

Imp. n°

Versione 0.1
01.06.2006



I : MANUALE DI INSTALLAZIONE ED USO
OPERATORE PORTE PER ASCENSORI

EN : INSTRUCTION BOOK FOR USE AND INSTALLATION
DOOR OPERATOR FOR ELEVATORS

D : INSTALLATIONS- UND BEDIENUNGSHANDBUCH
AUFZUGSTÜRANTRIEB

F : MODE D'INSTALLATION ET D'EMPLOI
OPERATEUR PORTES POUR ASCENSEURS





I

Indice

- 01 > cap. 1 Dispositivo oper 02
- 05 > cap. 2 Principio di funzionamento
- 06 > cap. 3 Regolazioni
- 07 > cap. 4 Funzionamento
- 08 > cap. 5 Caratteristiche elettriche
- 09 > cap. 6 Posizione della piastrina
per sostituzione cinghia Poly VJ
- cap. 7 Manutenzione

EN

Table of Contents

- 10 > cap. 1 OPER 02 Device
- 14 > cap. 2 Operation principles
- 15 > cap. 3 Adjustments
- 16 > cap. 4 Operation
- 17 > cap. 5 Electrical features
- 18 > cap. 6 Location of the plate
for the replacement of belt Poly VJ
- cap. 7 Maintenance

D

Inhaltsverzeichnis

- 19 > kap. 1 Antrieb Oper 02
- 23 > kap. 2 Funktionsprinzip
- 24 > kap. 3 Einstellungen
- 25 > kap. 4 Funktion
- 26 > kap. 5 Elektrische Merkmale
- 27 > kap. 6 Position der Platine zum Austausch
des Riemens Poly VJ
- kap. 7 Wartung

F

Table des Matières

- 28 > chap. 1 Dispositif OPER 02
- 32 > chap. 2 Principes de fonctionnement
- 33 > chap. 3 Réglages
- 34 > chap. 4 Fonctionnement
- 35 > chap. 5 Caractéristiques électriques
- 36 > chap. 6 Position de la plaque pour le
remplacement de la courroie Poly VJ
- chap. 7 Entretien

1. DEVICE OPER 02

OPER 02 is designed to control automatic elevator doors driven by a dc motor.

The device carries out the following functions:

- **Passive operation, one or two controls**
All the adjustments are carried out by a trimmer
- **36 Vcc, 3A motor control with torque compensation and sensitive edge control.**
Independent adjustment of the Operation Speed, Closing Speed and Sensitive Edge.
- **Photocell Amplifier**
The circuit is designed for operation with a pair of transmitting-receiving (not reflection) sensors.
- **Voltage-free contacts towards the control panel**
Contacts are provided for the open/close limit switches, photocells and sensitive edge.

The operator is controlled by controlling the current which circulates inside the motor by means of an adjustment system without feed-back.

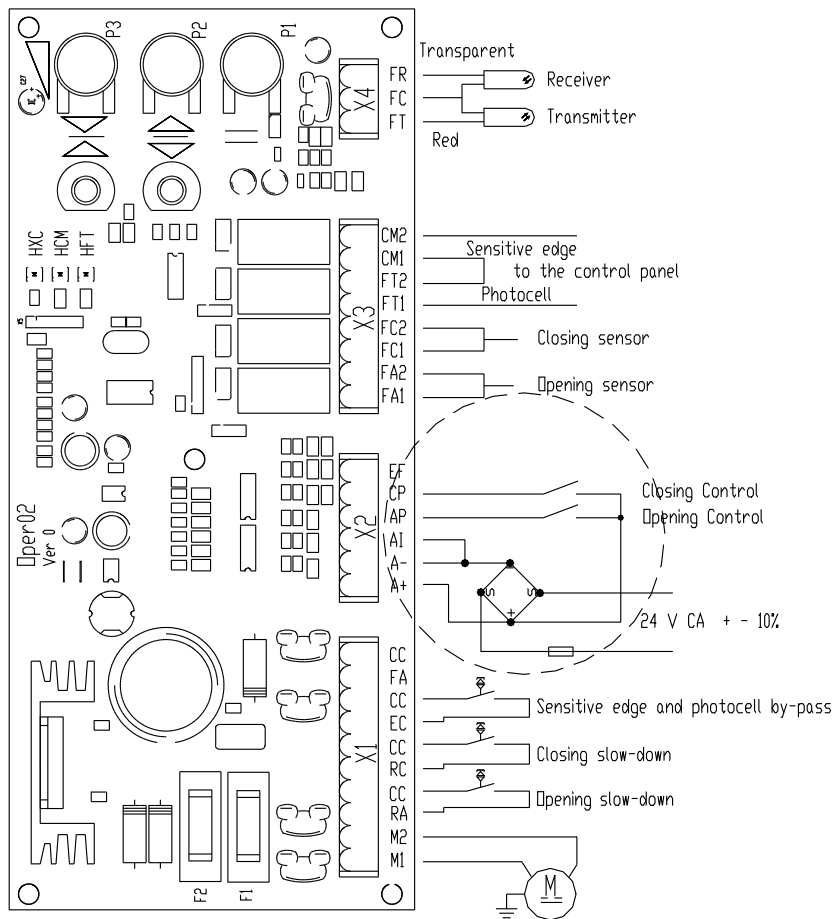
The continuous compensation of the torque enables to ensure stability throughout time in the speed adjustments and – in particular – to supply the whole torque required at the final stage of door closing.

The adjustment is not linked to the power supply voltage; subsequently, power supply of the device can be at different voltages in standard operation and in emergency, provided that the limits are complied with.

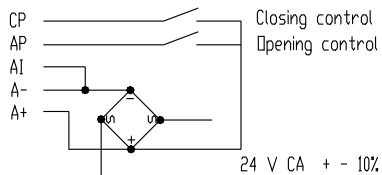
The information relevant to the position of the doors is detected by means of three monostable magnetic contacts (NO), RA-RC-EC which detect respectively the beginning of slowing-down at opening, the beginning of slowing down when closing and the end of closing (See Figure 3).

FIGURE 1 – AT THE NEXT PAGE – SHOWS THE LAYOUT OF THE CARD AND THE CONNECTIONS TO THE EXTERNAL CIRCUITS.

CARD LAYOUT AND CONNECTION TO THE OUTSIDE CIRCUITS



Common connection positive controls



Common connection negative control

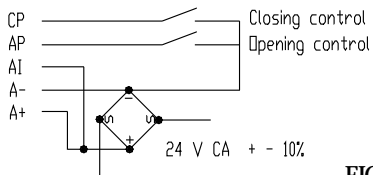


FIG. 1

WARNING: The door closing control from the panel is to be permanent, i.e. it must drop only when the door opening one is given.

1.1 OPERATOR INSTALALTION

The operator is delivered with a preliminary wiring in order to facilitate the installation operations. The operator package shall include the screws and brackets required for assembly. The supply does not include – expect if expressly requested. The booth door sill, the booth parameter or the programming keyboard.

1. Attach the brackets to the operator as shown in Figure 2.

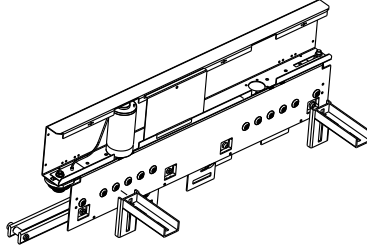


FIG. 2

2. Attach the operator – by means of the purposely-allocate brackets – onto the booth roof, aligning it to the booth door sill. Tighten the attachment bolts thoroughly (See Figure 3).

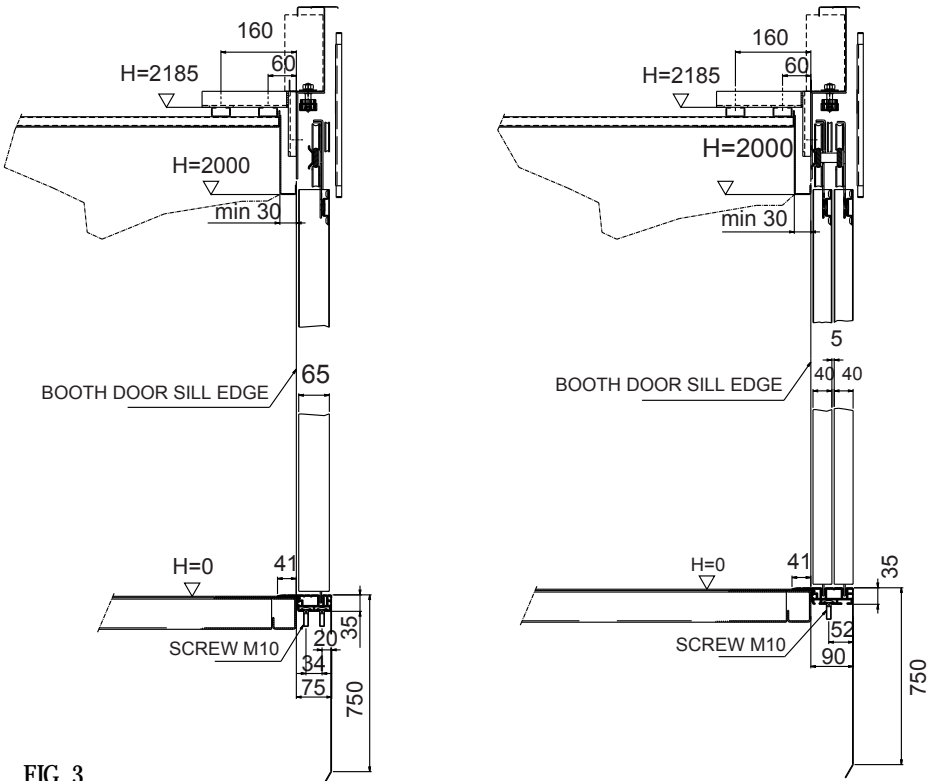


FIG. 3



3. Attachment of the booth wings. After attaching the booth wings (See Figure 4), make sure that the space between the wings and the booth shoulder between the door sill and the wing itself (See Fig. 3). Should said space not be correct (5 mm), locate the wings into the exact position by means of the purposely-allocated shims.

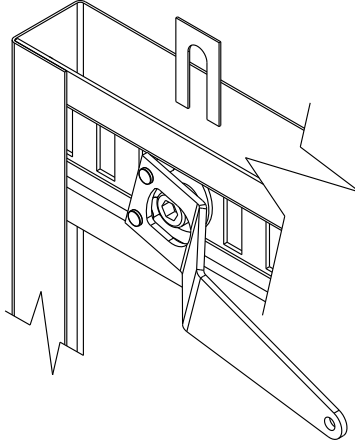


FIG. 4

2. OPERATING PRINCIPLES

2.1 CONNECTIONS

I circuiti esterni sono collegati tramite connettori estraibili a morsetti.

La suddivisione dei circuiti nei vari connettori è stata realizzata in modo tale da semplificare le operazioni di cablaggio.

- CONNECTOR X1

CODE	DESCRIPTION
M1, M2	Motor connection
RA	Opening slow-down monostable input
CC	Input common
RC	Closing slow-down monostable input
CC	Input common
EC	Monostable input – sensitive edge by-pass at closing end
CC	Input common
FA	Not used
CC	Common input

- CONNECTOR X2

CODE	DESCRIPTION
A+	Positive Power supply +
A-	Negative power supply common
AI	Positive or negative control (See scheme)
AP	Door opening control input
CP	Door closing control input (See scheme)
EF	Not used

- CONNETTORE X3

CODE	DESCRIPTION
FA1	Opening sensor 1
FA2	Opening sensor 2
FC1	Closing sensor 1
FC2	Closing sensor 2
FT1	Photocell 1
FT2	Photocell 2
CM1	Moving edge 1
CM2	Moving edge 2

- CONNECTOR X4

CODE	DESCRIPTION
FT	Photocell projector (red)
FC	Photocell Sensor Common
FR	Photocell receptor (transparent)

2.2 SIGNALING LED'S

CODE	DESCRIPTION
HXC	Sensor control ON = Contact closed When the magnetic passes on sensors RA and RC, LED HXC issues a pulse. When the magnetic band is on sensor EC, LED HXC remains lit.
HCM	Intervention of the sensitive edge
HFT	Intervention of the photocell

3. ADJUSTMENTS

The adjustments are carried out independently by a trimmer.
The following table shows the list of the adjustments allowed.

CODE	DESCRIPTION
> <	Closing rate of trimmer P3
< >	Opening rate of trimmer P2
	Sensitive edge intervention torque. Trimmer P1

3.1 ADJUSTMENT OF THE MAGNETIC SENSORS

- 1) Adjust the closing and opening speeds through the trimmers, as specified in the tables above.
- 2) Move sensors RA (opening slow-down) and RC (Closing slow-down) in order to obtain a smooth closing-up of the door.
- 3) Adjust sensor EC:
 - A - Close the operator trolley until it leans onto the rubber washer (the operator cam is to remain open);
 - B - Let reed EC move forward towards the magnet until LED HXC is lit on the card;
 - C - Tighten the screws of the reed support plate.

REMARK Sensor RA is to be involved by the magnetic band even when the door is fully open.
Sensor RC is to be involved by the magnetic band even when the door is fully closed.

3. 2 CARD CONTROLS

Card OPER02 contains also two push-buttons for the operation in Test mode.

When power supply is connected to the card, if both the push-buttons are kept under pressure for at least 1 second, the card moves into test mode, thus ignoring the control panel controls.

If the push-buttons are pressed again for 1 second, the card shall resume the standard operating mode.

Any time voltage is supplied to the card, it will set into the standard operation mode, i.e. controlled from the control panel.

4. OPERATION

The device does not carry out any control autonomously; it will carry out only the controls which come from the control panel.

The sole exception is the stopping of the doors in case of intervention of either the moving edge or the photocell.

4.1 DOOR OPENING

Door opening is carried out with the max torque available with no constraint.

The max. speed which can be reached depends upon:

- Trimmer adjustment <I>
- Resisting torque of doors and kinematics

The values of Acceleration, Deceleration, Opening Slow Speed, Maintaining Current at the End of Opening are fixed and unchangeable.

The doors open at the established speed until the monostable RA is reached.

Such monostable is to be located in such a way that the slow speed movement is reduced to the minimum at the end of the deceleration.

If monostable RA is read before the end of the acceleration, as in the case of re-opening of the doors, the beginning of the deceleration is delayed in compliance with the actual speed of the doors.

If – in case of door closing - re-opening is requested before the RA monostable is exceeded - la the reopening shall be carried out at slow speed.

The opening sensor contact (FA1-FA2) opens when the doors are completely open, when the opening maintaining current is applied.

4.2 DOOR CLOSING

Door closing is carried out with torque control until monostable EC closes.

The doors operate at the established speed until they reach monostable RC. This monostable is to be adjusted so that – at the end of the deceleration – the movement of the floor doors at slow speed is reduced to the minimum.

If monostable RC is read before the end of the acceleration, the beginning of the deceleration is delayed based upon the actual speed of the doors.

The values of Acceleration, Deceleration, Closing Slow Speed, maintaining Current at End of Closing are fixed and unchangeable.

The Closing Sensor contact (FC1-FC2) opens when the doors are completely closed, when monostable EC is read.

The Max torque level is adjusted by Trimmer II

If – during the closing operation – The max torque is exceeded when monostable EC is open, the motor stops immediately, LED HCM lights up, and the signal is sent to the control panel by contact CM1 CM2. The door remains in the position in which it is until the closing control is removed and the command is given again.

4.3 PHOTOCCELL AMPLIFIER

OPER02 is provided with an amplifier for the pair of photocells of the active transmitter-receiver (not reflection) type, model OPTEA IRS 103 or equivalent.

The interruption of the photocell immediately stops the motor, LED HFT lights up and the information is sent to the control panel through contact FT1 FT2.

The door thus remains in the position in which it is until the closing control is removed and a new command is given.

When the doors are completely closed, the photocells are by-passed.

If the system is not provided with photocells, do not connect output FT1 FT2

5. ELECTRICAL FEATURES

Supply Voltage on terminals s A+, A-	24...48 Vdc obtained by an alternate current of 18...30V ac, 150W
Power Supply protection:	External by fuse 4A
Motor Protection:	Internal with 2 3.15 A fuses. The power section is protected for both temperature and current
Voltage on inputs AP and CP:	12...48 Vcc.
Pour of the outputs contacts:	1A/48Vcc, 1A/125Vca.
Minimum current on the contacts	10mA 12V
Ambient Temperature	5°C...40°C

6. PLATE POSITION TO REPLACE BELT POLY VJ

Once the position of the plate is ascertained, loosen the pulley on the opposite side of the plate to loosen the belt. Once the belt is loose, extract belt Poly Vj by letting it slide in your hands.

To reinstall the plate with the Reed in the right position, and to give the right tightening to belt Poly VJ, the following operations should be carried out.

Locate the plate as indicates in Figure 5 and tighten it thoroughly, belt Poly Vj by letting it slide on the pulleys. To complete, locate the toothed belt back to the original position.

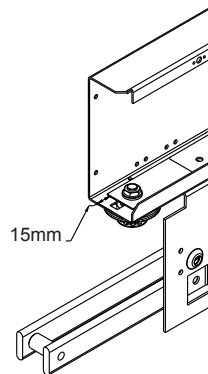


FIG. 5

7. MAINTENANCE

At each maintenance intervention, check the following points:

- Wear of the shoes
- Cleanness of guideways and door sills
- Inspect for any damage to the wings
- Electric contacts
- Cleanness of the mating and sliding wheels and relevant guideways

WARNING

- Do not lubricate the guideways
- Do not lubricate the transmission belts
- Do not lubricate the wheel bearings

IF THE DEVICE DOES NOT WORK:

- 1) MAKE SURE THAT THE VOLTAGE ON TERMINALS A+ A- IS WITHIN 24 AND 48VDC
- 2) MAKE SURE THAT FUSES F1 AND F2 ON THE CARD ARE NOT INTERRUPTED
- 3) MAKE SURE THAT THE MAGNETIC SENSORS ARE OPERATIONAL (THIS CAN BE EASILY CHECKED BY MEANS OF AN OHMMETER OR CIRCUIT TESTER. MAKE SURE NOT TO SUPPLY THE CARD SENSOR INPUTS.
- 4) IF LED HFT REMAINS LIT, CHECK THE CONNECTIONS OF THE PHOTOCELL SENSORS.
- 5) IF LED HCM LIGHTS UP WHEN THE DOORS CLOSE :
 - A - CHECK THE GOOD MECHANICAL SLIDING OF THE DOORS;
 - B - ADJUST TRIMMER II
- 6) IF THE MOTOR HAS NO THRUST TO CLOSE THE DOORS:
 - A - ET THE CARD INTO MANUAL MODE (PRESSING BOTH THE RED PUSH-BUTTONS FOR APPROX. 1 SECOND);
 - B - CLOSE THE BOOTH DOORS BY THE CLOSING PUSH-BUTTON, MANUALLY HELP THEM IF THE CLOSE WITH DIFFICULTY. IMPORTANT: THE OPERATOR STRUCTURE IS TO CLOSE AS WELL;
 - C - GIVE A SHORT PULSE WITH THE RED PUSH BUTTON IN OPENING AND THEN IN CLOSING FOR 1 SEC APPROX;
 - D - WAIT FOR APPROX. 2 MINUTES WITHOUT GIVING ANY COMMAND.

THIS PROCEDURE ENABLES THE CARD TO ACQUIRE THE MOTOR DATA



ITALY
GMV S.p.A.
Via Don Gnocchi, 10
20016 Pero (MI)
Tel. +39 02 339301
Fax +39 02 3390379
e-mail: info@gmv.it
www.gmv.it

