

WK120

MANUALE TECNICO ELETTRONICA
TECHNICAL MANUAL ELECTRONICS
MANUEL TECHNIQUE ELECTRONICS
MANUAL TÉCNICO ELECTRONICS

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1. PURPOSE OF THIS MANUAL

This manual has been drafted by the manufacturer and is an integral part of the product.

It contains all the information required for:

- the correct awareness of installers about safety issues;
- the correct installation of the device;
- the in-depth knowledge of its operation and its limits;

- the correct use in safe conditions;

La costante osservanza delle indicazioni fornite in questo manuale, garantisce la sicurezza dell'uomo, l'economia di esercizio e una più lunga durata di funzionamento del prodotto.

In order to prevent wrong manoeuvres and the consequent risk of accidents, it is important to carefully read this manual, complying scrupulously with the information provided.

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1.1 ABOUT THIS MANUAL

Information

these instructions concern only the electrical installation and the use of the system WK120 for the control of automatic doors with sliding wings. For mechanical installation please see the special instructions supplied.

During assembly and installation operations of the automatic device and test operations of the door, hazardous situations might arise if the safety warnings contained in the instructions are not followed.

Carefully read this instruction manual before proceeding.

Instructions must be available with the system for any use or maintenance operation needed.

the data indicated are to be considered for indicative purposes only. The manufacturer is not to be held responsible for any inaccuracy contained in this manual arising from printing or transcription mistakes. The company reserves the right to make changes to improve the product without giving prior notice.

1.2 General safety precautions

carefully read the instructions before starting to install the product.

Warning: packaging materials (plastic, polystyrene, etc.) must not be dispersed in the environment and must not be left where children can reach them as they are a potential source of danger. Wrong installation of the equipment can cause serious danger: please, follow all installation instructions carefully. Only suitably skilled technicians trained on the product are authorised to install, test and put into service this product, as well as to perform periodical checks and maintenance operations.

Information: we strongly recommend following a specialised training course. Installers should contact the supplier for information on courses. We recommend operating in a well-lit and healthy environment, in compliance with the safety regulations in force. We recommend the use of approved protective clothing (safety shoes, protective goggles, gloves and helmet). Do not wear articles of clothing that could get caught. Take adequate safety measures to prevent the risk of injury caused by sharp splinters and the possible risks of crushing, knocks and cuts and amputation collision and shearing danger. Warning! We recommend using safety ladders,

working in pairs and paying special attention while handling the cover to prevent risks of knocks or falling.

Because of translating and rotating parts, when the cover is disassembled or open, there is a risk of dragging of hair, clothing, cables etc. On-load components not properly fastened can fall to the ground. Carry out the permanent fastening as soon as the installation of mounting brackets and rails is over.

We recommend strict observation of the national regulations for safety in work sites (in Italy, Legislative Decree 528/99 coordinated with Legislative Decree 494/96 "Implementation of Directive 92/57/EEC concerning minimum safety and health requirements at temporary or mobile construction sites"). Please refer to the safety guide for installation of sliding pedestrian doors among the services in our website: www.aprimatic.com.

Delimit the yard to prevent any unauthorised persons from transiting in the working area. Do not leave the working area unattended.

installation, electrical connections and adjustments must be carried out in a professional manner in compliance with the good manufacturing and workmanship regulations in force in the country where the automation is installed. The manufacturer of the device is not responsible for the non-observance of professional standards of work in the construction of the power-driven structure, nor for any damage which may be caused by the use of the drive. Incorrect installation may be dangerous. Follow the manufacturer's instructions. Before starting installation, check that the product is intact and that the existing structure is suitably strong and stable and that it complies with the sector current regulations.

1.3 Caution the power supply system must be carried out by a qualified and expert electrician according to the local requirements, in compliance with local system safety regulations.

Before connecting the power supply make sure that the plate data correspond to those of the electric power distribution grid. The protection measures on the primary are used on site/in operation.

As main switch of the mains power, use a magneto-thermal differential switch of 6A tripping at 30mA. Fasten the connection cables with proper ties. Disconnect the power supply before carrying out any other maintenance operation, repair or replacement, both mechanical and electrical. Test and commissioning of the automation device are not allowed until the sliding automatic door in which it is incorporated has been verified as complying with the requirements provided for by Machinery Directive 2006/42/EEC to which the finished, assembled and installed door is subject to. The installer must provide and store the technical dossier of the automatic door and must fulfil all obligations required. At the end of the job the installer must check the installation and the correct operation of the automation device.

WK120 complies with EN60335 and EN16005, if safety devices are not monitored and properly connected to test inputs, the installer must set the automation device in such a way that parameters correspond to those indicated in the table below.

90% travelling distance per leaf D	90% della corsa per anta D	Mass of doorset leaf m [kg] - Massa dell'anta														
		150	140	130	120	110	100	90	80	70	60	50	40	30	20	10
		Maximum travelling speed v [m/s] - Velocità massima della corsa														
		0.15	0.16	0.16	0.17	0.18	0.18	0.19	0.21	0.22	0.24	0.26	0.29	0.34	0.41	0.58
[m]		Minimum travelling time t s] - Tempo minimo della corsa														
0.7		4.7	4.6	4.4	4.2	4.0	3.9	3.7	3.5	3.2	3.0	2.7	2.5	2.1	1.8	1.3
0.8		5.4	5.2	5.0	4.8	4.6	4.4	4.2	3.9	3.7	3.4	3.1	2.8	2.4	2.0	1.4
0.9		6.0	5.8	5.6	5.4	5.2	4.9	4.7	4.4	4.1	3.8	3.5	3.1	2.7	2.2	1.6
1.0		6.7	6.5	6.3	6.0	5.8	5.5	5.2	4.9	4.6	4.3	3.9	3.5	3.0	2.5	1.8
1.1		7.4	7.1	6.9	6.6	6.3	6.0	5.7	5.4	5.1	4.7	4.3	3.8	3.3	2.7	1.9
1.2		8.0	7.8	7.5	7.2	6.9	6.6	6.2	5.9	5.5	5.1	4.7	4.2	3.6	3.0	2.1
1.3		8.7	8.4	8.1	7.8	7.5	7.1	6.8	6.4	6.0	5.5	5.0	4.5	3.9	3.2	2.3
1.4		9.4	9.1	8.7	8.4	8.0	7.7	7.3	6.9	6.4	5.9	5.4	4.9	4.2	3.5	2.5
1.5		10.0	9.7	9.4	9.0	8.6	8.2	7.8	7.3	6.9	6.4	5.8	5.2	4.5	3.7	2.6

The installer must carry out a risk analysis and check that the sliding door system does not feature crushing or shearing points. If necessary, corrective measures must be implemented and signals required by current regulations must be applied in order to make the dangerous areas visible. The identification data of the motorised system must be clearly visible on each installation. The installer must provide full information about the automatic, manual and emergency functioning of the motorised door and deliver the operating instructions to the system user. For any repairs or for replacing parts, use original spare parts only. The guarantee is void if this product is used in combination with components of other brands. The manufacturer of the drive declines any responsibility if components incompatible with safety and correct operation are installed.

This instruction manual is available for download on our website www.aprimatic.it, attached to the product data sheet.

2.0 Intended use and field of application

WK120 CONTROL SYSTEM is used for electronic control of automation devices for NK series sliding doors. The field of application is limited only to automatic doors with one or two horizontal sliding wings for civilian, public or industrial use, in dry environments, in covered areas for entry and pedestrian transit.



Attenzione

Do not use the product for purposes other than those specified.

Do NOT tamper with or modify the product in any way.

The product must only be installed using APRIMATIC material.



Attenzione

Equipment WK120 has been designed to control the operation of automatic door WK120.

Only use the product for the permitted uses specified. Do not use the product for purposes other than those specified.

You should note the operating restrictions specified in the installation manual supplied with the operator. Do NOT tamper with or modify the product in any way. The product must only be installed using APRIMATIC material.

Aprimatic S.r.l. declines all liability for damages caused by failure to follow these instructions.

The equipment can be used by children who are over 8 years of age and by persons with limited physical, sensory or mental capacities, or inexperienced or unskilled persons, provided that they are under supervision or that they have been instructed about the safe use of the equipment and inherent hazards.

Children must be supervised so that they do not play both with the equipment and the remote control. Cleaning and maintenance operations intended to be carried out by the user must not be performed by unsupervised children.

2.1 Features and technical data

See tab.1

Before installing the product, check that the temperature limits indicated on the drive system are suitable for the installation environment.

Description	WK-120
Aluminium Beam's dimension (mm)	H 116 x 176
Power Supply	230 V~ / 50-60 Hz
Maximum Power	100 watt
Power Supply for Accessories	24 V= / 0.5 A max
Maximum Speed 1 sliding door	0.7 m / sec.
Maximum Speed 2 sliding door	1.4 m / sec.
Maximum Load 1 sliding door	120 kg MAX
Maximum Load 2 sliding door	100 + 100 kg
Type of use	S3 = 100%
Working Temperature	-15°C / +55°C
Protection Rating	IP20
Opening Cycles	Test 1,000,000 Cycles
Certification Compliance	EN61000, EN60335 compliance EN16005

ELEMENTS OF THE BASIC SYSTEM

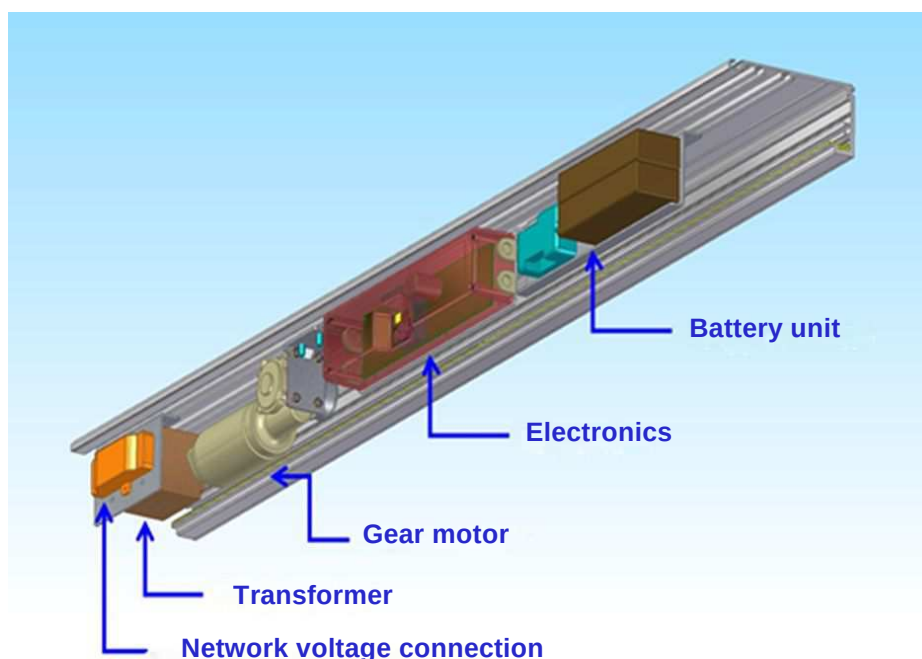
See fig.1.

- Control equipment CONTROL WK120
- POWER SUPPLY unit
- 24VDC gear motor
- ACCESSORY DEVICES

For available ACCESSORY devices see fig.2.

⇒ WARNING! Consult also the special instructions provided with each accessory.

fig.1



3.0 SYSTEM PREPARATION / POWER SUPPLY

Arrange electrical connections of control and safety devices of your system according to the diagram in fig.2 and the warnings provided in this manual.

For each device installed outside the frame, it is necessary to arrange suitable (external or buried) raceways until the installation position.

Warning: the system must be carried out by qualified personnel and in full compliance with the regulations in force in the country of installation.

- **230VAC POWER SUPPLY** - 3x1.5mm cable (dimension the cross-section according to the line length). Arrange the output of the mains power cable on the right (view from the inside). If the insertion of a three-module cover plate in the automation device power cable is required, carry out this operation before connecting the cable to the junction boxes.

Important! Always install, upstream of the line, a main switch ensuring an omnipolar cut-off with minimum contact opening of 3 mm (connect to a magneto-thermal differential switch of 6A - sensitivity 30mA).

- **ACCESSORIES** Control and command devices and the emergency push-button must be placed within the field of vision of the automation device, far from moving parts and at a minimum height from the ground of 1.5m.

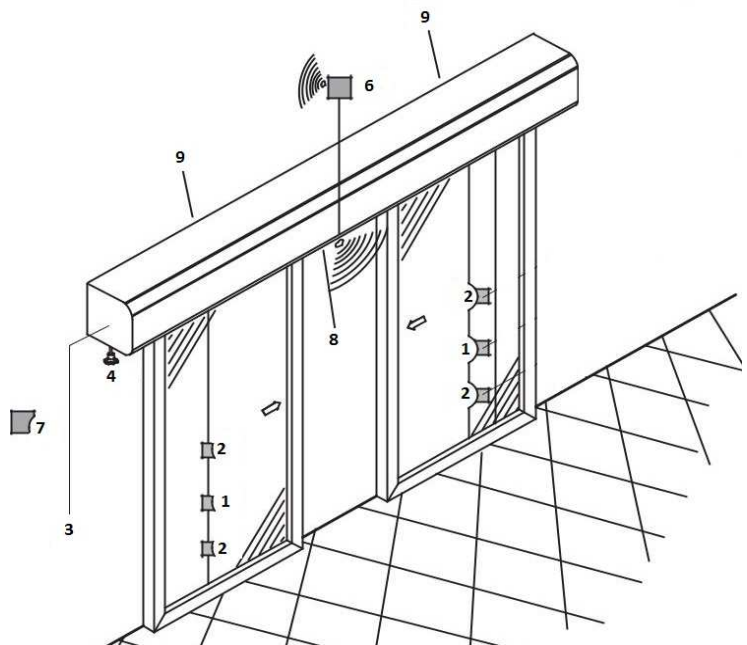
Since data transmission is carried out with a bus protocol, selectors must be connected by means of twisted cables.

Before proceeding, read carefully the instructions attached to any accessory devices and strictly comply with them.

- 1) external ER4N single beam obstacle detection photocell
- 2) recessed ER6/N with emitter card: 2x0.75 amplifier cable \ receiver: 4x0.75 mm cable
- 3) PE emergency push-button to be positioned in sight of the door - 2x1 mm cable
- 4) internal emergency manual release
- 6) passage detection radar
- 7) selector / programmer (5x0.22 mm cable - MAX length 15 m)
- 8) Electric lock
- 9) STOP with mechanical emergency opening device

ACCESSORY ARRANGEMENT

fig.2



3.1 Electrical connections, equipment layout

LBT0428 Electronics

WK120

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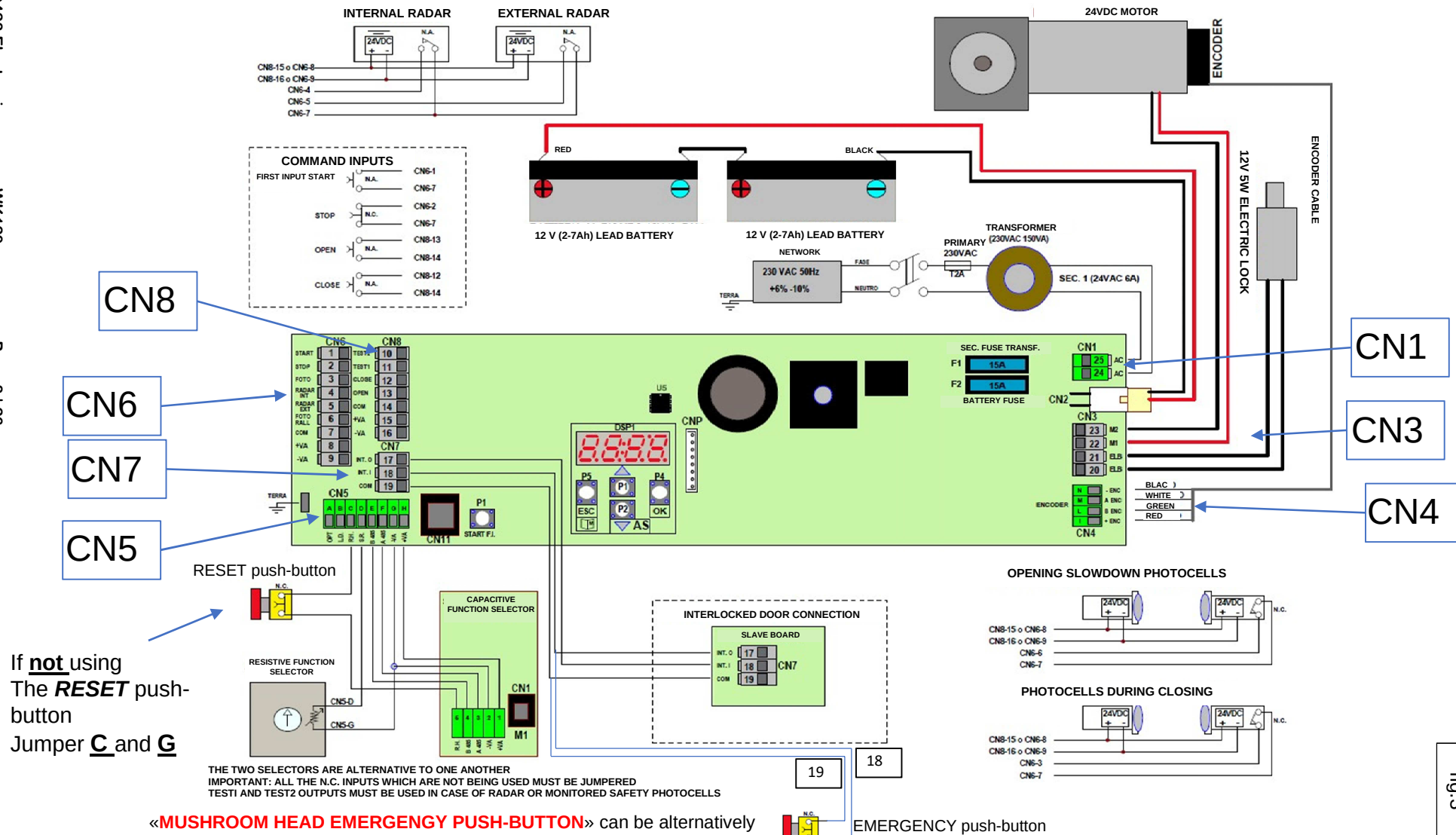


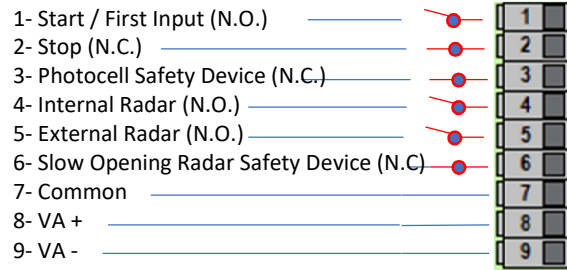
fig.3

The following pages include details on each terminal block connections.

NOTE Operating logics of inputs and outputs are described in chapter 4.2 «OPERATING MODE

CN6 terminal block

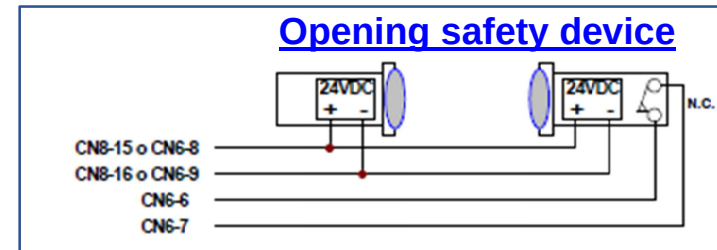
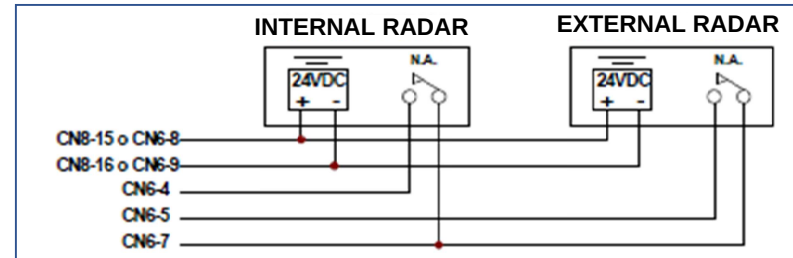
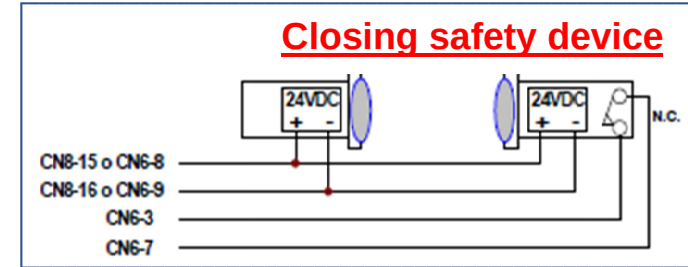
CN6 terminal block connections



NOTE

- START command (1) may have special settings, therefore consult chapter 5.0 «EDIT PARAMETERS» Parameter «U»
- Safety devices: Stop (2) , Photocell (3) , Slow Opening Radar (6) may have special settings, therefore consult chapter 5.0 «EDIT PARAMETERS» Parameters «L» , «N» , «O»

NOTE Safety devices must be connected in SERIES

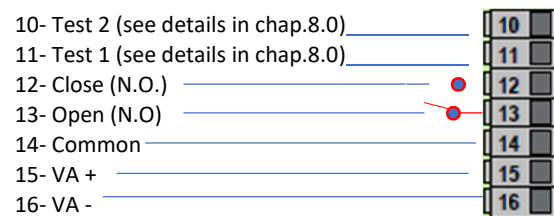


NOTE Safety devices must be connected in SERIES

NOTE operating logics of inputs and outputs are described in chapter 4.2 «OPERATING MODE

CN8 terminal block

CN8 terminal block connections



NOTE To connect and set «TEST» inputs for compliance with EN16005, see the dedicated diagram in chapter 3.7 and 3.8

NOTE Since «TEST» inputs for compliance with EN16005 have special settings, consult chapter 5.0 «EDIT PARAMETERS» Parameters «L» , «N» , «O»

NOTE operating logics of inputs and outputs are described in chapter 4.2 «OPERATING MODE

CN7 terminal block

Use of the terminal block for connecting interlocked doors

MASTER door

CN7terminal block connections

17- Int. contact I (N.O)
18- Int. contact I (N.O)
19- Common



SLAVE door

CN7terminal block connections

17- Int. contact I (N.O)
18- Int. contact I (N.O)
19- Common

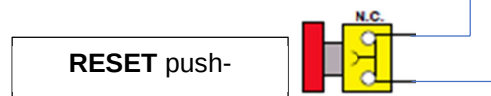


NOTE Remember to properly set
PARAMETER «Y»
in chapter 5.0 «EDIT PARAMETERS»

Use of the terminal block for the emergency opening command

CN7terminal block connections

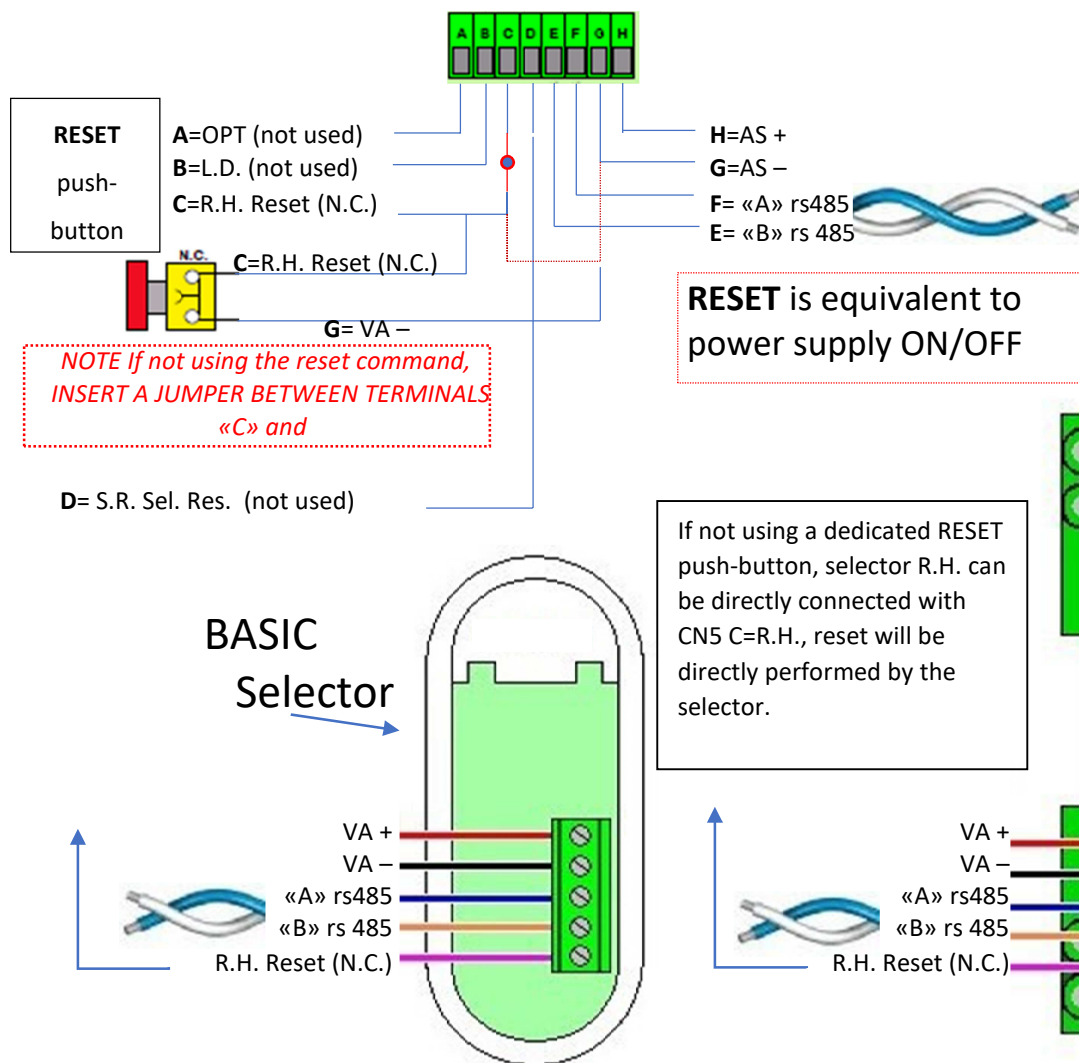
17-
18- Emergency Contact (N.C.)
19- Common



NOTE Remember to properly set
PARAMETER «Y»
in chapter 5.0 «EDIT PARAMETERS»

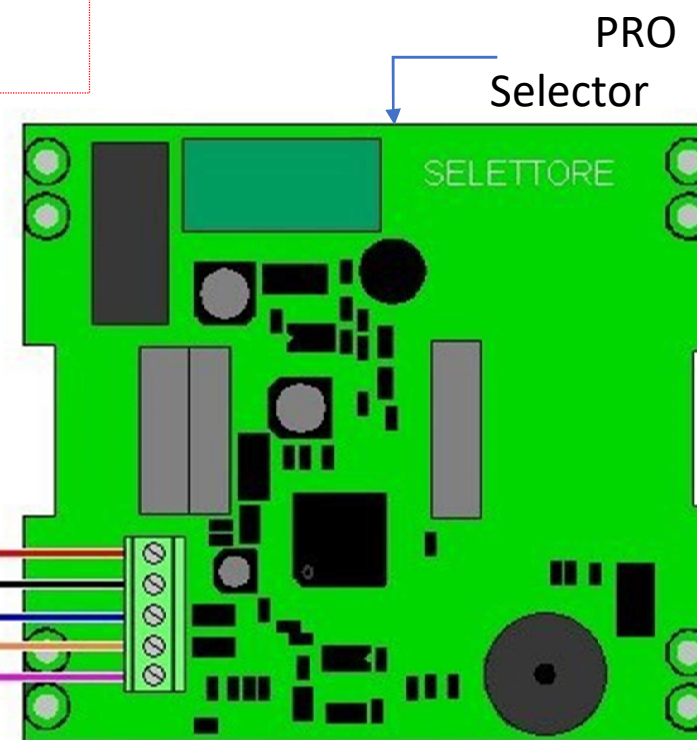
NOTE operating logics of inputs and outputs are described in
chapter 4.2 «OPERATING MODE

CN5 terminal block



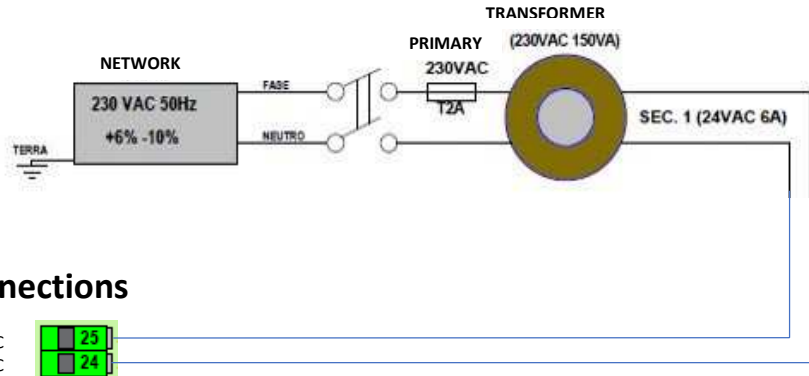
Selector connection

Qty.1 PRO Selector a Qty. 1 BASIC selector can be connected in parallel to CN5 terminal block. Both «BASIC» and «PRO» selectors can coexist



3.6 CN1, CN3, CN4 terminal block

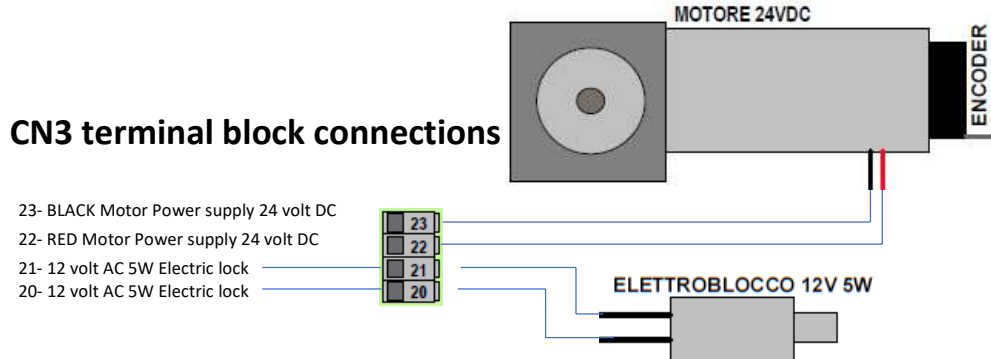
CN1 terminal block



NOTE

- ⇒ connect the power supply only after all wiring has been carried out.
- ⇒ Upon switch-on, check that the status of LEDs corresponds exactly to that indicated in chap.

CN3 terminal block



CN4 terminal block

NOTE The CORRECT PRELIMINARY setting of the gearmotor is important, otherwise the wings will "crash" as the encoder reading is different. **SEE SWITCH-ON PARAMETER 4.0**

CN4 motor encoder

N= Power supply Negative -
M= Signal A
L= Signal B
I= Power supply Positive +



ENCODER colours A1 model (Default)

D Type

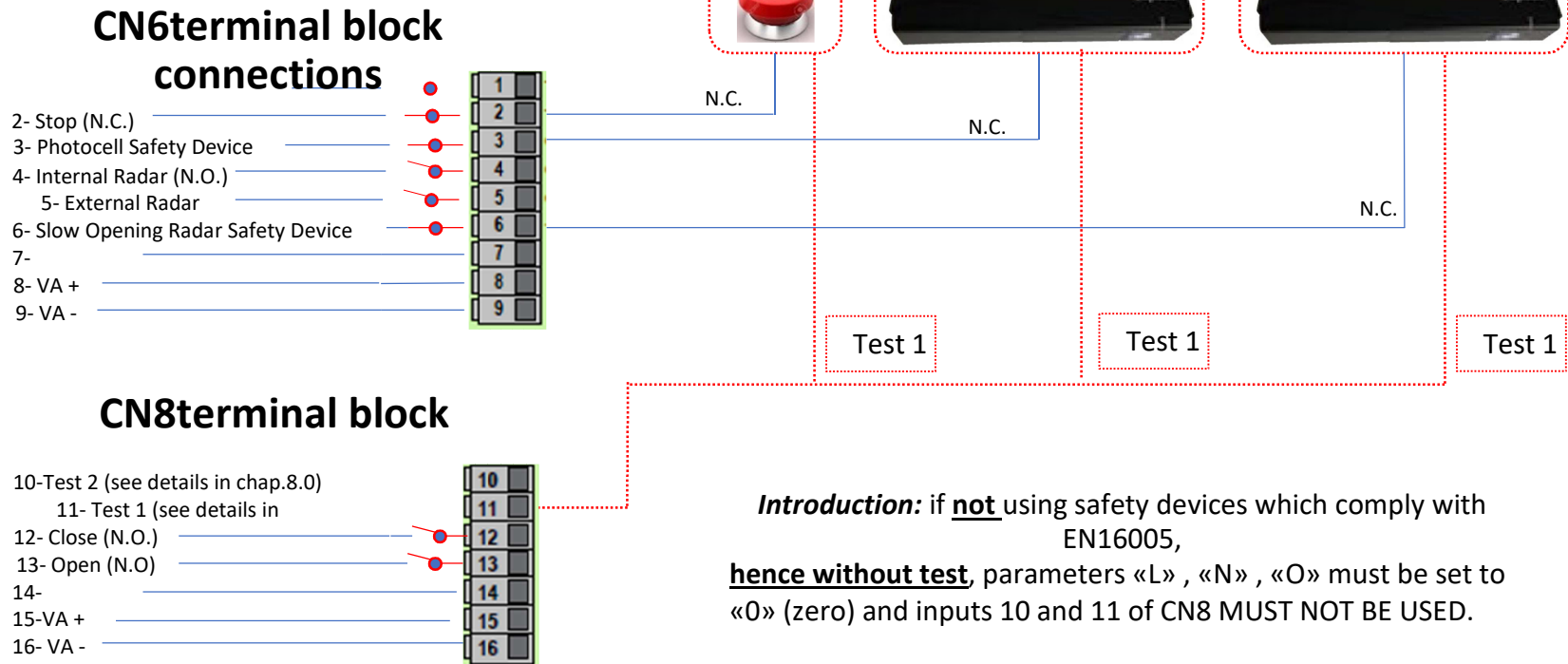
N= NERO Power supply Negative -
M= GREEN Signal A
L= YELLOW Signal B
I= RED Power supply Positive +

ENCODER colours A2 model

K Type

N= NERO Power supply Negative -
M= WHITE Signal A
L= GREEN Signal B
I= RED Power supply Positive +

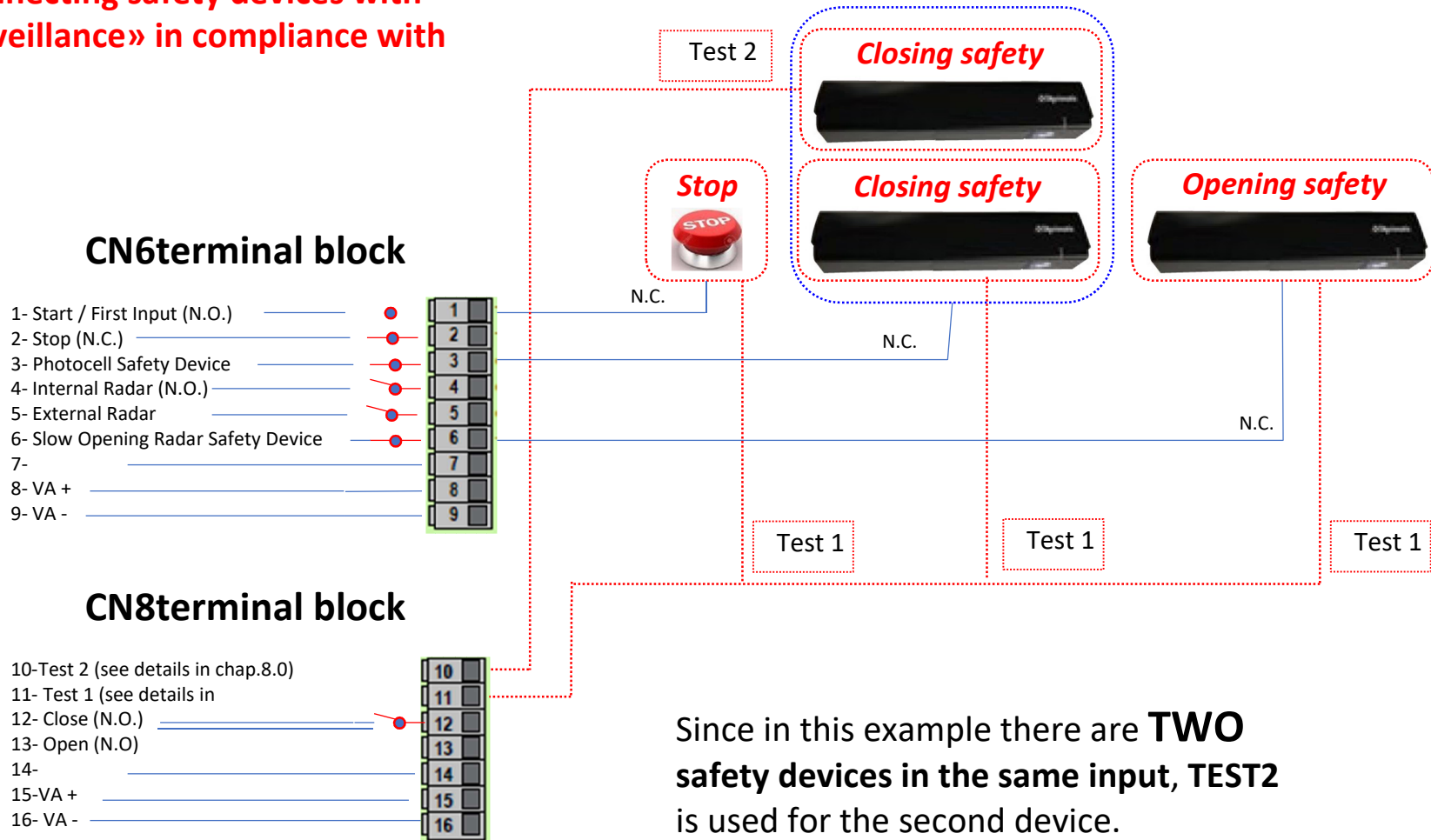
Connecting safety devices with «surveillance» in compliance with



Use of TEST1 and/or TEST2 PARAMETER SETTING chap.5.0

- If **only ONE** safety device per input is connected to safety contacts, 2-3-6 of CN6 terminal block:
 - Use only TEST1 for all.
 - Set reference parameter «L» , «N» , «O» to «1» where the safety device is present.
- If **TWO** safety devices in the same input are connected to safety contacts, 2-3-6 of CN6 terminal block:
 - Use TEST2 for the second device.
 - Set reference parameter «L» , «N» , «O» to «2» where **TWO** safety devices are present in the same input

Connecting safety devices with «surveillance» in compliance with



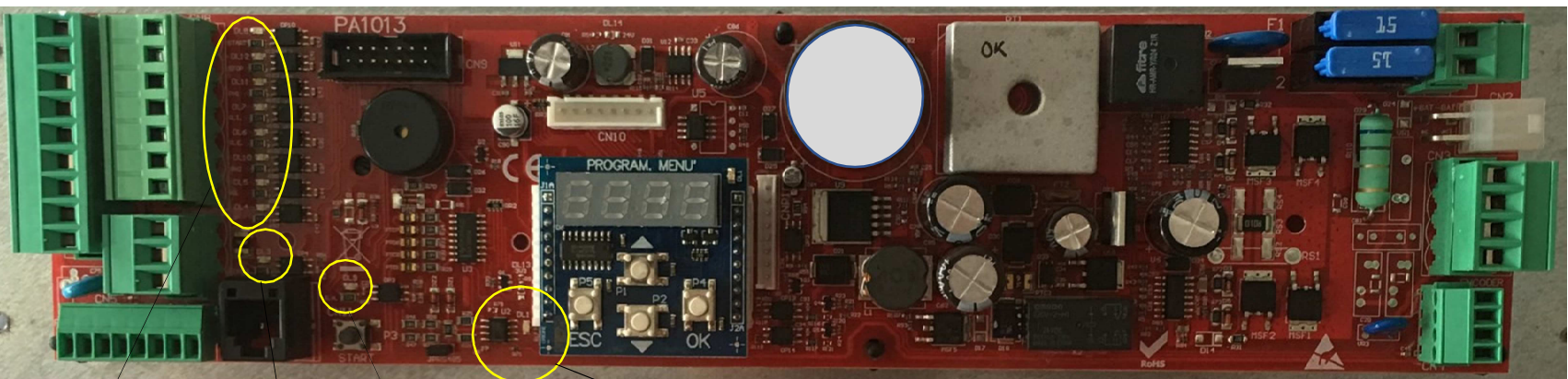
Since in this example there are **TWO safety devices in the same input, TEST2** is used for the second device.

Parameter «L» will be set to «2» since in the same safety input 3 of CN6 there are two devices.

3.9 Check of the LEDs

Upon switch-on, check that the status of LEDs corresponds exactly to that indicated in fig.4

fig.4



DL 8	START Input LED	GREEN	Normally OFF
DL 12	STOP Input LED	RED	Normally ON
DL 11	Photocell 1 Input LED	RED	Normally ON
DL 7	INT. RADAR Input LED	GREEN	Normally OFF
DL 6	EXT. RADAR Input LED	GREEN	Normally OFF
DL 10	PHOTOCELL 2 Input LED	RED	Normally ON
DL 5	CLOSE Input LED	GREEN	Normally OFF
DL 4	OPEN Input LED	GREEN	Normally OFF

DL 1	LED RS 485 Communication	GREEN	Normally FLASHING
DL 9	RESET HW Input LED	YELLOW	Normally ON
DL 3	Master/ Slave Input LED	GREEN	Normally OFF

DL 15	POWER SUPPLY LED Motor Power	BLUE	Normally ON
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4.0 Switching on

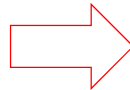
- Before carrying out the self-learning procedure check that the status of all the LEDs corresponds to that indicated in Chap.3.9, fig.4

Upon electronic board switch-on, the first door movement must be a closing movement carried out with reduced speed.

Upon switch-on, the display shows the installed firmware version for 2 seconds, then it shows the type of configured motor for another 2 seconds:

A 1 Type D EU motor (default)

A 2 Type K EXTRA EU motor



The CORRECT PRELIMINARY setting of the gear motor is important, otherwise the wings will "crash" as the encoder reading is different.

To edit the setting see Chap.8.0

and lastly the "bidir" default operation mode (see *Operating mode*).

At the very first switch-on of a new board or after parameter re-initialisation (see *Special settings with password*) the display shows *Appr*, as a saving procedure is required.



NOW START THE SELF-LEARNING PROCEDURE

4.1 Self-learning procedure

By pressing and holding **P2 arrow down** at any time for at least 2 seconds until the acoustic signal, the message **APPR** will be displayed and a saving procedure can be requested.

This procedure starts with a radar command/Start push-button and is made up of six operations, three opening and three closing operations, during which the door saves the stroke and its weight class (displayed as C0, C1, C2, C3, C4, C5 from the lightest to the heaviest). According to the weight class all operating parameters are automatically set, which, in any case, can be manually edited later (see Chap.5.0 *Edit parameters*).

NOTE Parameters will not be completely set until the self-learning procedure (3 OP-CL complete cycles) will be completed.

During saving procedure the end-of-stroke slowdown spaces are automatically adjusted and remain memorised until a new saving procedure.

NOTE Once the self-learning procedure will be completed, wings will no longer go to the opening mechanical stop, but they will be positioned at a distance of 10:15 mm from it.

The motor type and the weight class learnt can be viewed on the equipment display pressing the P1 key.

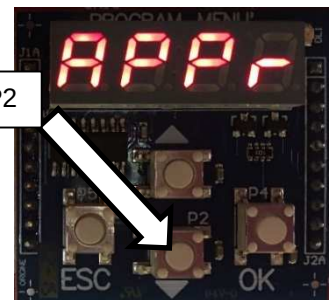


fig.5

P2



by

Should you note, over time, that the slowdown spaces are no longer optimal, it is recommended to carry out a new saving procedure.



At this point the door is ready to be operated.

4.2 Operating mode

Operating modes can be selected and viewed only from selectors, WK120 display is normally off.

bdlr - Bidirectional

FrEE - Free

rInt - Output

rESt - Input (*)

APAr - Partial Opening (*)

bLOC - Lock

OPEn - Open

FArM - Pharmacy

NOTE The door can be operated also without any connected selector, but in this case, the operating mode cannot be changed

(*) The *Input* and *Partial Opening* modes share the “PHARMACY” position of the BASIC and PRO selector, which is set through parameter **U** (see *chap.5.0 Edit parameters*).

If the selector is not installed (it will not be detected at equipment switch-on) the default operating mode is *Bidirectional*. Should the selector no longer be detected during operation (because disconnected or due to connection interruption) the operating mode becomes *Bidirectional*, unless the *Lock* or *Free* functions are active, which will be kept for safety reasons.

Bidirectional operating mode

A RAD INT or RAD EXT command opens the door, which remains open for a time that can be edited by the user (see *Chap.5.0 Edit parameters*) before closing again. A RAD INT or RAD EXT command during opening is ignored. A RAD INT or RAD EXT command during closing immediately reopens the door.

Output operating mode

A RAD INT command opens the door, which remains open for a time that can be edited by the user (see *Chap.5.0 Edit parameters*) before closing again. A RAD INT or RAD EXT command during opening is ignored. A RAD INT command during closing immediately reopens the door.

Input operating mode

A RAD EXT command opens the door, which remains open for a time that can be edited by the user (see *Chap.5.0 Edit parameters*) before closing again. A RAD INT or RAD EXT command during opening is ignored. A RAD EXT command during closing immediately reopens the door.

Partial Opening operating mode

A RAD INT or RAD EXT command opens the door; the opening stroke is reduced to a percentage of the maximum stroke that can be edited by the user (see *Chap.5.0 Edit parameters*). The door stays open for a time that can be edited by the user (see *Edit parameters*) before closing again. A RAD INT or RAD EXT command during opening is ignored. A RAD INT or RAD EXT command during closing immediately reopens the door.

Open operating mode

Set selector to *Open* to open the door, which stays open until selector position is changed.



Notes: in this mode, being the "CLOSE" command a safety element, it will command a closing operation. The "STOP" command

Lock operating mode

Set selector to *Lock* to close the door and activate the electric lock. The door stays closed and locked ignoring any command (except START) until selector position is changed.

The "lock delay" can be set, see chap.5.0 Edit parameters.

Free operating mode

By setting selector to *Free* the door is free to be manually moved and ignores any command. This condition will last until selector position is changed.

Pharmacy operating mode

Set selector to Pharmacy to close the door and activate the electric lock. The only accepted commands are: START, OPEN and CLOSE. The door will open by approx. 15 cm only, and the electric lock will be reactivated when door is closed again. This condition will last until selector position is changed.

OPEN and CLOSE commands

The OPEN command opens the door, which stays open until receiving the CLOSE command. A RAD INT or RAD EXT command during closing immediately reopens the door. A PHOTO command during closing immediately reopens the door.

The CLOSE command also opens the door when the door is closed: in this way it is possible to have a stepper movement using only that command.



Notes: this mode follows also the "PARTIAL OPENING" setting

START Command / 1st Input

The START command opens the door also when in lock status. The door stays open with the modes set in parameter U (see *Chap.5.0 Edit parameters*) and then closes again and locks (only if the lock status persists). By setting parameter "U" to 0 (zero) it becomes "stepper".



Notes: this mode DOES NOT follow the "PARTIAL OPENING" setting, thus the "START" command performs always a full opening.

STOP command (N.C.)

The STOP command immediately stops the door and, as long as it stays active, any other command is ignored. Exception made for the "OPEN" operation.

PHOTO command (N.C.)

The PHOTO command reopens the door if in closing phase and, as long as it stays active, does not allow its re-closing.

Emergency opening command (N.C.) "EMERGENCY PUSH-BUTTON"

If parameter **Y** (see *Chap.5.0 Edit parameters*) is set to **value 2**, input **INT.I** becomes the EMERGENCY OPENING command, (NORMALLY CLOSED).

The Emergency Opening command opens the door under any condition, including lock mode and active STOP command.

Until active, it does not allow door re-closing.

SLOW PHOTO command (N.C.)

The SLOW PHOTO command reopens the door if in closing phase and determines its immediate slowdown if in opening phase and, as long as it stays active, it does not allow door re-closing.

Battery

If the battery is present (parameter **P** = 1 see *Chap.5.0 Edit parameters*), upon switch-on, and then every 4 hours its voltage is monitored by momentarily disconnecting mains supply. If the battery is faulty, disconnected or flat, the equipment will switch off for a few moments during the test and then it switches back on. This event is automatically memorised, and the test will not be repeated. This is to prevent the equipment from switching off again every 4 hours. If battery voltage drops below 23.5 Volts, error E05-low battery is signalled. In this case the equipment continues working according to the modes set through parameter **G**.

Blackout

If the battery is present, the equipment continues working also during a blackout (signalled with error E04 – Blackout), according to the modes set through parameter **F**, see *Chap.5.0 Edit parameters*. Movement speed is slightly slowed down. If blackout persists and battery voltage drops below 22 V, error E07 - flat battery will be signalled. Door movements are in any case disabled.

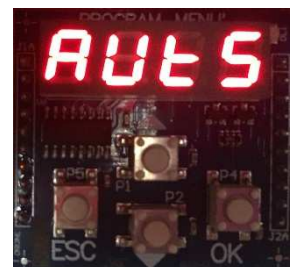
Interlock

If parameter **Y** (see *Chap.5.0 Edit parameters*) is set to value 1 the interlock function is enabled. In this case the door, upon receiving the radar pulse, will open only if input **INT.I** (normally open) is not active, which in turns activates the output **INT.O** for the full opening – pause – closing cycle. The radar pulse received while the input **INT.I** is enabled is saved and followed only when the input **INT.I** is disabled.

Slowdown space self-test procedure

If at any moment, when pressing and holding the **P2 arrow down** key for at least 2 seconds, you hear an acoustic signal, keep it still pressed down, then, if you hear a second acoustic signal, release the key and the message **AUTS** will be displayed.

The next two door operations are required to save the slowdown spaces again if the door conditions (frictions, etc.) have changed from the previous saving



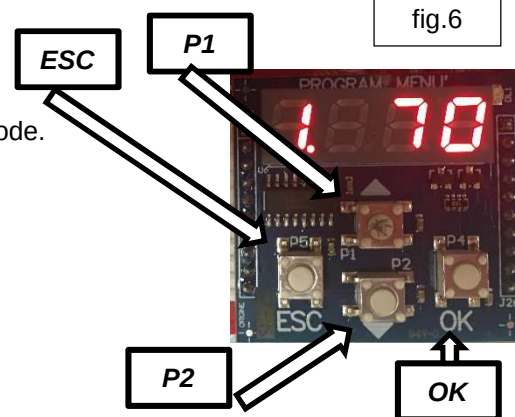
5.0 Edit parameters

Press **ESC** for 2 seconds (until the beep) to access the edit parameter mode.

Use **ESC** to scroll through the parameters, use **P1** and **P2** to edit them.

Press **OK** for 2 seconds (until the beep) to save the current value.

Press **ESC** again for 2 seconds (until the beep) to quit the edit mode.

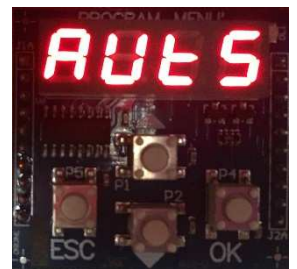


N	Def.	Min.	Max.	Parameter	Notes
1	70			Opening speed	In mm/second
2	40			Closing speed	In mm/second
3	4			Opening slowdown speed	In mm/second
4	3			Closing slowdown speed	In mm/second
5	5			Opening braking	Absolute value
6	4			Closing braking	Absolute value
7	50			Opening approaching space	Absolute value
8	38			Closing approaching space	Absolute value
9	12			Force against obstacle	Absolute value
A	2			Pause time	In seconds
B	75			% of partial opening stroke	Partial opening is active with RADARS and OPEN, but not with START command.
C	0			Electric lock type	0=Monostable 1=Bistable
D	0			Traffic adaptation	0=Not enabled 1=Enabled
E	0			If door is forced	0=It resists to forcing 1=It opens 2=It stays free
F	0			With blackout	0=It continues operation
G	0			With low battery	1=It opens although in lock mode 2=It closes and locks 3=It opens only if not in lock mode 4=It closes but does not lock
H	1			Motion direction (□) (Facing door from the outside)	0=It opens to the left 1=It opens to the right
J	8			Voltage with door closed (windproof)	Absolute value

N	Def.	Min.	Max.	Parameter	Notes
L	0			PHOTO surveillance	0=Not monitored 1=One monitored device 2=Two monitored devices
N	0			SLOW PHOTO surveillance	
O	0			STOP surveillance	
P	0			Battery presence	0=Not present 1=Present
R	0			Lock with R.INT or R.EXT NOT USED only for sel. Resis.	0=Standard operation 1=Locked closed door
T	0			Selector sixth position (PHARMACY)	0=Partial opening (APPROX. 150 MM)
U	0			START opening duration	0=Stepper From 1 to 9 in tens of seconds
V	0			Lock status delay	0=Immediate From 1 to 9 in tens of seconds
Y	0			Interlock / Emergency Opening	0=Disabled 1=Enabled 2=Emergency opening

(□) After editing the "Motion direction" parameter the following first opening and closing operations will be performed at reduced speed.

After editing parameters from 1 to 9, the message **AUTS** is displayed. The next two door operations are required to learn the door ideal conditions again.



6.0 Obstacle detection

If the door meets an obstacle during a closing operation it will reopen immediately and stay open for the pause time before closing again. The next closing operation will be carried out by slowing down near the point where the obstacle was detected. If the obstacle is met for three times in a row, the door will stop and rest against it.

If the door meets an obstacle during an opening operation it will stop for the set pause time before closing again at reduced speed. The next opening operation will be carried out by slowing down near the point where the obstacle was detected.

7.0 Monitored safety devices (See dedicated diagram in point 3.7 and 3.8)

Some monitored safety devices equipped with a stimulation input can be connected to the STOP, PHOTO, and SLOW PHOTO inputs.

Each of the three inputs can be connected to a not monitored device or a monitored device or a series of two monitored devices.

It is required to set the configuration of each input through parameters L, N and O (see *Edit parameters*)

With a not monitored device, the corresponding parameter must be set to 0. In this case no device test is performed.

With a single monitored device, the corresponding parameter must be set to 1. In this case the device test is carried out through TEST 1 output that will connect to the test input of the monitored device.

With two monitored devices connected in series, the corresponding parameter must be set to 2. In this case the test of the first device is carried out through TEST 1 output that will connect to the test input of the first monitored device, and the test of the second device is carried out through TEST 2 output that will connect to the test input of the second monitored device.

Tests are carried out immediately after the end of each opening movement of the door; if one of the tests should fail, the corresponding error will be displayed (see *Errors*) and the door will not close. Every 30 seconds the test is repeated (in case of opening with OPEN command the test is repeated upon receiving the CLOSE command), and if successful the door will close again.

During this error status, it is still possible to move the selector to the Lock position and manually close the door: the electric lock will be activated after two seconds from closing.

8.0 Settings with special CODES

With the equipment switched off (without power supply) press the **OK** and keep it pressed down, at this point switch on the equipment

(connect the power supply), always keeping OK pressed down, and, after a few seconds, the equipment will emit a short acoustic signal. Release **OK** key, and the following will be displayed: "0000".

Use **P1** and **P2** keys to separately edit the first two digits and then the other two digits of the number. In this way a special configuration code can be set that will have to be confirmed by pressing **OK** for two seconds.

According to the special set code the following operations will be performed:

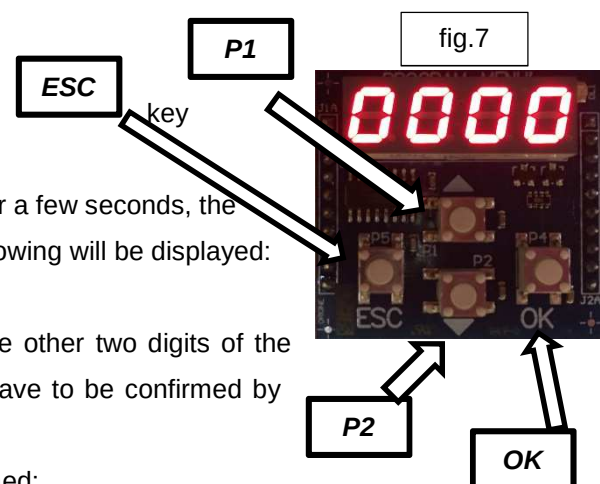
code **1111**: Selection A 1 Type D EU motor (default)

code **2222**: Selection A 2 Type K EXTRA EU motor

code **2468**: Start of cyclic test mode.

code **1234**: Enabling of special displays. (see chapter 10.0)

code **3223**: Reset to DEFAULT values (only points from 1 to 9 chap.5.0)



9.0 Errors

The display shows the following errors or warnings, if any, immediately after the operating mode:

Error	Description
E 00	Missing communication between function selector and equipment. If the function selector connection is wrong or missing, error E 00 is shown on PRO selector display and the equipment display does not work.
E 01	Obstacle detected for current during closing. The equipment continues its standard operation.
E 01	Obstacle detected for encoder stopped during closing. The equipment continues its standard operation.
E 02	Obstacle detected for current during opening. The equipment continues its standard operation.
E 02	Obstacle detected for encoder stopped during opening. The equipment continues its standard operation.
E 03	Faulty encoder. The equipment locks and will attempt to restart operation only after being reset or switched off.
E 04	No power supply. The equipment continues its operation according to what set through parameter F.
E 05	Low battery. The equipment continues its standard operation until the battery voltage allows it.
E 06	Saved stroke greater than maximum threshold. (max. stroke mm xxxx). The equipment will attempt to restart operation only after being reset or switched off.
E 07	Flat battery. The equipment stops.
E 08	Inverted motor polarity or inverted encoder channels. The equipment locks and will attempt to restart operation only after being reset or switched off.
E 09	Detected weight greater than maximum threshold. (max. weight kg xxx) The equipment will attempt to restart operation only after being reset or switched off.
E 10	Current detected on motor greater than maximum threshold. (max. amp. Xxx) The equipment will attempt to restart operation after a new command.
E 11	Overload protection of power circuit triggered. The equipment will attempt to restart operation after a new command.
E 12	EEPROM memory writing or reading error The equipment will attempt to restart operation only after being reset or switched off.
E 13	PHOTO command monitored device test 1 failed
E 14	PHOTO command monitored device test 2 failed
E 15	SLOW PHOTO command monitored device test 1 failed
E 16	SLOW PHOTO command monitored device test 2 failed
E 17	STOP command monitored device test 1 failed
E 18	STOP command monitored device test 2 failed
E 19	Power electronics temperature too high. The equipment will attempt to restart operation only after being reset or switched off.

E 20	Power electronics fault. The equipment will attempt to restart operation only after being reset or switched off.
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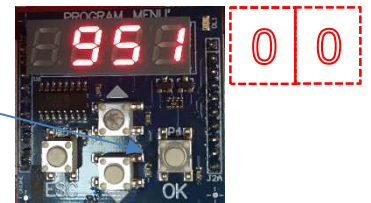
10.0 Displays:

⇒ Press ESC to view the following in sequence:

CTOT Total number of performed automation cycles, expressed in hundreds.
This value cannot be reset

CPAR Partial number of performed automation cycles, expressed in hundreds: this counter can be reset by pressing **OK** for two seconds until an acoustic signal is heard.

fig.8



⇒ Upon switch-on, if the specific code is entered (see settings with special codes chap.8.0), other particular information can be displayed in real time:

POSE Door position (in encoder counts)

CORS Stroke saved (in encoder counts)

RALA Saved opening approaching space (expressed in encoder count)

RALC Saved closing approaching space (expressed in encoder count)

UBAT Battery voltage (expressed in volts)

IMOT Instantaneous current (in 1/100 ampere) if the door is in motion. Max. current of last movement if the door is stopped.

UMOT Motor voltage (in volts)

SOGO Obstacle current threshold (in 17/100 ampere)

UERR The codes of the last 16 errors occurred are displayed automatically in intervals of seconds with numbers from 1 for the most recent to 16 for the least recent.

TEMP The power electronics temperature is displayed in degrees centigrade.

VACC The accessory supply voltage is displayed in volts.

AUTS This information is displayed each time the board parameters are edited and the next two door operations are required to check all parameters again.

After 60 seconds of inactivity the display will show the operating mode again.

11.0 AUTOMATIC SLIDING DOOR ORDINARY MAINTENANCE SCHEDULE

To ensure the correct operation and the safety of use of the automatic sliding door, in accordance with the European standard EN16005, the owner must have the ordinary maintenance carried out by professional and expert staff. Except for the standard cleaning of external doors and windows and of any floor sliding rails, under the competence of the owner, all maintenance and repair operations must be carried out by professional and expert staff. The following table lists all the operations related to ordinary maintenance and the frequency of service for an automatic sliding door under standard operating conditions. In case of more difficult operating conditions, or if the automatic sliding door is used sporadically, the frequency of maintenance operations can be consistently adjusted.

Carry out the maintenance every 6 months or 500,000 cycles.

Disconnect the mains supply, open the automation device and perform the following checks and adjustments.

- Check the correct fixing of all the screws of the automation device inner components.
- Check the cleaning of carriages and sliding rail.
- Check the correct belt tension.
- Check the state of wear of belt and carriage wheels (replace them if necessary).
- Check the correct fastening of wings on carriages.
- If present, check the correct fixing of the locking device and the operation of the release cord.
- Connect the mains supply and perform the following checks and adjustments. - Check the correct operation of command and safety devices.
- Check that the safety sensor detection area complies with the requirements of European standard EN16005.
- Check that the wing operating forces comply with the requirements of European standard EN16005.
- If present, check the correct operation of the locking device.
- If present, check the correct operation of the battery supply device (replace the battery if necessary).

NOTE The safety functions of automation and safety devices must be checked at least once a year.

All the operations of maintenance, replacement, repair, updating, etc. must be written in the maintenance record, as required by the European standard EN16005, and delivered to the owner of the automatic sliding door. For any repairs or replacement of products, use original spare parts only.

DISPOSAL OF PRODUCTS



For a correct disposal of electrical and electronic equipment, batteries and accumulators, the owner must take the product to the special "separate waste collection centres" set up by the local authorities.

MAINTENANCE RECORD FOR AUTOMATIC PEDESTRIAN DOORS

IN COMPLIANCE WITH MACHINERY DIRECTIVE 2006/42/EC AND WITH EUROPEAN STANDARD EN 16005.

This maintenance record includes the technical references and the records of installation, maintenance, repair and editing operations and must be made available for any inspection by authorised organisations.