Kiwitron
SMART INDUSTRY SOLUTIONS

KiwiSafe

X001551

Configuration

Procedure

INDEX

REVISIONS

Version	Comments	Amended chapters
00	First issue	All
01	General revision of the document. Updated device configuration menus. Added attention parameters for each device.	Anticollision Menu
02	Third issue	General settings, GPIO settings, Advanced settings, GPIO settings (KiwiEye). Product name updated.

Tab.1 - Document revisions

PURPOSE AND SCOPE

USERS	Installer; Operator of the vehicles on which it is installed; Qualified personnel qualified to maintain the device.
PURPOSE	Provide information needed for: ➢ The correct configuration of the device and its accessories; ➢ The correct sensitisation of operators to security issues; ➢ The safe use of the device's accessories.

Tab.2 - Purpose and Scope

LEGEND

	Warning/Caution - Important Safety Information
	General information and suggestions
	PROHIBITION: Operations or actions NOT permitted.

Tab.3 - Legend

SAFETY INSTRUCTIONS AND WARNINGS

The handling of the device must be entrusted to appropriately trained and qualified personnel.

Before setting up the device, carefully read and understand the relevant manual to avoid damaging the product and putting your safety at risk.

The technical information contained in this document is provided for information purposes only and does not constitute a contractual commitment.
Kiwitron s.r.l. reserves the right to make any graphic or functional changes to devices and/or software without prior notice.

The KiwiSafe device and its accessories **CANNOT** replace the safety devices of the vehicle on which it is installed.

The KiwiSafe device and its accessories **MUST** be installed in compliance with general safety regulations.

It is forbidden to install the KiwiSafe device and its accessories to inhibit or alter the operation of the safety systems already on the vehicle.

It is forbidden to use the system to operate power contactors, as opening them while current is flowing would cause an electric arc.

WARNING THE OPERATOR of the vehicle before carrying out any remote operation (web cloud or remote connection via PC) to prevent dangerous situations.

The management of blocking (or slowing down) **MUST** respect the safety of the machine and operators. The blocking of a machine **MUST NOT** create potential dangerous situations.

Do not use the device or its accessories in the presence of flammable gases or fumes, near filling stations, fuel depots, chemical plants or during blasting operations. **Avoid any potentially explosive atmosphere.**

Device configuration

Connect KiwiSafe to the PC using the USB-C cable supplied.

Download the LUC SW from download.kiwi/luc/windows_setup.exe and follow all the steps indicated.

Start LUC SW and click on "Memory Slot" → "Load from file".

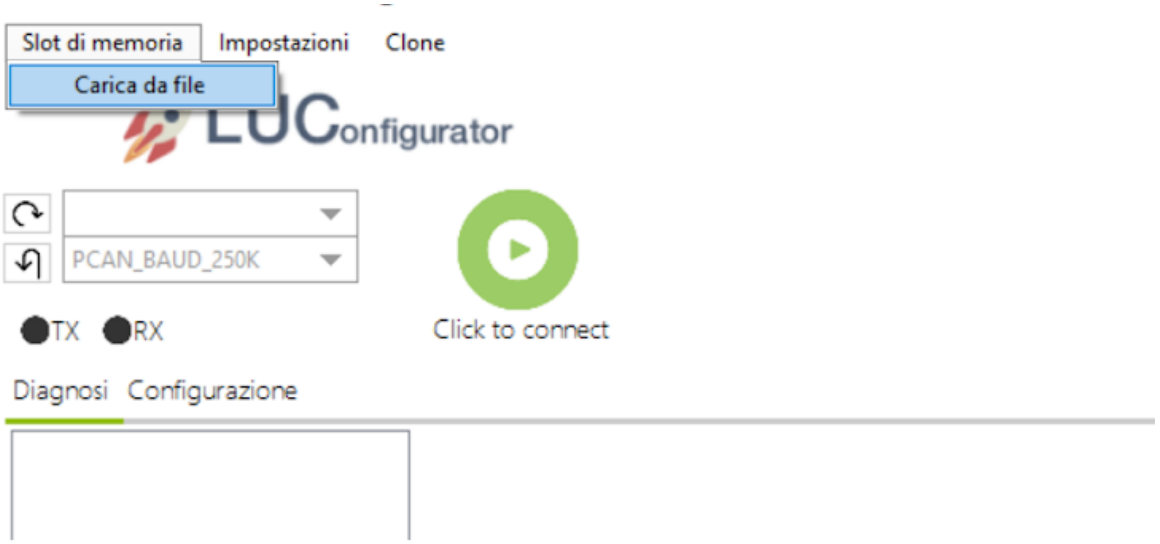


Fig.1

Select the most recent file from those proposed and click 'Open'.

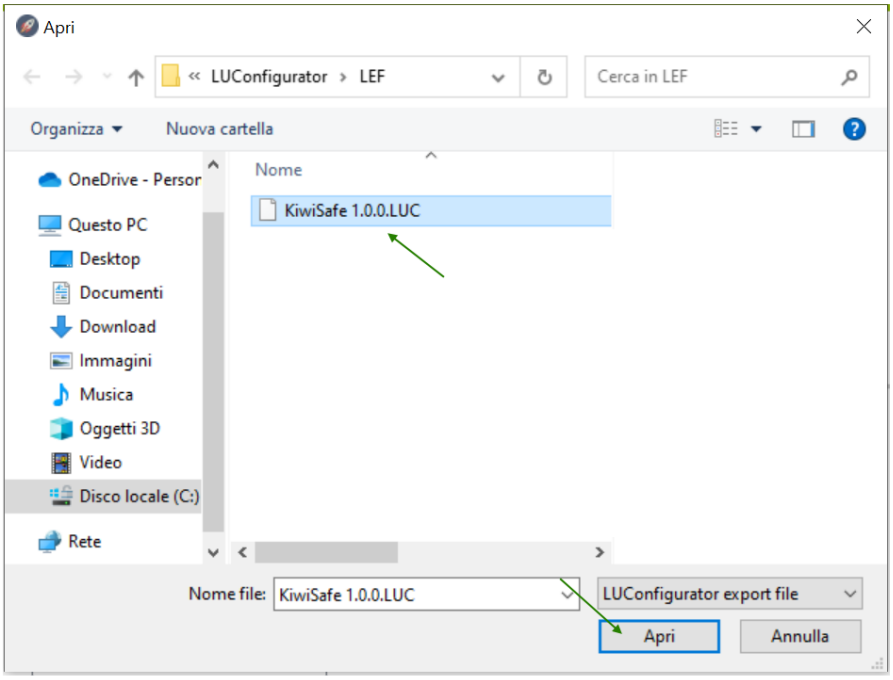


Fig.2

During the first SW installation and for any new releases/updates, you can manually load the configuration file at the following location: Local Disk C: → Programs (x86) → LUConfigurator → LEF

Click on 'Settings' and select 'USB'.

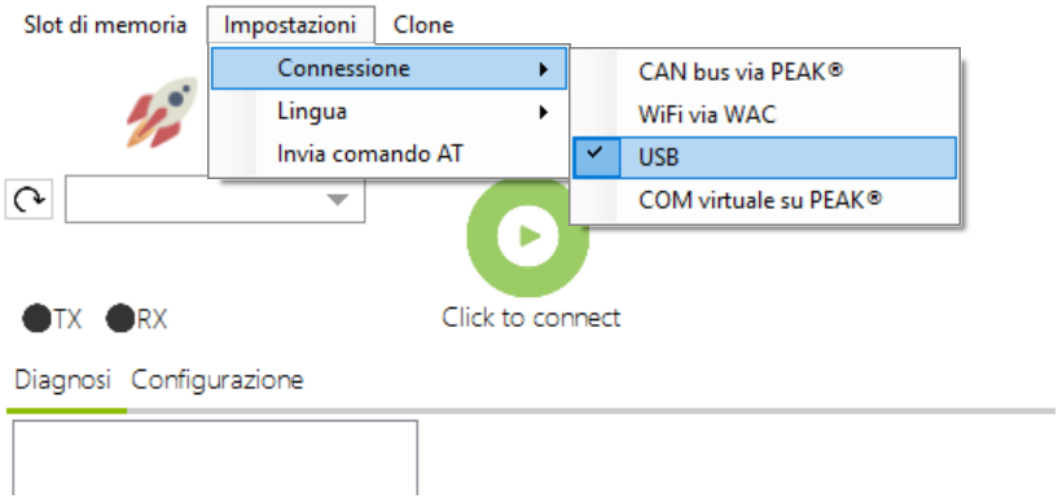


Fig.3

Click the 'Update' button located on the left-hand side of the window:

Fig.4

Click the drop-down menu and select the COM port associated with the device:

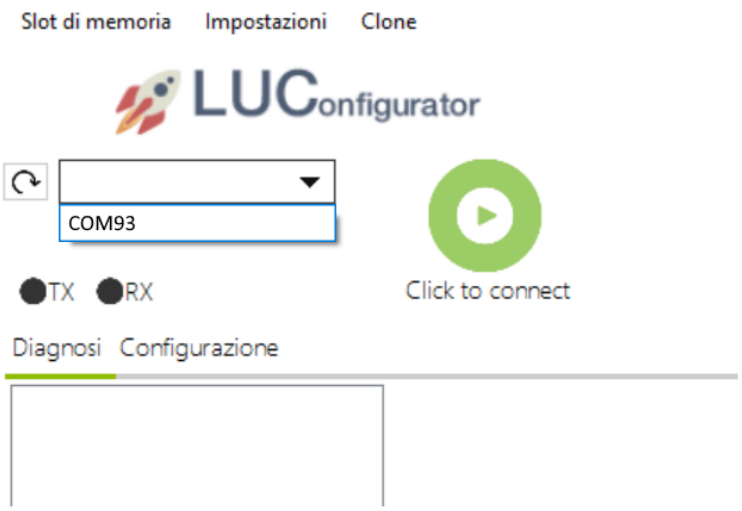


Fig.5

Press 'Click to connect':

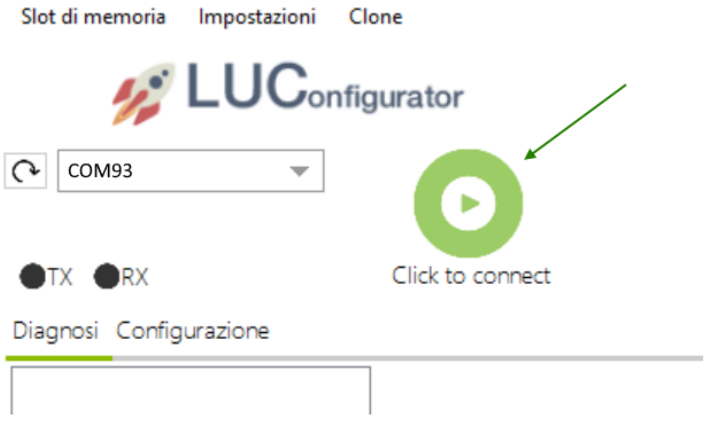


Fig.6

In the top right-hand corner, a box is displayed showing data on KiwiSafe, the serial number and the installed firmware version:

Fig.7

Click on the 'Configuration' tab:

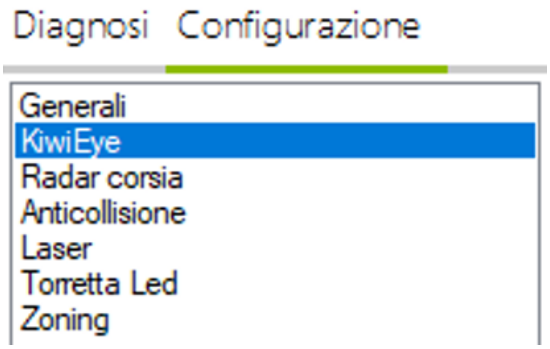
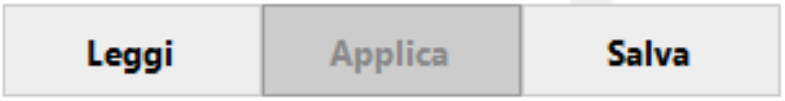


Fig.8

On the left side of the screen are the 'General' menu, the configuration menus for each device that can be integrated into the system, and the 'Zoning' menu.

For each of these menus, three buttons are visible in the bottom right-hand corner:



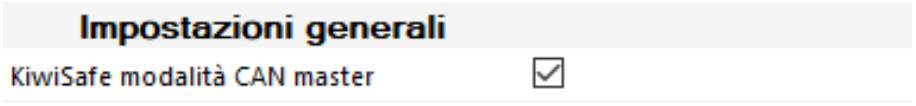
- **Read: Button for reading and displaying parameters stored in KiwiSafe.**
- **Apply: n.a.**
- **Save: Button for saving parameters. Changed parameters have a light green background, changed and saved parameters have a dark green background.**

Make sure you have saved the configuration parameters before moving to another menu.

General Menu

In this section you can configure the general parameters of the KiwiSafe device.

General Settings



General Menu - General Settings	
Parameter	**Description**
KiwiSafe CAN master mode	If flagged, it identifies KiwiSafe as the master device. If not flagged, it identifies KiwiSafe as a display device (there is already a KeyAdvanced or a KeyTouch master).

Tab.4 - General: General Settings

Visualisation

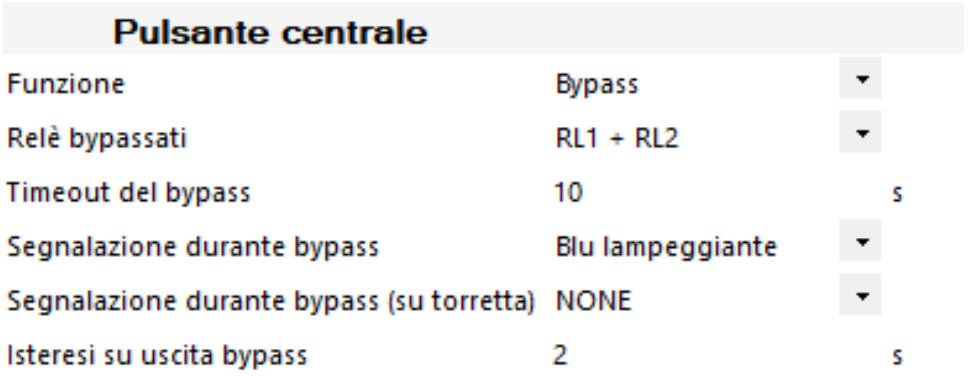
General Menu - Visualisation	
Parameter	**Description**
LED display use	**Exclusive Mode**: The display depends on the priority assigned to the sensor: KiwiSafe displays the LEDs and flashes of the detection sensor that has the highest priority at that time. For the same detection zone, KiwiSafe displays the LEDs and flashes of the sensor with the highest colour priority. For the same detection zone and colour, KiwiSafe displays LEDs and sensor flashes with a higher accessory priority. **Sensor Merge**: The visualisation is a combination of the information received from the connected sensors: KiwiSafe simultaneously displays the LEDs of all sensors associated with the system that have the highest priority at that time. For the same radius, KiwiSafe displays the LEDs and flashes of the sensor with the highest colour priority. For the same beam and colour, KiwiSafe displays LEDs and sensor flashes with a higher accessory priority.

General Menu - Visualisation	
Parameter	**Description**
Device Priority	A number from 1 to 255 is given for each system-integrated sensor. The higher this value, the more important the sensor is considered by KiwiSafe. ⚠ Do not use the same priority level for several sensors to avoid abnormal signals.
Zoning Priority	A number from 1 to 255 is given for the zoning functionality detected by the system-integrated sensors. The higher this value, the more important the zoning functionality is considered by KiwiSafe. ⚠ Do not use the same priority level for several functionalities to avoid abnormal signalling.

Tab.5 - General: Visualisation

Central button

The central KiwiSafe button can be programmed to temporarily disable one or more relays.
Bypass takes place if the button is held down, for the maximum time indicated in 'Bypass timeout'.

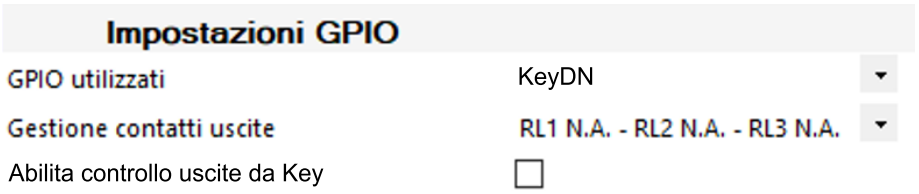


General Menu - Central button	
Parameter	**Description**
Function	**Bypass**: Pressing and holding the central KiwiSafe button activates the bypassing of one or more relays according to the programming of the 'Bypassed relays' parameter. **Disabled**: The central button is disabled, it performs no function even if it is pressed.

General Menu - Central button	
Parameter	**Description**
Bypassed relays	**No bypass**: No relays are bypassed, activations are performed according to programming in any case. **RL "x"**: Bypasses relay "x" **RL "x" + RL "y"**: Bypasses relay "x" and relay "y" **RL "x" + RL "y" + RL "z"**: Bypasses relay "x", relay "y" and relay "z" If the parameter 'Allow bypass in case of error' is flashed, the status dictated by 'Relay activation in case of error' is bypassed.
Bypass Timeout	If "Function" parameter is set to Bypass, this value indicates the maximum duration, in seconds, of the bypass action. The bypass action ends: • because the time set with 'Bypass Timeout' has elapsed • because the central button was released • because no more obstacles are detected (see parameter 'Hysteresis on bypass output')
Signalling during bypass	Allows you to choose the visual representation of the bypass action in progress by means of colour combination and/or flashing of the KiwiSafe LEDs. If the bypass is applied during an error message, no representation is displayed.
Signalling during bypass (on light column)	Allows you to choose the visual representation of the bypass action in progress **via light column**, via colour combination and/or flashing of the light column LEDs or with an acoustic signal (light column buzzer).
Hysteresis on bypass output	This is the time interval (in seconds) from when the obstacle detection condition ceases until the relays return to normal operating conditions.

Tab.6 - General: Central button

GPIO Settings



General Menu - GPIO Settings	
Parameter	**Description**
Used GPIO	KiwiSafe: KiwiSafe inputs and relays are used KeyDN: KeyDN inputs and relays are used
Output contact management	Handles contacts on KiwiSafe or KeyDN relays (depending on how the "Used GPIO" parameter is set) in N.O./N.C. output. It is possible to set one of the available relay operation combinations.
Enable output control from Key	If this function is activated, the KeyAdvanced/KeyTouch can also manage Kiwisafe relays in parallel mode, i.e: RL1 KiwiSafe simultaneously with RL1 KeyDN and RL2 KiwiSafe simultaneously with RL2 KeyDN.

Tab.7 - General: GPIO Settings

Advanced Settings

General Menu - Advanced Settings	
Parameter	**Description**
CAN-BUS bitrate	Sets the CANBUS bitrate.
CAN Open Key Node	Sets the KeyDN CAN Node.
Relay deactivation time (only on KiwiSafe)	Is the time required (in ms) for KiwiSafe relays to change state.
Relay activation in the event of an error	Sets an action if any kind of malfunction is detected in the system. Possible values: • No action • Activate relay 1 • Activate relay 2 • Activate both relays ⚠ "Activate" should be understood as "change of state from rest position"
Allow Bypass in case of error	Flagged: if a relay is triggered by an error then it can be deactivated via the bypass button. Unflagged: if a relay is triggered by an error when the central button is pressed, no bypass takes place.
Relay activation during start-up	Each time the KiwiSafe machine is switched on, it takes an interval of time to become operational. If a KiwiEye is integrated into the system, this interval can be as long as 30 seconds. Using this parameter, it is possible to configure whether or not the relays are activated during the start-up phase.

Tab.8 - General: Advanced settings

KiwiEye Menu

In this section, KiwiEye parameters can be configured.

GPIO Settings

KiwiEye Menu - GPIO Settings		
Parameter	**Description**	
LED pedestrian/forklift display mode	Set the sensor display mode to KiwiSafe:	
	Possible values	
	Steady (no flashing)	The LEDs light up steadily (no flashing); the colours green, yellow and red are used.
	Fast flashing	The LEDs light up with fast flashing; the colours green, yellow and red are used.
	Slow flashing	The LEDs light up with slow flashing; green, yellow and red are used.
	Fast flashing (green excluded)	The LEDs light up with fast flashing; yellow and red are used.
	Slow flashing (green excluded)	The LEDs light up with slow flashing; yellow and red are used.
	Fast flashing (yellow excluded)	The LEDs light up with fast flashing; green and red are used.
	Slow flashing (yellow excluded)	The LEDs light up with slow flashing; green and red are used.
	Fast flashing red only	The LEDs light up with fast flashing; only the colour red is used.
	Slow flashing red only	The LEDs light up with fast flashing; only the colour red

KiwiEye Menu - GPIO Settings	
Parameter	**Description**
	is used.
RL"x" activation	Identifies the event that activates relay "x".  Relay 3 is activated with KeyDN connected and enabled

	Possible values
OFF	Disabled
Pedestrian in danger zone	Pedestrian in danger zone
Forklift in danger zone	Forklift in danger zone
Pedestrian or forklift in danger zone	Pedestrian or Forklift in danger zone
Pedestrian in warning zone	Pedestrian in warning zone
Forklift in warning zone	Forklift in warning zone
Pedestrian or Forklift in warning zone	Pedestrian or Forklift in warning zone
Pedestrian in danger or warning zone	Pedestrian in danger or warning zone (forklift not included)
Forklift in danger or warning zone	Forklift in danger or warning zone (pedestrian not included)
Any warning or danger	Any warning or danger in any zone

Buzzer Activation (KiwiSafe) - Buzzer Activation (Light column)

Identifies the event that triggers the KiwiSafe buzzer and the event that triggers the Light column buzzer.

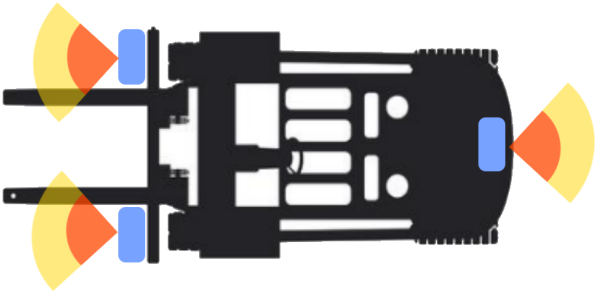
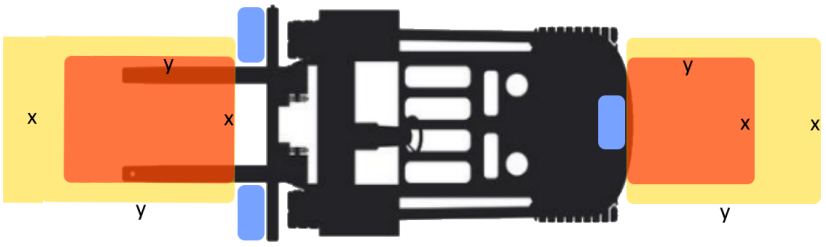
	Possible values
OFF	Disabled
Pedestrian in danger zone	Pedestrian in danger zone
Forklift in danger zone	Forklift in danger zone
Pedestrian or forklift in danger zone	Pedestrian or Forklift in danger zone
Pedestrian in warning zone	Pedestrian in warning zone
Forklift in warning zone	Forklift in warning zone

KiwiEye Menu - GPIO Settings	
Parameter	**Description**
	Pedestrian or Forklift in warning zone: Pedestrian or Forklift in warning zone Pedestrian in danger or warning zone: Pedestrian in danger zone o attenzione Forklift in danger or warning zone: Forklift in danger or warning zone Any warning or danger: Any warning or danger in any zone
Red - yellow - green light activation (Light column)	Configure buzzer or light activation depending on the condition you are in.: **Possible values** OFF: Disabled Pedestrian in danger zone: Pedestrian in danger zone Forklift in danger zone: Forklift in danger zone Pedestrian or forklift in danger zone: Pedestrian or Forklift in danger zone Pedestrian in warning zone: Pedestrian in warning zone Forklift in warning zone: Forklift in warning zone Pedestrian or Forklift in warning zone: Pedestrian or Forklift in warning zone Pedestrian in danger or warning zone: Pedestrian in danger zone o attenzione Forklift in danger or warning zone: Forklift in danger or warning zone Any warning or danger: Any warning or danger in any zone No danger (green light only): No danger detected
Allow bypass	Flagged: enables the bypass function if relay activation is generated by the sensor. Unflagged: the bypass function cannot be used in the event of relay activation.

Tab.9 - KiwiEye: GPIO Settings

Lane mode settings

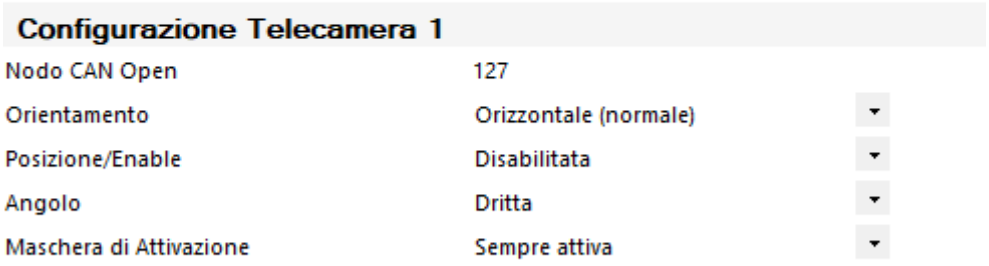
Impostazioni modalità corsia		
Modalità	Corsia	
Danger detection area y dim	1	m
Danger detection area x dim	1	m
Warning detection area y dim	3	m
Warning detection area x dim	1	m

KiwiEye Menu - Lane mode settings	
Parameter	**Description**
Mode	Normal: Detection of pedestrians, forklifts and signs takes place within the camera's field of view. In this mode, the "danger/warning detection area" parameters are not considered (see below).  Fig.9 - Detection area - Normal mode Lane: Detection of pedestrians, forklifts and signs takes place within a user-configurable detection area for both the warning and danger zone. The following parameters are then taken into account.  Fig.10 -Detection area - Lane mode
Danger detection area x/y dim Warning detection area x/y dim	Area of the lane within which the detection of pedestrians, forklifts and Aruco takes place. The x side indicates the width of the area while the y side indicates the depth.

Tab.10 - KiwiEye: Lane mode

Camera “x” configuration

In this section you can configure the specific KiwiEye parameters for each camera integrated in the system.



KiwiEye Menu - Camera “x” configuration	
Parameter	**Description**
CAN Open Node	Uniquely identifies the KiwiEye camera node to be integrated into the system. The node number can be found on the camera's identification label. The (decimal) values available are 1 to 255. ⚠ Two or more chambers with the same node number cannot coexist.
Orientation	Identifies the orientation of the camera installation. **Possible values** Horizontal (normal)  Horizontal (overturned) 

KiwiEye Menu - Camera “x” configuration		
Parameter	**Description**	
	Vertical (left side down)	
	Vertical (right side down)	
Position/Enable	Disabled: The camera is not enabled. Front: The camera is installed at the front of the vehicle. Rear: The camera is installed at the rear of the vehicle.	
Corner	Identifies the installation of the camera with respect to the centre axis and direction of travel of the vehicle. Is used to correctly display bright LEDs on KiwiSafe.	
	Possible values	
	Straight	Aligned to the centre axis and direction of travel of the vehicle.
	30° right/left	Installed at approximately 30° to the centre axis and the direction of travel of the vehicle.
	45° right/left	Installed at approximately 45° to the centre axis and the direction of travel of the vehicle.

KiwiEye Menu - Camera “x” configuration		
Parameter	**Description**	
	Left/Right side	Installed at approximately 90° to the centre axis and direction of travel of the vehicle.
Activation mask	Parameter relating to alerts sent by the camera.	
	Possible values	
	Disabled	The camera is powered but the signals it transmits to KiwiSafe are ignored
	Always on	Always send all warnings to KiwiSafe
	IP1	If a 'positive' is sent to input IP1 (example: IP1 is used to identify 'forward gear' of the vehicle)
	IP2	If a 'positive' is sent to input IP2 (example: IP2 is used to identify 'reverse gear' of the vehicle)
	IN1	If a 'negative' is sent to the IN1 input (example: IN1 is used to identify 'forward gear' of the vehicle)
	IN2	If a 'negative' is sent to the IN2 input (example: IP1 is used to identify 'reverse gear' of the vehicle)
	NO_IP1	No signal on IP1.
	NO_IP2	No signal on IP2.
	NO_IN1	No signal on IN1.
	NO_IN2	No signal on IN2.
	Installation example: *There are two Kiwieyes, one at the front and one at the rear.* *You want to activate the rear when engaging reverse gear (input IP1)* *The settings must be:* ● *front camera: NO_IP1* ● *rear camera: IP1*	

Tab.11 - KiwiEye: Camera “x”

If the system consists of more than one KiwiEye camera, the 'Camera Configuration' section must be configured in the same way as described for camera 'x' for all installed cameras.

Zone settings

In this section you can configure the warning (yellow zone) and alarm (red zone) zones for KiwiEye obstacle detection (pedestrian or forklift), values are in metres.

Impostazione zone		
Zona allarme pedone frontale	1	m
Zona preallarme pedone frontale	2	m
Zona allarme carrello frontale	4	m
Zona preallarme carrello frontale	8	m
Zona allarme pedone posteriore	4	m
Zona preallarme pedone posteriore	8	m
Zona allarme carrello posteriore	4	m
Zona preallarme carrello posteriore	8	m

KiwiEye Menu - Zone settings	
Parameter	**Description**
Frontal pedestrian danger zone	Indicates the distance below which the front camera, after identifying that the obstacle is a pedestrian, activates the danger zone (red).
Frontal pedestrian warning zone	Indicates the distance below which the front camera, after identifying that the obstacle is a pedestrian, activates the warning zone (yellow).
Frontal forklift danger zone	Indicates the distance below which the front camera, after identifying that the obstacle is a forklift, activates the danger zone (red).
Frontal forklift warning zone	Indicates the distance below which the front camera, after identifying that the obstacle is a forklift, activates the warning zone (yellow).
Rear pedestrian danger zone	Indicates the distance below which the rear camera, after identifying that the obstacle is a pedestrian, activates the danger zone (red).
Rear pedestrian warning zone	Indicates the distance below which the rear camera, after identifying that the obstacle is a pedestrian, activates the warning zone (yellow).
Rear forklift danger zone	Indicates the distance below which the rear camera, after identifying that the obstacle is a forklift, activates the danger zone (red).
Rear forklift warning zone	Indicates the distance below which the rear camera, after identifying that the obstacle is a forklift, activates the warning zone (yellow).

Tab.12 - KiwiEye: Zone settings

Advanced settings

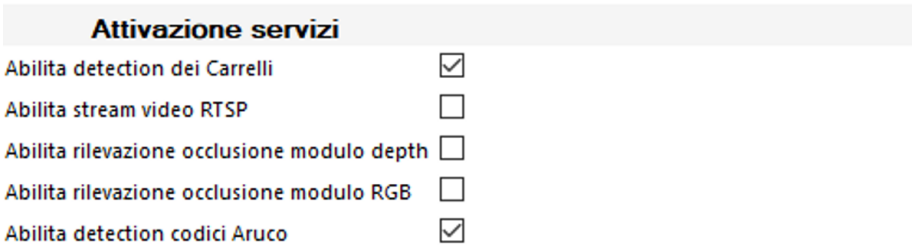
In this section you can configure the detection thresholds for KiwiEye obstacle detection (pedestrian or forklift).

Impostazioni avanzate		
Soglia detection pedone	55	%
Soglia detection carrello	55	%
Detection type	Rilevazione aggressiva (consigliata)	
Attivazione Box size filter	☐	

KiwiEye Menu - Advanced settings	
Parameter	**Description**
Pedestrian detection threshold	Indicates the threshold on the probability that the camera has identified an obstacle as a pedestrian. Above this threshold it is activated to calculate the distance to the vehicle. The default value is 55. Recommended values: 40 ÷ 70.
Forklift detection threshold	Indicates the threshold on the probability that the camera has identified an obstacle as a forklift. Above this threshold it is activated to calculate the distance to the vehicle.
Detection type	Indicates the detection mode implemented by KiwiEye. Aggressive detection (recommended for outdoor working environments): the camera detects obstacles up to approx. 25 m from its position. Light detection (recommended for indoor working environments): the camera detects obstacles up to approx. 10 m from its position.
Box size filter activation	The box size filter parameter checks whether a detected obstacle has dimensions compatible with the assigned category. (Category sizes will be user-configurable). Activating this parameter decreases the probability of detecting false positives at the expense of losing partial obstacle detections. The detected obstacle must be visible in full and not partially as it must be compatible with the physical dimensions with which the camera identifies these objects.

Tab.13 - KiwiEye: Advanced settings

Services activation

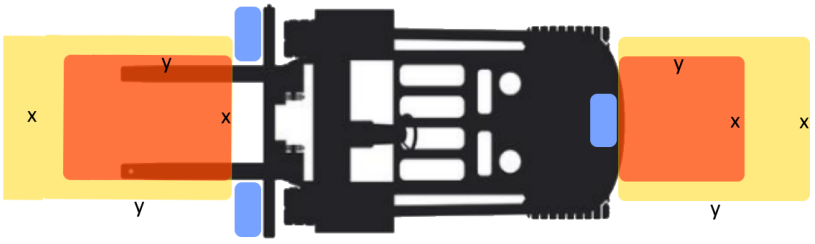


KiwiEye Menu - Services activation	
Parameter	**Description**
Enable forklift detection	Enables the camera's neural network to recognise forklifts. If this value is not ticked, forklifts are not recognised by the camera.
Enable RTSP stream video	If a viewing device (Tablet / PC) is integrated into the system, it is possible to stream the images detected by the camera. If there is no system screen, it is advisable to keep this parameter deactivated to the detriment of camera performance.
Enable depth module occlusion detection	If flagged, it activates an internal camera process that can detect occlusions on depth modules, to the detriment of camera performance.
Enable RGB module occlusion detection	If flagged, it activates an internal camera process that can detect occlusions on RGB modules, to the detriment of camera performance.
Enable Aruco codes detection	Enables the camera's neural network to recognise signs with Aruco codes. If this value is not ticked, the signs are not recognised by the camera.

Tab.14 - KiwiEye: Services activation

Aruco Code settings

Impostazioni codici Aruco		
Aruco detection area x dim	2	m
Aruco detection area y dim	2	m
Isteresi per codici Aruco	4	x 100ms
Attiva segnalazione detection codice Aruco	☑	

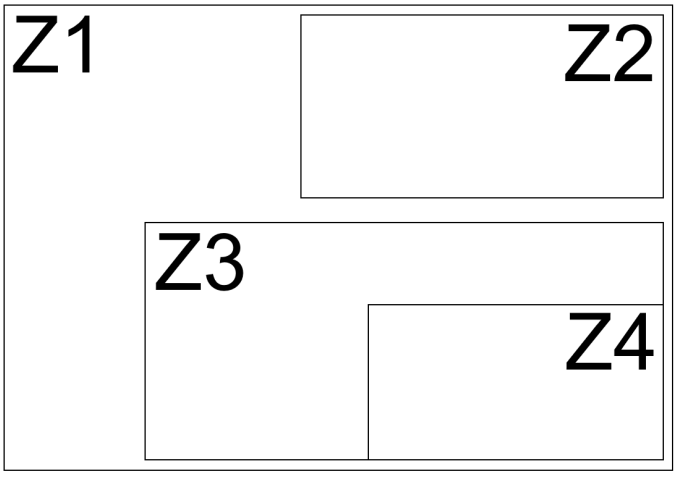
KiwiEye Menu - Aruco Code settings	
Parameter	**Description**
Aruco detection area x dim	Area within which Aruco signs are surveyed. Up to 4 zones can be defined. The x side indicates the width of the area while the y side inidcates the depth.
Aruco detection area y dim	
	Fig.11 - Aruco detection area
Hysteresis for Aruco codes	This is the time interval in which the camera must continuously detect the code. If the camera detects the Aruco code for more than this interval then it interprets the sign as detected.
Aruco code detection activation	If flagged when the Aruco code is framed, and for the entire detection time within the detection area, KiwiSafe displays a blue LED circle or semicircle around the central button. If it is not flagged when the bow code is framed, and for the entire detection time within the detection area, KiwiSafe does not display any LEDs.

Tab.15 - KiwiEye: Aruco Code settings

Code “x”

In this section, the Aruco code 'x' is configured.
Up to 6 codes with their ID, associated action and priority can be defined.

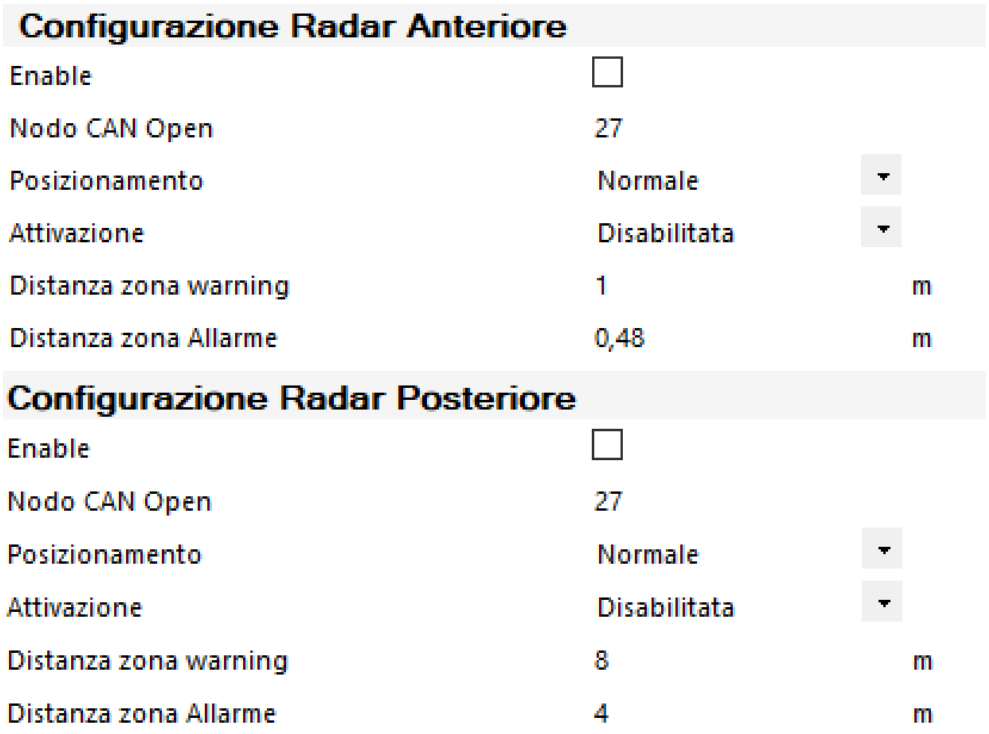
KiwiEye Menu - Code “x”	
Parameter	**Description**
ID	Numeric value from 1 to 6, associates ID with code, user definable.
Modes of operation	Identifies the time interval in which the action associated with the sign is valid. Permanent: The action is always active, it is only deactivated by the detection of a permanent sign that disables it. Instantaneous: The action associated with the sign is valid as long as the sign is inside the camera frame. Timed: considers the action associated with the sign valid for the time indicated in 'Operating time'.
Operating time (if timed)	Time interval (in seconds) for which the action on the sign remains valid.

KiwiEye Menu - Code “x”	
Parameter	**Description**
Action	Defines for the detection of Code 'x' which zone you should add or exclude. The outputs follow the configuration of the 'RLx activation' parameter. Example: There is an 'x' Aruco code at the entrance of each 'x' zone shown below. If you detect: Code 1: 'Add zone 1’ Code 2: 'Add zone 2' (Zone 2 is included in zone 1) Code 3: 'Exclude zone 2 and add zone 3' (Zone 3 is included in zone 1 but not in zone 2) Code 4: 'Add zone 4' (Zone 4 takes all zone 1, 3 and 4 rules into account)  Fig.12 - Aruco Code Zones
Priority	Numeric value from 1 to 255, user-definable, associates a priority to the code, the higher this value, the more priority the code is considered.

Tab.16 - KiwiEye: Code “x”

Radar Menu

Front/Rear radar configuration



Radar Menu - Front/Rear radar configuration

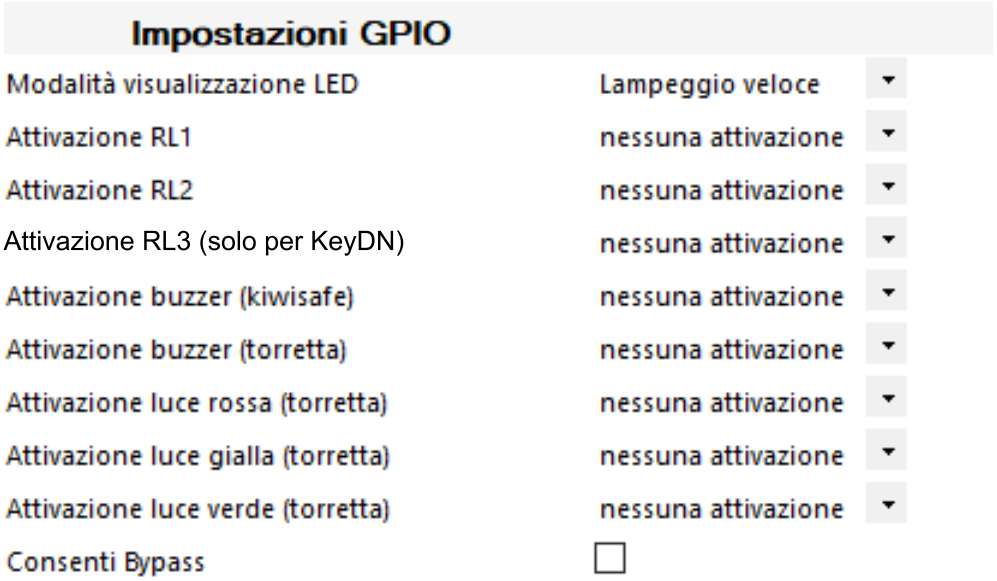
Parameter	Description
Enable	If flashed, this parameter enables radar, otherwise it excludes it.
CAN Open Node	Sets the CAN node of the sensor.
Positioning	**Normal**: Radar is installed normally **Inverted**: Radar is installed with the underside facing upwards.
Activation	Parameter relating to radar warning.

Possible values	
Disabled	Radar is powered but the signals it transmits to KiwiSafe are ignored
Always on	Always send all warnings to KiwiSafe
IP1	If a 'positive' is sent to input IP1 (example: IP1 is used to identify 'forward gear' of the vehicle)
IP2	If a 'positive' is sent to input IP2 (example: IP2 is used to identify 'reverse gear' of the vehicle)
IN1	If a 'negative' is sent to the IN1 input

Radar Menu - Front/Rear radar configuration		
Parameter	**Description**	
		(example: IN1 is used to identify 'forward gear' of the vehicle)
	IN2	If a 'negative' is sent to the IN2 input (example: IP1 is used to identify 'reverse gear' of the vehicle)
	NO_IP1	If no 'positive' is sent to input IP1
	NO_IP2	If no 'positive' is sent to input IP2
	NO_IN1	If no 'negative' is sent to the IN1 input
	NO_IN2	If no 'negative' is sent to the IN2 input
Warning zone distance	Value expressed in metres: this is the distance between the obstacle and the forklift below which the early warning zone is identified.	
Danger zone distance	Value expressed in metres: this is the distance between the obstacle and the forklift below which the alarm zone is identified.	

Tab.17 - Radar: Configuration

GPIO Settings



Radar Menu - GPIO Settings		
Parameter	**Description**	
LED pedestrian/forklift display mode	Set the sensor display mode to KiwiSafe:	
	Possible values	
	Steady (no flashing)	The LEDs light up steadily (no flashing); the colours green, yellow and red are used.
	Fast flashing	The LEDs light up with fast flashing; the colours green, yellow and red are used.
	Slow flashing	The LEDs light up with slow flashing; green, yellow and red are used.
	Fast flashing (green excluded)	The LEDs light up with fast flashing; yellow and red are used.
	Slow flashing (green excluded)	The LEDs light up with slow flashing; yellow and red are used.
	Fast flashing (yellow excluded)	The LEDs light up with fast flashing; green and red are used.
	Slow flashing (yellow excluded)	The LEDs light up with slow flashing; green and red are used.
	Fast flashing red only	The LEDs light up with fast flashing; only the colour red is used.
	Slow flashing red only	The LEDs light up with fast flashing; only the

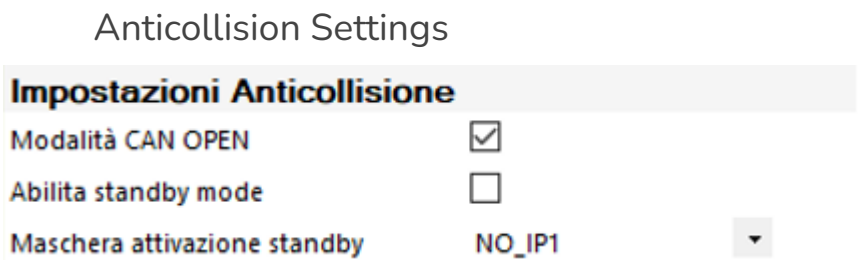
<table>
<tr><th colspan="2">Radar Menu - GPIO Settings</th></tr>
<tr><th>Parameter</th><th>Description</th></tr>
<tr><td></td><td>colour red is used.</td></tr>
<tr><td>RL”x” activation</td><td>Configure activation of RL'x' depending on the condition you are in.
Each individual relay can be associated with activation on:
no activation
front radar in warning zone
front radar in danger zone
front radar in warning or danger zone
rear radar in warning zone
rear radar in danger zone
rear radar in warning or danger zone
any warning zone
any danger zone</td></tr>
<tr><td>Buzzer Activation (KiwiSafe) - Buzzer Activation (Light column)</td><td>Identifies the event that triggers the KiwiSafe buzzer and the event that triggers the light column buzzer.<table><tr><th colspan="2">Possible values</th></tr><tr><td>OFF</td><td>Disabled</td></tr><tr><td>Pedestrian in danger zone</td><td>Pedestrian in danger zone</td></tr><tr><td>Forklift in danger zone</td><td>Forklift in danger zone</td></tr><tr><td>Pedestrian or forklift in danger zone</td><td>Pedestrian or Forklift in danger zone</td></tr><tr><td>Pedestrian in warning zone</td><td>Pedestrian in warning zone</td></tr><tr><td>Forklift in warning zone</td><td>Forklift in warning zone</td></tr><tr><td>Pedestrian or Forklift in warning zone</td><td>Pedestrian or Forklift in warning zone</td></tr><tr><td>Pedestrian in danger or warning zone</td><td>Pedestrian in danger zone o attenzione</td></tr><tr><td>Forklift in danger or warning zone</td><td>Forklift in danger or warning zone</td></tr><tr><td>Any warning or danger</td><td>Any warning or danger in any zone</td></tr></table></td></tr>
</table>

Radar Menu - GPIO Settings	
Parameter	**Description**
Red - yellow - green light activation (Light column)	Configure buzzer or light activation depending on the condition you are in. Each individual parameter can be associated with activation on: • no activation • front radar in warning zone • front radar in danger zone • front radar in warning or danger zone • rear radar in warning zone • rear radar in danger zone • rear radar in warning or danger zone • any warning zone • any danger zone • No alert (only for green light)
Allow bypass	Flagged: enables the bypass function if relay activation is generated by the sensor. Unflagged: the bypass function cannot be used in the event of relay activation.

Tab.18 - Radar: GPIO Settings

Anticollision Menu

In this section, the parameters of the anti-collision device can be configured.



Anticollision Menu - Anticollision Settings		
Parameter	**Description**	
CAN Open Mode	Enable CAN Open Mode	
Enable standby mode	If flashed, this enables the 'Standby' mode of the anti-collision device. If it is not flashed, the anti-collision device is always active.	
Standby activation mask	If 'Enable standby mode' is flashed. Parameter relating to warnings sent by the anti-collision device:	
	Possible values	
	Disabled	The device is powered but the signals it transmits to KiwiSafe are ignored
	Always on	Always send all warnings to KiwiSafe
	IP1	If a 'positive' is sent to input IP1 (e.g. IP1 is used to identify 'forward gear' of the forklift)
	IP2	If a 'positive' is sent to input IP2 (e.g.: IP2 is used to identify 'reverse gear' of the medium)
	IN1	If a 'negative' is sent to the IN1 input (e.g. IN1 is used to identify 'forward gear' of the forklift)
	IN2	If a 'negative' is sent to the IN2 input (e.g.: IP1 is used to identify 'reverse gear' of the forklift)
	NO_IP1	If no 'positive' is sent to IP1 input
	NO_IP2	If no 'positive' is sent to IP2 input
	NO_IN1	If a 'negative' is not sent to the IN1 input
	NO_IN2	If a 'negative' is not sent to the IN2 input

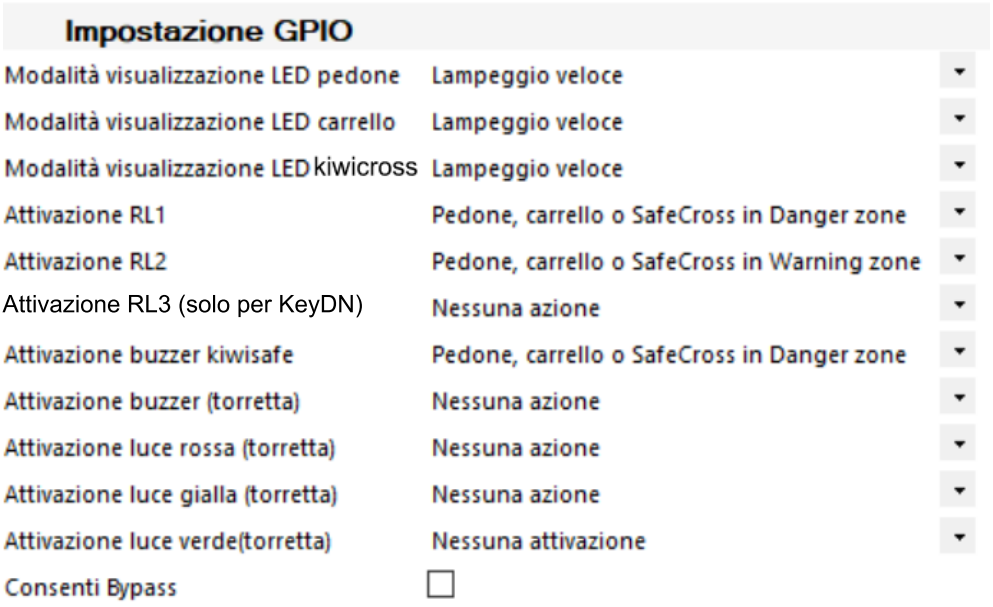
Tab.19 - Anticollision: Anticollision Settings

Anchor “x”

Anticollision Menu - Anchor “x”	
Parameter	**Description**
Position/Enable	Indicates the installation position of the device. In the case of Anchor 1: ● Disabled if the anchor is not enabled. ● Central: centrally mounted or in front position if disabled Anchor 2 In the case of Anchor 2: ● Disabled if the anchor is not enabled. ● Rear: Rear-mounted
CAN Open Node	Indicates the CAN node of the device

Tab.20 - Anticollision: Anchor “x”

GPIO Settings



Anticollision Menu- GPIO Settings		
Parameter	**Description**	
LED pedestrian/forklift /KiwiCross display mode	Set the sensor display mode to KiwiSafe:	
	Possible values	
	Steady (no flashing)	The LEDs light up steadily (no flashing); the colours green, yellow and red are used.
	Fast flashing	The LEDs light up with fast flashing; the colours green, yellow and red are used.
	Slow flashing	The LEDs light up with slow flashing; green, yellow and red are used.
	Fast flashing (green excluded)	The LEDs light up with fast flashing; yellow and red are used.
	Slow flashing (green excluded)	The LEDs light up with slow flashing; yellow and red are used.
	Fast flashing (yellow excluded)	The LEDs light up with fast flashing; green and red are used.
	Slow flashing (yellow excluded)	The LEDs light up with slow flashing; green and red are used.
	Fast flashing red only	The LEDs light up with fast flashing; only the colour red is used.
	Slow flashing red only	The LEDs light up with fast flashing; only the colour red is used.

Anticollision Menu- GPIO Settings	
Parameter	**Description**
RL”x” Activation	Configure RL'x' activation depending on the condition you are in. To each individual relay you can associate activation on all possible combinations of forklifts and/or pedestrian and warning and/or danger zone: ● no activation ● pedestrian in warning zone ● forklifts in warning zone ● KiwiCross UWB in danger zone ● pedestrian in warning zone ● forklifts in warning zone ● KiwiCross UWB in warning zone ● pedestrian or forklifts in warning zone ● pedestrian or forklifts in danger zone ● pedestrian or forklifts or KiwiCross in warning zone ● pedestrian in danger or warning zone ● forklifts in danger or warning zone ● KiwiCross UWB in danger or warning zone ● pedestrian or forklifts or KiwiCross in danger zone ● pedestrian or forklifts in danger or warning zone ● pedestrian or forklifts or KiwiCross in danger or warning zone ● pedestrian in danger zone or forklifts in warning zone ● pedestrian in warning zone or forklifts in danger zone

Buzzer Activation (KiwiSafe) - Buzzer Activation (Light column)	Identifies the event that triggers the KiwiSafe buzzer and the event that triggers the Light column buzzer.

	Possible values
Pedestrian or forklift in danger zone	Pedestrian or Forklift in danger zone
Pedestrian in warning zone	Pedestrian in warning zone
Forklift in warning zone	Forklift in warning zone
Pedestrian or Forklift in warning zone	Pedestrian or Forklift in warning zone
Pedestrian in danger or warning zone	Pedestrian in danger zone o attenzione
Forklift in danger or warning zone	Forklift in danger or warning zone
Any warning or danger	Any warning or danger in any zone
	Valori possibili:
OFF	Disabled
Pedestrian in danger zone	Pedestrian in danger zone
Forklift in danger zone	Forklift in danger zone
Kiwi Cross UWB in Danger	KiwiCross UWB in danger zone
Pedestrian in Warning	Pedestrian in warning zone
Forklift in Warning	Forklift in warning zone
Kiwi Cross UWB in Warning	KiwiCross UWB in warning zone
Pedestrian or forklift in Danger	Pedestrian or forklift in danger zone
Pedestrian or forklift in Warning	Pedestrian or forklift in warning zone
Pedestrian or forklift or Kiwi Cross UWB in Warning	Pedestrian or forklift in danger zone or KiwiCross in warning zone
Pedestrian in Danger o warning	Pedestrian in danger zone or warning zone
Forklift in Danger o warning	Forklift in danger or warning zone
Kiwi Cross UWB in Danger o warning	KiwiCross UWB in danger o warning zone

Anticollision Menu- GPIO Settings	
Parameter	**Description**
	Pedestrian or forklift or Kiwi Cross UWB in Danger: Pedestrian or forklift or Kiwi Cross UWB in danger zone
	Pedestrian or forklift in Danger o Warning: Pedestrian or forklift in danger or warning zone
	Pedestrian or forklift or Kiwi Cross UWB in Danger o Warning: Pedestrian or forklift or Kiwi Cross UWB in Danger o Warning zone
	Pedestrian in Danger Zone or forklift in Warning: Pedestrian in Danger Zone or forklift in Warning zone
	Pedestrian in Warning Zone or forklift in Danger: Pedestrian in Warning Zone or forklift in Danger zone
Red - yellow - green light activation (Light column)	Configure buzzer or light activation depending on the condition you are in. Each individual relay can be associated with activation on all possible combinations of forklifts and/or pedestrian and warning and/or danger zone: ● no activation ● pedestrian in warning zone ● forklifts in warning zone ● pedestrian in danger zone ● forklifts in danger zone ● pedestrian or forklifts in warning zone ● pedestrian or forklifts in danger zone ● pedestrian in danger or warning zone ● forklifts in danger or warning zone ● pedestrian or forklifts in warning or danger zone ● pedestrian in danger zone or forklifts in warning zone ● pedestrian in warning zone or forklifts in danger zone ● No danger (green light only) ● Registered driver (green light only) ● Pedestrian in registraztion zone (green light only)
Allow bypass	Flagged: enables the bypass function if relay activation is generated by the sensor. Unflagged: the bypass function cannot be used in the event of relay activation.

Tab.21 - Anticollision: GPIO Settings

Setting distances

Impostazione distanze		
Zona allarme pedone	2	m
Zona preallarme pedone	4	m
Zona allarme carrello	2	m
Zona preallarme carrello	4	m
Zona registrazione driver	1	m
Zona preallarme kiwicross	2	m
Zona allarme kiwicross	4	m

Anticollision Menu - Setting distances	
Parameter	**Description**
Danger zone pedestrian	It indicates the distance, in metres, below which the anchor, after identifying that the obstacle is a pedestrian, activates Danger zone (red).
Warning zone pedestrian	It indicates the distance, in metres, below which the anchor, after identifying that the obstacle is a pedestrian, activates Warning zone (yelow).
Danger zone forklift	It indicates the distance, in metres, below which the anchor, after identifying that the obstacle is a forklift, activates Danger zone (red).
Warning zone forklift	It indicates the distance, in metres, below which the anchor, after identifying that the obstacle is a forklift, activates warning zone (yellow).
Danger zone Kiwicross	It indicates the distance, in metres, below which the anchor, after identifying that the obstacle is a KiwiCross, activates Danger zone (red).
Warning zone Kiwicross	It indicates the distance, in metres, below which the anchor, after identifying that the obstacle is a KiwiCross, activates warning zone (yellow).
Driver registration	It indicates the distance, in metres, below which the anchor, after identifying an Anticollision TAG, activates registration zone (blue).

Tab.22 - Anticollision: Setting distances

Laser Menu

In this section, the parameters of the laser device can be configured.

Laser settings

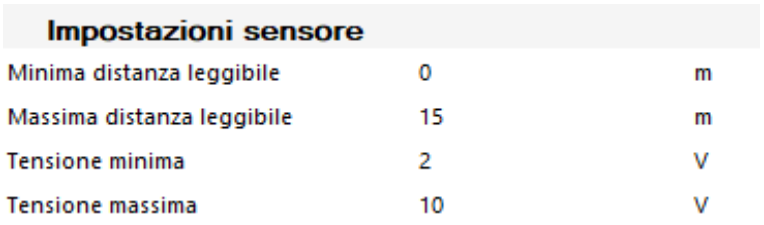
Laser Menu - Laser settings

Parameter	Description	
Enable	If flashed, this parameter enables the laser, otherwise it excludes it.	
Activation mask	If 'Enable standby mode' is flashed. Parameter relating to warnings sent by the laser device:	
	Possible values	
	Disabled	The camera is powered but the signals it transmits to KiwiSafe are ignored
	Always on	Always send all warnings to KiwiSafe
	IP1	If a 'positive' is sent to input IP1 (example: IP1 is used to identify 'forward gear' of the vehicle)
	IP2	If a 'positive' is sent to input IP2 (example: IP2 is used to identify 'reverse gear' of the vehicle)
	IN1	If a 'negative' is sent to the IN1 input (example: IN1 is used to identify 'forward gear' of the vehicle)
	IN2	If a 'negative' is sent to the IN2 input (example: IP1 is used to identify 'reverse gear' of the vehicle)
	NO_IP1	No signal on IP1.
	NO_IP2	No signal on IP2.
	NO_IN1	No signal on IN1.

Laser Menu - Laser settings	
Parameter	**Description**
	NO_IN2 No signal on IN2.
Input used by the sensor	Indicates the input to which the laser is connected
Ceiling height	Expressed in metres: Indicates the height of the interior working environment of the vehicle on which the laser is mounted.
Hysteresis	Expressed in cm: Indicates the tolerance of variations measured by the laser so that it does not change state.
Status change time	Expressed in seconds: Delay time applicable to change of relay state.
Assigned colour	Displays concentric LEDs on KiwiSafe, showing red, yellow or no colour.

Tab.23 - Laser: Laser settings

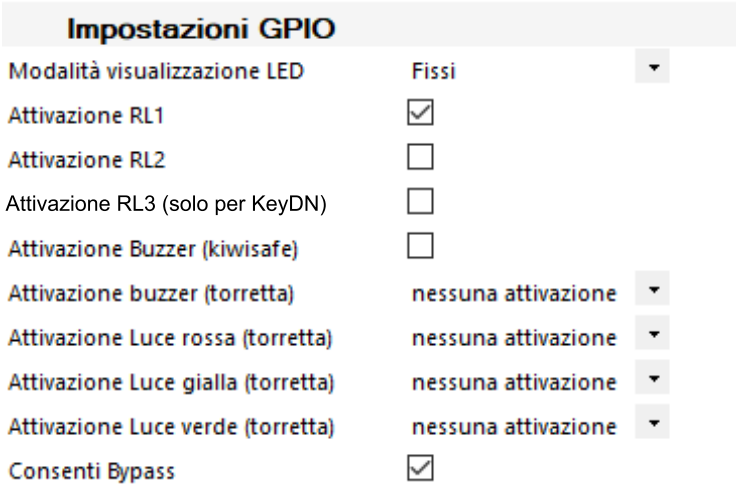
Sensor settings



Laser Menu - Sensor settings	
Parameter	**Description**
Minimum readable distance	Expressed in metres: Indicates the minimum distance readable by the laser.
Maximum readable distance	Expressed in metres: Indicates the maximum distance readable by the laser.
Minimum voltage	Expressed in Volts: Indicates the minimum voltage threshold detectable by the laser.
Maximum voltage	Expressed in Volts: Indicates the maximum voltage threshold detectable by the laser.

Tab.24 - Laser: Sensor settings

GPIO Settings



Laser Menu - GPIO Settings		
Parameter	**Description**	
LED display mode	Set the sensor display mode to KiwiSafe:	
	Possible values	
	Steady (no flashing)	The LEDs light up steadily (no flashing); the colours green, yellow and red are used.

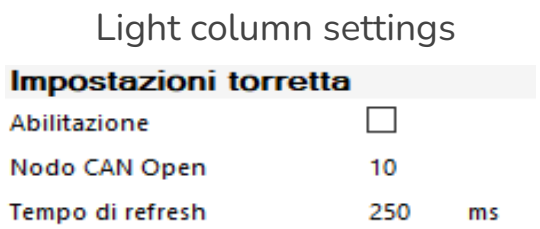
Laser Menu - GPIO Settings	
Parameter	**Description**
	Fast flashing: The LEDs light up with fast flashing; the colours green, yellow and red are used. Slow flashing: The LEDs light up with slow flashing; green, yellow and red are used. Fast flashing (green excluded): The LEDs light up with fast flashing; yellow and red are used. Slow flashing (green excluded): The LEDs light up with slow flashing; yellow and red are used. Fast flashing (yellow excluded): The LEDs light up with fast flashing; green and red are used. Slow flashing (yellow excluded): The LEDs light up with slow flashing; green and red are used. Fast flashing red only: The LEDs light up with fast flashing; only the colour red is used. Slow flashing red only: The LEDs light up with fast flashing; only the colour red is used.
RL"x" activation	Configure RL"x" activation or not.
Buzzer Activation (KiwiSafe) - Buzzer Activation (Light column)	Identifies the event that activates the KiwiSafe buzzer and the event that activates the light column buzzer. **Possible values** OFF: Disabled Pedestrian in danger zone: Pedestrian in danger zone Forklift in danger zone: Forklift in danger zone Pedestrian or forklift in danger zone: Pedestrian or Forklift in danger zone Pedestrian in warning zone: Pedestrian in warning zone Forklift in warning zone: Forklift in warning zone Pedestrian or Forklift in warning zone: Pedestrian or Forklift in warning zone Pedestrian in danger or warning zone: Pedestrian in danger zone o attenzione Forklift in danger or: Forklift in danger or warning zone

<table>
<tr><th colspan="2">Laser Menu - GPIO Settings</th></tr>
<tr><th>Parameter</th><th>Description</th></tr>
<tr><td></td><td>
<table>
<tr><td>warning zone</td><td></td></tr>
<tr><td>Any warning or danger</td><td>Any warning or danger in any zone</td></tr>
</table>
</td></tr>
<tr><td>Red - yellow - green light activation (Light column)</td><td>The light column lights (green, yellow, red) are individually configurable with the following values:
<table>
<tr><th colspan="2">Possible values</th></tr>
<tr><td>OFF</td><td>Disabled</td></tr>
<tr><td>Pedestrian in danger zone</td><td>Pedestrian in danger zone</td></tr>
<tr><td>Forklift in danger zone</td><td>Forklift in danger zone</td></tr>
<tr><td>Pedestrian or forklift in danger zone</td><td>Pedestrian or Forklift in danger zone</td></tr>
<tr><td>Pedestrian in warning zone</td><td>Pedestrian in warning zone</td></tr>
<tr><td>Forklift in warning zone</td><td>Forklift in warning zone</td></tr>
<tr><td>Pedestrian or Forklift in warning zone</td><td>Pedestrian or Forklift in warning zone</td></tr>
<tr><td>Pedestrian in danger or warning zone</td><td>Pedestrian in danger zone o attenzione</td></tr>
<tr><td>Forklift in danger or warning zone</td><td>Forklift in danger or warning zone</td></tr>
<tr><td>Any warning or danger</td><td>Any warning or danger in any zone</td></tr>
<tr><td>No danger (green light only)</td><td>No danger detected</td></tr>
</table>
</td></tr>
<tr><td>Allow bypass</td><td>Flagged: enables the bypass function if relay activation is generated by the sensor.
Unflagged: the bypass function cannot be used in the event of relay activation.</td></tr>
</table>

Tab.25 - Laser: GPIO Settings

Light column Menu

In this section, the parameters of the Light column device can be configured.

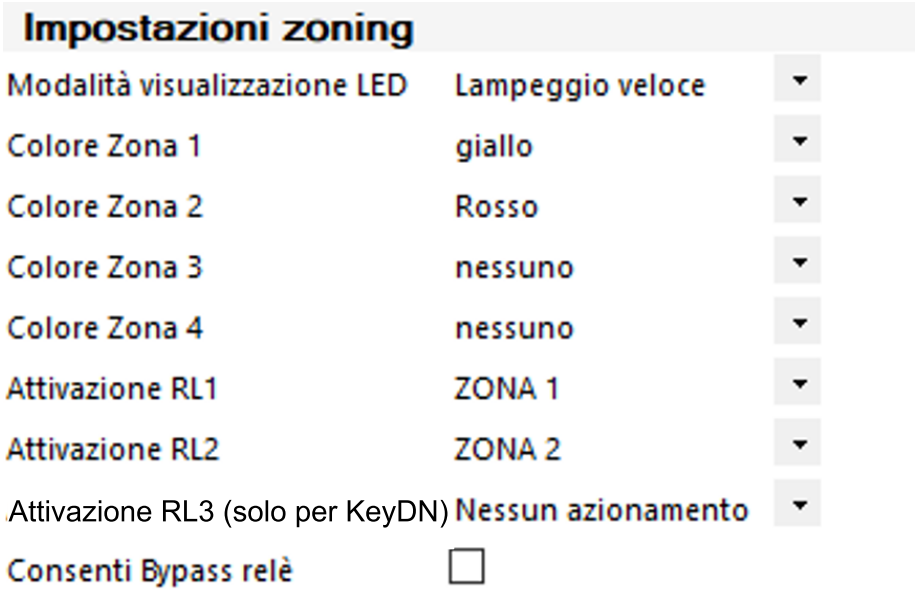


Light column Menu - Light column settings	
Parameter	**Description**
Enable	If flashed, this parameter enables the Light column lights, otherwise it excludes it.
CANOpen Node	Sets the CAN node of the sensor.
Refresh time	Expressed in ms: This is the time between one refresh of received information. By reducing this parameter, visualisation speed can be improved in systems where lots of sensors are integrated.

Tab.26 - Light Column: Light Column settings

Zoning Menu

In this section, the parameters of the Zoning functionality can be configured.



Zoning settings

Zoning Menu - Zoning settings		
Parameter	**Description**	
LED display mode	Set the zoning display mode to KiwiSafe:	
	Possible values	
	Steady (no flashing)	LEDs light up steadily (no flashing); the colours green, yellow and red are used.
	Fast flashing	LEDs light up with fast flashing; the colours green, yellow and red are used.
	Slow flashing	LEDs light up with slow flashing; green, yellow and red are used.
	Fast flashing (green excluded)	LEDs light up with fast flashing; yellow and red are used.
	Slow flashing (green excluded)	LEDs light up with slow flashing; yellow and red are used.
	Fast flashing (yellow excluded)	LEDs light up with fast flashing; green and red are used.
	Slow flashing (yellow excluded)	LEDs light up with slow flashing; green and red are used.
	Fast flashing red only	LEDs light up with fast flashing; only the colour red is used.
	Slow flashing red only	The LEDs light up with fast flashing; only the colour red is used.

<table>
<tr><th colspan="3">Zoning Menu - Zoning settings</th></tr>
<tr><th>Parameter</th><th colspan="2">Description</th></tr>
<tr><td>Zone “x” colour</td><td colspan="2">Sets the colour of the LEDs displayed on KiwiSafe while inside Zone 'x':

<table><tr><th colspan="2">Possible values</th></tr><tr><td>None</td><td>LEDs do not take on any colour to indicate that we are within the 'x' zone.</td></tr><tr><td>Yellow</td><td>LEDs turn yellow to signal that we are within the 'x' zone.</td></tr><tr><td>Red</td><td>LEDs turn red to signal that we are within the 'x' zone.</td></tr></table></td></tr>
<tr><td>RL”x” activation</td><td colspan="2">Identifies the zone activating relay 'x'.

  Relay 3 is activated with KeyDN connected and enabled

<table><tr><th colspan="2">Possible values</th></tr><tr><td>OFF</td><td>Disabled</td></tr><tr><td>Pedestrian in danger zone</td><td>Pedestrian in danger zone</td></tr><tr><td>Forklift in danger zone</td><td>Forklift in danger zone</td></tr><tr><td>Pedestrian or forklift in danger zone</td><td>Pedestrian or Forklift in danger zone</td></tr><tr><td>Pedestrian in warning zone</td><td>Pedestrian in warning zone</td></tr><tr><td>Forklift in warning zone</td><td>Forklift in warning zone</td></tr><tr><td>Pedestrian or Forklift in warning zone</td><td>Pedestrian or Forklift in warning zone</td></tr><tr><td>Pedestrian in danger or warning zone</td><td>Pedestrian in danger or warning zone (forklifts not included)</td></tr><tr><td>Forklift in danger or warning zone</td><td>Forklift in danger or warning zone (pedestrians not included)</td></tr><tr><td>Any warning or danger</td><td>Any warning or danger in any zone</td></tr></table></td></tr>
</table>

Tab.27 - Zoning: Zoning settings

Save / Import configuration

Once the device configuration is complete, it is possible via the 'Clone' menu:

- save the device configuration to a local file on a PC
- import a configuration file previously saved on other device

To save the configuration, click "Clone"--> "Save configuration to file".

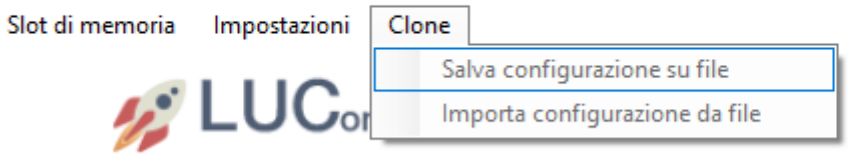


Fig.13 - Clone - Save

You can select the parameters you wish to save:

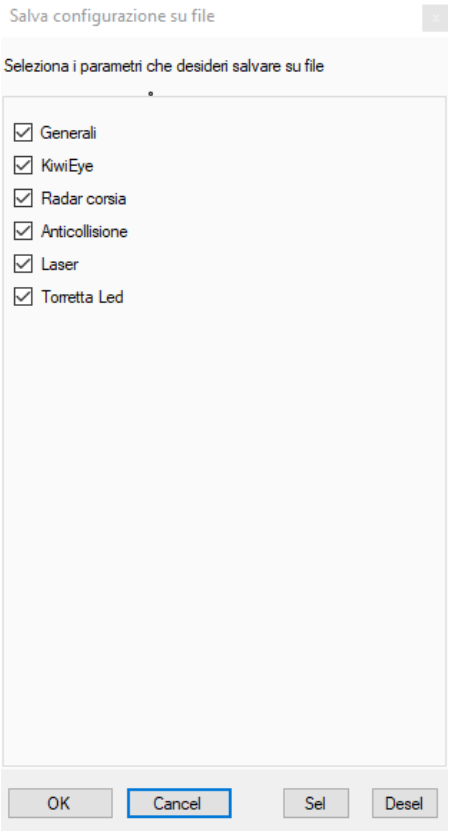


Fig.14 - Clone - Parameter selection to save

This will result in a file with the extension .LEX that can be renamed by the user.
The configuration file is saved at the following location:

Local disk C: → Programs (x86) → LUConfigurator → export

To import a previously saved configuration, click 'Clone' → 'Import configuration from file'.

Importing a configuration file overwrites and replaces all content saved within

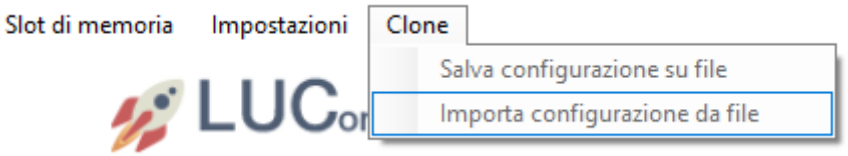


Fig.15 - Clone - Import