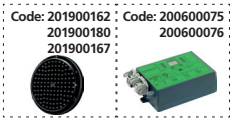
Led Mobile Traffic Light

/ Technical Data /

	Traf c light nymber: 2 (two)
	Luminous intensity regulation: variable intensity depending on ambient light
	Light source: Led lantern; maximum power 32W @ 12V
	Times: times x 1 sec. ..... times x 5 sec. .....
	Power supply: 12 V
	Connection type: quartz synchronization cable less
	Alarms: lamps; battery
	Autonomy: (100 Ah battery) 6,25 days 150 hours
	Maximum distance: depending on travel time
	Dimensions: closed: 48x81 x h 69 cm open: 48x81 x h 177 - 232 cm
	Weight: single traffic light without battery 32 kg two traffic lights without batteries 64 kg
	Construction materials: bent iron sheet, fire painted iron tubular and/or hot galvanized
	Temperature: -20 °C - +70 °C

/ Spare parts /



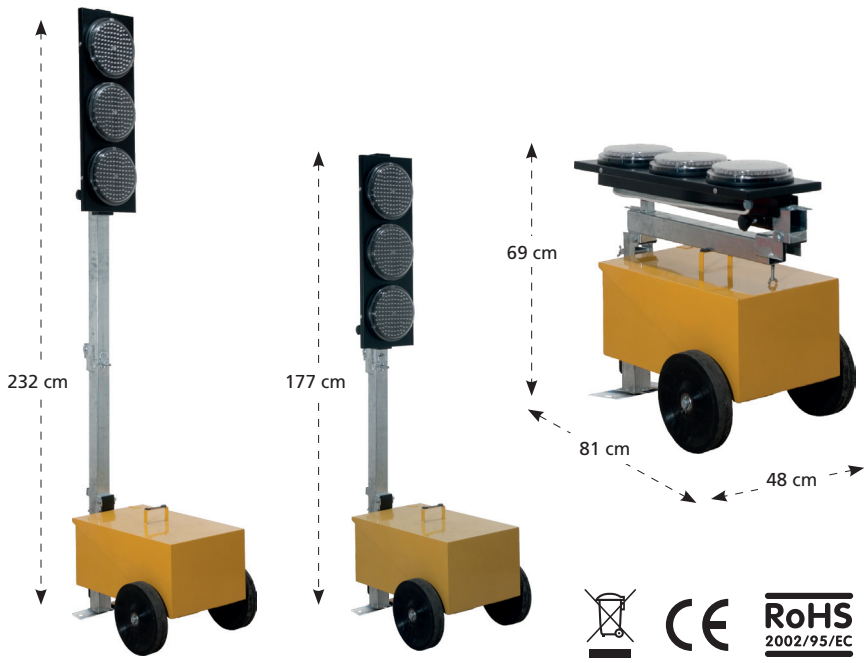
/ Accessories /

/ Norms /

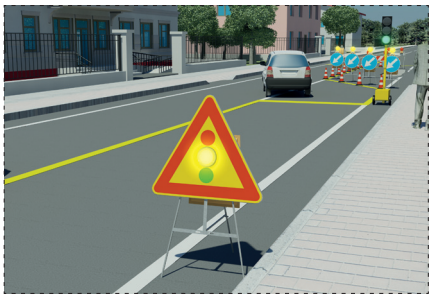
- In compliance with UNI EN 12368
- European Directive 2004/108/CE and CE marking

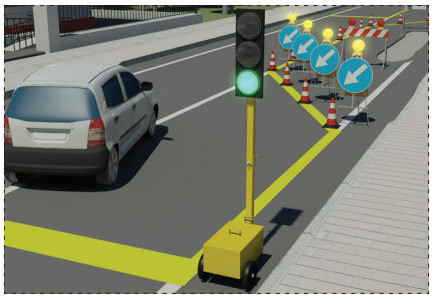
/ Packaging /

	Box: carton box each pcs: 51x80x h 68 cm weight: 32,5 kg (box included)
	Pallet weight and dimensions for the couple: pallet: 80x100x h 80 cm total weight: 75 kg



/ Specific application /





/ Description /

The system is composed by two mobile carts complete with traffic light lanterns and the control units.The traffic lights are easy to carry and to remove. The QM3RDC traffic light quartz model, thanks to the two working modalities, can be used both for stationary working zones and for moving working zones, because of the synchronism system without connections between the two control units (cables for connection optional).
The power supply can be made by 100 Ah battery or by a power pack.

/ Functionality /

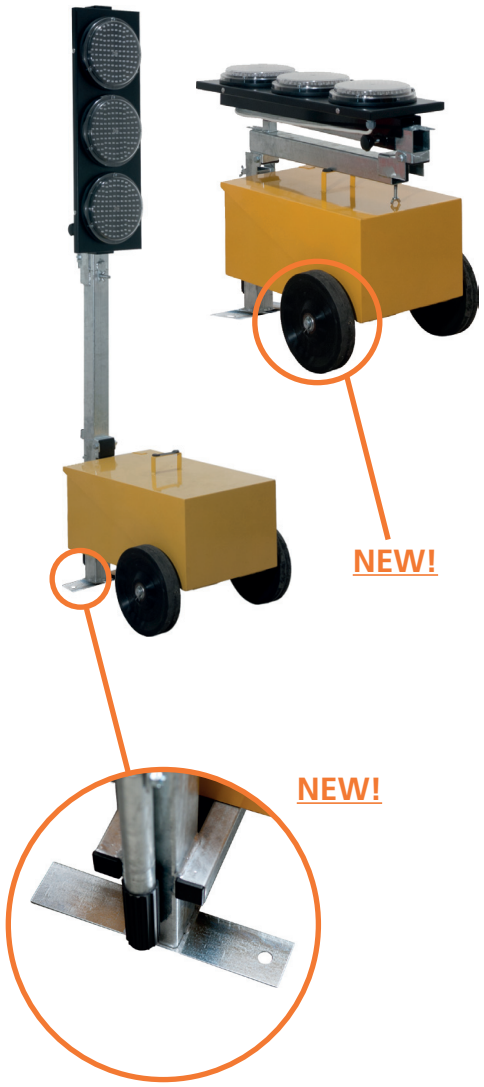
The mobile traffic light must be used in compliance with the 42 article of Regulation Enforcement and implementation of the Italian Road Code, in case of the presence of road working zones that cause a restriction of the road.

/ General characteristics /

VISIBILITY:
Thanks to the photo cell control that depends on the ambient light, the lamps will result more efficient.
The lantern is black painted in order to highlight the lamp color because it increases the contrast.
Finally, the absence of colored lenses permits to eliminate the phantom effect.

CONSUMPTIONS:
Thanks to the high luminous efficiency lamps with photo cell control, the consumptions are very low.
Because of this function, the traffic light has higher autonomy using smaller batteries (and consequently less expensive).

Led Mobile Traffic Light



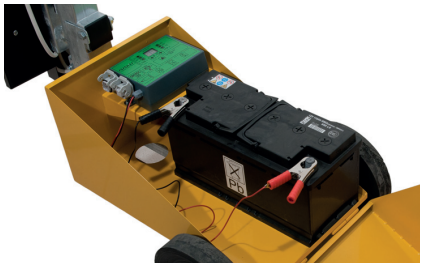
Fixing bracket to the ground that makes the traffic light more stable.

For further information you can consult the user manual.

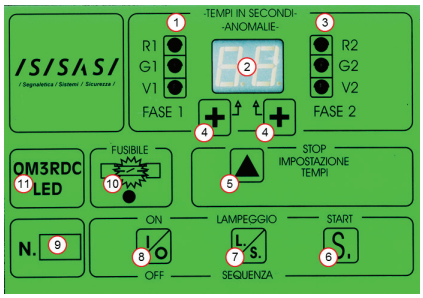
EASY TO USE:
Thanks to the foldable cart, the device is very easy to transport and occupies very little space, the **larger wheels** allows you to carry the cart even on rough ground.
The lantern height is variable, **from 177 cm up to 232 cm**.
Because of the smaller batteries, the charging phases are faster and it is easier to change and carry them.
All these characteristics allow a rapid installation of the working zone.

RELIABILITY:
Each optic has 120 Leds and if some of them are burn, the optic functioning will not be compromised.

/ Control unit /



The digital control unit handles and verify the lamps and battery correct functioning.
Below are explained all the controls and buttons present on the control unit panel.

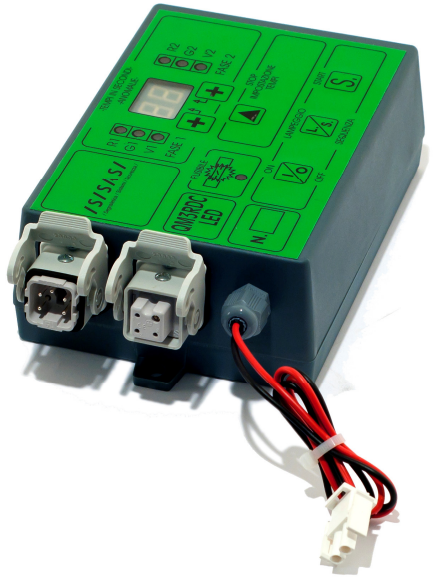


1-3	phase 1 and phase 2 relay
2	luminous display for setting times and errors viewing
4	increasing times (tens, units)
5	traffic light setting times, start up and stop
6	traffic light sequence start up
7	flashing/sequence changing
8	control unit switching on/off
9	production lot
10	blown fuse indicator
11	control unit model

Mobile traffic light QM3RDC

User Manual

Edizione Aprile 2013 – Rev. A2



TO GUARANTEE ABSOLUTELY SAFE WORKING CONDITIONS, BEFORE PERFORMING ANY OPERATION ON THE UNIT, READ THIS MANUAL VERY CAREFULLY AND ALWAYS FOLLOW THE INSTRUCTIONS AND RESPECT THE PROHIBITIONS CONTAINED HEREIN!

Pay particular attention to the instructions preceded by the following symbols:

Symbols

N.B. *NOTA BENE:*
Provides important information

WARNING:
Indicates possible risk for persons or danger for the unit if the instructions and restrictions are not carefully followed.

DANGER:
Indicates a high risk (even the risk of death) for persons if the instructions and restrictions are not carefully followed

The manual reflects the state of the technology at the time the product is placed on the market. SISAS S.r.l. reserves the right to update previous products and manuals and declines any responsibility derived from mistaken interpretation of this document.

	**WARNING** In compliance with n. 151 D.Lgs of 25/07/2005 All the components must be disposed as special waste, so the system must be deposited in recycling center. Anyone who dispose illegally the waste without following the procedure cited will be subject to penalties by the national regulations.

INDICE

1. How to use and preserve the manual

This manual is considered an integral part of the unit and must be kept for future reference.

This manual provides information for:

- Intended use
- Technical characteristics
- How to install it
- Mounting and uses

The manual also provides information for:

- Instructions for the staff
- Shows all the normal maintenance
- Reparations assistance
- Instructions for spare parts and accessories

The operator who follows the instructions in this manual must be an educated person who has adequate knowledge of electricity and roadway traffic.

This instruction booklet must be kept in the special casing contained on the traffic light trolley and must be protected from the weathering.

N.B.

CE	The product is in compliance with the European Directives: 2004/108/CE (EMC) Harmonized standards applied: EN 61000-4-2, EN61000-4-6, EN 50081-1, EN 55022(limits)

NOTE:

CARD A (to be duly filled out and kept)

Retailer's stamp	Date of purchase ____/____/_____

Traffic light system model QM3RDC Machine N°: _____

Company name

_____

Address of legal headquarters:

Street _____ZIP _____

Town _____ VAT N° _____

CARD B (to be duly filled out and returned)

Retailer's stamp	Date of purchase ____/____/_____

Traffic light system model QM3RDC Machine N°: _____

Company name

_____

Address of legal headquarters:

Street _____ZIP _____

Town _____ VAT N° _____

2. Mobile traffic lights uses

The system is composed by 2 complete traffic lights with lanterns with 3 lights, and control units (one for each traffic light).
Their usage is necessary according to art.42 comma 3 of the New Italian Road Code, in presence of work zones that create a restriction of the lane.

The traffic lights are easy to carry, thanks to their low weight, for the small size and for the cart with wheels.
The quartz traffic lights model **QM3RD** is very suitable for moving work zones, since they have not any connection between the two control units (optional).

The power supply is made using a standard commercial battery of 12V or using a power pack.

3. Technical characteristics

Power supply	**Battery 12v**
Absorption	**~1°**
Maximum power of lantern	**Max 32W @ 12V**
Autonomy *	**150h**
Exercise temperature	**From -20 to +70 °C**
Duration of battery	**5 years**

* The autonomy of the traffic light has been tested in laboratory at constant 20° temperature without accessories and using a new and charged battery of 100Ah

In general a standard traffic light is made up by two mobile traffic units each of them composed of:

- Wheeled battery case with external hinge cover for 180° opening, stop base, movable lever with plastic hand grip, pole for traffic light head fitting, lever and split pin lockup.
- Traffic signal head with 200 mm optics, multi polar cable and male connector with 5 poles.
- Control unit.

During normal equipment operation, the battery case cover has to be perfectly closed with the split pin inserted to avoid not trained people casually touching the inner parts, and to protect the device against environmental agents.

4. Control Unit

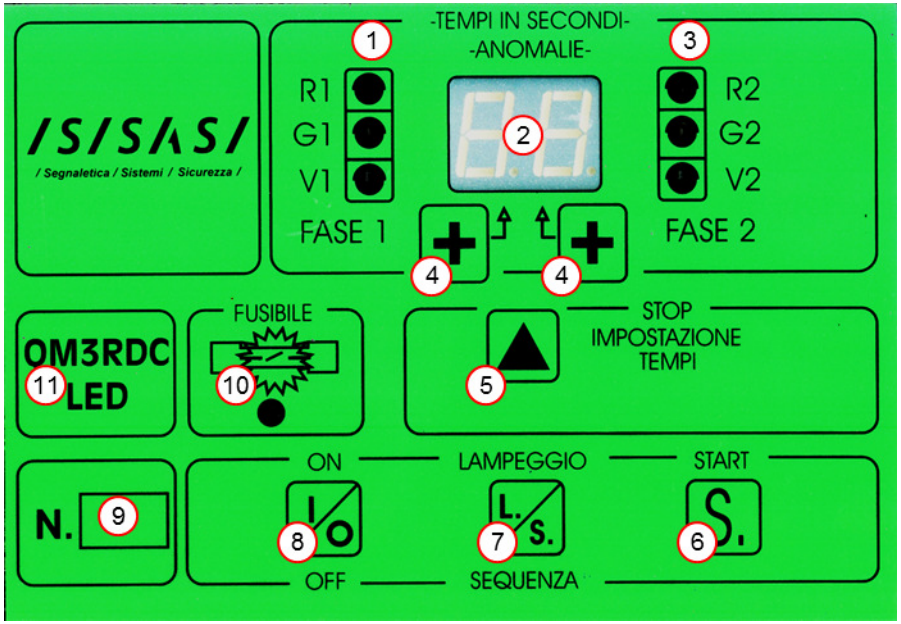


Fig. 1- Control unit layout

The digital control unit manages and verify the correct functioning of the lamps and the battery. In the above figure are shown all the components identified with a number. In the following list there are all the components with their number and their explanation.

Number	Description
1	Phase1 repeater
2	Display for time setting and errors visualization
3	Phase2 repeater
4	Increasing time (tens digits, units digits)
5	Switching on/off and time setting
6	Start traffic light sequence
7	Change Flashing/Sequence
8	Control unit switching on/off
9	Production lot
10	Blown fuse indicator
11	Control unit model

Appendix B - Warranty –

How to obtain the warranty coverage:

Far apporre il timbro del rivenditore e la data d'acquisto sui tagliandi A e B
Compilare il tagliando B e spedirlo in busta chiusa, entro 30gg dalla data di acquisto a: SISAS srl, Via Sputnik 8 , 06073 Ellera scalo, Corciano – Perugia.
Conservare il tagliando A che avrà in tal modo validità di garanzia.

Test :

Data test :	Test tecnician:
____/____/_____	_____

Spare parts	
Code	**Description**
200600077	Control unit model QM3RDC
201900304	Led traffic light lantern
201900162	Led red optic
201900117	Led yellow optic
201900167	Led green optic

ASSISTENZA:

If you have any questions, need a special configuration or are experiencing operating problems call S.I.S.A.S. Techtronic s.r.l. and request On-Line customer support for the traffic light systems.

From Monday to Friday from 8:00 a.m. to 5:00 p.m.

+39 075.5186422
+39 075.5186470

5. Control unit configuration

This type of control unit can support only alternating one-way.
The **wired mode** allows synchronization via electrical cable; whereas the Quartz mode does not need any type of plug. In this case the synchronization starts as soon as the system is switched on.

The Quartz mode synchronization must be done every 6 days, even if it has been switched off without pressing the button STOP.

To change the control unit operating mode you can see 6.2 chapter.

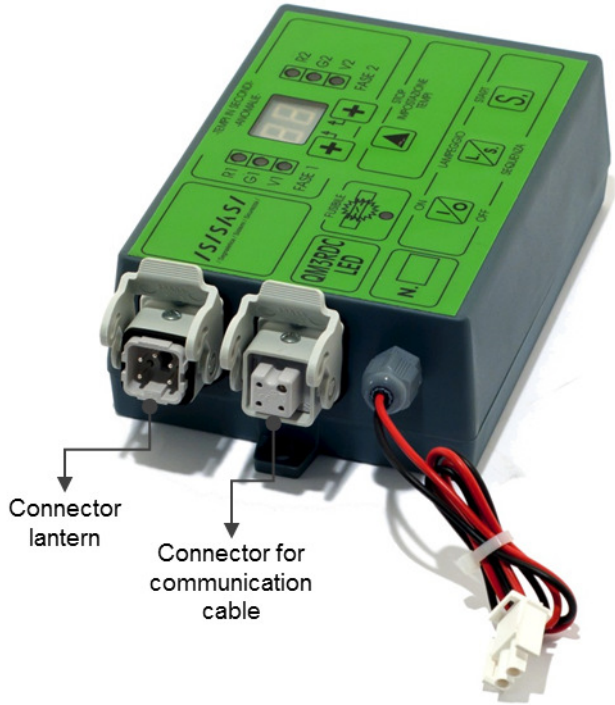


Fig.2 – Connecting elements

5.1 Wired mode

With this modality you need to use a cable connected between the two control unit. This kind of connection assure a better protection of the traffic light, because the synchronism and the error handling are made by both control units.

The cable can have a maximum length of 600 m.
The cable and the control unit are plugged with a connector.
The setting time is made automatically when the system is just started.
For the system start check the chapter 7.

5.2 Quartz mode

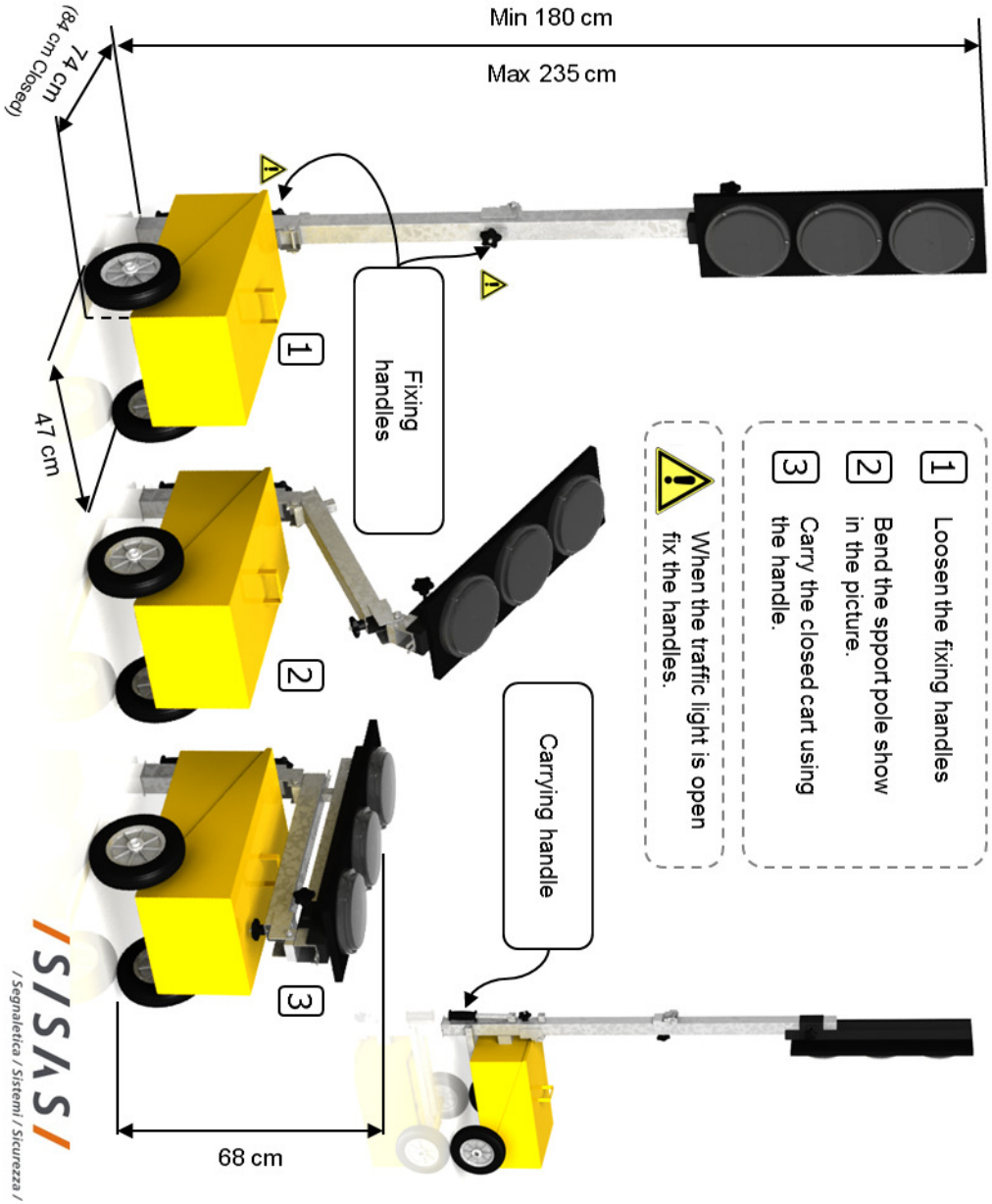
When you use this modality there must be people in the working zone

The control units can work without any type of connection.
This connection can be used in temporary road working zones, where the staff is always present.

This product can be used instead of the road flag mover when the temporary working zone is constantly moved.

The synchronism and the error handing are independent for each control unit, so it is necessary to periodically check the two traffic lights, and resynchronize the traffic light system every time you change the batteries.
Anyway, you must check the system every six days.
For synchronism details check the chapter 7.

Appendix A – Fitting instruction -



8. Traffic light stop and system switching off

To stop the traffic light sequence press Stop (5) button one time only, in order to visualize in the display “F1” or “F2” writing.

The system is switched off using I/O (8) button. This act will switch off the lanterns and the control units. If the STOP button is not pressed, the counter of the phases is done even if the control unit is switched off. If the control unit will switch on again, this will start working in synchrony with the other control unit.

The synchronization of the control units must be done every 6 days even if they have been switched off without pressing STOP button.

9. Yellow flashing modality

The traffic light control unit has a button that permits to change from flashing mode to sequence mode. If the “L.S.” (7) button is pressed, the lantern will start yellow flashing. If the button is pressed again the sequence will restart, except in the case the Stop (5) button has been pressed.

10. Battery replacement

The replacement of the battery can be done in any moment thanks to an internal accumulator that permits to activate the clock of the control unit that manages the traffic lights times.
For this reason it is not necessary to re synchronize the traffic lights every time the battery must be changed, it is compulsory only if more than 6 days passed from the previous synchronization.

6. Control unit configuration

In this chapter is described how to set the system.

6.1 Time setting

In the following table is shown how to set the time and how start-up the system:

Power up the control unit		
Press the button		If the control unit is switched off
Press the button		Until  or  are displayed
Press the button		To set the **red-red** time
Press the buttons		To set the time
Press the button		To set the **green phase 1** time
Press the buttons		To set the time
Press the button		To set the **green phase 2** time
Press the buttons		To set the time
Press the button		To **complete the procedure**
Now  or  should appear on the display.		
 Make sure that the time setting are the same in both control units.		
Press the buttons at the same time in both control units		To **start up the system**

For the systems **with cables mode** is enough to set only the phase 1 control unit. With this mode the phase 2 control unit must be switched on pressing the START button. All the operations, including the start-up, must be done using the phase 1 control unit.

N.B. *For times over 99 seconds is possible to set up the control unit to have timing 5 times bigger (from 5 seconds to 495 seconds).*
For the details on the configuration refer to Chapter 5

6.2 Advance configuration

The control unit has a simple menu for the modifications of some basic parameters. Here below some parameters to set up:

- Modification of the **PHASE** (F1 or F2)
- **YELLOW** modality (standard/East Europe):
  The standard mode is used in Italy and in several European countries. This sequence has the switch on of the yellow after the green for a time of 5 seconds. On the other hand, in the East Europe modality, the switch on of the yellow is in the last 2 seconds of the red and for 3 seconds after the switched off of the green.
- **MODALITY TIME** x 5 (1 = 5 seconds):
  this modality, if activated, multiply the value for 5 times.
  Ex: If you set up the control unit with "red-red" at 30 seconds, this will correspond to an interval of 150 seconds.
- **FUNCTION** modality (with cables mode, quartz mode):
  there are two function modality as shown in chapter 5.

Make sure that all the settings are the same for both control units, except for the phases.

With the configuration menu is possible to change the parameters. The control unit display is divided in the following way: the first digit, tens, shows the current menu with a letter, from A to E; the second digit, units, shows the current menu value. Following there is an example of the countdown to access to the menu.

Display	
Menù	**Dato**
	

7.2 Quartz mode

The **QM3RD** traffic light control unit provides to maintain aligned the times of the two phases through an internal clock, that must be synchronized through the switch on of the two control units in the same time.

Before starting the traffic light sequence it is necessary to verify that the two control units are in the STOP position, so that in the display are shown "F1" and "F2".

Do not use 2 control units with the same phase. In this case go to chapter 5.2 to change the set up of the phase.

Make sure that the setting times are the same in both the control units

It is necessary to make the start up of the sequence in the same time, for this reason we suggest to locate the two traffic lights one close to the other to be able to synchronize the control units easily. Once the control units are one close to the other, and after setting up the times (as explained in 5.1 chapter), it is necessary to press Start button (6) in the same time in both the control units.

7. Traffic light start up

The traffic light start up depends on the function modality.
If you use the cable modality it will be enough to start up only one control unit.
If you use the quartz modality it will be necessary to synchronize both the control units.

In order to have a correct control unit operation, the operator must ensure that the batteries do not have a low charge.
If there are messages regarding the low charge of the batteries, the operator will have to change the batteries before using the system.

7.1 Wired mode

With cable mode is the simplest, concerning the start-up and the configurations. Once you have connected the control units with the cable, you will have to activate the phase 2 pressing the START button. Then all the operations will be done through the phase 1 control unit.

The start-up of the traffic light is done pressing the START button on the **phase 1** control unit.

In case of security problems, the system will automatically start flashing until the solution of the problem.

The access of the menu is made in the following way:

- Disconnect the battery from the control unit.
- Press the (6) and On/Off (8) Start buttons
- Power supply the control unit (keep pressing the buttons)
- In the display will be shown a countdown as in Fig. 1
- At the end of the countdown, leave the buttons. The menu for the modifications of the different parameters will be visualized.
- Use button "+" under the "data" display to modify the value in the current menu.
- Use the button "+" under the "menu" display to go to the next menu
- Referring to the table below for the configuration:

Menù	Descrizione	Valori
A	Phase	A 1 = **Phase1** A2 = **Phase 2**
b	Yellow Est Europe	b0 = **Yellow Italy** b 1 = **Yellow Est Europe**
C	x 5 Times	C0 = **x 1 Times** C 1 = **x 5 Times**
d	Mode	d0 = **Quartz** d 1 = **With cable**
E	Countdown Mode	E0 = **Countdown mode is not activated** E 1 = **Countdown mode is activated**

Once finished the configuration press the Stop (5) button to exit from the configuration menu.

The modifications in the menu must be done in both the control units.

6.3 Reset della centralina

The control unit reset is similar to the one of the menu of configuration access, already explained in the previous chapter.

The reset of the control unit, reset all the previous set up data. Following there is the table with the values of all the parameters after the reset:

Descrizione	Valore
Phase	**1**
Long time modality	**Off (x 1 times)**
Yellow modality	**Standard modality**
Timer red-red	**10 seconds**
Green time 1	**10 seconds**
Green time 2	**10 seconds**

For the reset follow up the steps below:

- Disconnect the battery from the control unit
- Press the 2 "+" buttons under the display
- Re connect the battery and the control unit (maintain pressing the buttons)
- In the display will be shown the countdown as in figure 2.
- As soon as the countdown has finished, the control unit will be reset to the default parameters

Here the example of the countdown for the reset of the control unit:

Display


6.4 Display information and errors

	Display	Description
With quartz and with cable mode		**When the control unit is in "stop" mode, the F letter following from a number, shows the phase of the control unit. In the example shows the Phase 1.**
		**When the control unit is in "stop" mode, the F letter following from a number, shows the phase of the control unit. In the example shows the Phase 2.**
		**"LB" Low Battery – shows that the battery is discharging and must be changed.**
		**"EB" Battery Error – shows that the battery is completely discharged. This caused the switched off of the lantern, but the control unit remains activate and goes on the counter.**
		**Shows that the Red lamp is damaged and must be replaced. In this case the control unit goes to flashing mode to show an error.**
		**Shows that the yellow lamp is damaged, and must be replaced.**
		**Shows that the green lamp is damaged and must be replaced.**
		**Shows that the protection fuse is damaged.**
Only with cable mode		**Shows that the fuse of the control unit with phase 2 is damaged.**
		**Shows that the battery level of the phase 2 is low.**
		**Shows that the green lamp of the phase 2 is damaged and must be replaced**
		**Shows that the yellow lamp of the phase 2 is damaged, and must be replaced.**
		**Shows that the Red lamp of the phase 2 is damaged and must be replaced.**
		**Shows that there is a malfunction about the communication between the control units, or that the phase 2 battery is discharged.**

If the error "Eb" or "Lb" happen, to start again the control unit is necessary to replace the battery and cancel the error pressing START button