ITALIAN STYLE FOR LIFTS

MANUAL

DOOR DRIVE

OPR500-H

FIRMWARE VERSION: V03-H

English

REV.3
01/03/2016

Summary

1. GENERAL INFORMATION: 2
2. CONNECTIONS (CONTROL PANEL): 3
3. START-UP: 4
4. COMMANDS FROM THE CONTROL BOARD OF THE ELEVATOR 5
   4.1 Opening 5
   4.2 Closing: 5
   4.3 NUDGE: 5
   4.4 safety reopening system: 6
5. KEYPAD: 7
   5.1 OPENING PROFILE AND CLOSING PROFILE: 8
   5.2 Auxiliaries (“TORQUES”) 9
      5.2.1 Maximum Torque default value=095) 9
      5.2.2 Limit Torque (default value=070) 9
      5.2.3 Stationary opening torque (default value=020) 9
      5.2.4 Stationary closing torque (default value=005) 9
      5.2.5 Security Torque in closing (“default value=070) 9
      5.2.6 Security Torque in opening (default value=080) 9
   5.3 Commands 9
   5.4 OPTIONS 9
      5.4.1 Safety reopening system in closing (“SEC. CL TORQUE”) 9
      5.4.2 Safety reopening system in opening (“SEC. OP. TORQUE”) 10
      5.4.3 Command type (“COMMAND MODE”) 10
      5.4.4 Engine rotation (“MOTOR ROTATION”) 10
      5.4.5 Auto-racing (“AUTO RUNNING”) 10
   5.5 Summary diagram of the programming menu 11
6. FunCTION 12
   6.1 IxT heat protection of the motor: 12
7. Led diagnostic 12
8. PARAMETER OF DEFAULT: 13
9. DIMENSIONS: 14
10. OPR500-BUFFER_OPR400 COnnections 15

1. GENERAL INFORMATION:

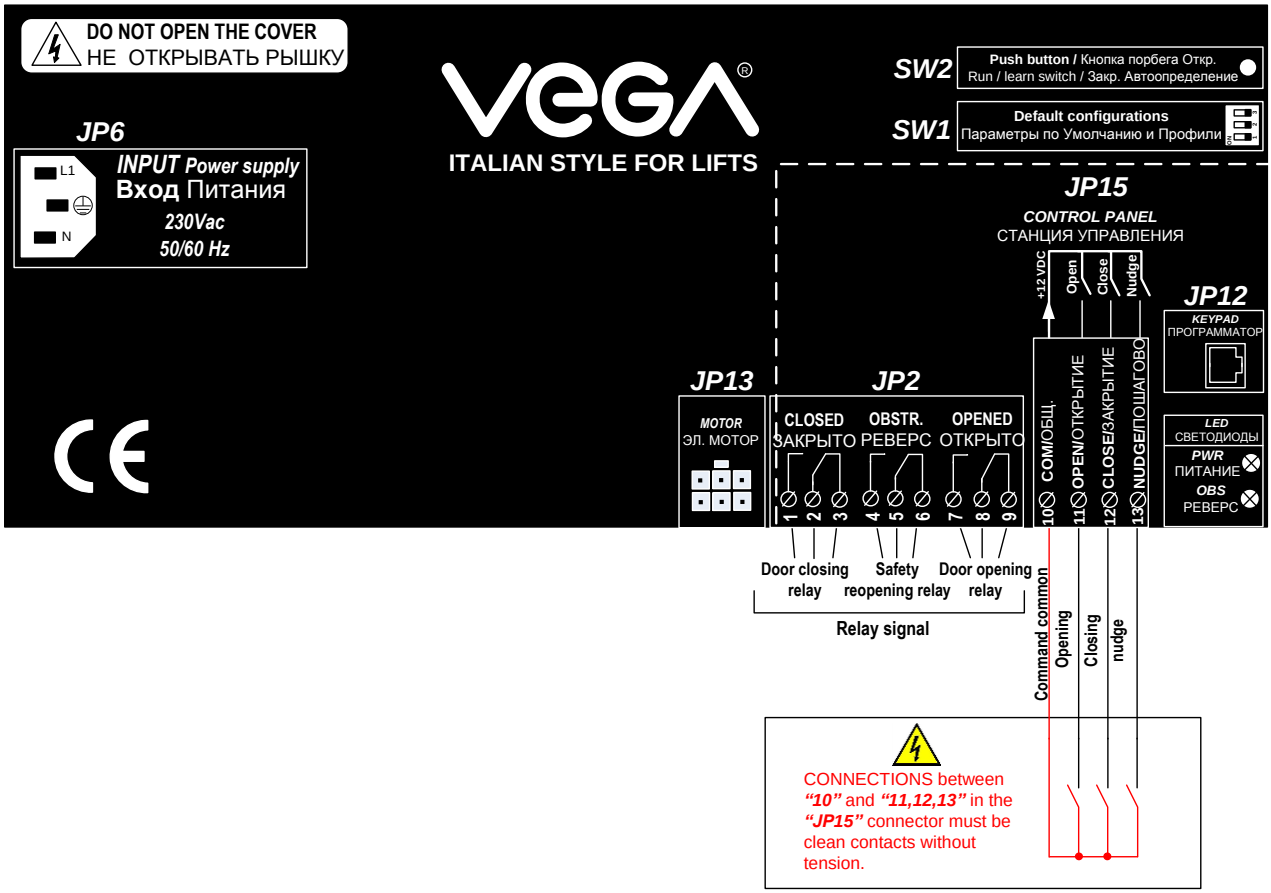
Power supply	230Vac ±10% (50-60Hz)
Dimension	270mm x 106mm x 45mm
Weight	0,7Kg
Degree of protection	IP20
On board protection	8A
Output relay switching capacity	24VDC 3A

PINOUT		
JP2	Connector for output signal ➢ CLOSED ➢ OPENED ➢ OBSTRUCTED	Kimenetek: -Zárva -Nyitva -Szorítás gátló
JP6	Mains connection 230V (50/60 Hz)	
JP12	Keyboard plug	
JP13	Motor plug	
JP15	Connector for input (ONLY CLEAN CONTACT, without voltage) ➢ OPEN ➢ CLOSE ➢ NUDGE	Bemenetek: -Nyit -Zár -Tolás
SW1	Dipswitch for default configuration	
SW2	Push button: -learn (press for 3 seconds) -Run (open / close) (quick press).	Nyomógomb: -Tanulás 3sec nyomvatartani -Teszt Nyit/zár
PWR(led)	Normal work→ GREEN Error→Red	Normál üzem zöld LED Hiba :Piros led
OBS(led)	Obstruction→Yellow	Sárga Szorítás gátlás led

REGULATIONS AND STANDARDS

EMC test	EN 12015 and EN12016
CE	Certified
Electrical safety according to EN 60950	Conforming

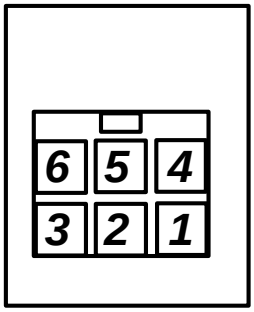
2. CONNECTIONS (CONTROL PANEL):



DC GEARED GEARMOTOR (108657 FCEE)

Supply voltage	24 VDC
Maximum speed	220 rpm
Gear ratio	1:26
Pulse generator (Encoder integrated in GM)	3
Degree protection	IP20
Nominal Torque	1.5 Nm (2.5 A)

JP13



MOTOR

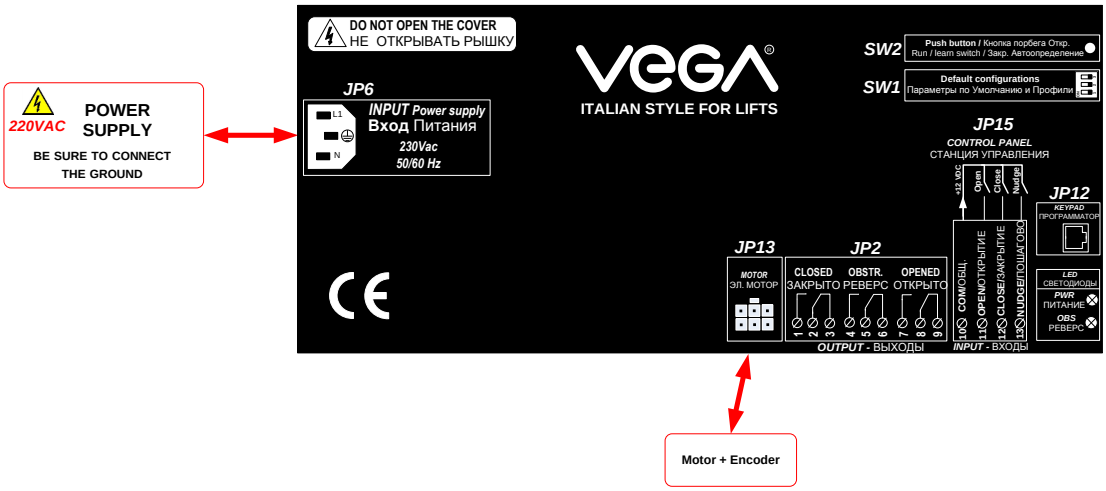
PINOUT: Code 108657 FCEE

1:M+ → Red
2:M- → Blue
3:GND → White
4:ENC B → Green
5:+5V → Brown
6:ENC A → Yellow

3. START-UP:

1. If they are not connected yet, connect the motor (JP13).

2. Connect the 230 V mains power (JP6).



IMPORTANT!

Check that at the power on, the doors will have to go in closing.

3. Detection of the Point 0 and self-learning:

0 Pont és öntanulás

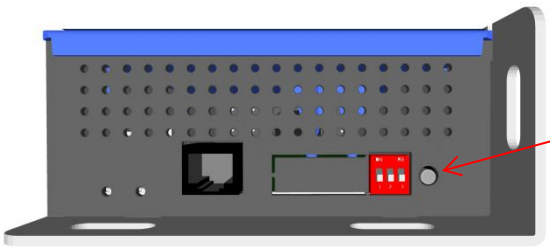
DURING THIS PHASE, MAKE CERTAIN THAT THE TRAVEL OF THE DOOR IS NOT INTERRUPTED BY ANY OBSTACLES AND THAT THE DETECTED POINT 0 ACTUALLY CORRESPONDS TO FULLY CLOSED DOORS.

Az ajtót teljesen be kell zárni, ez lesz a nulla pont

In case of operator with retractable cam, the door can be considered as completely closed, when the retractable cam is closed.

4. SELF-LEARNING

The Self-learning function must be set-up by the installer at start-up and is required in order to have the drive memorize the number of encoder pulses corresponding to the door clear opening.



START SELF-LEARNING
Press the SW2 push button, for 3 seconds.

Zárt állapotból kell indítani a tanulást és végig kell mennie.

The board performs the self-learning storing the door clear opening data in its permanent memory, and the door remains open, waiting for command. Self-learning must always be performed with completely closed doors. During this phase, make sure that the run of the doors is not interrupted by obstacles. Otherwise, repeat the operation.

4. COMMANDS FROM THE CONTROL BOARD OF THE ELEVATOR

4.1 OPENING

Controlled by the elevator control board by closing terminals **(10-11)** in **JP15** or by launching the command from the user interface or with pushbutton SW2.
The opening command is ignored in the following instances:
- Searching of Point 0;
- Self-learning phase;
- When the door closing command is active. (for the door opening command to be accepted during the closing phase it is necessary to interrupt the door close command first).;
- Alarm on;
- Door closing with Nudge;
- Door closing command from the user interface.

4.2 CLOSING:

Closing of the door must be controlled by the elevator control board by closing terminals **(10-12)** in **JP15** or by launching the command from the user interface or with pushbutton SW2.
The closing command is ignored in the following instances:
- Searching of Point 0;
- Self-learning phase;
- When the door opening command is active.(for the door closing command to be accepted during the opening phase it is necessary to interrupt the door open command).
- Alarm On;
- Door closing with Nudge;
- Door opening command from the programming pad (user interface);
- Safety reopening system is activated;
- Reopening command from the photocell.

4.3 NUDGE:

In this mode, the drive performs a forced closing of the door with a safety torque corresponding to the parameter of the safety reopening system, in compliance with EN 81.1/2 and at very low speed.
Nudging is optional and, if needed, must be controlled from the control board of the elevator, after a certain number of unsuccessful tries to close the doors.
A sound alarm to warn passengers in the cabin that the doors are going to be forcefully closed should be setup whenever the nudging function is used.
The function is controlled by closing terminals **(10-13)** in **JP15** and only remains active while the command stays on.
Nudge may be commanded during the open stationary state and while the door is in movement as well.
If the command is interrupted prior to complete closing of the door, the drive performs the opening or closing command coming from the elevator control board.
Should this command not be present, the door will remain still, waiting for command.

4.4 SAFETY REOPENING SYSTEM:

Szoritásgátló:

The presence of an obstacle between the closing doors will cause a rise in the current. Exceeding the level of the set torque limit causes the doors to reopen following the speed profile set for the estimated position.(relè “OBSTR”).

OPTIONS→SEC. CL TORQUE→MASTER

Automatikusan visszanyit

If closing is detected an obstacle, the door re-opens automatically.
If there remains a closing command, the door closes again, if the obstacle has not been removed, the cycle repeats to infinity if instead the obstacle, has been removed, the door, complete the closure resuming normal operation.
The last section of 20mm, the safety reopening is not active, so if there is an obstacle in this part, the door stops automatically without re-open, signaling the opening limit switch.

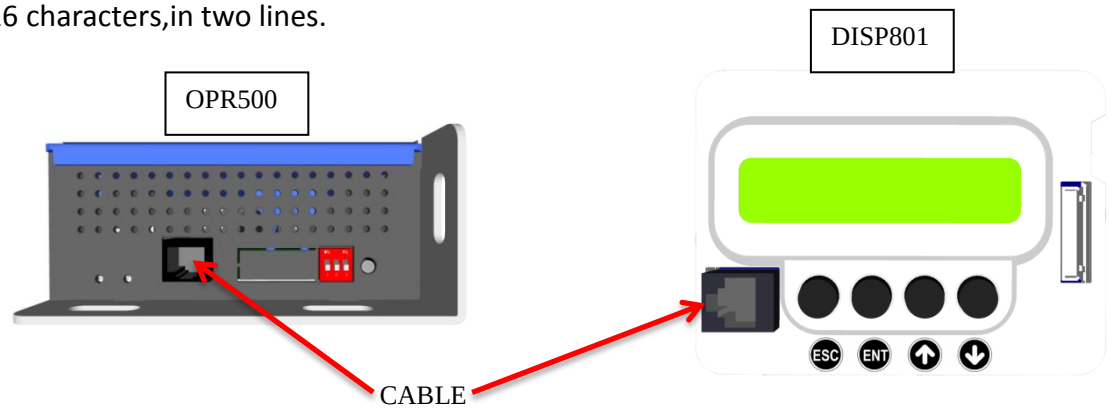
OPTIONS→SEC. CL TORQUE→SLAVE

Csak megáll, a vezérlés nyittat vissza.

The door stops activating the safety reopening (relay "OBSTR") and waits for a command from control panel.

5. KEYPAD: Programozó készülék

The user interface consists of 4 buttons (ESC, ENTER, UP and DW) and an alphanumeric display to 16 characters,in two lines.



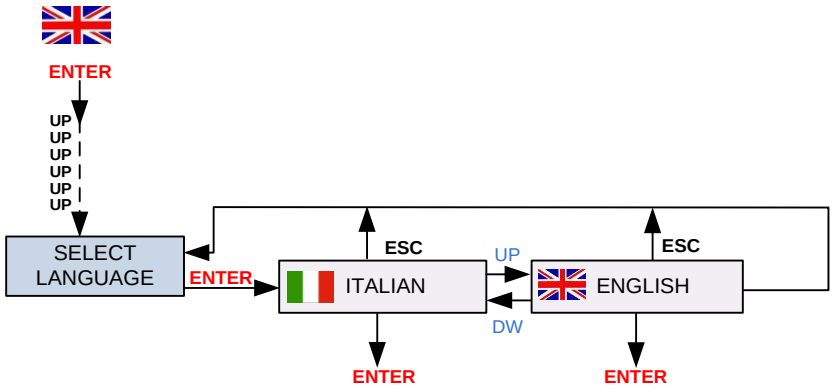
CB6.RJ12-RJ12.0050→ 2 RJ12 connectors (50 cm)

Using the buttons "UP" and "DW" you can select the commands that you want to give and confirm by pressing the ENTER key.

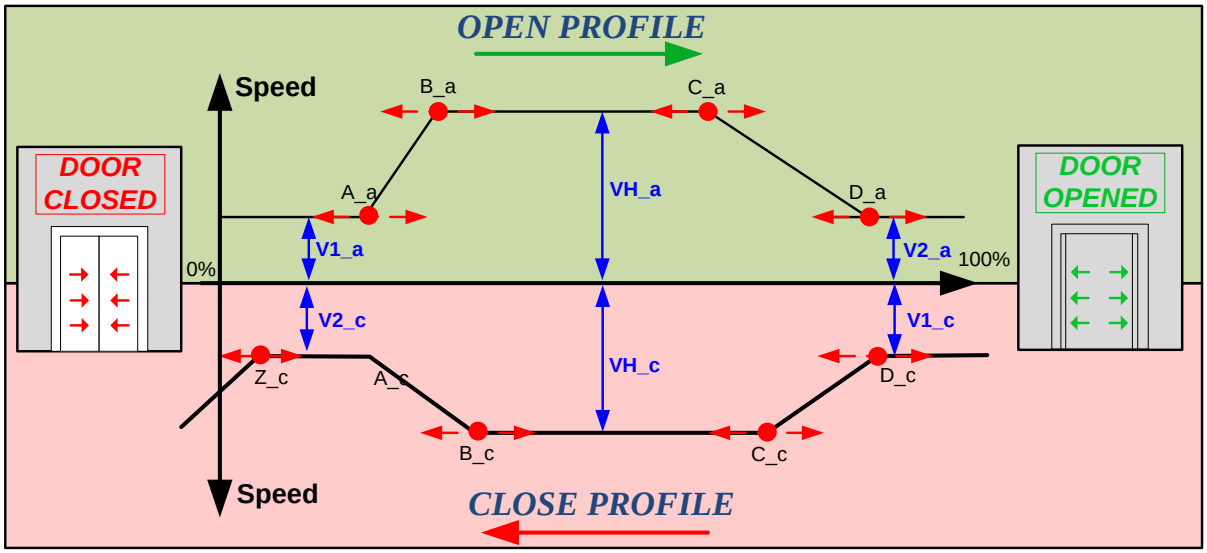
Code	Description
REPHASING	Rephrasing phase
LEARNING	Self-learning
IXT-PROT	Ixt protection
ALARM	Door in fault
WAITING	Stop door, in waiting of command
RUNNING	Door in moving
O	"11 OPEN" input active
C	"12 CLOSE" input active
N	"13 NUDGE" input active
ENC-INC	Incoherence encoder pulses
ENC-KO	Encoder connection interrupted
OVERTEMP	Current protection engine (C°>90°)
OVER-CURR	Overload current
S	SD-CARD presence (S=unlocked)
DOOR OPENED	"OPENED" relay activation (JP2→7-8-9)
OBSTRUCTION	"OBSTRUCTION" relay activation (JP2→4-5-6)
DOOR CLOSED	"CLOSED" relay activation (JP2→1-2-3)

LANGUAGE:

Its possible choose the language at parameter: SELECT LANGUAGE



5.1 OPENING PROFILE AND CLOSING PROFILE:



THE VALUE OF EACH PARAMETERS IS A PERCENTAGE OF MAXIMUM VALUE:

- For position parameters (A_a, B_a, C_a, D_a, D_c. C_c, B_c, A_c, Z_c) the maximum value is the length of door clear opening, calculated during the self-learning.
- For speed parameters (v1_a, vH_a, v2_a, v_appr, v1_c, vH_c, v2_C, v_rif) the maximum value is 0.4 m/s (calculated for a bullwheel of diameter 35 mm).
- For torques parameters (Max Torque, Limit Torque, Stat Op. Tor., Stat Cl. Tor., Sec. Cl. Tor., Sec. Op. Tor.) the maximum value is 8 A equivalent to a force of 340 N (calculated for a bullwheel of diameter 35 mm).

OPENING PROFILE:

Parameters	Description		Default
Point A_a	Start opening acceleration ramp		008
Point B_a	End opening acceleration ramp		018
Point C_a	Start opening deceleration ramp		075
Point D_a	End opening deceleration ramp		099
Speed V1_a	Coupling cam opening speed	Zárnyitó oldási seb.	007
Speed VH_a	Maximum opening speed		060
Speed V2_a	End opening speed		004
Speed learn	Learning speed	Tanulási sebesség	015

A sebességváltási pontok a 0, zárt állapothoz képest, százalékban vannak megadva. A sebességek szintén százalékban szerepeklnek.

CLOSING PROFILE:

Parameters	Description	Default	
Point D_c	Start closing acceleration ramp	099	
Point C_c	End closing acceleration ramp	085	
Point B_c	Start closing deceleration ramp	030	
Point A_c	End closing deceleration ramp	008	
Point Z_c	Additional run closing for mobile coupling cam	005	Zárnyitó készülék pontja
Speed V1_c	Starting closing speed	005	
Speed VH_c	Maximum closing speed	050	
Speed V2_c	End closing speed	003	
Speed rif	Speed during the initial synchronization	015	Bekapcsolás utáni kezdő seb.

5.2 AUXILIARIES ("TORQUES")

Represented by five references of current expressed in hundredths the maximum value. The maximum value of the couple's 8 A (Max Force = 340 N).

5.2.1 Maximum Torque default value=095)

This represents the maximum torque that the drive can supply according to the requested speed profile.

5.2.2 Limit Torque (default value=070)

This represents the level of current that must be exceeded in order to acquire the status of completely open or completely closed door, so that the drive will set itself.

5.2.3 Stationary opening torque (default value=020)

Nyomatékkal nyitvatartás. A szükséges legalacsonyabb értékre kell állítani

It sets the pushing force needed to keep the door open.

Nyomatékkal zárvatartás A leg alacsonyabbra kell állítani.

5.2.4 Stationary closing torque (default value=005)

It sets the pushing force needed to keep the door closed. Sets the pushing force.

5.2.5 Security Torque in closing ("default value=070)

The security torque is used as a limit level for the safety reopening system in closing. The programmed value is expressed as a percentage of the maximum value that is 10 A.

Szorításgátló nyomaték szint.

5.2.6 Security Torque in opening (default value=080)

The security torque is used as a limit level for the safety reopening system in opening. The programmed value is expressed as a percentage of the maximum value that is 10 A.

5.3 COMMANDS

-The commands Open and close have priority over the elevator control board commands and open and close the door immediately.
-The Save command causes all of the data handled by the interface to be saved in the permanent memory
-The Default command replaces all the current data in use with the original factory settings.
-The recalled default parameters will be saved in the permanent memory of the microprocessor (Eeprom).
-The learning command allows at the board to memorize the number of encoder impulses corresponding to the door clear opening.

- A nyitás és zárás parancsok elsőbbséget élveznek a felvonó vezérlőpaneljével szemben parancsol, és azonnal nyissa ki és csukja be az ajtót. -A Mentés parancs hatására az interfész által kezelt összes adat elmentésre kerül a állandó memória -Az Alapértelmezett parancs lecseréli az összes jelenleg használt adatot az eredeti gyári adatokra beállítások. -A visszahívott alapértelmezett paraméterek az állandó memóriájába kerülnek mentésre mikroprocesszor (Eeprom). -A tanulási parancs lehetővé teszi a táblánál a kódoló számának memorizálását az ajtó szabad nyílásának megfelelő impulzusok.

5.4 OPTIONS

5.4.1 Safety reopening system in closing ("SEC. CL TORQUE")

You can program the type of working for the input of safety reopening system in closing:
-Slave: the board indicates the safety reopening system (relay OBSTR) to the control panel and waits for a new command from the control panel.
-Master: the board indicates the safety reopening system (relay OBSTR) to the control panel and reopens automatically.

A szorításgátlóra a visszanyitást: SLAVE esetén a vezérlés végzi, Master esetén automatikus.

5.4.2 Safety reopening system in opening ("SEC. OP. TORQUE")

You can enable or disable the reopening system in opening:
ENABLED: If it encounters an obstacle stops signaling the signaling end opening (relay OPENED).
DISABLED: If it encounters an obstacle continues to force the opening until it reaches the limit switch or until the 'activation of IxT protection.

Szorításgátlás nyitás üzemben::
Engedélyezeve a nyitvarelé meghúz.

5.4.3 Command type ("COMMAND MODE")

This parameter works on inputs of opening and closing (11 and 12);
MASTER: programming the type of commands as the Master, to the board just an impulse for the open and close commands. Once accepted the command, the board completes the operation also if the input is not active.
SLAVE: If instead we program the type of commands as a slave, the board commands the opening or closure for the time in which the corresponding input is active. If the command falls operation in progress is aborted.

Parancs mód: impulzusra, vagy folyamatos jelre

5.4.4 Engine rotation ("MOTOR ROTATION")

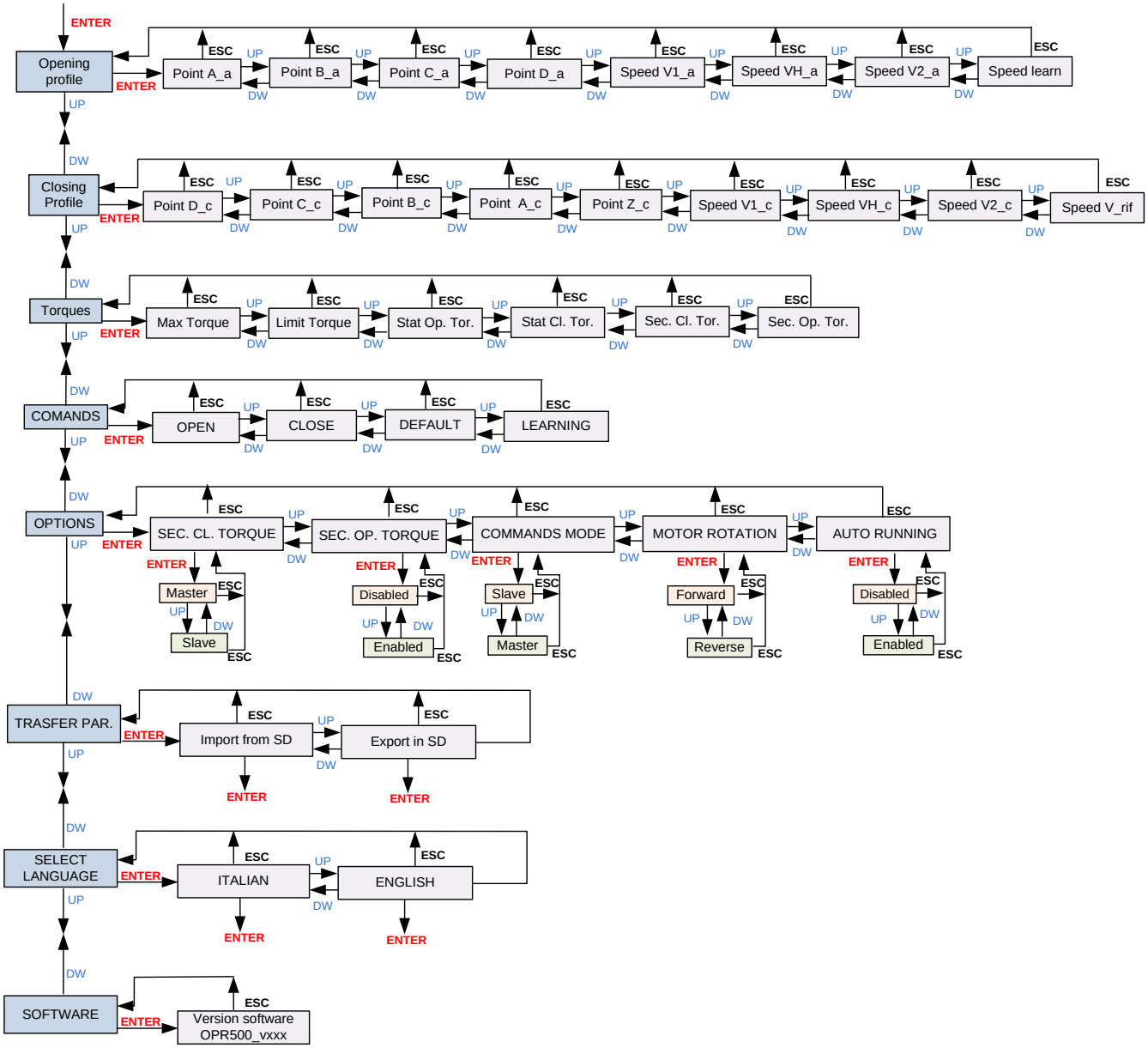
This parameter allows you to rotate the engine.

Motor forgásirány

5.4.5 Auto-racing ("AUTO RUNNING")

The board will simulate automatically opening and closing of the door.
The inputs are excluded.

5.5 SUMMARY DIAGRAM OF THE PROGRAMMING MENU



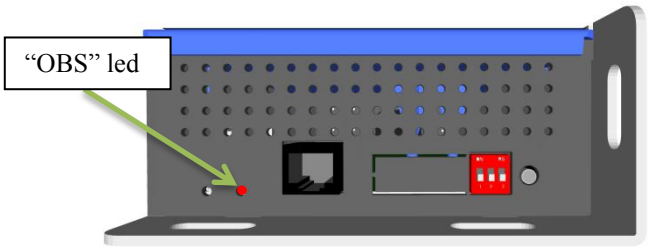
6. FUNCTION

6.1 IxT heat protection of the motor:

This function is always active and protects the motor from overloads due to mechanical hardening or obstacles hindering the normal run of the door.
If the current absorbed by the motor is higher than the set level (5A) for more than 7 sec., the driver is disabled and stands by for 15 sec. , it will then close the door in low speed mode. If closing fails and the current is higher than 5 A again, the above described cycle will be repeated. After a third failed attempt, the driver will enter the Fault state. If the obstacle is removed, after one regular cycle the counter resets itself.

Ha a motor több mint 15 sec-ig több mint 7Ampert vesz fel 15 másodpercig kikapcsol, ha ismét előáll a helyzet hibával leáll.

7. LED DIAGNOSTIC



Normal work: PWR→ Green: normal work
Error: PWR→RED: error
Flash code: 3 sec. ON + flash code:

1: ERROR EPROM
2: OVERCURRENT
3: MOTOR NOT CONNECTED
4: ENCODER ERROR
5: IXT ERROR
6: MOTOR IN OVER TEMPERATURE

Hibajelek: 3 sec bekapcsolás + villanások száma:
1 > Epromhiba
2 > Túláram
3 > Motor nem csatlakozik
4 >Encoder hiba
5 >Túlterhelés
6 > Túlmelegedés

8. PARAMETER OF DEFAULT:

Alapértelmezett paraméterek

OPENING PROFILE :

Parameters	Description	Default
Point A_a	Start opening acceleration ramp	008
Point B_a	End opening acceleration ramp	018
Point C_a	Start opening deceleration ramp	075
Point D_a	End opening deceleration ramp	099
Speed V1_a	Coupling cam opening speed	007
Speed VH_a	Maximum opening speed	060
Speed V2_a	End opening speed	004
Speed learn	Learning speed	008

CLOSING PROFILE:

Parameters	Description	Default
Point D_c	Start closing acceleration ramp	099
Point C_c	End closing acceleration ramp	085
Point B_c	Start closing deceleration ramp	030
Point A_c	End closing deceleration ramp	008
Point Z_c	Additional run closing for mobile coupling cam	005
Speed V1_c	Starting closing speed	005
Speed VH_c	Maximum closing speed	050
Speed V2_c	End closing speed	003
Speed rif	Speed during the initial synchronization	008

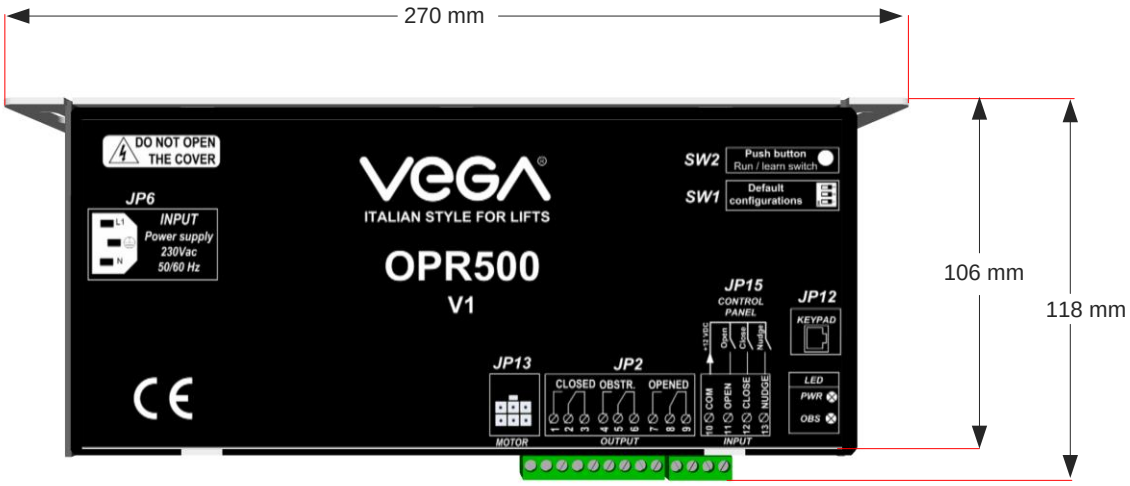
TORQUES:

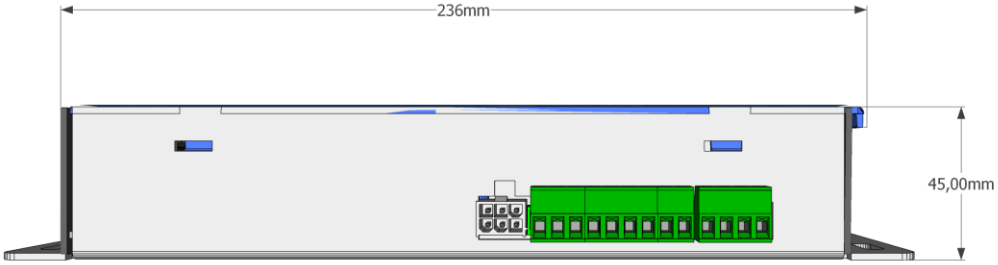
Parameters	Description	Default
Max Torque	Maximum	095
Limit Torque	Limit Torque	070
Stat Op. Tor.	Stationary opening torque	020
Stat Cl. Tor.	Stationary closing torque	005
Sec. Cl. Tor.	Security Torque in closing	055
Sec. Op. Tor.	Security Torque in opening	080

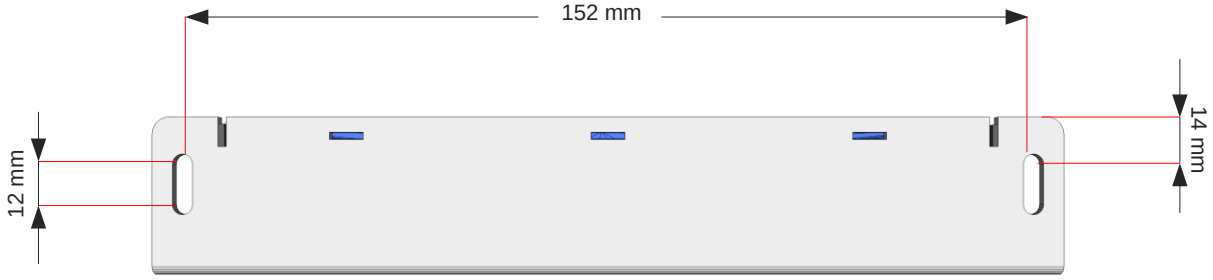
OPTIONS:

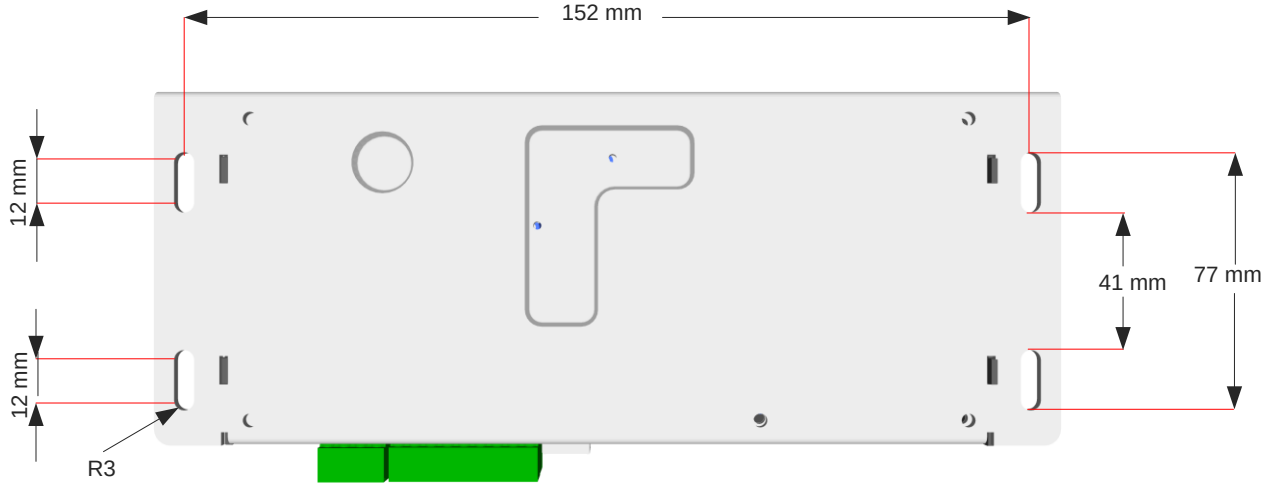
Parameters	Description	Default
SEC. CL. TORQUE	Safety reopening system in closing	Slave
SEC. OP. TORQUE	Safety reopening system in opening	Disabled
COMMANDS MODE	Command type (Master/slave)	Slave
MOTOR ROTATION	Motor rotation (forward/reverse)	Forward
AUTO RUNNING	Auto racing	Disabled

9. DIMENSIONS:

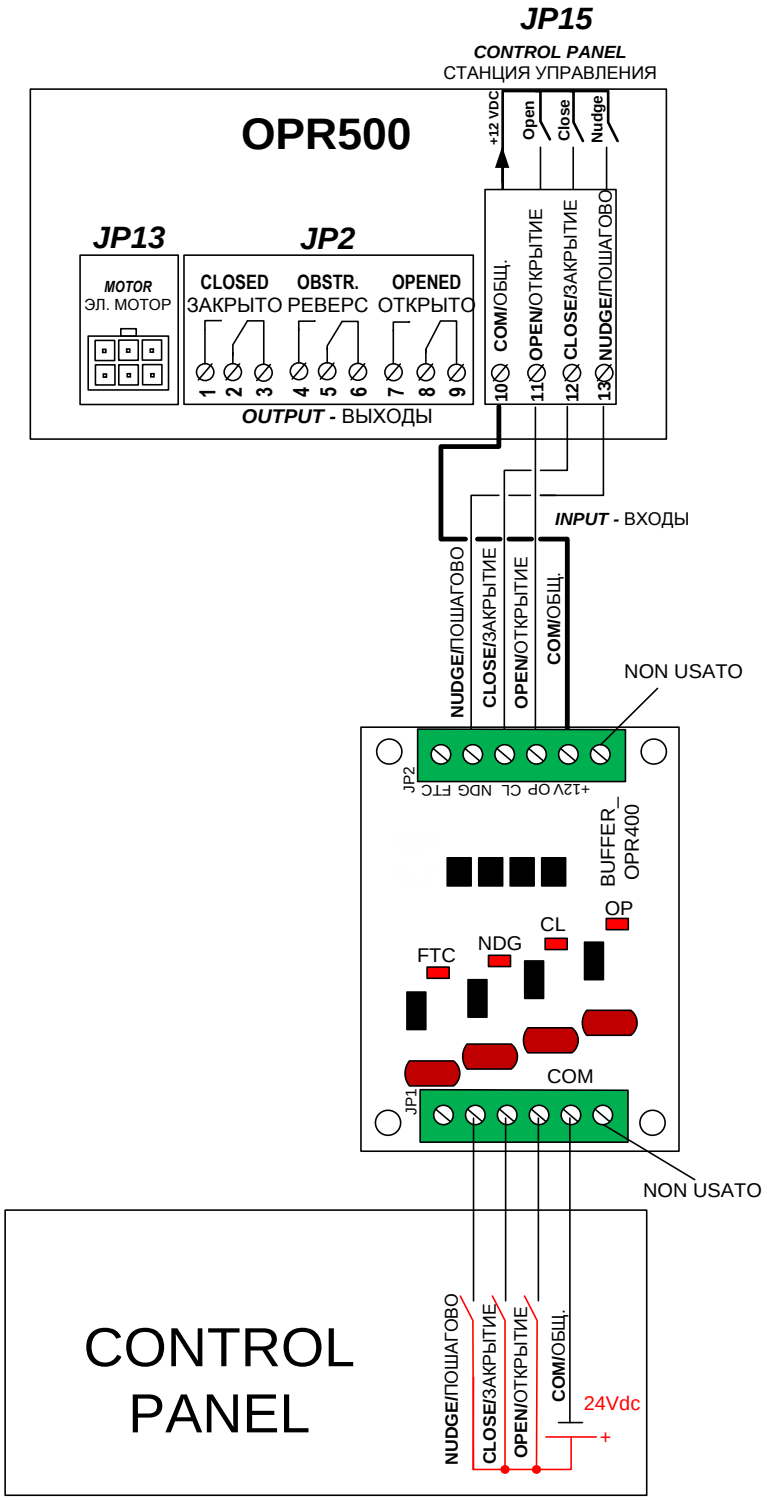








10. OPR500-BUFFER_OPR400 CONNECTIONS



ITALIAN STYLE FOR LIFTS

Vega srl
Via degli Appennini 12/13
63845 - Ponzano di Fermo (FM) P.iva 01578140442
Phone: + 39 (0)734 275405 -Fax: +39 (0)734 636098
www.vegalift.it