INSTALLATION MANUAL

NEPTIS

INVERS
INVERS-B

Operator for Automatic Swinging Doors

FOR SAFETY EXITS IN SMOKE EXHAUSTION SYSTEMS

GB

English
Translation of the ORIGINAL INSTRUCTIONS

NEPTIS INVERS INSTALLATION MANUAL - GB - Rel.1.0 - 08/2016 - CD0444GB

INDEX:

ELECTRONIC SECTION

GENERAL SAFETY WARNINGS

Carefully read this instruction manual for the safe installation and operation of the automatic door.
Improper installation and incorrect use of the product could cause serious injury.
Keep the instruction manual for future reference.
The installer must provide all the information about operation and provide the system user with the user manual delivered with the product.

MEANING OF THE SYMBOLS USED IN THESE INSTRUCTIONS

DANGER: Indication of dangerous situations that could cause material damage and personal injury.

WARNING: Identifies the procedures that must be understood and followed to prevent product damage or malfunctions.

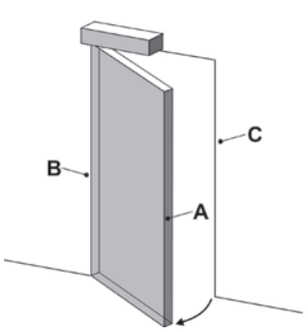
NOTE: To point out and place attention on important information.

GENERAL SAFETY OBLIGATIONS

The mechanical and electric installation must be performed by specialised personnel in accordance with current directives and regulations.
The installer must make sure that the structure to be automated is stable and robust and if necessary, make it this way by making structural modifications.
Keep product and packaging materials out of children's reach, as they might be a source of danger.
Do not let the children stay or play within the range of the door.
This product was designed and built exclusively for the purpose described in this documentation. Any other use that is not specifically indicated could adversely impact the condition of the product and the safety of people.
Label accepts no responsibility for incorrect product installation and usage, as well as for any damages caused by changes made without its prior consent.
Label is not responsible for the construction of the fixtures to be motorised.
The IP31 degree of protection requires that the operator is installed only on the inner side of buildings.
This product cannot be installed in explosive environments or atmospheres, or in the presence of flammable gases or fumes.
Make sure that the characteristics of the electric distribution network are compatible with the technical data indicated in this manual and that upstream of the system there is an omnipolar switch with an opening distance of the contacts of at least 3mm and a residual current device.
Connect the ground conduit of the electric system.
The automatic door must be checked, started up and tested by skilled and well-prepared personnel.
A technical dossier must be prepared for every automation as required by the Machine Directive.
Disconnect the power supply before working on the automation and before opening the cover.
Maintenance is of fundamental importance for the proper operation and safety of the automation. Check the efficiency of all parts every six months.
Use only original spare parts for maintenance and when replacing product components.
Cleaning operations must be performed with the power supply disconnected, using a damp cloth. Do not deposit or let water or other liquids penetrate into the Neptis operator or the accessories that are part of the system.

It is recommended to take out a maintenance contract.

The automatic swinging doors must be designed and installed in a way to protect users against the risk and danger of crushing, impact and shearing between the door and adjacent parts near the door.
The person responsible for starting-up the automation must perform a risk assessment based on the place of installation and the type of users that could use the automatic door.



A = Main closing edge

B = Secondary closing edge

C = Opposite closing edge

The dangers of crushing and shearing related to the secondary closing edge must be prevented either structurally or by supplementary protective measures (rubber covers, for example).
Any residual risks must be properly signalled.

1) DESCRIPTION

The NEPTIS INVERS operator consists of an electro-mechanical motor with spring to open swinging pedestrian doors.

A list of the operator models for NEPTIS INVERS swinging doors produced by Label is provided below:

- **NEPTIS "INVERS"**
  with opening spring.
- **NEPTIS "INVERS-B"**
  with opening spring and built-in emergency battery.

The operator NEPTIS INVERS is installed with push articulated arm BSS2.
The operator must be installed indoor, in dry environments.
In case of power outage or of a smoke sensor alarm, the door opens thanks to the energy stored in the opening spring.
Before starting with assembly, refer to the technical drawings in paragraph 5. Check installation dimensions and the chart that provides the weight limits based on the length of the door leaf.
The technical data provided in the chart refer to a typical installation, but may be influenced by variables, such as friction, environmental conditions, alignment of the leaf hinges, etc....

2) TECHNICAL SPECIFICATIONS

POWER SUPPLY	115/230Vac +/-10%, 50-60Hz
POWER	95W
POWER SUPPLY OF EXTERNAL ACCESSORIES	24Vdc, 1A
ELECTRIC MOTOR	24Vdc
SHAFT OUTLET MAXIMUM TORQUE	45Nm
LEAF MAXIMUM WEIGHT *	max. 250 Kg (up to 800mm)
LEAF MAXIMUM WIDTH *	max. 1400mm (up to 100Kg)
OPERATOR DIMENSIONS (LxHxD)	550 x 110 x 120 mm.
OPERATOR WITH BATTERY DIMENSIONS (LxHxD)	730 x 110 x 120 mm.
WEIGHT OF NEPTIS INVERS OPERATOR	9,5 Kg
WEIGHT OF NEPTIS INVERS-B OPERATOR	11 Kg
PROTECTION DEGREE	IP31
AMBIENT TEMPERATURE	-15°C +50°C
FREQUENCY OF USE	continuous
LIMIT SWITCH AND ANTICRUSHING SAFETY	encoder controlled
REACTION TO OBSTACLES	reversal of direction
OPENING TIME for 95°	3 - 8 seconds adjustable
CLOSING TIME for 95°	6 - 15 seconds adjustable
PAUSE TIME	0 - 60 seconds adjustable

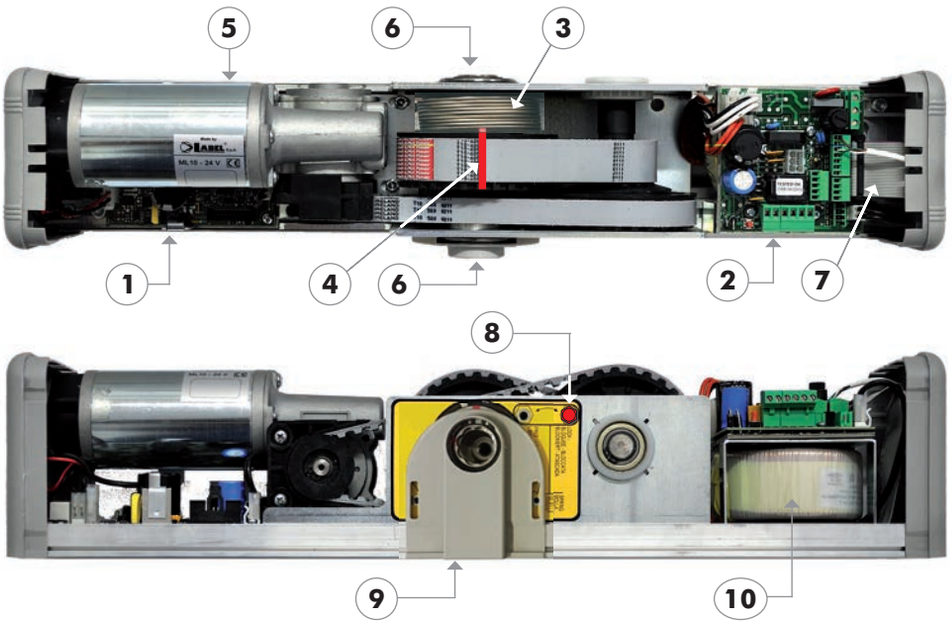
*** LEAF WEIGHT DEPENDS ON ITS WIDTH** (see chart in the section MECHANICAL DRAWING)

AUTOMATISM WITH SPRING OPENING IN CASE OF POWER OUTAGE

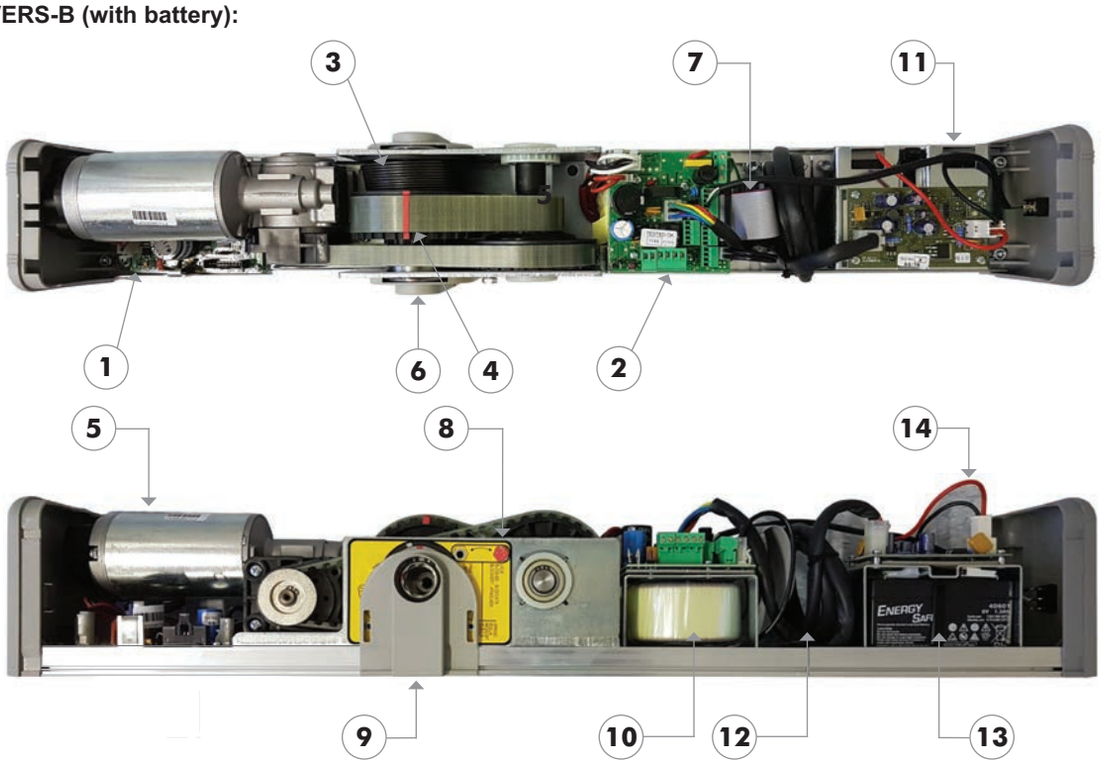
MECHANICAL SECTION

3) OPERATOR COMPONENTS

NEPTIS INVERS:



NEPTIS INVERS-B (with battery):



LEGEND:

1	L-NEP LOGIC CARD
2	PWN-T ELECTRICAL WIRING AND POWER SUPPLY CARD
3	OPENING SPRING
4	SPRING PRELOAD REFERENCE LINE
5	GEARMOTOR WITH ENCODER
6	MOTION TRANSMISSION SHAFT OUTPUT
7	INNER WIRING BETWEEN THE L-NEP and PWN-T CARDS
8	SPRING PRELOAD LOCKING SCREW
9	PLASTIC PLATE
10	TRANSFORMER
11	N-BAT/I MODULE, BATTERY CHARGER CARD
12	WIRING BETWEEN N-BAT/I MODULE and PWN-T CARD
13	N-BAT/I MODULE, BATTERIES
14	BATTERY CABLE CONNECTION

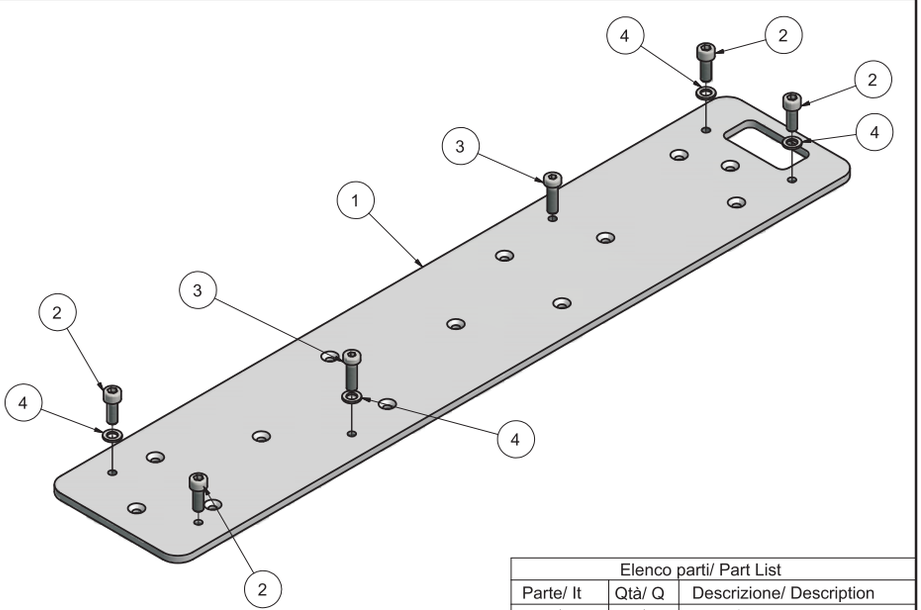
4) PRELIMINARY CHECKS

Before assembling the automation, make sure the following requirements have been met:

- The operator support structure must be solid and must not show any significant deformations.
- The leaf structure must be rigid and robust.
- The leaf pivots must be suitable and in a good condition.
- The lenght and weight of the leaf must lie within the operating limits of the operator (maximum recommended height 3 mt).
- The leaf must move in a regular manner without friction along its entire stroke.
- The door requires mechanical end stops consisting of a mechanical retainer in the opening position and a final stopper when closed.

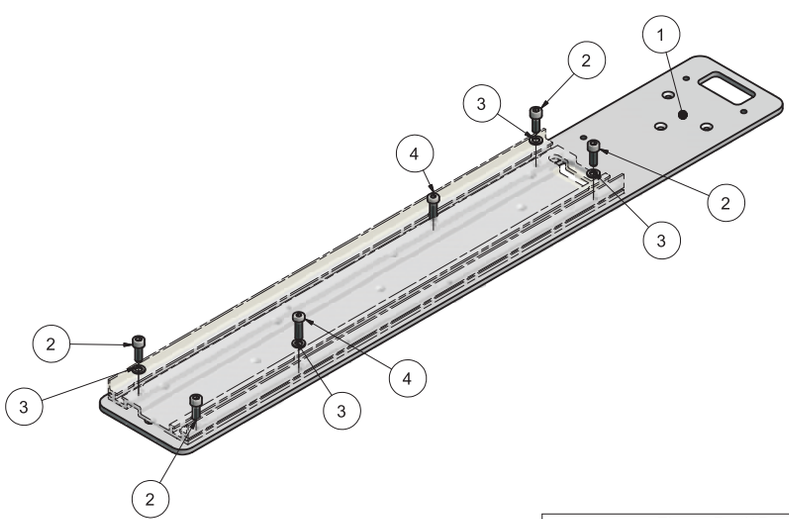
The mechanical stop in the open position is not supplied with the operator.

If the wall to which the operator will be fastened is not suitably resistant and reliable, a predrilled metal plate is available, upon request, to which the NEPTIS INVERS can be fixed.
There are two fixing plate models, the FIXPLATE for operators without a battery and FIXPLATE-P for operators with a built-in battery.



FIXPLATE

Elenco parti/ Part List		
Parte/ It	Qtà/ Q	Descrizione/ Description
1	1	Piastra/ Plate
2	4	Vite/ Screw M6 x 16
3	2	Vite/ Screw M6x20
4	4	Rondella/ Washer

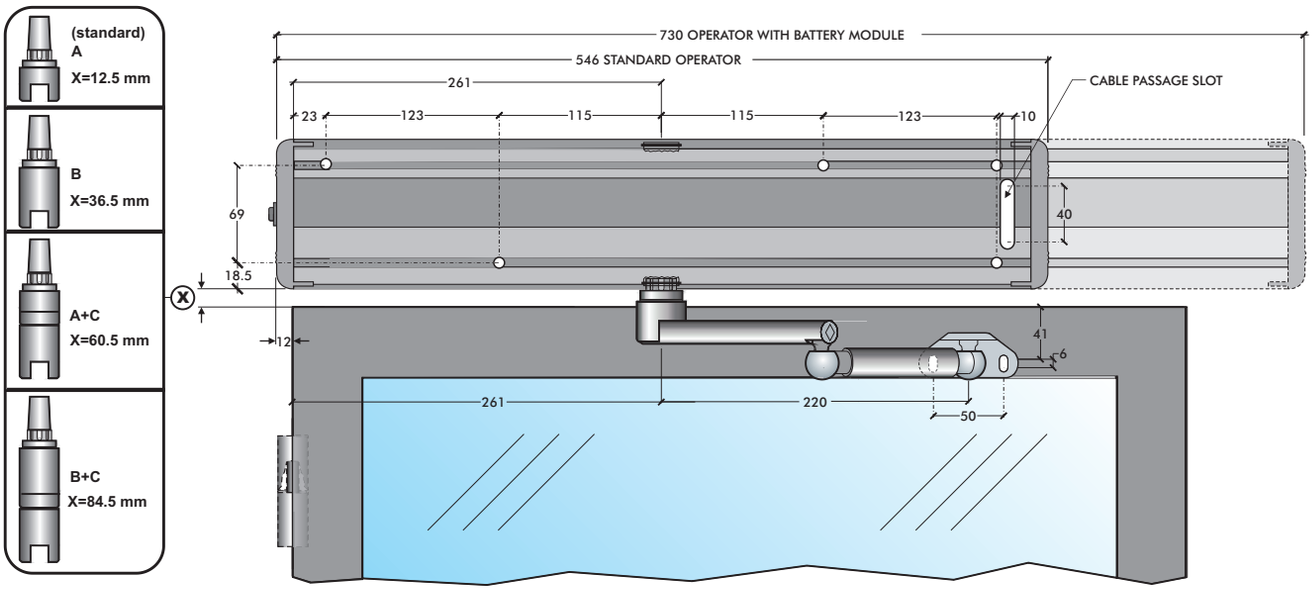


FIXPLATE-P

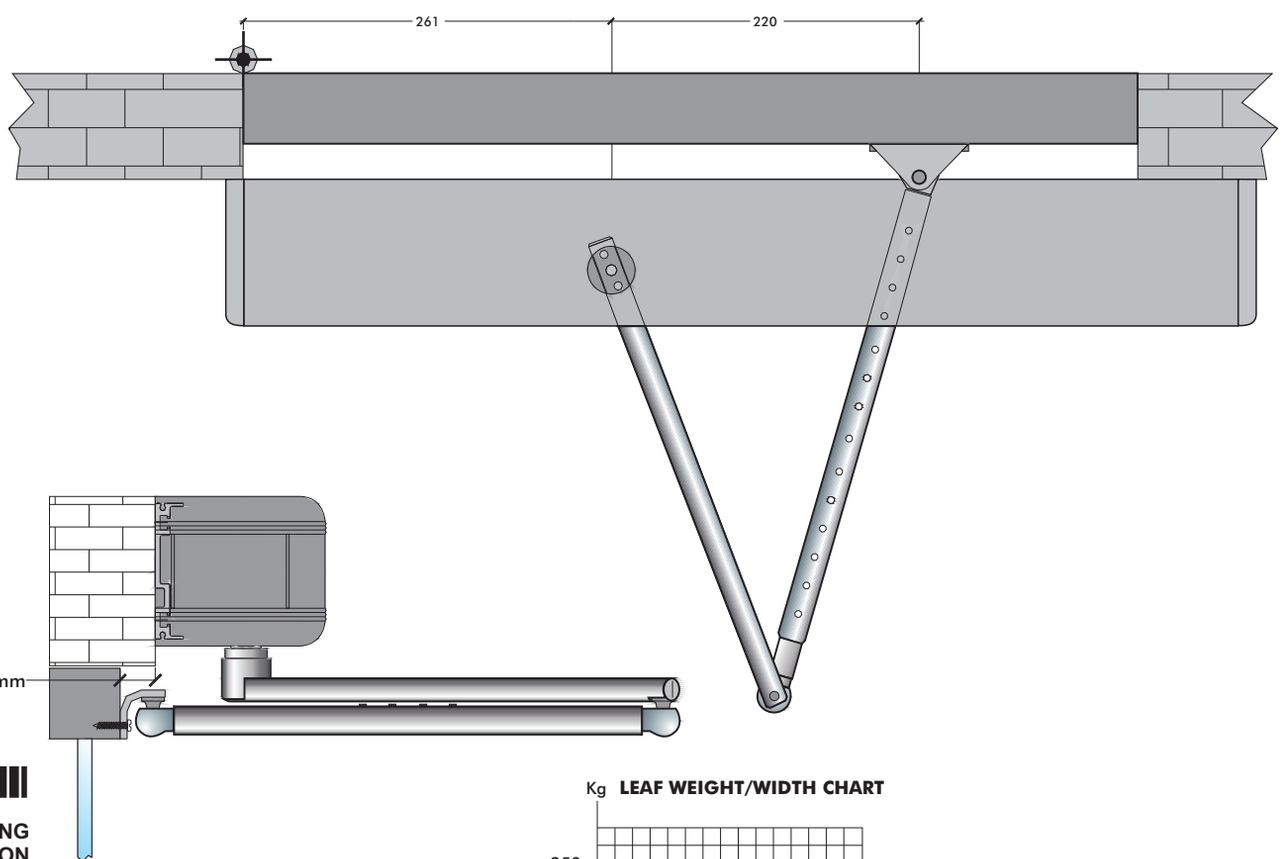
Elenco Parti/ Part List		
Parte/It	Qtà/ Qty	Descrizione/Description
1	1	Piastra/Plate
2	4	Viti/Screw M6 x 16
3	4	Rondella/Washer
4	2	Vite/ Screw M6x20

5) TECHNICAL DRAWINGS

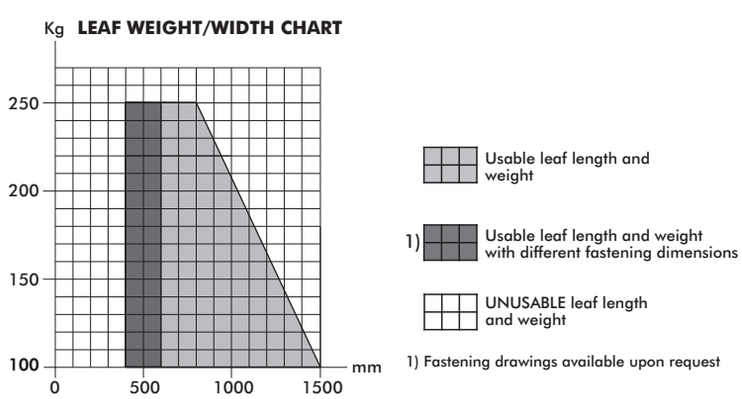
ASSEMBLY OF THE OPERATOR ON THE LINTEL FROM THE SIDE OPPOSITE OF THE HINGE
BSS2 ARTICULATED PUSH ARM
The door opens outwards (seen from the operator side)



A = STANDARD TAPERED PIN
If it is necessary to increase the distance between the operator and the arm (dimension X), replace the standard tapered pin with the following optional extensions:
B = EXTB-Z TAPERED PIN (optional) for mm.24 shaft extension
C = EXTC-Z EXTENSION (optional) **for TAPERED PIN** for mm.48 shaft extension



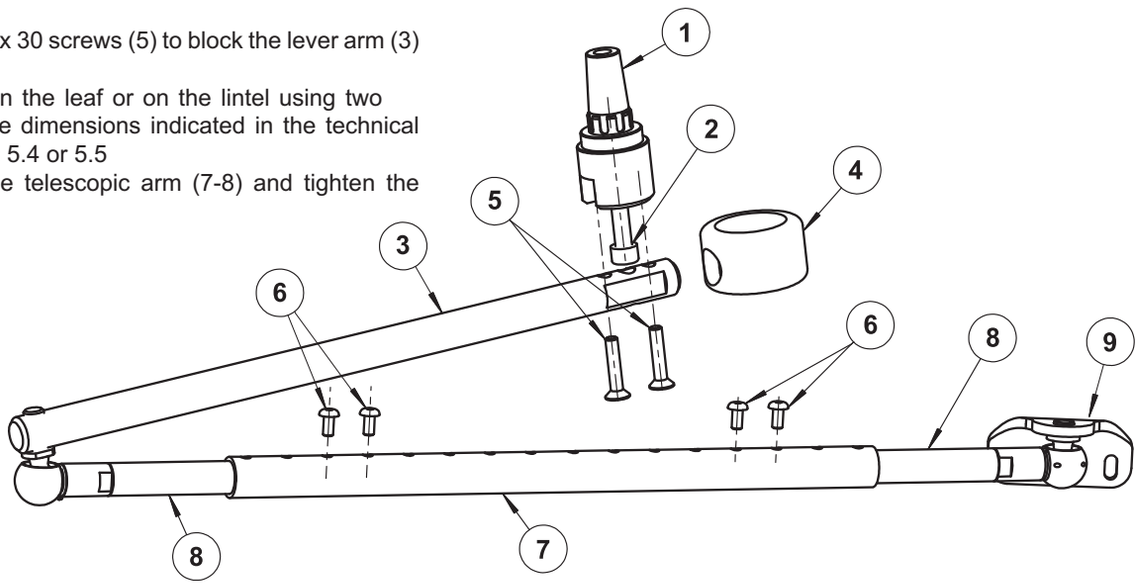
For this application, please consider that the gearmotor must be on the hinged side of the door for a correct movement direction when opening.
At door open a mechanical end-stop has to be installed.



6) MOVEMENT TRANSMISSION ARMS

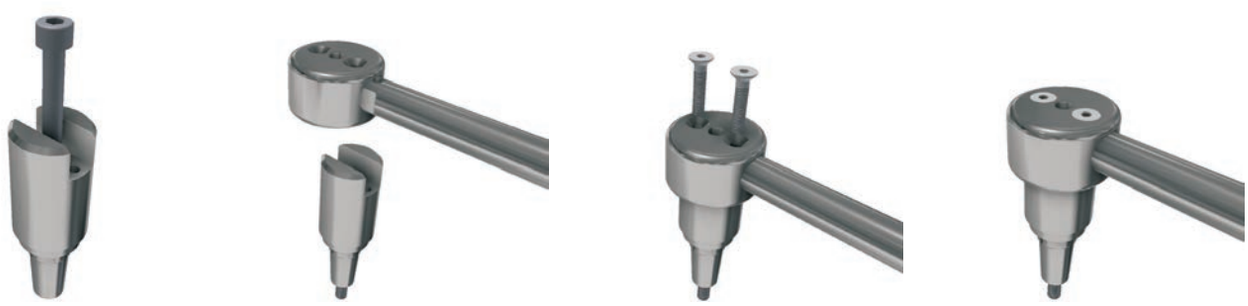
6.1) BSS2 ARTICULATED PUSH ARM

a) Insert the M8 x 70 screw (2) in the tapered pin (1)
b) Insert the lever arm (3) in the closed shell (4)
c) Insert the tapered pin (1) above the lever arm (3) through the closed shell (4)
d) Strongly tighten the M6 x 30 screws (5) to block the lever arm (3) on the tapered pin (1)
e) Fix the arm plate (9) on the leaf or on the lintel using two screws according to the dimensions indicated in the technical drawings in paragraphs 5.4 or 5.5
f) Adjust the length of the telescopic arm (7-8) and tighten the screws (6)



6.2) EXTB-Z TAPERED PIN

Use the EXTB-Z tapered pin if a larger distance is required between the operator and the arm in comparison to the standard tapered pin.
For the assembly dimensions follow the technical drawings in par. 5.
For the assembly, follow the steps shown in the following figures:
insert the M8 X 90 screw in the tapered pin (A), insert the arm in the closed shell (B), insert the tapered pin in the arm (C) and tighten the two M6 X 20 screws (D).



A B C D

6.3) EXTENSION FOR EXTC-Z TAPERED PIN

Use the EXTC-Z extension if a larger distance is required between the operator and the arm in comparison to what can be obtained using the standard and EXTB-Z tapered pins.
Couple the EXTC-Z extension to the standard or EXTB-Z tapered pin (depending on the distance to be reached, see the technical drawings in par. 5).
For the assembly, follow the steps shown in the following figures:
couple the EXTC-Z extension with the tapered pin and insert the central screw (E), tighten the two M6 X 65 side screws (F), insert the extension in the arm and tighten the two M6 X 20 screws (G).

E F G

7) PREPARING AND ASSEMBLING THE OPERATOR

7.1) Required tools:

Tape measure, drill, level, thin flat-head screwdriver, medium-sized flat-head screwdriver, large cross-head screwdriver, Allen wrenches with handle (sizes 2.5 – 4 - 5 – 6), flat-head wrench 10.

7.2) Operator control

Remove the operator from its packaging and remove the screws retaining the cover.

Remove the aluminium cover from its seat, pulling it firmly upwards and without applying pressure on the sides, if possible.

The NEPTIS INVERS operator foresees the possibility of connecting the arm on both sides of the mechanical body and therefore makes it possible to select the opening movement direction.
The label located on the mechanicl body at the shaft outlet indicates the opening direction.

Identify pin connection correct side by carefully referring to the technical drawings in paragraph 5.

⚠

Do not remove the spring preload locking screw!

The spring preload locking screw keeps the pulley locked, making it possible for the spring to remain in its preloaded position (factory setting).

Removing the spring preload locking screw would make the pulley and gears move inside the operator, representing a hazard to fingers or other body pars near the moving components.

☞

The spring preload locking screw must **not** be removed before completing installation and connecting the arm to the leaf and the operator shaft output to prevent the spring from being released. Follow the instructions to be certain to correctly perform all the assembly phases.

7.3) Operator assembly

Refer to the assembly table (par. 5.1), which shows the positions where the holes required for mounting the operator and the pulling arm must be drilled.
For arm assembly refer to paragraph 6.

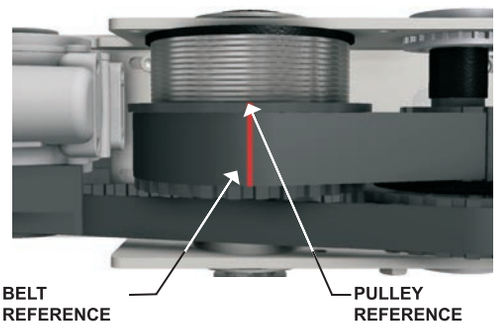
☞

To fix the devices use the screws and anchors suitable for the type of support.

After fixing the operator and arm, follow the next steps for connecting the arm pin to the shaft output of the NEPTIS INVERS operator.

7.4) Selecting the spring load

The spring is preloaded in the factory to a standard value,which is indicated by the alignment of the red line on the belt with the red mark on the pulley.



Select the spring opening force according to the following rule:

- Connect the arm to the operator output shaft with the leaf completely closed to obtain a low opening force (minimum spring load).
- Connect the arm to the operator output shaft with the leaf in an intermediate position to obtain a medium opening force (medium spring load).
- Connect the arm to the operator output shaft with the leaf completely open to obtain a high opening force maximum spring load).

7.5) Inserting the arm's tapered pin

Make sure that the plastic plate is inserted in the operator's mechanical body where the output shaft is located, before inserting the arm's tapered pin.

There are wedges in the arm's tapered pin that must be perfectly matched with those in the operator output shaft. These serve the purpose of making sure that the arm's tapered pin always moves together with the operator's motion transmission shaft.

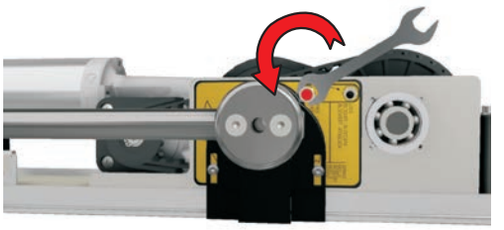
Insert the arm's tapered pin in the operator output shaft making sure that the wedges in the two parts are correctly matched and then firmly tighten the screw fixing the arm's tapered pin.

7.6) Releasing the spring

⚠

During this operation, the operator and arm pulleys can move. Keep fingers and body parts away from the moving components during this operation and keep the leaf blocked manually.

Move the spring locking screw from the locked position to the free position.
The door leaf is free to open due to the force of the spring.
Make sure the door completely opens.
If leaf movement is regular along the entire stroke, both when opening as well as when closing, continue with the electrical connections as described in the electronic part section of the paragraph “Electric connections”.
If the spring load must be increased or reduced, remove the arm from the operator. This operation is described in the following paragraph.

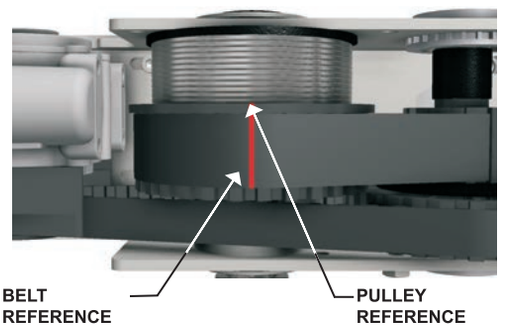


8) REMOVING THE ARM

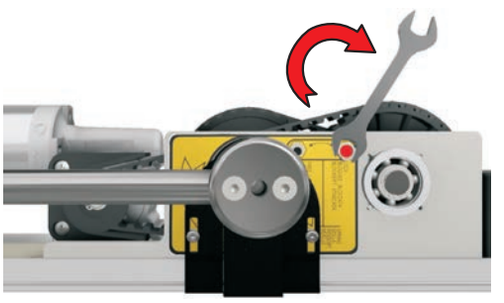
⚠

Carefully follow the steps described below to remove the arm. In particular, unscrew the screw fixing the tapered pin only after the spring has been locked.
The removal of the tapered pin's fastening screw can cause the movement of pulleys and gears present in the automation if the spring has not been locked in advance.
Keep your fingers and other parts of your body clear from the moving components during this operation.

REPOSITIONING TO STANDARD PRELOAD
Before removing the arm, re-establish the standard spring load value (factory setting). To do this, manually move the leaf until the red line on the belt is aligned with the red mark on the pulley
.

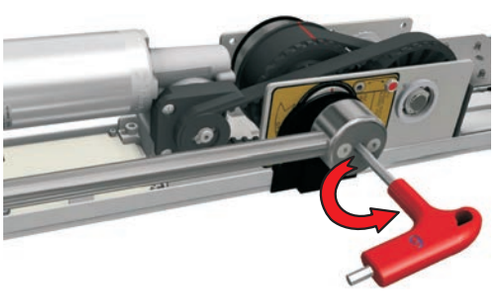


Spring locking
Move the spring preload locking screw from the free position to the locked position, making sure that the screw is inserted in the pulley.



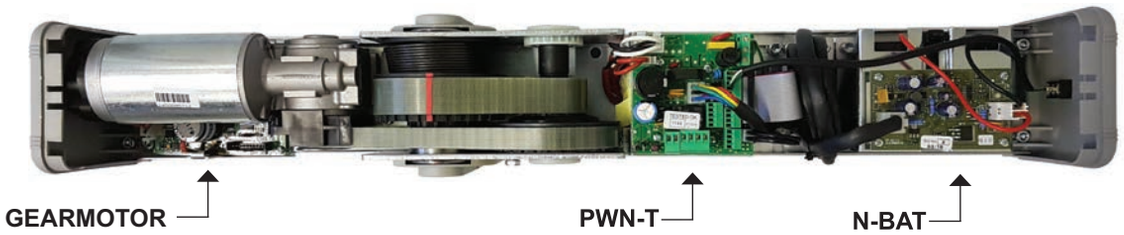
REMOVING THE TAPERED PIN

Insert the Allen wrench (6mm.) inside the hole of the tapered pin without removing the arm rod.
Unscrew the arm's fastening screw, applying greater force in the final phase in order to remove the tapered pin.



Repeat the steps described in par. 7.4, 7.5 and 7.6 to select the spring opening force and to connect the arm.

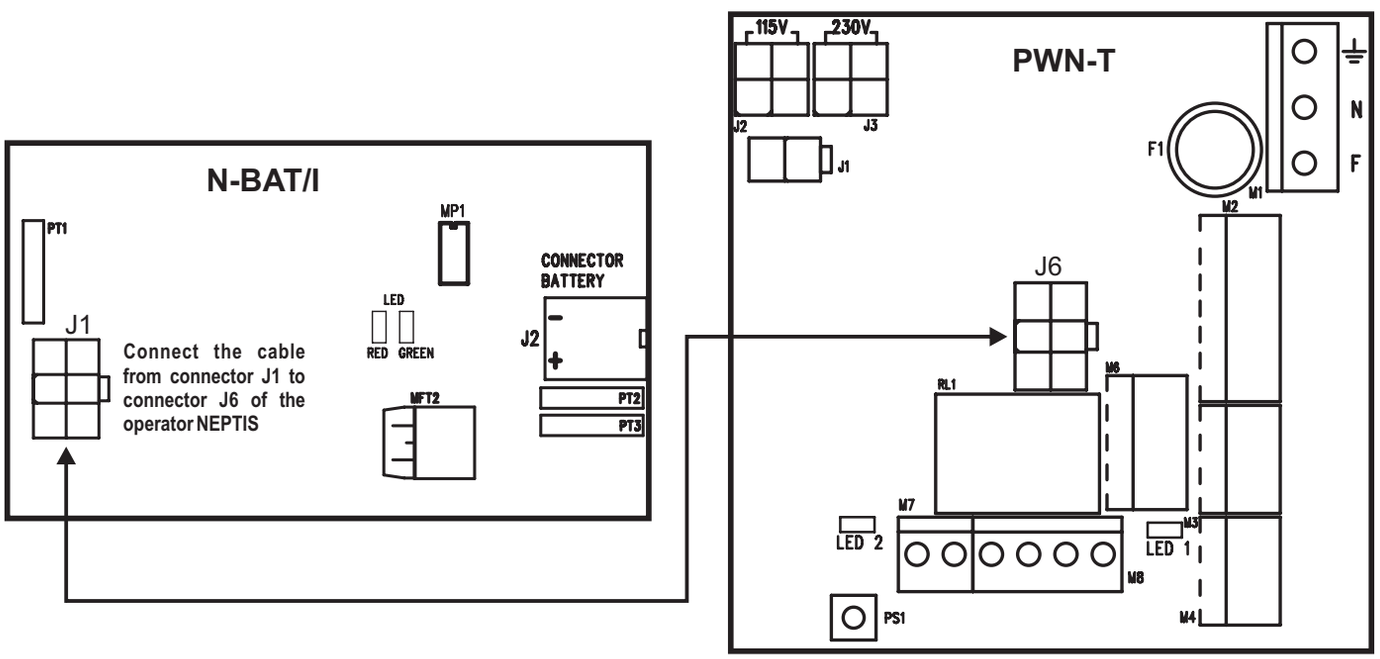
9) NEPTIS INVERS-B OPERATORS WITH BATTERY



For information about the operator installation dimensions, please refer to the technical drawings in paragraph 5, taking into account that the battery module is always on the side opposite to the door pivots.

Electric connection

Connect the J1 connector of the N-BAT/I module to the J6 connector of the PWN-T power supply unit through the special cables.
The battery cable must be connected to the J2 connector of the N-BAT/I.



Operation

Battery operation must be activated by the digital programmer NDSEL/I setting the function F06 = ON.
The N-BAT/I module starts to operate in case of power outage, ensuring a perfect control of the door emergency opening movement.

IMPORTANT!

BATTERY TYPE: 3x6V (18V) - 1.3Ah

LED SIGNALLING

SIGNALLED EVENTS	GREEN LED	RED LED
BATTERY DISCONNECTED	ON	ON
BATTERY CHARGING	BLINKING	OFF
BATTERY CHARGED WITH MAINS VOLTAGE	ON	OFF
BATTERY DISCHARGED	OFF	BLINKING
BATTERY CHARGED WITHOUT MAINS VOLTAGE	OFF	ON

WARNING!

- Periodically check battery efficiency
- To allow recharging batteries must always be connected to the electronic control unit
- The equipment must be disconnected from the mains when removing the batteries
- In case of replacement, always use genuine batteries.
- Replacement must be performed by qualified personnel
- Remove batteries from the equipment before its disposal
- Batteries contain polluting substances; therefore they must be disposed of in accordance with the provisions of local regulations

10) HOW TO RESET THE SPRING PRELOAD

Read this paragraph only if the spring must be unloaded due to the failure to comply with the correct installation procedures.

The automatism is supplied with the opening spring preloaded to a standard value, which is indicated by the alignment of the red mark on the belt with the red mark on the pulley (see figure to the side).
If during installation the arm is accidentally disconnected without first returning and blocking the spring in the standard position with the locking screw, the spring will be loaded below its standard value.
To return it to the correct position, carry out the following steps carefully:

a) Completely disconnect the arm from the outlet pin, if it is still inserted.

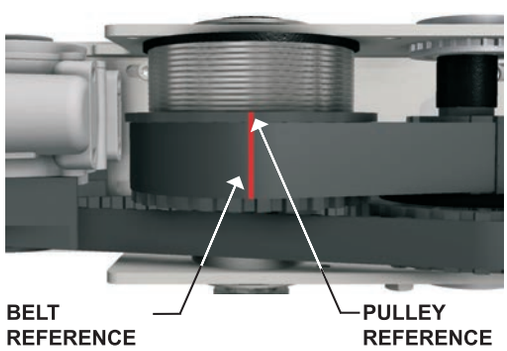
b) Make sure that the manual program selector on the side of the operator is located in the central “0” position.

c) Connect the power supply (see the ELECTRIC CONNECTIONS paragraph)

d) Delete the set-up if it was already stored in the operator control unit (see paragraph 23: “MAINTENANCE”)

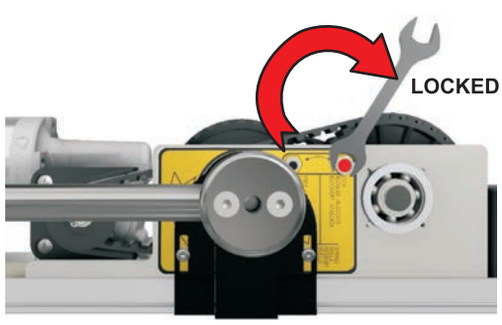
e) Press and hold down the PS1 button (START) on the PWN-T card, the control unit will beep 5 times and start the spring loading manoeuvre.

   Return the spring load to the standard value indicated by the alignment of the red mark on the belt with the red mark on the pulley (see figure to the side). Once the position is reached, release the PS1 button.



If the spring goes beyond the level indicated by the red line during the operation, it can be slowly unloaded by moving the manual program selector to position **I** .
In position **II** , the spring is quickly rewound!
Keep fingers and body parts away from moving components.

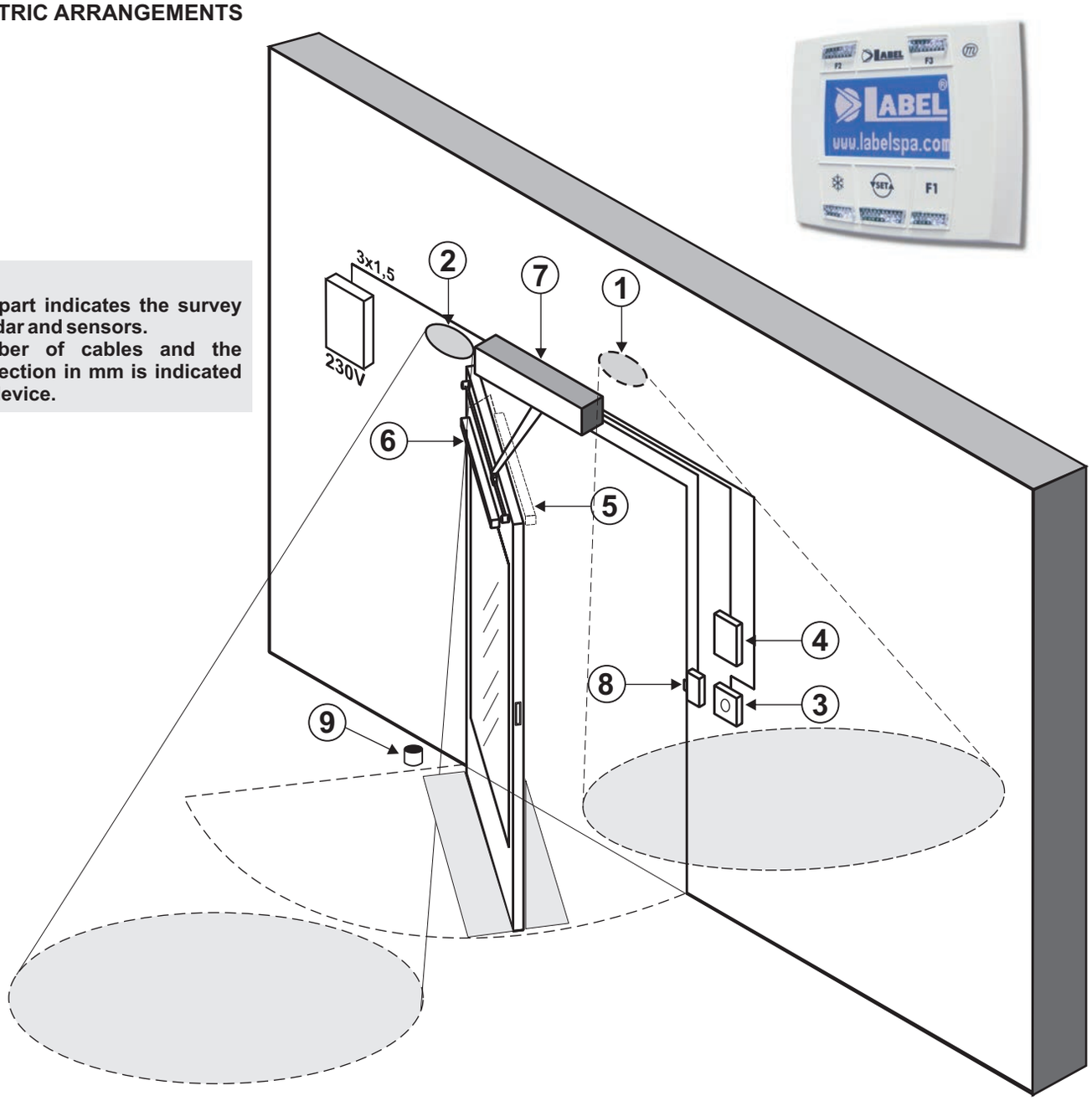
f) Move the locking screw from the free position to the locked position, paying attention that the screw is inserted in the pulley.
g) After this operation, the initial set-up must be repeated (see the INITIAL SET-UP paragraph).



ELECTRONIC SECTION

11) ELECTRIC ARRANGEMENTS

NOTE:
The grey part indicates the survey zone of radar and sensors.
The number of cables and the relevant section in mm is indicated for every device.



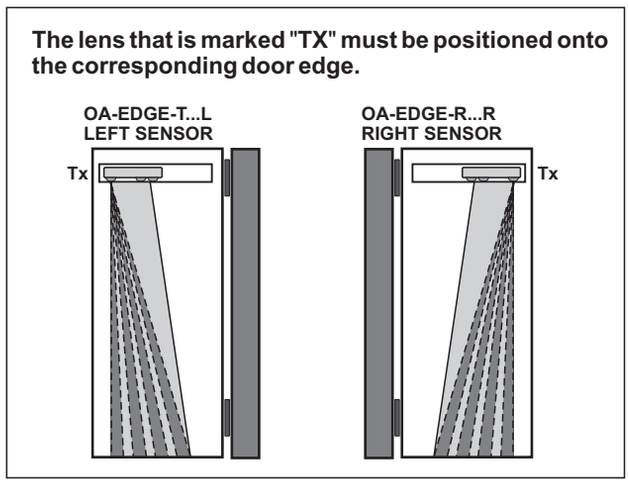
① **EXTERNAL RADAR (4x0,5mm)**
② **INTERNAL RADAR (4x0,5mm)**
③ **OPENING CONTROL (2x0,5mm)**
④ **PROGRAM SELECTOR (4x0,5mm)**
⑤ **SAFETY SENSOR FOR CLOSING (SLAVE SENSOR CONNECTED TO THE MASTER SENSOR)**
⑥ **SAFETY SENSOR FOR OPENING (8x0,5mm MASTER SENSOR)**
⑦ **NEPTIS OPERATOR (mains power supply 3x1,5mm)**
⑧ **ELECTRIC LOCK (2x1mm)**
⑨ **FLOOR STOP**
⑩ **SMOKE ALARM DEVICE**

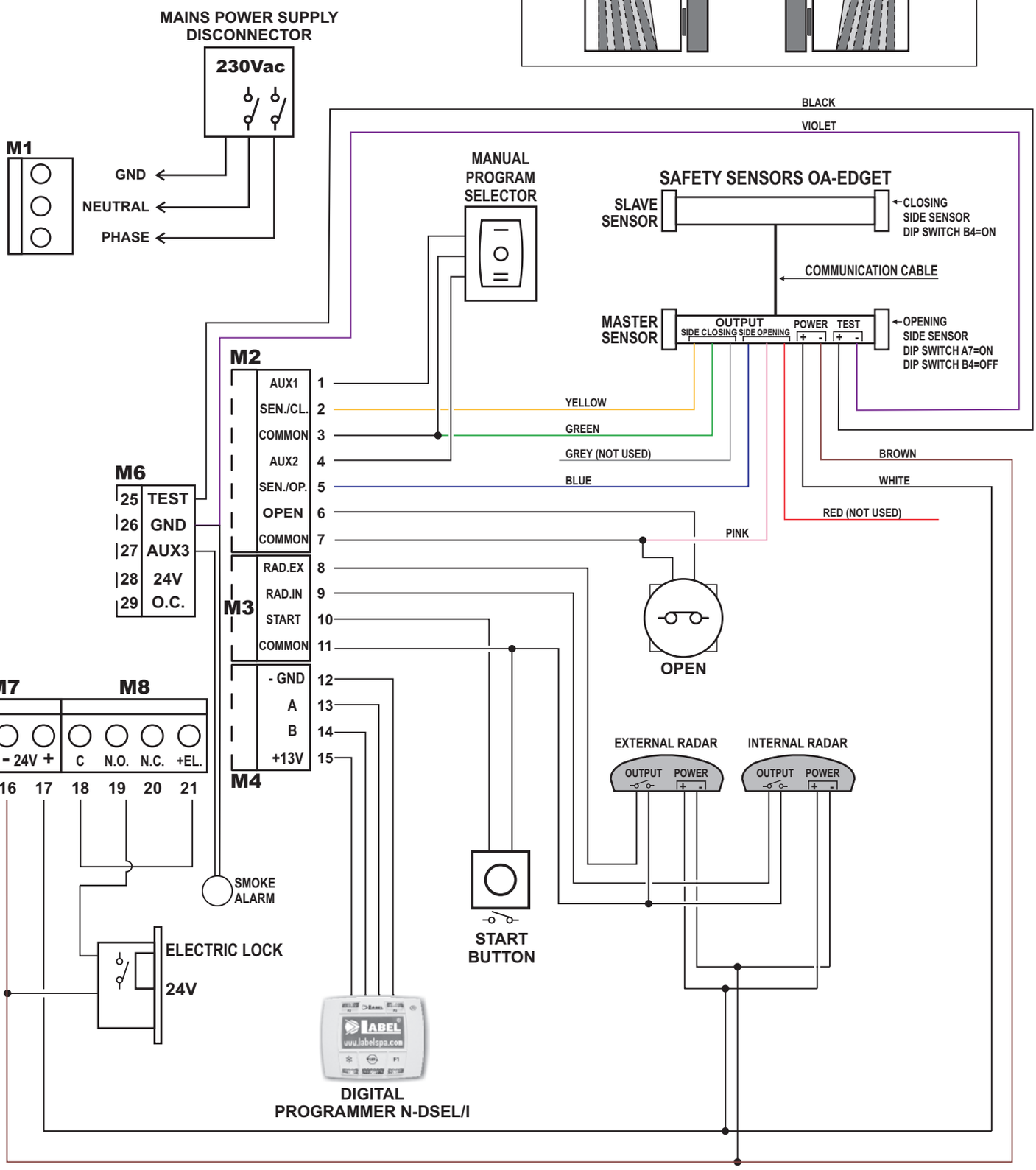
- The power supply line must be protected against short circuit and dispersion to ground.
- On the power supply mains, provide for an omni-polar switch/selector with contact opening distance of at least of 3 mm.
- Use self-extinguishing cables for electric connections.

- Separate the mains power supply line from the very-low voltage line relative to control and safety accessories.
- On the plastic side panels of the Neptis operator there are the holes that must be broken open, through which the electric cables must be inserted. The installer must made the power supply cable stable inside the operator and, particularly, limit the peeling of cable primary sheath so that the air and surface distances are not reduced if a connector detaches from the terminal.
- If operator is installed on a door leaf, perform electric connection by a branching box with suitable flexible unions and pipes, available on the market.

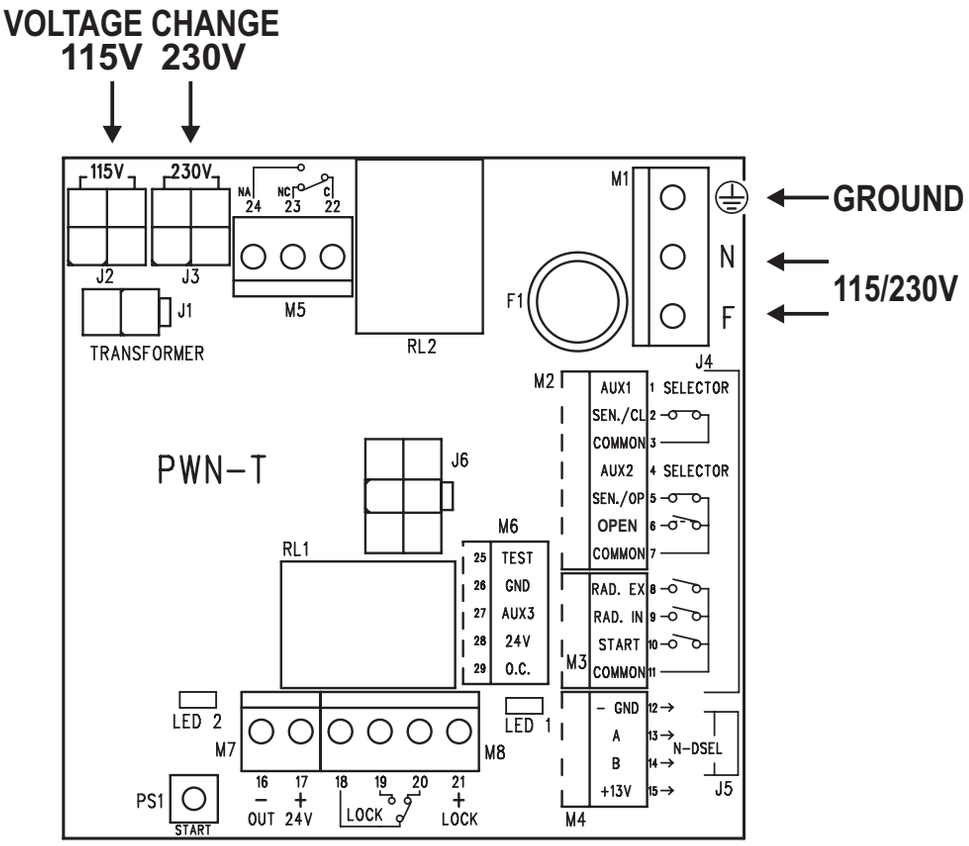
12) ELECTRIC CONNECTIONS

PWN-T





13) PWN-T POWER SUPPLY MODULE AND ELECTRIC WIRING



☞

- In case of 230Vac mains voltage, put the 4-pole connector of the transformer primary in the J3 connector (230V) of PWN-T board (factory setting).
- In case of 115Vac mains power supply, put the 4-pole connector of the transformer primary in the J2 (115V) connector of PWN-T board.

TERMINAL BOARD M1

230 Vac power supply: phase to terminal F, neutral to terminal N, ground connection with terminal ground symbol.

- Ground the operator by connecting the ground cable from the line to the Faston connector on the plate the PWN-T board is fastened to. A cable, connected with ground terminal of PWN-T board, is connected with the second faston.
- The electric line is protected by 2A fuse F1.

TERMINAL BOARD M2

Terminals 1-3-4
MANUAL PROGRAM SELECTOR, located on operator side panel (factory wiring):
closed contact on position I to terminal 1 (AUX1);
central contact to terminal 3 (common);
closed contact on position II to terminal 4 (AUX2);

- For more information on the operating modes of manual program selector, refer to "Program selectors" paragraph.

Terminals 2-3
Input of SAFETY SENSOR FOR CLOSING, N.C. contact.
The operation of safety sensor for closing must be enabled by N-DSEL/I digital programmer (function F18 ON).
The activation during closing provokes the door reopening.

Terminals 5-7
Input of SAFETY SENSOR FOR OPENING, N.C. contact.
The operation of safety sensor for opening must be enabled by N-DSEL/I digital programmer (function F19 ON).
The activation during opening stops the door leaf movement; when the sensor deactivates, the opening restarts at low speed.

Terminals 6-7
OPEN input.
Input contact logic state can be selected as N.O. (default condition) or N.C. by N-DSEL/I digital programmer (function 30).
The activation allows opening the door of all operating programs.

TERMINAL BOARD M3
Terminals 8-11
EXTERNAL RADAR input, N.O. contact.
It controls the door opening.
It is not active when the program selector is on “Exit only” and “Night lock”.

Terminals 9-11
INTERNAL RADAR input, N.O. contact.
It controls the door opening.
It is not active when the program selector is on “Entrance only” and “Night lock”.

Terminals 10-11
START input, N.O. contact.
It controls the door opening.
It is not active when the program selector is on “Night lock”.

TERMINAL BOARD M4
Connection of N-DSEL/I digital programmer.
Terminal 12 = - GND (power supply negative);
Terminal 13 = signal line A;
Terminal 14 = signal line B;
Terminal 15 = + 13V (power supply positive).

TERMINAL BOARD M5
Terminals 22-23-24
Relay potential free contact RL2 (22 = Common 23 = N.C., 24 = N.O.).
- DOOR STATE SIGNAL.
  Function F10 = OFF.
  The output is enabled when the door is open or is moving, and is disabled when the door is closed.
- DOOR OPEN SIGNAL DUE TO SMOKE ALARM OR POWER OUTAGE WITH BATTERY N-BAT/I.
  Function F10 = ON.

TERMINAL BOARD M6
Terminal 25
TEST output for safety sensors set for monitoring.
- For more information, refer to "Safety sensors" paragraph.

Terminals 26-27
AUX3 input, smoke alarm
The input contact logic state can be selected either as N.O. (default condition) or N.C. using the N-DSEL/I digital programmer (function F17).
Activation causes the door to open.

TERMINAL BOARD M7
Terminals 16 (negative) - 17 (positive)
24Vdc output, max. 20W, for the power supply of control and safety sensors.
Led 2 ON indicates the proper operation of output.

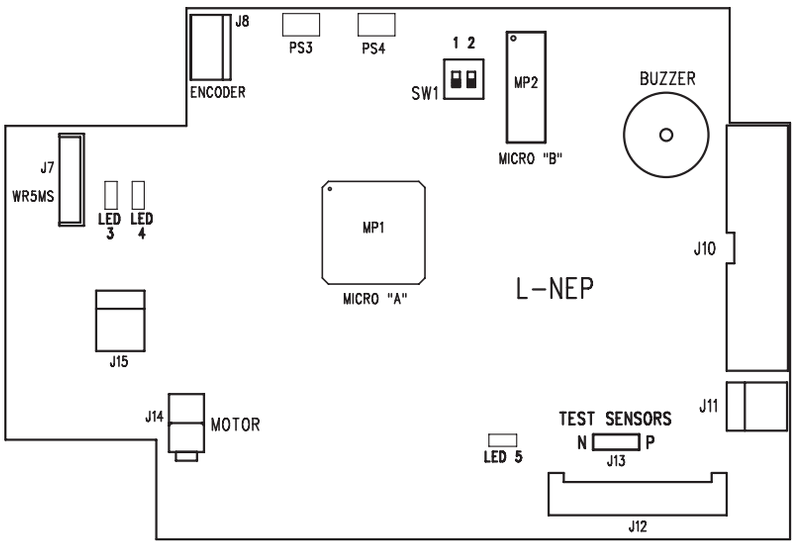
TERMINAL BOARD M8
Terminals 18-19-20
Free contact of relay RL1 for electric lock connection; (18 = Common, 19 = N.O., 20 = N.C.).

Terminals 16 (negative) - 21 (positive)
24Vdc output for electric magnet or electric lock power supply.
- For more information, refer to "Applications with electric lock" paragraph.

CONNECTORS

Connector J1 = transformer secondary (factory wiring).
Connector J2 = transformer primary (for 115V mains voltages).
Connector J3 = transformer primary (for 230V mains voltages, factory wiring).
Connector J4 = wiring of electric signals to connector J10 of L-NEP logic board.
Connector J5 = wiring of motor power supply to connector J11 of L-NEP logic board.
Led 1 ON indicates the presence of output voltage.
Connector J6 = connection with N-BAT/I battery module (See paragraph "OPERATOR NEPTIS INVERS-B WITH BATTERY")

14) L-NEP LOGIC BOARD

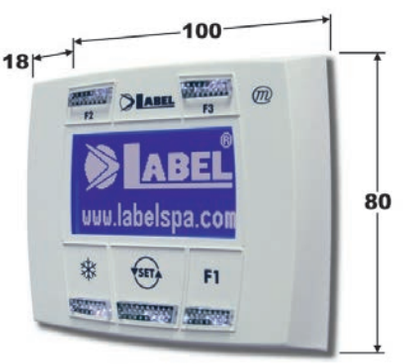


PART DESCRIPTION

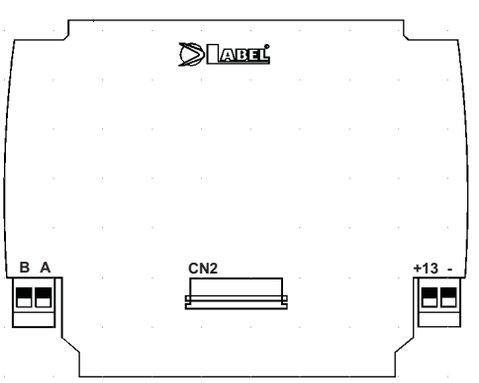
Connector J7 = WR5MS wiring for Master Slave communication in two-leaf swing door.
For more information, refer to "DOUBLE LEAF DOOR SET" paragraph.
Connector J8 = encoder wiring insertion.
Connector J10 = wiring of electric signals from connector J4 of PWN-T module.
Connector J11 = wiring of motor power supply from connector J5 of PWN-T module.
Connector J12 = insertion for EN/RF1 radio receiver.
For more information, refer to "EN/RF1 radio receiver" paragraph.
Jumper J13 = it selects the logic status of safety sensor monitoring signal.
For more information, refer to "Safety sensors" paragraph.
Connector J14 = motor wiring insertion.
Jumper J15 = selects two door braking levels during opening in case of power outage.
Jumper J15 activated = low speed.
Jumper J15 deactivated = high speed.
Led 3 – Led 4 = display of encoder signals.
Led 5 = display of MP1 microcontroller operation (micro A):
led on = correct operation;
led off or slowly flashing = fault on logic board.
Buzzer = warning buzzer.
MP1 = microcontroller "A"
Mp2 = microcontroller "B"
SW1 = dip-switch for operator type selection:
1 OFF / 2 OFF = single leaf operator or Master operator in double leaf
1 ON / 2 OFF = Slave operator in double leaf

15) N-DSEL/I DIGITAL PROGRAMMER – SCOPE AND CONNECTIONS

N-DSEL/I digital programmer is a tool necessary to the installer to configure the operation of the automatic door and perform the set-up of operations, functions and parameters, to perform system diagnostics and have access to events memory containing information on automated device and its operation.
Access to the programming menu is protected by safety technical password so that specialized and authorized personnel only can operate on the automated device.



N-DSEL/I digital programmer can also be used by the final user, but only for choosing the operating mode of automatic door; the user can also select the preferred language and set up a user password to prevent the use of digital programmer by unauthorized persons.



Connect N-DSEL/I digital programmer to PWN-T module of Neptis operator by 0.5mm 4-conductor cable.

Terminal +13V = connect to terminal 15 of PWN-T board (+13V);
Terminal - = connect to terminal 12 of PWN-T board (- GND);
Terminal A = connect to terminal 13 of PWN-T board (A);
Terminal B = connect to terminal 14 of PWN-T board (B);

For each subject-matter described in the following paragraphs the use of digital programmer (hereinafter N-DSEL/I) is explained in the specific case.

16) COMMISSIONING OF AUTOMATED DEVICE (INITIAL SET-UP)

After completing the mechanical installation and performing electric connections, manually shift the door leaf for its entire stroke, to ensure that no friction appears on the movement.
SET-UP operation is compulsory to allow the operator electronic control unit to acquire stroke points.
When the set-up begins, the door will be open and during the stroke learning cycle, no obstacle shall appear in the leaf movement area.
The NEPTIS operator is equipped with a function allowing it to learn the position of the side wall during the initial set-up.
This function is useful as it allows to store the wall position at the end of the opening stroke, and as a consequence to precisely set the point at which the tripping of the opening safety sensor causes the leaf to decelerate in the last few degrees of the opening stage.
It is important that you adjust the safety sensor detection field before starting the operator set-up cycle.

If Neptis operator controls a single-leaf automatic door, dip 1 and 2 on SW1 dip-switch of L-NEP logic board must be set on OFF.
If two Neptis operators must control a double-leaf automatic door, refer to “Double-leaf door set” paragraph..

Follow chapter 16.1 only if N-DSEL/I digital programmer is new and powered for the first time.
Follow chapter 16.2 if digital programmer has already been used before.

16.1) FIRST START OF N-DSEL/I DIGITAL PROGRAMMER

Power the Neptis operator by mains voltage, the control unit buzzer emits some quick, short beeps.

- Language selection is shown on the display of N-DSEL/I digital programmer;
- use **F2** and ❄ buttons to move the arrow in correspondence with the language desired.
- Press EXIT (SET) button to exit “Language” section and enter “Serial communication set-up” section, see paragraph16.3.

16.2) USE OF N-DSEL/I DIGITAL PROGRAMMER

Power the Neptis operator by mains voltage, the control unit buzzer emits some quick, short beeps.

The display signals the lack of communication between N-DSEL/I and operator control units since the serial code of L-NEP logic board is not stored on N-DSEL/I.

Press (SET) button for about 5 seconds to enter the general programming menu.
- F1 button allows moving forward among menu symbols.
- Select RS485 symbol.
- Give a quick pulse to ENTER ❄ button to enter the “Serial communication setup” section, see paragraph16.3.

16.3) SERIAL COMMUNICATION SET-UP

N-DSEL/I programmer automatically detects the presence of operator electronic control unit (fig. A) and stores the serial code of L-NEP logic board (fig. B).

When acquisition of serial code is completed, the display must show the closed padlock symbol on letter M and open padlock on letter S, for a single leaf door (fig. C).

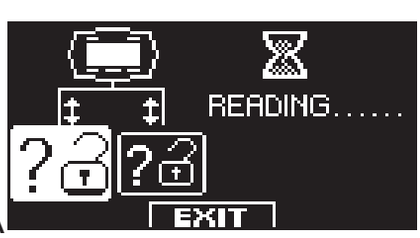
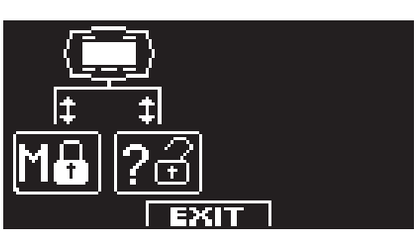
fig.A 

fig.B 

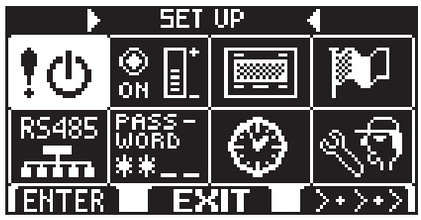
fig.C 

For a double-leaf swing door, refer to “Double-leaf door set” paragraph.

Press EXIT (SET) button to exit “Serial communication set-up” section and enter the general programming menu.

16.4) INITIAL SET-UP

From general programming menu, F1 button allows moving forward among menu symbols.
Select INITIAL SET-UP symbol.



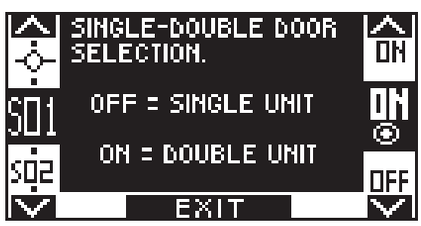
Give a quick pulse to ENTER ❄ button to enter the “Initial setup” section.

Type the 10-character technical password for access to set-up configuration.
The default technical password supplied by Label to N-DSEL/I digital programmer is “A-A-A-A-A-A-A-A-A-A”
Press the button in correspondence with letter A, asterisk appears on the first letter case on the display; repeat this operation for all the other characters required.
If the password typed is correct, you enter the section dedicated to set-up configuration; if the password typed is wrong, you return to general programming menu.

It is recommended to change the default technical password.
Refer to “Password management” paragraph.

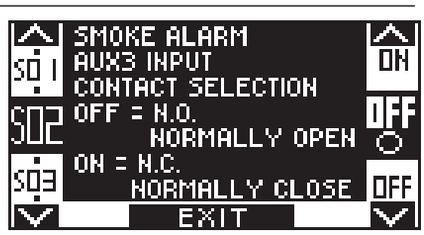
In this section, F1 / F3 buttons allows selecting the function ON / OFF status, while ❄ button allows moving to the following function.
Press F2 button to return to previous function.

Select the door type: single leaf OFF, or double leaf ON (in this last case, refer to “Double-leaf door set” paragraph).



Configuration of the smoke alarm contact on the AUX3 input (terminals 26-27).

- Select OFF if you do not connect a smoke alarm or if you use a N.O. (normally open) contact.
- Select ON if you connect a smoke alarm with a N.C. (normally closed) contact.



Select ON only if an electric lock is present.

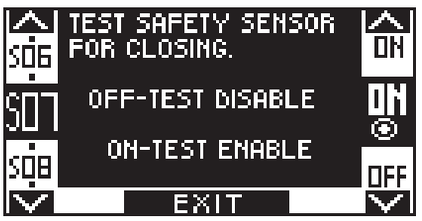
Only if S03 function has been set to ON
Select the type of electric lock:

- Impulsive = OFF (electric lock or electric strike)
- Permanent = ON (electromagnet).

Select ON only if a safety sensor has been installed on closing (between terminals 2-3).

Select ON only if a safety sensor has been installed on opening (between terminals 5-7).
We recommend that you adjust the safety sensor detection field before starting the set-up, to allow the operator to precisely store the position of any side wall.

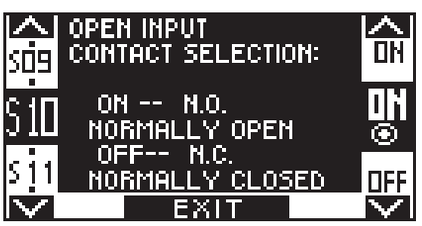
Only if S05 function has been set to ON
Select ON if a safety sensor has been installed on closing and monitored (as required by standard EN 16005) to activate sensor test at the beginning of each cycle, select OFF only if the safety sensor on closing has not been set up to be monitored.
For more information, refer to "Safety sensors" paragraph.



Only if S06 function has been set to ON
Select ON if a safety sensor has been installed on opening and monitored (as required by standard EN 16005) to activate sensor test at the beginning of each cycle, select OFF only if the safety sensor on closing has not been set up to be monitored.
For more information, refer to "Safety sensors" paragraph.

If S07 and/or S08 functions are set to ON only
Select test logic status, used by operator control unit to monitor safety sensors.
The set-up depends on the characteristics of sensor installed.
Select OFF when using “4SAFE ON SW” or "OA-EDGET" type sensors;
select ON when using “TOP SCAN-S” type sensors.
For more information, refer to "Safety sensors" paragraph.

Contact configuration on OPEN input between terminals 6-7 of PWN-T board.
Select ON with normally open contact or when the OPEN input is not used.
Select OFF when using a device with normally closed contact.



The operator is ready for the set-up cycle.
Exit the detection field of the opening safety sensor during the set-up, to allow the sensor to only detect the presence of any side wall at the end of the opening.
The set-up cycle begins with the door in opening position because the spring keeps the door open.
Press the ❄ (OK) button.
The control unit buzzer emits 4 beeps and the set-up cycle starts.

The set-up provides for a full closing/opening/closing cycle at low speed to learn the run stop positions.

A 3" beep duration means set-up finishing at the end of closing.

16.5) FUNCTIONAL TESTING

Select door automatic operation by program selector.
Put program manual selector on status **I**, if used.

Refer to “Program selectors” paragraph describing the selector types provided for to select the automatic door operating mode.

To start an opening manoeuvre, give a pulse to PS1 button (Start) of PWN-T module or engage door opening devices.

Ensure that door opening and closing cycle is properly performed and that pulse organs and safety sensors operate; to adjust sensor detection field, refer to the instructions delivered with the sensor.
The opening safety sensor detects the presence of any side wall at the end of the opening stroke thanks to the automatic learning function during the initial set-up.
Should you need to change the optical adjustment of the safety sensor after performing the initial set-up of the operator, you can change the opening safety sensor inhibition distance by editing the P03 parameter of the N-DSEL/I digital programmer (see paragraph "Parameter setting").
During door movement, intermittent signals could be heard as emitted by the buzzer to indicate that the limit power delivered by operator has been reached, especially if leaf dimensions and weight are close to the limits allowed.
A short audible signal by the buzzer at the beginning of the movement is to be considered as normal, as the pick-up phase requires maximum force.
Adjust the thrust power by P04 parameter of N-DSEL/I programmer (see . “Parameters setting” paragraph).
To deactivate the buzzer noise signal when the power limit is reached, set up F34 function to ON (see “Functions setting”).

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The buzzer noise signal for almost the entire stroke means that the leaf exceeds the limits allowed or installation levels shown on technical installation drawings are not met or frictions exist on the fixture; in this case, the movements of automatic door are difficult and the opening/closing cycle could not be completed.

Impact safety: ensure that stop and reverse of moving direction are performed if the leaf movement is hindered.

- Verify that by shutting off mains power, both door leaves fully open by means of the opening spring.
- In the operators with battery (Neptis INVERS-B) set F06 = ON on both master and slave operator to enable recognition of the battery module N-BAT/I.
  In the event of a power failure, the opening movement of the door, as well as by the spring, is operated by the battery powered operator, which will also check the final deceleration phase. After a few seconds from the completion of the opening cycle, the leaves will softly touch the mechanical stop.

- **RESTORE OPERATION**
  When the mains power returns, the standard operation of the automatic door must be restored, setting the program selector to night lock and then setting it back to automatic program.
  The restore operation is possible 10 minutes after the mains power is restored.

- If you have connected the contact of a smoke alarm to the AUX 3 input of the control unit, verify its proper operation.
  By activating the smoke alarm, the door should open and stay open.
  Normal operation of the door can only resume after the smoke alarm input is off and after the reset operation, which consists in setting the program selector to night lock and returning it to the automatic program.
  The AUX 3 smoke alarm input is enabled in all work programs of the automatic door (function F23 = OFF).

- If you want to disable door opening due to the smoke alarm in the night lock work program, select F23 = ON.
  The smoke alarm signal will still be stored, therefore on the first opening command, or after selecting the automatic program, the door opens and stays open, so as to perform system safety checks.
  The door will resume normal operation after the reset operation (switching from night lock program to automatic program).

To set up the functions, refer to “Functions setting” paragraph.
To adjust the parameters, refer to “Parameters setting” section.

Set-up operation must be repeated if one of the following conditions varies:
door weight, leaf opening angle, spring loading, replacement of L-NEP logic board or of mechanical unit inside Neptis operator.
To repeat set-up, follow the steps described in the previous paragraph, “Initial set-up”.

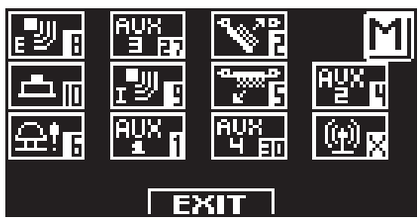
16.6) INPUTS DIAGNOSTICS

N-DSEL/I programmer allows checking the inputs status to ensure proper operation of all devices connected with Neptis operator.
To enter "Inputs diagnostics" while the automatic door operating program is shown on display, keep **F2** button pressed for about 3 seconds.

F3 button is exclusively used with a double-leaf swing door; if an M appears on top right, MASTER input ports are displaying, in case of an S, input ports concern SLAVE operator. A single touch on the F3 button switches from M to S.
In case of single-leaf automation, an M appears on top right.

The display shows the symbols of all operator inputs, with the relevant terminal number.
If an input is used, the corresponding symbol lights up with an arrow on a side.

	**External radar**
	**Internal radar**
	**Start**
	**OPEN**
	**Closing safety sensor**
	**Opening safety sensor**
	**AUX 1 (it activates if the manual program selector is in position I)**
	**AUX 2 (it activates if the manual program selector is in position II)**
	**AUX 3 Smoke alarm**
	**EN/RF1 receiver when activated by SPYCO radio control**
	**unused**



17) PROGRAM SELECTORS

The program selector allows the door user to select the operating mode.
The following can be used, according to the choice: manual selector integrated in Neptis operator side, EV-MSEL key mechanical selector or N-DSEL/I digital programmer.
Each program selector is described in details below.

17.1) MANUAL PROGRAM SELECTOR

The 3-position manual program selector is the basic solution provided for onboard operator.
The operation of this selector is enabled by F01 function OFF (default preset).

Position **I** = Bi-directional automatic program
The door automatically opens when each opening control activates.

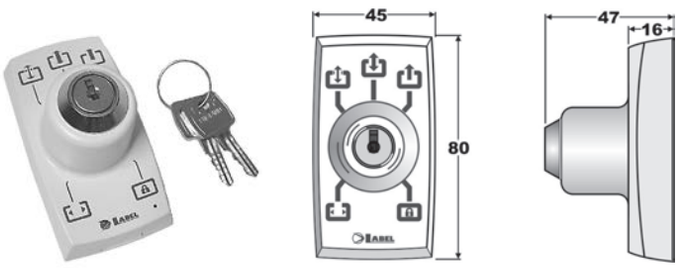
Position **0** = Free manual door
The automatic operation is disabled and the door opens powered by the spring and stays open.

Position **II** = Night lock program
if F07 function is set to **OFF** The door can only be open by OPEN input or radio control if EN/RF1 radio receiver is installed.
(default)

Position **II** = Open door program
if F07 function is set to **ON** The door stops in complete opening position.

17.2) EV-MSEL MECHANICAL KEY SELECTOR

5-position key mechanical selector can be used as an alternative to the manual selector and its operation is enabled by F01 function OFF (default preset).



Disconnect manual selector wires from terminal board of PWN-T module if EV-MSEL mechanical selector is installed.

ELECTRIC CONNECTIONS

Terminal 1 of EV-MSEL= to terminal 9 (Internal radar) of Neptis operator PWN-T.
Terminal 2 of EV-MSEL= to terminal 3 (Common) of Neptis operator PWN-T.
Terminal 3 of EV-MSEL= to terminal 1 (AUX 1) of Neptis operator PWN-T.
Terminal 4 of EV-MSEL= to terminal 4 (AUX 2) of Neptis operator PWN-T.

For any check on proper connection and operation of key mechanical selector, enter inputs diagnostics (see par. 16.5) to ensure that different key positions correspond to activation of the following symbols:

= and
= no active symbol
=
= and
=

OPERATING MODE

Insert and rotate the key in EV-MSEL selector to select the program desired.

	Open door program The door stops in complete opening position.
	Free manual door The automatic operation is disabled and the door opens powered by the spring and stays open.
	Bi-directional automatic program The door automatically opens when each opening control activates.
	Single-direction automatic program output only To exclude the incoming detection on external radar input
	Night lock program The door can only be open by OPEN input or radio control if EN/RF1 radio receiver is installed.

The key can be taken out of the selector when in any position in order to prevent the work program from undesired changes.

17.3) N-DSEL/I DIGITAL PROGRAMMER – USED LIKE PROGRAM SELECTOR

N-DSEL/I digital programmer can be installed in the system and used by the user like a program selector, as an alternative to manual and mechanical selector if you need a more complete tools in terms of functions and graphs.

To enable N-DSEL/I operation like a program selector, set up F01 function ON (see "Functions setup" paragraph).

Select the automatic door operating mode by pressing once the SET button.
Each time a button is pressed, it switches from a work program to the next one.

The operating programs to be selected by SET button are described below

Bi-directional automatic program
The door automatically opens when each opening control activates.

Single-direction automatic program output only
To exclude the incoming detection on external radar input

Single-direction automatic program input only
To exclude the outgoing detection on internal radar input.

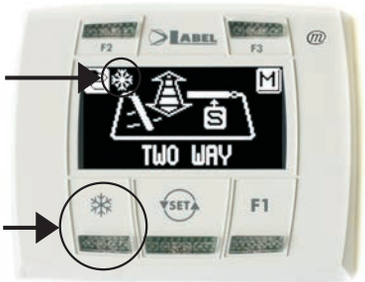
Open door program
The door stops in complete opening position.

Night lock program
The door can only be open by OPEN input or radio control if EN/RF1 radio receiver is installed.

Free manual door
The automatic operation is disabled and the door opens powered by the spring and stays open.

- **Power warning light display**
  The symbol indicates the presence of mains power voltage and the battery, if any, is operating.
- The symbol means that mains power is not present, the battery is efficient and the door is open.
- The symbol with mains power voltage indicates that the battery is damaged.
  In this case, the control unit buzzer emits a beep before each door opening for 10 cycles (if F09 function OFF), or the door opens and remains open (if F09 function ON).
- The symbol without mains power voltage indicates that the emergency battery is about to run out.

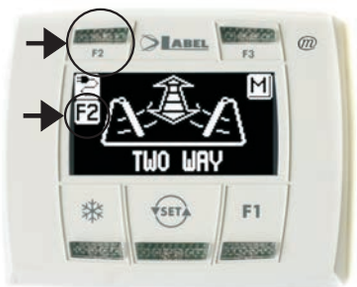
Operation of other buttons located on N-DSEL/I program selector panel



❄

Pedestrian opening, used in double-leaf door automated device only
To activate pedestrian opening, press the ❄ button.
the symbol ❄ on the display indicates that the function is on.

In a double leaf door, the first leaf (Master) only opens if the opening command is given by internal or external radar inputs.
The pedestrian opening only operates in bi-directional, single-direction and open door automatic programs.
To deactivate pedestrian opening, press again the ❄ button.
For more information, refer to "Pedestrian opening" paragraph.



F2

Deactivation of step-by-step operation
Give a pulse to F2 button to deactivate the step-by-step operation previously activated by F13 function ON (see para. “Functions setting”) and enable the door automatic closing.
Press F2 button again to activate step-by-step operation. Symbol F2 on display goes off.

F1

Door opening command
Press F1 button to open the door, but only in bi-directional and single-direction programs (if F33 function OFF).
Press F1 button to open the door in all operating programs, both automatic and night lock (if F33 function ON).

F3

It is only used in one MASTER / SLAVE double-leaf door automated device

F3 button has no function on the main work program selection screen, it is only used to switch from MASTER to SLAVE and to check that communication between operators and N-DSEL/I programmer is working properly.

Letter M is displayed on top right side when Master operator is selected, letter S appears when Slave operator is selected.

If the system is working properly, door working program is displayed both with M and S, in case of fail communication the message "NO COMUNICATION" is displayed for the non-working-properly operator.

SCHEDULED MAINTENANCE
If the display shows the message "**SCHEDULED MAINTENANCE**", contact the authorized service center to request maintenance on the system.

18) GENERAL PROGRAMMING MENU

To enter the general programming menu while the automatic door operating program is shown on display, keep SET button pressed for about 5 seconds.

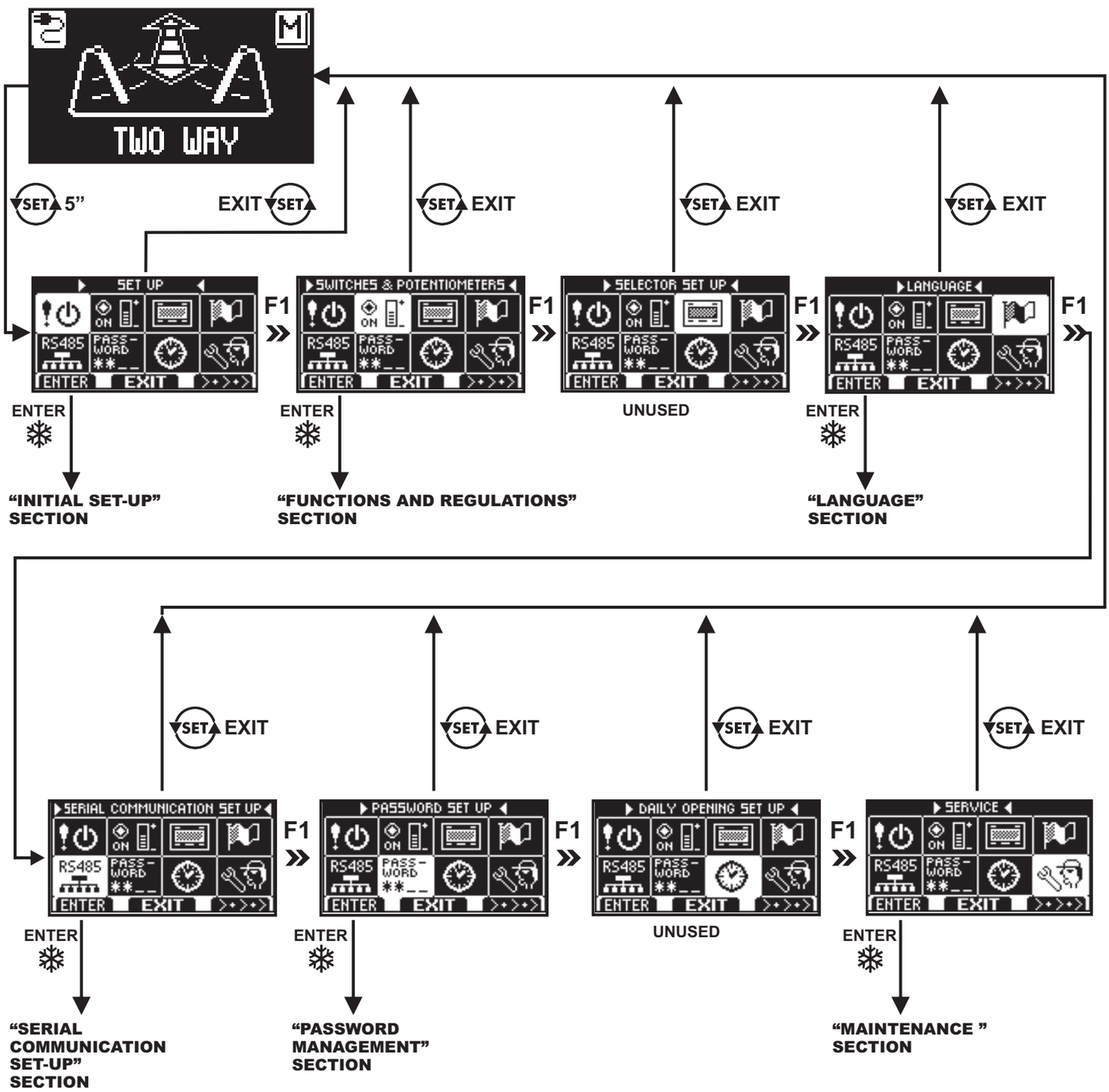
The programming menu consists of different sub-menus divided by subject (Diagram 1).

Select the section you want to have access to by using F1 button >> .
The menu icon selected is highlighted and the section title is shown on display top side.

To enter the selected sub-menu, give a quick pulse on ENTER button.

To exit the general programming menu and return to the operating program view, press EXIT SET button.

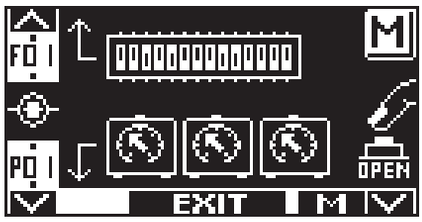
DIAGRAM 1



- **Refer to par. 16.4 when entering the initial set-up section.**
- **Refer to par.16.3 when entering the serial communication setups for single-leaf door; see para. 29.2 for two-leaf swing door.**
- **For the other sub-menus, refer to the following paragraph on the section you have had access to**

19) FUNCTIONS AND REGULATIONS

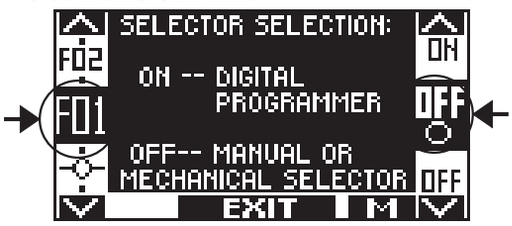
To enter please digit the 10-digits technical password (for detailed information please check paragraph “Password management”



In this submenu the push buttons have the following scope:

Push Button F2 = entering the setting for functions F (see paragraph “Functions Setting”);
Push Button ❄ = entering the setting for Parameters P (see paragraph “Parameters Setting”);
Push Button F1 = to run door opening;
Push Button F3 = it is used only in case of double leaf door application to set up the parameters on Master or Slave operator; letter M or S displayed bottom right indicates which operator has been selected. Letter M will appear on display on top right position if the automation is single leaf
Push Button SET = to return to the general setting menu.

19.1) FUNCTIONS SETTING



In this section the display describes the scope of the selected function;
push button F1 is setting the function in OFF;
push button F3 is setting the function in ON;
push button F2 allows proceeding to the following function;
push button ❄ allows returning to the previous function;

Here the explanation of each single function:

FUNCTION	STATUS	DESCRIPTION	*' SLAVE
F01	OFF	Choosing the program selector: manual built-in selector or mechanical key switch EV-MSEL	
	ON	Choosing the program selector: digital selector N-DSEL/I	
F02	OFF	Singe leaf door (just on display; repeat initial set-up in order to change it)	
	ON	Double leaf door (just on display; repeat initial set-up in order to change it)	
F03	OFF	Master operator in double leaf door application (just on display; repeat initial set-up in order to change it)	
	ON	Slave operator in double leaf door application (just on display; repeat initial set-up in order to change it)	
F04	OFF	Electric lock deactivated	S
	ON	Electric lock activated	
F05	OFF	Active function if **F04 = ON**. Impulsive functioning for electric lock (see paragraph "Electric lock Application")	S
	ON	Active function if **F04 = ON**. Permanent functioning for electric lock (see paragraph "Electric lock Application")	
F06	OFF	N-BAT/I BATTERY MODULE NOT PRESENT	S
	ON	N-BAT/I BATTERY MODULE PRESENT	

FUNCTION	STATUS	DESCRIPTION	*' SLAVE
F07	OFF	Active function if **F01 = OFF**. Operation mode for the manual built-in selector in position **II** **II**= Night Lock program	
	ON	Active function if **F01 = OFF**. Operation mode for the manual built-in selector in position **II** **II**= Open Door program	
F08		Function disabled	
F09	OFF	Battery monitoring = in case of empty or damaged battery the control unit buzzer beeps prior to ten following opening cycles	
	ON	Battery monitoring = in case of empty or damaged battery the door opens and remains open in Automatic Door program	
F10	OFF	M5 TERMINAL BOX CONTACT OUTPUT (22 23 24) DOOR STATE SIGNAL The output is active when the door is in motion or open, while it is not active when the door is closed.	
	ON	M5 TERMINAL BOX CONTACT OUTPUT (22 23 24) DOOR OPEN SIGNAL DUE TO SMOKE ALARM OR POWER OUTAGE WITH BATTERY N-BAT/I	
F11	OFF	Selecting the program "Night Lock" the door remains closed and can be opened just with the OPEN input	
	ON	Selecting the program "Night Lock" the door opens and remains open for 10" before closing in order to grant escape from building	
F12	OFF	Function for disabled persons deactivated	
	ON	Function for disabled persons activated; see paragraph "Courtesy function for disabled persons" for detailed information on this function mode	
F13	OFF	Function mode with automatic closure	
	ON	Step by step function: one Start or one OPEN input activates door opening while a second input is needed for door closure	
F14	OFF	Standard function mode on inputs internal and external radar	
	ON	Step by step function mode with separate commands. The external radar input activates door opening, whereas the internal radar input activates door closure. The command input (Start, OPEN and SPYCO remote control) operate in standard mode	
F15	OFF	For double leaf door application: partial opening deactivated if key switch selector EV-MSEL is connected	
	ON	For double leaf door application: partial opening activated on Master leaf if key switch selector EV-MSEL is connected (active function if **F01=OFF**). For further details please check paragraph "Pedestrian opening"	
F16	OFF	Active function if **F15=ON**. Partial opening on Master leaf active with key switch selector EV-MSEL in program "Free manual door"	
	ON	Active function if **F15=ON**. Partial opening on Master leaf active with key switch selector EV-MSEL in program "Night Lock"	
F17	OFF	CONFIGURATION OF THE AUX3 INPUT: Normally open (N.O.) contact When not in use or if a smoke alarm with N.O. contact is installed	
	ON	CONFIGURATION OF THE AUX3 INPUT: Normally closed (N.C.) contact When a smoke alarm with N.C. contact is installed	
F18	OFF	Closure safety sensor input deactivated; if a closure safety sensor is not installed	S
	ON	Closure safety sensor input activated; if a closure safety sensor is installed	

FUNCTION	STATUS	DESCRIPTION	*' SLAVE
F19	OFF	Opening safety sensor input deactivated; if a opening safety sensor is not installed	S
	ON	Opening safety sensor input activated; if a opening safety sensor is installed	
F20	OFF	Test on closure safety sensor deactivated. For sensors without monitoring function carried out by the automation control unit	S
	ON	Active function if **F18=ON**. Test on closure safety sensor activated. For sensors with monitoring function carried out by the automation control unit (cat. 2 / pl. c). For detailed information please check paragraph "Safety Sensors Device"	
F21	OFF	Test on opening safety sensor deactivated. For sensors without monitoring function carried out by the automation control unit	S
	ON	Active function if **F19=ON**.Test on opening safety sensor activated. For sensors with monitoring function carried out by the automation control unit (cat. 2 / pl. c). For detailed information please check paragraph "Safety Sensors Device"	
F22	OFF	Active function if **F20** or **F21=ON**. Safety sensor test with LOW logic level. For detailed information please check paragraph "Safety Sensors Device"	S
	ON	Active function if **F20** or **F21=ON**. Safety sensor test with HIGH logic level. For detailed information please check paragraph "Safety Sensors Device"	
F23	OFF	AUX 3 INPUT - SMOKE ALARM enabled in the NIGHT LOCK program.	
	ON	AUX 3 INPUT - SMOKE ALARM disabled in the NIGHT LOCK program.	
F24		Function disabled	
F25	OFF	Constant pause time	
	ON	Automatic pause time increases if door is not closing properly due to the high flow of persons walking through it	
F26		Function disabled	
F27		Function disabled	
F28		Function disabled	
F29		Function disabled	
F30	OFF	OPEN input configuration; normally closed contact. When a device with N.C. contact is installed	
	ON	OPEN input configuration; normally open contact. When a device with N.O. contact is installed	
F31		Function disabled	

FUNCTION	STATUS	DESCRIPTION	*' SLAVE
F32	OFF	Internal and external radars are deactivated during closing phase in "Night Lock" program	
	ON	Internal and external radars are activated during closing phase in "Night Lock" program, causing the door reopening	
F33	OFF	Push button **F1** of digital selector N-DSEL/I enables door opening only during automatic program modes	
	ON	Push button **F1** of digital selector N-DSEL/I enables door opening both during automatic program modes and during "Night Lock" program	
F34	OFF	Activates buzzer warning relative to the reached motor power limit (please check paragraph "Functional Testing")	S
	ON	Deactivates buzzer warning relative to the reached motor power limit	
F35		Function disabled	
F36		Function disabled	
F37		Function disabled	
F38		Function disabled	
F39		Function disabled	
F40	OFF	Cyclic function disabled	
	ON	Cyclic function. Activates the continuous door opening and closing cycle; this function is meant to be used for function testing or laboratory purposes	

***' For double leaf swing door application.** In the column Slave of the present spreadsheet, the functions marked with letter S, have to be separately configured on Slave operator. All other functions not marked with letter S, have to be set on Master operator and are common for both units.

19.2) PARAMETERS SETTING

In this section the display describes the type of selected parameter;
push button F1 decreases the setting value in percentage;
push button F3 increases the setting value in percentage;
push button ❄ allows proceeding to the following parameter;
push button F2 allows returning to the previous parameter;

Here the explanation of each single parameter.

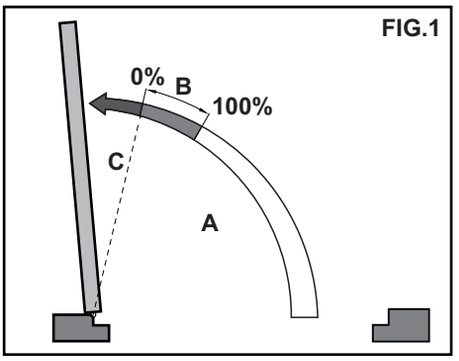
PARAMETER	Ref. Drawing	DESCRIPTION	*'SLAVE
P01	**Fig.1**	**Opening speed.** Increase this value for a faster door opening speed.	**S**
P02	**Fig.2**	**Closing speed.** Increase this value for a faster door closing speed.	**S**
P03	**Fig.4**	**Safety sensor, slow motion area in opening.** When the door leaf at the end of the opening is close to the wall, the safety sensor in opening can detect it and stop the door. To prevent an uncomplete opening cycle the door can moving at low speed when the sensor detect the wall. The area from where the door reacts with a low speed instead of stop depend from this potentiometer. If P03=0 the door stop ever, increasing the value the door use low speed to approach the end of the opening. At maximum value the area start from about 45° from the end of opening.	**S**
P04		**Thrust power during opening.** Increase this value for higher motor thrust power during opening (and closing if set closing by motor) cycle.	**S**
P05		**Pause time,** can be regulated between 0 and 60 seconds. It is the time in which the door remains open before closing.	
P06		**Closing voltage at door closed.** Increase this value to keep the motor thrust active with door close.	**S**
P07	**Fig.5**	**Wind stop function at door closed.** At 0% (default value) the function is disabled. Increasing this value the motor is applying an opposite force to wind strength in order to keep the door leaf closed.	**S**
P08	**Fig.3**	**Push & go.** As soon as the door is pushed manually, an automatic opening cycle activates. Increasing the value will increase the degrees of displacement of the leaf required before opening start.Setting range between 2° and 15° (default value 100%).	**S**
P09		**Final thrust for electric lock coupling** (active if **F04=ON**). Increase this value for a higher leaf speed in the last closing phase so that an easier coupling to electric lock is enabled.	**S**

PARAMETER	Ref. Drawing	DESCRIPTION	*'SLAVE
P10		**Closing stroke to release electric lock** (active if **F04=ON**). At 0% (default value) the function is disabled. Increase this value to adjust the closing stroke power of 0,5 second closing before opening cycle. Used to easily release the electric lock.	**S**
P11		**Opening delay at electric lock activation** (active if **F04=ON**). By 0% (default value) the function is disabled. Increase this value to increase the delay leaf opening in respect of the electric lock activation (4 seconds at 100%).	**S**
P12	**Fig.1**	**Slowing down distance in opening.** Slowing down distance in opening. Distance from where the leaf start the low speed in opening. Increase this value to adjust door leaf slowing distance.	**S**
P13	**Fig.2**	**Slowing down distance in closing.** Slowing down distance in closing. Distance from where the leaf start the low speed in closing. Increase this value to adjust door leaf slowing distance.	**S**
P14		Parameter disabled	
P15	**Fig.6**	**Motor thrust power at the end of the closing.** Increasing the value will increase the thrust power of the motor during the final stage of the closing operation.	**S**
P16		**Motor thrust time during end closing.** Increase this value to adjust time during which the motor thurst is active in the last closing phase, thus overcoming any friction and achieving complete door closure. At value 100% time would be 1,5".	**S**
P17		Parameter disabled	
P18		**Distance between leaf physical end stop and opening end-running.** Increase this value to increase the gap between the physical end stop on the floor and the position of the leaf with the door full open. This setting can be adjusted for about 5°.	**S**
P19		**Leaf opening delay.** For double leaf application. Increase this value to adjust opening delay between Slave and Master unit. This setting is necessary in case of overlapping leaves. At minimum value 0% both leaves start opening at the same time.	
P20		**Leaf closing dealy.** For double leaf application. Increase this value to adjust closing delay between Master and Slave unit. This setting is necessary in case of overlapping leaves. At minimum value 0% both leaves start closing at the same time.	
P21		Parameter disabled	
P22		Parameter disabled	

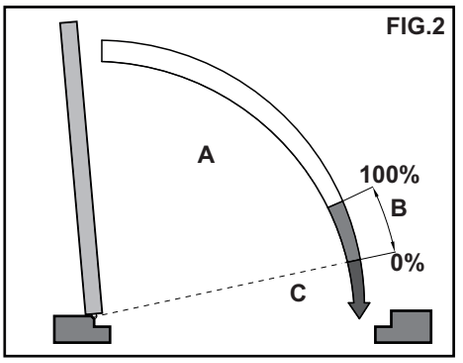
PARAMETER	Ref. Drawing	DESCRIPTION	*'SLAVE
P23		**Opening acceleration ramp:** Increase this value for higher acceleration during opening cycle.	**S**
P24	**Fig.5**	**Wind stop at door open.** Increase this value to achieve a higher opposite force to wind direction in order to keep door open.	**S**
P25		Parameter disabled	
P26		**Safety sensor test time** (adjustment enabled if **F20** and/or **F21=ON**). This parameter can be used only if safety sensors with test monitoring option checked by the control unit are installed and in case the default value 0% caues safety test failure. For further information please check paragraph "Safety Sensors".	**S**
P27		Parameter disabled	
P28		Parameter disabled	
P29		Parameter disabled	
P30		Parameter disabled	
P31		Parameter disabled	
P32		Parameter disabled	
P33		This parameter allows you to select the number of cycles of opening/closing after which the display of the program selector N-DSEL/I show the massage "**SCHEDULED MAINTENANCE** ". OFF (default), the message is not displayed. Select the number of cycles in dependence on the operations of the door and the conditions of use: 8K (8000 cycles), 16K (16.000 cycles), 32K (32.000 cycles), 64K (64.000 cycles), 128K (128.000 cycles), 256K (256.000 cycles), 512K (512.000 cycles).	
P34		Parameter disabled	
P35		Parameter disabled	

*' **For double leaf swing door application.** In the column Slave of the present table, the functions marked with letter S, have to be separately configured on Slave operator. All other functions not marked with letter S, have to be set on Master operator and are common for both units.

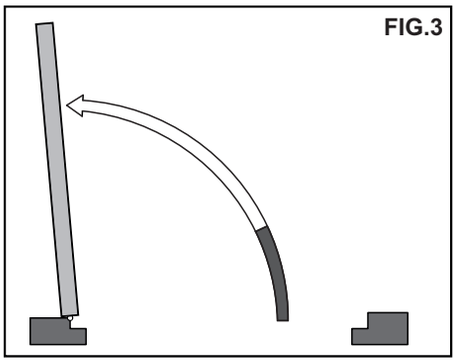
The following drawings show the regulation areas of some parameters described in the spreadsheet in order to better understand its purpose. In the spreadsheet the column “Ref. Drawing” is indicating the drawing number to be checked for any parameter for which a relative drawing has been added.



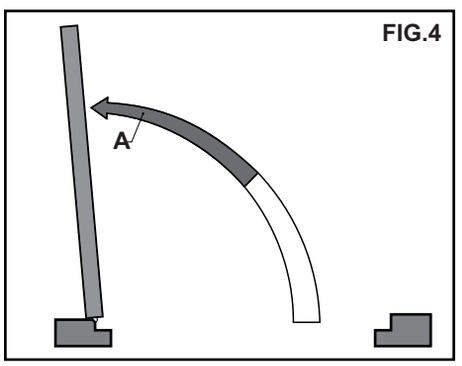
A=Adjusting area of opening speed controlled by P01 parameter
B= Adjusting area of slowing down distance controlled by P12 parameter
C= Adjusting area of approach speed
A+C = Opening time



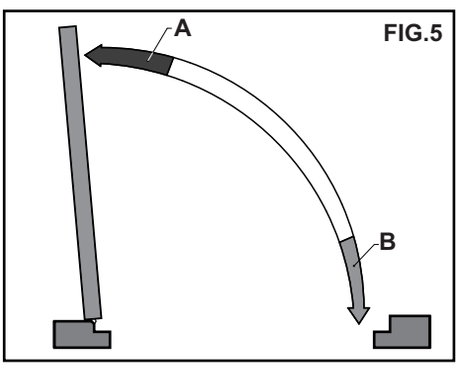
A=Adjusting area of closing speed controlled by P02 parameter
B=Adjusting area of slowing down distance controlled by P13 parameter
C= Adjusting area of approach speed
A+C = Closing time



Adjusting area of Push&Go controlled by P08 parameter, before automatic opening



A = Area from where, if safety sensor in opening detect an obstacle, the door opens at low speed instead of stop moving depending of potentiometer P03 value.



A= Intervention area of Wind Stop with opened door. The opposing force is controlled by P24 parameter.
B= Intervention area of Wind Stop with closed door. The opposing force is controlled by P07 parameter.

20) LANGUAGE

- Use F2 and ❄ buttons to move arrow to the language desired.
- Press EXIT (SET) button to return to general programming menu.

21) PASSWORD MANAGEMENT

This section shows three types of password.

a) TECHNICAL PASSWORD (for technical personnel in charge of installation and maintenance)

It is a 10-character password of installer who starts the system.
Using a technical password is compulsory to prevent unauthorized persons from having access to general programming menu sections concerning parameters and functions setting, initial set-up and maintenance area.
Default preset technical password is "A-A-A-A-A-A-A-A-A-A".

WARNING!
It is recommended to change the default technical password and be very careful not to forget it.

b) PRIMARY PASSWORD (for the system's owner-user)

It is a 5-character password used by the user to prevent unauthorized persons from having access to N-DSEL/I programmer and change the work program.
Using a primary password is optional and must be enabled by system's owner.
Default preset primary password is "A-A-A-A-A".

WARNING!
When enabling the password, be very careful not to forget the access combination.

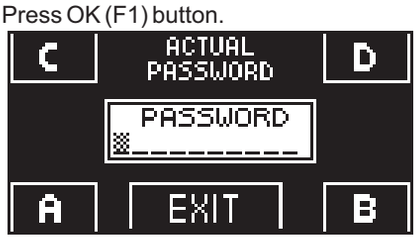
c) SERVICE PASSWORD (for user)

It is a 5-character password that the system's owner may divulge to persons to be authorized to use N-DSEL/I programmer.
The service password only allows changing the automatic door work program.
Default preset service password is "A-A-A-A-A".
To change the service password, it is necessary to have access by primary password.

Use ❄ button to move the selection arrow downward, F2 button to move the arrow upward.

21.1) HOW TO CHANGE THE TECHNICAL PASSWORD

- Select “TECHNICAL PASSWORD”
- Press OK (F1) button.



- Type the default preset technical password “A-A-A-A-A-A-A-A-A-A” by pressing 10 times on A button.

- Type the new technical password, selecting a combination of 10 characters from the letters A-B-C-D.

- It is required to repeat the new password, so type the previous combination again.

- If the password typed is correct, “PASSWORD OK” is shown on display for one second and the general programming menu is restored.

From this moment on, when having access to general programming to enter initial set-up, functions and adjustments, settings of serial communication and maintenance section, the new password stored needs to be typed.
The password is not required afterwards, when toggling among sections without exiting the general programming menu.
If the password typed is not correct, “PASSWORD ERROR” is shown on display and the general programming menu is restored.

21.2) HOW TO CHANGE THE PRIMARY PASSWORD

- Select “PRIMARY PASSWORD”
- Press OK (F1) button.

- Type the default preset primary password “A-A-A-A-A” by pressing 5 times on A button.
- (IF the primary password is not the default password as it had already been changed before, type the currently-used primary password).

- Type the new primary password, selecting a combination of 5 characters from the letters A-B-C-D.

- It is required to repeat the new password, so type the previous combination again.

- If the password typed is correct, “PASSWORD OK” is shown on display for one second, thus reverting to the PASSWORD MANAGEMENT section; through the EXIT (SET) button the general programming menu is restored.
- On the contrary, if the password typed does not match the previous one, PASSWORD ERROR is displayed, thus reverting to PASSWORD MANAGEMENT section. The procedure needs to be carried out again.

21.3) HOW TO CHANGE THE SERVICE PASSWORD

- Select "SERVICE PASSWORD"
- Press OK (F1) button.

- Type the primary password

- Type the new service password, selecting a combination of 5 characters from the letters A-B-C-D.

- It is required to repeat the new password, so type the previous combination again.

- If the password typed is correct, “PASSWORD OK” is shown on display for one second, thus reverting to PASSWORD MANAGEMENT section.

Pressing the EXIT (SET) button the general programming menu is available again.
If the password typed does not match the previous one, PASSWORD ERROR is displayed, thus reverting to PASSWORD MANAGEMENT section. The procedure needs to be carried out again.

21.4) ENABLING USER (primary and service) PASSWORD USAGE

- Select “PASSWORD ON / OFF”
- Press OK (F1) button.

- Type the primary password

- Press ON ❄ button to enable the user password usage and return to PASSWORD MANAGEMENT menu.
  To return to work program view, press EXIT (SET) button twice.
- From this moment on, whenever the user wants to access to N-DSEL/I digital programmer to change the automatic door work program, the primary or service password must be typed.

When the user decides to enable the password usage, it is recommended to change the combination of both primary and service password.

21.5) DEACTIVATING THE USER PASSWORD USAGE

- From PASSWORD MANAGEMENT section, type “PASSWORD ON / OFF”
- Press OK (F1) button

- Type the primary password

- Press OFF (F1) button to disable user password usage. To return to general programming menu press the EXIT (SET) button twice.
- From this moment on, the access to N-DSEL/I digital programmer as program selector is free.

22) INFORMATION AND EVENTS MEMORY

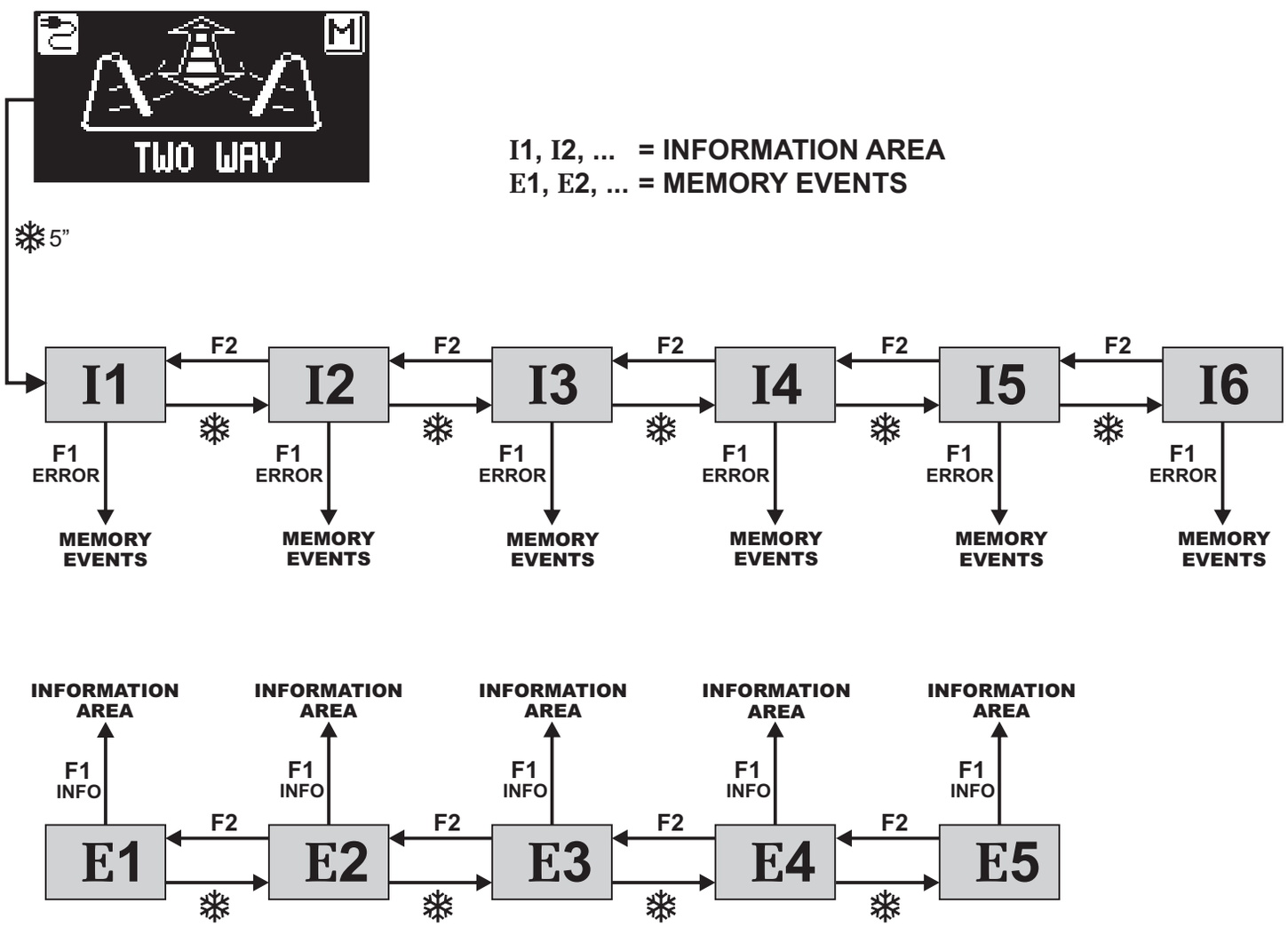
N-DSEL/I digital programmer allows displaying information on automation and accessing to events memory, where fault errors are stored.

After displaying the automatic door work program, press ❄ button for 5" to enter the information area (Diagram 2).

The buttons inside the information area are used as follows:

- v ❄ button allows forwarding to the following information or event in events memory.
- ^ **F2** button allows forwarding to the following information or event in events memory.
- **F3** button is only used with two-leaf swing door and the symbol on the top right side of display shows M if Master operator information is displayed, or S if Slave operator is involved.
  Every touch on **F3** button allows shifting from M to S and vice versa.
  In case of single-leaf automation, letter M is shown on the top right side of display.
- **F1** button allows shifting to events memory to display error messages and return to information area by pressing it again
- EXIT SET button allows returning to main view of door work program.

DIAGRAM 2



The diagram shows the path for access to information and events memory display; texts in figures relate to the memory cells that appear on the display in the left side when accessing the display of information or errors.

Refer to the following tables for a list of information and error messages.

INFORMATION AREA

NUMBER	INFORMATION	MEANING
I1	**Serial number**	Display serial code of logic board L-NEP
I2	**Partial cycles**	Display opening/closing door cycles since last maintenance. This counter must be reset every maintenance by authorized personnel (See "Maintenance" chapter)
I3	**Total cycles**	Display total opening/closing door cycles since first time operation.
I4	**Release Micro "A"**	Display Micro "A" software release of logic board L-NEP.
I5	**Release Micro "B"**	Display Micro "B" software release of logic board L-NEP.
I6	**Identificative number**	Identification number containing useful data for manufacturer.

The events memory stores the last 5 error messages in chronological order.
When all the 5 memory cells are full of messages, the following event stored shall be located in E1 cell, the other memory events are shifted by one position and the event in E5 cell shall be deleted.
The events memory stores messages, divided into warnings and errors.
The errors stored are shown by symbol (!) directly from main screen of work program; enter the events memory to show the relevant message.
The warnings stored are not shown in the main screen of work program, but only stored in events memory.

MEMORY EVENTS

Message of warnings or errors that can be read by digital programmer N-DSEL (E1-E2-E3-E4-E5)

WARNINGS

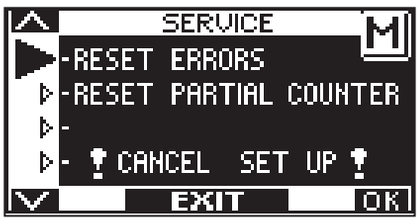
SIMBOL	SCREEN MESSAGE	MEANING	SOLUTION
	RESET SOFTWARE	Generic malfunction that caused a reset of the microcontroller.	There is an automatic recovery system in case of temporary malfunction.
	OBSTACLE IN OPENING	The door detect an obstacle during the opening cycle that caused the reversal direction of the leaf.	If the problem persists, check if there is any obstacle that stop the door and remove it, or control the smoothness of the leaf.
	OBSTACLE IN CLOSING	The door detect an obstacle during the closing cycle that caused the reversal direction of the leaf.	If the problem persists, check if there is any obstacle that stop the door and remove it, or control the smoothness of the leaf.
	RESET 4 OBSTACLE IN CLOSING	If, during closing, the door detect an obstacle at the same point for 4 consecutive times, a reset occurs with subsequent opening at slow speed.	Remove the obstacle that prevents the complete closure of the door.
	BATTERY LOW LEVEL	Low battery level in absence of mains power, (only for operators with N-BAT/I battery module).	As soon as the mains supply returns the battery will be recharged.

ERRORS

SIMBOL	SCREEN MESSAGE	MEANING	SOLUTION
	FAULT CURRENT	The cyclical testing of the detection circuit current has failed.	The system automatically resets and, after a few seconds, repeat again the test. If the problem persists it is a defect on the logic board L-NEP.
	FAULT POWER	The control of the driving signal of the motor has detected a fault.	The system automatically resets and, after a few seconds, repeat again the test. If the problem persists it is a defect on the logic board L-NEP.
	ERROR INITIAL SET UP	The operator is not able to finish the initial set-up.	Control the smoothness of the door and that there are no obstacles along the way, that motor and encoder are connected and try again to set-up the door.
	ERROR ENCODER OR MOTOR	Encoder signals are not detected or the motor does not turn.	Check that the cables and connector of the motor and encoder are well inserted and not damaged.
	FAULT ENCODER	Fault detected during the test operation of the encoder.	The system automatically resets, and repeat again the test at the first cycle. If the problem persists it is a defect on the logic board L-NEP.
	ERROR SAFETY SENSOR IN OPENING	The test on the safety opening sensor is failed.	Verify that the settings and parameters related to the safety sensor test are correct, on the operator and on the sensor.Also check that the electrical connection between the sensor and controller are correct.
	ERROR SAFETY SENSOR IN CLOSING	The test on the safety closing sensor is failed.	Verify that the settings and parameters related to the safety sensor test are correct, on the operator and on the sensor.Also check that the electrical connection between the sensor and controller are correct.
	FAULT BATTERY	The battery is damaged (only for operators with N-BAT/I battery module).	Verify the efficiency of the battery and the control module N-BAT/I.
	FAULT EEPROM REGISTER	The test of the internal memory cells related to the safety parameter has failed.	The system automatically resets and, after a few seconds, repeat again the test. If the problem persists it is a defect on the logic board L-NEP.
	ERROR COMMUNICATION MASTER-SLAVE	The communication line between master and slave is missing. (with double door only)	Check that the WR5MS cable is connected between master and slave and that the configuration setting for double swing unit is correct.
	GENERAL ERROR SLAVE	A fault is present on the slave operator. (with double door only)	Access memory events on the slave operator and check what type of problem is displayed.

23) MAINTENANCE

To enter, type 10-character technical password (for more information, refer to “Password management” paragraph).



Access to this section only for setting to zero the errors in the events memory, for setting to zero the partial counter of opening/closing cycles performed by the door and for deleting the initial set-up performed when operation starts.
The reset of events memory and partial counter must be performed by specialized personnel only during routine maintenance, after performing all checks on system operation.

Never delete set-up.
Only in case of leaf stroke change, reuse of operator or L-NEP logic board in a new system or if the spring needs to be reloaded (unloaded during arm extraction because spring preload lock procedures have not been properly performed), it is necessary to delete set-up and proceed to a new set-up following operations described in par. 16.4 (for single-leaf door) or par. 29.2 (for double-leaf door).

The buttons in this section are used as follows:

- v ❄ button allows forwarding in reset type selection.
- ^ **F2** button allows returning to previous reset.
- **F1** (OK) button allows confirming data zero-set operation for the reset type selected.
- **F3** button is only used with two-leaf swing door and the symbol on the top right side of display shows M if reset operations are relevant to Master operator, or S if Slave operator is involved.
  Every touch on **F3** button allows shifting from M to S and vice versa.

In case of single-leaf automation, letter M is shown on the top right side of display.

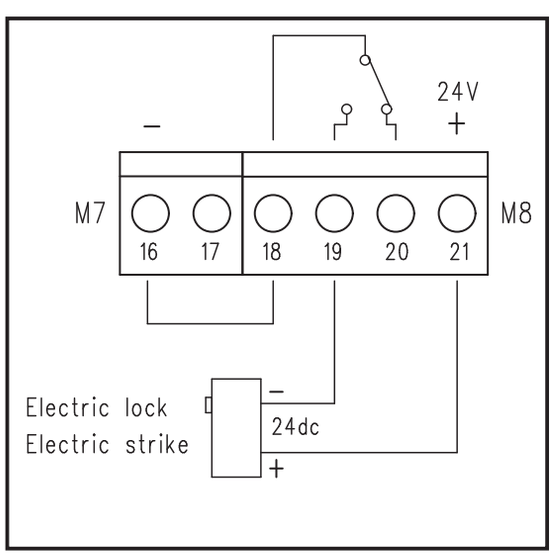
24) ELECTRIC LOCK APPLICATION

To block the door in closing position, Neptis operator is ready to drive an electric strike, an electric lock or an magnetic lock.

24.1) ELECTRIC LOCK / ELECTRIC STRIKE

Functions settings to activate electric lock:

- **F04 = ON** to activate electric lock output.
- **F05 = OFF** to enable impulsive driving.



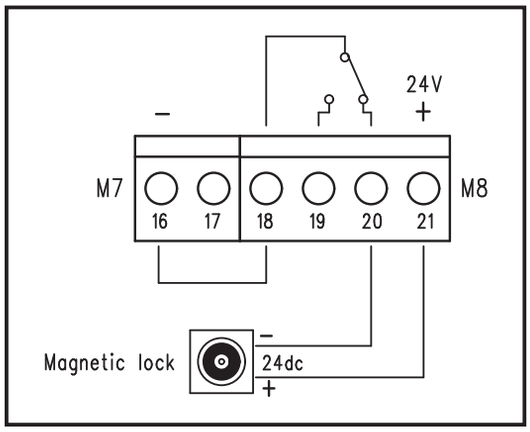
Parameters settings for electric lock managing:

- **P09**
  Adjust the speed of the door in the last degrees of the closing stroke to facilitate electric lock coupling.
- **P10**
  Power during the 0,5 seconds of stroke on closing before opening to release electric lock.
  At 0% value the function is disabled, between 01 to 100% the power increase proportionally.
- **P11**
  Delay between electric lock and motor activation in opening.
  At 0% value the function is disabled, between 01 to 100% the power increase proportionally until 4 seconds.

24.2) MAGNETIC LOCK

Functions settings to activate magnetic lock:

- **F04 = ON** to activate electric lock output.
- **F05 = ON** to enable permanent driving, that keep magnetic lock powered with closed door.



25) SAFETY SENSOR DEVICES

This section describes how to connect and configure properly some of the safety sensors in compliance with the standard EN12987 available on the market, to ensure a level of safety corresponding to PL = c, Category 2 as required by the standard EN16005.

25.1) SENSOR OA-EDGE T (see scheme at paragraph «Wiring Diagram»)

WIRING CONNECTION SENSOR OA-EDGE T	WIRING CONNECTION NEPTIS OPERATOR
Wiring between the sensor and the terminal block of the PWN-T board on Neptis operator	
1. WHITE (+) Supply power	TERMINAL 17 (+)
2. BROWN (-) Supply power	TERMINAL 16 (-)
3. GREEN COM (Closing side)	TERMINAL 3 COM
4. YELLOW N.C. (Closing side)	TERMINAL 2 Safety sensor in closing
5. GREY N.O. (Closing side) do not connect	
6. PINK COM (Opening side)	TERMINAL 7 COM
7. BLUE N.C. (Opening side)	TERMINAL 5 Safety sensor in opening
8. RED N.O. (Opening side) do not connect	
9. BLACK (+) Test input	TERMINAL 25 TEST (+)
10. VIOLET (-) Test input	TERMINAL 26 GND (-)

DIP SWITCH SETTING ON OA-EDGE T

A7 = ON Low level test input.

A8 = OFF Input test delay 10msec..

B4 = OFF On the opening sensor.

B4 = ON On the closing sensor.

For other option and settings available on the safety sensor, see the instructions supplied with the sensor OA-EDGE-T.

PARAMETERS ON DIGITAL PROGRAMMER N-DSEL/I

F18 (S05) = ON Safety sensor in closing activation

F19 (S06) = ON Safety sensor in opening activation

F20 (S07) = ON Test on safety sensor in closing

F21 (S08) = ON Test on safety sensor in opening

F22 (S09) = OFF Test level LOW

SETTING ON THE L-NEP BOARD

Jumper J13 = position **P**

25.2) SENSOR 4SAFE ON SW

WIRING CONNECTION SENSOR 4SAFE ON SW			WIRING CONNECTION NEPTIS OPERATOR
Wiring between the sensor and the terminal block of the PWN-T board on Neptis operator			
1. GREEN	(+)	Supply power	TERMINAL 17 (+)
2. BROWN	(-)	Supply power	TERMINAL 16 (-)
3. YELLOW	COM	(Opening side)	TERMINAL 7 COM
4. WHITE	N.C.	(Opening side)	TERMINAL 5 Safety sensor in opening
5. BLACK	N.O.	(Opening side) do not connect	
6. PINK	COM	(Closing side)	TERMINAL 3 COM
7. VIOLET	N.C.	(Closing side)	TERMINAL 2 Safety sensor in closing
8. GREY	N.O.	(Closing side) do not connect	
9. RED	(+)	Test input	TERMINAL 25 TEST (+)
10. BLUE	(-)	Test input	TERMINAL 26 GND (-)

DIP SWITCH SETTING ON 4SAFE ON SW

DIP 1 = ON Sensor installed opening side

DIP 1 = OFF Sensor installed closing side

For other option and settings available on the safety sensor, see the instructions supplied with the sensor 4SAFE ON SW.

PARAMETERS ON DIGITAL PROGRAMMER N-DSEL/I

F18 (S05) = ON Safety sensor in closing activation

F19 (S06) = ON Safety sensor in opening activation

F20 (S07) = ON Test on safety sensor in closing

F21 (S08) = ON Test on safety sensor in opening

F22 (S09) = OFF Test level LOW

SETTING ON THE L-NEP BOARD

Jumper J13 = position **P**

25.3) SENSOR TOPSCAN-S

WIRING CONNECTION SENSOR TOPSCAN-S			WIRING CONNECTION NEPTIS OPERATOR
Wiring between the sensor and the terminal block of the PWN-T board on Neptis operator			
1.	(-)	Supply power	TERMINAL 16 (-)
2.	(+)	Supply power	TERMINAL 17 (+)
3.	COM		TERMINAL 7 COM
4.	N.O.	do not connect	
5. 5.	N.C. N.C.	se il sensore è installato dal lato apertura se il sensore è installato dal lato chiusura	TERMINAL 5 Safety sensor in opening TERMINAL 2 Safety sensor in closing
6.	TEST	test input	TERMINAL 25 TEST (+)

SETTING ON TOPSCAN-S

For other option and settings available on the safety sensor, see the instructions supplied with the sensor TOPSCA-S, In particular make sure to cut configuration jumper J on the sensor according to the instructions of the TOPSCAN-S.

PARAMETERS ON DIGITAL PROGRAMMER N-DSEL/I

F18 (S05) = ON Safety sensor in closing activation

F19 (S06) = ON Safety sensor in opening activation

F20 (S07) = ON Test on safety sensor in closing

F21 (S08) = ON Test on safety sensor in opening

F22 (S09) = ON Test level HIGH

SETTING ON THE L-NEP BOARD

Jumper J13 = position **P**

The parameter 26 on digital programmer N-DSEL adjusts the timing of testing of the safety sensor. In case of failure of safety test on the sensor TOPSCAN-S may need to increase the value of this parameter.

The test of the safety sensors occurs at the beginning of each cycle of opening and closing of the door. If the sensor does not respond properly to the test the buzzer on the operator control unit will beep, and the speed of the leaf will be slow (at safety speed) for the entire cycle.

27) EN/RF1 RADIO RECEIVER

1 - GENERAL INFORMATION

The EN/RF1 single-channel receiver is a 433.92 MHz radio receiver designed to open the Neptis automatic door using the SPYCO transmitters manufactured by Label.

2 - USE

The EN/RF1 receiver must be coupled to the J12 connector of the L-NEP electronic control unit and it is prearranged to operate the opening of the automatic door in all the automation work programs.

The automatic door opening control is given by the SPYCO radio-control, while the protection and safety of the door movement are ensured by devices outside the receiver itself.
It shall never be used in any case where the output activation or deactivation may cause injuries and damage.
Class 3 receiver in compliance with the ETSI EN 300-220-1 V.2.1.1 (2006-04) standards, chapter 4.1.1.

3 - INSTALLATION OF THE RECEIVER

Couple the EN/RF1 receiver (fig. 1) to the J12 connector of the electronic control unit L-NEP (fig.2).
Proceed with saving the SPYCO radio-controls (fig.3) as follows:

a) Enter the programming mode of the SPYCO transmitters pressing and holding the SW1 button until the L1 led is steadily lit (approx. 3 seconds).
b) Press the button of the SPYCO transmitter to be saved and the successful saving will be indicated by 5 fast flashings of the L1 led .
c) Afterwards, the L1 led will be steadily lit again and it will be possible to save another transmitter by repeating the described operation from step b) and so on with all the transmitters to be used.

NOTE:

- Should the button of an already saved transmitter be pressed during the programming phase, the L1 led of the receiver will blink slowly for 5 times .

MEMORY FULL

- A maximum of 250 transmitters can be saved on the receiver.
  When the last memory cell available (ZC1) is reached, the L1 led will blink slowly for 5 times .

d) Once the transmitter saving procedure is finished, exit the programming mode by pressing and holding the SW1 button until the L1 led turns off (O).

4 - USE OF THE RADIO-CONTROL

By pressing the button of a saved SPYCO transmitter, the automatic door opens and the L1 led of the receiver will remain on until the button of the transmitter is released.
The radio-control opens the door in all the automation work programs.

5 - CANCELLATION OF THE MEMORY OF THE RECEIVER

Should it be necessary to cancel all the saved transmitter codes from the memory of the EN/RF1 receiver, proceed as follows:

a) Extract the EN/RF1 receiver from the connector J12 of the L-NEP control unit.
b) Keep the receiver SW1 button pressed and then couple again the EN/RF1 receiver to the J12 connector of the L-NEP control unit.
c) Release the EN/RF1 receiver SW1 button only when the L1 led of the receiver starts blinking.
d) The L1 led will be blinking very fast for approx. 8 seconds, thus indicating the cancellation of the memory of the receiver.
e) When the cancellation of the memory of the EN/RF1 receiver is finished, the L1 led will turn off.
f) At this point, it is possible to save again the code of the transmitters to be used, following the procedure described in step 3 described above.

6 - TECHNICAL SPECIFICATIONS

Power supply	12Vdc
Absorption	10mA stand-by - 50mA in operation
Outputs	OPEN COLLECTOR
Frequency	433.92 Mhz
Memory capacity	250 users
Range without obstacles	30 meters
Operating temperature	-20° / +55°
Receiver class (ETSI EN 300-220-1 Chapter 4.1.1)	Class 3

7 - DECLARATIONS

Marketing, sale and use are valid without restrictions in all EU countries.
With this document Label SpA declares that the EN/RF1 receiver complies with all the essential requirements and with all other relevant dispositions established by 1999/5/EC directive.
The conformity declaration is attached to the EN/RF1 receiver instructions.

LED MEANING

○	**LED OFF**
☀	**LED ON**
☀	**LED BLINKING SLOW** **full memory or transmitter already saved**
☀	**LED BLINKING FAS** **transmitter saving**
☀	**LED BLINKING VERY FAS** **memory cancellation**

FIG. 1

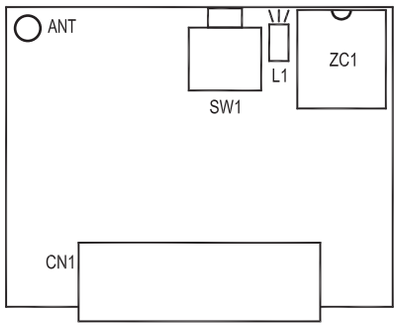


FIG. 3

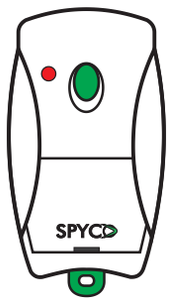
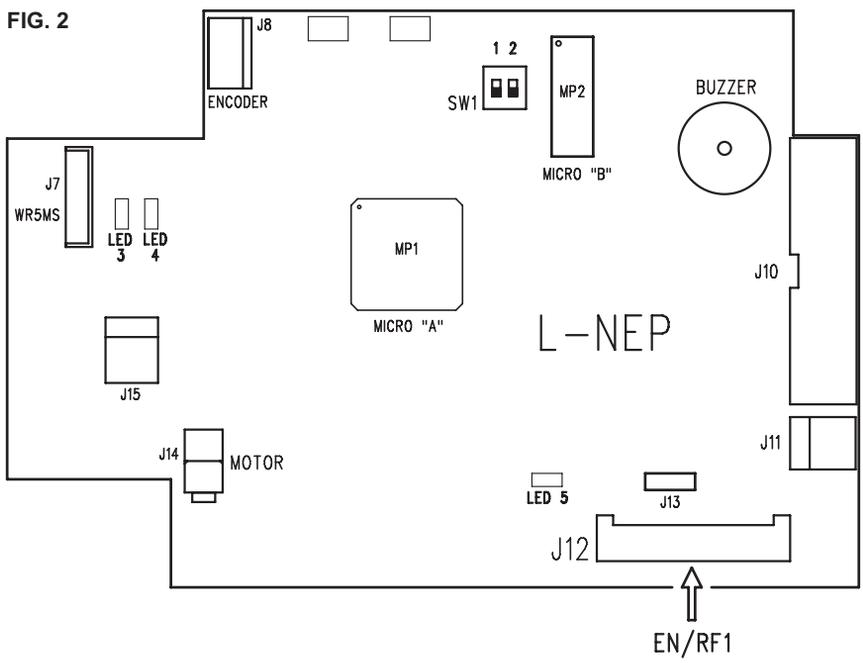


FIG. 2



28) DISABLED PEOPLE COURTESY FUNCTION

Enable this function by setting function **F12=ON** on the digital programmer N-DSEL/I.

- The inputs suitable for use by disabled people must be connected to the START or OPEN input terminals.
  Even the remote control SPYCO combined with radio receiver EN/RF1 can be used as disable people input.
- Adjust the pause time (parameter P05) to hold the door open for a sufficient time to allow the disabled person to be able to pass through the door before the automatic closing.
- If at the end of the opening cycle or during the pause time, the safety sensor in closing detects the presence of the disabled people, the pause time is reduced to 3 seconds (even if is set at higher value) after which the door closes .
- The door closes immediately without taking into account the pause time if the opening is activated by external radar input , internal radar input or with a manual push if push & go function is enable.

29) DOUBLE LEAF DOOR SET

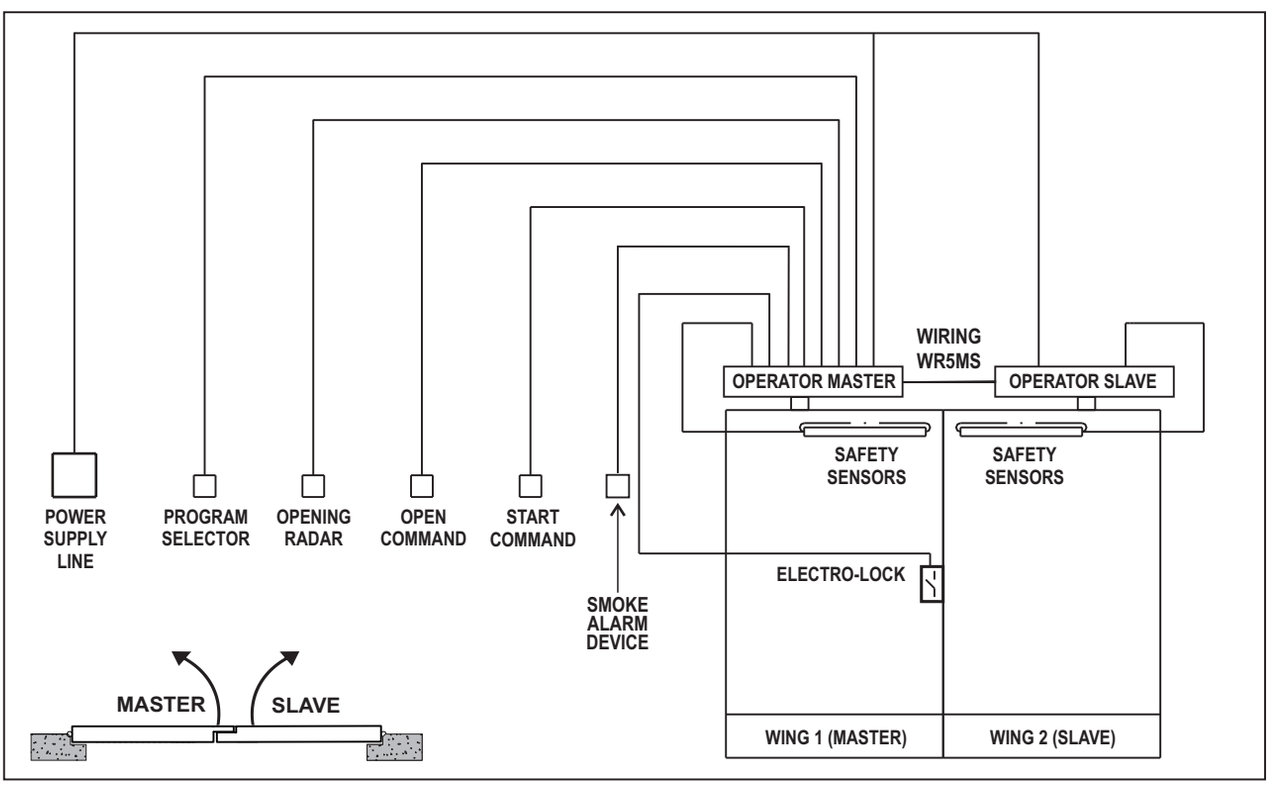
To manage the operation of a swing door with two leaf two operators is needed, one must be configured as Master and the other must be configured as a Slave.
In the case of overlapping leaf, the operator applied to the door leaf that overlap the other (the one that opens first) must be configured as Master.

When double swing door with overlapped leaf is used as escape route too, the installer must check that force required to open the door manually with the slave operator 's leaf (with Master operator's leaf overlapped) not exceed 150 N , measured at the leading edge at right angles to the door leaf and at a height of 1000 +/- 10 mm.
In case of force over 150 N only the leaf of the Master operator must be use as escape route and consequently the identification symbol must be put just on this leaf."

29.1) ELECTRICAL WIRING FOR A DOUBLE LEAF DOOR SET

Make the electrical connections at the operators (see Section 12 "Electrical connections"), taking in to account that all the devices used to open the door, the program switch, the smoke alarm device (if any) and the electric lock must be connected to the Master operator.
Safety sensors installed on the master leaf must be connected to the operator Master, safety sensors installed on the slave leaf must be connected to the Slave operator.
If the door has a double electric lock to lock each door individually, connect the electric lock that blocking the slave door at the slave operator.

Master and Slave operators must be connected together with the WR5MS wiring cable.
Connect the two terminals of the cable to connector J7 on the L-NEP logic card.
The digital programmer N-DSEL/I must be connected to the Master operator.



29.2) DOOR SET UP

After completing the mechanical installation and after that electrical connections are made, manually check that the movement of both leaves is friction-free for all the stroke.

Before power up the operator set the switch SW1 on the logic board L-NEP as indicated on the following table.

	SW1 DIP 1	SW1 DIP 2
L-NEP MASTER OPERATOR	OFF	OFF
L-NEP SLAVE OPERATOR	ON	OFF

Follow now the next steps to complete the operator set up.

1. Turn on main power supply on both operators.

2. If the digital programmer N-DSEL/I has been used before, the display will show "No Communication" because the new serial numbers of the operator's board L-NEP are not stored in the programmer N-DSEL/I.

Press and hold for about 5 seconds the SET push button to enter the general programming menu, and from there select the submenu "Serial communication setting" (as indicated in par. 18).

- If the digital programmer N-DSEL/I is new and is powered for the first time, you will be required to choose your preferred language as specified in paragraph 16.1, then you will automatically enter the "Serial communication setting".

3. SERIAL COMMUNICATION SETTING

The programmer N-DSEL/I recognizes the presence of the two operators in the system (Fig. A) and acquires automatically the serial number of the logic boards L-NEP (fig. B).
At the end of the acquisition of the logic boards serial numbers, the display will show the symbol closed padlock on the icons with letters M and S (fig. C) and the programmer N-DSEL/I will be able to manage both master and slave operators.

fig. A

fig. B

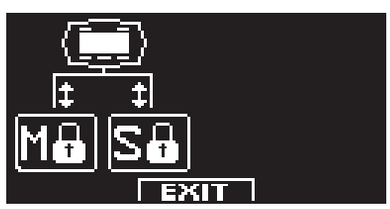


fig. C

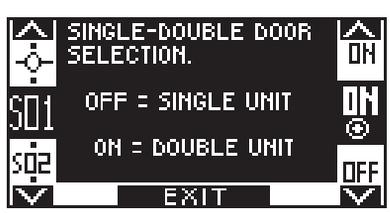
Press EXIT (SET) push button to exit from "Serial communication setting" and come back to the general programming menu .

4. INITIAL SET-UP

From the general programming menu , enter in the "INITIAL SET UP" section (as indicated in par. 18)
Enter the 10 digits of the technique password to access the configuration set-up.
(for more information on using technique password, see the par. "Password management" 21 and 21.1).
In this section the push-button F1 / F3 set the OFF / ON state of the function.
With the push-button ❄ you go to the next function, with the F2 you return to the previous function.

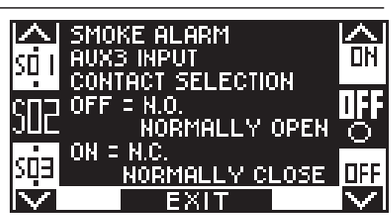
5. SETTING OF THE DOUBLE LEAF FUNCTIONS.

- Set function S01 ON = double leaf door.

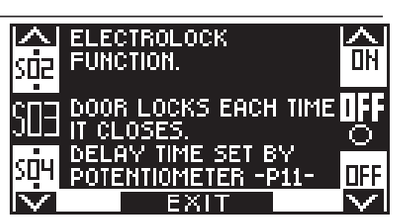


Configuration of the smoke alarm contact on the AUX3 input (terminals 26-27).

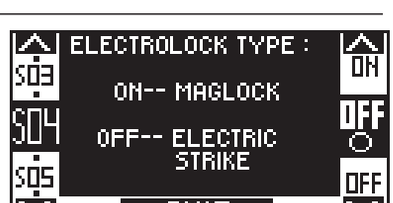
- Select OFF if you do not connect a smoke alarm or if you use a N.O. (normally open) contact.
- Select ON if you connect a smoke alarm with a N.C. (normally closed) contact.



- The S03 function must be set ON just in case an electric lock is set on the door.
  Only on the Master operator the electric lock output will be activated.



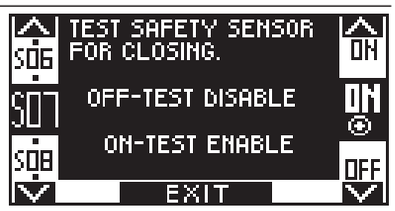
- The function S04 is displayed only if function S03=ON.
  Select the electro-lock type installed:
  OFF: electric lock or electric strike (impulsive)
  ON: electromagnet (permanent)



- The function S05 must be selected ON if a safety sensor in closing is installed (between terminals 2-3).
  Selecting this function is valid for both Master and Slave operators.

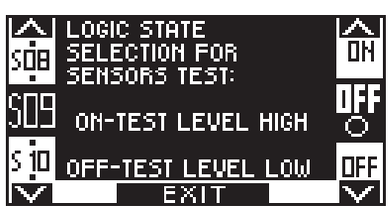
- The function S06 must be selected ON if a safety sensor in opening is installed (between terminals 5-7).
  Selecting this function is valid for both Master and Slave operators.

- The function S07 is displayed only if the function S05 = ON
  Select ON if you have installed a safety sensor in closing monitored (as required by standard EN16005) to activate the test sensor at the beginning of each closing cycle.
  For more information, refer to par. "Safety sensors devices".
  Select OFF if the safety sensor in closing is not arranged to be monitored.



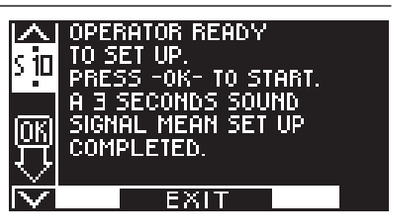
- The function S08 is displayed only if the function S06 = ON
  Select ON if you have installed a safety sensor in opening monitored (as required by standard EN16005) to activate the test sensor at the beginning of each opening cycle.
  For more information, refer to par. "Safety sensor devices".
  Select OFF if the safety sensor in opening is not arranged to be monitored.

- The function S09 is displayed only if the function S07and/or S08 = ON.
  Select the logical state of the test used to monitor the safety sensors.
  The setting depends on the characteristics of the sensor.
  Select OFF for sensors "4SAFE SW ON" or "OA-EDGE T.
  Select ON for the sensor "TOP SCAN-S".
  For more information, refer to par. "Safety sensor devices".



- Configuration of the contact on the OPEN input between terminals 6-7 of the PWN-T board.
  Select ON with normally open contact, or if you do not use OPEN INPUT.
  Select OFF if you are using a device with a normally closed contact.

- The operators are now ready to start the set-up cycle.
  Stay away from the detection range of the opening safety sensor during the set-up, to allow the sensor to detect only the presence of any side wall at the end of the opening.
  The set-up cycle begins with the doors in opening position because the spring keeps the doors open.
  Press the ❄ button (OK) to start the set-up cycle.



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6. INITIAL SET-UP CYCLE

The set-up is done in the following sequence:

- slow closing of the slave leaf;
- slow closing of the master leaf;
- slow opening of the master leaf;
- slow opening of the slave leaf;
- slow closing of the slave leaf, then 3" long sound to report run recording by the slave;
- slow closing of the master leaf, then 3" long sound to report run recording by the master;

29.3) FUNCTIONAL TESTING

Select the automatic operation of the door using the program selector. If you use the manual switch, set the program at state **I.**
Refer to par. "Program Selectors " that describe the types of selectors available to set the operating mode of the automatic doors.
To start an opening cycle give an impulse by the push-button PS1 (Start) on the module PWN-T of the Master operator, or operate the other opening control devices (as radar, mat, etc.).

Verify that opening and closing cycle takes place correctly. During the opening cycle the Slave leaf start with a predetermined delay with respect to Master leaf, as well as in the closing cycle is that the Master leaf that start with a predetermined delay with respect to Slave leaf. The delay between the leaves at the start is crucial to avoid that it can come across each other. To change the preset delay door go to "Switch and potentiometer" and set: On the parameter P19 the desired value of delay in opening ; on the parameter P20 the desired value of delay in closing (see par. 19.2 "Parameters setting").

Verify that the input device and safety sensors are functioning; to adjust the detection range of the sensors, refer to the instructions supplied with the sensor. The detection of the opening safety sensor due to the arrest of the movement only of the leaf on which it is installed. The detection of the closing safety sensor causes the inversion of the movement in opening of both doors.

During the movement of the door an intermittent buzzer sound may be hear. It's an indication that the limit power use by the operator it's near the maximum available, Occur especially if the size and the weight of the leaf are approaching the limits permitted. A short beep of the buzzer when leaf starting is to be considered normal because the inrush phase is the time in which it is required more strength. Adjust the power stroke with parameter P04 by the programmer N-DSEL/I (par.19.2 see "Parameters setting"). Power stroke P04 must be set on both master and slave operators separately (see par. 19 "Functions and regulation"). To turn off the audible buzzer that signal the power limit, set the F34 ON (see par. "Functions setting"), in this case independently on the two operators.

☞
The sound of the buzzer for almost the entire cycle means that the leaf exceeds the permissible limits, or that the installation dimensions given in the drawings of installation have not been met, or that are present to much friction on the frame, in which case the automatic door has difficulty moving and may fail to complete the cycle of opening and

Safety in case of impact: verify that opposing an obstacle to the movement of a door, the operator stop and reverse the direction of travel of both doors

- Verify that by shutting off mains power, both door leaves fully open by means of the opening spring.
- In the operators with battery (Neptis INVERS-B) set F06 = ON on both master and slave operator to enable recognition of the battery module N-BAT/I.
  In the event of a power failure, the opening movement of the door, as well as by the spring, is operated by the battery powered operator, which will also check the final deceleration phase. After a few seconds from the completion of the opening cycle, the leaves will softly touch the mechanical stop.

- **RESTORE OPERATION**
  When the mains power returns, the standard operation of the automatic door must be restored, setting the program selector to night lock and then setting it back to automatic program.
  The restore operation is possible 10 minutes after the mains power is restored.

- If you have connected the contact of a smoke alarm to the AUX 3 input of the control unit, verify its proper operation.
  By activating the smoke alarm, the door should open and stay open.
  Normal operation of the door can only resume after the smoke alarm input is off and after the reset operation, which consists in setting the program selector to night lock and returning it to the automatic program.
  The AUX 3 smoke alarm input is enabled in all work programs of the automatic door (function F23 = OFF).

- If you want to disable door opening due to the smoke alarm in the night lock work program, select F23 = ON.
  The smoke alarm signal will still be stored, therefore on the first opening command, or after selecting the automatic program, the door opens and stays open, so as to perform system safety checks.
  The door will resume normal operation after the reset operation (switching from night lock program to automatic program).

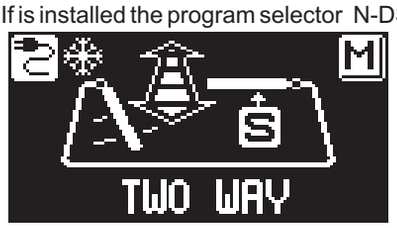
To set up the functions, refer to “Functions setting” paragraph.
To adjust the parameters, refer to “Parameters setting” section.

The operation of set-up must be repeated in the case of variation of one of the following conditions: weight of the door, opening angle of the leaf, spring loading, replacement of the logic board L-NEP or the mechanical unit inside the operator Neptis.
To repeat the set-up, follow the steps described in the previous section. 29.2 (points 4, 5, 6).

29.4) PEDESTRIAN OPENING

With a double door it's possible to select the pedestrian opening, in which only Master operator open.

- If is installed the program selector N-DSEL/I (F01 = ON), press the ❄ push-button to activate the pedestrian opening.



- If is installed the manual selector switch or the mechanical key EV-MSEL (F01 = OFF), in order to activate the pedestrian opening is necessary to set the **F15 = ON**.

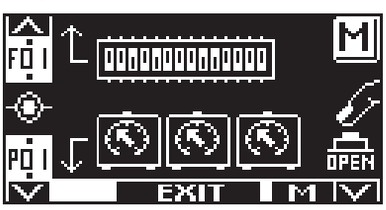
Then you have to choose what position on the selector must be enabled pedestrian opening:
F16 = OFF: pedestrian opening in position **0** on the manual selector program.
pedestrian opening in position ⇧ on the mechanical selector EV-MSEL.
F16 = ON : pedestrian opening in position **II** on the manual selector program.
pedestrian opening in position 🔒 on the mechanical selector EV-MSEL.

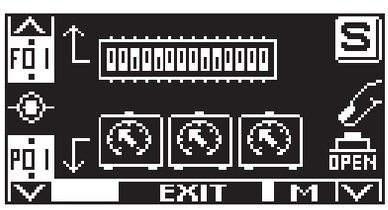
PEDESTRIAN OPENING WORKING MODE
Any opening activation via internal and external radars inputs and with the push push & go actuate partial opening of the door, then only the leaf Master operate. Any opening activation via Start, OPEN input and with the remote control Spyco combined with radio receiver EN/RF1 cause the complete opening of both doors.

29.5) CONSIDERATION ON THE USE OF N-DSEL/I PROGRAMMER IN A DOUBLE DOOR SYSTEM.

With the digital programmer N-DSEL/I is possible to operate separately on operators Master and Slave as regards the following sections of the programming menu and general area information.

a) FUNCTIONS AND PARAMETERS

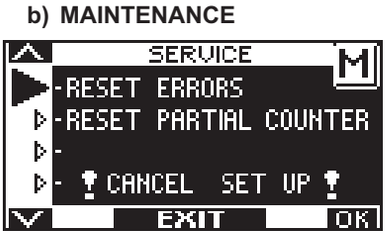


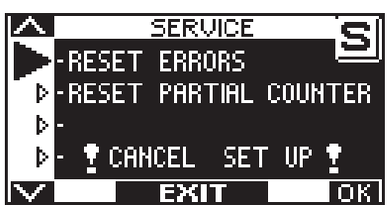


pressing the F3 button you switch from Master to Slave and vice versa

Master operator **Slave operator**

b) MAINTENANCE





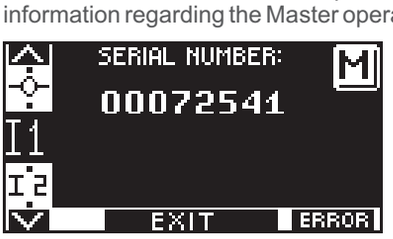
pressing the F3 button you switch from Master to Slave and vice versa

Master operator **Slave operator**

If the display shows the letter M on the N-DSEL/I operations it's related to the Master, if display show letter S operation performed it's related to the slave operator.

c) INFO AREA AND MEMORY EVENTS

Also the informations and the events can be accessed individually. Once you enter in the information menu as described in par. 22, press the F3 button to selected on which operator you want to display information and events. At the top right of the display will show the letter M if the information regarding the Master operator, the letter S if they relate to the operator Slave.



pressing the F3 button you switch from Master to Slave and vice versa

Master operator **Slave operator**

In double leaf application, reset error log first on SLAVE (S) unit and then on MASTER (M) unit.
To reset error log, select “ERROR RESET” and press OK.

30) MEANING OF THE ACOUSTIC SIGNAL

On the logic board L-NEP is present a buzzer which emits acoustic signals, which corresponds to a meaning depending on the number of beeps emitted and the duration of the sound.

ACOUSTIC SIGNAL (BEEP)	MEANING
8 BIP short and fast	Operator without set-up at power up.
5 BIP short	Pressing the push button PS1 on the PWN-T board with the operator without initial set-up and manual program selector in position 0 (manual).
BIP extended	For as long as you hold down the push button PS1 on the PWN-T board, with operator without initial set-up and manual program selector in position **I** or **II**.
4 BIP short	Warning signal that door start to move slowly in the initial phase of the cycle set-up.
Long sound (3 seconds)	Initial set-up completed correctly.
Extended or blinking sound (during movement)	The limit of power that the operator is able to supply to the motor is exceeding during the movement of the leaf. This warning is activated if the function F34 = OFF. To disable this acoustic signal set F34 = ON
1 BIP	After power up with an operator previously set.
5 BIP	Encoder is disconnected or malfunctioning or motor is disconnected or malfunctioning.
1 BIP (before opening)	Test of the safety sensor in opening failed.
1 BIP medium (before opening)	Battery faulty or low level
1 BIP (before closing)	Test of the safety sensor in closing failed.
1 BIP long (1 second)	Internal fault detection.

31) MAINTENANCE PROGRAM

To guarantee and to keep a secure functioning in door's lifetime it recommended make maintenance every 6 months.
The installer can set the number of cycles of opening/closing after which on the programmer N-DSEL/I shows the message "SCHEDULED MAINTENANCE" (parameter 33).

☞ **Warning!**
Before work on the operator cut main power line.

- Check that all fixing screws are well tightened.
- Clean and lubricate moving and sliding components.
- Lubricate opening spring if present.
- Check wiring connections.
- Check that arm connection screw are well tightened.
- Check that the door wing is stable and that the movement is fluent and with no friction from ”door closed” position up to “door open” position.
- Check the condition of the hinges and lubricate it.
- Check that speeds, timing, and safety functions are well adjust.
- Check that safety and activation sensors are properly functioning.
- Verify if door with spring opens at damping speed without power supply.

At the end of the maintenance reset the counter of partial cycles and reset the memory events (see paragraph 23 "MAINTENANCE")

☞ **Warning!**
Any part that appear damaged or worn must be changed.
Make use only of original spare parts; for this purpose check LABEL price list.

LABEL S.p.A.
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www.labelspa.com

DECLARATION OF INCORPORATION OF PARTLY ASSEMBLED MACHINERY

Manufacturer: Label S.p.A.

Address: Via Ilariuzzi 17/A - 43126 San Pancrazio Parmense, PARMA - ITALY

Declare that: the operator **NEPTIS INVERS, NEPTIS INVERS-B**

Serial number:

realized to control automatic pedestrial swing doors
complies with the essential safety requirements of the following directives:

- Low Voltage Directive LVD 2014/35/UE
- Electromagnetic Compatibility Directive EMC 2014/30/UE

Label declares that the operator NEPTIS has been realized to be incorporated in a machine or to be assembled with other devices to constitute a machine covered by Machine Directive 2006/42/EC.

Label declares as well that the product cannot be operated until the final machine, where the product is incorporated, has been certified as compliant with the Machine Directive 2006/42/EC.

European Harmonized standards applied:
EN 13849-1
EN 13849-2 (operator in cat.2, PL = d)
EN 61000-6-2
EN 61000-6-3
EN 60335-1
EN16005

Label undertake to submit, upon suitably justified request of the national authorities, information related to the partly completed machinery.

PERSON AUTHORIZED TO ESTABLISH THE TECHNICAL DOCUMENTATION:
Bruno Baron Toaldo
Via Ilariuzzi, 17/A
43126 - San Pancrazio P.se - Parma

Parma, 01/09/2016

The Chairman
Bruno Baron Toaldo

NEPTIS

Made in Italy
by

LABEL S.p.A.

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SISTEMA QUALITA'
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