lights
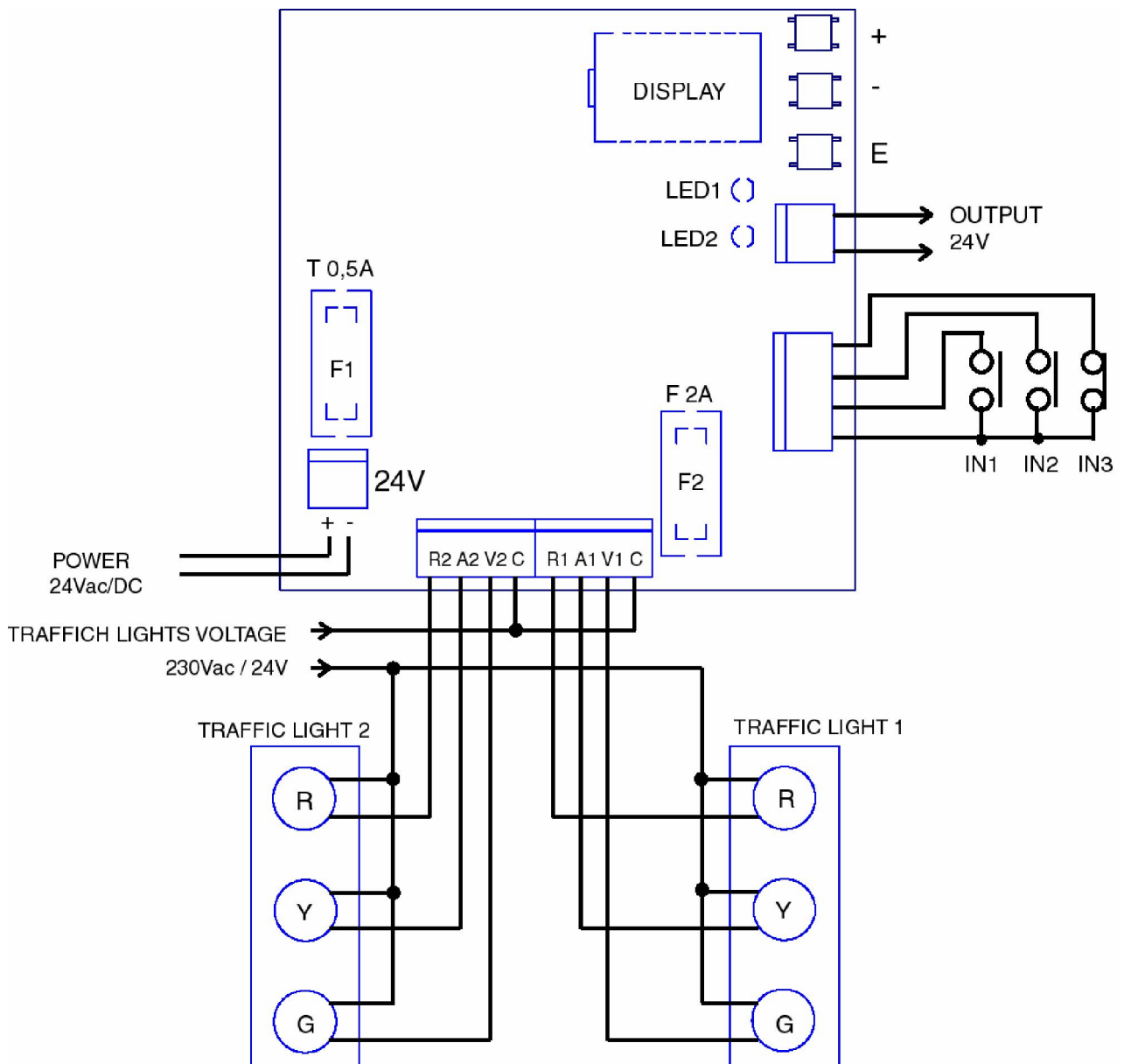
Basic Version

Version with

transformer

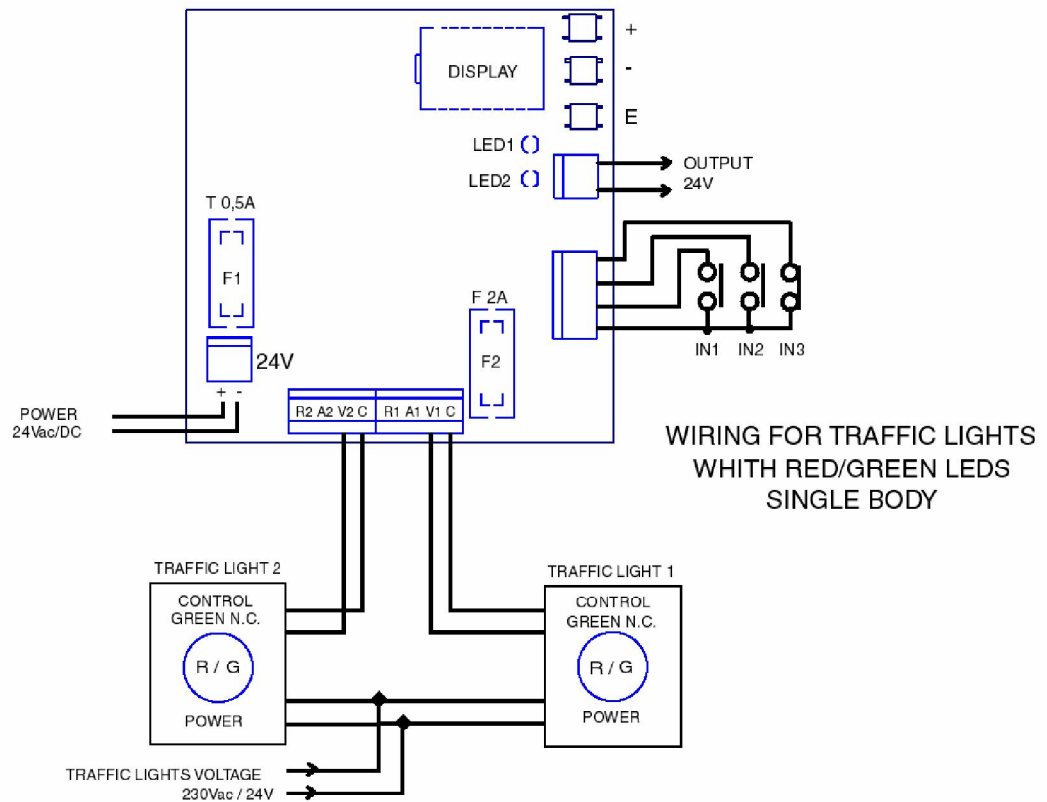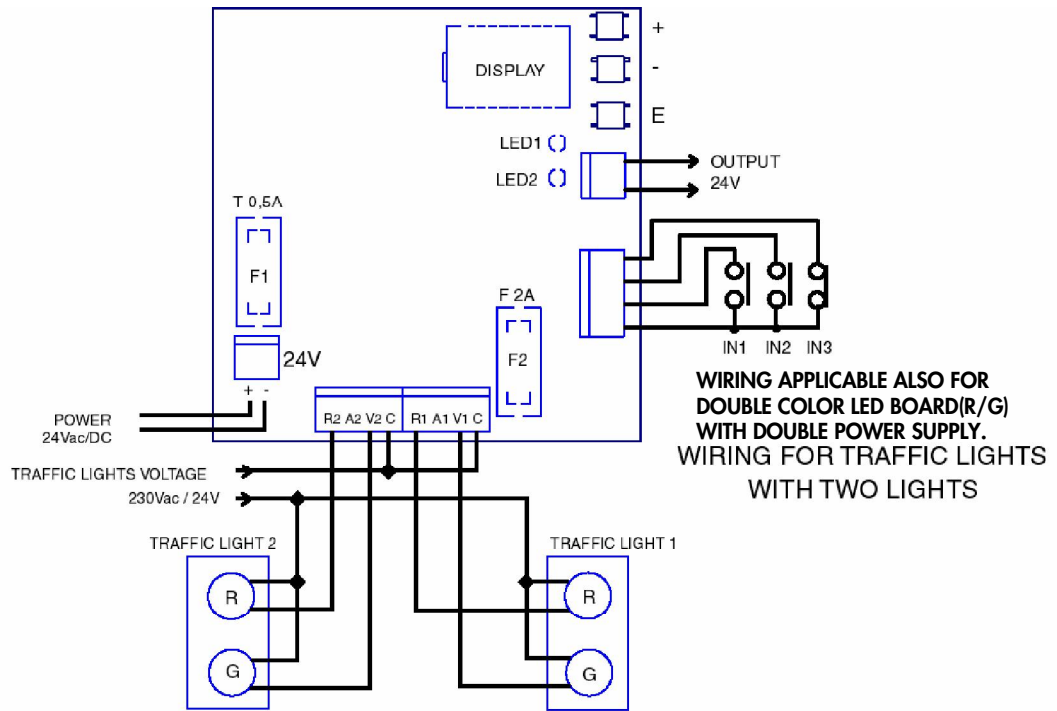

Version with

transformer, batteries

and battery charger

⚠️ WARNING!

- **The installation and any subsequent modifications must be done only by qualified personnel.**

- **To ensure operator' safety and to avoid damaging the components, the control board must be switched off while making connections .**

- **This electronic control board has been made specifically to control traffic lights. Is forbidden the use of the product for purposes other than those for which it is intended, or in an improper way.**

- **Use original components. The company is not responsible for any damages sustained due to the use of non original components.**

CONNECTION DIAGRAM

DISPLAY

+

-

E

LED1 ( )
LED2 ( )

OUTPUT
24V

T 0,5A

F1

24V

POWER
24Vac/DC

R2 A2 V2 C   R1 A1 V1 C

F 2A

F2

IN1   IN2   IN3

**WIRING APPLICABLE ALSO FOR
DOUBLE COLOR LED BOARD(R/G)
WITH DOUBLE POWER SUPPLY.**
WIRING FOR TRAFFIC LIGHTS
WITH TWO LIGHTS

TRAFFIC LIGHTS VOLTAGE
230Vac / 24V

TRAFFIC LIGHT 2

R

G

TRAFFIC LIGHT 1

R

G

DISPLAY

+

-

E

LED1 ( )
LED2 ( )

OUTPUT
24V

T 0,5A

F1

24V

POWER
24Vac/DC

R2 A2 V2 C   R1 A1 V1 C

F 2A

F2

IN1   IN2   IN3

WIRING FOR TRAFFIC LIGHTS
WHITH RED/GREEN LEDS
SINGLE BODY

TRAFFIC LIGHT 2

CONTROL
GREEN N.C.

R / G

POWER

TRAFFIC LIGHT 1

CONTROL
GREEN N.C.

R / G

POWER

TRAFFIC LIGHTS VOLTAGE
230Vac / 24V

DESCRIPTION OF THE PRODUCT

The control board is used to control two or three-light traffic lights in parking areas, residences and in all those areas where it is necessary to control access.

The control unit has an electrical and mechanical inter block, to prevent in the case of malfunction coming on contemporaneously of the two green lights.

The control unit can be used with 24V or 230V lights.

The control unit comes with 3 different codes:
- basic version (power 24V ac/DC alternating or direct current)
- version with transformer (power 230Vac)
- version with batteries in buffer (power 230Vac)

ELECTRICAL CONNECTIONS

1) + 24Vac/DC power .
2) - 24Vac/DC power .
3) R2. output relay (clean contact 5A max) red light traffic light 2.
4) A2. output relay (clean contact 5A max) yellow light traffic light 2.
5) V2 output relay (clean contact 5A max) green light traffic light 2.
6) Traffic lights common relay.
7) R1. output relay (clean contact 5A max) red light traffic light1.
8) A1. output relay (clean contact 5A max) yellow light traffic light 1.
9) V1. output relay (clean contact 5A max) green light traffic light 1.
10) Traffic lights common relay.
11) Control common (+24VDC)
12) IN1 (Input1), input for detection devices (N.O or N.C) traffic light 1
13) IN2 (Input2), input for detection devices (N.O or N.C) traffic light 2
14) IN3 (input 3), emergency input N.C or N.O.
15) Auxiliary voltage output +24V, 400mA max
16) Auxiliary voltage output -24V, 400mA max

DEFINING THE COMPONENTS OF THE CONTROL UNIT

F1- fuse to protect auxiliary output 24V
F2- fuse to protect traffic light output.
LED1 – Three-colour led showing status (red/yellow/green light) of traffic light 1.
LED2 – Three-colour led showing status (red/yellow/green light) of traffic light 2.
DISPLAY- 4 digit display for setting operations
IN3 – Activating input 3 (EMERGENCY) in the case of traffic lights with **two** lights, this means the start of a flashing sequence of the red traffic lights until deactivation of input3.

TECHNICAL DATA

Power card: 24V ac/DC (+- 10%).
Current consumption at rest: 0.02 A (at 24VDC).
Maximum current switching relay 5A.
Maximum current accessories : 0.4A at 24Vac/DC.

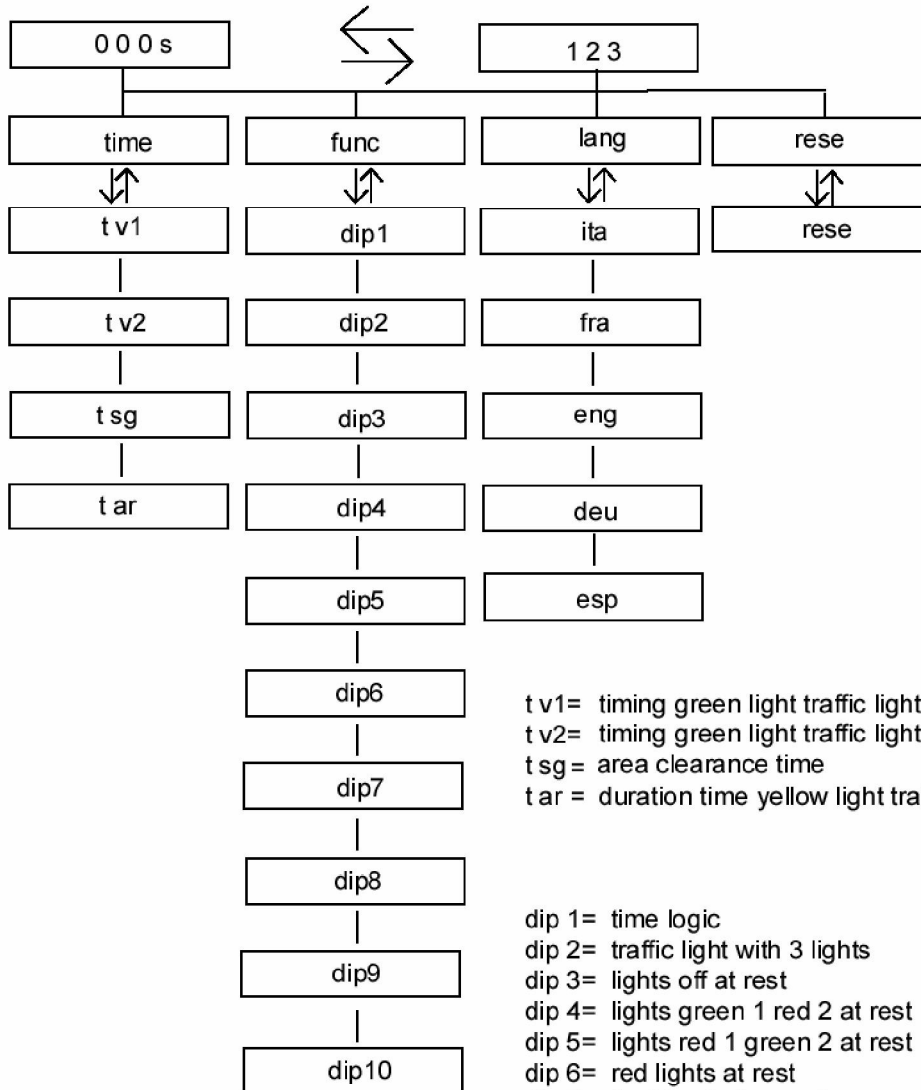Power to panel with transformer: 230V ac (+- 10%) 50Hz.
Current consumption at rest: 0.04 A (at 230Vac).

Power to panel with transformer and batteries: 230V ac (+- 10%) 50Hz.
Current consumption at rest: 0.04 A (at 230Vac).
Capacity of batteries in buffer: 3Ah
Time required to completely charge batteries in buffer: 24h

0 0 0 s	⇐ ⇒	1 2 3

time	func	lang	rese
⇕	⇕	⇕	⇕

t v1	dip1	ita	rese
t v2	dip2	fra	
t sg	dip3	eng	
t ar	dip4	deu	
	dip5	esp	
	dip6		
	dip7		
	dip8		
	dip9		
	dip10		

t v1 = timing green light traffic light 1
t v2 = timing green light traffic light 2
t sg = area clearance time
t ar = duration time yellow light traffic lights 1 and 2

dip 1 = time logic
dip 2 = traffic light with 3 lights
dip 3 = lights off at rest
dip 4 = lights green 1 red 2 at rest
dip 5 = lights red 1 green 2 at rest
dip 6 = red lights at rest
dip 7 = flashing before red
dip 8 = input 1 n.o./n.c.
dip 9 = input 2 n.o./n.c.
dip10 = input 3 n.c./n.o.

ita = Italian
fra = French
eng = English
deu = German
esp = Spanish

rese = sets factory parameters

⬜↑
⬜↓
⬜ E < ENTER function - simply press

ESC function - press for 2 seconds
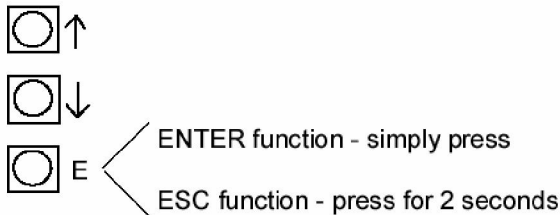
WARNING: At rest the display shows the activation of the inputs or the cycle time
1 2 3
1 = input 1 active
2 = input 2 active
3 = input 3 active
0 0 0 s
0 0 0 = cycle seconds counter
s = execution of area clearance time

To access the menus or to undertake an operation, press ENTER (E) and release immediately. Keeping the same button pressed, it will be possible to return to the upper menu or cancel the operation requested (ESC). To navigate in the menus use the up and down arrows.

⚠️ **With DIP2 = ON use a sign warning to proceed with caution when light is yellow, or stop when traffic lights have been installed in areas with poor visibility.**

Default settings are: tv1 = 10s (from 0 to 240), tv2 = 10s (from 0 to 240), tsg = 10s (from 0 to 2400), tar = 0s (from 0 to 15), dip1 = OFF, dip2 = OFF, dip3 = OFF, dip4 = OFF, dip5 = OFF, dip6 = ON, dip7 = OFF, dip8 = OFF, dip9 = OFF, dip10 = OFF, language = Italian.

N.B. With the default settings, INPUT1 and INPUT2 are type N.O. (normally open contacts), while INPUT3 is type N.C. (normally closed)

OPERATIONAL LOGIC

1. *Operational logic with timer*. The timing of the red and green of the traffic lights are set from the display using the parameters **tv1**(green time traffic light 1), **tv2** (green time traffic light 2), **tsg** (area clearance time). This logic doesn't require the use of photoelectric cells or other detection devices as the system is controlled only by the times set for the two traffic lights.
Operation is cyclical.

   To use this logic, open the function menu, and set **dip 1= ON**.
   Set the **tv1** and **tv2** times based on the maximum time required for the green lights in each traffic light.
   Set the desired time **tsg**, during this time the traffic lights both show red lights to be sure that the maneuvering area between the traffic lights is cleared before the green light comes on the opposite side.
   If the traffic light has three lights (there is a yellow light) regulate the time **tar** for the yellow light, to avoid sudden braking.
   If the traffic light has two lights, (due to the absence of the yellow light), and you need a signal before one of the lights turns red, it is possible to insert the flash of the green light (**dip 7=ON / dip 2= OFF**) regulating the time (**tar**).

2. *Operational logic with control device* (for example photoelectric cells or buttons).
   The start of the green light cycle in each traffic light is set by the detection device.
   The red and green times of the traffic lights are set on the display using the parameters **tv1**(green time traffic light 1), **tv2** (green time traffic light 2), **tsg** (area clearance time).

   To use this logic, open the function menu, and set **dip 1= OFF**.
   Set the **t v1** and **tv2** times based on the maximum time required for the green lights in each traffic light.
   Set the desired time **tsg**, during this time the traffic lights both show red lights to be sure that the maneuvering area between the traffic lights is cleared before the green light comes on the opposite side.
   If the traffic light has three lights (there is a yellow light) regulate the time **tar** for the yellow light, to avoid sudden braking.
   If the traffic light has two lights, (due to the absence of the yellow light), and you need a signal before one of the lights turns red, it is possible to insert the flash of the green light (**dip 7=ON / dip 2= OFF**) regulating the time (**tar**).
   Activate (ON) dip3 or dip4 or dip5 or dip6 depending on the desired rest status of the traffic lights.
   N.B. only one of the dip 3-4-5-6 can be ON.

N.B.
When using two traffic lights with three lights (dip2=ON), at the expiry time of the green light in each traffic light, before the red light comes on, the yellow light will activate for the time t ar.
When using two traffic lights with two lights (dip2=OFF), the tar time of the yellow light will be taken over by the green light, before the red light comes on.

With Dip 3 = ON (LIGHTS OFF AT REST) or dip 6 = ON (RED LIGHTS AT REST) input1 activates the green light for traffic light 1, input 2 activates the green light for traffic light 2.
The booking by each input is accepted even in active mode of the lights.
In the case of activation of input 1 and 2 contemporaneously during the state of rest, input 1 has priority.

In the case of activation of input 1 and 2 during a work cycle the input that has not been activated during the previous cycle, has priority.

With Dip 4 ON (GREEN 1 ,RED 2 AT REST) input 2 activates the green cycle for traffic light 2.
Ended the green cycle of traffic light 2, the next green cycle of traffic light 1 will be at minimum tv1 sec.
If input 1 remains active, input 2 has no effect (BOOKINGS ARE NOT ACCEPTED) therefore it is suggested to install a push-button control as input 1 (N.O or N.C depending Dip8).
In this situation input 1 is useful if allowing access in one direction or when temporary priority must be given to only one direction; for example to allow entry to an underground parking area. (TRAFFIC LIGHT 1 EXTERNAL – TRAFFIC LIGHT 2 INTERNAL).

With Dip 5 = ON (RED 1 ,GREEN 2 AT REST) input 1 activates the green cycle for traffic light 1.
Ended the green cycle of traffic light 1, the next green cycle of traffic light 2 will be at minimum tv1 sec.
If input 2 remains active, input 1 has no effect (NO BOOKINGS ARE ACCEPTED) therefore it is advisable to install a push-button control as input 2 (N.O or N.C depending on Dip9).
In this situation input 2 is useful if blocking access in one direction or when temporary priority must be given to only one direction for example to allow exit from an underground parking area (TRAFFIC LIGHT 1 EXTERNAL – TRAFFIC LIGHT 2 INTERNAL).

CORRECT POSITIONING OF CONTROL DEVICES (Fig1)
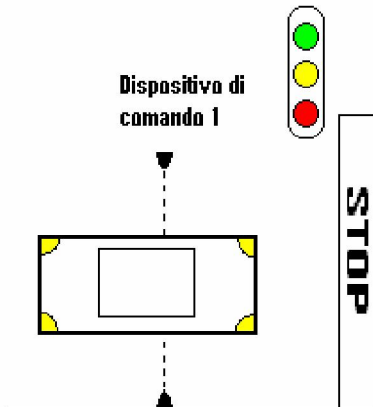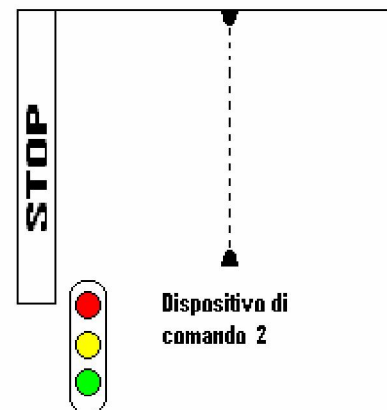
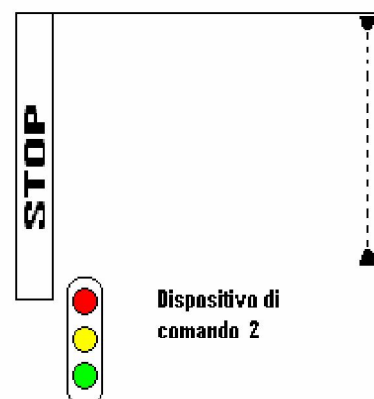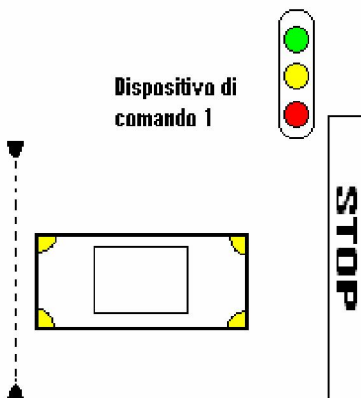Control device 1   Control device 2

INCORRECT POSITIONING OF CONTROL DEVICES (Fig2)

- **It is advisable to insert a differential magneto thermal switch before connecting power to the control unit.**
- **Power supply of the clean contacts (free from voltage), controlled by the relays, depends on the type of traffic light used: traffic lights 230Vac will require an electric panel that supplies voltage of 230Vac, while the 24V traffic light will require voltage of 24V ac-dc.**
- **The electronic board and connected devices do not require any particular maintenance. Verify periodically, at least twice a year, that the devices operate properly.**
- **N.B. Using the lights with red/green traffic lights in a single body, the operations relating to dip3 and dip7 are not possible, according to the wiring indicated.**