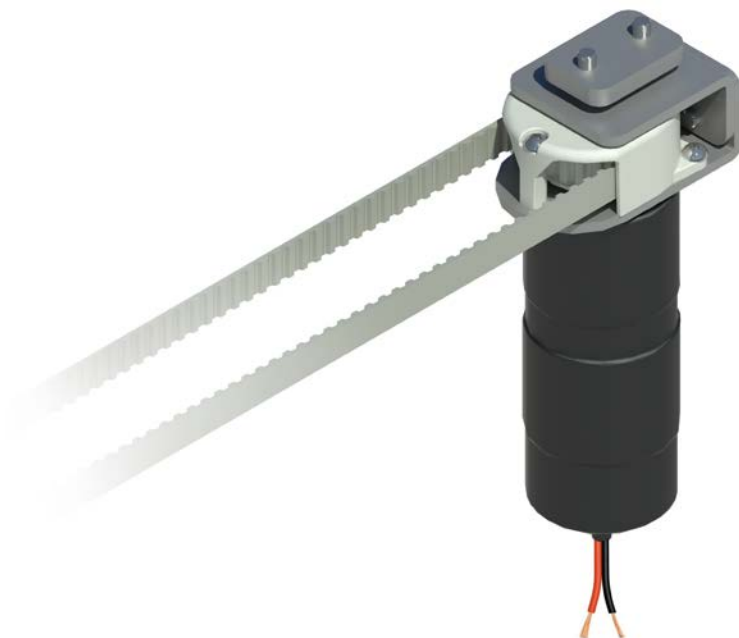


## ACTUATOR FOR SLIDING BLINDS



### USE AND MAINTENANCE MANUAL

Original version in English

This user manual is an integral part of the machine and must be kept in an appropriate manner to maintain its integrity and allow it to be consulted during the life of the equipment.

Read this manual carefully before proceeding with any intervention on the equipment


The manufacturer has the right to make changes to the production and to the manual, without this entailing the obligation to update the production and previous manuals.



## INDEX

<b>PREFACE</b> .....	<b>4</b>
<b>1 GENERAL INFORMATION</b> .....	<b>4</b>
1.1 DEFINITIONS AND SYMBOLS.....	4
<b>2 IDENTIFICATION OF THE MANUFACTURER</b> .....	<b>5</b>
<b>3 INFORMATION ON TECHNICAL ASSISTANCE AND MAINTENANCE</b> .....	<b>5</b>
3.1 RACCOMANDATIONS .....	5
3.2 EXTRAORDINARY MAINTENANCE .....	5
<b>4 FEATURES AND TECHNICAL INFORMATION</b> .....	<b>6</b>
4.1 REGULATORY REFERENCES .....	6
<b>5 GENERAL DESCRIPTIONS</b> .....	<b>7</b>
<b>6 RECEPTION AND STORAGE</b> .....	<b>7</b>
6.1 CHECK UPON RECEIPT OF THE EQUIPMENT.....	7
6.2 CONTENTS OF THE BOX: .....	7
6.3 STORAGE.....	7
<b>7 FIELDS OF APPLICATION AND ELECTRICAL PREPARATION</b> .....	<b>8</b>
<b>8 ELECTRICAL PREPARATION</b> .....	<b>9</b>
<b>9 INSTRUCTIONS FOR MECHANICAL ASSEMBLY</b> .....	<b>9</b>
9.1 TOOLS REQUIRED FOR ASSEMBLY.....	9
9.2 CHECK OF THE DIMENSIONS .....	10
<b>10 ENGINE INSTALLATION</b> .....	<b>10</b>
10.1 FIXING THE MOTOR AND THE TRANSFER PULLEY ON THE TRACK .....	11
10.2 POSITIONING AND FASTENING THE BELT.....	12
10.3 COMPLETION OF MECHANICAL INSTALLATION OF THE SLIDING SYSTEM .....	13
10.4 FIXING THE BRACKET BETWEEN THE LEAF.....	13
<b>11 ELECTRICAL CONNECTION</b> .....	<b>13</b>
<b>12 AUTOMATION OPERATION</b> .....	<b>14</b>
12.1 TRIMMER TEMP: INCREASE THE OPENING SPEED OF THE LEAVES: .....	14
12.2 TRIMMER CURR: INCREASE OF MOTOR POWER:.....	14
<b>13 ELECTRICAL INSTALLATION PREPARATION</b> .....	<b>15</b>
13.1 TYPE OF CONTROL BUTTON AND CONNECTION TO THE INTEGRATED CONTROL UNIT .....	15
13.2 TYPE OF CONTROL BUTTON .....	15



13.3	CONNECTIONS TO THE BOARD .....	16
13.4	RADIOR RECEIVER WIRING DIAGRAM MOD. EWSCE230.....	16
<b>14</b>	<b>COMPATIBILITY WITH HOME AUTOMATION SYSTEMS .....</b>	<b>17</b>
14.1	ELECTRICAL DIAGRAM FOR ELECTRIC PISTON CONNECTION.....	17
<b>15</b>	<b>PROBLEMS AND ANOMALIES .....</b>	<b>18</b>
<b>16</b>	<b>DISPOSAL .....</b>	<b>19</b>
<b>17</b>	<b>LIMITATIONS OF LIABILITY .....</b>	<b>19</b>
<b>18</b>	<b>MARKING COMPATIBILITY CERTIFICATE  .....</b>	<b>20</b>
<b>19</b>	<b>WARRANTY .....</b>	<b>20</b>



## PREFACE

Dear Customer,

In thanking you for the preference given to us in choosing our equipment which will surely prove to be important above all over time, we invite you to strictly follow the instructions given in this manual, this will be of great help for optimal use and to keep the characteristics unaltered over time. characteristics of your equipment.








CHIAROSCURO SAS di Girelli Marco & C.

## 1 GENERAL INFORMATION

This user manual is an integral part of the equipment supplied and constitutes the essential support for its installation and correct use. Read it with particular attention and completely before proceeding with the installation and use of the equipment. The manual must accompany the equipment in case of resale. Partial and total reproduction of this document is prohibited without the written authorization of CHIAROSCURO SAS.

### 1.1 DEFINITIONS AND SYMBOLS

The paragraphs below contain a series of definitions, terminologies and symbols used in the drafting of this manual.

SYMBOL	DESCRIPTION
	<b>User: (U.)</b> operator without specific skills, able to use the equipment in normal operating conditions and for simple maintenance interventions.
	<b>Electromechanical operator: (O.E.)</b> technician able to install mechanical - hydraulic - pneumatic parts and to carry out adjustments, maintenance or repairs and to operate in the presence of voltage inside cabinets, junction boxes and electrical systems.
	<b>Manufacturer's technician: (M.C.)</b> qualified technician made available by the manufacturer to carry out complex operations in particular situations or, in any case, as agreed with the user. The skills are, depending on the case, of a mechanical and / or electrical and / or electronic and / or software type.
	<b>Note:</b> It contains the indications or important information contained in the manual to be read, with particular attention, for the best use of the equipment.
	<b>Danger:</b> Indicates a situation that can cause injury, even death, or serious damage to health.
	<b>Attention:</b> Indicates a situation that could cause, even indirectly, damage to people, property and the environment with consequences also of an economic nature.
	<b>Warning:</b> Indicates that the directions must be followed with particular attention. Failure to observe the warning could cause malfunctions or dangerous conditions or damage.



## 2 IDENTIFICATION OF THE MANUFACTURER

The plate fixed on the side of the actuator contains all the identification data of the ST40 actuator. Fig.3.1 Example of label (the data shown are purely indicative, the real values are shown in the label of the equipment placed on the automation itself).



**CHIAROSCURO** Automation SL120

Power Supply Electronic Device 110-230 Vac  $\pm 10\%$   
Power Supply Automation 24 Vdc  
Max current absorption  $\sim 0,3A$   
Maximum torque 120 N  $+65^{\circ}C$    
Device degree of protection IP20  $-15^{\circ}C$   
Product-Lot-Nr: 202 0  1  2   
www.chiaroscuro.eu +39 0464 424 715 Made in Italy

On the label, applied to all the motors, there are indications concerning the model of motor used, the operating voltages, the absorption, the speed of movement, the degree of electrical protection, the operating temperatures, the lot number and the year of production of the engine and the European brand certification

## 3 INFORMATION ON TECHNICAL ASSISTANCE AND MAINTENANCE

To report faults, contact the Assistance Center:



**CHIAROSCURO SAS di Girelli Marco & C.**

C.so General A.Cantore 23 - 38068 Ala (TN) Italia

Tel: +39 0464 424715 fax: +39 0464 712027

email : [info@chiaroscuro.eu](mailto:info@chiaroscuro.eu) sito : [www.chiaroscuro.eu](http://www.chiaroscuro.eu)

For communications or requests for information or spare parts, send the form "ORDER OF SPARE PARTS, TROUBLESHOOTING, INFORMATION" to the service center



*To maintain the duration of the guarantee, the customer must scrupulously follow the instructions indicated in this manual. Otherwise, we will not be held responsible for any problems or malfunctions of the appliance (in this regard, carefully read the guarantee attached to the manual).*



*The manufacturer, in order to adapt the equipment to technological progress and specific production needs, may decide, without prior notice, to make changes to it without this entailing the obligation to update the production and previous manuals. Furthermore, if the illustrations in this manual differ slightly from the equipment in your possession, the safety and operating indications of the same are always guaranteed.*

### 3.1 RACCOMANDAZIONI



*In the event of an error, contact the service center indicating the model, code and serial number of the equipment.*



*In the event that defects / malfunctions are found, do not try to repair the equipment but contact the service center indicating the model, code and serial number of the equipment.*

### 3.2 EXTRAORDINARY MAINTENANCE



*User: Contact the electromechanical operator in case of breakages or malfunctions .*



*Electromechanical operator: Identify malfunctions and if necessary contact the service center indicating the model, code and serial number of the equipment. Use the service request form - spare parts.*



### 4 FEATURES AND TECHNICAL INFORMATION

TEMPLATE	SL120i.1A	SL120i.2A
NUMBER OF DOORS	1	2
MIN-MAX WIDTH 1 DOOR	40 - 350 cm	
MIN-MAX WIDTH 2 DOORS		80 - 700 cm
MAX WEIGHT 1 LEAF OR SUM OF MORE LEAVES	200kg.	
SIZE LXHP	62x136x40 mm.	
ELECTRONIC BOARD POWER SUPPLY	110 ÷ 230 Vac	
AUTOMATION POWER SUPPLY	24 Vdc	
MAXIMUM CURRENT CONSUMPTION	~ 0.3 A	
IMPACT FORCE DETECTION STUMBLING BLOCK	<150 N	
MAXIMUM THRUST AND TRACTION FORCE	120 N	
MAXIMUM SPEED OF MOVEMENT	90 mm / sec	
WORKING CYCLE	20 cycles / hour	
END OF STROKE ADJUSTMENT	Position self-determination	
DEGREE OF PROTECTION	IP 20	
ELECTRONIC BOARD	In PT5 box 160x130x70mm.	
REVERSIBLE PULLEY	Standard	
STANDARD BELT LENGTH	6 meters	
CABLE LENGTH	5 meters	
RADIOR RECEIVER	Yes on request	

#### 4.1 REGULATORY REFERENCES

The legislative references applied and the national and harmonized technical standards applied for compliance with the above legislative references are:

The legislative references are:	The international technical standards are:
2004/108 / EC EMC Directive	EN 60335-1 (2008_07)
2006/95 / EC LVD directive	EN 60335-2-103 (2003_08) / A11 (2009_07).
2006/42 / EC machinery directive	EN 55014-1 (2008_01) / A1 (2010_10) / A2 (2012_02)
2011/65 / EC RoHS2 Directive EN 55014-2 (1998_10) /	EN 55014-2 (1998_10) / A1 (2002_09) / A2 (2009_09)
A1 (2002_09) / A2 (2009_09)	



*At the request of the customer, a version of the ST50 / ST100 system is available equipped with a radio receiver module and transmitters operating in the 433MHz band that meet the requirements of Directive 1999/95 / EC (radio equipment and telecommunications equipment) and subsequent amendments.*

## 5 GENERAL DESCRIPTIONS

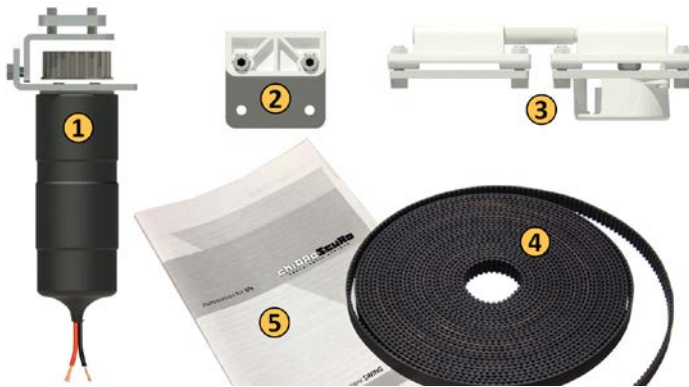
The SL120i equipment is an automatic actuator for opening / closing sliding shutters (windows): It consists of a high-performance reversible automation coupled with high-strength gears. The possibility of closing or opening with simple manual controls placed in remote positions (remote control) or with automation systems (home automation) allows the user to make the most of the protection offered by the blinds in the different environmental conditions present (e.g. hot, cold, sheltered from insects etc.)

## 6 RECEPTION AND STORAGE

### 6.1 CHECK UPON RECEIPT OF THE EQUIPMENT

Upon receipt of the equipment, ensure the integrity and completeness of the content.

### 6.2 CONTENT OF THE BOX:



Pc.1	Motor with plate for rails with internal groove max 15mm
Pc.1	Straight drag bracket
Pc.1	Tensioner with idle return pinion
Mt.5	Belt 6 mt.
Pc.1	Use and maintenance manual



*In the event that the product, upon receipt, is damaged and / or with missing pieces and / or defects / malfunctions are detected, do not try to repair the equipment but contact the service center indicating the model, code and serial number. equipment (see Fig.3.1. Data plate label on page 4).*

### 6.3 STORAGE

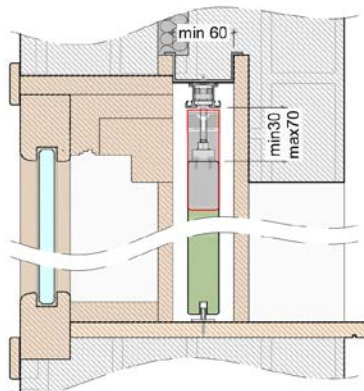


*If the equipment is not used for a long time, store the equipment in a dry, clean and dust-free place.*

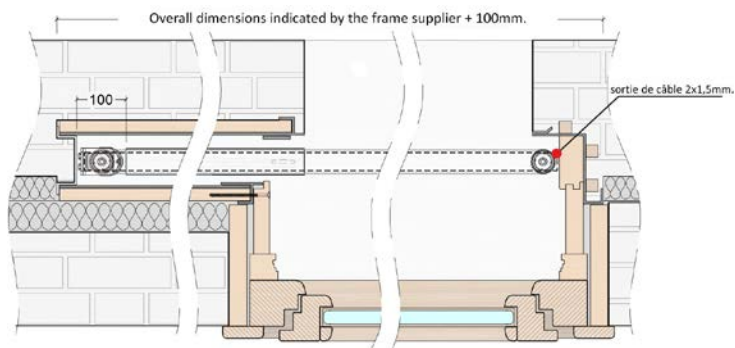


*In caso di stoccaggio materiale superiore ai 24 mesi dall'immatricolazione, la CHIAROSCURO SAS fornisce la Garanzia prevista come da Condizioni Generali di Vendita.*

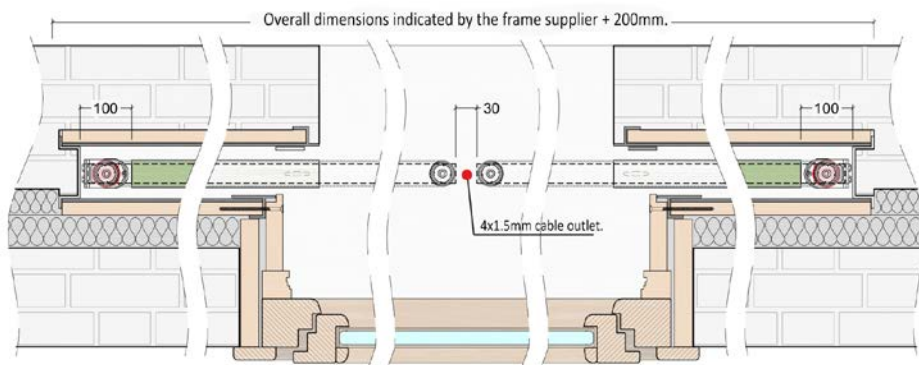
## 7 FIELDS OF APPLICATION AND ELECTRICAL PREPARATION



**Section**



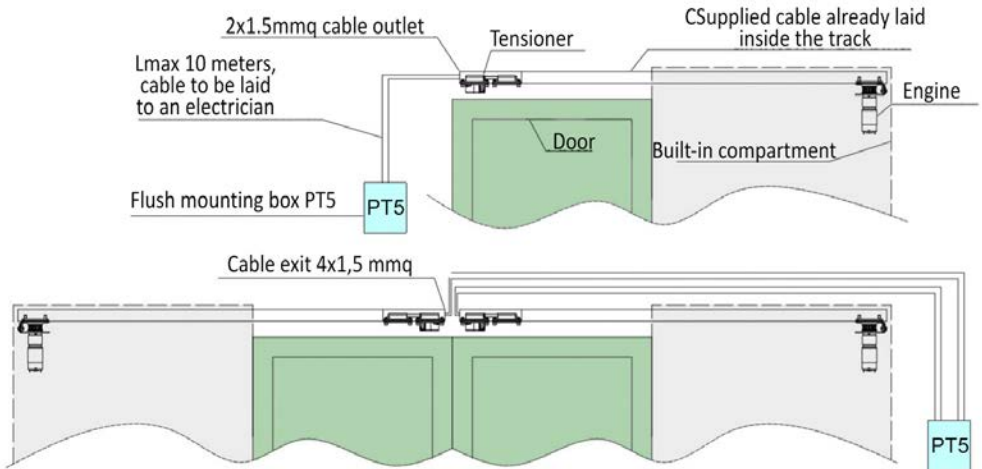
**Application on counterframe with single sliding door**



**Application on double sliding door counterframe**



## 8 ELECTRICAL PREPARATION



## 9 INSTRUCTIONS FOR MECHANICAL ASSEMBLY



**Electromechanical operator:** (O.E.) technician able to install mechanical - hydraulic - pneumatic parts and to carry out adjustments, maintenance or repairs and to operate in the presence of voltage inside cabinets, junction boxes and electrical systems.



*The automation provided is a product for professional use for free installation. Assembly must be carried out by a qualified electromechanical operator. CHIAROSCURO SAS exonerates itself from any responsibility in case of bad installation and / or installations made by unauthorized operators.*

### 9.1 TOOLS REQUIRED FOR ASSEMBLY

To proceed with the installation, the following tools and materials are required:

Screwdriver for hexagonal head screw 3	Screwdriver for hexagonal head screw 4
1 x 5.5 slotted screwdriver	Electrician's scissors
Search phase	Fine point permanent marker
DIN 7505 / B Chipboard screw with cylindrical head 3.5 x 25 Pcs 2	Unipolar flying terminal 2,5
Probe pulls cables	

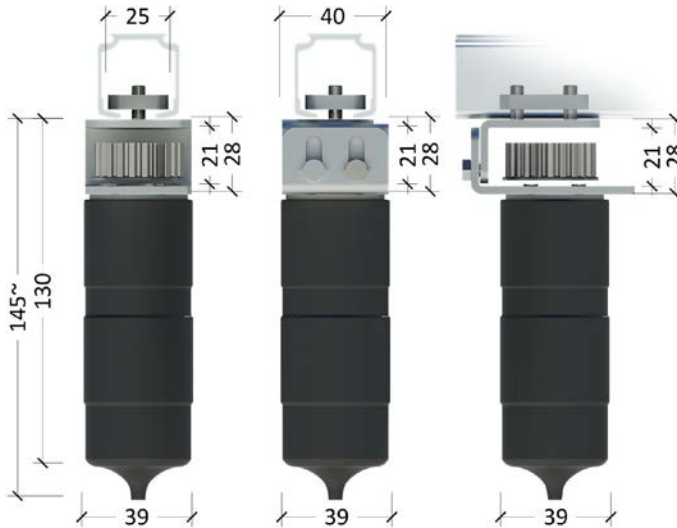


*The list shown is not supplied with the SL120i product, but is necessary for correct bench installation. D.P.I. or other are edited and evaluated by the O.E. depending on the installation itself in the field.*



### 9.2 CHECK OF THE DIMENSIONS

Check that there is sufficient space beyond the track and that the positioning of the motor inside the compartment does not hinder the sliding of the doors. Evaluate the spaces and connections in order to ensure access and removal of the installed elements, in order to facilitate any subsequent maintenance phases. In this regard, we recommend providing “quick release” electrical connections to the motor.



*Check that the electrical setting and all the parameters are respected as in the technical sheet on pag. 7*

## 10 ENGINE INSTALLATION

In the following steps, the operations necessary for correct installation of the automation on the track will be described.



**ATTENZIONE**

*Attention, following the installation manual of the chosen sliding system, proceed with the mechanical installation of the window frame. It is mandatory to insert the carriages and stoppers in reverse or by cutting the carriage locking clips, in order to prevent the carriage from locking in the stopper. Without this precaution, the carriage will remain blocked in the stopper and upon restarting the SLIDE.120i actuator will recognize this block as an obstacle. The order to be followed is as follows: stopper / trolley / trolley / stopper.*

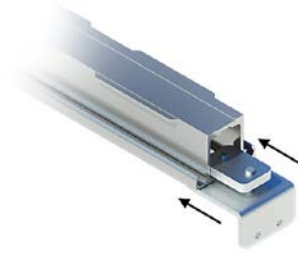


**ATTENZIONE**

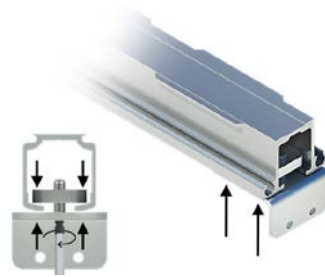
*The order of insertion of the components in the track to be followed  
Single door: stopper / trolley / trolley / stopper;  
Double door: stopper / trolley / trolley / stopper / trolley / trolley.*

## 10.1 FIXING THE MOTOR AND THE TRANSFER PULLEY ON THE TRACK

Slide the motor coupling plate inside the track.  
The plate supplied as standard has a width of 20mm. and can be combined with rails with a minimum internal width of 25mm. N.b: The compatibility of this plate with the track must always be checked by the technical department. Oversized plates with a width of 25mm are available. and 30mm., or made to measure in the case of integration on particular tracks.



Fasten the motor coupling plate to the track by tightening the two lower countersunk Allen screws using an Allen key number 3, making sure that the upper plate rests evenly on the metal parts of the track and is guaranteed stable tightening.

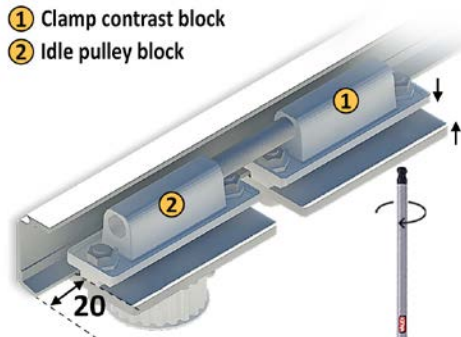


Position the motorization taking care that a condition of perpendicularity and parallelism is maintained between the track and the motor and fix it to the previously positioned elements, taking care to tighten the 2 head bolts with a 10 mm wrench.



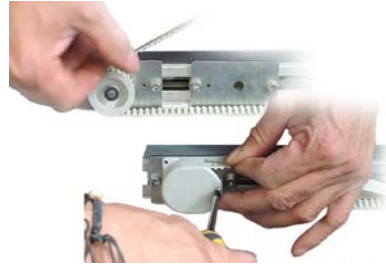
The belt tensioner unit consists of two elements: the clamp contrast block and the idle pulley block. Position the belt tensioner assembly at the opposite end of the track, taking care to secure it so that it is retracted by 2cm. with respect to the end edge of the track. In this way, even with the system tensioned, the idle pulley block will be retracted or aligned with the track. Now tighten only the clamp contrast block to the track, acting on the two lower 4 Allen screws.

- ① Clamp contrast block
- ② Idle pulley block

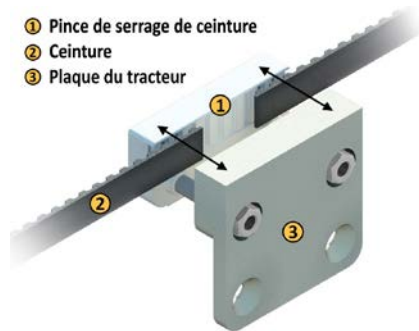


## 10.2 POSITIONING AND FASTENING OF THE BELT

Insert the belt into the driving pulley and then into the return pulley. Attach the protective cap to this. The headset will hold this side of the strap in place.



The pulling plate acts as a joint between the two edges of the belt and when suitably fixed, as well as ensuring perfect tightening of the belt, it transmits the movement of the belt to the door.



Bring the flap of the motor-side belt to the center of the track and centrally fasten the belt on the traction bracket and continue hooking the flap coming from the idle pulley to the traction bracket. From the interception of the flaps, cut the adjacent flaps with electrician's scissors and tighten the clamp of the pulling bracket by acting on the two hexagonal head screws No. 4.



To tension the belt loop, the M8 screw shaft that makes up the belt tensioner must be unscrewed with the 1x5.5 slotted screwdriver, in order to move the idle pulley block away from the clamp contrast block that was previously fixed and which now acts as a contrast.

Once the correct tension has been reached, tighten the fastening screws of the idle pulley block with the hexagonal key n° 4.





### 10.3 COMPLETION OF MECHANICAL INSTALLATION OF THE SLIDING SYSTEM

To complete the mechanical installation, simply proceed as described in the installation manual of the manufacturer of the sliding system, taking care not to damage the automation just installed on it.

### 10.4 FIXING THE BRACKET BETWEEN THE LEAF

Fix the bracket to the door in a central position with the 3.5 x 25 - DIN 7505 / B chipboard screws. For the 2-door system, carry out the same operation on the opposite edge of the belt loop in the correct position to be able to complete the movement of both doors.



*For the 2-leaf system, if the leaves do not have the same stroke, the automation will perform the shortest stroke.*

---

## 11 ELECTRICAL CONNECTION

Assembly must be carried out by a qualified electromechanical operator. CHIAROSCURO SAS exonerates itself from any responsibility in case of bad installation and / or installations made by unauthorized operators. (Minimum card size 145 x 105mm)



*The proper functioning of the equipment and compliance with safety requirements are guaranteed only if connected to an efficient electrical system built in accordance with the laws in force (in Italy Legislative Decree. 37/2008). The manufacturer assumes no responsibility for any damage to the equipment or to third parties caused by the use of a system that does not comply with current regulations.*

---



*If the behavior of the equipment does not reflect the above, do not use the automation and immediately report the anomaly to the CHIAROSCURO SAS authorized service center. Never open the enclosure of the equipment unless expressly authorized in writing by CHIAROSCURO SAS. Failure to comply with this rule results in the immediate forfeiture of the warranty and consequent liability of CHIAROSCURO SAS for aspects concerning the safety and operation of the equipment.*

---



*It is the sole responsibility of the electromechanical operator to set up the system. CHIAROSCURO SAS is in no way responsible for deficiencies of any nature on the system. All the information necessary for a good system is fully available, it is the buyer's responsibility to request them formally.*

---

## 12 AUTOMATION OPERATION

The automation operates the doors after pressing the button and continues to move them until the button is pressed. The operator switches off automatically when the effort is detected, with the leaf completely open or completely closed. The closing / opening force must be set appropriately by means of a trimmer (see chapter "Adjustment trimmer"). To stop the leaves at an intermediate point during movement, simply stop pressing the button.

### 12.1 TRIMMER TEMP: INCREASE THE OPENING SPEED OF THE LEAVES:

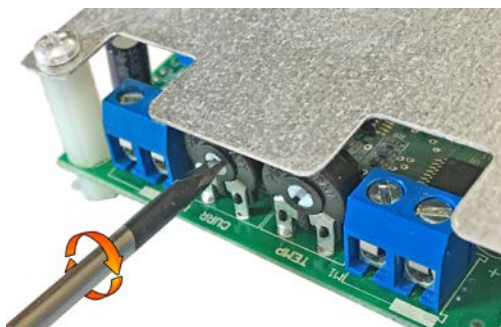


*The board, as standard, is pre-wired and configured with pre-optimized "default" parameters that are valid for most users and types of common use. It is not recommended to change the default parameters of the electronic board, which must only take place when necessary. The modification of the configuration parameters must only be carried out by knowledgeable and qualified operators.*



Adjusting the TEMP trimmer allows you to set the leaf opening speed. Clockwise rotation decreases the speed of the leaves, on the contrary, anticlockwise rotation increases it. Carry out some opening and closing tests to check that the doors do not slam excessively against each other during contact. Adjust the stops of the carriages so that the doors do not hit each other when closing.

### 12.2 TRIMMER CURR: INCREASE OF MOTOR POWER:



Adjusting the CURR trimmer allows you to set the thrust torque. By setting a thrust level too low, the leaves will lock in an anomalous way, while too much power would lead to a single effort of the motors when the stroke is complete. We suggest identifying the minimum operating point and from that position, increase the power by ¼ of a turn.

## 13 ELECTRICAL INSTALLATION PREPARATION

### WARNING !

The electrical installation must be carried out following the national standards in force, thus for all the obligations established by law. The electrical connections must be made without voltage, do not power the work area before completing all assembly operations.

#### RADIO SPECIFICATIONS

Frequency: 433.92 Mhz Transmitter range: approx: 70m free field

The good propagation of radio waves depends on the nature of the environments to pass through.

The range of radio waves is affected by the type of construction

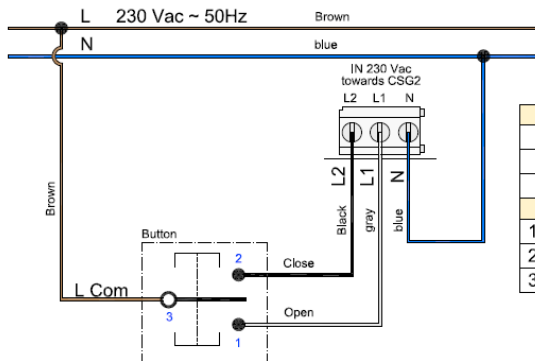
### 13.1 TYPE OF CONTROL BUTTON AND CONNECTION TO THE INTEGRATED CONTROL UNIT

### 13.2 TYPE OF CONTROL BUTTON



The switch must necessarily be of the type:  
up and down switch interlocked without restraint.

## COMMAND CONNECTION FUNCTIONAL DIAGRAM



IN 230 Vac su GSG2	
L1	Line opens N.O.
L2	Line close N.O.
N	neutral
BUTTON	
1	Aprire Opening phase towards 230Vac motor
2	Chiusura Close phase 230Vac
3	Comune Common button phase

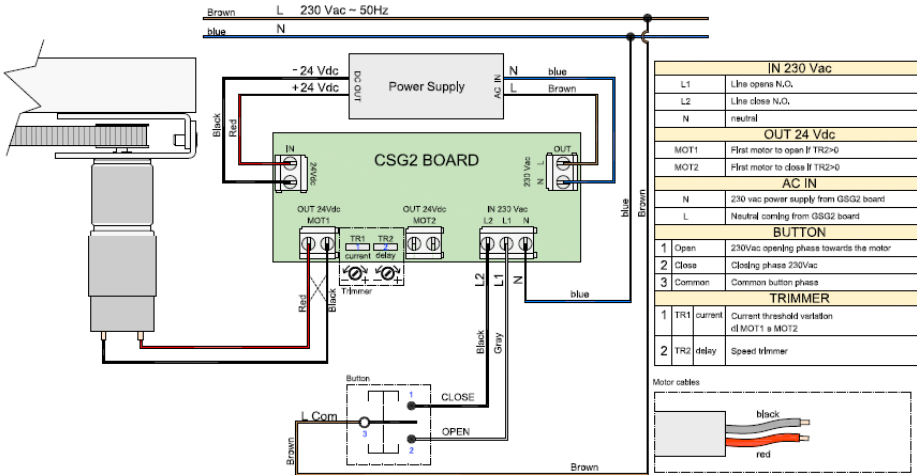
Flush mounting box PT5  
Dim. 160x130x70





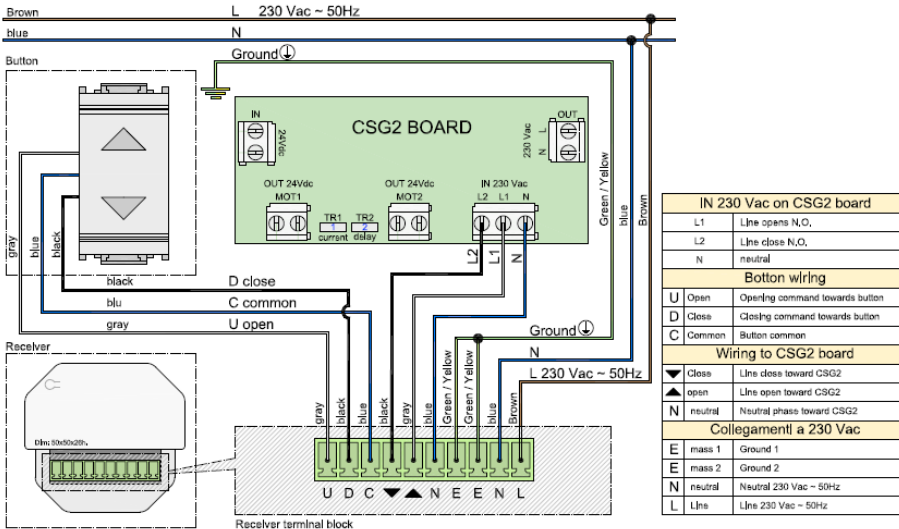
### 13.3 CONNECTIONS TO THE BOARD

WIRING DIAGRAM CSG2 - DEAD MAN



### 13.4 RADIOR RECEIVER WIRING DIAGRAM MOD. EWSCE230

WIRING DIAGRAM FOR CONNECTION TO EWSCE230 RECEIVER ON CSG2 BOARD



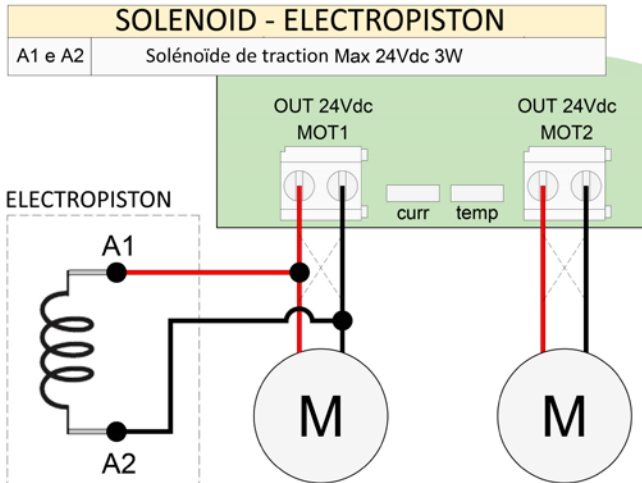


## 14 COMPATIBILITY WITH HOME AUTOMATION SYSTEMS



The automation is compatible with almost all home automation systems and existing home automation management modules that manage the opening and closing of the shutters (modules that can be purchased from specialized dealers). As for the control of rolling shutters, it is in fact sufficient to set a retention time of more than 60 seconds using your favorite application: the automation will move and automatically stop when the doors are opened / closed. The integrated card is in fact able to stop the motors when the movement is complete, identify any obstacles or presences during operation, in order to guarantee maximum safety during operation and to protect the motors from strain. This simplified use makes automation extremely easy to manage and configure! We suggest that you check the compatibility of your home automation module by consulting your trusted dealer, showing him this type of simplified use and these wiring diagrams. You can also contact our technicians who will be happy to provide you with further technical and functional details.

### 14.1 ELECTRICAL DIAGRAM FOR ELECTRIC PISTON CONNECTION



The solenoid lock must be connected by bridging the motor cables corresponding to the first leaf to open. For further information, refer to the instructions in the solenoid lock package



## 15 PROBLEMS AND ANOMALIES

**Fault table:** O.E. must keep this table updated when carrying out an intervention and attach it to the motor in the event that, in agreement with CHIAROSCURO, the motorization is to be sent for assistance, for the factory reset of the automation.

DATA	OPERATOR	ANOMALY DESCRIPTION	PROBABLE CAUSE



If the proposed intervention has not resolved the anomaly found, interrupt the operations and request the intervention of the Assistance Center.

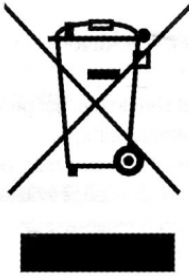


Never open the enclosure of the equipment unless expressly authorized in writing by the Chiaroscuro company. Failure to comply with this rule leads to the immediate forfeiture of the warranty and the consequent liability of the supplier for aspects concerning safety and operation.

## 16 DISPOSAL

### INFORMATION FOR USERS

Pursuant to art. 13 of the Legislative Decree 25 July 2005, n. 151 "Implementation of Directives 2002/95 / EC, 2002/96 / EC and 2003/108 / EC, relating to the reduction of the use of hazardous substances in electrical and electronic equipment, as well as the disposal of waste"



The crossed-out bin symbol shown on the equipment indicates that the product at the end of its useful life must be collected separately from other waste. The user must, therefore, deliver the equipment complete with the essential components at the end of its life to suitable separate collection centers for electronic and electrotechnical waste, or return it to the retailer when purchasing new equipment of an equivalent type, at the rate of one by one. Adequate separate collection for the subsequent start-up of the discarded equipment for recycling, treatment and environmentally compatible disposal helps to avoid possible negative effects on the environment and health and favors the recycling of the materials of which the equipment is made. Illegal disposal of the product by the user involves the application of administrative penalties provided for by current legislation.

## 17 LIMITATIONS OF LIABILITY

It is up to the buyer / installer to determine whether the engine thrust is adequate for the needs of the required application; the needs depend on various factors mainly: weight and dimensions of the door or the pair of doors, correct verticality and balance in the sliding, friction of the carriages and of the elements of contact with the doors and various entities that generate antagonistic forces which hinder the free scrolling. The intensity and duration of the stresses of these antagonistic forces are highly variable and in the absence of complex and expensive measurement and recording procedures they can only be estimated not in a subjective and approximate way.

In the offer, the supplier company expresses an assessment of these factors based first of all on data and information made available by the customer and possibly emerged from the inspection, but these assessments cannot be considered contractually binding and binding for the purpose of attributing responsibility to the supplier company in the choice and adequacy of the supply to the specific case as only with a pilot installation made in the case considered by the most significant customer can the real needs / problems of the application emerge.

The various mechanical elements are designed to cope with the stresses and normal wear resulting from the drive thrust generated by the apparatus for a number of 20,000 operating cycles. However, there are stresses and consequent wear that do not depend on the drive thrust but depend on poor installation and above all on stresses caused by friction when the intensity or frequency of the opposing forces are significant or related to consistent phenomena.

Precisely because of the unknown entity and type of said stresses, the resistance of the apparatus for this purpose cannot be guaranteed.



## 18 MARKING COMPATIBILITY CERTIFICATE

**CHIAROSCURO SAS di Girelli Marco & C.**

C.So General A.Cantore 23 - 38061 Ala (TN) Italy.

Tel: +39 0464 424715 fax: +39 0464 712027

email: [info@chiaroscuro.eu](mailto:info@chiaroscuro.eu) sito: [www.chiaroscuro.eu](http://www.chiaroscuro.eu)

Declares that the electrical product

Template	SL120i
Description	Actuator for the movement of hinged doors

It complies with the legislative provisions that transpose the following directives and subsequent amendments:

2004/108 EC Directive (EMC Directive) and subsequent amendments 2006/95 / EC EC Directive (Low Voltage Directive) and subsequent amendments 1999/5 / EC RoHS2 Radio and Telecommunications Terminal Equipment 2002/95 / EC Restriction of use of certain Hazardous Substances

Compatibility is valid provided that the SL120i actuator is used exclusively for the intended applications and installation is performed according to the assembly instructions.

ALA, 27/08/2015



Marco Girelli  
Legal Representant

## 19 WARRANTY

### CONDITIONS AND LIMITATIONS:

CHIAROSCURO SAS company guarantees the equipment for a period of 12 months.

The warranty starts from the date of purchase indicated on the fiscal document at the time of delivery of the equipment. The company undertakes to repair or replace free of charge those parts that show manufacturing defects within the warranty period. The guarantee does not include any form of compensation deriving from direct or indirect damage to persons or things. During the warranty period, if the Customer wishes the repair to be carried out by the CHIAROSCURO SAS technicians, a written request must be sent to CHIAROSCURO SAS. In this case, the costs relating to travel, food and accommodation will be fully charged to the customer. For interventions caused by defects or failures not clearly attributable to the material or manufacturing, all travel, repair and / or replacement costs of all parts will be charged to the customer. The extension of the guarantee following a repair on the equipment is excluded. In case of return of parts of the equipment, the Customer will be able to ship them only after receiving written authorization from the CHIAROSCURO SAS company. Packaging and shipping costs are charged to the customer (unless otherwise agreed between the parties). In any case, accidental damage due to transport, neglect, inadequate treatment, use that does not comply with the warnings given in this manual or for all those phenomena not dependent on the normal operation or use of the equipment are excluded from the guarantee. The warranty is void if the equipment is repaired by unauthorized third parties or if equipment or accessories not supplied, recommended or approved by CHIAROSCURO SAS are used or if the serial number is removed or altered during the warranty period. The guarantee immediately ceases its effects in the event that the Customer is late or non-payment, even partial. CHIAROSCURO SAS declines all responsibility for any damage to persons or things caused by misuse or imperfect use of the equipment. The Court of Rovereto (ITALY) is competent for any dispute.