

MICOM AUTODOOR Automatic Sliding Door Operator Model: EDM18E

Original Instructions

INSTALLATION MANUAL



The installation instruction detailed within are solely for professional installers and not intended to be handed over to the end user.

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IMPORTANT NOTICE

	Please read these instructions carefully before installing the door operator. We are not responsible for any loss or damage if these precautions are not followed.
	During maintenance and installation, the 3-way power connector should be plugged out of the control (power off).
	Please use the correct power supply (See section "2.-Technical Specifications").
	Make sure that the operator is grounded or connected to earth! The coating of the operator is made of an electrically conductive metallic material, which will easily induce electrical conduction! Make sure the ground or earth wire is connected!
	The operator housing is not completely sealed, therefore it should be noted that excessive moisture or a corrosive atmosphere could destroy the electronic components contained within.
	Do not remove screws and bolts from the internal structure of the Control Unit. Do not intend to open, repair or alter any part of the Control Unit. The failure to comply results in loss of warranty.
	Installation and maintenance of this product can be performed by MICOM authorized personnel only.
	Before plugging in the 3-way connector (power on), make sure that no objects obstruct the travel of the automatic doors.
	To add or replace the battery (providing emergency power in case of any power failure), only 19.2V/300mAH NiMH battery, otherwise irreversible damage will be caused to the operator.
	Follow all indicated instructions, as improper installation could cause severe damage.
Please keep these instructions.	

Note: Installation instructions detailed here within meet the requirements of BSEN 16005 and if necessary can be verified.



IMPORTANT SAFETY NOTICE!!!



When the door starts for the first time, it will automatically perform a series of opening and closing cycles (normally between 3 to 5 times) – Known as teaching or self-learning mode.

Please note these learning cycles are performed at high speed without safety features enabled.

Keep clear of the entrance and doors. Ensure that no pedestrians pass through the doors during the initial learning, installation or maintenance. Keep clear of doors when opening or closing during learning. It is advisable to identify and restrict the area with warning signs.



In certain installations of automatic doors, some installers may sometimes place operation selector cables and power supply cables (230Vac) within the same tube. This must never be done as it may cause, in the short or long term, the microprocessor to work incorrectly or to break down irreversibly.

It is advised to avoid placing cables within the same tube. Those belonging to the automatic door must be shielded and properly grounded at both ends.

Likewise, installation technicians must not combine these cables within the rail / housing.

It is always necessary to try to separate signal cables (photocell, selector, radars, engine, etc.) from voltage cables (230V or 110V).

1-INTRODUCTION

This installation manual contains the necessary information to effectively perform installation, maintenance and service of the MICOM EDM18E Automatic Sliding Door Operator.

The MICOM EDM18E system is to be utilized for automatic sliding pedestrian doors. Moreover, it is suitable for Single, Double, Telescopic and Curved sliding applications. Its small size and attractive housing design will compliment the aesthetics of any door. A Brushless Motor together with an advanced Control Unit forms a very compact, durable and high-quality automatic sliding door operator system.



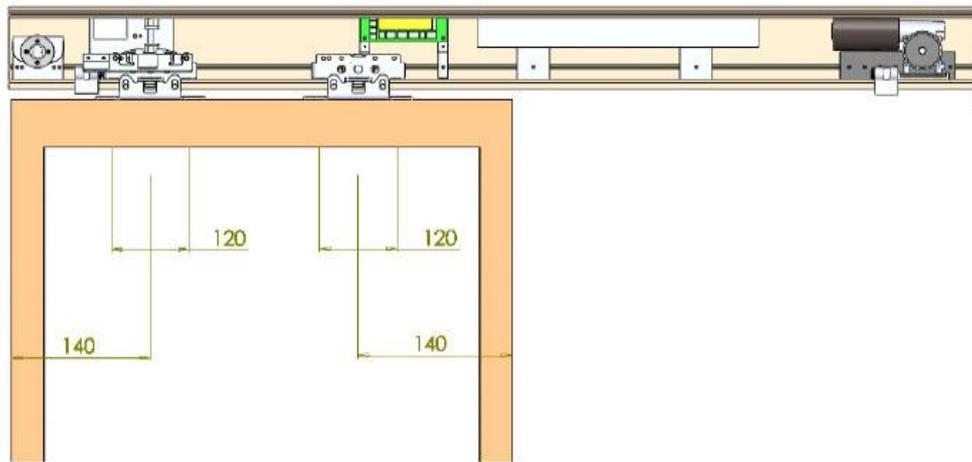
1.1- TECHNICAL SPECIFICATIONS

MODEL	EDM18E-A	EDM18E-D
Application	Single	Double
Power Supply	AC100-240V 50.60Hz 2A	
Maximum Consumption	200W	
Door Weight KG	100KG	90KGx2
Speed	70~750mm/s (adjustable)	
Motor	Brushless DC motor	
Gear box	Worm screw	
Control system	Microprocessor	
Brake	Automatic	
Door opening time	From 0 to 60 sec. (10 adjustable positions)	
Pressure to eliminate door-frame gaps	A small force may be adjusted in order to keep the door closed or open. Force from 0 to 8 Kg (5 adjustable positions)	
Safety obstruction Function	When opening: Door stops. Returns to normal operation upon the activation of a sensor, or after 10 sec.	
	When closing: Door opens, then closes at slow speed. Returns to normal operation upon the activation of a sensor, or after 10 sec.	
Failure detection	Warning and specification of error by means of an acoustic alarm and visual display.	
Partial opening	10 positions for partial opening operation, from 5% to 90%.	
Emergency battery	Allows opening or closing in an emergency situation by battery.	
Electromagnetic Lock	Electromagnetic Lock : Fail Secure- MRC-1 (LK1) / Fail Safe – MRC-2 (LK2) (Optional)	
Operating temperature and humidity	Ambient temperature: from 0°C to +50°C (no condensation or icing). Ambient humidity: from 30% to 85% (the environment must be free of hazardous materials).	
Maximum leaf weight	Single leaf-door = 1 x 120 Kg max Double leaf-door = 2 x 90 Kg max Two Sliding telescopic leaf-door = 2 x 60 Kg max Four Sliding telescopic leaf-door = 4 x 45 Kg max	

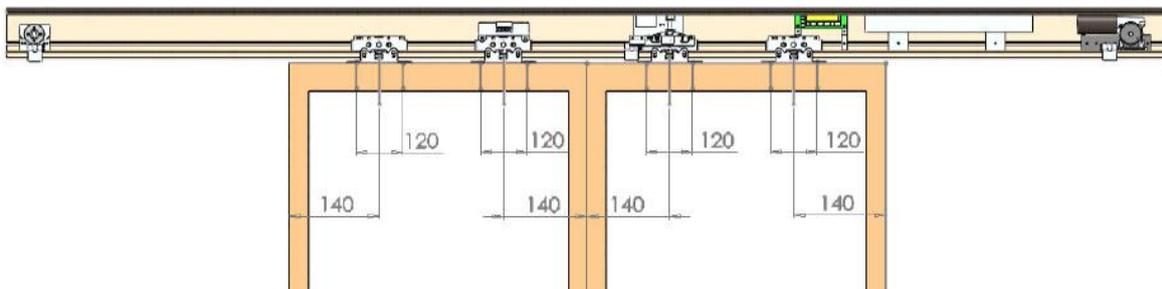
2-MECHANICAL INSTALLATION

2.1.1- GENERAL ASSEMBLY DRAWING

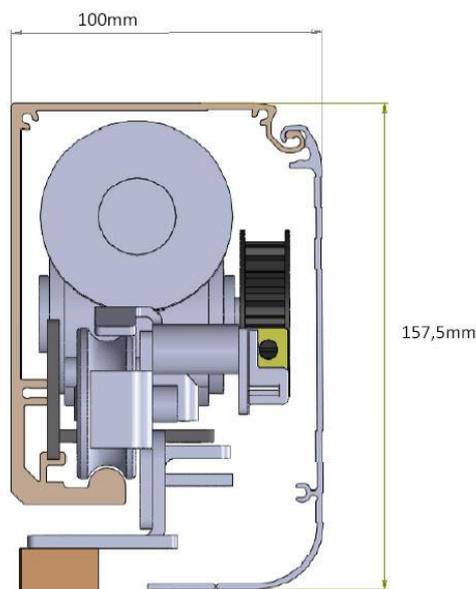
GENERAL ASSEMBLY DRAWING OF SINGLE DOOR



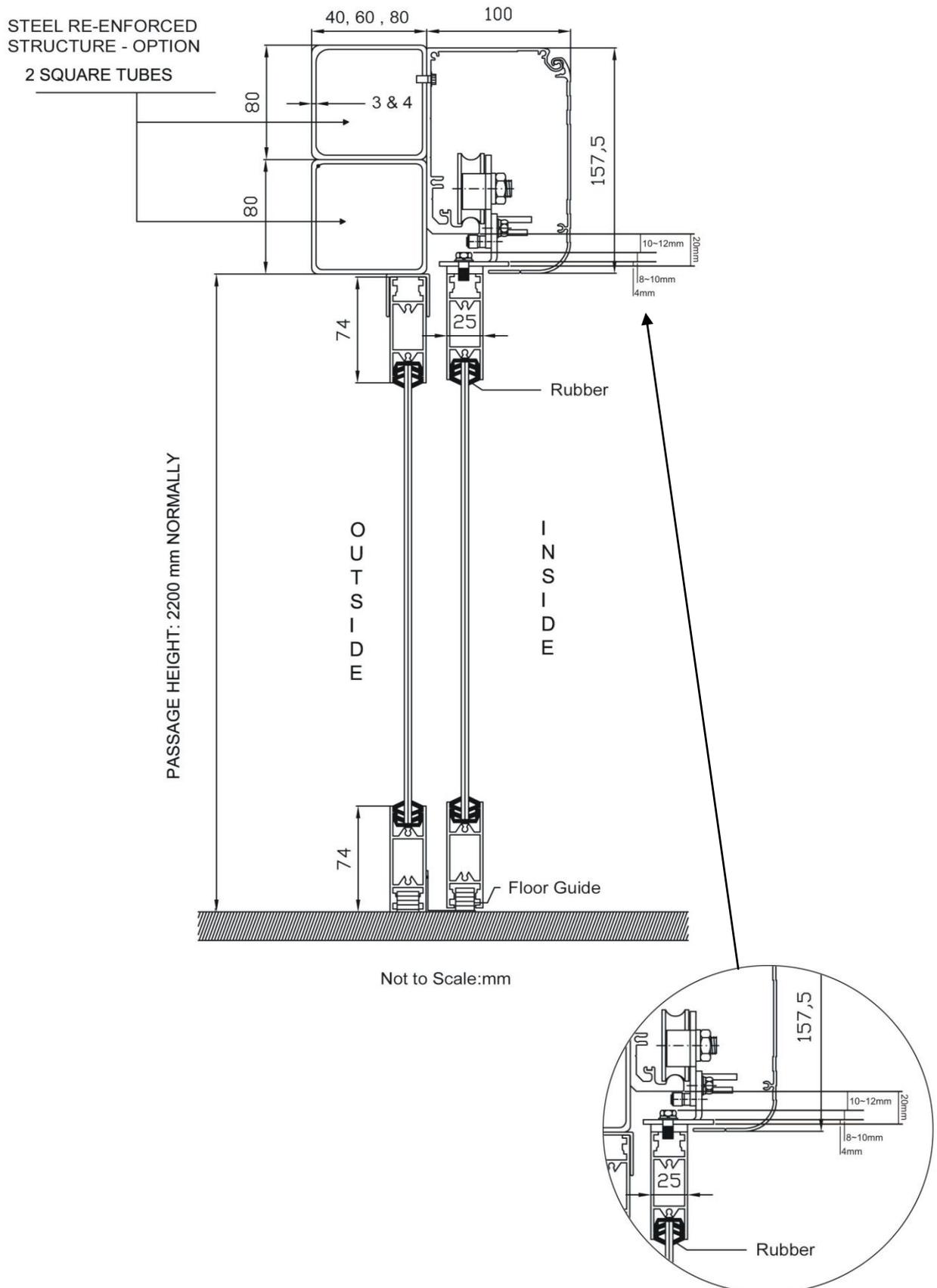
GENERAL ASSEMBLY DRAWING OF DOUBLE DOOR



2.1.2 - SECTION DRAWING

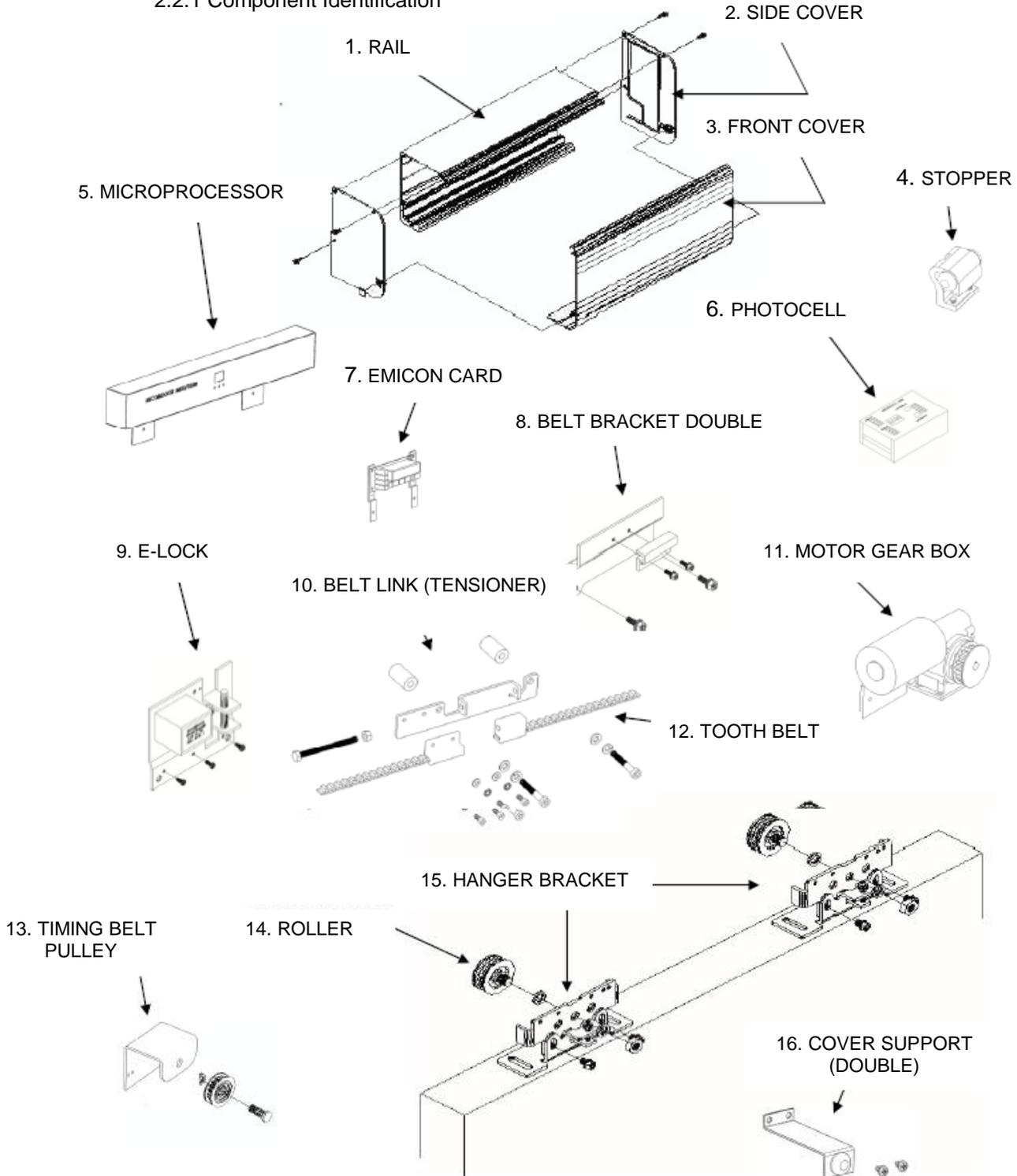


2.1.3 – RAIL & DOOR HEIGHT ADJUSTMENT



2.2.-COMPONENTS

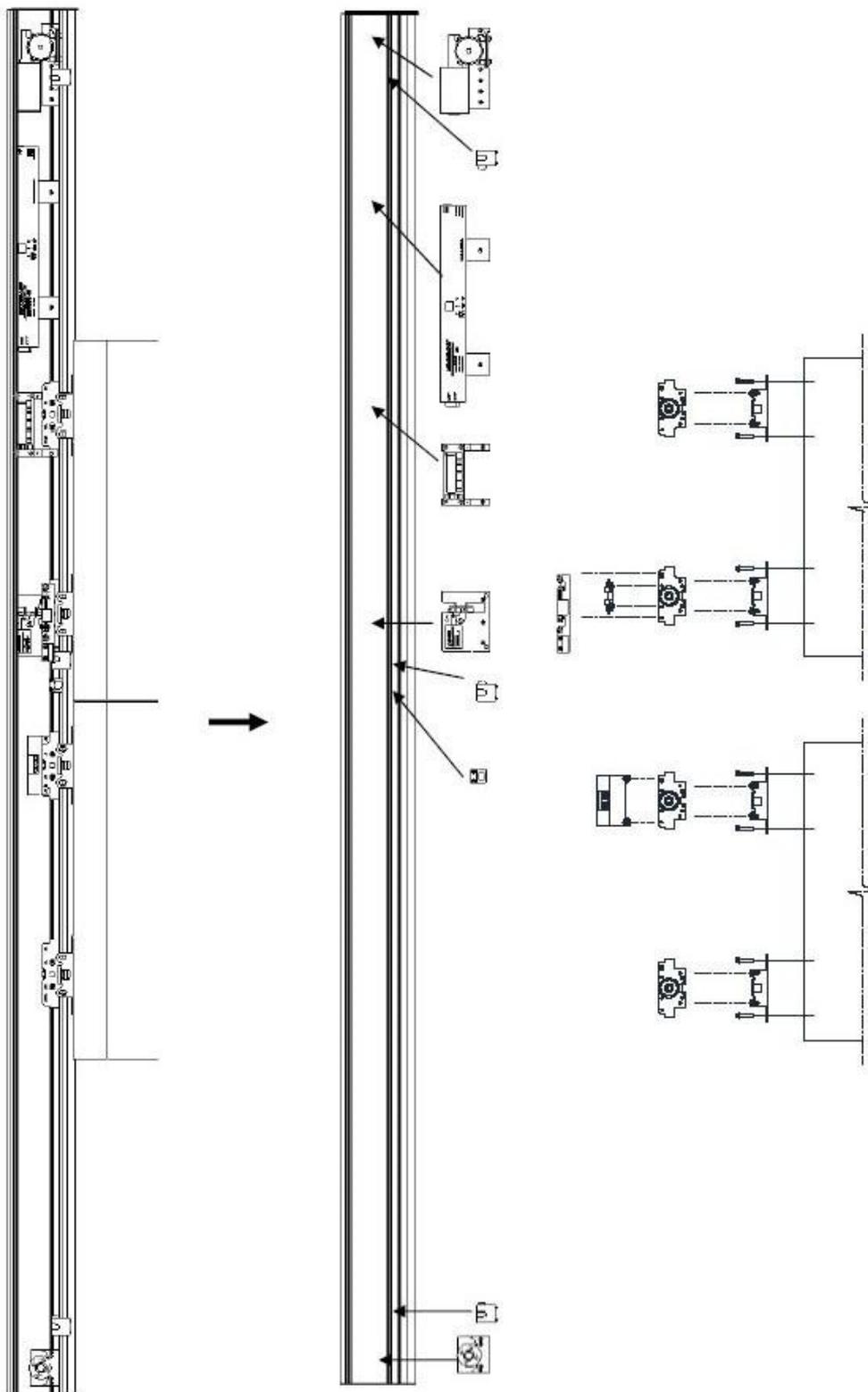
2.2.1 Component Identification



2.2.2.-Component List

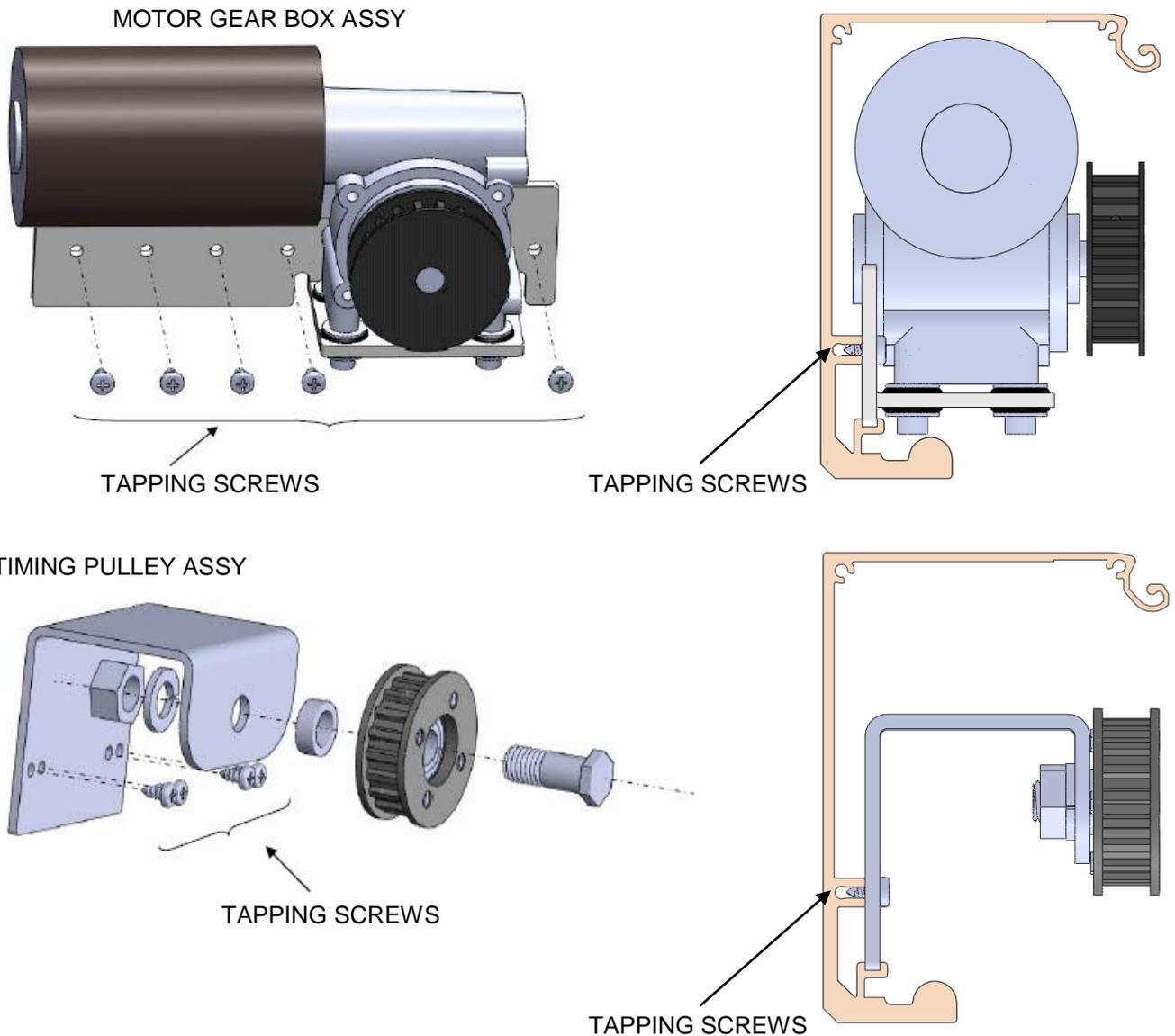
No.	COMPONENTS	DESCRIPTION
1	Rail	Extruded Aluminum
2	Side Cover	Plastic Mold
3.	Front Cover	Extruded aluminum with hinged opening at 60°
4.	Stopper	Fixed point of opening and closing
5	Microprocessor	Operation control and parameter setting
6	Photocell	Safety of pedestrian in the doorway
7	EMICON card.	To make the connection of all the peripherals (radars, safety, selector...)
8	Belt Bracket Double	Door to belt connection for double doors (Left leaf)
9	Electromagnetic Lock	Electromagnetic lock to lock the door leaf
10	Belt Link (Tension)	To link the belt and tighten
11	Motor Gear Box Assembly	Brushless DC Motor
12	Tooth Belt	8M9 Tooth belt for EDM18E. Width: 9mm 8M15 Tooth belt for EDM18E. Width: 15mm
13	Belt Timing Pulley	Idle pulley with bearing
14	Roller	Nylon wheel with internal ball bearing
15	Hanger Bracket	Nylon wheel with bearing Door height adjusting function
16	Cover Support (Double)	To support and reduce front cover vibration

2.3. – OPERATOR COMPONENT INSTALLATION



2.3.1-Motor Gear Box Assembly

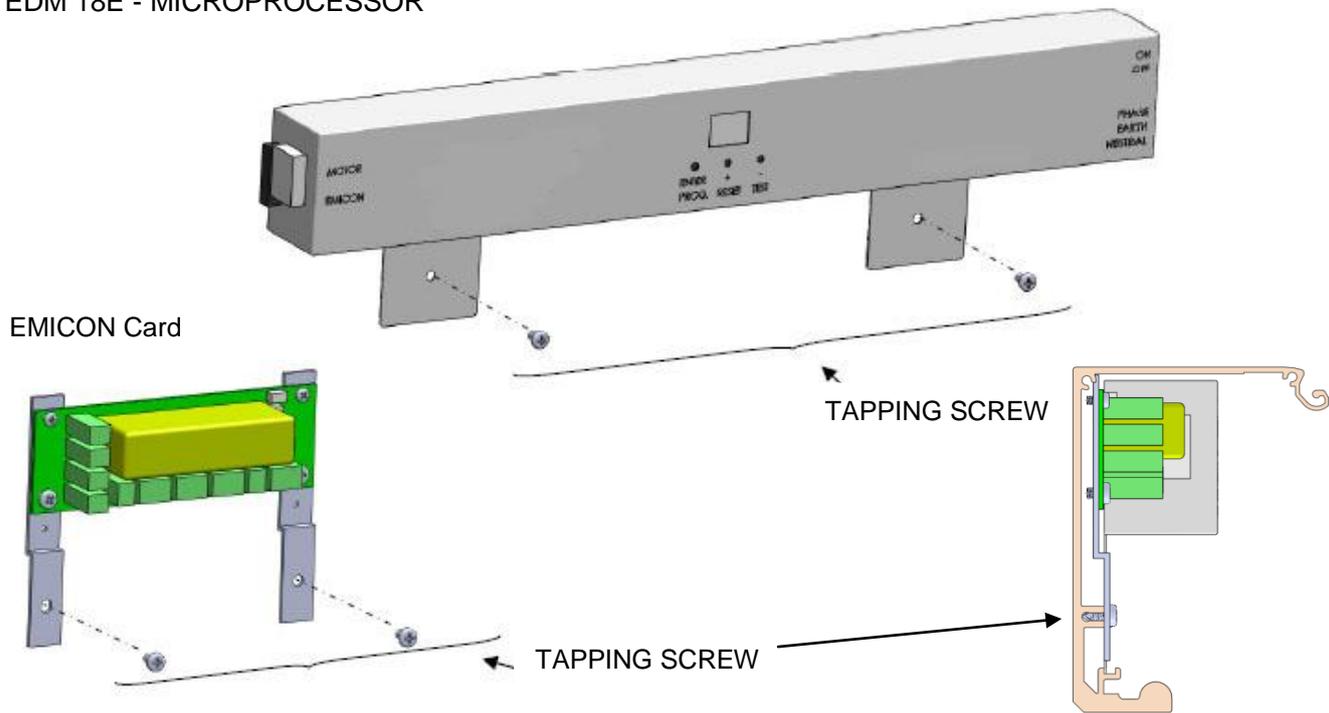
Install the motor gear box assy and belt pulley in the designated position on the rail as shown. Fasten tightly with tapping screws in the screw holder. (See the drawing section).



2.3.2.-Control Box (Microprocessor) and EMICON Connection Card

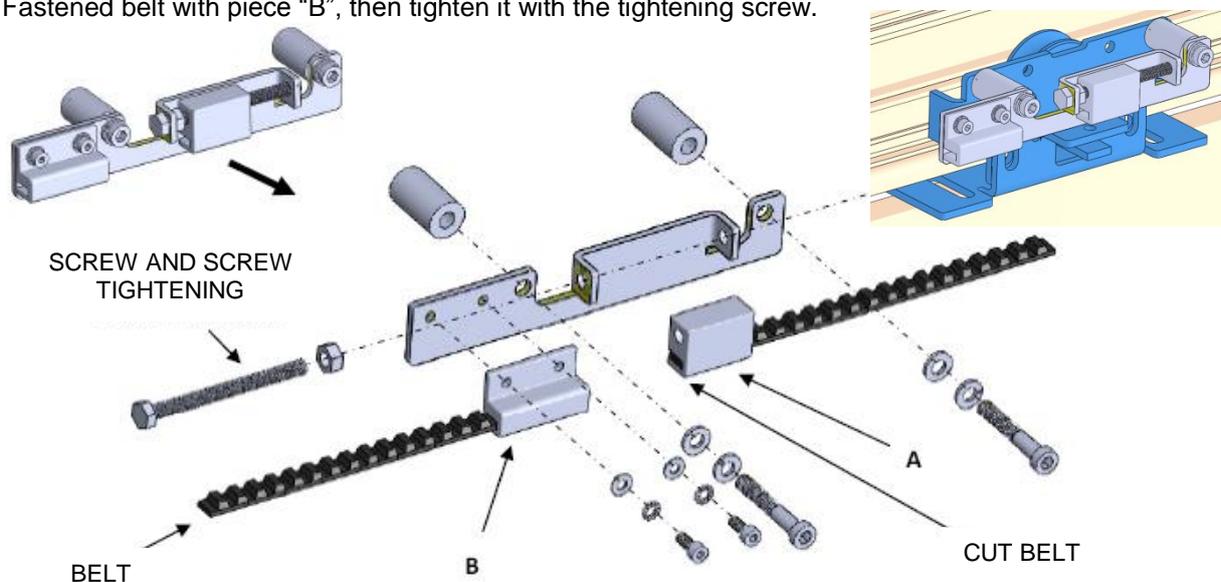
- (1) Install the control box and the EMICON card in the position on the rail as shown.
- (2) During installation, be careful not to damage the cables or elements of the control box.

EDM 18E - MICROPROCESSOR



2.3.3.-Belt Link (Tension)

To connect the belt link tensioner to the hanger bracket assy. Fasten the left part of the belt to the piece "A". Pass the belt around the motor pulley and the timing pulley, then tighten a little by hand. Fastened belt with piece "B", then tighten it with the tightening screw.

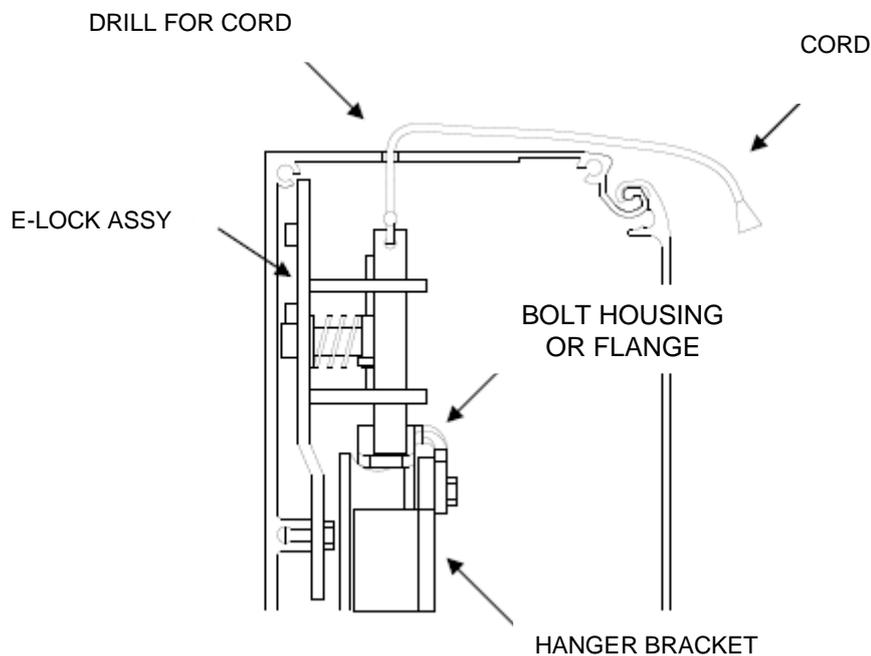
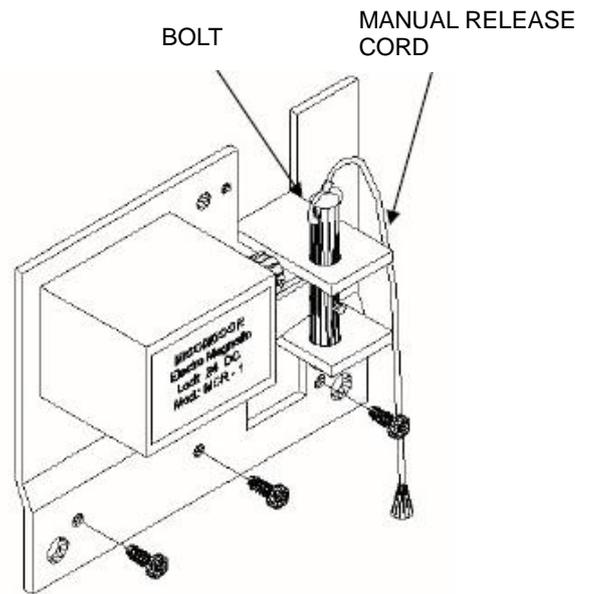


2.3.4.-Electromagnetic Lock

Once the doors are installed, the final position of the E-lock on the rail will be set.

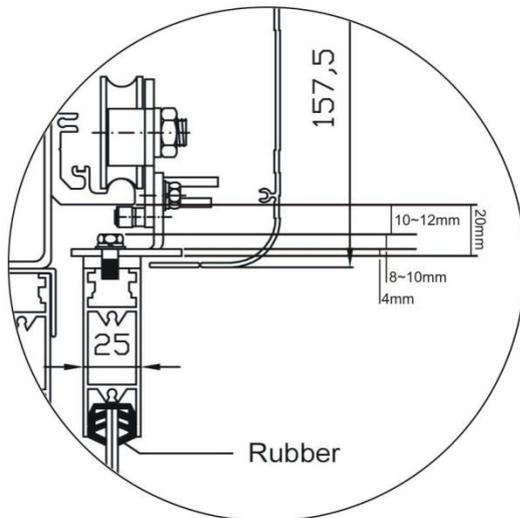
Once installed, drill a hole through the top of the rail just above the belt so that the manual release cord can pass up through the rail.

This cord allows manual operation of the bolt in case of emergency. The bolt will rise to releases the door leafs.



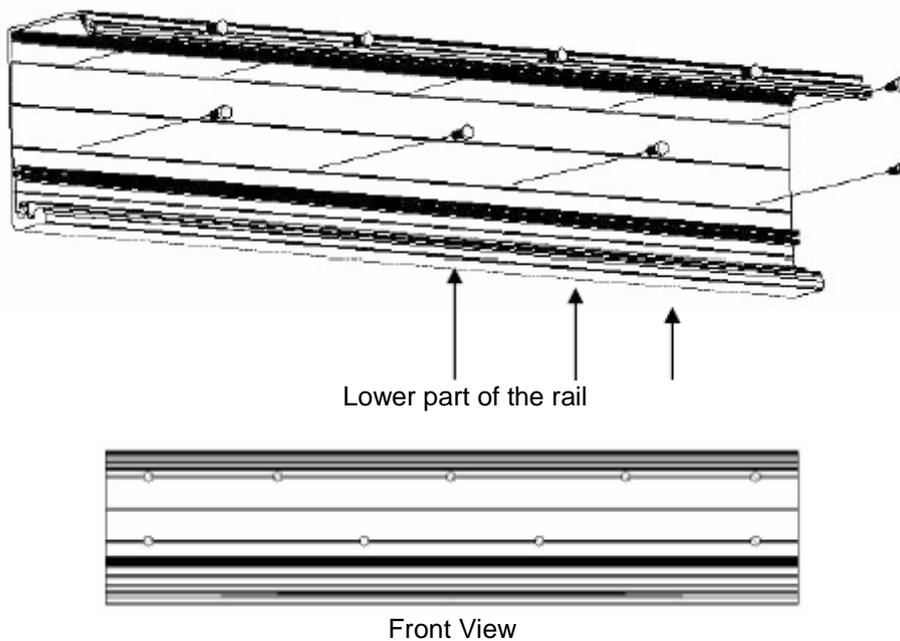
2.4- RAIL INSTALLATION

To calculate the height for installing the rail, we should sum up the door height and add 2.8cm to it. The result of this addition will tell us where to locate the lower part of the rail.

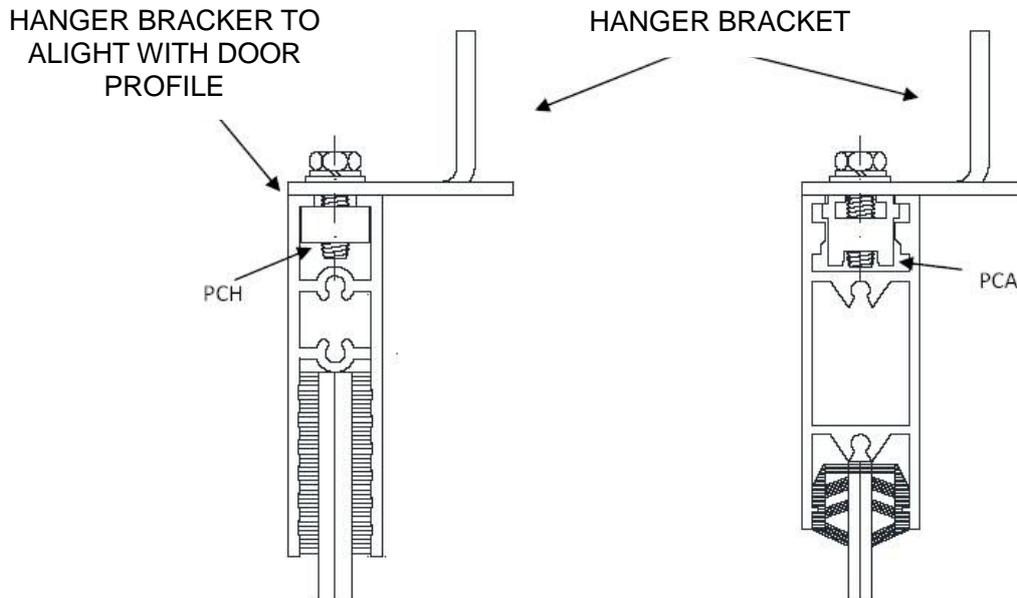


We recommend removing the belt and hanger brackets. Drill holes for tapping screws through the rail in alternative positions with the help of the guides. With two more holes at each end as shown in the drawing below.

Note: Clean the rail properly before continuing with the installation.



2.5- DOOR PROFILE INSTALLATION



DOOR PROFILE – FRAMELESS GLASS & FULL GLASS

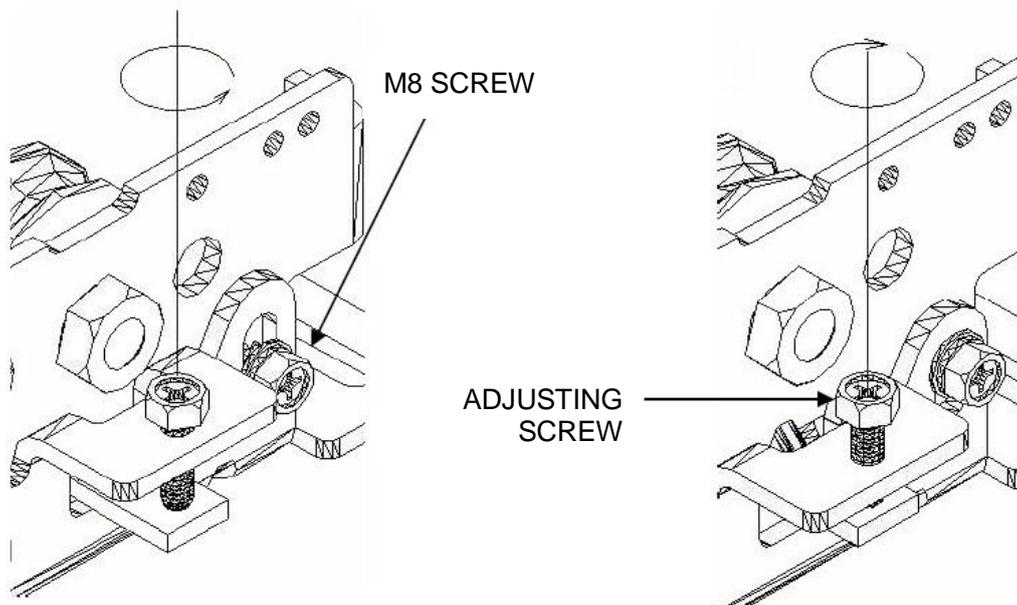
2.5.1 – Hanger Roller Bracket Installation

Release the hanger bracket from the hanger roller bracket assy.

Fasten the hanger bracket to door profile as above.

Re-connect and fasten the hanger bracket back to the hanger roller bracket assy again with two M8 screw and one adjusting screw as below.

Adjust the door height using the adjusting screw. Tighten the M8 screw.

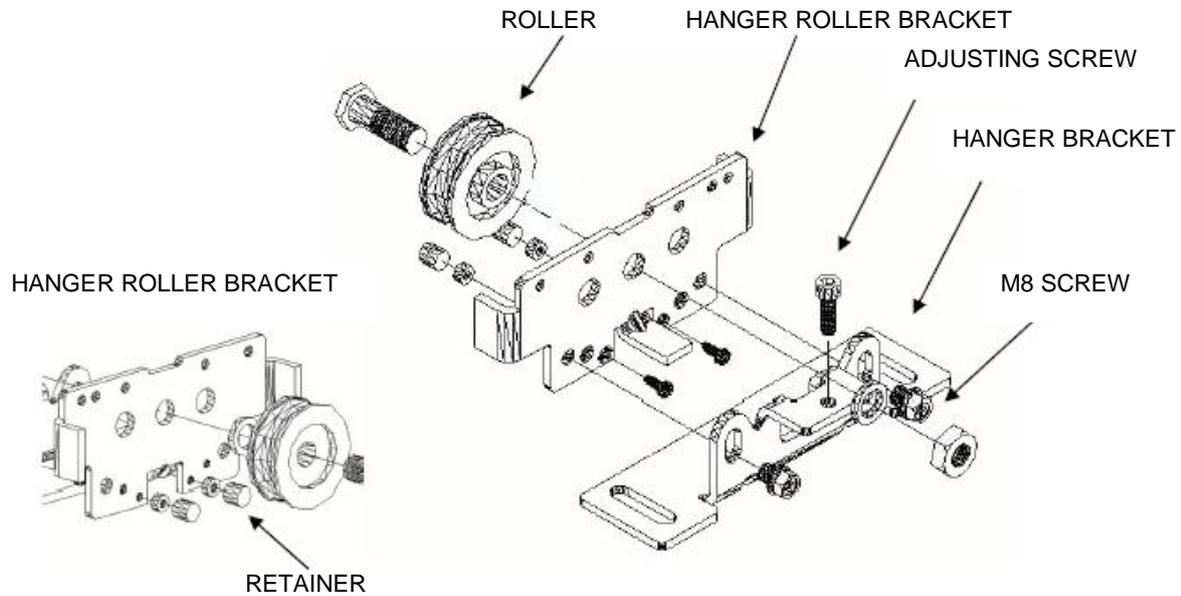


Starting Position: Raise the adjusting screw

Final position: Lower the adjusting screw to adjust the door.

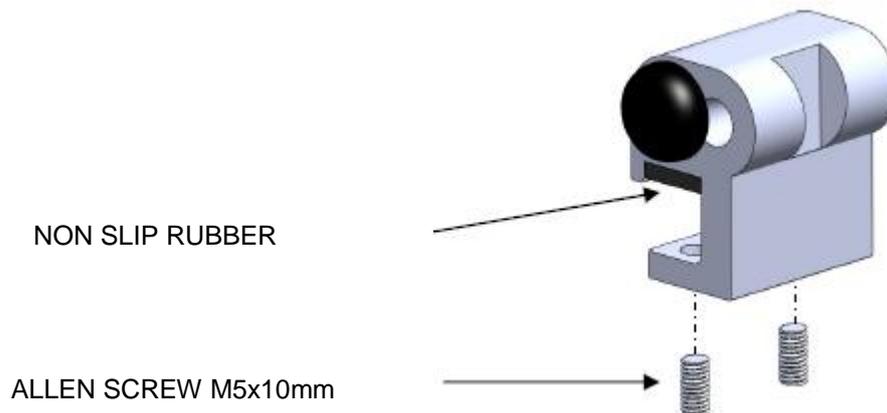
2.5.2 – Hanger Roller Bracket

Verify that the door leaf slides without rubbing on the ground or any other point of the frame or on the rail which is not a rolling surface.



2.6.- DOOR STOP INSTALLATION

Adjust the opening and closing stop position, fasten stopper to the rail with Allen screw M5.



3.- OPERATION

3.1. - COMMISSIONING. SELF-LEARNING

IMPORTANT NOTICE:

From the first plug-in of 3-pin power plug (power ON), an innovative process of self-adjusting of the system will start. This process will perform several automatic opening and closing cycles. These initial cycles help obtain information of the automatic door, such as: door weight, door stroke, inertial forces, etc...

With this information, the Control Unit will adjust the control parameters so that the door movement will be precise and efficient, making full use of the component attributes. If the door exceeds certain limits of weight and inertia, the Control Unit will limit the parameters of speed and acceleration in order to improve safety and the useful life of the system.

It is very important to let the door make these movements freely, without obstacles preventing it from moving normally. Therefore we recommend ensuring no-one approaches the door.

In this self-learning process, the automatic door performs the following actions automatically:

- 1). Before starting, ensure that the selector switch, the motor and the EMICON card are connected.
- 2). Using the 3-Pin Power Plug-in, connect at the right of the Control Unit (Power On). This will switch on the power. Then place the selector switch in any function mode other than closed / lock.

- 3). The door opens slowly until it finds the door stop.
- 4). The door closes slowly until it finds the door stop.
- 5). The door emits three audible beeps to inform that it will open.
- 6). The door makes 3 to 6 opening and closing movements at high speed (the greater the weight, the more times it will move.)
- 7). The door emits three audible beeps informing that the self-learning process has been finished.

This process will be performed during the first trial run of the automatic door or every time the "RESET" is set (see the section "5.2.5.-PROGRAMMING RESET").

Open Direction – Ensure open direction is set correctly.

Open Direction	Parameter 01
Right & Bi-Part Open:	Value 0 (default)
Left Open:	Value 1

Notice: If in the process of installation without Safety Beam accessories fitted. Please note Safety Beam Factory Setting Parameter 21 is Value 1=NC

Once the self learning process is complete without Safety Beam fitted, the operator will assume an open failsafe or redundant state. In order to operate the system during installation or maintenance without safety beams connected, it is necessary to switch this circuit from a NC to NO contact. Value 0=NO:

Presence / Security Safety Beam – Parameter 21 : Value 0=NO / 1=NC

Note: Once Safety Beam is fitted - Switch Parameter 21 back to Value 1=NC.

Once the self-learning process is over, the door will start operating normally.

If the self-learning process has not been performed correctly for any reason, it can be restarted again by setting the “RESET” in the Control Unit.

Every time important changes are made in the automatic door, such as: change of the stop positions, the change of door size or the change of the door weight; in these cases, the “RESET” mode must be set so that the Control Unit adapts to these changes.

After setting the “RESET” in the Control Unit, besides restarting the self-learning, the programming parameters are deleted returning to the values loaded by default. There are certain parameters that will not be deleted after one “RESET”, such as: door speed and hold open timer.

3.2.-NORMAL OPERATION

To ensure that the system is working correctly, we should verify that the indicator “POWER ON”, located in the Control Unit, is always on.



When the Control Unit receives an opening signal (for example, a motion sensor, an emergency button, or a presence sensor), the indicator “INPUT ON” of the display will be activated and the motor will start rotating to transmit movement to the doors, thus opening the door.



When no opening order is received, the engine will rotate in the opposite direction until the door is fully closed.

On receiving a stop commanding (through the emergency stop button), the door will stop and remain immobilized while the stop commanding maintains.

3.3.-POWER FAILURE

EDM 18E automatic door operator contains a battery system as standard. In case of a general power failure, the door will act in two possible ways:

1. If the selector switch is in the position of  Door Closed, the battery will feed the system until the door is fully closed. Then, it will be disabled to avoid discharging.
2. If the selector switch is in any position other than the position  Door Closed, the battery will feed the system until the door is fully open. Then the battery will be disabled to avoid discharging

Once the battery has been disabled, the automatic door will stop operating until the general power supply is re-established (or until the entrance Emergency Opening/Closing is active by Push-button P5-see section "4.2.-EMICON CARD"). In this case, if the entrance Emergency Opening/Closing is activated, the battery system will be activated, and the motor will open/close the automatic door.

3.4.-ERRORS

It may happen that the system has suffered from a certain problem and may stop operating correctly, for example, in case of power supply failure or when the automatic door hits an obstruction.

In these cases, the automatic door will emit an audible and visual notice to indicate the error type (for more information, see the section "6.-PROBLEM SOLUTION. ERROR TABLE")

4.-ELECTRICAL CONNECTION

4.1.-CONTROL UNIT

4.1.1.-INTRODUCTION

The Control Unit has three connections:

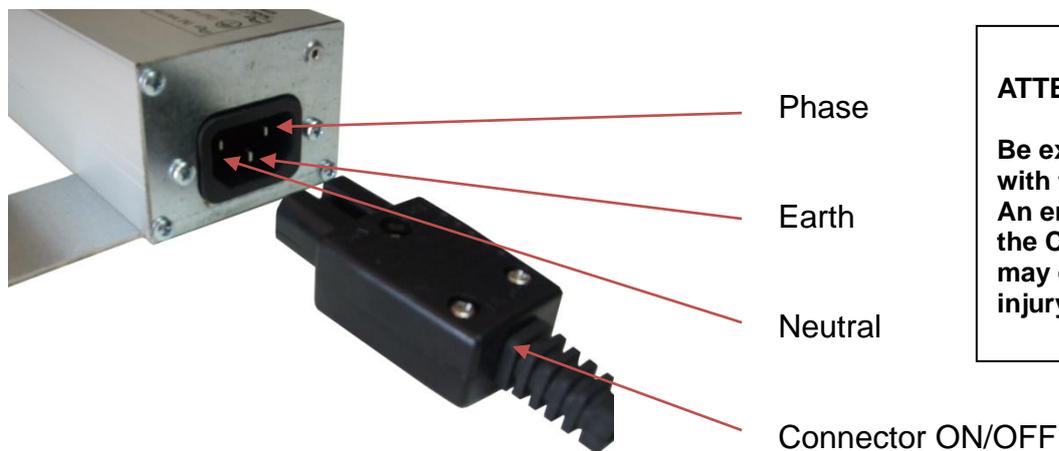
- Connection to Main Power Supply
- Connection to Motor
- Connection to EMICON card

4.1.2. Connection to Mains Power Supply

The Control Unit accepts a multi-voltage and can work on a wide range of voltages (from 100Vac, to 230Vac). It is also compatible with frequencies of 50/60Hz.

Power Input connection is made by a 3-way connector located to the right of the Control Unit (see the following image).

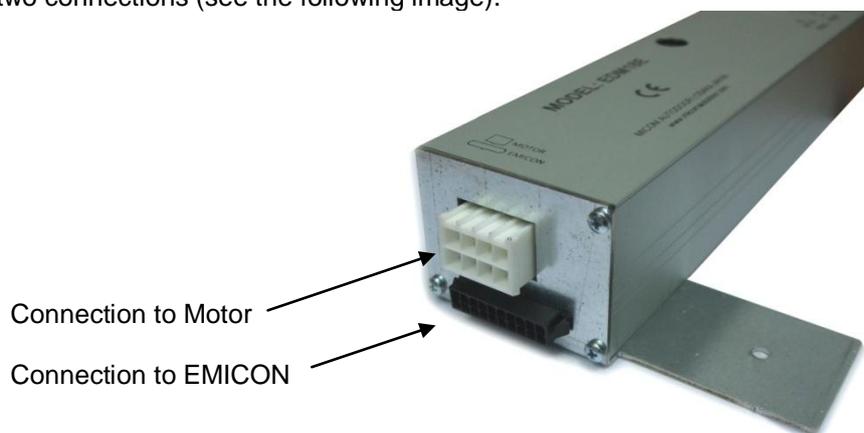
It is important to always connect the earth wire to avoid product malfunction and damage or other possible dangerous situations. To switch on the power, simply plug in with power on at source.



ATTENTION!! 
Be extremely careful with this connection. An error can damage the Control Unit and may cause serious injury or death.

4.1.3.-Connection to the Motor and EMICON card

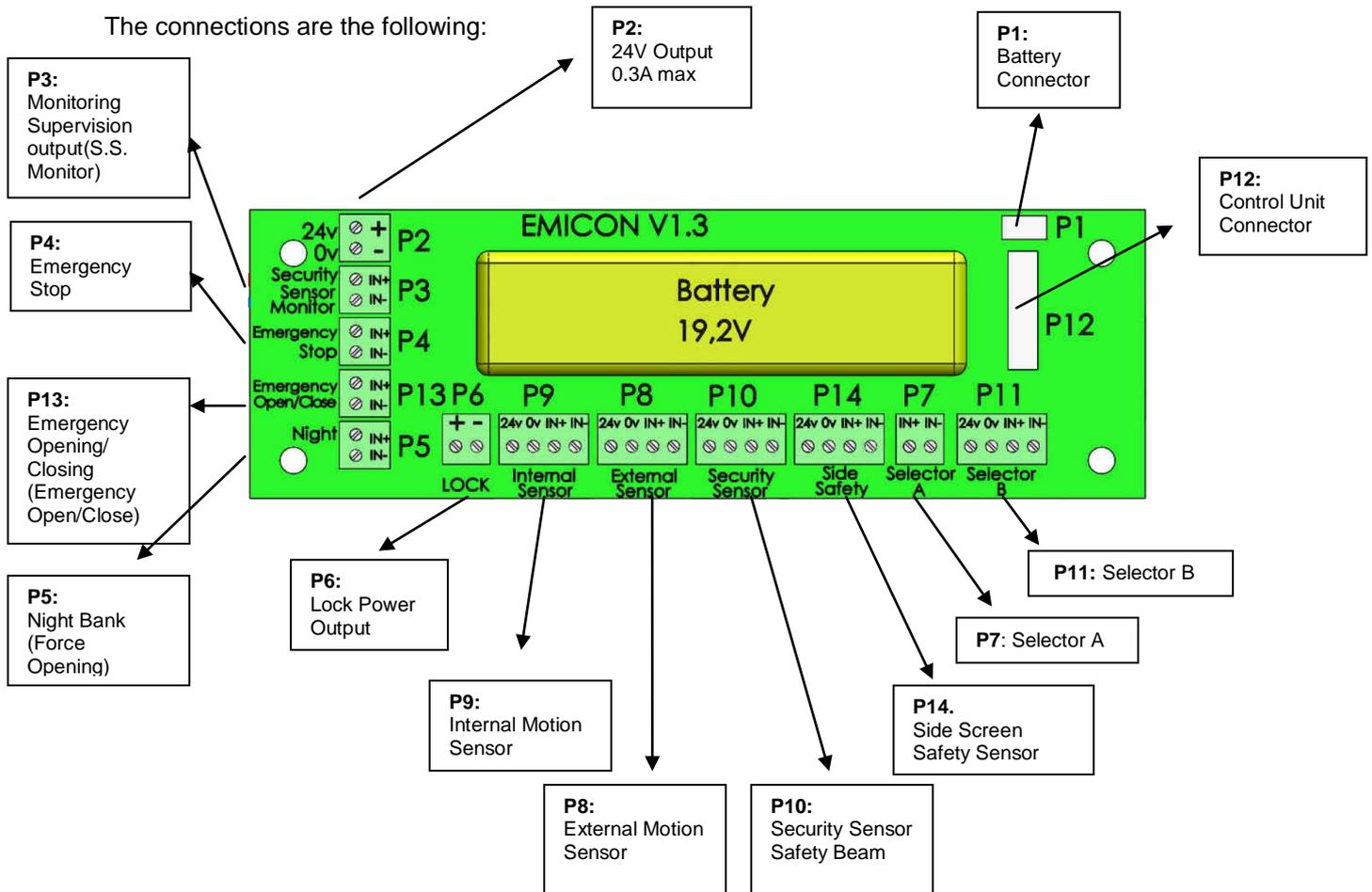
The connection to the Motor and the EMICON card is made from the left of the Control Unit, through two connections (see the following image).



4.2.-EMICON Unit

The EMICON card has the function of interconnecting the Control Unit with the different peripheral components: emergency battery, sensors, emergency button, control system and switching selector...etc.

The connections are the following:



Connector P1. Connection to Emergency Battery

A 19.2V NiMH battery must be connected on connector P1.

Connector P2. 24V Output

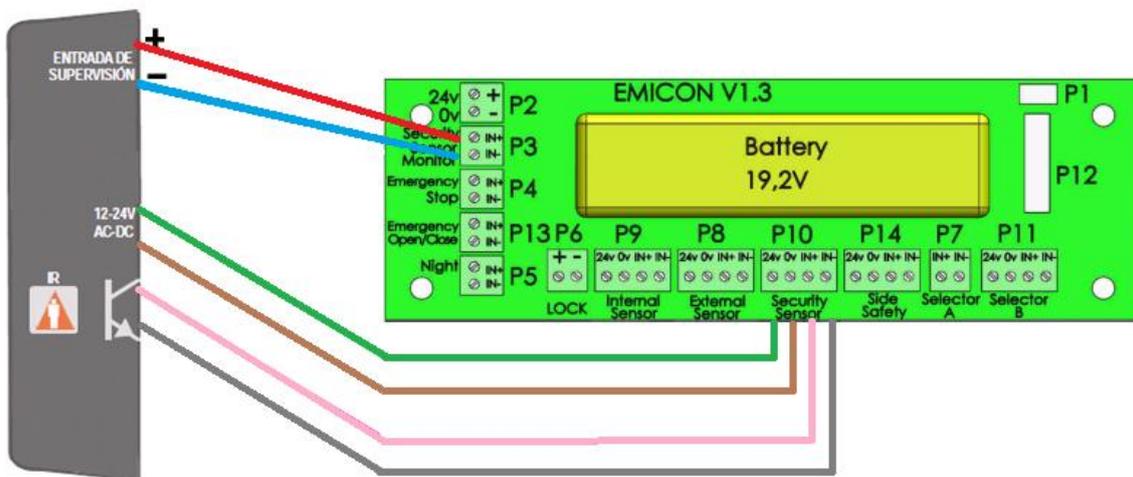
Connector P2 is 24V power supply. This power supply may be used to supply power to any additional component that might be necessary to connect to the automatic door. For example, wireless remote control cards, password access control systems, etc.

Check the consumption of the component before you connect it. The maximum current is 300mA.

Connector P3. Supervision Output (Security Sensor Monitor) - Monitoring Supervision output (S.S. Monitor)

The connector P3 is a communication output, used by some presence sensors. With this communication, it is possible to check the correct operation of the sensor, which increases the safety level of an automatic door.

This connection is carried out between the Connector P3 and one sensor input, usually known as "MONITORING" or "monitoring input". The output of the connector P3 is a 24V output and you have to take in account of polarity, as shown on the following figure:



By default, the monitoring function of the Control Unit is not activated. In order to activate it, it is necessary to program the parameter 18, or parameter 35, of the Control Unit (see section "5.-CONTROL UNIT PROGRAMMING"). The parameter 18 activates the Monitoring of sensors connected to P10 (safety), and the parameter 35 activates the monitoring of sensors connected to P14 (side safety). To P3, it is possible to simultaneously connect a sensor of each type: safety and side safety.

Connector P4. Emergency Stop

The Connector P4 is an input used to connect an emergency stop device. By default, this input is programmed to operate with Normally Open contacts (NO), but it may be programmed to operate with Normally Closed contacts (NC) (see section "5 - 3. PROGRAMMING PARAMETERS" - Parameter No. 22").

The activation by this input will immediately stop the door.



Connector P13. Emergency Opening/Closing

This input is mainly connected to fire alarm or anti-panic systems and its function is to Open or Close the door in any situation, except when the operation selector is in the CLOSED position.

By default, this input is programmed to operate with Normally Open (NO) contacts and so that the door can open. But it can be programmed to operate with Normally Closed (NC) contacts, so that the door can close (See section "5.3.-PROGRAMMING PARAMETERS"-Parameter No. 32).

Connector P5. NIGHT BANK (Forced opening)

Its function is to Open the door in any situation, including when there is a power cut (to that end, a battery must be connected to connector P1).

If there is a failure in the general power supply, an emergency battery would be used to open/close the door.

It is necessary to bear in mind that this input has priority over the operation selector.

This input only works with Normally Open (NO) contacts.

Connector P6. Electromagnetic Lock (Power Supply)

The connector P7 is a 24V output used to supply power to locking systems (Electromagnetic Lock MRC-1 (LK1) & MRC-2 (LK2)).

 **WARNING!** Do not exceed the maximum consumption. Otherwise, the control unit will be damaged. It is necessary to take in account that the maximum consumption of the locking system is 7W (300mA).

This input has 4 operation modes:

Mode MCR-1 (LK1) (Standard – Fail Secure)

If the Selector is in the key position , it locks without power.

If the Selector is in any position other than the key position , it unlocks with power.

Mode MCR-2 (LK2) (Fail Safe)

If the Selector is in the key position , it locks with power.

If the Selector is in any position other than the key position , it unlocks without power.

Mode MCR-1A (LK1) (Fail Secure)

If the Selector is in the key position , it locks without power.

If the Selector is in any position other than the key position , it locks without power when close, and unlocks when opening. (Always Locking)

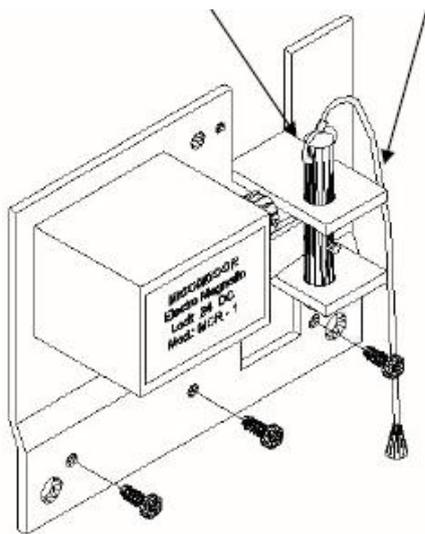
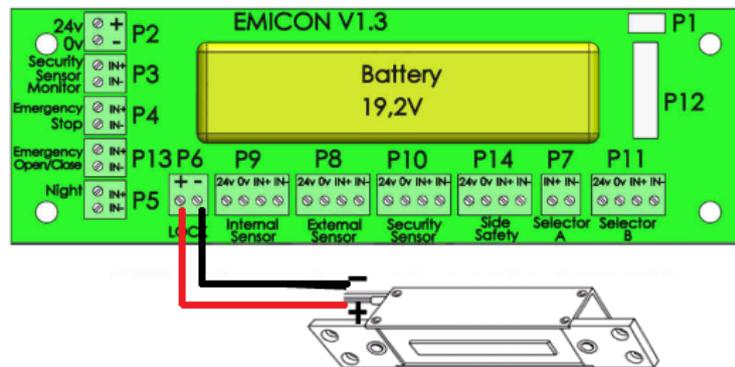
Mode MCR-2A (LK2) (Fail Safe)

If the Selector is in the key position , it locks with power.

If the Selector is in any position other than the key position , it locks with power when closing, and unlocks when opening. (Always Locking)

These functions can be programmed on the Control Unit (see section “5 - 3. PROGRAMMING PARAMETERS” - Parameter No. 15).

NOTE: If the E-lock used has polarity, the connection must be carried out as follows:



Note: If a lock without polarity is used such as MCR-1 and MCR-2 E-Lock of MICOM Autodoor (as shown), the position of connections has no relevance.

MICOM Electromagnetic Lock Model Function

Model: MRC-1 (LK1) Fail Secure – In case of power failure, door is LOCKED

Model: MRC-2 (LK2) Fail Safe – In case of power failure, door is UN-LOCKED

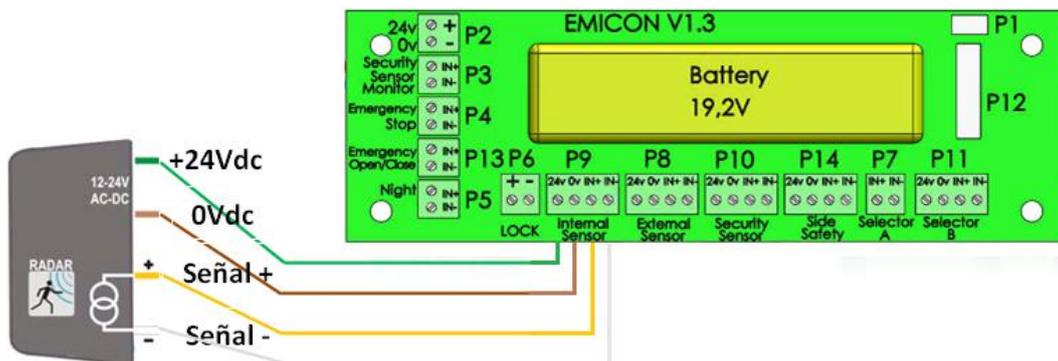
Connector P9. Internal Motion Sensor

Connector P9 is used for connection a motion sensor. The connector has 4 leads:

- Two leads are used to provide power to the sensor. The power supply output is a DC 24V output.
- Two leads are for signal input of the sensor to the control, which may be without polarity or with polarity.

By default, the signal input is programmed to operate as a Normally Open contact. It may be also programmed to operate as a Normally Closed contact (see section "5 - 3. PROGRAMMING PARAMETERS" - Parameter No. 19).

Notice: It maybe the case some Sensors only have 1 activation signal wire. This should be connected to Input +, with a wire bridge made between Input +/-.



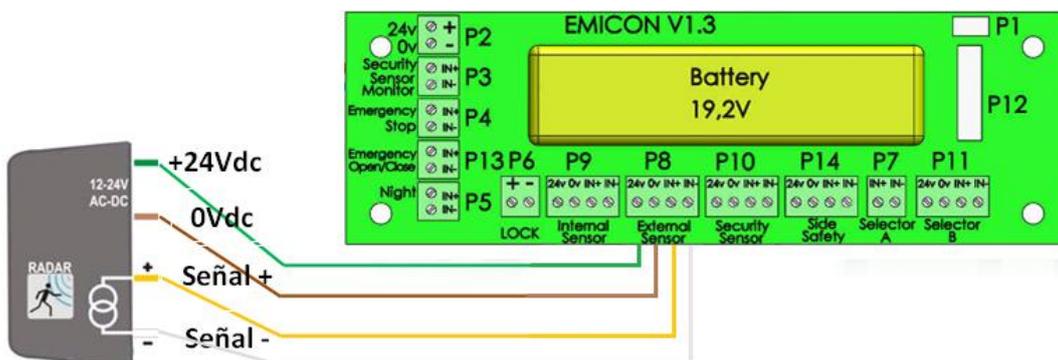
Connector P8. External Motion Sensor

The connector P8 is used for connection a motion sensor. The connector has 4 leads:

- Two leads are used to provide power to the sensor. The power supply output is a DC 24V output.
- Two leads are for signal input of the sensor to the control, which may be without polarity or with polarity.

By default, the signal input is programmed to operate as a Normally Open contact, although it may be programmed to operate as a Normally Closed contact as well (see section "5 - 3. PROGRAMMING PARAMETERS" - Parameter No. 20").

Notice: It maybe the case some Sensors only have 1 activation signal wire. This should be connected to Input +, with a wire bridge made between Input +/-.



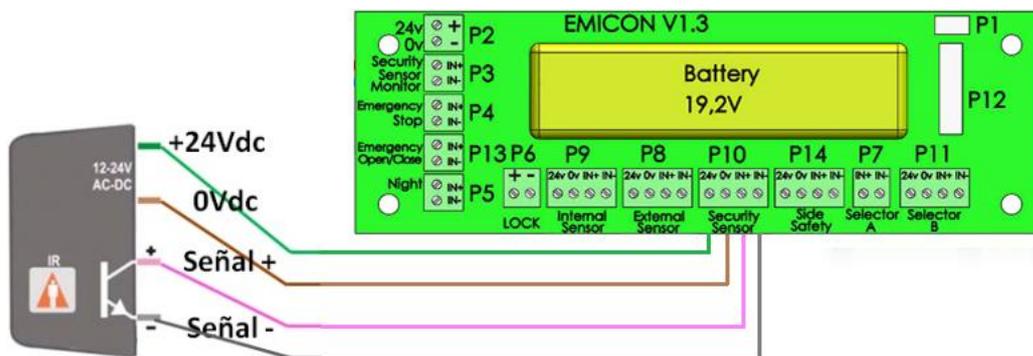
Connector P10: Security (Safety Beam) Sensor

The connector P8 is used for connection a security sensor (or presence sensor).

The connector has 4 leads:

- Two leads are used to provide power to the sensor. The power supply output is a DC 24V output.
- Two leads are for signal input of the sensor to the control, which may be without polarity or with polarity.

By default, the signal input is programmed to operate as a Normally Closed contact, although it may be programmed to operate as a Normally Open contact as well (see section "5 - 3. PROGRAMMING PARAMETERS" - Parameter No. 21").



Connector P14: Side Screen Safety Sensor

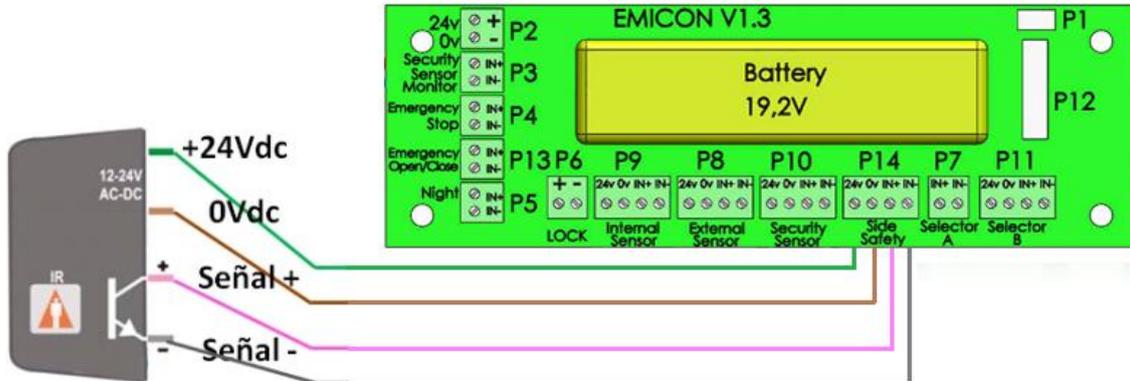
Connector P14 is used to connect a side safety sensor. This sensor prevents eventual dangers at the sides of the automatic door.

Side screen safety input is provided to protect pedestrian who are at risk from a moving leaf whilst behind the door when opening.

Side screen safety input when active will work in the following way

- When door is opening, if side screen safety is activated – door will move at preset slow speed.
- If the pedestrian should leave the side screen safety area, the door will return to preset set opening speed.
- When door is closed, if side screen safety is activated – door will not open.
- Once pedestrian leaves the side screen safety area, the door will open when activated.

By default, the signal input comes programmed to act as the Normally Open contact, although it can also be configured as the Normally Closed contact (for more information, see the section “5.3.- PROGRAMMING PARAMETERS” - Parameter N°33”).



Connector P7: Selector Switch A (Manual)

The Selector Switch A is connected to connector P12, which allows us to change the operation mode of the automatic door.

The connection is made via any 2-wire cable and the order of connection has no relevance (without polarity).

Only MICOM Manual Selector can be connected to the EMICON card.

It is only possible to connect one type of selector to the EMICON card at any one time, i.e., you must connect either Selector A (Manual) or Selector B (Digital), but never both together.



Selector A

Connector P11: Selector Switch B (Digital)

Selector Switch B is connected to Connector P13, which allows us to change the operating mode of the automatic door and to keep it in the memory.

The connection is made via of any 4-wire cable and the connection must be carefully carried out, take notice that these connections have polarity.

Installation: Selector B has 4p connector plug-in which corresponds to EMICON P.13. Using standard 4 core cable (not supplied), ensure wiring is correct. P1 to P1 / P2 to P2 / P3 to P3 / P4 to P4.

The voltage used is 5V.

Several Selectors B (Digital) may be connected to an EMICON card.

It is only possible to connect one type of selector to the EMICON card, i.e., you may either connect Selector A (Manual) or Selector B (Digital), but never both together.



Selector B

Only in the event that it is necessary to connect more than one Selector B (Digital), the following instructions must be followed:

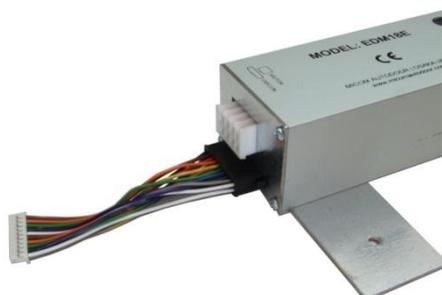
- 1.-To have access to its electronic board, it is necessary to remove 4 internal screws.
- 2.- Then, we must proceed to remove a "Bridge" called P5.
- 3.- It is necessary to carry out this procedure in all the selectors connected to the operator, except for one of them (the furthest away selector from the operator). If, for example, we have an operator with 3 selectors connected, we must remove the "bridge" from the two closest selectors to the operator; the third selector, the furthest away, is not modified.

Only one type of selector can be connected in the EMICON card, that is to say, either the Selector A (Manual) or the Selector B (Digital) should be connected, but these two should never be connected at a time.

 **WARNING! Pay special attention when connecting the Selector B (Digital), if it is connected to the wrong connector (for example, to the connector used for motion and security sensors), irreversible damage can occur to the Selector as well as the Control Unit.**

Connector P12: Connection to the Control Unit

The connector P12 is used to link the EMICON board to Control Unit.



4.3.- SWITCHING SELECTOR

The selector switch allows us to select the function mode of the door, that is to say: exit, enter and exit, always keep it open, and keep it closed.

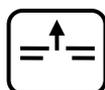
Operation selector models available are as follows:

- **Selector A (Manual).** This selector switch allows us to choose between the functions described above, only with rotating its manual actuator.

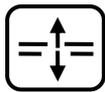
According to the function chosen by the manual actuator, we can find the following function modes:



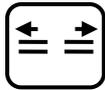
Mode "Closing". This mode allows us to close the door (blocked if it has an electromagnetic lock). In this mode, the emergency opening system will be disconnected (battery).



Mode "only exit". In this mode, it allows us only to exit. The device of emergency opening (battery) is connected.



Mode “automatic”. In this mode, it allows us to enter and exit. The device of emergency opening (battery) is connected.



Mode “door open”. In this mode, it allows us to keep the door open. The device of emergency opening (battery) is connected.

- **Selector B (Digital).** This selector switch has 6 buttons, the operation of which allows us to choose among several operation modes. It also has 6 LED light showing the current operation mode selected.

Operation modes available are as follows:



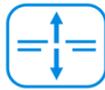
Mode “Closing”. This mode allows us to close the door (blocked if it has an electromagnetic lock). In this mode, the emergency opening system will be disconnected (battery).



Mode “only exit”. This mode only allows us to exit. The device of emergency opening (battery) is connected.



Mode “only entrance”. This mode only allows us to enter. The device of emergency opening (battery) is connected.



Mode “automatic”. This mode allows us to enter and exit. The device of emergency opening (battery) is connected.



Mode “door open”. This mode allows us to keep the door open. The device of emergency opening (battery) is connected.



Mode “partial opening”. This mode allows us to partially open the door. The device of emergency opening (battery) is connected. Depending on the operation mode of the selector, before activating the “partial opening” mode, we can obtain the following modes:



→



Mode “only partial exit”. This is equal to the “only exit” mode, but, in this case, the door opens partially.



→



Mode “only partial entrance”. This is equal to the “only entrance” mode, but, in this case, the door opens partially.



→



Mode “partial automatic”. This is equal to the “automatic” mode, but, in this case, the door opens partially.



→



Mode “partial permanent opening”. This mode is equal to the “permanent partial” mode, but, in this case, the door opens partially.

For example, if we want to activate the “only partial entrance” mode, we must follow these steps:

1st.- Press button

2nd.- Wait until the corresponding light signal is on.

3rd.- Press button

Selector B 'Memory' - Another function of the selector B (Digital) is to choose memory or not. Namely to choose if the selector will retain the last setting after a power cut or not.

-Mode "WITHOUT MEMORY". In this programming mode, the position of the selector is NOT registered in the memory when a power cut takes place, and when the power supply is restored, the automatic door will always start in the operation mode "closing"

In order to activate the mode WITHOUT MEMORY, press and hold the button for 5 seconds



-Mode "WITH MEMORY". In this programming mode, the position of the selector is registered in the memory when a power cut takes place, and when the power supply is restored, it will have the same position as it had before the supply cut.

In order to activate the mode WITH MEMORY, press and hold the button for 5 seconds. This programming mode is factory pre-selected.



4.4.- PROBLEMS CAUSED BY INTERFERENCES



In certain installations of automatic doors, some installers may sometimes place operation selector cables and power supply cables (230Vac) within the same tube. This must never be done as it may cause, in the short or long term, the microprocessor to work incorrectly or to break down irreversibly.

It is advised to avoid placing cables within the same tube. Those belonging to the automatic door must be shielded and properly grounded at both ends.

Likewise, installation technicians must not combine these cables within the rail / housing.

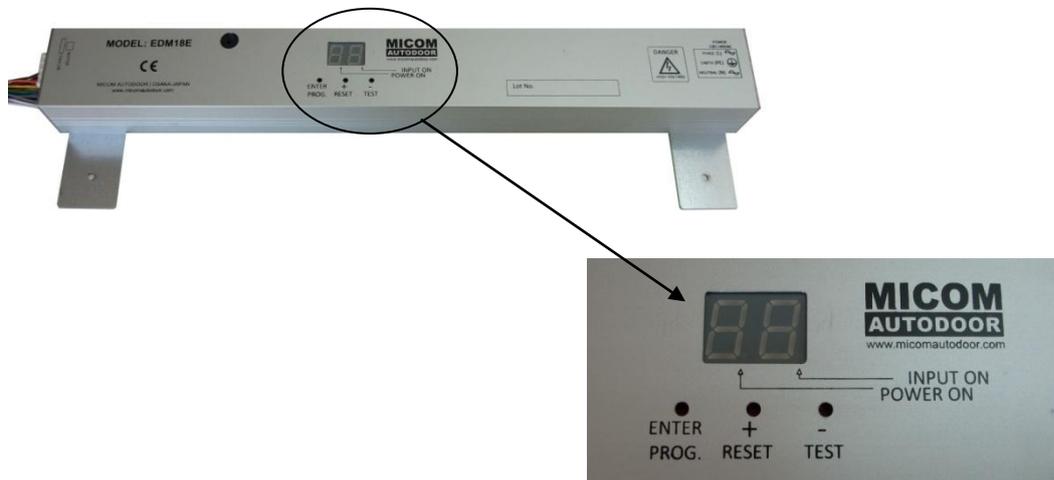
It is always necessary to try to separate signal cables (photocell, selector, radars, engine, etc.) from voltage cables (230V or 110V).

5. CONTROL UNIT PROGRAMMING

5.1. INTRODUCTION

The Control Unit has an area aimed at programming various parameters of the automatic door, such as speed, opening time, brake stroke, etc.

The programming is carried out by means of a display and 3 push buttons, as shown.



Push buttons are located inside the Control Unit. In order to operate them, it is recommended to use a fine tip screwdriver.

5.2. SETUP MENU

5.2.1. ENTER SETUP MENU

In order to enter the set-up menu, first we must move the selector position to night mode or key.

We then must press and hold down the push button “ENTER PROG.” for 5 seconds, approximately.

While we hold down “ENTER PROG.”, the Control Unit will beep, and the display will show the letter “P”, once a second.

Following these 5 seconds, a message “00” will be shown on the display, which indicates that we have already entered at the set-up menu. Release the push button “ENTER PROG.”.

This operation can only be carried out when the automatic door is in the stopped position (open or closed)

5.2.2. MODIFYING PARAMETERS

When you have entered the set-up menu, modify the programming parameters as follows:

- Initially, the display shows two digits, ranging from “00” to “40”, which represent the parameter that we want to modify (see section “5 - 3. Programming Parameters”). Press, “ENTER”, the parameter value will be shown, represented by a sign “=”, followed by the number representing the value, for example “=0”.

Pressing “ENTER”, will alternate from the parameter ‘selection’ and parameter ‘value’ changing mode.

- By using the push buttons “+” and “-”; we can change the parameter selection or increase or decrease the parameters value.

5.2.3. SETUP EXIT MEMORISE CHANGES

In order to exit the set-up menu and memorise the changes carried out, it is necessary to do the following:

- Access the parameter "00"
- Press "ENTER"
- Press "+"

5.2.4. PROGRAMMING EXAMPLE

Suppose that you need to change the functionality of emergency stop and you need it to operate as a normally closed contact. It is necessary to follow the steps shown below:

- If the door is in operation, we must wait until it is completely open or closed. In order to prevent any eventual accidents while programming, it is recommended to place the selector in the "closed door" or "open door" position.
- Press and hold down "ENTER" for 5 seconds, until the display shows the message "00".
- Press "+" 22 times, i.e., until the number "22" is shown on the display (if we look at the list of section "5 - 3. Programming Parameters", we will see that the number 22 represents the parameter of emergency stop).
- Press "ENTER". The display will show the value "=0" that indicates that the emergency stop is set-up in order to operate as a normally open contact.
- Press "+". The display will show the value "=1" that indicates that the emergency stop is set up in order to operate as a normally closed contact (NC).
- Press "ENTER". The display will show the value "22".
- Now, the emergency stop is already set up as a normally closed contact. Now, you can exit the set-up menu and keep the changes:
 - Press "-" 22 times, i.e., until the value "00" is shown on the display.
 - Press "ENTER".
 - Press "+".

5.2.5. PROGRAMMING RESET

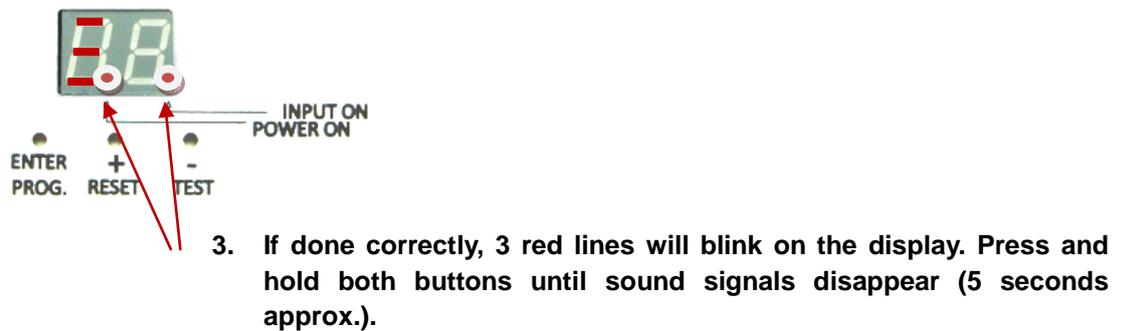
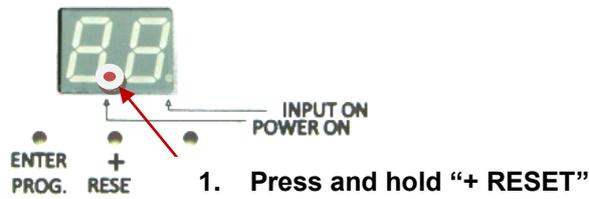
The Control Unit may be RESET in two ways:

First

- Remove power supply from the Control Unit (it is also recommended to remove the battery, by unplugging the connector P1).
- Press and hold the button "RESET" and reconnect the Control Unit to power supply.
- Wait for 5 seconds, until the Control Unit stops emitting sound signals.
- Release the button "RESET".

Second

- Press the button "+ RESET" and, then, "ENTER PROG.", and hold both buttons for 5 seconds.



Note: it is no longer required to switch OFF the power supply to the Control during resetting.

5.3. PROGRAMMING PARAMETERS

<u>Parameter</u>	<u>Description</u>	<u>Adjustable Value</u>	<u>Default Value</u>	<u>Notes</u>
00	Exit the set-up			Enter / +
01	Door Opening Direction	0 or 1	0	
	Value 0 = Double leaf, or one leaf, right opening Value 1 = One leaf, left opening			
02	Automatic Closing Timer	From 0 to 9	1	
	Value 0 = 0 seconds Value 1 = 1 second Value 2 = 2 seconds Value 3 = 3 seconds Value 4 = 4 seconds Value 5 = 5 seconds Value 6 = 10 seconds Value 7 = 20 seconds Value 8 = 30 seconds Value 9 = 60 seconds			
03	Opening Speed	From 0 to 9	6	
	Value 0 = 70 mm/s Value 1 = 150 mm/s Value 2 = 225 mm/s Value 3 = 300 mm/s Value 4 = 375 mm/s Value 5 = 450 mm/s Value 6 = 525 mm/s Value 7 = 600 mm/s Value 8 = 675 mm/s Value 9 = 750 mm/s			
04	Closing Speed	From 0 to 5	2	
	Value 0 = 70 mm/s Value 1 = 150 mm/s Value 2 = 225 mm/s Value 3 = 300 mm/s Value 4 = 375 mm/s Value 5 = 450 mm/s			
05	Opening Acceleration	From 0 to 9	Automatic	
	Value 0 = Minimum Acceleration Value 9 = Maximum Acceleration			
06	Closing Acceleration	From 0 to 9	Automatic	
	Value 0 = Minimum Acceleration Value 9 = Maximum Acceleration			
07	Braking when Opening	From 0 to 9	9	
	Value 0 = Soft Braking Value 9 = Strong Braking			
08	Braking when Closing	From 0 to 9	9	
	Value 0 = Soft Braking Value 9 = Strong Braking			
09	Maintained Force when open	From 0 to 4	2	
	Value 0 = 0 Kg Value 1 = 4 Kg Value 2 = 6 Kg Value 3 = 7 Kg Value 4 = 8 Kg			

5.3.	Continued			
<u>Parameter</u>	<u>Description</u>	<u>Adjustable Value</u>	<u>Default Value</u>	<u>Notes</u>
10	Maintained Force when close	From 0 to 4	2	
	Value 0 = 0 Kg Value 1 = 4 Kg Value 2 = 6 Kg Value 3 = 7 Kg Value 4 = 8 Kg			
11	Partial Opening (With Digital Selector B)	From 0 to 9	5	
	Value 0 = 5 % Value 1 = 10 % Value 2 = 20 % Value 3 = 30 % Value 4 = 40 % Value 5 = 50 % Value 6 = 60 % Value 7 = 70 % Value 8 = 80 % Value 9 = 90 %			
12	Acoustic signal	0 or 1	0	
	Value 0 = Activated Value 1 = Deactivated			
13	Opening Brake Point	From 0 to 9	2	
	Value 0 = 50 mm Value 1 = 60 mm Value 2 = 70 mm Value 3 = 80 mm Value 4 = 90 mm Value 5 = 100 mm Value 6 = 120 mm Value 7 = 140 mm Value 8 = 160 mm Value 9 = 180 mm			
14	Closing Brake Point	From 0 to 9	2	
	Value 0 = 50 mm Value 1 = 60 mm Value 2 = 70 mm Value 3 = 80 mm Value 4 = 90 mm Value 5 = 100 mm Value 6 = 120 mm Value 7 = 140 mm Value 8 = 160 mm Value 9 = 180 mm			

5.3	Continued			
Parameter	Description	Adjustable Value	Default Value	Notes
15	Electromagnetic Lock	From 0-3	0	
	<p>Value 0 = <u>Mode MCR-1 (LK1) Fail Secure (Standard)</u></p> <p>If the Selector is in the key position , it locks without power. If the Selector is in any position other than the key position , it unlocks with power.</p> <p>Value 1 = <u>Mode MCR-2 (LK2) Fail Safe</u></p> <p>If the Selector is in the key position , it locks with power. If the Selector is in any position other than the key position , it unlocks without power.</p> <p>Value 2 = <u>Mode MCR-1A (LK1) Fail Secure</u></p> <p>If the Selector is in the key position , it locks without power. If the Selector is in any position other than the key position , it locks without power when closing, and unlocks with power when opening (always locking).</p> <p>Value 3 = <u>Mode MCR-2A (LK2) Fail Safe</u></p> <p>If the Selector is in the key position , it locks with power. If the Selector is in any position other than the key position , it locks with power when closing and unlocks without power when opening (always locking).</p>			
16	Partial Opening	0 or 1	1	
	<p>Value 0 = Fixed Mode. Value 1 = Automatic Mode.</p>			
17	Acoustic Signal before Closing	0 or 1	0	
	<p>Value 0 = Deactivated Signal. Value 1 = Activated Signal.</p>			
18	Presence Sensor in MONITORING Mode	0 or 1	0	
	<p>Value 0 = MONITORING Mode deactivated Value 1 = MONITORING Mode activated</p>			
19	Internal Motion Sensor	0 or 2	0	
	<p>Value 0 = NO (Normally Open). Value 1 = NC (Normally Closed). Value 2 = Ratchet (Flip-Flop)</p>			
20	External Motion Sensor	0 or 1	0	
	<p>Value 0 = NO (Normally Open). Value 1 = NC (Normally Closed).</p>			
21	Presence / Security Safety Beam Sensor	0 or 1	1	
	<p>Value 0 = NO (Normally Open). Value 1 = NC (Normally Closed).</p>			

5.3	Continued			
<u>Parameter</u>	<u>Description</u>	<u>Adjustable Value</u>	<u>Default Value</u>	<u>Notes</u>
22	Emergency Stop	0 or 1	0	
	Value 0 = NO (Normally Open). Value 1 = NC (Normally Closed).			
23	Night Bank (Forced opening)	0	0	
	Value 0 = Emergency opening mode. NO			No Adjustment
24	Emergency System (France C48)	0 or 1	0	
	Value 0 = Deactivated System. Value 1 = Activated System.			
25	Buzzer to Indicate Pedestrian Entry	From 0 to 3	0	
	Value 0 = Deactivated signal. Value 1 = Signal, 1 second long. Value 2 = Signal, 2 seconds long. Value 3 = Signal, 3 seconds long.			Buzzer will sound to 0-3 sec after external sensor followed by safety beam is activated. Not active on exit
26	Battery Monitoring	From 0 to 2	1	
	Value 0 = No Battery. Value 1 = Activated Monitoring. Value 2 = Deactivated Monitoring.			
27	Rotating Selector-A. Closing Timer.	From 0 to 4	0	
	Value 0 = No delay in closing Value 1 = Output only during 30 seconds before closing Value 2 = Output only during 60 seconds before closing Value 3 = Output only during 90 seconds before closing Value 4 = Output only during 120 seconds before closing			When selector is in locked position, inside sensor is active for time before closed and locked.
28	Low Speed Opening	From 0 to 4	1	
	Value 0 = Low Value 1 = Normal Value 2 = Normal-High Value 3 = High Value 4 = Very High			
29	Low Speed Closing	From 0 to 4	1	
	Value 0 = Low Value 1 = Normal Value 2 = Normal-High Value 3 = High Value 4 = Very High			
30	Delay in unlocking	From 0 to 1	0	
	Value 0 = 0.5 seconds Value 1 = 1 second			
31	Interlock Function	From 0 to 1	0	
	Value 0 = Deactivated Value 1 = Activated			

5.3	Continued			
<u>Parameter</u>	<u>Description</u>	<u>Adjustable Value</u>	<u>Default Value</u>	<u>Notes</u>
32	Emergency Open / Close	From 0 to 3	0	Active in any position other than Night mode. In night mode, door remain closed.
	Value 0 = Emergency Opening Mode. NO Value 1 = Emergency Opening Mode. NC Value 2 = Emergency Closing Mode. NO Value 3 = Emergency Closing Mode. NC			
33	Side Screen Safety	From 0 to 1	0	
	Value 0= NO (Normal Open Contact) Value 1=NC (Normally Closed Contact)			
34	Elastic Open Cushion Feature (France)	From 0 to 1	0	Cushioning space at full open to compensate for opening by elastic open system.
	Value 0 = Off Value 1 = On			
35	Side Screen Safety Monitoring	From 0 to 1	0	Input to P3. Control will monitor Side Screen or Safety Beam independently
	Value 0=Off Value 1=On			
40	Additional information.	From 0 to 9		
	<p>Value 1 = Cycle Counter - The number of cycles is shown.</p> <p>In order to show the number of cycles, the display will show the digits of the number, correlatively and starting from the digit located on the left. For example, in order to show the number 2500, the following will appear:</p> <p>- "2" - - "5" - - "0" - - "0" -</p>			

5.3	Continued							
<u>Parameter</u>	<u>Description</u>	<u>Adjustable Value</u>	<u>Default Value</u>	<u>Notes</u>				
	<p>Value 2 = Battery Monitor - The Battery Charge level is shown.</p> <table border="1"> <tr> <td> = Maximum Level</td> <td> = High Level</td> </tr> <tr> <td> = Medium Level</td> <td>= Low Level</td> </tr> </table>	= Maximum Level	= High Level	= Medium Level	= Low Level			
= Maximum Level	= High Level							
= Medium Level	= Low Level							
	<p>Value 3 = Operator Life - Number of working days.</p> <p>In order to show the number of days of operation, the display will show the digits of the number, correlatively and starting from the digit located on the left.</p> <p>For example, in order to show the number 2500, the following will appear:</p> <p>- "2"</p> <p>-</p> <p>- "5"</p> <p>-</p> <p>- "0"</p> <p>-</p> <p>- "0"</p> <p>-</p>							
	<p>Value 4 = Software Version in use - Operating System can be checked</p>							
	<p>Value 5 = Monitoring Test</p> <p>Control box operation and monitoring output can be tested by activating value 5. A 4 second 24VDC output will allow checking by electrical tester to confirm.</p>							

5.3	Continued			
<u>Parameter</u>	<u>Description</u>	<u>Adjustable Value</u>	<u>Default Value</u>	<u>Notes</u>
	Value 6 = Stroke Distance (mm) Length of stroke distance is measured and available in mm.			
	Value 7 = Weight of Door Leaf (kg) Weight of door leaf is measured and available in kg.			

6. TROUBLE SHOOTING (LIST OF ERRORS)

When the automatic door is in any error status, the display of the Control Unit will show a message indicating the type of error that has taken place. A beep will also be heard.

In order to recognize the type of error that has taken place, an acoustic signal (long and short beeps) are used:

- Long beep
- Short beep

Error Type	Acoustic Signal	Description	Solution
E0	— — — —	Door-stroke Error	<ul style="list-style-type: none"> -The door stroke may not be shorter than 400 mm. -Verify the connection of the motor to the Control Unit. -Remove any obstacle that prevents the door leaves from moving along the stroke. -The weight of the door exceeds the maximum weight allowed. -The belt is too tight. -The motor connector is damaged or disconnected.
E1	- - - - -	Blocked opening	<ul style="list-style-type: none"> -The door has been blocked during the opening operation. Remove the obstacle that blocks the leaves. -If the problem persists, switch off the power supply and verify that the door leaves move smoothly by hand. -If the problem appears sporadically, without there being any obstacle or impediment, perform a RESET operation or reduce the opening acceleration.
E2	- - - - - —	Blocked closing	<ul style="list-style-type: none"> -The door has been blocked during the closing stroke. Remove any obstacle that blocks the leaves. -If the problem persists, switch off the power supply and verify that the door leaves move smoothly by hand. -If the problem appears sporadically, without there being any obstacle or impediment, perform a RESET operation or reduce the closing acceleration.

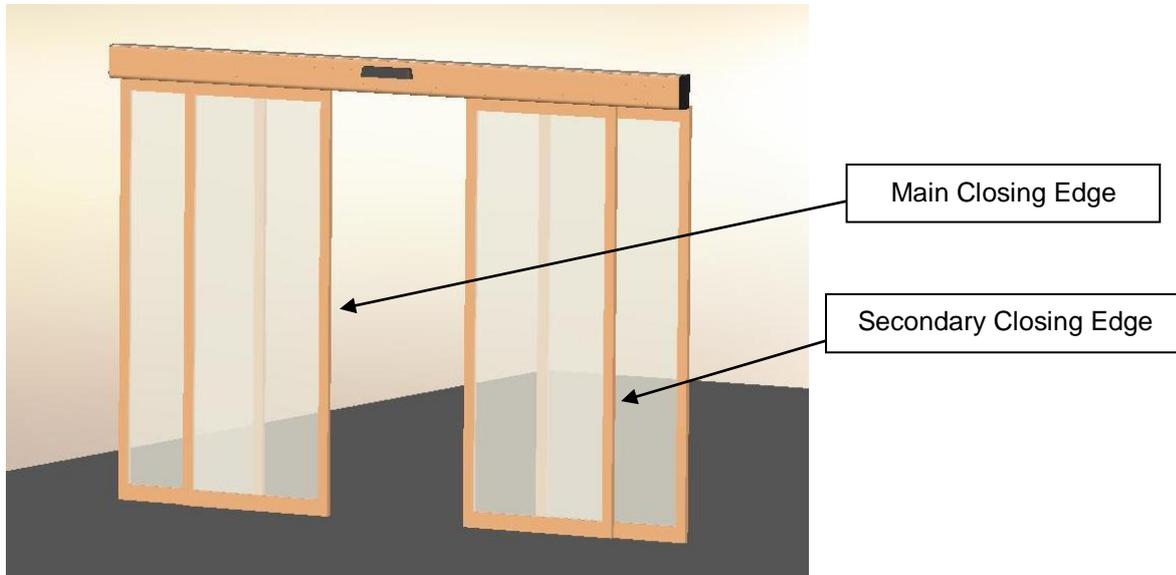
Error Type	Acoustic Signal	Description	Solution
E4	-----	Error in side safety sensor monitoring	<ul style="list-style-type: none"> -Verify that the connected side safety sensor has the monitoring option activated (Monitoring). -Verify that the safety sensor is properly connected. -If the problem persists, replace the security sensor with a new one.
E5	-----	Broken belt or faulty motor gear box	<ul style="list-style-type: none"> -If the belt is broken, replace it with a new one. -Unplug 3-pin connector to Switch off the power and try to rotate the motor manually. If it does not rotate easily (a small force must make it rotate), replace a new motor.
E6	-----	Error on security sensor monitoring	<ul style="list-style-type: none"> -Verify that the security sensor has the Monitoring option activated. -Verify that the security sensor is correctly connected. -If the problem persists, replace the security sensor with a new one.
E7	----- —	Emergency operation in a power supply failure	<ul style="list-style-type: none"> -When there is a power supply failure, it is normal that this error appears. -If there is not a power supply failure, check that there is 100-230Vac on the connector of the Control Unit, using a tester. -If the problem persists, replace the Control Unit with a new one.
E8	-----	Lock error	<ul style="list-style-type: none"> -The automatic door is closed and tries to open, but it cannot. Verify that the lock is connected and works appropriately. -Verify that the lock parameter has been correctly programmed (see section “3 - 3. Programming Parameters” parameter no. 15). -Grease the movement area of the lock (Caution: the electrical area of the lock must not be greased). -If the problem persists, replace the lock with a new one.
E9	A short beep every 30 seconds	Low battery.	<ul style="list-style-type: none"> --Verify that the battery is connected to the EMICON connection board. - If the problem persists, the battery has gone flat; let it charge for, at least, 15 minutes. To that end, simply plug the Control Unit in the mains power supply, and the battery to the EMICON board. - Replace the Battery with a new one. NimH 19.2V 300mAH

<u>Problem</u>	<u>Solution</u>
<p>The LED of POWER of the Display does not light.</p> 	<p>--There is a failure in the power supply or the Control Unit is not connected to the mains power supply (110-230Vac).</p> <ul style="list-style-type: none"> - Remove the battery (connector P1) and unplug the 3-pin connector to turn off the power. After some seconds, connect the battery and plug-in the 3 pin connector again to turn on the Control Unit. -If the problem persists, replace the Control Unit with a new one.
<p>The LED INPUT ON in the Display does not light when a sensor is activated.</p> 	<ul style="list-style-type: none"> -Check that the selector switch is correctly connected and works appropriately. -Check that the selector switch is not in "Closed Door" position. - Verify that the sensors are well connected, and the connector that communicates the EMICON card with the Control Unit is plugged. It is possible that one of the components connected to the EMICON board is causing a short-circuit due to a bad connection. Verify that there are 24Vdc in the connector P2. -If the problem persists, replace the connector that links the EMICON board to the Control Unit. - If the problem persists, replace the Control Unit with a new one.
<p>The door does not close or open completely by just a few centimetres.</p>	<ul style="list-style-type: none"> -Check that there is not excessive friction in the movement. -Check that the belt has not been excessively tightened. -If the problem persists, increase closing or opening low speed torque (Parameters 28 and 29) until the problem is solved. -If the problem persists, adjust the parameters 13 and 14.
<p>Door does not open</p>	<ul style="list-style-type: none"> - Verify that the switching selector is not in the "Closing" mode.  - If the switching selector has a lock and a key, put the key on the ON position. - If the problem persists, disconnect the switching selector and verify through a voltage meter Vdc, that there is a 5V voltage in the connector P7 (for more information, consult the section "4.2.-EMICON card"). - If the voltage is "0V", it is possible that the Control Unit is damaged or the connector that communicates the Control Unit and the EMICON card is not well connected, therefore it is recommended to disconnect and connect the mentioned connector again. - If the voltage is "5V", replace the switching selector with a new one.
<p>Selector B (Digital) does not work properly</p>	<ul style="list-style-type: none"> -Verify that the connections have been carried out properly (for further information, see section "4.2.- Emicon Card"). -Verify that between the terminals TX and RX of the EMICON card, there is a resistive value (measure with a digital multimeter) of 60 ohms. If the resistive value is 120 ohms or higher, more "bridges" than necessary have been removed. If the resistive value is 30 ohms or lower, more than one selector has been connected and the necessary "bridges" have not been removed (for further information, see section "4.3.- Operation selector").

7. REDUCING RISK OF ACCIDENT OR INJURY



Automatic doors pose a potential hazard of crushing, shearing, hitting or drawing-in. Residual risks cannot be excluded, however the use of appropriate safety devices is highly recommended to reduce these risks.



8. MAINTENANCE

-The door system has to be checked by a qualified MICOM technician. This check has to be made at least once a year and in the first commissioning.

-The door system has to be serviced at regular intervals by a specially trained MICOM technician in accordance with the manufacturer's instructions.

-Before performing maintenance work, power must be unplugged from the control unit and secured against unauthorized use of the power plug or plugging back into the control.

In the absence of any rules that indicate the inspection frequency, the manufacturer recommends to perform the inspection with the maximum period of 6 months.

For the correct operation of the automatic door, it is recommended to replace the components that have a limited useful life. The following table shows the recommended replacement periodicity.

Component	Reference	Cycles/hour in operation			
		<10	<100	>100	Intensive operation
		Low traffic	Medium traffic	High traffic	
Battery: 19.2V Mod. BMI50	2001076	24	24	24	24
Elastic kit (CO48)	2001103	8	8	8	8
Tooth belt for EDM18E	2002000	72	60	48	36
Carriage wheel	2002008	72	60	48	36
Ground guide		48	24	12	6

DECLARATION OF CONFORMATY

We:

MICOM AUTODOOR

Address: Kenwa Co. Ltd., 12th Floor, Umeda Skybuilding, Tower West, 1-30,
Oyodonaka 1-Chome, Kita Ku, Osaka 531-0076, Japan

Tel: +81 6 6454 9721 / Fax: +81 6 6454 9726

Email: info@kenwa.co.jp

Declare under our sole responsibility that the type of equipment:

Model : EDM 18E & EDM 30E

Complies with the following statements:

Reference	Description
89/336/CEE	DIRECTIVE: EMC 2004/108/CE
EN61000-6-3 : 2007	LIGHT INDUSTRIAL NORM
EN61000-6-1 : 2007	LIGHT INDUSTRIAL NORM
73/23/CEE	DIRECTIVE : DBT 2006/95/CE
EN 60335-2-103 : 2005	NORM
EN 60335-1 : 2002	NORM
98/37/EEC	MACHINERY DIRECTIVE
EN 16005 : 2013	NORM

Signed



Mr. Steven Liddle
C.O.O MICOM Autodoor

MICOM Autodoor - Head Office Japan

12th Floor | Tower West | Umeda Skybuilding 1-30 | Oyodonaka 1-Chome | Kita-ku | Osaka 531-0076 | Japan
TEL: (0081) 6 6 454 9721 | FAX: (0081) 6 6 454 9726
E-MAIL: info@micomautodoor.com

MICOM Autodoor - Europe

2nd Flr . Dobson House | Regent Centre | Gosforth | Newcastle Upon Tyne | NE3 3PF | U.K.
Tel: (0044) 0191 2336323 | Fax: (0044) 0191 2840222
E-Mail: info@micomautodoor.com

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