

GRH-BEUD

MOTOR FOR SLIDING GRIES



INSTALLATION MANUAL

Our compliments for your excellent choice. The GR6-8 electromechanical gear motor has been produced for reliability and high quality. This Manual will offer information you may need to install your gear motor assuring long-lasting performance and to safeguard your safety.

HOWEVER CAUTION IS UNQUESTIONABLY INDISPENSABLE AND NOTHING IS BETTER THAN PREVENTING ACCIDENTS. GR products have been made to conform with rules and laws in force at time of manufacture.

This manual is designed exclusively for the specialized installation expert in the criteria of construction and equipment to assist in the protection against accidents in the installation and use of the gate; door and automation of such gates (adhere to the rules and laws in force).

On completion the installer should issue to the end consumer an instruction manual according to EN 12635.

Before proceeding with the installation the installer must provide an analysis of the identification and management of risks as per the standards EN 12453 and EN 12445.

All wiring of the various external electrical components connected to the automation (e.g. Photocells, flashing lights, keypads etc) must be carried out according to EN 60204-1 and the amendments made of the point 5.2.2 of EN 12453.

It is prohibited to do any repair or adjustment of the equipment if you have not taken all necessary precautions to avoid possible accidents (example: power supply disconnected, engine block). All mechanisms in motion must be equipped with appropriate protections.

The mains power line must be protected for maximum current in locked rotor condition as per government electrical laws.

Install the gear motor on gates that conform to EN 12604.

Perform the measure of strength developed by the gear motor and take the appropriate steps as per EN 12445.

Positioning photocells: These safety devices must be installed at a height not exceeding 70cm from the ground and at a distance from the floor movement of the door of no more than 20cm. Their proper functioning of the photocells must be verified at the end of installation according to Section 7.2.1 of EN12445.

Keep the activation controls of automation out of reach of children. The controls should be installed at a minimum 1.5m height above the ground and outside the range of actions of moving parts such as the gate.

All activation actions must be executed only at points from where the automation is fully visible.

Operate the remote only in view of automation.

Store carefully this manual in a suitable place known to all interested people.

Any unauthorized and arbitrary modification made to this product, releases the company GR SISTEMI AUTOMATICI DI APERTURA Srl and from any liability resulting from damage or injury to things, people or animals.

The non-observance of regulations and of safety standards here listed releases the company GR SISTEMI AUTOMATICI DI APERTURA Srl from any liability resulting from damage or injury to things, people or animals.

The automation must be coupled to a control board equipped with torque regulation that provides an anti crushing safety as described in EN 12453 - EN 12445

CONFORMITY DECLARATION:

It's in accordance with Machine Directive 39/89/CE and following modify. It's in accordance with the following directive CE:

Electromagnetic compatibility Directive 89/336/CEE and following modify. Low tension Directive 73/23/CEE and following modify.

Have been applied the following harmonized norms:

EN292/1/2, EN 294, EN60335-1, UNI EN 12453, and what applicable of the EN12445-2000.

Castiglione d/St. 05-10-2020

DISMANTLING / REINSTALLING

This product falls within the scope of the Directive 2012/19 / EU concerning the management of waste electrical and electronic equipment (WEEE). The appliance must not be disposed of with domestic waste as it is made of different materials that can be recycled at the appropriate facilities. Inquire through the municipal authority regarding the location of the ecological platforms to receive the product for disposal and its subsequent correct recycling. Furthermore, it should be remembered that, upon purchase of an equivalent appliance, the distributor is obliged to collect the product for disposal free of charge. The product is not potentially dangerous for human health and the environment, not containing harmful substances, but if abandoned in the environment negatively impacts on the ecosystem. Read the instructions carefully before using the appliance for the first time. It is recommended that you do not use the product for any purpose other than that for which it was intended, there being a danger of electric shock if used improperly.



The crossed-out bin symbol, on the label on the appliance, indicates the compliance of this product with the regulations regarding waste electrical and electronic equipment. Abandonment in the environment of the equipment or illegal disposal of the equipment is punishable by law.

To dismantle or reinstall the automation elsewhere, you need to:

1 - Disconnect the power supply and disconnect the electrical system.

2 - Remove the control panel and all the components of the installation. In the event that some components are damaged or unable to be removed, replace them.

SAFETY RULES

During the installation and the use of the automation, pay attention to the following safety rules:



Mechanisms moving!

Do not install automation in an environment saturated with explosive mixtures!





Use welding glasses!

Aaintain ear protection!

USE OF THE AUTOMATION

The gearmotor GR6-8 was designed and built for the opening of gates with weight max. 800kg. G.R. Srl assumes no responsibility for a purpose other than that provided by gearmotor GR6-8. Since automation can be put into motion in view by button or remotely by remote control, it is essential to check frequently the perfect efficiency of all safety devices. It is advisable to check periodically (every six months) the regulation of electronic friction of which must be equipped the electronic control board.

TECHNICAL DATA

	GR6 220V	GR8 220V
MAX. weight of the gate	600Kg	800Kg
Power supply	220Vac	220Vac
Nominal power	190W	350W
Capacitor	8,0μF	12,5µF
Absorption	1,1A	1,5A
RPM	1400	1400
Torque	13,4Nm	21,2Nm
Gate speed	10,2m/min	10,2m/min
Thermal protection	150°C	150°C
Working temp.	-20°C +60°C	-20°C +60°C
Lubrication	GREASE	GREASE
Protection IP	IP44	IP44
Use frequency	25%	35%

PRELIMINARY CHECKS

- Read the instructions in the manual carefully.
- Check that the gate is perfectly horizontal
- Check that it slides smoothly and without friction points
- Check that there is an adequate base for fixing the motor, otherwise
- prepare it - Check that the electrical system complies with the characteristics required

by the gearmotor

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FIG.1

- Remove the motor from the box, check that it is not damaged. Unscrew the screws A and B and remove the cover FIG.1



A = 105mm = VERTICAL DISTANCE BETWEEN THE TEETH OF THE RACK AND THE GROUND

B = 20mm= HORIZONTAL DISTANCE BETWEEN THE DRIVE WHEEL AND THE GATE

FOUNDATION PLATE (OPTIONAL)

If the base has yet to be prepared and the installation of the motor is not immediate, it is possible to cement the foundation plate (NOT INCLUDED) following the installation dimensions FIG.2 – Position the foundation plate as shown in FIG. 3



C = 55mm = HORIZONTAL DISTANCE BETWEEN THE BASE OF THE MOTOR AND THE GATE

GEARMOTOR POSITIONING

If there is a concrete base already prepared, it is possible to install the motor, without using the foundation plate, following the installation dimensions in FIG. 2. In this case, suitable M10 screw anchors must be used

- Position the motor so that the cable outlets correspond to the appropriate holes on the motor body. FIG. 4

- Secure the motor to the ground with suitable anchors, using the slots provided FIG. 5.

Or if the foundation plate is installed, fix the motor to the 4 log bolts provided as shown in FIG.3.



INSTALLATION

INSTALLING THE RACK

If the rack is already installed, check that there is a space of approximately 1mm between the drive wheel and the rack FIG.5,



if the rack is not installed, proceed as follows:

 Take the first piece of rack and position it on the motor sprocket making sure that at the end of the installation there is always 1mm of space (if necessary use temporary shims under the motor). Slide it to the point indicated in FIG. 5

- Weld or screw the first pin or spacer to the gate (depending on the type of rack).

- Apply all the other elements of the rack so that they are perfectly joined and aligned with the first one. Use pliers and a piece of rack for perfect alignment of one element with the other. See FIG. 6



EMERGENCY RELEASE

To unlock the motor proceed as follows:

- remove the cap D
- Insert the supplied key E and turn CLOCKWISE for 4 turns FIG.7
- To overturn the motor turn ANTICLOCKWISE for 4 turns





IT'S RUNNING

FINAL OPERATIONS

Once the rack and motor have been fixed, release the motor see FIG.8, and move the gate to check that it slides freely and effortlessly.

ATTENTION vérifier qu'il ne "repose" pas sur la roue motrice du moteur. Dans ce cas, réglez la crémaillère pour laisser environ 1 mm d'espace entre le pignon du moteur et la crémaillère

- Install the limit switch cams on the rack FIG. 8 without fixing them in a definitive way, in order to be able to adjust them in the optimal position when programming the control unit.



CAUTION The limit switch cams are used to operate the limit switches of the motor which, by means of the control unit, interrupt the movement of the gate during opening and closing. They must be positioned at the ends of the rack taking into account any inertia and the delay in stopping the gate with respect to the operation of the limit switches.

- Proceed with the electrical connections, program the control unit, carry out the final test and reinstall the cover cards.

SCHEDULED MAINTENANCE WARNINGS

Pefore any maintenance operation, disconnect the power using the main switch

The equipment must be maintained in such a way as to maintain the conditions that guarantee safety and correct operation

Always use original spare parts

Do not carry out any interventions that modify the machine

The modified machine needs a new CE mark

The adjustment of the function of the automation must be carried out by specialized personnel, in compliance with the relevant regulations. During these operations the presence of two operators is expected

SCHEDULED MAINTENANCE - OPERATIONS

DESCRIPTION	FREQUENCY	ENTRUSTED	OPERATION
Photocells cleaning	Monthly	Operator	Clean with damp cloth
Control of the gate supports of the fall arrest devices, the limit stops, the rack, the sliding guide and the sliding of the gate	According to necessity	Operator	Check the integrity of all items, state of welds and corrosion. Unhook the motor and check the friction points of the gate and the distance between the pinion and rack (1.0mm).
Control of the sensitivity of the electronic clutch (torque regulation) of the control unit	Semiannual	Technician	Check the torque adjustment as indicated in the EN 12453 - EN 12445 standard
Control of the IP protection	Semiannual	Technician	Check that there are no traces of moisture or water inside the electrical enclosures
Monitoring current dispersion	Annual	Technician	Verify that the dispersion of current is less than 7.5 A
Control of signals	Semiannual	Operator	Verify that the safety warning signage is complete and intact



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ID100 Manual – Control for one motor 240 volts

Important: Read this manual before the installation. This manual is integral part of your product, keep it for reference.

Warnings:

First of all verify that this product is suitable for the installation.

- Read carefully technical characteristic before the installation.
- L Installation of this control unit must be done by qualified installers, following rules and regulations of installation country.

It is mandatory do periodic maintenance.

L Maintenance or repairing must be done by qualified Technicians.

Turn power off before maintenance or repairing.

This device is intended for gate automation, any other applications is not advised.

Anufacturer discharges all responsibility for failing to respect the rules.

Don't leave this control unit unattended or where children can reach.

Preliminary checking: Before to install this control unit,

Verify that all the connected devices respect the technical characteristics mentioned in the table which follows.

Verify that a working and suitable RCD switch is installed up line of the installation.

Leven that cables composing the installation are suitable for it.

The manufacturer:

Declares:

The control unit ID100 is compliant to following

directives:

- 2006/95/CE Low voltage directive.

- 2004/108/CE Electromagnetic compatibility.

Castiglione 10-11-2016

TECHNICAL CHARACTERISTICS					
Power Supply	230Vac +/- 10%				
Power consumption	800mW (stand-by)				
Auxiliary supply out	24Vdc, 100mA				
TEST output	24Vac, 100mA				
Motor output	230Vac, 750W				
Flashing light output	230Vac, 250W				
Courtesy light output (AUX)	230Vac, 250W				
Operating temperature range	-5 +60°C				



1	Antenna's shield
2	Antenna
3	Start/Open input (NO)
4	Pedestrian/Close input (NO)
5	Common
6	Photocell input (NC)
	During pause: Reloads pause
	During closing: Reverses motors direction
7	Photostop input (NC)
	During pause: Reloads pause
	During closing: Reverses motors direction
	During opening: stops the motors and waits till contact returns close.
8	Opening Edge input (NC)
	Enabled by advanced menu.
-	During opening: Reverses motors direction for 1 sec.
9	Closing Edge input (NC/8K2)
	Enabled by advanced menu.
	During pause: Reloads pause
10	
10	Limit switches input (NC)
11-12	Linit Switches input (NC)
12	STOP Input (NC) Always stops the gate
13	Common
15 16	Continion Auxiliany supply sutput 241/as
17-19	Auxiliary Supply Output 24vac
10-21	Elashing light output 220Vac
20-21	Courtosy light output 230Vac
20-21	Output motor 230Vac 750W
22 23 24	Bower supply input 230Vac
23-20	Forth input
27 TD1	Slowing down speed trimmer
	Motors torque trimmer
TS1_ TS3	Buttons un/down
TS2	
DSP	
E1	230V/ac outputs fuse 54 East
L T	

INPUT STATUS

When the control unit is waiting for an opening or closing cycle, or when it's in pause, status of inputs is displayed as following diagram



QUICK INSTALLATION

To program working times, <u>set the gate to fully closed</u> then press UP (TS1) until you read **AU** on the display. The gate starts opening. If limit switches are installed the control unit learns itself the gate direction and the procedure is over after the gate has fully open and closed. If limit switches aren't installed, you will need to push ENTER (TS2) once the motor is fully open. Then wait until the gate completely closes.

TRIMMER REGULATIONS

TR1 The slow down speed trimmer regulates the slow down speed.

TR2 The motors torque trimmer tunes the power on the motor. Attention: during first 2 seconds after start, each motor pushes at 100% of is power (Boost power).





OBSTACLE DETECTION TUNING AT NORMAL SPEED

Attention: Obstacle detection requires a properly installed gate, no resistance points, no defects in the drive, and the motor must not be overwhelmed (gate too heavy for the motor).

Enable obstacle detection using the "OD" basic menu and enable parameter F

In order to enable obstacle detection, the encoder input must be disabled (see advanced menu).

Set torque trimmer TR2 to max rotating it clockwise and let the gate run giving a START command, once the gate has been running at least 2 seconds (boost) slowly reduce torque until the gate reverses. Now rotate back clockwise TR2 1/8 and test the power of the gate.

Attention:

For first 2 seconds after starting (boost) and in the first two second of the slow motion phase, the gate ignores obstacle detection (boost).

BOARD PROGRAMMING

BEFORE PROGRAMMING FULLY CLOSE THE GATE

USE OF DOWN, UP AND ENTER BUTTONS FOR PROGRAMMING

Control unit function programming is made within a special configuration menu, which you can access and where you can shift through DOWN, ENTER and UP keys.

The configuration menu consists in a list of configurable items; the display shows the selected item.

- By pressing DOWN, you will pass to the next item
- By pressing UP, you will return to the previous item
- By pressing together UP and DOWN buttons you exit from the item

• By pressing ENTER, you can view the current value of selected item and possibly change it.

There are 2 main menus:

- BASE PROGRAMMING (BASE MENU): only the useful parameters for a base programming are displayed.

- *ADVANCED PROGRAMMING* (ADVANCED MENU): parameters of the advanced menu are displayed.



BASE MENU

Press ENTER for at least 1 second to enter base menu.

od is on the display, with up/down it's possible to select other functions of this menu.

To exit this menu select **EX** or press UP and DOWN together. After 2 minutes without actions, the control unit exits itself from this menu.

BASE MENU MAP



RT: Delete a code with transmitter, transmit the code to be removed, on the display is show "**OK**" if the operation is successful.

Rn: Delete a code with memory number, select the number in the memory to be deleted and confirm with enter. **Ra**: Delete all transmitters in memory. To delete all codes select **RA** and push enter, then confirm with **Y5**.

	J.↓			
		L	AU	Automatic learning procedure.
LT Learn working times	Ì.	MN	Manual learning procedure.	
		ΨI	EX	EXIT or push 차 together

LT learns working time: Attention: in this procedure all safety inputs are disabled. The gate learns all the working times. If limit switches are connected (coherent with motor direction) the board learns the direction of the gate. If the limit switches aren't connected verify gate direction with dead man "DM" menu and change it with gate direction "GD" advanced menu.

If NC/analogue edges are connected, they are automatically detected and enabled.

Is it possible to program working time automatically, please refer to "Quick installation". Select **LT** in the base

menu and push enter, after select the learning mode with UP/DOWN.

AU: Automatic learning procedure.

MN: Manual learning procedure.

To exit this menu select **EX** or push UP/DOWN together.

- AU Automatic procedure for working time learning: In this procedure all safety inputs are disabled.

- MN Manual procedure for working time learning: In this procedure all safety inputs are disabled.

BEFORE TO START SET THE GATE COMPLETELY CLOSED.

The gate starts opening, in this phase it's possible to set the slowing down speed with the SD speed trimmer. Once the gate is fully open, push ENTER.

If limit switches are installed, the gate stops itself once open.

M1 is written on the display

In the phase which follows use the ENTER button to control the following sequence: starting motor, starting slow down, stop motor.

If limit switches are installed the motor stops automatically at the end of closing. $|\uparrow\uparrow|$

	ΨI		
5P	Set pause time	Ļ	↓↑ _{0 – 99}

5P Set pause time:

Use up/down to set the pause time between 0 and 99 seconds. Press ENTER to confirm. To exit without modifications push together UP and DOWN.

Attention, setting a pause time doesn't enable automatic closing, please refer to section **"OL** operating logic" to enable this function

	₩ I			
		01	Open motor	
DM	Dead man mode		CI	Close motor
		↓	EX	EXIT or push 차 together

DM Dead man mode:

Selecting this menu it's possible to control each motor in dead man mode. Press and hold ENTER to start the selected motor in dead man mode



BOARD PROGRAMMING ADVANCED MENU

Press the ENTER button until the display shows **TM**. Use UP and DOWN to select all items in this menu. To exit this menu select **EX** or push UP/DOWN together. After 2 minutes without actions, the control unit exits itself from this menu.

ADVANCED MENU MAP

				TI	Working time	
			لے ا	51	Start time slowdown	0 – 99 I 1
	tm	Working times	Ì.A.	pt	Pedestrian time	٧
↓ ↓			↓ I	tc	Courtesy light time (x 10 sec)	
4 SEC.				ex	EXIT or push 🕻 together	

TM Working times menu: In this menu it is possible to modify working times of control unit: Once selected working time to be changed, use the UP and DOWN to modify it from 1 to 99 seconds. Press ENTER to confirm.

	↓ I			
		Γ	Rh	Gate direction RIGHT
gd	Gate direction		Lf	Gate direction LEFT
		ΨI	ex	EXIT or push 🚺 together

GD Gate direction: In this menu it is possible to invert motor direction and limit switches according if gate is right or left. Use UP and DOWN to choose right (\mathbf{rh}), left (\mathbf{lf}) or exit (**EX**). Press ENTER to confirm.



En Enables encoder:

Enables or disables the encoder input on **J1** connector. Don't enable this function if none encoder connected.

	$\downarrow\uparrow$			
		ſ	¥5	YES - SET FACTORY DEFAULTS
D1	Load factory defaults	Ì.	Nt	NOT
		↓	ex	EXIT or push 🕻 together
	J ↑			
		Ļ	¥5	YES
RC Release end travel	۱. ۲.	Nt	NOT	
	↓I	Ψľ	ex	EXIT or push 🕻 together

RC Release torque at work end:

Enabling this function, the motors reverse direction for a while to release the torque at end of work.

	$\downarrow\uparrow$			
		L	¥5	YES
55	Soft start	Ì.	Nt	NOT
		↓	ex	EXIT or push 🕻 together

55 Soft start: In this menu you can enable the soft start of 1 second when motor starts moving

		Ţ	¥5	YES - edge is enabled
eo	Opening analogue		Nt	NOT – edge is disabled
	euge	↓	ex	EXIT or push 🕻 together

Eo Enables opening edge: This function enables or disables the opening edge.

Y5: Edge enabled (NC).

NT: Edge disabled (left input unconnected)



TP Enable photocells test: Enabling this function the photocell transmitters must be supplied by "TEST" output on connection 17-18. The control unit tests the contact at each cycle.

↓↑					
T5	Enable photostop test	↓与	Y5	YES - test is enabled	
			Nt	NOT – test is disabled	
			ex	EXIT or push 🕻 together	

T5 Enable photostop test: Enabling this function the photostop transmitter's must be supplied by "TEST" output on connection 17-18. The control unit tests the contact at each cycle.

Attention: If both test functions **TP** and **T5** are disabled, TEST output on connections 17-18 works as open gate signal light 24V (as by default).



Ar Enable automatic transmitters leaning: Enabling this function it's possible to insert new transmitters without accessing base menu. Refer to "Automatic transmitters learning".



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QUICK TABLE BASE MENU

DISPLAY	DESCRIPTION	DATA	DESCRIPTION	DEFAULT	DATA
	Obstacle detection	D 5	Disabled		
ad .		F	Enabled in normal speed	D 5	
ou		F 5	Enabled both in fast speed and slowing down.		
		EX	EXIT		
	Operating logic	5T	Step by step logic.		
		At	Automatic closing with stop function.	5T	
		CD	Automatic closing for condominium function.		
oL		Oc	Open/Close logic, inputs start and pedestrian work as open and close		
		oa	Open/Close logic with automatic closing and stop function, inputs start and pedestrian work as open and close		
		EX	EXIT		
	Learns radio codes	C1	Learn a transmitter on channel 1		
		C2	Learn a transmitter on channel 2		
		LL	Learning of a code for courtesy light		
LC		rt	Delete a code with transmitter*		
		rn	Delete a code with memory number*		
		ra	Delete all transmitters*		
		EX	EXIT		
	Learn working times	AU	Automatic learning procedure.		
LT		MN	Manual learning procedure.		
		EX	EXIT		
5P	Set pause time		↓↑ _{0 - 99}	10 sec.	
	Dead man mode	01	Open motor		
DM		C 1	Close motor		
		EX	EXIT		
EX	Exit				

QUICK TABLE ADVANCED MENU

DISPLAY	DESCRIPTION	DATA	DESCRIPTION	DEFAULT	DATA
	Working times	TI	Working time motor 0 – 99	30 sec.	
		51	Start time slowdown motor	20 sec.	
tm		pt	Pedestrian time	08 sec.	
		tc	Courtesy light time (x 10 sec)	12 120 sec.	
		EX	EXIT		
	Gate direction	Rh	Gate direction RIGHT		
gd		Lf	Gate direction LEFT	Rh	
		ex	EXIT		
	Encoder enabling	¥5	YES		
En		Nt	NOT	Nt	
		EX	EXIT		
	Load factory defaults	¥5	YES - SET FACTORY DEFAULTS		
D1		Nt	NOT		
		EX	EXIT		
	Release end travel torque	¥5	YES		
RC		Nt	NOT	Nt	
		EX	EXIT		
	Soft start	¥5	YES	Nt	
55		Nt	NOT		
		EX	EXIT		
	Opening analogue edge	¥5	YES - edge is enabled	Nt	
eo		Nt	NOT – edge is disabled		
		EX	EXIT		
	Closing analogue edge	D5	Edge disabled	- D5	
		nc	Edge with NC contact.		
ec		an	Analog edge 8K2		
		EX	EXIT		
	Enable photocells test	¥5	YES - test is enabled	Nt	
tp		Nt	NOT – test is disabled		
		EX	EXIT		
	Enable photostop test	¥5	YES - test is enabled		
T5		Nt	NOT – test is disabled	Nt	
		EX	EXIT		
	Transmitters auto-learning	¥5	YES - enabled		
ar		Nt	NOT – disabled	Y5	
		EX	EXIT		
EX	Exit				

Error code	Problem and eventual solution
El	Power control system failiture. Send board in assistance.
E2	Obstacle detected in the previous cycle. Verify that gate is free and there's no obstacles in the range.
E3	Photocells or photostop obstructed for longer than 2 minutes. The gate can't start moving and the blinker could be fixed on. Verify that photocells and photostop aren't obstructed, and if there's no bugs inside them. Verify wiring to this devices.
E4	Safety edges are engaged for longer than 2 minutes. Verify wiring to emergency device. If there isn't an emergency device installed, disable it by advanced menu.
E5	Stop is engaged for longer than 2 minutes. Verify wiring to emergency device. If there isn't an emergency device installed, shunt this input with the common.

