

EvoDrive+

Maintenance manual

EVODRIVE AUTOMATIC GUIDE FOR INTERIOR SLIDING DOOR

ORIGINAL MANUAL

PART 4 - Maintenance Manual

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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.

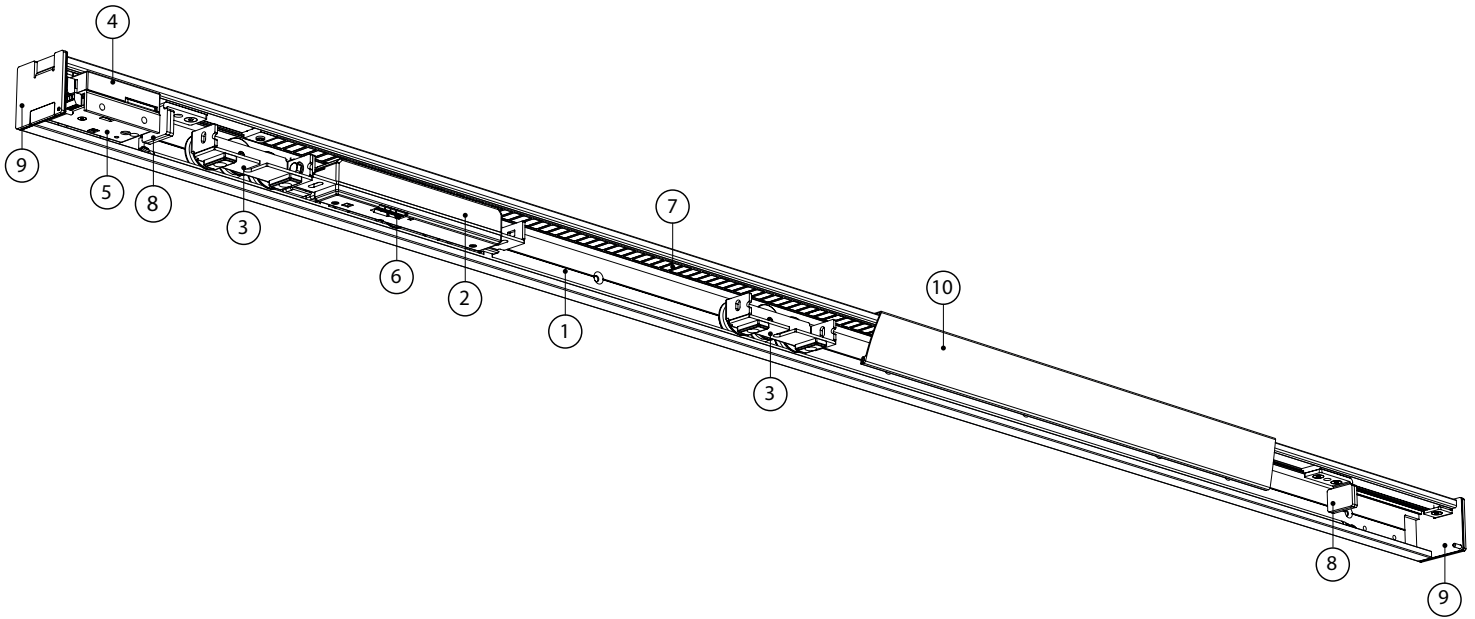
When performing ordinary or extraordinary maintenance tasks that require to stop the operation of the EvoDrive automatic guide, it is compulsory to interrupt or shut down the power supply (230V AC) and proceed with diligence.

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
Otros datos	Operating noise: < 50 dB Use - continuous Number of cycles: > 1.000.000
Adjustable parameters	Opening direction: right or left Biastable Mode "Low energy" or normal mode Opening speed Hold open time

Electrical features

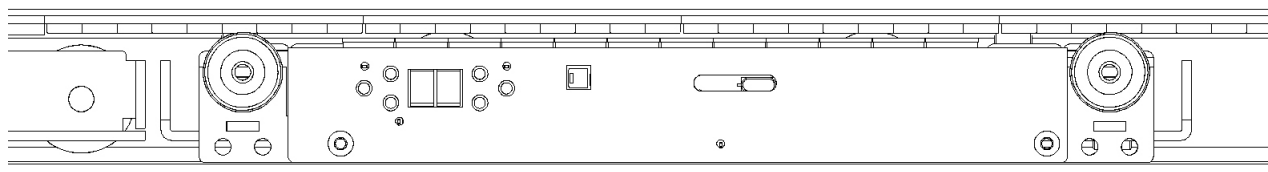
Power supply	80-264 VAC/390 VDC & 47-63 Hz (Universal) Maximum Operatin Power: 180 W Protection fuse: 2 A Cable section: 3x1,5 mm ² . Length 2 m
Power consumption	In motion: 60 W Max (0,2 s): 180 W In stand-by < 4 W
Motor	Type: Linear LSMPM (Linear Synchronous Motor with Permanent Magnets) No. of poles: 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 °C - Max: 40 °C

4. BASIC TROUBLESHOOTING

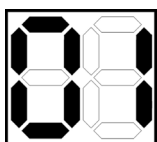
Situation/Problem	Solution
Obstruction detection during the closing cycle	<ul style="list-style-type: none"> - Check and remove obstructions in the opening travelling area. - Check that leaf can be moved manually and smoothly. - Verify that the final adjustment has been made, see p. 19 of EvoDrive+ installation manual. - In the case 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	<ul style="list-style-type: none"> - 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	<ul style="list-style-type: none"> - 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 EvoDrive+ installation manual.
Leaf does not move	<ul style="list-style-type: none"> - Verify that I/O Accessories is switched 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 EvoDrive+ installation manual.
Leaf hits the users	<ul style="list-style-type: none"> - Verify that all the sensor has been correctly adjusted.
Self-adjustment never ends	<ul style="list-style-type: none"> - 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 length, from closing to opening. - Verify that the final adjustment has been made, see p. 19 of EvoDrive+ installation manual.
Door vibrates at the end of the opening movement	<ul style="list-style-type: none"> - Adjust the parameter 11 and 12 of the display decreasing their value.
Door knocks at the end of the opening movement	<ul style="list-style-type: none"> - Adjust the parameter 11 and 12 of the display increasing their value.
Door vibrates at the end of the closing movement	<ul style="list-style-type: none"> - Adjust the parameter 08 and 09 of the display decreasing their value.
Door knocks at the end of the closing movement	<ul style="list-style-type: none"> - Adjust the parameter 08 and 09 of the display increasing their value.

5. DETAILED TROUBLESHOOTING

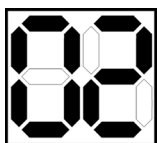
Motor signaling errors



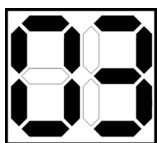
All the errors codes are showed blinking in the motor display



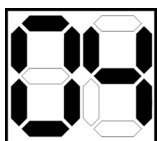
- i. **Error 1 - Code 01 blinking:** The system has detected an overcurrent, restart the automatic guide and if the error persists contact your dealer indicating the error code.



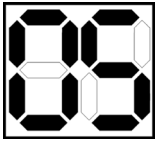
- ii. **Error 2 - Code 02 blinking:** The system has detected an encoder error, verify that the motor has magnets during the entire journey, if not, restart the automatic guide and if the error persists contact your dealer indicating the error code.



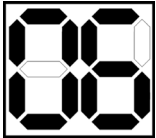
- iii. **Error 3 - Code 03 blinking:** The system has detected a weight error, verify that: the leaf does not exceed **80 kg**; the friction of the floor guide is not excessive and the leaf can be moved manually throughout its travel.



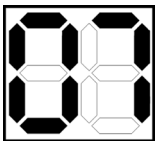
- iv. **Error 4 - Code 04 blinking:** The system has detected an over-temperature error, verify that it is not in an environment with a temperature higher than 40 °C.



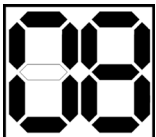
- v. **Error 5 - Code 05 blinking:** The system has detected an overvoltage error.



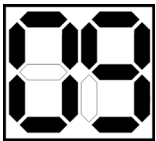
- vi. **Error 6 - Code 06 blinking:** The system has detected one error in the Bluetooth communication between the IO-Acc and the driver.



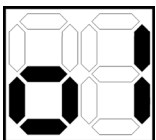
- vii. **Error 7 - Code 07 blinking:** The system has detected an error in the internal electronics clock, restart the automatic guide and if the error persists contact your dealer indicating the error code.



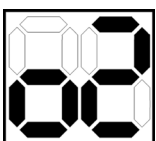
- viii. **Error 8 - Code 08 blinking:** The system has detected an error in the internal non-volatile memory of the electronics, restart the automatic guide and if the error persists contact your dealer indicating the error code.



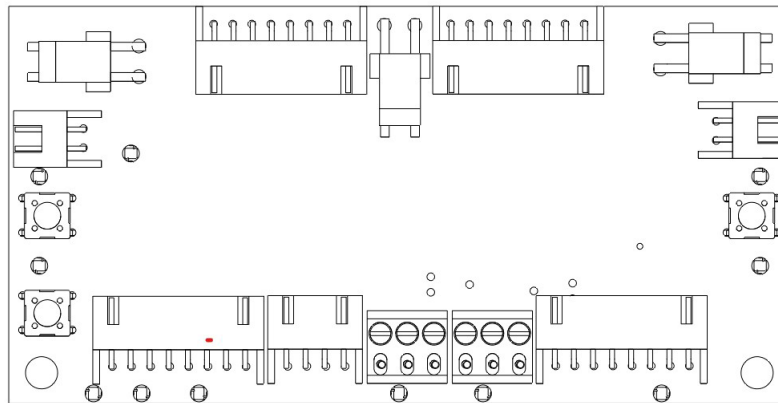
- ix. **Error 9 - Code 09 blinking:** The system has detected an error in the internal program memory of the electronics, restart the automatic guide and if the error persists contact your dealer indicating the error code.



- x. **Error 10 - Code o1 blinking:** The system has detected an obstacle when the door was opening.



- xi. **Error 11 - Code o2 blinking:** The system has detected an obstacle when the door was closing.



I/O ACCESORIES ELECTRONICS

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I/O ACCESORIES ELECTRONICS		
LED's State	Situation / Problem	Solution
LEDs OFF	When activating interior sensor, Ext. Sensor or Safety sensor no orange led turn on. The door does not work.	- Check the wiring connections of all sensors.
ORANGE LED COMPLETELY ON	The interior sensor led is still on when there is no detection of movement or presence.	- Check the wiring connection of all sensors. - Check all the settings and the sensivity of the sensor. - Disconnect/Connect the sensor.
ORANGE LED COMPLETELY ON	The exterior sensor led is still on when there is no detection of movement or presence.	- Check the wiring connection of all sensors. - Check all the settings and the sensivity of the sensor. - Disconnect/Connect the sensor.
ORANGE LED COMPLETELY ON	The exterior push-button led is permanently on. The push-button is permanently blocked in push position.	- Disconnect the push button.
ORANGE LED COMPLETELY ON	The interior push-button led is permanently on. The push-button is permanently blocked in push position.	- Disconnect the push button.

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	Frequency	Number of cycles
Cleaning of the top and bottom track rails	Yearly	50,000
Cleaning the sliding leaf travelling area	Yearly	50,000
Adjustment of the sliding leaf suspension	Yearly	50,000
Adjustment of all screws in general	Yearly	50,000
Adjustment of the automatic lock (if supplied)	Yearly	50,000
Adjustment of the gap between motor and magnets	Yearly	50,000
Test of the safety sensors	Yearly	50,000
Test of the activation devices (radars, sensors, touch-less switch, push buttons, etc.)	Yearly	50,000
Test of the remote control battery	Every 2 years	-
Inspection of the leaf trolleys	Every 5 years	250,000
Inspection of the end stops felts	Every 5 years	250,000
Inspection of the sliding leaf guide	Every 5 years	250,000
Inspection of the motor brushes	Every 5 years	250,000

7. MAINTENANCE RECORD SHEET

Date: / /	
Made by:	(name of the service technician)
Comples: YES <input type="checkbox"/> NO <input type="checkbox"/>	
Remarks:	
.....	
Signed by the service Technician:	Signed by the client:

Date: / /	
Made by:	(name of the service technician)
Comples: YES <input type="checkbox"/> NO <input type="checkbox"/>	
Remarks:	
.....	
Signed by the service Technician:	Signed by the client:

Date: / /	
Made by:	(name of the service technician)
Comples: YES <input type="checkbox"/> NO <input type="checkbox"/>	
Remarks:	
.....	
Signed by the service Technician:	Signed by the client:

Date: / /	
Made by:	(name of the service technician)
Comples: YES <input type="checkbox"/> NO <input type="checkbox"/>	
Remarks:	
.....	
Signed by the service Technician:	Signed by the client:



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