



# NEPTIS

## INVERS/INVERS-B

ELECTRO-MECHANICAL OPERATOR FOR AUTOMATIC SWING DOORS, WITH SINGLE/DOUBLE LEAF

**FOR SAFETY EXITS IN SMOKE EXHAUSTION SYSTEMS**



# TECHNICAL CATALOG



**NEPTIS**  
**INVERS/INVERS-B**



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# Product presentation

## NEPTIS INVERS



## NEPTIS INVERS-B (with battery)



The operator for Neptis Invers swing doors is used in safety exits and in smoke and heat exhaustion systems.

The operator can be installed on automatic pedestrian doors with single or double leaf and is suitable for applications in shopping malls, nursing homes, public places and in all environments where the door must ensure an escape route in case of smoke and power outage.

In case of power outage and of alarm from the fire detection system, door opening is ensured by the mechanic energy stored in the opening spring.

After opening caused by alarm or power outage, normal operation of the door must be restored by the user through the program switch.

The operation of the automatism in the automatic work program occurs by means of the opening controls via buttons or by the activation sensors.

During the night lock closed door program, the door can be opened via key buttons or Label radio control.

The door may remain locked after closing by installing an electromagnet.

In case of power outage, the operator INVERS-B with built-in battery ensures a perfect control of the opening movement with the spring. The battery state is constantly monitored by the electronic control unit.

The operation of the door is safe thanks to the use and monitoring of the safety sensors, which stop the movement of the door in case of detection of people or objects.

Every aspect that concerns safety, from the encoder control to the forces moving the door, is supervised by the software of the electronic control unit, which has passed the tests required by the standard EN 13849 with particular reference to the analysis of faults on electronic components.

The operator Neptis Invers complies with European regulations on safety in the use of automatic pedestrian doors EN 16005.

## TECHNICAL SPECIFICATIONS

### MODELS:

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

<b>POWER SUPPLY</b>	115/230Vac +/-10%, 50-60Hz
<b>POWER</b>	95W
<b>POWER SUPPLY OF EXTERNAL ACCESSORIES</b>	24Vdc, 1A
<b>ELECTRIC MOTOR</b>	24Vdc
<b>SHAFT OUTLET MAXIMUM TORQUE</b>	45 Nm
<b>LEAF MAXIMUM WEIGHT *</b>	max. 250 kg (up to 800 mm)
<b>LEAF MAXIMUM WIDTH *</b>	max. 1400 mm (up to 100kg)
<b>OPERATOR SIZE (LxHxD)</b>	550 x 110 x 120 mm
<b>DIMENSIONS OF OPERATOR WITH BATTERY (LxHxD)</b>	730 x 110 x 120 mm
<b>WEIGHT OF NEPTIS INVERS OPERATOR</b>	9.5 kg
<b>WEIGHT OF NEPTIS INVERS-B OPERATOR</b>	11 kg
<b>PROTECTION CLASS</b>	IP31
<b>AMBIENT TEMPERATURE</b>	-15°C +50°C
<b>FREQUENCY OF USE</b>	continuous
<b>LIMIT SWITCH AND ANTICRUSH SAFETY</b>	encoder controlled
<b>REACTION TO OBSTACLES</b>	reversal of direction
<b>OPENING TIME for 95°</b>	3 - 8 seconds adjustable
<b>CLOSING TIME for 95°</b>	6 - 15 seconds adjustable
<b>PAUSE TIME</b>	0 - 60 seconds adjustable

\* THE WEIGHT OF THE LEAF DEPENDS ON WIDTH (see chart in the section MECHANICAL DRAWINGS)

### AUTOMATISM WITH SPRING OPENING IN CASE OF POWER OUTAGE

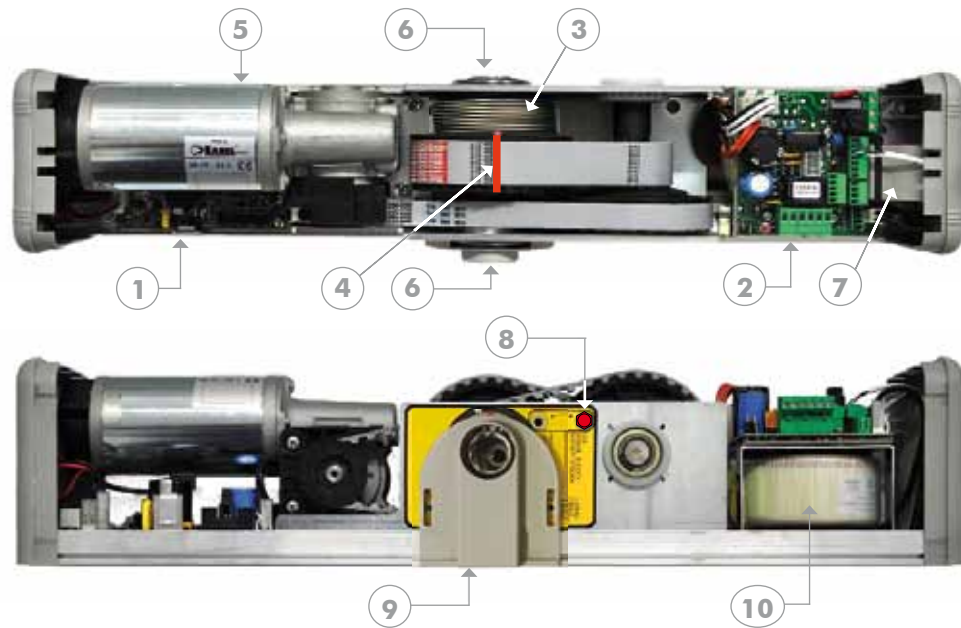
# Operator details

## COMPONENTS OF THE OPERATOR

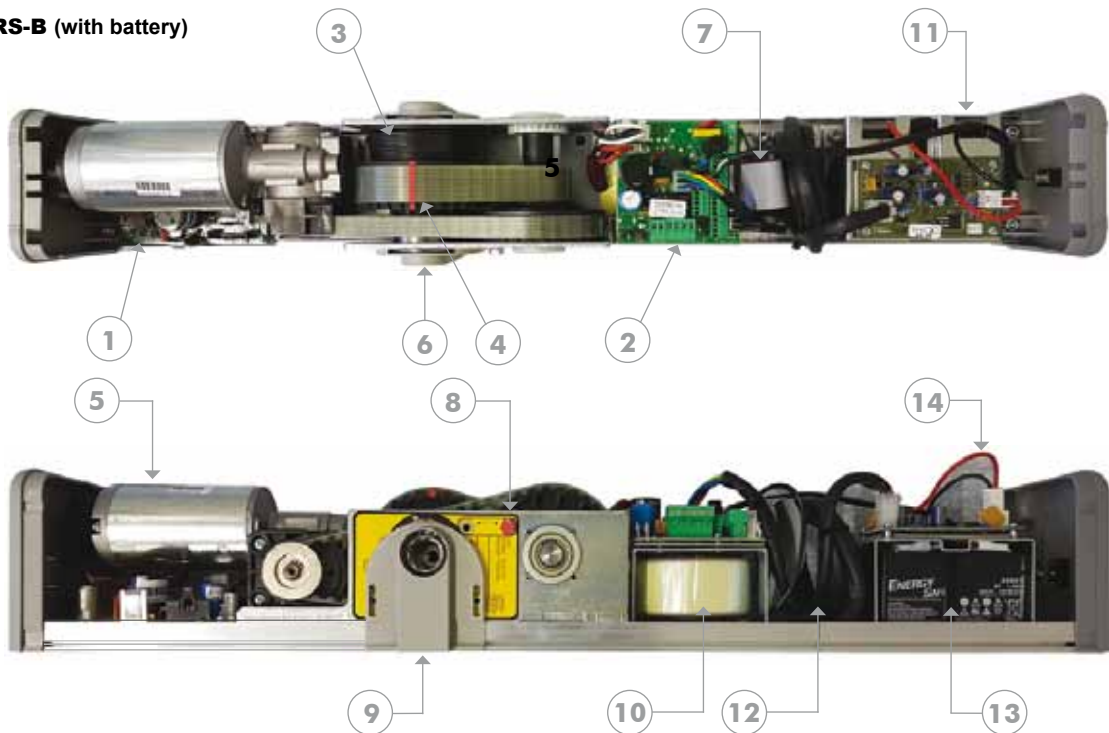
### LEGEND


1	L-NEP logic card	8	spring preload locking screw
2	PWN-T electrical wiring and power supply card	9	plastic plate
3	opening spring	10	transformer
4	spring preload reference line	11	N-BAT module, battery charger card
5	gear motor with encoder	12	wiring between N-BAT module and PWN-T card
6	motion transmission shaft outlet	13	N-BAT module, batteries
7	inner wiring between the L-NEP and PWN-T cards	14	battery cable connection

### NEPTIS INVERS



### NEPTIS INVERS-B (with battery)



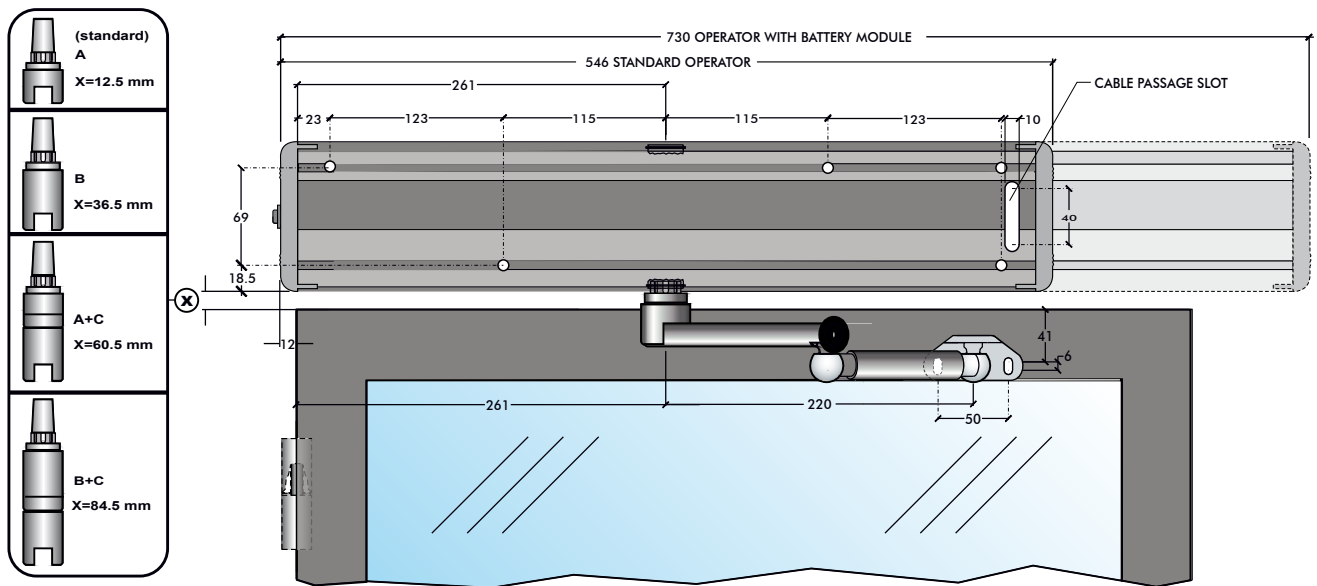
MODEL	CODE	DESCRIPTION
	<b>BSS2FE</b>	Steel BSS2FE articulated push arm



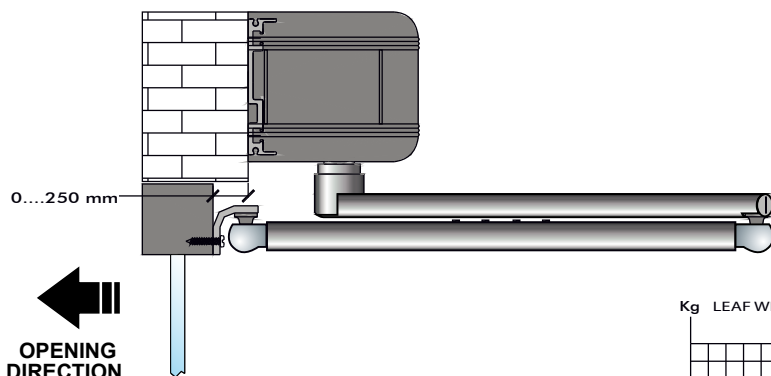
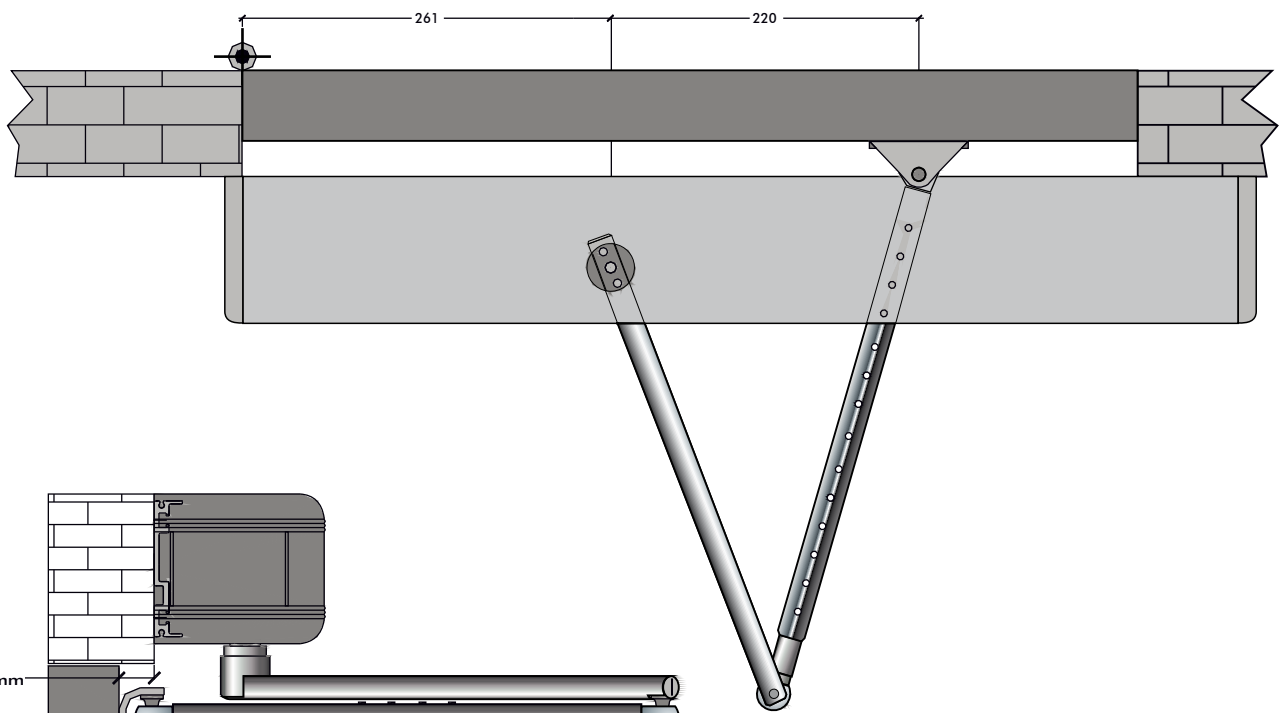
# Mechanical drawings

## ASSEMBLY OF THE OPERATOR ON THE TRANSOM FROM THE SIDE OPPOSITE TO THE HINGE BSS2 ARTICULATED PUSH ARM

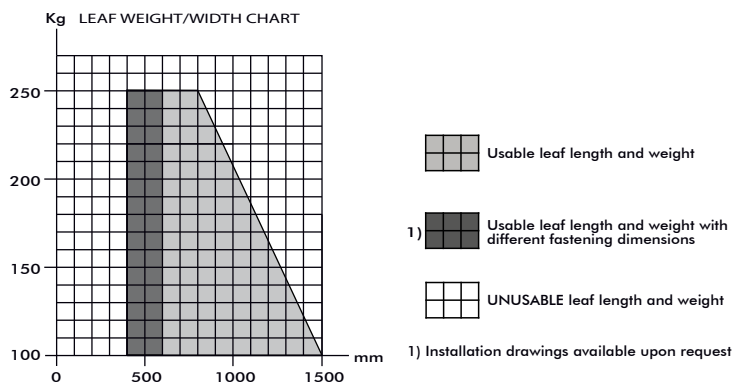
The door opens outwards (seen from the operator side)



**A = STANDARD TAPERED PIN**  
Should it be 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 opening movement direction. It is necessary to install a mechanic lock in open door position.





## INPUTS / OUTPUTS

### INPUTS

- Internal opening radar
- External opening radar
- Start for opening command in all automatic programs
- Open to control opening in the night lock program with closed door
- Safety opening sensor
- Safety closing sensor
- Input for opening command from the fire alarm system

### OUTPUTS

- Electric lock
- Door status

## DIGITAL PROGRAMMER N-DSEL/I

The digital programmer N-DSEL/I is the tool required to set up automatic door operation and perform the set-up and function/parameter setting operations, to carry out system diagnostics and to access the event memory containing information about the automatism and its operation.

Access to the programming menu is protected by a technical password, to ensure that only specialised personnel can perform any operation on the automatism.

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



## INFORMATION AREA AND EVENT MEMORY

The digital programmer allows to display automation-related information and to access the event memory.

The information area allows to display the total number of operations carried out by the door after the commissioning of the operator and the partial number of operations carried out since the last service, as well as information about the automatism, such as the software versions or the serial number of the electronic board.

The event memory allows to display the error messages or the system malfunctions; the unit stores the last 5 events in chronological order.

# Program switches

The program switch allows the user to choose the operating mode of the automatic door. It is possible to install one of the following program switches:

- **Manual switch integrated in the side panel of the operator**



I = Automatic Program, 0 = manual program, II = night lock / open door (selectable)

- **EV-MSEL – manual key switch**



Automatic bi-directional, exit only, manual program, open door, night lock.

- **N-DSEL/I – digital programmer**



Automatic bi-directional, exit only, open door, night lock, manual program, partial opening of just master leaf for double leaf doors.

## FUNCTIONS AND PARAMETERS

Functions and parameters are programmed by the technical staff with the aid of the digital programmer N-DSEL/I.

### FUNCTIONS

- **SINGLE/DOUBLE LEAF DOOR OPERATION**

Using two operators allows to synchronise the operation of double-leaf doors.

- **ELECTRIC LOCK MANAGEMENT**

The operator is designed to control a 24V electric strike/electromagnet

- **BATTERY MONITORING**

Should the battery get damaged, the door can either keep operating normally, just signalling the fault, or open and stay like that.

- **MONITORING OF SAFETY SENSORS (complying with standard EN12978)**

A sensor test is performed every time the door starts moving.

- **STEP-BY-STEP FUNCTION**

Automatic reclosing disabled; the opening and closing cycle must be controlled by operating the Start or OPEN input.

- **PARTIAL OPENING FUNCTION (for double-leaf doors)**

In a double-leaf door only the master leaf may be opened.

- **PUSH & GO FUNCTION**

The automatic opening cycle may be triggered by slightly pushing the leaf.

## PARAMETERS

### ADJUSTMENTS

- OPENING SPEED
- CLOSING SPEED
- PAUSING TIME WITH OPEN DOOR
- THRUST POWER
- SLOW-DOWN DISTANCE AT THE END OF THE OPENING AND CLOSING CYCLE
- WIND STOP, CONTRASTING WIND ACTION
- POWER/DURATION OF THE MOTOR THRUST AT THE END OF THE CLOSING CYCLE
- HOLDING TENSION WITH DOOR CLOSED
- OPENING DELAY AFTER ELECTRIC LOCK ACTIVATION
- CLOSING STRIKE TO EASE THE RELEASE OF THE ELECTRIC SWITCH

	<p><b>N-DSEL/I</b>  <b>Digital programmer</b> for door control.          It allows to select all the functions, to set all the parameters (acceleration, speed, distances, etc.), to check the state of all the inputs by means of diagnostic functions and to access the information area.</p>
	<p><b>EV-MSEL</b>  <b>Mechanic switch</b> to select the work program.</p>
	<p><b>OM105L</b> Black two-direction microwave sensor  <b>OM106C</b> Black one-direction microwave sensor</p>
	<p><b>OA-EDGE-T 340 L</b> safety sensor, 340mm, 1 module, safety test, LH closing*  <b>OA-EDGE-T 340 R</b> safety sensor, 340mm, 1 module, safety test, RH closing*  <b>OA-EDGE-T 900 L</b> safety sensor, 900mm, 1 module, safety test, LH closing*  <b>OA-EDGE-T 900 R</b> safety sensor, 900mm, 1 module, safety test, RH closing*</p> <p>* "LH closing" or "RH closing" indicates that the sensor is designed to be installed with the lens bearing the TX mark on the main closing edge (on the side opposite to the pivots).</p>
	<p><b>WR5MS</b>  <b>MASTER/SLAVE CONNECTION CABLE</b> for double swing door</p>
	<p><b>CENTRAL CASING</b> for double wing door, mm 1000</p>
	<p>(A) Pin for shaft extension mm.24          (B) Pin for shaft extension mm.48</p>
	<p><b>FIXPLATE-P</b>  <b>Fixing plate</b> for the operator NEPTIS INVERS</p>
	<p><b>SPYCO</b>  <b>Single-channel transmitter</b> for remote operation</p>
	<p><b>EN-RF1</b>  <b>Coupling single-channel radio receiver</b></p>

## CERTIFICATIONS

ELECTROMAGNETIC COMPATIBILITY DIRECTIVE "2014/30/EU"

Standard EN 61000-6-2

Standard EN 61000-6-3

LOW VOLTAGE DIRECTIVE "LVD 2014/35/EU"

Standard EN 60335-1

Machinery Directive 2006/42/EC

Standard EN 13849-1

Standard EN 13849-2

Category=2, PL=d

EN 16005



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