ROLL SHUTTER SW

DESCRIPTION

The “ROLL SHUTTER SW” control unit is a device suitable for moving electrical shutters, curtains or overhead doors and it's part of devices for home & building automation. It can be easily installed thanks to its reduced dimensions and simple wiring required. The unit is remotely governed by keyfobs, smartphones or PC with common internet browser. It has a high degree of digital security and allows operational parameters set up with a smartphone App in order to better adapt the devive to the electric motor type and client specific needs. For this purpose, the “**LC Param Manager**” App has been created and can be downloaded from “**Google Play Store”**. It's suitable only for Android smartphones equipped with the NFC hardware.

INSTALLATION

Warning! Work on electrical connection only after the supply voltage has been switched off.

The rolling shutter control unit enclosure is suitable to be installed inside electrical junction boxes, to be fixed on wall, or mounted directly inside roll shutter casing.

To access the terminal blocks remove the 4 screws which hold the 2 orange protection covers.

Terminal blocks connection:

The 2 poles terminal block has to be connected to the power supply (240V AC) following line and neutral symbols, the 3 poles block has to be connected to the motorized valve (240V, max 200mA).

The control device can be supplied with a voltage lower then 240 VAC with a limit of 80VAC and frequency of 50/60Hz. If the supply voltage is lower then 240AC, the motor voltage must be adequate to the supply and respect current limitation of 200mA.

Fig.1 depict the connection scheme printed also on the sticker on top of the control unit, where:

Supply: F= Line wire, N= Neutral wire,
Tubular motor: F1= Direct rotation phase wire, F2= Inverse rotation phase wire, N= Motor neutral wire

N.B. Before powering the motor, adjust its limit switches according to the manufacturer manual to avoid damages.

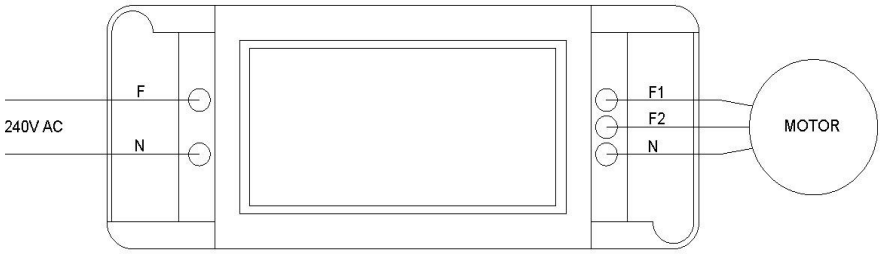


Fig. 1

PROGRAMMING

Setting up of switch parameters is done wireless via Near FielCommunication (NFC) technology. When asked by the App, to communicate, the phone has to be placed on top of the Smart enclosure where the NFC symbol is.

DEVICE PARAMETERS

	PARAMETER	Min-Max	Initial Value	DESCRIPTION
1	COMMAND TYPE	1 - 2	1	Type of command attributed to key-fobs buttons: 1=Toggle (negation of the previous state), 2=Function_key (one button turns ON and another button turns OFF the switch)
2	MAX MOTOR ON TIME	0 - 600	120	[Seconds] Maximum activation time for the motor (0 = infinite)
3	MOTOR RATED CURRENT	5 - 20	10	[dA] Motor rated current
4	NO LOAD SWITCH OFF	0 - 1	1	Enable voltage supply to the motor even in absence of any current 0=disabled; 1=enabled.
5	OVERLOAD SWITCH OFF	0 - 1	0	Enable a motor power supply interruption in case of overload 0=disabled; 1=enabled.
6	OVERLOAD TRIP DEL	1 - 10	4	[minutes] motor overload detection time.

7	LED MODE	0 - 2	0	Smart Sw led signalling mode: **0**= leds always on according to the relay state (ON = red, OFF = green), **1**= one single led flash to signal a relay state change: (OFF->ON) = red flash, (ON->OFF) = green flash, **2** = green led signal power ON, yellow (green+red) led signal power ON and relay ON;
8	TX POWER	1 - 5	5	Control unit RF transmission power (1=+2 dB, 2=+5 dB, 3=+8 dB, 4=+13 dB, 5=+20 dB).
9	KEY POWER	1 - 3	3	Keyfob RF transmission power (1=+5 dB, 2=+10 dB, 3=+12 dB).
10	CHAN SEL MODE	0 - 2	0	Radio channel selection: 0= standard channel, 1= channel selected from "PROG CHANNEL" parameter. 2= channel randomly selected between those available
11	PROG CHANNEL	1 - 30	30	Programmed channel selection. Used only if parameter **CHAN SEL MODE =1**
12	CMD REPEAT	0 - 2	0	Command repetition without a received reply (0 = don't repeat)
13	ADDRESS BYTES	3 - 8	3	Address byte number
14	SECURITY BYTES	6 - 16	6	Security byte number
15	KEY COPY ENABLE	0 - 2	1	Enabling of key-fob button cloning 0= disabled, 1= buttons can be cloned but "clones" are not allowed to be cloned, 2= buttons can be cloned and also "clones" are allowed to be cloned.

KEYFOB

The pocket sized key-fob has two buttons and three colors (green/red/yellow) signaling led.
Before being used it must first be registered to it's "slave" rolling shutter control unit.
Registration procedure attribute to the single button a code to control the "slave device".
The procedure therefore, has to be repeated for every button which we want to relate with a control unit.

Keyfob registration procedure

To register a new key-fob start the app e push the "*Start NFC Connection*", then put in contact your phone antenna with the top surface of the control unit where the NFC symbol is. After a few moments device data will appear on the screen together with buttons to access the general settings menu. To proceed, push the "*Device Registration*" button and again put in contact your phone with the NFC symbol on the sticker, now the control unit LED begin to blink yellow for a few seconds allowing registration of a new keyfob button which is achieved by pushing the button for about 3 seconds. Registration is confirmed by the keyfob with a series of 4 green blinks. If the keyfob was previously registered to another Smart Sw, it's necessary to erase the previous registration, before attempting a new registration.

N.B. If when pushing the button it immediately emits a single yellow blink, it means that the button was already registered and to be registered again, the previous registration need to be erased.
To do that you need to push the button for about 10 seconds, until the green LED start to blink, release the button and push it again for about 10 seconds, until the red LED blinks briefly.
Button is erased if when pushing it a yellow blink appears after about 3 seconds.

Keyfob button cancellation

To erase a button, push it for about 10 seconds, until the green LED start to blink, release the button and push it again for about 10 seconds, until the red LED blinks briefly.
Button is erased if when pushing it a yellow blink appears after about 3 seconds.

Keyfob cloning procedure

If a button has been registered with parameter "KEY COPY ENABLE"=1, it is possible to clone that button to another key-fob by pressing the button for about 10 s until the key-fob yellow led starts to blink, keeping the button pressed, now press the button that need to become a clone until it's relative green led blinks briefly confirming the occurred cloning.
The button so obtained cannot be used to do other cloning. If pushed for about 10 seconds, the cloned button generate a yellow led blink instead of a green blink.
If the original button has been registered with parameter "KEY COPY ENABLE"=2, then also its clones can be themselves cloned.

Keyfob commands
The shutter can be governed by two buttons, one to lift and one to lower (with parameter “COMMAND TYPE”=2) or with just one button in “step” or “sequential ” mode (with parameter “COMMAND TYPE”=1). **Warning:** change “COMMAND TYPE”, imply the generation of a new digital security key so the impossibility to command the switch with previous registered keyfobs which would need a new registration.
In that case the App notify the operator with a warning of the consequent loss of communication with previous keyfobs and waits confirmation.
There is no limit to the buttons associable with a control unit, keyfobs buttons can also be registered and command different control units. Every single button though can command one single device.

Battery replacement
Key-fob is powered by a CR2032 battery type. For the replacement the screws on the enclosure have to be removed. Then open the shell enclosure using a small flat blade screwdriver and remove the PCB contained inside the shell. Push the battery out of the battery older, and insert a new one respecting the battery polarity. Reposition the PCB in the half shell which has 2 pins making sure the battery side face down, close the shell and screw the 2 previously removed screws.

WiFi SERVER COMMANDS.
The device can be controlled as well as the keyfobs also with an internet browser like Firefox, Chrome, Opera.
For this purpose it's available the “WiFi server bridge 433” whose detailed description is given on our site.

PASSWORD
It's possible to set a password from the App to block parameter modification and new key-fobs registration. PW setting can be done from *MENU->SET UP MENU->Change password*.
Please Note If a new password is to be activated leave empty the textfield “Current Password”, if instead the password is to be deactivated leave empty textfiels “New Password” and “Re-type Password”. If the password is to be changed fill all the textfields.
In case of lost password it is possible to reset it by pushing the button “ PASSWORD CLEAR & SECURITY KEY REGEN” which appears on the App screen under the “DEVICES REGISTRATION” button. This reset button is normally hided, to show it, repeat 3 consecutive cycles of power OFF and power ON of the control unit, within a 30 second time window.
A password reset imply also the cancellation of the address & security key of the device, therefore a new registration of the associated sensors is required. This procedure can also be utilized to make all the previous registered keyfobs useless.

DIGITAL SECURITY OF THE COMMUNICATION
The parameters “ADDRESS BYTES” & “SECURITY BYTES” are dedicated to adapt the digital security level.
The default values ensure an adequate security for most applications, so their modification is not necessary.

CHARACTERISTIC DATA

ROLLING SHUTTER CONTROL DEVICE	
Power supply	80 — 240 VAC 50/60Hz
Standby power	~ 0,15 W
Parameters read/write	Port NFC prot. IEC 14443 Type B
Enclosure dimensions	29x45x115 mm
Weight	~ 90 gr.
Enclosure protection	IP54
Relay current ratings	240 VAC / 10A
Operating temperature	-10 — +50°C
KEYFOB	
Number of buttons	2- 4
Shell dimensions	56,8x44x14,5mm
Operating frequency shell	ISM 433 MHz
Transmitted signal power	< 10dBmW

Shell protection	IP65
Battery type	CR2032
Battery life *	> 5 years
Radio range	20 / 50 m
Operating temperature	-10 — +50°C

** life get calculated for 10 commands per day*

WARRANTY

The warranty period of 2 years start on day of purchase.
Warranty doesn't cover damages caused by:
- wrong installation,
- failure to observe these instructions,
- tampering, modifications or reparation attempt,
- wrong use,
- failure to observe safety regulation in force,
- majeure force (e.g. over-voltages, fire etc.)

Warranty does not include direct or indirect damages due to device defects, or costs derived from installation or removal labour.
In case of malfunction will be our liberty to choose if to replace, fix or refund the cost of the device.

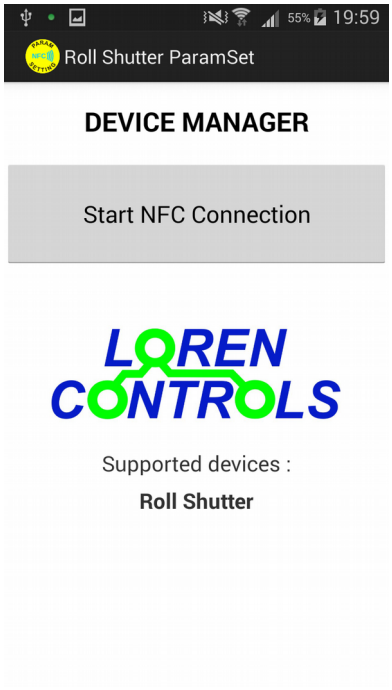
CONTROL PARAMETERS READ/WRITE WITH SMARTPHONE

To obtain a connection between smatrphone and control unit, take the following steps:

1- Make sure the control unit is connected to AC power source (led on).
2- Start the dedicated Android application downloadable at *http://www.lorencontrols.eu*
3- Push the ”Start NFC Connection” button, under the “Loren Controls” logo.
4- Like asked by message on the screen, place the phone on top of the Smart Sw enclosure where the NFC symbol is.
5- If the connection is activated, another screen will appear, showing Software/Hardware data and 2 buttons.
   The first button “SET UP MENU“ access the parameter setting menu and the second button
   “DEVICE REGISTRATION“ start the sensor registration procedure (check next paragraph to see phone screenshots)
   If connection fail an error message appears.
6- To proceed with the parameter read/write or a new key-fob registration push the dedicated button and place the phone on the Smart Sw enclosure like described above.

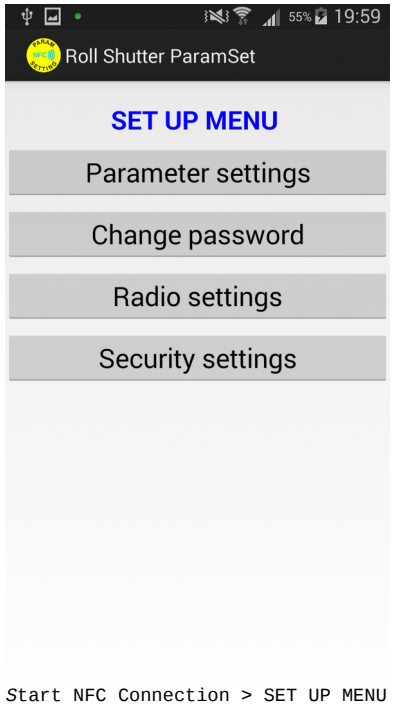
ANDROID SMARTPHONE APP SCREEN SEQUENCES

Shown below are some screenshots of the app dedicated to the management of parameters.
The device is supplied with a set of default values.
Parameter modification is allowed only within relative range, if the inserted parameter is out of range it is automatically brought back to its previous value.
Under every screenshot it's “button press path” is specified. When not used, the App closes itself after a pre-set time.

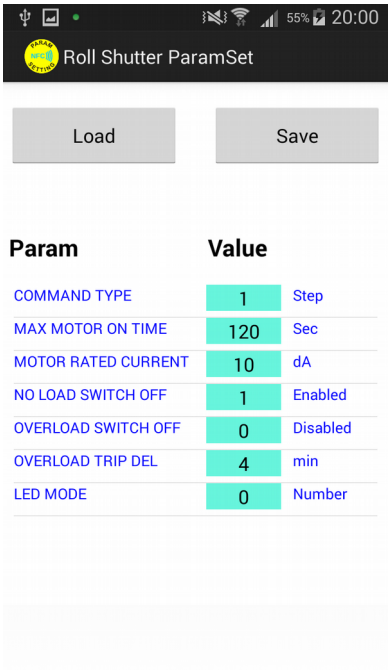


“First image of the App”

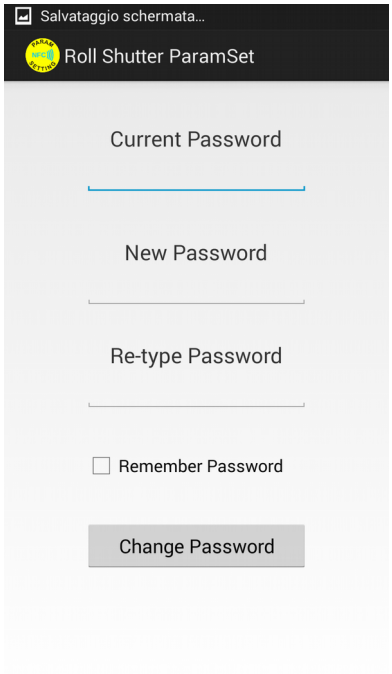
`Start NFC Connection`



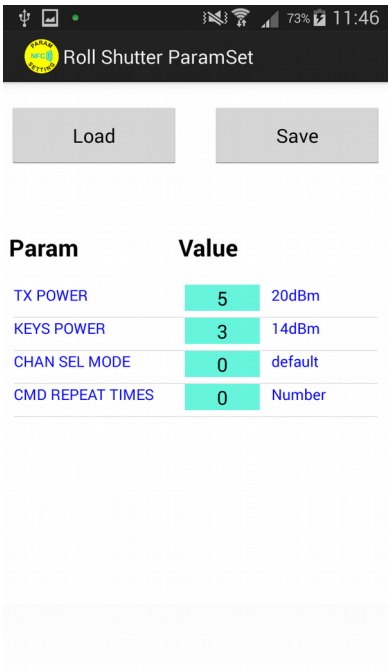
`Start NFC Connection > SET UP MENU`



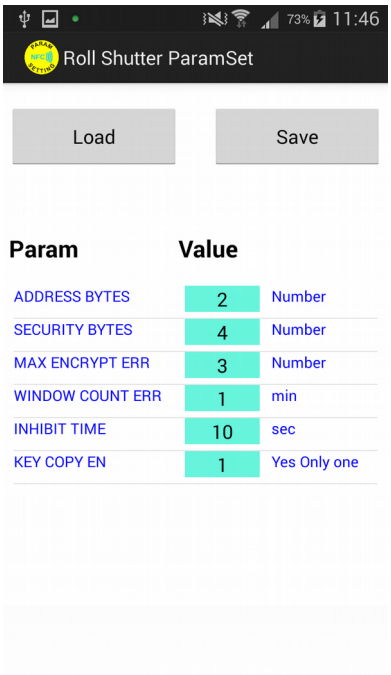
Start NFC Connection > Set UP MENU > Parameter setting



Start NFC Connection >SET UP MENU > Change Password



Start NFC Connection >SET UP MENU > Radio setting



Start NFC Connection >SET UP MENU > Security setting