

**INSTRUCTIONS**



**INDEX**

**1. GENERAL**

*1.1 NORMAL USE*

*1.2 GUARANTEE*

*1.3 TRANSPORT AND STORAGE*

*1.4 FUNCTIONING*

*1.4.1 NORMAL OPERATING MODE*

*1.4.2 GOVERNOR UNABLE TO UNBLOCK*

*1.4.3 GOVERNOR UNABLE TO BLOCK*

*1.4.4 NO VOLTAGE IN THE INSTALLATION DURING THE TRIP*

*1.4.5 EMERGENCY RESCUE WITHOUT VOLTAGE IN THE INSTALLATION*

*1.5 GENERAL FEATURES*

*1.6 MARKING*

**2. ASSEMBLY**

**3. WIRING**

*3.1 ELECTRICAL WIRING*

*3.2 WIRING DIAGRAMS*

*3.2.1 LIFT CONTROLLERS WITH FREQUENCY CONVERTER*

*3.2.2 LIFT CONTROLLERS 1 AND 2 SPEEDS, HYDRAULIC*

**4. TESTS**

*4.1 REACHING FLOOR AND DOOR OPENING*

*4.2 FUNCTIONING DURING A USUAL TRIP*

*4.3 SIMULATION OF THE GOVERNOR COIL BLOCKING IN THE INACTIVE POSITION*

*4.4 NO VOLTAGE IN THE INSTALLATION DURING THE TRIP*

*4.5 EMERGENCY RESCUE WITHOUT VOLTAGE IN THE INSTALLATION*

**5. MAINTENANCE**

*5.1 USEFUL LIFE*

**INSTRUCTIONS**

## **1.- GENERAL**

### **1.1 NORMAL USE**

*The EM-17 module is an electronic control device that detects unintended car movement with a lift stopped on the floor and the doors open.*

*The EM-17 module is an integral part of the devices for unintended car movements in compliance with the annexe III of the Lift Directive 2014/33/EU. Any other use has not been assessed and therefore is not foreseen.*

### **1.2 GUARANTEE**

*LUEZAR-ECO, S.L. guarantees, for the period established by the current legislation, the functioning of its product against any fault in the materials and assembly during its manufacturing.*

*This guarantee will not be valid in the following cases:*

- *Inappropriate use.*
- *Faulty installation.*
- *Superficial impacts.*
- *Faulty electrical wiring.*
- *Inappropriate maintenance.*

*And, in general, non-compliance with the instructions described in this handbook.*

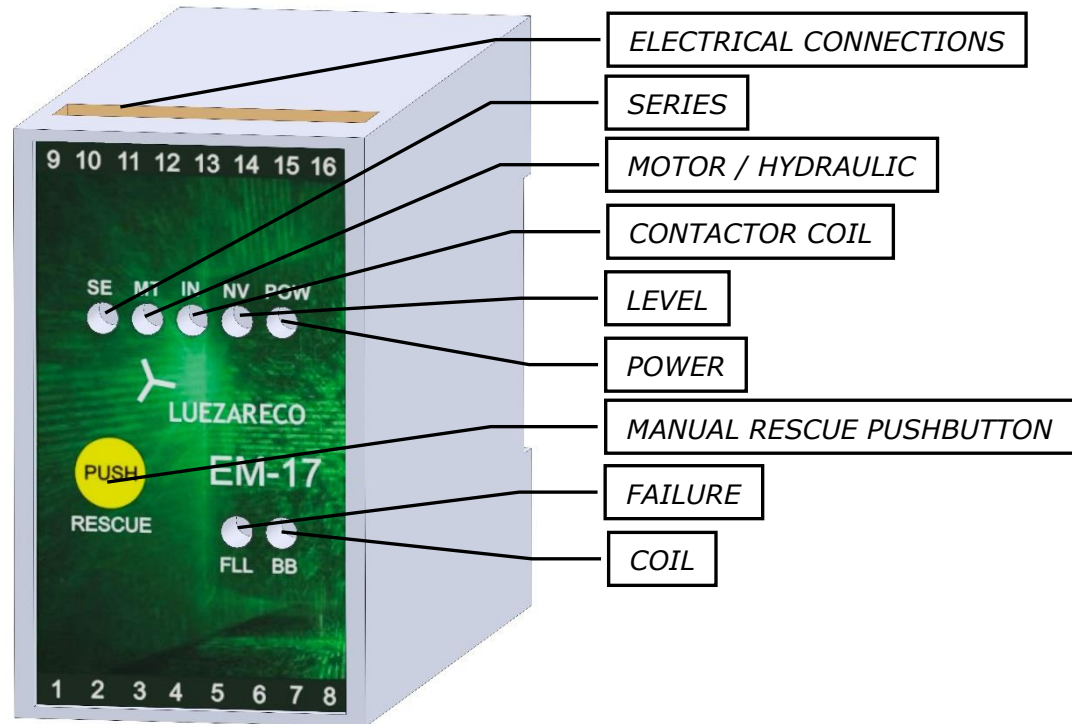
*The integral components of the control module cannot be opened, manipulated or modified under any circumstances. Any action on them must be carried out by LUEZAR-ECO, S.L.*

*LUEZAR-ECO, S.L. reserves all rights to modify the content of this document without prior notice, thus cancelling the validity of previous revisions.*

### **1.3 TRANSPORT AND STORAGE**

*The EM-17 control module shall be transported in appropriate packaging so that it is protected from bumps, humidity, dirtiness and poor weather conditions at all times.*

*Control modules do not have a limited shelf life, but they shall be returned to the factory in order to be checked by LUEZAR-ECO S.L., following prior agreement, if any superficial damage caused by bumps or humidity is detected once the product has been unpacked.*

**INSTRUCTIONS**
**1.4 FUNCTIONING**

**LED SIGNALS**

- **POWER.** *Module ON indicator. The LED indicator on shows the module powered on.*
- **LEVEL.** *Level indicator. The LED indicator on shows that the lift is at the floor level.*
- **CONTACTOR COIL.** *Contactor coil indicator. The LED indicator on shows that the contactor of the governor coil is not activated.*
- **MOTOR / HYDRAULIC** *Motor signal disabled. Unused. Led always off*
- **SERIES.** *Series indicator. The LED indicator on shows that the safety series is closed.*
- **FAILURE.** *Relay failure indicator. The LED indicator on shows that the module has detected a failure.*
- **COIL.** *Coil indicator. The LED indicator on shows that the coil is powered.*

**INSTRUCTIONS**

**1.4.1 NORMAL OPERATING MODE**

The EM-17 control module works in conjunction with the lift controller and the overspeed governor equipped with a blocking device. The following blocking device has to include a coil and a safety switch so that when the coil is not powered the governor gets blocked and when it is on – the governor is unblocked.

The EM-17 module uses the following input signals from the lift controller:

- Door safety series.
- Floor level.

In the normal operating mode, when the car reaches the floor and opens the doors the EM-17 control module disconnects the governor coil from the power supply and blocks it. Therefore, if unintended care movement occurs under these conditions since the overspeed governor is blocked it consequently engages the safety gear and stops the car.

By contrast, when the new command sends the lift in motion the module receives the signs of closed doors from the lift controller. It then powers the coil and unblocks the governor to make a regular trip until the lift reaches the floor again.

**1.4.2 GOVERNOR UNABLE TO UNBLOCK**

If the lift tries to get in motion and due to mechanical or electrical reasons the governor coil remains blocked in the inactive position (governor blocked) and the coil contact is not activated, the module will not allow the lift to start the movement, the failure LED indicator lights up and blocks the command. The LED indicator of failure remains lit until the doors open and the door series indicator disappears or until the module is disconnected from power supply.

If the problem remains, the failure will recur once the lift tries to get in motion again.

**1.4.3 GOVERNOR UNABLE TO BLOCK**

When the car reaches floor level and opens doors, if the coil is blocked in active position and the NC contact remains actuated the module prevents the elevator from starting, the failure LED lights up and blocks the order of the lift controller. The fault LED will remain on until the coil NC contact is no longer actuated, or the module power is cut off.

If the problem remains, the failure will recur once the lift reaches the floor level.

**1.4.4 NO VOLTAGE IN THE INSTALLATION DURING THE TRIP**

When there is no voltage in the installation the car or the hydraulic system stops. In this case, the module gets its power supply from the batteries or another external source, the coil stays powered for approximately 3 seconds and once they have elapsed, the module stops supplying power to the coil and the governor gets tripped so as to prevent any car movement.

Once the power supply has been restored the EM-17 device goes back to its normal operating mode.

The delay in governor tripping mentioned in this section is meant to avoid undesired blocking of the lift.

# INSTRUCTIONS

## 1.4.5 EMERGENCY RESCUE WITHOUT VOLTAGE IN THE INSTALLATION

Using 24V batteries or an external power supply source and by pressing the rescue pushbutton, which can be found on the front panel, the coil can be powered on by disengaging the governor and thus allowing the lift to move during the emergency rescues.

It is essential to use rechargeable batteries or an external power supply source to carry out emergency rescues in the absence of voltage. The control module makes it possible to recharge these batteries without the need to connect them to a special charger.

## 1.5 GENERAL FEATURES

Power supply.	24 V <sub>DC</sub>
Battery power.	24 V <sub>DC</sub> 1,5Ah Ni-Cd
Governor unlocking coil power supply.	24V <sub>DC</sub>
Trigger delay of the control system.	25 ms
Door signal.	De 24 a 250 V <sub>DC/AC</sub>
Level signal.	12V <sub>DC</sub>
Activated coil contactor signal or sensor.	12V <sub>DC</sub>

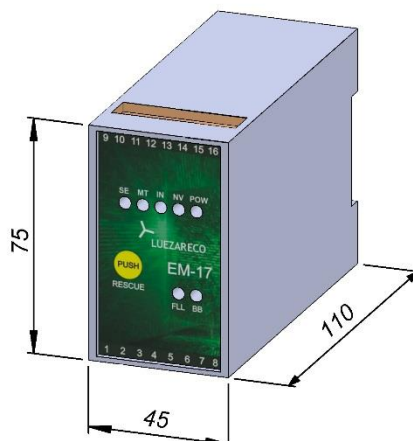
## 1.6 MARKING

Each unit has an identifying label with the name of the product, the manufacturing number (F.Nr.) and the manufacturer data.



## 2.- ASSEMBLY

The control module EM-17 mounts on the 35mm DIN-rail.



**INSTRUCTIONS**
**3. WIRING**
**3.1 ELECTRICAL WIRING**

When wiring the module it is essential to follow the instructions given below and to check the indicated voltages. Faulty wiring can cause irreparable damages to the unit.

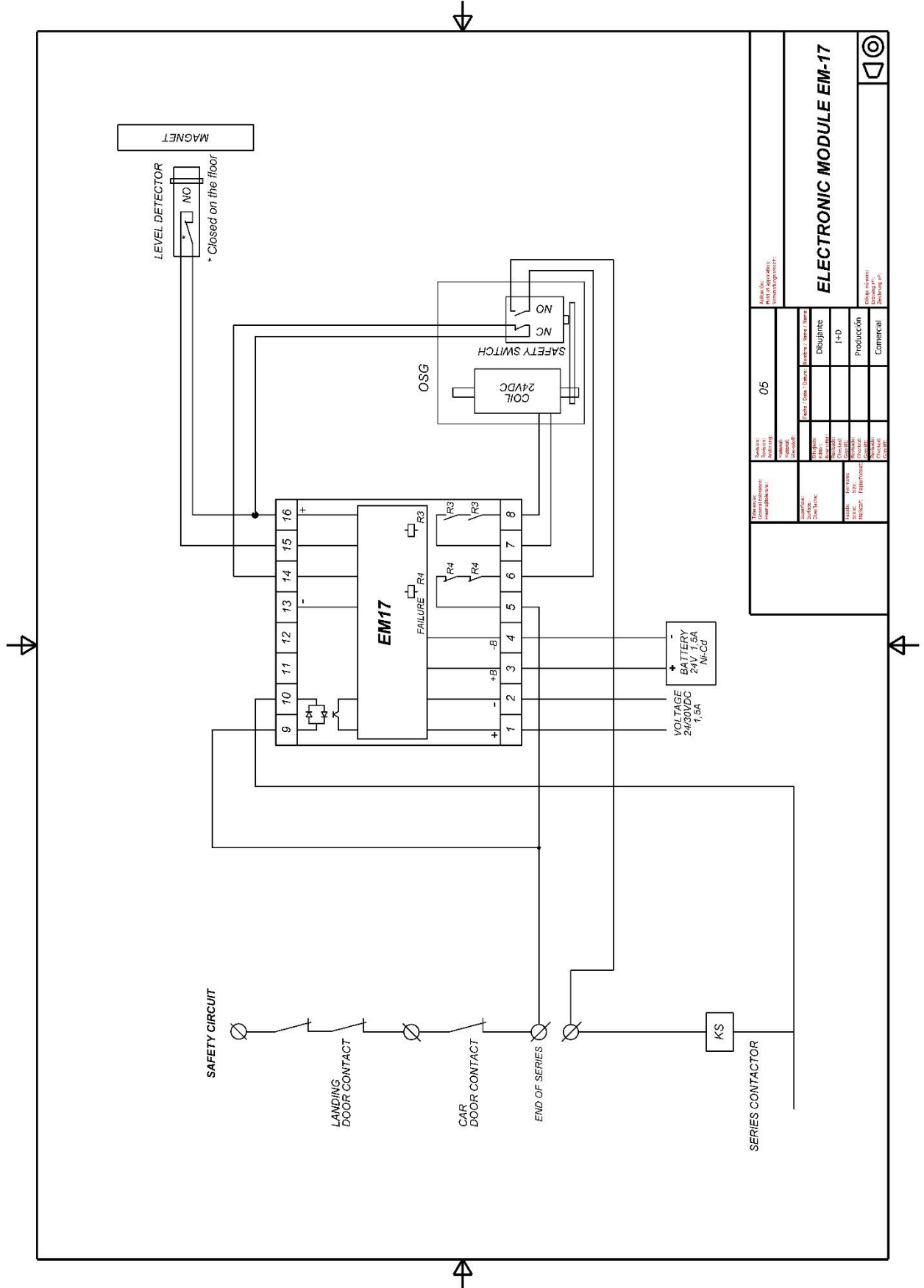
TERMINAL	DESCRIPTION
1	Power supply $24V_{DC} \pm 10\%$
2	Power supply 0V.
3	Battery. +. 24V.
4	Battery. -. 0V.
5	Cutoff contact of safety series of the controller.
6	Cutoff contact of safety series of the controller.
7	Coil. $0V_{DC}$ .
8	Coil. $24V_{DC}$ .
9	Inlet of the car door series. From 24 to $250V_{DC/AC}$ .
10	Common inlet of safety series of the controller $0V_{DC/AC}$ .
11	<No connect>
12	<No connect>
13	Negative. -. $0V_{DC}$ .
14	Sensor activation or coil contactor.
15	Level signal. $12V_{DC/AC}$ .
16	Positive. +. $12V_{DC}$ .







**3.2.2 CONTROLLERS 1 AND 2 SPEEDS, HYDRAULIC**





**INSTRUCTIONS**

**4.- TESTS**

To verify the correct operation of the control module once it has been installed, the following tests shall be carried out.

**4.1 REACHING FLOORS AND OPENING DOORS**

The lift will be called. When the lift reaches the floor and opens the doors the module will stop powering the governor coil and it will remain blocked. While the lift remains on the floor the governor will always stay blocked regardless of whether or not there are unintended car movements.

In this case, the signals received by the module are the ones of the power supply and floor level. The status of LED indicators will be as shown in the picture.



**4.2 FUNCTIONING DURING A USUAL TRIP**

The lift will be called so as to verify that it makes the trip correctly.

The status of the LED indicators on the module during the trip, from the moment it closes its doors on the floor until it reaches the new floor with the doors closed, will be the following:



*Lift on the floor with doors closed*



*Lift during the trip*

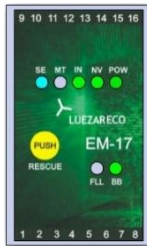


*Lift on the floor with doors closed ending the trip*

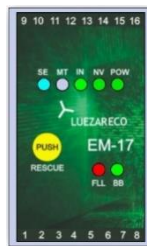
When it opens its doors again the status will be as described in the previous section.

**INSTRUCTIONS**
**4.3 SIMULATION OF THE GOVERNOR COIL BLOCKING IN THE INACTIVE POSITION**

To simulate this situation, once the lift is stationed on the floor, the coil will be blocked in its inactive position (governor blocked) and the lift will be called. The correct sequence of the LED indicators of the module should be the one described in the previous section, however if the activation signal from the coil contact is not received, the lift controller prevents the lift from movement and the LED indicator of Failure is lit and remains in failure until there is a door series opening every time the lift attempts to start moving.



NO CONTACTOR SIGNAL



FAILURE SIGNAL


 LIFT STOPPED  
WITH OPEN DOORS

**4.4 NO VOLTAGE IN THE INSTALLATION DURING THE TRIP**

The lift is called and when it is moving the voltage is switched off in the installation. The module will maintain the coil powered for approximately 3 seconds using the power supply from the batteries. Consequently, the power supply will be cut and the governor will get tripped. Once the power supply has been restored it will automatically return to its normal operating mode.

**4.5 RESCUE OPERATION WITH NO VOLTAGE IN THE INSTALLATION**

Set the lift in a way that governor coil is left visually accessible, cut off the power supply in the installation, repeatedly activate the rescue pushbutton and make sure the governor coil gets activated and deactivated correctly. Restore the power supply, perform a command and make sure the lift moves correctly.

**5.- MAINTENANCE**

In order to guarantee the correct functioning of the unit in the course of its useful life yearly tests shall be carried out as described in the previous section. In addition, the correct functioning of the governor coil, as well as the state of charge of the batteries, shall be checked every year.

**5.1 USEFUL LIFE**

You should have the batteries changed every 3 years.