EvoDrive+
Maintenance manual

Part 4 of the Installation, User and Maintenance Manual
This section must be given to the Owner of the automatic door, and be always available for the Maintenance technician

EVODRIVE AUTOMATIC GUIDE FOR INTERIOR SLIDING DOOR

ORIGINAL MANUAL

PART 4 - Maintenance Manual

INDEX

1. INTRODUCTION

The maintenance of the EvoDrive+ automatic guide must be done only and exclusively by qualified and skilled technicians, bearing the necessary technical and professional accreditations, as required by the laws in force in the country of installation, and using only and exclusively the original spare parts and components supplied by Linear Motor Applications, S.L., or otherwise those expressly approved by them.

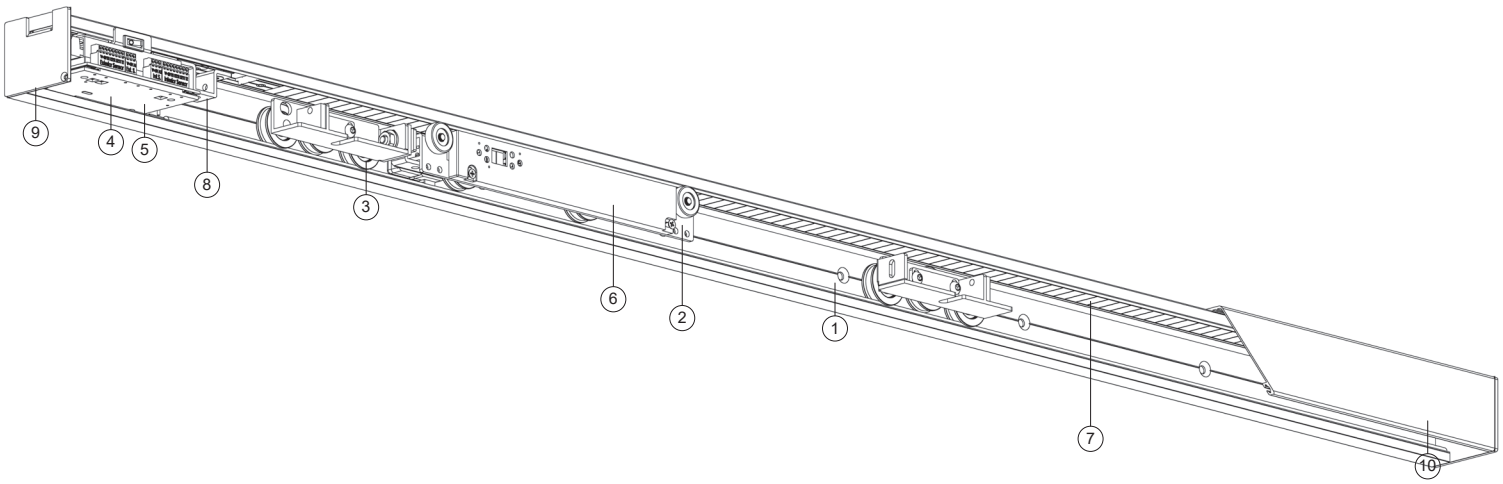
When performing ordinary or extraordinary maintenance tasks that require to stop the operation of the EvoDrive+ automatic guide, it is compulsory to interrupt or shut down the power supply and proceed with diligence.

The EvoDrive+ automatic guide does not require any particular maintenance interventions, except cleaning the top and bottom track rails, a general door cleaning and its travelling area, and a revision and adjustment of the mechanical elements at least once a year.

To clean the top and bottom track rails and the wheels, please use only a dry cloth paying special attention that it doesn't leave any waste along the rails. Do not use any liquids such as water or oils, as liquids may interrupt the electrical power supply to the motor.

In accordance with the European Norm EN16005, it is also required to yearly perform a verification of the performance of the activation and safety devices.

2. EVODRIVE COMPONENT OVERVIEW



1 Main profile
2 Linear motor type LSMPM
3 Leaf trolleys
4 Power supply circuit
5 I/O accessories control board
6 Motor driver
7 Permanent neodymium magnets
8 End stops
9 Side covers
10 Aluminium cover with brush seal

3. TECHNICAL SPECIFICATIONS

Mechanical features

Main features	Clear opening width lateral leaf (mm): 750 - 1400 Clear opening width double leaf (mm): 1500 - 2800 Operator length lateral leaf (mm): 1650 - 2850 Operator length double leaf (mm): 3100 - 5700 Opening speed: adjustable between 200 and 800 mm/s Closing speed: 200 mm/s EN16005 “Low Energy” Guide weight: 8-10 kg
Guide dimensions	60 mm height x 70 mm width
Leaf weight	Min. 5 kg - Max. 80 kg
Other data	Operating noise: < 50 dB Use - continuous Number of cycles: > 1.000.000
Adjustable parameters	Opening direction: right or left Bistable Mode “Low energy” or normal mode Opening speed Hold open time

Electrical features

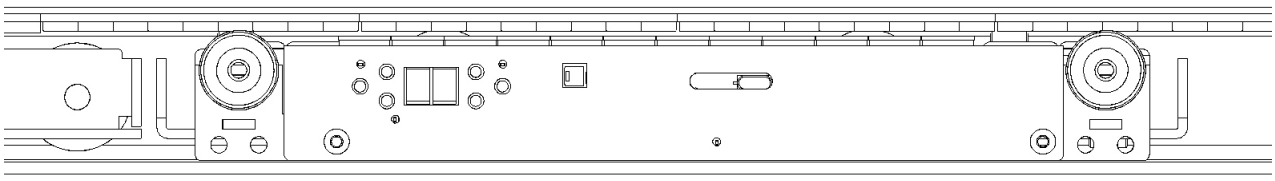
Power supply	80-264 VAC/390 VDC & 47-63 Hz (Universal) Maximum Operatin Power: 180 W Protection fuse: 2 A Cable section: 3x1,5 mm^2. Length 2 m
Power consumption	In motion: 60 W Max (0,2 s): 180 W In stand-by < 4 W
Motor	Type: Linear LSMPM (Linear Synchronous Motor with Permanent Magnets) No. of poles: 4 Pitch pole: 50 mm No. of phases: 3 Voltage: 24 V DC Permanent neodymium magnets Force: < 100 N
Control	Motion control by means of a driver with field oriented control (FOC) Self-adjustment of clear opening
Accessories	Voltage: 24 V CC Current: 1 A
Operating temperature	Min: 5 ºC - Max: 40 ºC

4. BASIC TROUBLESHOOTING

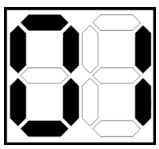
Situation/Problem	Solution
Obstruction detection during the closing cycle	- Check and remove obstructions in the closing travelling area. - Check that leaf can be moved manually and smoothly. - Verify that the final adjustment has been made, see p. 19 of EvoDrive+ installation manual. - In the event of having sensors installed, verify that the sensors are adjusted so that the door is not detected by them.
Obstruction detection during the opening cycle	- Check and remove obstructions in the opening travelling area. - Check that leaf can be moved manually and smoothly. - Verify that the final adjustment has been made, see p. 19 of EvoDrive+ installation manual.
Leaf is moving too slow	- Check if the operator is in Low Energy. - Check that no item is generating excessively friction. - Verify that the final adjustment has been made, see p. 19 of the EvoDrive+ installation manual.
Leaf does not move	- Verify that I/O Accessories is switch ON. - Verify that the operator is not in open mode. - Verify that the sensors / accessories have been connected correctly. - Verify that the final adjustment has been made, see p. 19 of the EvoDrive+ installation manual.
Leaf hits the users	- Verify that all the sensors has been correctly adjusted.
Self-adjustment never ends	- Check that the weight of the leaf is below 80 kg (max. admitted). - Verify that the motor is fully covered with magnets in all of its lenght, from closing to opening. - Verify that the final adjustment has been made, see p. 19 of the EvoDrive+ installation manual.
Door vibrates at the end of the opening movement	- Adjust the parameter 08 of the display decreasing their value.
Door knocks at the end of the closing movement	- Adjust the parameter 09 of the display decreasing their value.

5. DETAILED TROUBLESHOOTING

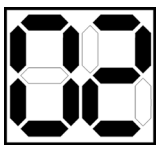
Motor signaling errors



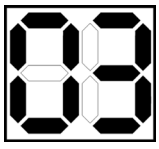
All errors codes are shown blinking in the motor display



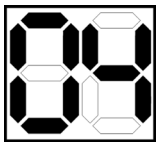
i. **Error 1 - Code 01 blinking:** The system has detected an overcurrent, restart the automatic guide and if the error persists contact your dealer indicating the error code.



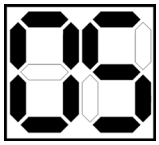
ii. **Error 2 - Code 02 blinking:** The system has detected an encoder error, verify that the motor has magnets during the entire journey, if not, restart the automatic guide and if the error persists contact your dealer indicating the error code.



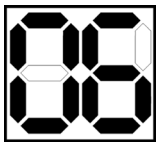
iii. **Error 3 - Code 03 blinking:** The system has detected a weight error, verify that: the leaf does not exceed **80 kg**; the friction of the floor guide is not excessive and the leaf can be moved manually throughout its travel.



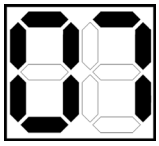
iv. **Error 4 - Code 04 blinking:** The system has detected an over-temperature error, verify that it is not in an environment with a temperature higher than 40 ºC.



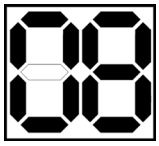
v. **Error 5 - Code 05 blinking:** The system has detected an overvoltage error.



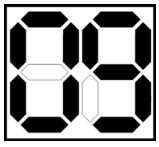
vi. **Error 6 - Code 06 blinking:** The system has detected one error in the Bluetooth communication between the IO-Acc and the driver.



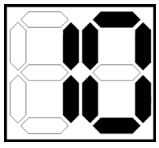
vii. **Error 7 - Code 07 blinking:** The system has detected an error in the internal electronics clock, restart the automatic guide and if the error persists contact your dealer indicating the error code.



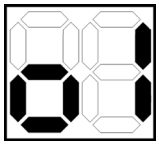
viii. **Error 8 - Code 08 blinking:** The system has detected an error in the internal non-volatile memory of the electronics, restart the automatic guide and if the error persists contact your dealer indicating the error code.



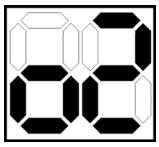
ix. **Error 9 - Code 09 blinking:** The system has detected an error in the internal program memory of the electronics, restart the automatic guide and if the error persists contact your dealer indicating the error code.



x. **Error 10 - Code 10 blinking:** The system has detected a hardware overcurrent, restart the automatic operator and if the error persists contact your dealer indicating the error code.

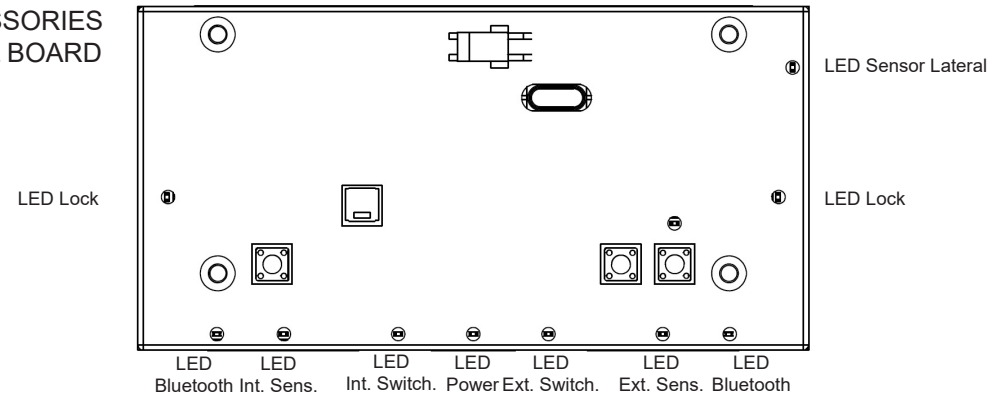


xi. **Error 11 - Code o1 blinking:** The system has detected an obstacle when the door was opening.



xii. **Error 12 - Code o2 blinking:** The system has detected an obstacle when the door was closing.

I/O ACCESSORIES CONTROL BOARD



I/O ACCESSORIES CONTROL BOARD	
LEDs status	**Description**
LED Power	ON when the operator is well powered
LED Bluetooth	ON on start-up, fast blink in pairing mode, slow blink connecting and OFF with correct connection
LED Interior Sensor	ON when detects safety/movement active signal, otherwise OFF
LED Exterior Sensor	ON when detects safety/movement active signal, otherwise OFF
LED Interior Switch	ON when detects active signal, otherwise OFF
LED Exterior Switch	ON when detects active signal, otherwise OFF
LED Lock	ON when close/exit mode is active and the lock is enabled

6. MAINTENANCE INTERVALS

In the following chart we show the tasks and intervals of the interventions, that are required to periodically execute on the EvoDrive+ automatic guide, which depend on the frequency or the number of cycles:

Task	Frecuency	Number of cycles
Cleaning of the top and bottom track rails	Yearly	50000
Cleaning the sliding leaf travelling area	Yearly	50000
Adjustment of the sliding leaf suspension	Yearly	50000
Adjustment of all screws in general	Yearly	50000
Adjustment of the automatic lock (if supplied)	Yearly	50000
Adjustment of the gap between motor and magnets	Yearly	50000
Test of the safety sensors	Yearly	50000
Test of the activation devices (radars, sensors, touch-less switch, push buttons, etc.)	Yearly	50000
Test of the remote control battery	Every 2 years	-
Inspection of the leaf trolleys	Every 5 years	250000
Inspection of the end stops felts	Every 5 years	250000
Inspection of the slinding leaf guide	Every 5 years	250000
Inspection of the motor brushes	Every 5 years	250000

7. MAINTENANCE RECORD SHEET

Date: / /
Made by: ..... (name of the service technician)
Complies: YES☐ NO☐
Remarks: .....

.....

.....

Signed by the service Technician:

Signed by the client:

Date: / /
Made by: ..... (name of the service technician)
Complies: YES☐ NO☐
Remarks: .....

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Signed by the service Technician:

Signed by the client:

Date: / /
Made by: ..... (name of the service technician)
Complies: YES☐ NO ☐
Remarks: .....

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Signed by the service Technician:

Signed by the client:

Date: / /
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Remarks: .....

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Signed by the client:

Date: / /
Made by: ..... (name of the service technician)
Complies: YES☐ NO☐
Remarks: .....

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Signed by the service Technician:

Signed by the client:

MOTION4
DOORS

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