INSTALLATION AND WIRING

The case is fixed to the wall with three external screws.
Make three holes in the wall following the printed cutout template at the bottom of the cardboard box. Use the supplied screws and wall plugs.
Cut the cable glands located at the bottom of the case and pass through them the wiring tube inside the case.
Connect the power supply, motor and device cables in the terminals of the terminal strip as indicated in the printed circuit board. See fig 1-7 & 1-8.
Configure the operating mode using the DIP SW. See fig. 1-3.
Activate the power supply and the ON Led will switch on. See fig. 1-1.
Program the maneuver and automatic cycle times.

SMINN MOTOR CONTROLLERS ARE EQUIPPED WITH LED INDICATION OF POWER SUPPLY.

Check that the light barrier and the safety edge are working looking at their associated leds. See fig. 1-7
Make sure that the safety edge is not activated when the gate/roller blind is completely closed.
Push the TEST button (fig 1-6) to start the opening maneuver. If the motor does not work, maybe the motor connection is inverted. Change it and repeat the step.

IMPORTANT USAGE SAFETY INSTRUCTIONS

- Keep the controller out of the reach of children.
- Observe that there are not objects or people in the way when the gate is moving.
- If you detect a malfunction of the system, call IMMEDIATELY the technical service. You must not use the mechanism as it can cause damage.
- You must take precautions when handling the gate manually (unblocked) because it can move without control, due to its own weight, the state of fixing points, springs and counterweights.

IMPORTANT INSTALLATION SAFETY INSTRUCTIONS

Before installing the motor controller:
- Check that the gate/rolling shutter is in good mechanical condition and well balanced.
- Move away everything that is not necessary and disconnect the AC current (AC V).
- Proceed to install the motor controller at a minimum height of 1.5 m, preferably next to the gate.
- Use appropriate sized wiring for the power supply and motor.
- Connect power supply to the motor controller using an easily reachable magnetothermic/emergency switch.

European regulations for doors EN 12453 and EN 12445 specify the minimum protection and safety levels for doors installed in houses and community and public installations.
Collision with any object must be prevented or the contact force must be limited (security band), and in the case of automatic cycle, a presence detector must be used too (i.e. light barrier).

MOTOR CONTROLLER USAGE RESTRICTIONS

Operation is not guaranteed when installed in different equipment than the specified.

THE USAGE INSTRUCTIONS OF THIS DEVICE SHALL BE HANDED TO THE USER, WHO WILL HAVE THEM IN THEIR POSSESSION. IF THEY ARE MISLAID, THE USER CAN ASK FOR A COPY OR DOWNLOAD IT DIRECTLY FROM THE WEBSITE WWW.SMINN.COM

The manufacturer keeps the right to modify the content of this document or the product without prior warning.
The equipment must be manipulated only by specialized and/or skilled personnel.

WARRANTY

WARNING

This product must be used in istallations which has been conceived for, considering any other as improper use. The packaging and wrapping MUST NOT be dumped in the environment.
Keep products, packaging, wrapping, documentation, etc., out of the reach of children.
Follow the current local, national or European regulations. The information contained in this document may have some mistakes that will be corrected in future editions. The manufacturer keeps the right to modify the content of this document or the product without prior warning.

WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT DIRECTIVE (WEEE)

CE DECLARATION OF CONFORMITY

The company	ELSON SISTEMAS, S. L.
	Pol. Torrelarragoiti, P6 - A3 - 1ª
	48170 Zamudio - Vizcaya (SPAIN)
Declares:	
The product:	BOX M-CM0 Motor Controller
Manufactured by	ELSON ELECTRÓNICA, S.A.
Under the trademark:	**SMINN**
For use in:	Residential, commercial or light industry environments.

This device meets the provisions contained in the article 3 of the R&TTE 1999/05/CE Regulation, as long as its usage is compliant to what was envisaged, having applied the following regulations:

Telecomunications:	EN 300 220-1 v1.3.1 (2000-09)
	EN 300 220-1 v1.1.1 (2000-09)
Electromagnetic compatibility:	2004-108-CE
Low tension:	2006-95-CE

Zamudio, 2011.03.30

José Miguel Blanco Pérez
Chief Technical Officer

BOX **M CM0**
UNIVERSAL MOTOR CONTROLLER WITH RECEIVER

INSTRUCTIONS MANUAL

SMINN
innovative in electronics

DESCRIPTION

Motor controller with integrated radio to control single-phase coaxial motors of up to 0,75 CV at 230VAC to be applied in rolling shutters and rolling doors.

Easy selection between three maneuver types: automatic, semiautomatic (alternative) and dead man.

Maneuver control via optocoupled inputs for light barriers and buttons.

Automatic detection of external limit switches with maneuver stop.

Current output for peripherals protected with a resettable fuse (depending on model).

Devices that are built using high quality materials and components and the latest technology. They are made taking into account the current regulations for the usage in residential, commercial and light industry environments.

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SPAIN

OPERATION

Once the motor controller is installed and configured correctly, it will start the maneuver every time an operation request is received via radio, by pressing the test button or by activating the KEY1 input. The motor controller will stop the maneuver when the programmed time finishes or the external limit switches are detected and will interrupt it when any security is activated.

OPERATING MODES

The motor controller has three maneuver types that are easily selectable via the option selector (see fig. 1-3):

- AUTOMATIC
This mode allows, after a complete opening, to automatically close the door after the programmed waiting time. It is selected setting DIP1 – AUTO CYCLE to ON (Up).

- SEMIAUTOMATIC (Alternating stop)
This mode works the same way the automatic mode does, allowing to stop the maneuver via the KEY1 input. The KEY1 input alternatively stops the maneuver and inverts it until the door is closed.
It is selected setting DIP2 - ALTERNATING STOP to ON (Up).

- DEAD-MAN
This mode only allows the movement of the door while holding the button connected to the KEY1/KEY2 terminals. It has two operating modes:

1. Dead-man in opening and closing
While holding KEY1 the door will open and while holding KEY2 the door will close. In this mode only the security SEC that stops the maneuver is taken into account. It is selected setting :
DIP3 – DEAD MAN to ON (Up)
DIP2 – ALTERNATING STOP to OFF (Down).

2. Dead-man in opening and semiautomatic closing.
The KEY1 input will open the door like in AUTOMATIC mode and while holding KEY2 the oor will close. In this mode only the security SEC and the security of opening through LIGHT BARRIER 2 (if it is selected) are taken into account.
It is selected setting :
DIP3 – DEAD MAN to ON (Up)
DIP2 – ALTERNATING STOP to ON (Up).

In both DEAD-MAN modes, AUTOMATIC CYCLE and ALTERNATING STOP are void.

MANEUVER CONTROL

CM0 controls the movement of the door with the signals received in KEY 1 and KEY2 terminals.
Inputs to activate the maneuver (KEY1, KEY2).
KEY1 – Input for button in automatic/semiautomatic/dead-man (open) modes.
KEY2 – Input for button in dead-man mode (close).

Light barriers (BND, SEC)
NC inputs to detect obstacles in the range of the door.
The input of the safety edge (BND) can be configured in two modes:
- Configured as EDGE in opening and closing:
DIP4-EDGE/LIGHT to OFF (Down).
In this mode, the door stops opening and inverts the maneuver for 2 sec, or stops closing and inverts completely.
The motor controller detects automatically either a 8K2R safety edge or two 4K1R parallel ones.
- Configuration as light barrier in opening: DIP4-EDGE/LIGHT to ON (Up).
In this mode, the door stops the opening maneuver and inverts completely, just like the SEC input..

External limit switches (FC-AUT):
The motor controller detects via this JUMPER (see fig. 1/11) the NC external limit switches, stopping and resetting the maneuver time..

Peripheral power supply
With this connection, the motor controller supplies power to the external devices, such as light barriers..

Receiver module
The controller includes an SMINN radio receiver, supporting activation via radio (see Fig. 1/2)

Fig.1

COMPONENTS

1. ON led
2. Radio module
3. Automatic cycle led
4. PROG. LED
5. PROG. button S1
6. TEST/MANEUVER button
7. Peripheral terminal block
8. Power and motor terminal block
9. 3/6A. protection fuse
10. Configuration DIP switch
11. Relay status leds
12. Automatic limit switch jumper

TECHNICAL SPECIFICATIONS

Power supply	230V AC (125VAC Optional)
Motor power	Single-phase 0,75CV
Radio receiver	Embedded
Configuration switch	Binary DIP SWITCH
Output power protection	Auto. resetteable fuse (depends on model)
Output power for peripherals	15VDC / 0.3A (depends on model)
External limit switch control	Analog
Maneuver control inputs	3 - Optocoupled (SEC-KEY1/KEY2) 1 - Analog (Safety edge)
Operating temperature	-20ºC to +85ºC industrial range
Maximum supported humidity	85% relative humidity
Casing	ABS
Dimensions	185 x 145 x 65 mm
Protection rating	IP54 (IP66 with cable glands)

PROGRAMMING THE MANEUVER TIME

These instructions should be followed to program the maneuver time. The motor controller must be powered on, the door/rolling shutter closed and the external limit switch jumper removed.

- Press and hold the programming button (PROG) for 8 sec. until the RUN/PROG led is on (See fig. 1/4)
- Release the programming button (PROG).
- Press the button of a TRANSMITTER or the MANEUVER TEST button to start opening.
- Wait some seconds until the door is completely open and then press again the programming button (PROG).
- The relays should switch off; the maneuver time is saved.
- If the motor controller is configured in automatic cycle (DIP 1 = ON, see fig. 1/3) the automatic cycle led will blink. After the desired "waiting time" has passed, press again PROG button.
- Finally, a validation beep is heard.

The times of opening, closing and optionally, automatic cycle, have been programmed. The opening and closing times are the same, and they can vary from 15 seconds up to 2 minutes.

ERASE MEMORY

SMINN transmitters' codes stored in the memory can only be deleted completely erasing the memory. To do so, follow these steps:

- Disconnect the power supply.
- Connect the power supply while holding PROG.
- Wait 8 secs until the RUN LED is switched on.
- Release the PROG button for 2 seconds.
- Press and hold again the PROG button. RUN LED will switch off.
- Wait 8 secs until the RUN LED blinks.
- Release the PROG button. Wait for a validation beep.

This procedure completely erases the system memory and leaves it in a default factory state.

TRANSMITTER PROGRAMMING

SMINN UNIVERSAL motor controllers can store up to 35 compatible transmitters. PIN compatibilty must be ensured to register a transmitter.
If this is the first installation, the receiver memory must be customized.

Customizing the receiver
· Press and hold the transmitter's 1st and 2nd buttons at the same time (5 sec.) until its led switches on.
· Release the buttons (the led remains on).
· Ensure you are close to the receiver to guarantee communication (1 to 10m).
· Press and hold the PROG button of the motor controller
· Press and hold the transmitter's 1st button (registration)
· Wait for the valid registration beep.
· Release the transmitter's button. Release the PROG button.

MANUAL PROGRAMMING

Follow these steps to register transmitters manually :
· Turn on the motor controller and wait for 5 seconds.
· Press and hold the programming button (PROG).
· Press and hold the button of the transmitter's channel that you want to register.
· Check that the PROG led is blinking (SCAN mode).
· Wait for the valid registration beep.
· Release the transmitter's button.
· Release the PROG button.

Repeat the process for as many transmitters as you want to register. If you try to register more than 35 transmitters, the receiver will answer with a long beep, indicating that the memory is already full.

The first registered transmitter will indicate the operation channel of the motor controller; the rest of transmitters will be registered using the same channel as the first one.

RADIO PROGRAMMING

Only a registered transmitter can invite or grant self-registration capabilities to other SMINN transmitters with the same PIN.
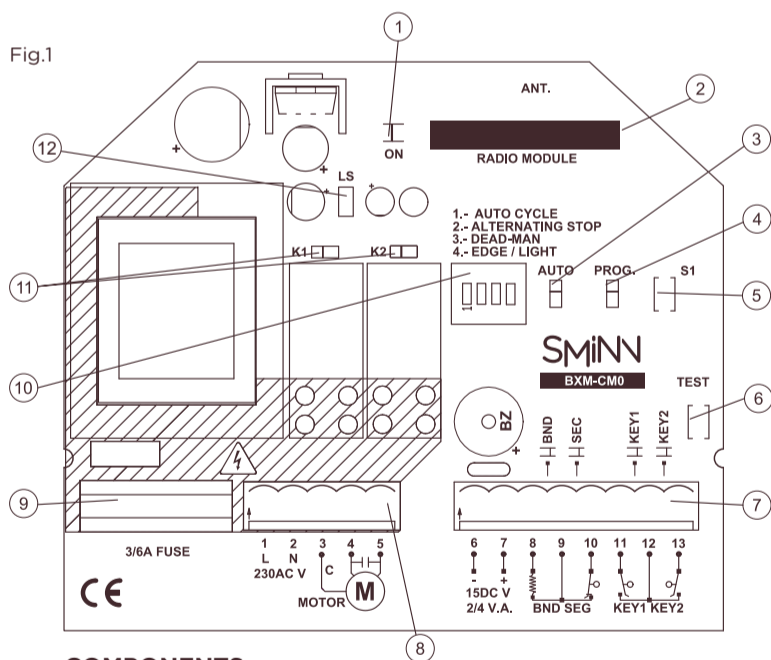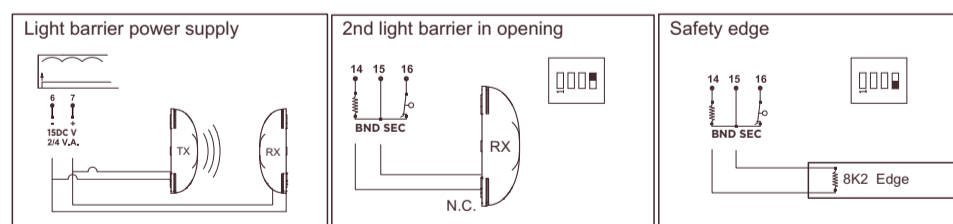
Registration by invitation.
· Press and hold the already registered transmitter's 1st and 2nd buttons (MASTER transmitter).
· Press and hold the new transmitter's 1st and 2nd buttons (must have the same PIN).
· Wait for 5 seconds until the led is on in both transmitters.
· Release both transmitter's 1st and 2nd buttons (the leds remain on).
· Take the Master transmitter's led near the new transmitter's SYNC area.
· Press and hold the Master transmitter's 1st button.
· Wait until the new transmitter's led blinks 5 times.
· Release the Master's button.
· Ensure you are close to the receiver to guarantee communication (1 to 10m).
· Press and hold the new transmitter's button that corresponds to the channel that you want to register.
· Wait for the valid registration beep.
· Release the button of the new transmitter.

CODE REPLACEMENT DUE TO LOSS

This function allows the replacement of a transmitter code stored in the motor controller with a new one, be it due to loss or mislaying.

The replacement of a transmitter code is only possible with a SMINN programming console. Knowing the PIN of the installation and the code number of the lost transmitter is required.

APLICATIONS

MODELS	Freq. MHz.	Power Output	Terminals		Transfor. Power
			Plug-in	Normal	
BOX M CM0 / 420	433.92	-	-	YES	2.8W
BOX M CM0 / 422	433.92	-	YES	-	2.8W
BOX M CM0 / 430	433.92	YES	-	YES	5W
BOX M CM0 / 432	433.92	YES	YES	-	5W
BOX M CM0 / 820	868.35	-	-	YES	2.8W
BOX M CM0 / 822	868.35	-	YES	-	2.8W
BOX M CM0 / 830	868.35	YES	-	YES	5W
BOX M CM0 / 832	868.35	YES	YES	-	5W