PARAMETRO	VALORE	SUBMENU	DESCRIZIONE	DEFAULT	CAPITOLO	MEMO
S.ENC	1-7		**Sensibilità encoder**	0	12.2	
	0		Rilevamento ostacoli mediante encoder disabilitato			
OST.A	0.5"-4.5"		**Inversione per ostacolo in apertura**	0.0"	12	
	0.0"		Arresto della porta			
	FULL		Chiusura completa della porta			
OST.C	0.5"-4.5"		**Inversione per ostacolo in chiusura**	FULL	12	
	0.0"		Arresto della porta			
	FULL		Apertura completa della porta			
CH.OS			**Chiusura dopo ostacolo**	AUTO	12	
	MAN		Manuale			
	AUTO		Automatica (se abilitata tramite il parametro CH.AU)			
I.ADI			**Abilitazione dispositivo ADI**	NO	24	
	NO		Interfaccia ADI disabilitata			
	SI	E.ADI	Interfaccia ADI abilitata			
RICH			**Richiusura all'accensione**	SI		
	NO		Funzione disabilitata			
	SI		Quando viene attivata l'alimentazione la centrale si predispone per la chiusura: il primo comando di START avvia il motore in chiusura. Se è attiva la chiusura automatica (CH.AU), inizia il conteggio del tempo di pausa e dopo viene comandata la chiusura			
T.ADD	0.5"-1'		**Extracorsa**	1.0"	16	
	NO		La porta termina la sua corsa anche se i finecorsa non sono stati attivati			
FINE			**Uscita menù di programmazione**	NO		
	NO		Non esce dal menu di programmazione			
	SI		Esce dal menu di programmazione memorizzando i parametri impostati			

27 - ANOMALIE DI FUNZIONAMENTO

In questo paragrafo vengono elencate alcune anomalie di funzionamento che si possono presentare, ne viene indicata la causa e la procedura per porvi rimedio.

VISUALIZZAZIONE	DESCRIZIONE	SOLUZIONE
Led POWER LOGIC spento	Alimentazione della parte logica assente	Controllare il fusibile F1
Led POWER MOTOR spento	Alimentazione dell'inverter assente	Controllare il fusibile F2
Led ERROR acceso	Inverter guasto	Inviare la centrale in riparazione
Led ATTENTION lampeggiante	Inverter in carica	La porta non si muove: quando il led si spegne l'inverter è pronto e la manovra può iniziare
Led ATTENTION acceso	Stop di emergenza attivo	Disattivare il pulsante di STOP tra i morsetti T1 e T2. Se non è installato un interruttore i due morsetti devono essere ponticellati
Led OVERLOAD acceso	Alimentazione accessori 24V sovraccarica	1. Estrarre la morsettiera H1 - H8: il led OVERLOAD si spegne 2. Eliminare la causa del sovraccarico (morsetti E1-E3) 3. Reinnestare lla morsettiera e verificare che il led non si accenda nuovamente
Prelampeggio prolungato del LAMPEGGIANTE	Quando viene dato un comando di start il lampeggiante si accende immediatamente, ma la porta tarda ad aprirsi: è scaduto il conteggio di cicli impostato per l'intervento di manutenzione (Service)	Accedere al menù dei contatori e reimpostare il parametro Service
Il display visualizza ERR1	Errore software	Inviare la centrale in riparazione
Il display visualizza ERR2	Inverter guasto	Verificare che il motore sia collegato correttamente. Se l'errore persiste inviare la centrale in riparazione
Il display visualizza ERR3	Il test di funzionamento delle fotocellule è fallito	1. Verificare che non ci siano ostacoli tra le fotocellule 2. Verificare che le fotocellule abilitate da menu siano effettivamente installate e funzionanti 3. Se vengono usate fotocellule di tipo 2, assicurarsi che il parametro FOT2 sia impostata su CFCH 4. Verificate le condizioni precedenti, se l'errore persiste, aumentare il tempo del test (parametro FT.TE)
Il display visualizza ERR4	Errore finecorsa	Verificare che i finecorsa siano collegati correttamente e che gli switch finecorsa si attivino con il movimento del cancello
Il display visualizza ERR5	Il test di funzionamento delle coste di sicurezza è fallito	1. Verificare che le coste abilitate da menù siano effettivamente installate e funzionanti 2. Assicurarsi che la centralina di controllo delle coste sia collegata correttamente e funzionante
Il display visualizza ERR6	Errore di comunicazione con l'inverter	Se l'errore persiste inviare la centrale in riparazione
Il display visualizza ERR7	Errore encoder	Verificare il collegamento dell'encoder
Il display visualizza ERR9	Accesso al menù di programmazione bloccato tramite CL1+	Inserire il modulo CL1+ con cui è stata bloccata la programmazione nel connettore ADI: la centrale entra automaticamente nel menù di programmazione PRG
Il display visualizza ERR10	Il test di funzionamento delle sicurezze collegate all'interfaccia ADI è fallito	Verificare che il modulo ADI sia connesso Verificare che le sicurezze collegate all'interfaccia ADI sia collegate correttamente e funzionanti
Il display visualizza ERR12	Surriscaldamento inverter	La segnalazione compare quando viene interrotto il movimento del motore per un surriscaldamento dell'inverter che pilota il motore e viene ripetuta ad ogni comando di avvio fino a quando l'inverter non si raffredda
Il display visualizza INIT	Inverter in carica	Prima di avviare il motore aspettare che la segnalazione si spenga
Il display visualizza HALT	Stop di emergenza attivo	Disattivare il pulsante di STOP tra i morsetti T1 e T2. Se non è installato un interruttore i due morsetti devono essere ponticellati

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1 - IMPORTANT REMARKS

For any installation problem please contact our Customer Service at the number +39-0172.812411 operating Monday to Friday from 8:30 to 12:30 and from 14:00 to 18:00.

V2 has the right to modify the product without previous notice; it also declines any responsibility to damage or injury to people or things caused by improper use or wrong installation.

⚠ **Please read this instruction manual very carefully before installing and programming your control unit.**

- This instruction manual is only for qualified technicians, who specialize in installations and automations.
- The contents of this instruction manual do not concern the end user.
- Every programming and/or every maintenance service should be done only by qualified technicians.

AUTOMATION MUST BE IMPLEMENTED IN COMPLIANCE WITH THE EUROPEAN REGULATIONS IN FORCE:

EN 60204-1 (Machinery safety. electrical equipment of machines, part 1: general rules)

EN 12453 (Safe use of automated locking devices, requirements)

- The installer must provide for a device (es. magnetotermical switch) ensuring the omnipolar sectioning of the equipment from the power supply. The standards require a separation of the contacts of at least 3 mm in each pole (EN 60335-1).
- The control unit must to be mounted in a case with degree protection IP44 or higher.
- To connect flexible or rigid pipes, use pipefittings having the same insulation level of the case.
- After making connections on the terminal board, use one hose clamp to fix dangerous voltage wires near the terminal board and another hose clamp to fix safety low voltage wires used for accessories connection; this way, in case of accidental detachment of a conducting wire, dangerous voltage parts will not come into contact with safety low voltage ones.
- Installation requires mechanical and electrical skills, therefore it shall be carried out by qualified personnel only, who can issue the Compliance Certificate concerning the whole installation (Machine Directive 2006/42/CEE, Annex IIA).
- The automated vehicular gates shall comply with the following rules: EN 13241-1, EN 12453 as well as any local rule in force.
- Also the automation upstream electric system shall comply with the laws and rules in force and be carried out workmanlike.
- The door thrust force adjustment shall be measured by means of a proper tool and adjusted according to the max. limits, which EN 12453 allows.
- We recommend to make use of an emergency button, to be installed by the automation (connected to the control unit T1-T2 input) so that the gate may be immediately stopped in case of danger.
- Always remember to connect the earth according to current standards EN 60335-1, EN 60204-1 (the control unit has two specific G1 and G2 clamps).
- The device is not intended for use by persons (including children) with reduced physical, sensory or mental capacities, or lack of experience and knowledge unless they are supervised or have been instructed in the use of the device by a person responsible for their safety



2 - DISPOSAL

As for the installation operations, even at the end of this product's life span, the dismantling operations must be carried out by qualified experts. This product is made up of various types of materials: some can be recycled while others need to be disposed of. Find out about the recycling or disposal systems envisaged by your local regulations for this product category.

Important! – Parts of the product could contain pollutants or hazardous substances which, if released into the environment, could cause harmful effects to the environment itself as well as to human health. As indicated by the symbol opposite, throwing away this product as domestic waste is strictly forbidden. So dispose of it as differentiated waste, in accordance with your local regulations, or return the product to the retailer when you purchase a new equivalent product.

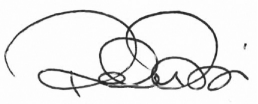
Important! – the local applicable regulations may envisage heavy sanctions in the event of illegal disposal of this product.

3 - EU DECLARATION OF CONFORMITY

V2 S.p.A. hereby declare that CX HEAVY1 products conform to the essential requirements established in the following directives:

- 2014/30/UE (EMC Directive)
- 2014/35/UE (Low Voltage Directive)
- RoHS-3 2017/2102

Racconigi, 01/03/2023
V2 S.p.A. legal representative
Roberto Rossi



4 - TECHNICAL SPECIFICATIONS

MODELS	CX HEAVY1	CX HEAVY1-PB
Power supply	230VAC - 50Hz	
Max motors load	1,5 KW	
Max accessories load 24V	20 W	
Working temperature	-20°C ÷ +60°C	
Protection fuse	F1 = T315mA / F2 = F10A	
Dimensions	200x172x80 mm	312x210x100 mm
Weight	1800 g	4500 g
Protecion degree	-	IP56

5 - DESCRIPTION OF THE CONTROL UNIT

The digital control unit CX HEAVY1 is an innovative V2 product that guarantees a safe and reliable automation of industrial sectional doors.

In compliance with the European standards concerning electrical safety and electromagnetic compatibility (EN 60335-1, EN 50081-1 and EN 50082-1) it has been equipped with the low voltage circuit total electric insulation (motors included) from the network voltage.

Other characteristics:

- Programming menu through 122x32 pixel graphic display
- Power supply for 1x230V three-phase motor (delta connection)
- Input for connection of an encoder
- Plug connector for modular MR radio receiver
- Start control, pedal start, stop by transmitter
- Three programmable relay outputs such as lights, electric lock, warning light, electric brake or functioning test 12Vdc
- 230V blinker output (use intermittent blinkers)
- Test of safety devices (photocells and ribb.) before each opening
- Precise adjustment of strength and speed during regular running and during slowdowns
- Running self-learning function
- Obstacle detection function through amperometric sensor
- Operational cycle counter with programmable maintenance requirement setting
- Monitoring of input status via display
- ADI connector for connection of the optional CL1+, SYNCRO modules

6 - LANGUAGE SELECTION

The CX HEAVY1 unit, thanks to the graphic display, is able to display messages in order to simplify the installation phases.

The pre-set language is ENGLISH but you can select an alternative language.

To select another language, proceed as follows:

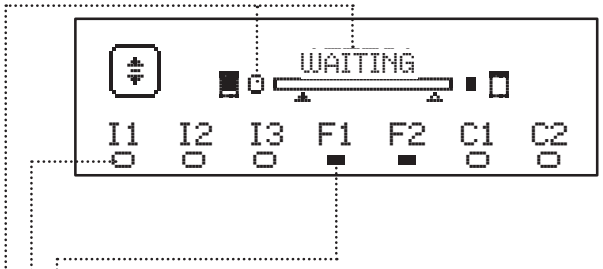
1. Power the unit
2. The display shows the firmware versions of micro-controllers, serial number and language: ENGLISH
3. While the display shows ENGLISH hold the **OK** button: the display shows the alternative language (ITALIAN)
4. Release the **OK** button: the new language has been set.

7 - CONTROL PANEL

When the power supply is turned on the display shows in sequence the following information:

1. Firmware version of the micro-controller of the unit
2. Firmware version of the micro-controller of the inverter
3. Serial number
4. Current language set

Here following is the control panel:



The control panel (in standby mode) displays the physical state of the contacts to the terminal board and programming buttons:

I1 ING1 input
I2 ING2 input
I3 ING3 input
F1 PHOTOCELL 1 input
F2 PHOTOCELL 2 input
C1 RIBB. 1 input
C2 RIBB. 2 input

The dot displayed below the abbreviations of inputs indicates the status of the input:

- FULL dot: contact closed
- EMPTY dot: contact open

In the upper part of the display the status of the automation system is shown:

- The message (e.g. WAITING) indicates the status of the unit
- The bar under the message indicates the position of the gate with respect to the limit switch
- The dot to the left of the bar shows the closing limit switch
- The dot to the right of the bar indicates the opening limit switch
- The arrow on the left indicates the status of the device connected to the terminal H3
- The arrow on the right indicates the status of the device connected to the terminal H4

The dot of the limit switches and the arrows of the inputs H3 and H4 indicate the input status:

- Arrow/FULL dot: closed contact
- Arrow/EMPTY dot: open contact

In the example shown above the display indicates that:

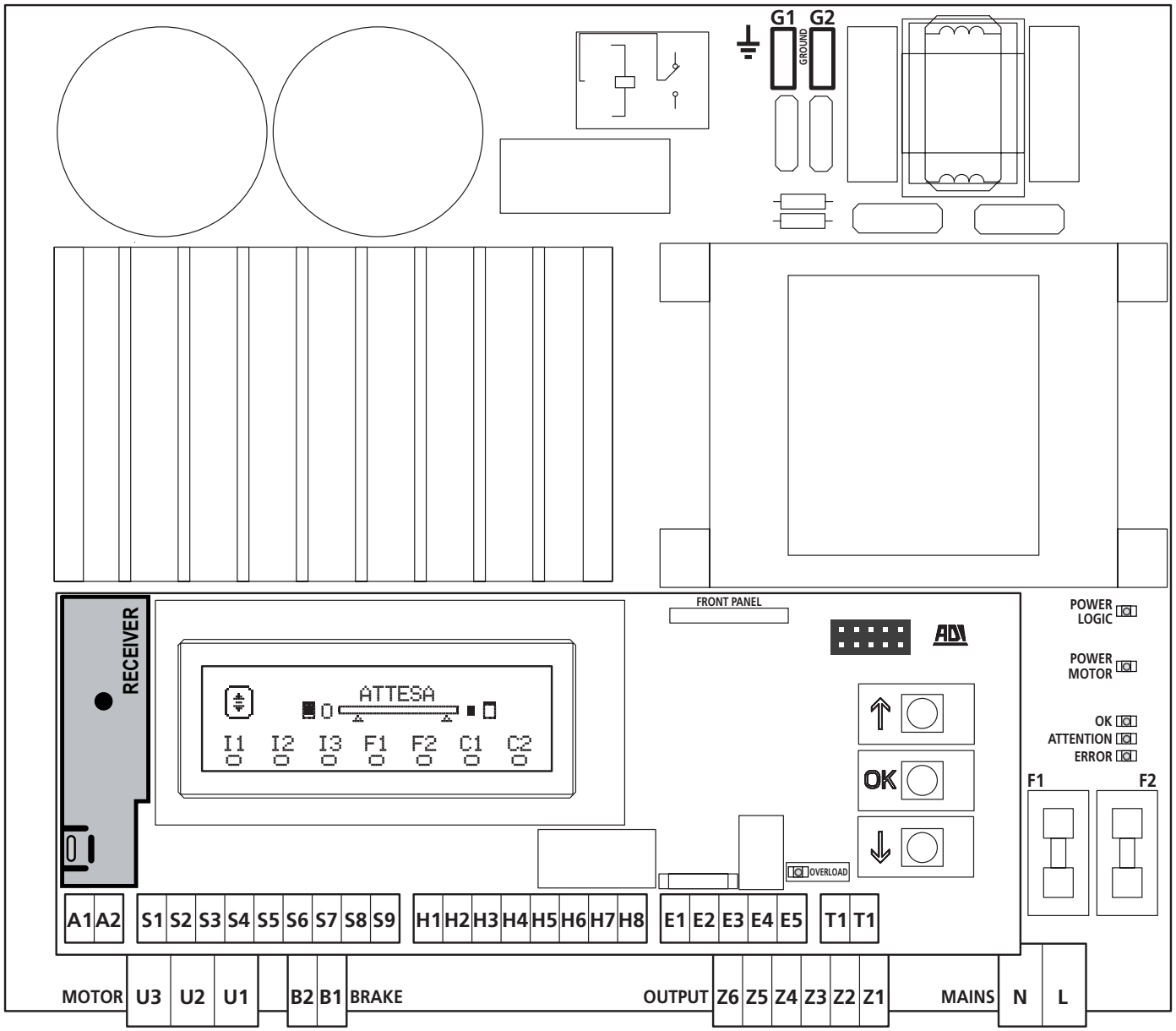
- The contact of F1 - F2 inputs is closed
- The contact of I1 - I2 - I3 - C1 - C2 inputs is open
- The gate is locked and in standby mode, waiting for a command

8 - ELECTRIC CONNECTIONS

TOP BOARD	
A1	Antenna shielding
A2	Antenna
S1	ING1 - configurable input to connect devices with N.O. contact
	ING1 parameter DEFAULT = START (activates the cycle)
S2	ING2 - configurable input to connect devices with N.O. contact
	ING2 parameter DEFAULT = ST.PE (partial opening)
S3	ING3 - configurable input to connect conventional devices with N.O. contact
	ING3 parameter DEFAULT = NO (no function)
S4	Common (-)
S5	Photocell 1. N.C. contact
	FOT1 parameter DEFAULT = NO (no function)
S6	Photocell 2. N.C. contact
	FOT2 parameter DEFAULT = APCH (enabled when opening and closing)
S7	Safety ribb. 1. N.C. contact
	COS1 parameter DEFAULT = NO (no function)
S8	Safety ribb. N.C. contact
	COS2 parameter DEFAULT = NO (no function)
S9	Common (-)
H1	Closing limit switch. N.C. contact
H2	Opening limit switch. N.C. contact
H3*	- Channel 1 encoder - Intermediate position switch
	ENCO parameter DEFAULT = NO (no function)
H4*	- Channel 2 encoder - Intermediate position switch
	ENCO parameter DEFAULT = NO (no function)
H5	Common (-)
H6**	- Open door warning light - 24Vdc blinker
	SPIA parameter DEFAULT = W.L. (open door warning light)
H7	- Common open door warning light - 12Vdc common power supply
H8	12Vdc power supply
E1 / E2	24Vac accessory power supply
E3 / E4	Common accessories power supply
E5	Photocell TX power supply (24Vac) for Functional test
T1 - T2	Emergency STOP

LOWER BOARD	
MOTOR U3-U2-U1	Motor
BRAKE B2-B1	REL3 relay options (16A - 250V)
	REL3 parameter DEFAULT = FR.NO (contact closed when the motor is running)
OUTPUT Z6-Z5	REL2 relay options (5A - 250V)
	REL2 parameter DEFAULT = NO (no function)
OUTPUT Z4-Z3	REL1 relay options (5A - 250V)
	REL1 parameter DEFAULT = LUCI (courtesy lights)
OUTPUT Z2-Z1	230V - 40W blinker
N - L	Mains power supply 230V - 50Hz
G1 - G2	Ground terminal for connection of the ground system and the motor

OTHER	
F1	T315mA. Power fuse
F2	F10A. Motor inverter fuse
ADI	ADI interface
RECEIVER	MR receiving modules
OVERLOAD	It indicates a 24Vac power overload of accessories
POWER LOGIC	It indicates that the control unit is powered
POWER MOTOR	It indicates the inverter driving the motor is powered
OK	GREEEN LED Flashes when the inverter driving the motor is in stand-by Turned on and fixed when the motor is running
ATTENTION	YELLOW LED Flashes when the power supply of the inverter driving the motor is charging Turned on and fixed when the emergency STOP is on
ERROR	RED LED Turned on and fixed when a fault of the inverter is detected



*** H3 - H4 :** the encoder uses the same terminals of the switches for the intermediate positions. If you are using an encoder the switches for intermediate positions cannot be used and vice versa.

**** H6 :** H6 terminal can be used for connecting a door open warning light or a blinker to 24Vdc.
Configure the SPIA parameter depending on the device connected

⚠ **WARNING: The installation of the unit, safety devices and accessories must be carried out when the power supply is disconnected.**

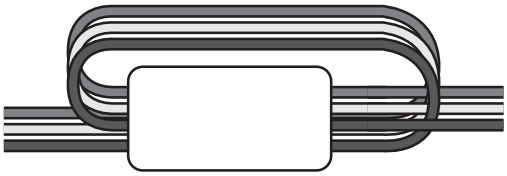
⚠ **WARNING: connect the grounding system to the ground terminal G1-G2**

9 - MOTOR

The CX HEAVY1 unit can drive a three-phase 230V motor with delta connection.

Connect the three phases of the motor to terminals **U1 - U2 - U3**

⚠ **CAUTION: introduce the cables of the motor in the ferrite and wrap as shown in figure**



⚠ Connect the grounding conductor of the motors to the grounding system of the power supply (the CX HEAVY1 unit is equipped with two dedicated terminals: G1 and G2).

Check whether the direction of movement of the motor is the correct one:

1. Power the unit on and move the door by activating the manual handling mode (Chapter 22)
2. If the direction of movement is wrong, reverse the connections of two terminals.
3. Disconnect the power supply

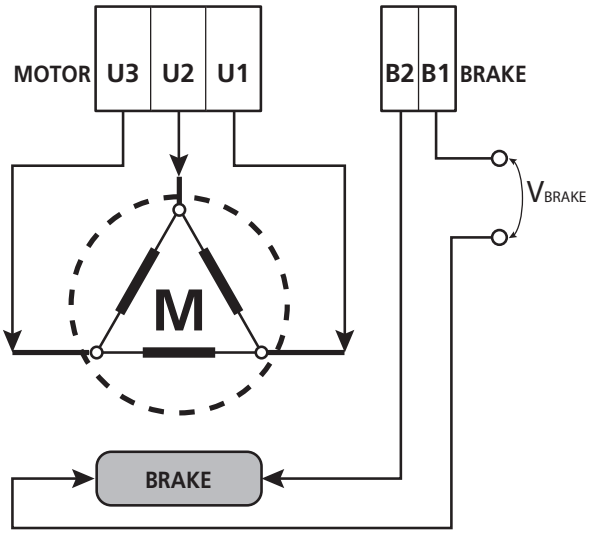
9.1 - ELECTRIC BRAKE

To make sure that the door does not move because of the weight, some motors are equipped with electric brake that must be released before driving the motor.

The unit is equipped with a relay connected to the terminals **B1-B2**, which can be used for this function.
The voltage required to operate the electric brake is different from engine to engine, so the relay only provides a dry contact, and must be connected to the appropriate supply voltage.

To use this feature you must set the parameter REL3, choosing between two modes:

1. FR.NO: the brake is powered to be released when the door must move. With the unit switched off the motor is locked.
2. FR.NC: the brake is powered to lock the door when it has to stay still. With the unit switched off the door is free.



9.2 - OPERATION OF THE MOTOR

The operating speed of the motor can be set with different values, depending on the various stages of the opening cycle.

Each opening cycle of the door consists of 5 stages:

1. Acceleration ramp

The speed of the door gradually increases from the minimum speed (5Hz) up to the operating one (value set in parameters VEL.A for opening and VEL.C for closing).

The time required to reach the normal operating speed is determined by the length of the acceleration ramp (ACC.A parameters for opening and ACC.C for closing).
The setting of the value to 0 will result in a short ramp and then the acceleration will be maximum, the setting of the value to 5 will result in a long ramp and then the acceleration will be minimal.

During this phase, the power can be increased up to 30% for more acceleration through the SPUN and SP.CH menus

2. Regular operating speed

At the end of the acceleration ramp, the door moves at the speed set in the parameters VEL.A (for opening) and VEL.C (for closing) up to the beginning of the slowdown phase.

In this phase, the motor is driven at 100% of its power.
The power supplied to the motor can be decreased by the parameters POT.A (for opening) and POT.C (for closing).

3. Slowdown

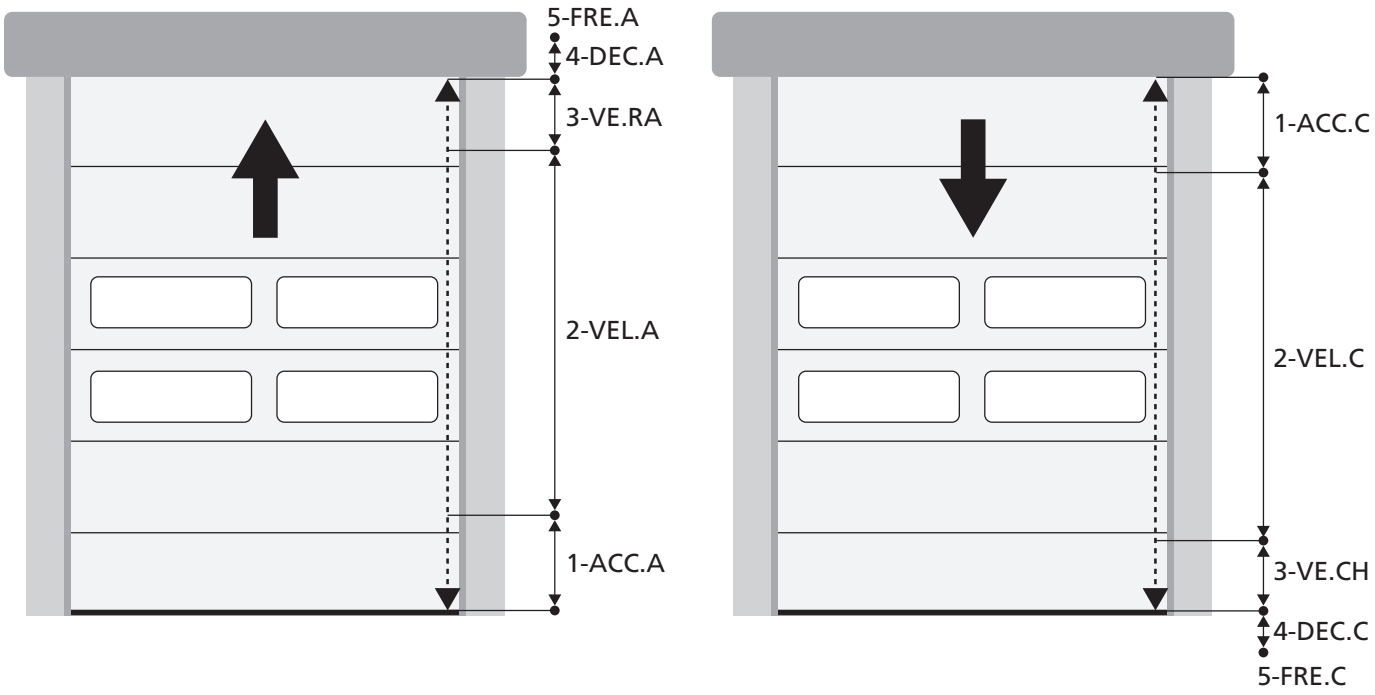
When the slowdown starting point is reached (Chapter 17), the unit gradually decreases the motor speed up to the value set in parameters VE.RA (for opening) and VE.RC (for closing)

4. Slowing ramp

Once the limit switch is reached, the speed of the door is gradually brought to zero. The duration of the slowing ramp can be set with the parameters DEC.A (for opening) and DEC.C (for closing)

5. Braking

When the motor speed reaches zero, the switch sends a brake command on the motor phases to ensure that the motor actually stops.
The intensity of the braking can be set using the parameters FRE.A (for opening) and FRE.C (for closing)



OPENING/CLOSING CYCLE PHASES	**OPENING** (parameters to be programmed)	**CLOSING** (parameters to be programmed)
1. Acceleration ramp	ACC.A	ACC.C
2. Regular operating speed	VEL.A	VEL.C
3. Slowdown	VE.RA	VE.RC
4. Slowing ramp	DEC.A	DEC.C
5. Braking	FRE.A	FRE.C

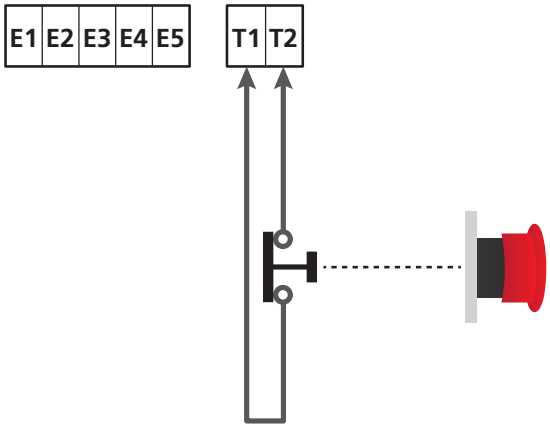
10 - EMERGENCY STOP

For added security it is OBLIGATORY to install a STOP switch that when pressed will immediately block automation.
The switch must have a normally closed contact, which opens in case of activation.

NOTE: terminals **T1** and **T2** are connected to allow start of automation before connecting the STOP switch.

Connect the cables of the STOP switch between terminals **T1** and **T2** of the unit.

⚠ **CAUTION: if the STOP input is not used, the terminals T1 and T2 must be bridged.**



11 - PHOTOCELLS

The unit has two inputs for photocells (normally closed contact), which can be independently enabled and associated with different functions:

Connect the N.C. output of the photocell 1 (FOT1) between terminals **S5** and **S9**
Connect the N.C. output of the photocell 2 (FOT2) between terminals **S6** and **S9**

⚠ **WARNING:**

- If you connect multiple photocells on the same terminal, the connection must be done in series: all photocells will have the same function.
- If you do not connect any photocell to terminal **S5**, the menu FOT1 must be set to NO.
- If you do not connect any photocell to terminal **S6**, the menu FOT2 must be set to NO.

Regardless of the selected function, if the photocells are activated during the pause, the pause time is reset using the value set in parameter CH.AU.
If you want to accelerate the closing of the door, after the transit, set a value for the parameter CH.TR lower than CH.AU's.
The pause time can be reset using the value of CH.TR.

11.1 - PHOTOCELL OPERATIONS

Photocell operations depend on the value programmed by parameters FOT1 and FOT2.

FUNCTION	VALUE
Active photocells when opening and closing	APCH
Masking function	MASK
Anti-dragging function	HOOK
Photocell disabled	NO

After selecting the value for parameters FOT1 and FOT2 you arrive at a secondary P.AP.F menu that allows the opening stroke value of the door where the photocells are active to be set.

NOTE: if you wish to activate the photocell only when closed, set parameter P.AP.F = 0

Below the behaviour of the door when the photocell is interrupted is described, based on having set parameter FOT1 or FOT2, and on the position of the door.
It is assumed that the P.AP.F parameter is set at 40%.

Figure A on the page to the side shows activation of the photocell while the door is found to be above 40% of the total height.

Figure B shows the same situation, but with the door below 40%.

Figure C shows activation of the photocell when the door has already activated the photocell masking switch, connected to terminals H3-H5.

1. Active photocells when opening and closing - APCH

- During closure of the door, if the photocell is interrupted the following scenarios can be checked based on the configuration of the P.AP.F parameter (e.g. 40%) and the position of the door:
  - In case A the door re-opens immediately
  - In case B the door shuts: when it is released the photocell re-opens completely.
- During opening of the door, if the photocell is interrupted the following scenarios can be checked based on the configuration of the P.AP.F parameter (e.g. 40%) and the position of the door:
  - In case A the photocell is bypassed
  - In case B the door shuts: when the photocell is released it starts opening again.
- Closed door, if the photocell is interrupted the start-up commands are rejected (by setting P.AP.F = 0 the photocell is bypassed and the start-up commands are accepted).
- Open door, if the photocell is interrupted the pause time is reloaded, and the closure commands are rejected.

2. Masking function - MASK

This function may serve with the curtain doors which, by billowing during closure, may interrupt the photocell beam.

⚠ A switch must be positioned immediately above the photocell and the N.C. contact must be connected to terminals **H3** and **H5**. When the contact opens the photocell is bypassed.

NOTE: configure the ENCO parameter on INTRM , EN.1C or FC.RA

The function of the doors is the same as point 1, but if the photocell ray is blocked during closure, when the door has already activated the switch attached between terminals H3-H5 (case C), the photocell is bypassed and the door continues to close.

3. Anti-dragging function - HOOK

Intervention of the photocell during the first part of the door opening indicates the possibility that the operator has accidentally remained hooked.
This function serves to avoid the operator being lifted up from the moving door.

Operation of the door is the same as point 1, but if the photocell ray is interrupted when the door begins opening or finishes closing (case B), the door closes.
To make it restart, the following operations must be carried out:

1. Release the photocell ray
2. Press the emergency stop button connected to terminals T1-T2 and rearm it
3. Send a start-up command

NOTE: if the emergency stop button is not installed, use of this function is not recommended

11.2 - POWER OF PHOTOCELLS AND AND FUNCTIONAL TEST

Photocells can be powered to 24 Vac (FIG.1) or 12 Vdc (FIG.2).
Regardless of the selected function, the photocells can be tested prior to each movement.
To enable the photocell test it is required to indicate the maximum duration of the test in the parameter FO.TE: if set to NO, the test is not carried out.

POWER SUPPLY 24VAC
Connect the power supply of photocell receivers between terminals **E1** and **E3 (COM)**.
Connect the power supply of photocell transmitters between terminals **E5** and **E3 (COM)**.

NOTE: to facilitate wiring the terminals for the AC power supply are double (E1 = E2 / E3 = E4)

WARNING: To carry out the test it is necessary that the transmitter power of the photocells is connected to the terminals **E5** and **E3 (COM)**

POWER SUPPLY 12VDC
The DC power supply is available between terminals **H8 (+)** and **H7 (-)**.

ATTENTION: In order to perform the test, one of the relay options must be used:

- REL1: connect the transmitter power supply between terminals **Z3 (+)** and **H7 (-)** and connect the terminal **H8** with the terminal **Z4**, set the REL1 parameter to TEST.
- REL2: connect the transmitter power supply between terminals **Z5 (+)** and **H7 (-)** and connect the terminal **H8** with the terminal **Z6**, set the REL2 parameter to TEST.

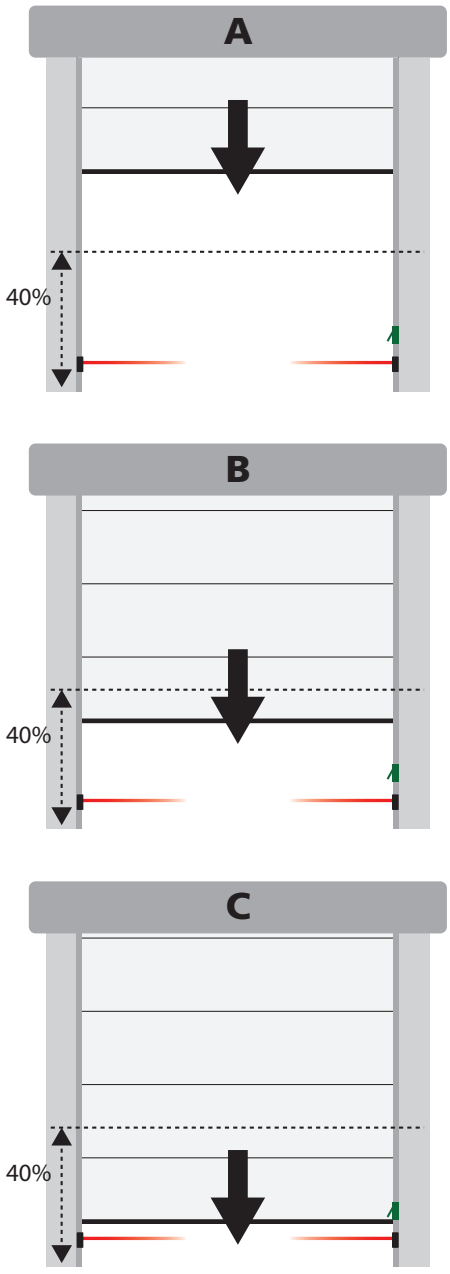
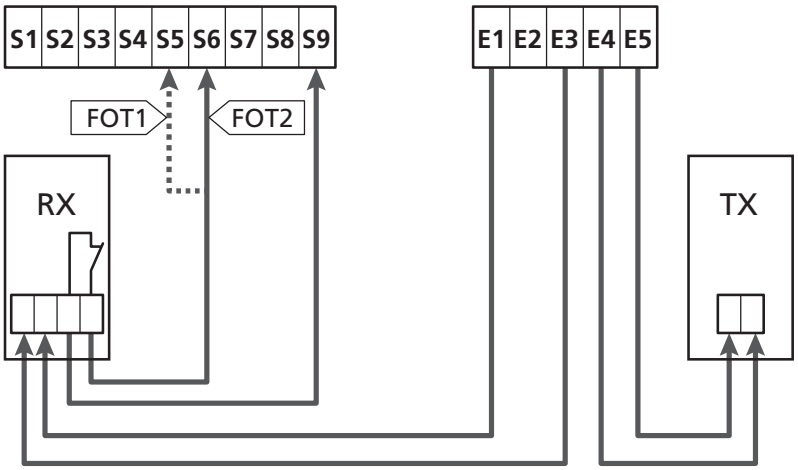


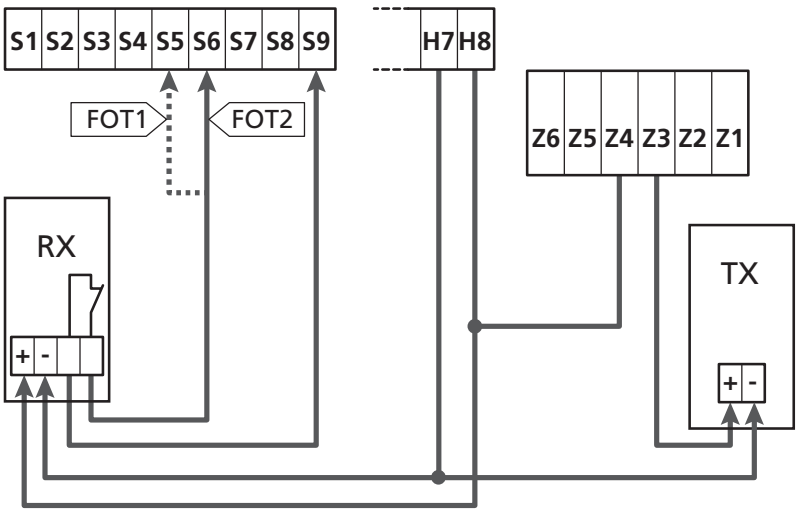
FIG. 1 24Vac



FOT1 parameter ⇨ DEFAULT = NO (no function)

FOT2 parameter ⇨ DEFAULT = APCH
(enabled when opening and closing)

FIG. 2 12Vdc



12 - DETECTION OF OBSTACLES (AMPEROMETRIC SENSOR, ENCODER, SAFETY RIBBONS)

The presence of an obstacle that prevents the movement of the door can be detected in several ways:

1. **Amperometric sensor**
2. **Encoder**
3. **Safety ribbons**

Regardless of the device that detected the obstacle, the reaction of the unit depends on the value set for the parameter OST.A for obstacles during opening and OST.C for obstacles during closing:

- If the value is 0.0", the port is simply stopped
- If the value ranges between 0.5" and 4.5" the door reverses the movement for the time set
- If the value is FULL the door re-closes or re-opens completely.

⚠ **Following detection of an obstacle during closure, the door reopens and the behaviour of the power centre depends on various parameters, with the following priority:**

1. If the clock mode is active (MODE = OROL), counting of the pause time for automatic closure is activated.
2. If the door is closed without withdrawing (OST.C = 0), or if closure after the obstacle is manual (CH.OS = MAN), counting of the pause time for automatic closure is NOT activated and the door will start moving again after the next start-up command is given
3. If closure after the obstacle is automatic (CH.OS = AUTO), the centre will behave according to the settings of the CH.AU parameter

12.1 - AMPEROMETRIC SENSOR

An unexpected increase in the consumption of current by the motor is meant as the result of the presence of an obstacle.
This feature is automatic and requires no settings.

12.2 - ENCODER

The unit detects the presence of an obstacle when the encoder indicates that the motor is turning at a speed lower than the set one (Chapter 18).

The sensitivity of the encoder must be set via the S.ENC parameter: the higher the value, the more the unit will be responsive to small drops in speed. If you do not want the encoder to detect obstacles, set to 0.

12.3 - SAFETY RIBBONS

The unit detects the presence of an obstacle when a safety ribbon is pressed.

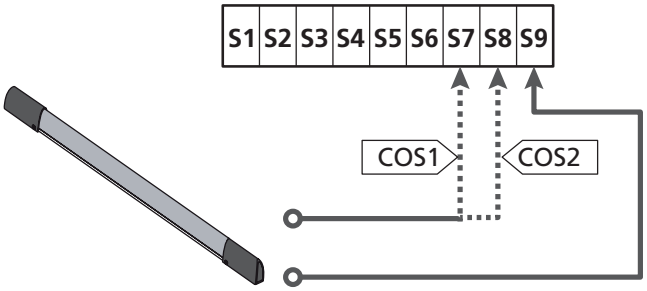
The unit has two inputs for the ribbons, which can be independently enabled and associated with different types of function.

Connect safety ribbon 1 (COS1) to terminals **S7** and **S9** and configure parameter COS1 to activate entry
Connect safety ribbon 2 (COS2) to terminals **S8** and **S9** and configure parameter COS2 to activate entry

- If you set AP the operation of the ribbon is detected only during opening and the unit will operate according to the settings of the OST.A parameter
- If you set CH the operation of the ribbon is detected only during closing and the unit will operate according to the settings of the parameter OST.C
- If you set APCH the operation of ribbon is detected during the opening and closing:
  - when opening the control unit will operate according to the settings of the parameter OST.A
  - when closing the control unit will operate according to the settings of the parameter OST.C

⚠ **WARNING:**

- If you do not connect any ribbon to the terminal **S7**, the parameter COS1 must be set to NO.
- If you do not connect any ribbon to the terminal **S8**, the parameter COS2 must be set to NO.



COS1 parameter ⇨ DEFAULT = NO (no function)

COS2 parameter ⇨ DEFAULT = NO (no function)

The control unit can operate with different types of ribbons; depending on the type of ribbon used it is required to correctly set the parameter CO.TE

NOTE: You can not use different types of ribbons on two COS1 and COS2 inputs.

a. Mechanical ribbons with normally closed contact
Set the parameter CO.TE with the value NO: not test is run before the movements.

b. Optical ribbons
Set the parameter CO.TE with the value FOTO: before any movement a functional test similar to that of photocells is carried out. If you do not want the test to be run, set NO.

Connect the power supply of the optical ribbons following the instructions described in chapter 11.2

c. Ribbon with resistive rubber
Set the parameter CO.TE with the value RESI: the unit is expected to measure an impedance equal to 8.2 kohms, and an alarm is triggered if a lower impedance (pressed ribbon) or a higher impedance (interrupted wire) are detected, therefore it is not necessary to run the test before the movements.

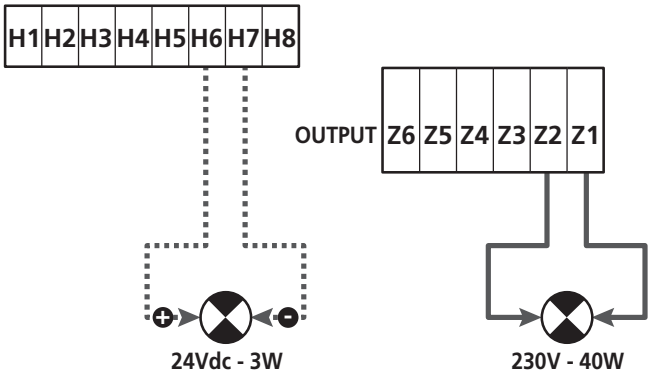
⚠ **WARNING:** If you connect multiple ribbons to the same terminal, the connection must be made in series, except in the case of resistive ribbons which which must be connected in parallel.

13 - BLINKER

The CX HEAVY1 unit has two outputs for the management of the blinker:

1. **Z1** and **Z2** terminal for a 230V - 40W blinker with internal intermittence
2. **H6 (+)** and **H7 (-)** terminals for a 24Vdc - 3W blinker.
   Using a 24V blinker you need to set the SPIA parameter with the value FLASH (DEFAULT = W.L.).

   NOTE: If these terminals are used for this function it will not be possible to connect a open door warning light.



The normal operation of the blinker involves its activation during both opening and closing of the door.

The other options available are:

- Enabled blinker set to pause: you need to set the value SI for the parameter LP.PA
- Pre-flashing: the blinker is activated before the beginning of the opening and closing phases for a time that can be set via the parameter T.PRE
- Pre-flashing during closing: the blinker is activated before the closing phase for a time other than that set for opening. The time can be set via the parameter T.PCH

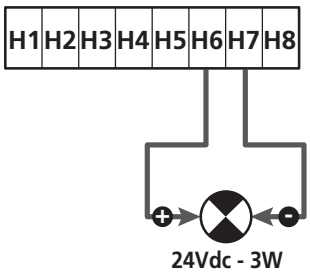
14 - OPEN DOOR WARNING LIGHT

The unit is fitted with a 24Vdc - 3W output that allows the connection of a warning light.

The open door warning light shows in real time the status of the door, the type of flashing indicates the four possible conditions.
- DOOR STOPPED (CLOSED): the light is off
- DOOR IN PAUSE MODE (OPEN): the light is on and fixed
- OPENING DOOR: the light flashes slowly (2Hz)
- CLOSING DOOR: the light flashes fast (4Hz)

Connect the cables of the warning light to terminals **H6 (+)** and **H7 (-)**

NOTE: if these terminals are used for this function it will not be possible to connect a 24Vdc blinker

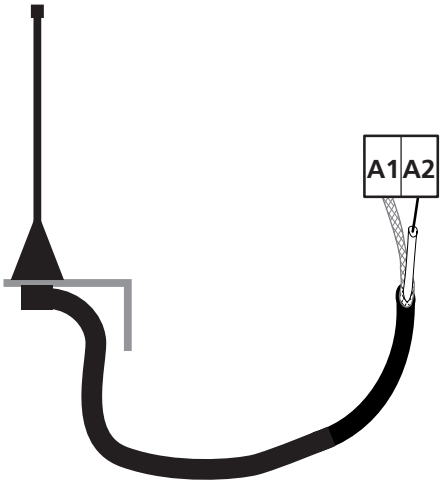


SPIA parameter a DEFAULT = W.L. (open door warning light)

15 - EXTERNAL ANTENNA

To guarantee the maximal radio range radio it is advisable to use the external antenna.

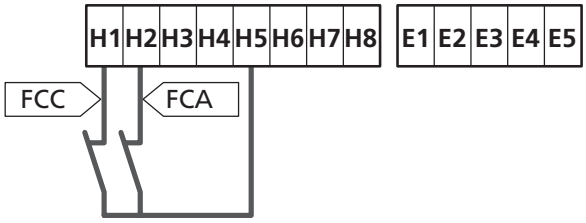
Connect the shield of the antenna to the terminal **A1** and the hot pole to the terminal **A2**.



16 - LIMIT SWITCH

For proper operation of the unit, it is necessary to connect two limit switches with a normally closed contact, that defines the travel of the door during opening and closing.

Connect the opening limit switch (FCA) between terminals **H2** and **H5**.
Connect the closing limit switch (FCC) between terminals **H1** and **H5**.



The position of the limit switches is stored during the learning procedure of the travel and during normal operation of the door the unit expects to detect the limit switches in specific positions.

⚠ If in some cases the door does not reach the position needed to activate the limit switch, you can set an additional time by configuring the parameter T.ADD: if the limit switches is not activated the door continues its movement up to the end of the set time.

17 - INTERMEDIATE POSITIONS

Some functions of the unit are activated at some intermediate positions of the door.

The intermediate positions can be detected in two ways:

- Additional switches connected to terminals **H3** and **H4**
- Programming of some parameters that are based on a percentage of the total travel

17.1 - SWITCHES

The activation of additional switches can control the following operations:

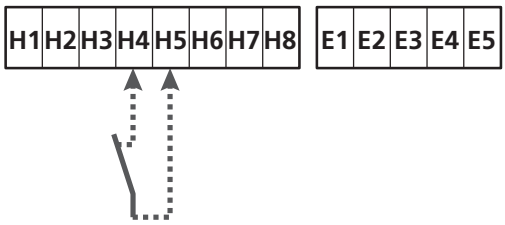
1. Start of slowdown

- During the opening phase the slowdown starts when the contact between the terminals **H4** and **H5** opens (configure the parameter ENCO on FC.RA).
- During the closing phase the slowdown starts when the contact between the terminals **H3** and **H5** opens (configure the parameter ENCO on FC.RA).

NOTE: The parameter FC.RA involves setting a maximum time limit within which the limit switch must activate after the slowdown is started. When the time set is run the door stops. If set to NO, the travel continues until reaching the limit switch.

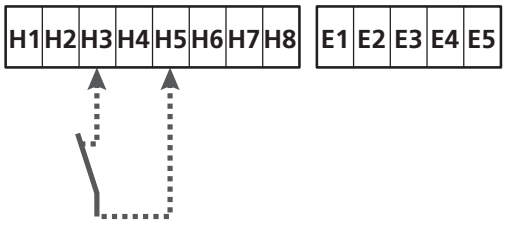
2. Partial opening position

The partial opening procedure ends when the contact between the terminals **H4** and **H5** opens (configure the parameter ENCO on INTRM).



3. Masked operation of the photocell

The photocell, if activated by setting the FOT1 or FOT2 parameter on MASK, is blocked when the contact between terminals **H3** and **H5** is open (configure the parameter ENCO on INTRM or FC.RA or EN.1C)



ENCO parameter ⇨ DEFAULT = NO (no function)

17.2 - PARAMETERS TRAVEL PERCENTAGE)

Some parameters of the programming menu are based on a percentage of the total travel of the door.

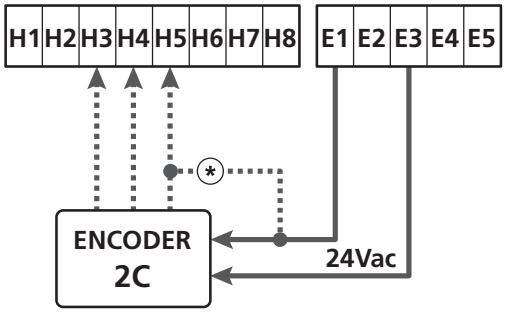
⚠ **ATTENTION**: to use these parameters it is necessary to carry out the learning procedure of the travel.

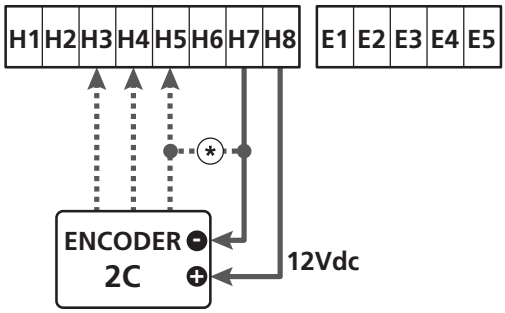
According to the configuration of these parameters the following operations can be controlled:

1. Start of slowdown

- During the opening phase the slowdown starts when the door reaches the final part of the travel: such a final part is determined by a percentage of the total travel and is set using the parameter RAL.A
- During the closing phase the slowdown starts when the door reaches the final part of the travel: such a final part is determined by a percentage of the total travel and is set using the parameter RAL.C

2. Partial opening position
The partial opening operation ends when the door exceeds the percentage of travel set by the parameter P.APP





18 - ENCODER

The position of the door can be detected much more accurately if an incremental decoder is mounted on the motor.

⚠ **WARNING: It is essential to run the learning phase of the travel (chapter 26.3) to use this feature**

NOTE: The encoder uses the same terminals of the switches for the intermediate positions. If you are using an encoder you cannot use the switches for intermediate positions.

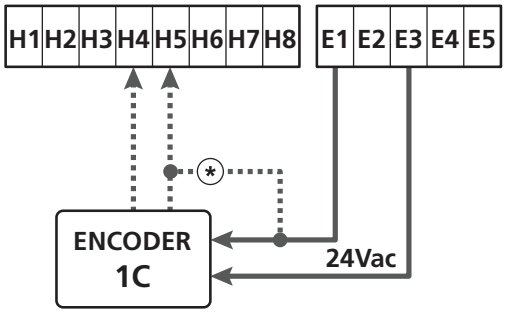
It is possible to use two types of encoder:

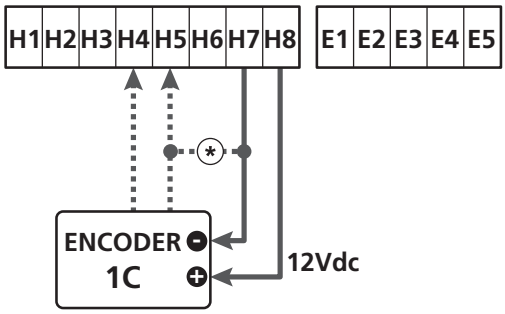
- Two-channel encoder: the direction of movement of the door is indicated by the encoder itself.
  - Connect the two channels on terminals **H3** and **H4** (the connection order is not important)
  - Connect the common on the terminal **H5**
  - Set the menu ENCO on EN.2C
- One-channel encoder: the direction of movement is determined by the command given to the inverter through the unit.
  - Connect the channel of the encoder on terminal **H4**
  - Connect the common on the terminal **H5**
  - Set the menu ENCO on EN.1C

If the encoder is powered to 24Vac connect the power supply to terminals **E1** and **E3**.

If the encoder is powered to 12Vdc connect the power supply to terminals **H7 (-)** and **H8 (+)**.

*** NOTE**: if the encoder has a single wire for the negative pole of the power supply and the common of outputs, connect the terminal **H5** to the negative pole of the power supply (terminal **H7** or one of the terminals **E1-E3**)





ENCO parameter ⇨ DEFAULT = NO (no function)

19 - CONTROL MODE FROM TERMINAL BOARD

To control the door through external devices you need have to connect devices with normally open contact between terminals **S1-S4**, **S2-S4** or **S3-S4** and set for each the desired function via the parameters ING1, ING2 and ING3.

The functions available are:

- **Start** (START value to be set)
  This function corresponds to a generic activation command and controls the following operations:

  - When the door is closed, an opening cycle starts

  - When the door is opening depends on the setting of parameter ST.AP:
    NO: command not active
    CHIU: the door closes immediately
    PAUS: the door stops (if the automatic closing mode is on the pause time counting starts)

  - When the door is open and the pause the counting is not active, the closing starts

  - When the door is open and the pause time counting is active, depends on the menu ST.PA:
    NO: command not active
    CHIU: closing starts
    PAUS: reset the pause time counting

  - When the door is closing depends on the menu ST.CH:
    APRE: the door re-opens
    STOP: the door will stop and the cycle is considered finished

  - When the door is stopped due to a stop command or the detection of an obstacle, a command Start restarts the door in the same direction as it was before being stopped. If the parameter STOP is set to INVE the door again moves, but in the opposite direction.

  - When the door began a partial opening cycle commands a total opening

- **Partial start** (value to be set ST.PE)
  This function corresponds to a partial opening command and controls the following operations:

  - When the door is closed, a partial opening cycle starts; the door opens only for the percentage of travel set in the parameter P.APP, or until the contact connected to terminal **H4** opens (ENCO parameter set on INTRM)

    Once you start the cycle, the functions are those described the START command.

  - When the door began a normal opening cycle this command has no effect.

- **Stop** (STOP value to be set)
  This function corresponds to a stop command: it is the only case in which the connected device must work with normally closed contact; it can be used to stop the door and hold it in a locked position.

  The operation of the STOP command depends on the value set for the parameter STOP:

  - PROS: the door stops in its current position and as long as the contact is open no command is effective.
    Once the contact is closed again, any start command restarts the door that follows its previous direction.

  - INVE: the door stops in its current position and as long as the contact is open no command is effective.
    Once the contact is closed again, any start command restarts the door in the opposite direction.

  - APRE: the door stops any movement and opens completely. If an active safety device prevents the opening, the door does not move until the device involved is deactivated, then it opens. So the door remains locked in the open position until the STOP contact closes again.

  - CHIU: the door does not stop the movement immediately, but when it stops it closes.
    If a safety device causes its re-opening, the operation is carried out, then again closing is commanded.
    When the door is closed, it remains locked in this position until the STOP contact is closed again.

- **Always opens** (APRE value to be set)
  Always controls the opening, regardless of the position of the door, if the door is already open, it is ineffective.
  NOTE: This command is not available for the input ING3.

- **Always closes** (CHIU value to be set)
  Always control the closing: if the door is already closed it is ineffective.
  NOTE: This command is not available for the input ING3.

- **Force dead man mode** (PRES value to be set)
  This command is available only on the input ING3: when the contact is closed the unit is operating in dead man mode.

20 - REMOTE CONTROL MODE

The CX HEAVY1 unit is fitted for the connection of an MR series receiver. The receiver has 4 channels, which can be associated with the buttons on the remote control and can have the following functions:

- Channels 1 and 2 trigger the opening cycle according to the setting of the parameter RX:
  START: channel 1 is equivalent to START command and channel 2 to PARTIAL START command
  APCH: channel 1 is equivalent to the command OPEN and channel 2 to the command CLOSE

- Channel 3 is equivalent to the STOP command

- Channel 4 operates according to the setting of the parameter AUX:
  MON: monostable. The contact of an option relay (REL1-2-3) set as courtesy light is kept closed as long as the channel is active.
  BIST: bistable. The contact of an option relay (REL1-2-3) set as courtesy light is switched every time the channel is activated.
  TIM: timer. The contact of an option relay (REL1-2-3) set as courtesy light is kept closed for the time set. If the channel is again activated, the time count is reset.
  TOUT: time out. The contact of an option relay (REL1-2-3) set as courtesy light is kept closed for the set time.
  If the channel is again activated, the relay contact is opened.
  PRES: force dead man mode. At each activation of the channel the unit switches between the operating mode set and the dead man mode.

21 - OPERATING MODES

The operating mode of controls depends on the settings of the parameter MODE.

- **Pulse mode** (MODE = STAN)
  A command opens the door.
  The manoeuvre ends when the limit switch is activated, when another command is received or when a safety device is activated. When the automatic closing is enabled the door closes after the pause time set (parameter CH.AU)

- **Clock mode** (MODE = CLOCK)
  This function allows to delay the opening of the door through an external clock.
  The operation is identical to the mode STAN, but the pause time count is suspended until the contact of the device connected to an input configured as STRT, ST.PE or APRE is closed.
  To use this feature, you must enable the automatic closing (parameter CH.AU)

- **Dead man mode** (MODE = PRES)
  The command must be kept active for the entire duration of the movement of the door; when the command is suspended the door stops immediately. In this mode, the START command launches alternately the opening and closing.

- **Mixed mode** (MODE = S.PRE)
  The opening movements are controlled by pulses and the closing ones in dead man mode.
  A door that moves in dead man mode stops if a safety device is activated; it is not possible to reverse the movement of the door as during normal operation.

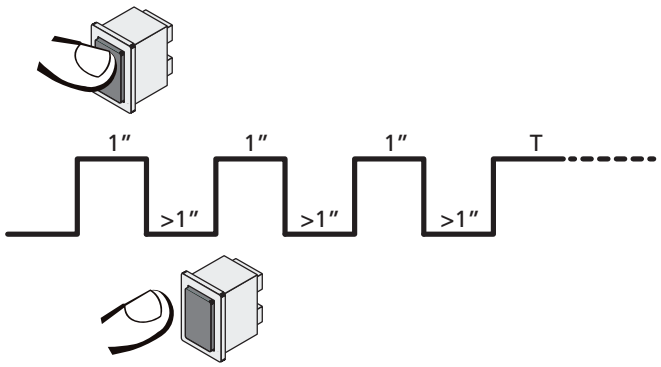
22 - SPECIAL OPERATING MODES

The CX HEAVY1 unit has some special operating modes, to be used only in special cases.

Dead man mode
The dead man mode can be temporarily forced through a command on terminal **S3**: when the contact is closed, the mode is activated (the parameter ING3 must be set to PRES).

Emergency dead man mode
This operational mode can be used to move the door in DEAD MAN mode in particular cases, such as installation/maintenance or in the case of malfunctioning of photocell, edge, limit switches or encoder.

To activate the function the START command must be pressed 3 times (presses must last at least 1 second; the pause between commands must last at least 1 second).



The fourth START command activates the door in MAN PRESENT mode. To move the door keep the START command pressed for the duration of the operation (time T).
The function will automatically turn off after 10 seconds of inactivity of the gate.

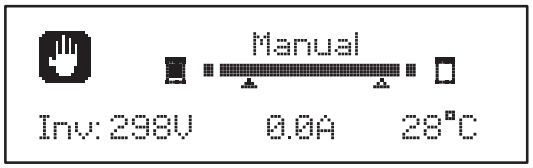
⚠ **WARNING**: during the emergency movement the safety device considered defective is not taken into account: all its activation will be ignored

Manual handling
During installation or maintenance, you can move the door through the buttons ↑ and ↓ placed next to the display.

The operation mode is always dead man:
↑ opens and ↓ closes the door.
The speed of the door is determined by the value set for the parameter VEL.M

⚠ **WARNING: all the safety devices are ignored (except for the Emergency STOP), then it is the operator's responsibility to make sure that there are no obstacles on the travel path of the door.**

During manual handling, the display shows some information on the operation of the inverter: voltage, current on the motor and temperature of the driver.



NOTE: It is possible to read this information without moving the door with a quick pressure on one of two ↑ and ↓ buttons.

The manual handling mode remains active for 1 minute, then the unit returns to normal operation.
To immediately return to normal operation, press the **OK** button for 1 second.

23 - OPTION RELAY OUTPUT

The unit has three relay outputs with normally open dry contact that can be configured with different functions through the parameters REL1, REL2 and REL3

The outputs REL1 and REL2 are for generic use (maximum current 5A - 250V) while the output REL3 is primarily intended for driving the electronic brake of the motor (16A - 250V).

In this table are the available functions and the value to set for the parameters REL1, REL2 and REL3

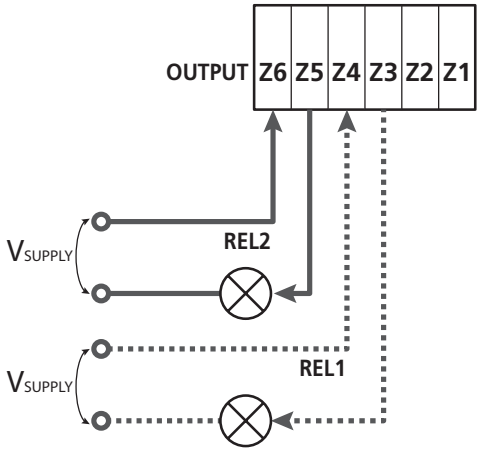
FUNCTION	REL1	REL2	REL3	VALUE
Lock	•			SERR
Opening command	•			APRE
Closing command		•		CHIU
Service reporting		•		SERV
Electric brake control			•	FR.NO FR.NC
Safety devices test	•	•		TEST
Custom	•	•		CUST
Courtesy light	•	•	•	LUCI

Connect the device controlled by the REL1 output to terminals **Z4** - **Z3**
Connect the device controlled by the REL2 output to terminals **Z6** - **Z5**
Connect the device controlled by the REL3 output to terminals **B2** - **B1**

⚠ **The relay outputs act as simple switches and do not provide any power supply.**

The power supply to the device VSUPPLY can be provided by the unit or the line.

If you use the power supply of accessories, 24 Vac or 12 Vdc, make sure that the current required is compatible with that supplied by the unit.



REL1 parameter ⇨ DEFAULT = LUCI (courtesy light)

REL2 parameter ⇨ DEFAULT = NO (no function)

23.1 - COURTESY LIGHT

The courtesy lights can be operated in the following ways:

1. **Timer control**
   The lights turn on when the opening is commanded and stay on for the time set.
   Select the value T.LUC in the parameter LUCI and set the desired time.

2. **Moving + timer**
   The lights turn on when the opening is commanded; when the door stops (open or closed) the lights stay on for the time set.
   Select the value CICL in the parameter LUCI and set the desired time.

3. **Timer by AUX control**
   The lights are activated by a remote control stored on channel 4 of the MR receiver and stay on for the time set.
   Select the value TIM in the parameter AUX and set the desired time.

4. **Light monostable**
   The lights are activated by a remote control stored on channel 4 on the receiver MR and stay on for the whole duration of the command transmission.
   Select the value MONO in the parameter AUX

5. **Light bistable**
   The lights are activated by a remote control stored on channel 4 of the receiver MR: a first command turns on the lights, a second command turns them off.
   Select the value BIST in the parameter AUX

6. **Bistable + timeout**
   The lights are activated by a remote control stored on channel 4 of the MR receiver and stay on for the time set.
   A second transmission before time runs out turns off the lights. Select the value TOUT in the parameter AUX and set the desired time.

23.2 - LOCK

The relay is closed for three seconds each time a new opening manoeuvre is started.

The operation of the electric lock can be supported with the following functions:

1. **Backlash**: before start opening the door is controlled to close for a short time to facilitate the unlocking of a lock.
   To activate this function, set the backlash time through the T.AR

2. **Final closure stroke**: after closing the door is still driven for a short time at full power to facilitate the enabling of a lock.
   To activate this function, set the final closure stroke through the parameter T.CVE

23.3 - SERVICE REPORTING
The relay is activated when the cycle count set for the Service request reaches (Chapter 26.4): in this way it is possible to activate a warning light.

23.4 - OPENING COMMAND
The relay is activated when the motor is controlled when opening: in this way it is possible to activate secondary motors or send synchronized signals with the movement of the main motor.

23.5 -CLOSING COMMAND
The relay is activated when the motor is controlled when closing: in this way it is possible to activate secondary motors or send synchronized signals with the movement of the main motor.

23.6 - SAFETY DEVICE TESTS
The relay is activated simultaneously with the relay dedicated to the test of photocells: in this way it is possible to perform the function test on devices that DO NOT use the 24 Vac power supply on terminal **E5**, for example devices powered to 12 Vdc.

23.7- ELECTRIC BRAKE CONTROL
The relay is activated to control the electric brake of the motor (chapter 9.1)

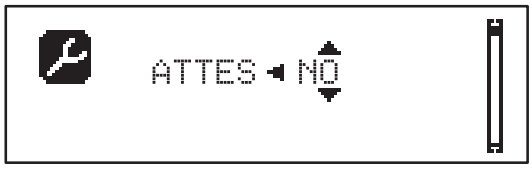
23.8 - CUSTOM
This feature is intended primarily for connecting warning light devices.

Programming this parameter allows you to define the state of the relay options selected in these 5 situations:

WAITI:	closed door, unit waiting for command
OPEN:	opening door
CLOSE:	closing door
PAUSE:	door open and running count of the automatic closing time
STOP:	door open without counting the automatic closing time

To program proceed as follows:

1. Select the value CUST and press **OK**: the display shows



2. Using the buttons h and i select the status of the relay in this situation:
NO: relay contact open
SI: relay contact closed

3. Press the **OK** button to scroll through the available 5 situations and select the status of the relay through the buttons ↑ and ↓

24 - ADI INTERFACE

The ADI (Additional Devices Interface) interface of the control unit allows the connection to V2 optional modules.

Refer to V2 catalogue or to the technical sheets to see which optional modules with ADI interface are available for this control unit.

⚠ **WARNING: Please read the instructions of each single module to install the optional modules.**

For some devices, it is possible to configure the mode for interfacing with the control unit; in addition, it is necessary to enable the interface so that the control unit can process the signals arriving from the ADI device.

Please refer to the I.ADI programming menu to enable the ADI interface and access the device configuration menu.

When the device is enabled, the display shows the word Adi at the top right:



ADI devices use the display of the control unit to issue alarms or display the configuration of the control unit:

- PHOTOCELL ALARM - the segment at the top turns on: the door stops, when the alarm ceases the door restart in opening.
- RIBBON ALARM - The bottom segment turns on: the door reverses for 3 seconds.
- STOP ALARM - The lowest segment turns on: the door stops and cannot restart until the alarm is disabled.
- SLAVE - When you use a SYNCHRO module instead of the word Adi, SLV turns on to indicate when the unit is configured as SLAVE

25 - CONTROL UNIT POWER SUPPLY

After connecting all the devices you can proceed with the connection of the control unit.

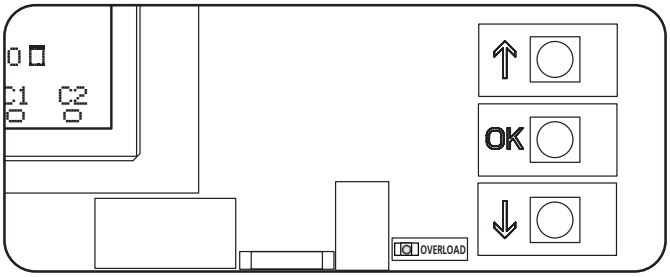
The control unit must be fed by a 230V - 50Hz electric line, protected by a differential magnetothermal switch complying with the law provisions in force.

Connect power supply cables to terminals **L** and **N** of the control unit.

Connect the grounding system to one of the two ground terminals **G1** and **G2**.

26 - PROGRAMMING

The programming of the functions and times of the unit is carried out through the configuration menus, accessible and searchable through the 3 buttons ↑, ↓ and **OK** placed next to the display of the unit.



- By pressing **OK** button you can access the programming and configuration menus of each individual parameters
- By pressing the button ↓ you will switch to the next item
- By pressing the button ↑ you return to the previous item

⚠ WARNING: Outside of the configuration menu, the buttons ↑ and ↓ activate the motor in DEAD MAN mode. The button ↑ activates the command OPEN and the button ↓ activates the command CLOSE.

⚠ These commands activate the motor without taking into account the status of safety devices.

26.1 - ACCESS TO MAIN PROGRAMMING MENUS

1. Press and hold the OK button until the display shows the desired menu

PRG	Programming of the operating parameters (Chapter 26.5)
CNT	Cycle Counter (Chapter 26.4)
SET	Learning of the travel (Chapter 26.3)
DEF	Loading DEFAULT parameters (Chapter 26.2)

2. Release the **OK** button: the display shows the first item in the sub-men or the options available for the function.

PRG	MODE
CNT	Total / Service
SET	Learn / Exit
DEF	Load default / Exit

3. Using the buttons ↑ ↓ and **OK** select and edit the parameters needed

⚠ CAUTION: if you do not carry out any operation for more than 1 minute, the unit exits from the programming mode, without storing the settings and changes made are lost.

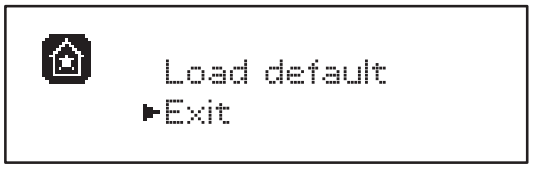
26.2 - LOADING DEFAULT PARAMETERS

If necessary, you can reset all parameters to their DEFAULT values (see table on page 48).

⚠ WARNING: This procedure involves the loss of all customized parameters.

1. Press and hold the **OK** button until the display shows DEF

2. Release the **OK** button: the display shows



3. To exit the function, select Exit using the ↑ ↓ and press **OK** to confirm

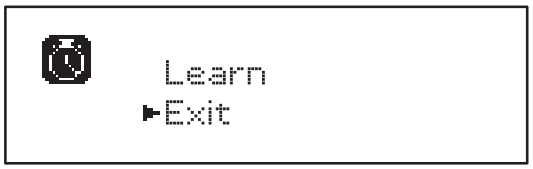
4. To load the DEFAULT data select Load default using the ↑ ↓ buttons and press **OK**.
Then select Yes and press **OK**: all parameters are re-written with their DEFAULT value, the unit leaves the programming mode and the display shows the control panel

26.3 - TRAVEL LEARNING

This function allows you to store the limit switches.
The recorded values are useful for all the programming parameters that are based on a percentage of the travel.

1. Press and hold the **OK** button until the display shows SET

2. Release the **OK** button: the display shows



3. To exit the function, select Exit using the ↑ ↓ and press **OK** to confirm

4. To start the learning procedure of the travel select Learn through the buttons ↑ and ↓ and press then **OK**

5. Press and hold the ↑ button to open the door completely

6. Press and hold the button ↓ to close the door completely

7. Press the **OK** button to store the travel and exit the function

26.4 - READING THE CYCLE COUNTER

The CX HEAVY1 unit takes into account the completed opening cycles of the door and, if requested, reports the need for maintenance after a fixed number of manoeuvres.

There are two counters available:
- Non resettable counter of the opening cycles completed (total)
- Counter showing the cycles to be performed before the next maintenance (service)
  This second counter can be programmed with the desired number of cycles.

1. Press and hold the **OK** button until the display shows CNT

2. Release the **OK** button: the display shows



3. To activate the maintenance request select the Service function and press **OK**

4. Set the desired number of cycles (the step consists of 250 cycles)

5. Press **OK** to confirm the display shows the control panel

When the Service counter reaches 0 the unit sends the request for maintenance, that can also be signalled in two ways:

1. Warning light: the option relay REL2 closes to activate a warning light (Chapter 23)

2. Pre-flashing: if you do not connect a dedicated warning light the unit indicates the request for service through an additional pre-flashing of 5 seconds at the beginning of each opening cycle

To disable the signalling it is necessary to access the Service counter menu and again program the number of cycles after which the maintenance will be required.

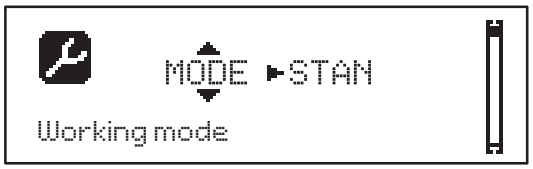
If set to 0, the signalling function for the request for service is disabled and the signal is not repeated.

⚠ **WARNING: maintenance operations should only be carried out by qualified staff.**

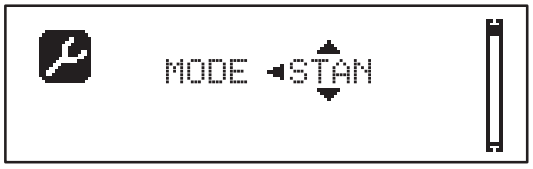
26.5 - PROGRAMMAZIONE DEI PARAMETRI DI FUNZIONAMENTO

1. Press and hold the **OK** button until the display shows PRG

2. Release the **OK** button: the display shows:
- the first parameter of the programming menu: MODE
- the currently set value (STAN)
- a scroll bar useful for detecting the position of the parameter within the programming menu
- a message describing the parameter

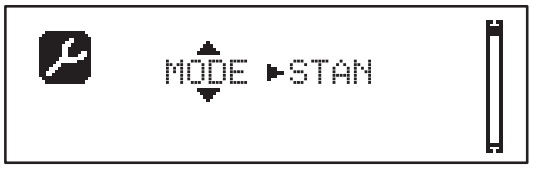


3. To change the value of this parameter press the **OK** button: the arrows move to the the value



4. Select the desired value using the buttons ↑ and ↓

5. Press the **OK** button to confirm and exit the parameter. The display shows again:



6. Using the buttons ↑ ↓ and **OK** select and edit the necessary parameters: the following pages show a table with all programming values, the selectable values. the values set by DEFAULT and a short description of the function.

NOTE: If you hold the buttons ↑ or ↓ the items of the configuration menu scroll in a fast way, until the item FINE is displayed

⚠ The last menu item FINE stores the changes made, exit the programming menu and return to normal operation of the system.

To avoid losing your configuration is mandatory to exit from the programming mode through this menu item.

⚠ **CAUTION: if you do not carry out any operation for more than 1 minute, the unit exits from the programming mode, without storing the settings and changes made are lost.**

26.6 - TABLE OF PROGRAMMING PARAMETERS

PARAMETER	VALUE	SUBMENU	DESCRIPTION	DEFAULT	CHAPTER	MEMO
MODE			**Working mode**	STAN	21	
	STAN		Standard			
	PRES		Dead man			
	S.PRE		Mixed			
	OROL		Timer			
P.APP	0-100%		**Partial opening**	50%	17.2	
T.PRE	0.5"-10.0"		**Pre-blinking time before opening**	NO	13	
	NO		Function disabled			
T.PCH	0.5"-10.0"		**Pre-blinking time before closing**	1.0"	13	
	NO		Pre-flashing during closing equal to T.PRE			
POT.A	30-100%		**Motor power during opening phase**	100%	9	
POT.C	30-100%		**Motor power during closing phase**	80%	9	
VEL.A	5-99HZ		**Normal speed during opening phase**	50	9	
VEL.C	5-99HZ		**Normal speed during closing phase**	50	9	
VEL.RA	5-99HZ		**Slowed speed during opening phase**	25	9	
VEL.RC	5-99HZ		**Slowed speed during closing phase**	25	9	
T.AR	0.1"-2.0"		**Backlash time**	NO	23.2	
	NO		Function disabled			
SPUN	0-30%		**Over voltage at start opening**	0	9	
SPCH	0-30%		**Over voltage at start closing**	0	9	
T.CVE	0.1"-2.0"		**Final closure-stroke time**	NO	23.2	
	NO		Function disabled			
ACC.A	0-6		**Starting ramp when opening**	2	9	
ACC.C	0-6		**Starting ramp when closing**	2	9	
DEC.A	0-6		**Slowing ramp during opening phase**	2	9	
DEC.C	0-6		**Slowing ramp during closing phase**	2	9	
FRE.A	0-10		**Brake intensity during opening phase**	4	9	
FRE.C	0-10		**Brake intensity during closing phase**	8	9	
RAL.A	0-50%		**Slowed opening run**	10%	9	
RAL.C	0-50%		**Slowed closing run**	10%	9	
VEL.M	5-99HZ		**Speed in manual operation**	30	22	
ST.AP			**Start during the opening phase**	PAUS	19	
	PAUS		The door stops and pauses			
	CHIU		The door immediately starts closing			
	NO		The door continues to open (the command is ignored)			
ST.CH			**Start during the closing phase**	STOP	19	
	STOP		The door stops and the cycle is considered as complete			
	APRE		The door re-opens			

PARAMETER	VALUE	SUBMENU	DESCRIPTION	DEFAULT	CHAPTER	MEMO
ST.PA			**Start during pause**	CHIU	19	
	CHIU		The door starts closing			
	NO		This command is ignored			
	PAUS		The pause time is reset			
CH.AU	0.5"-20'		**Pause time for automatic closing**	NO	21	
	NO		Function disabled			
CH.TR	0.5"-20'		**Pause time after transit**	NO	11	
	NO		Function disabled			
LUCI			**Courtesy light**	T.LUC	23	
	T.LUC	0.0"-20'	Timer after command	1.0'		
	NO		Function disabled			
	CICL	0.0"-20'	Moving + timer			
AUX			**AUX radio channel function**	TIM	20	
	TIM	0.0"-20'	Timer light	1.0'		
	BIST		Bistable light			
	MONO		Monostable light			
	PRES		Forced dead man mode			
	TOUT	0.0"-20'	Bistable + time out			
SPIA			**24V output setup**	W.L.	14	
	W.L.		Warning light			
	FLASH		Blinker			
	NO		No function			
LP.PA			**Blinker during pause time**	NO	13	
	NO		During the pause the blinker is off			
	SI		During the pause, the blinker is on			
REL1			**Relay 1 set up**	LUCI	23	
	LUCI		Courtesy lights			
	NO		No function			
	CUST		Custom		23	
		WAITI	Relay contact closed while waiting for commands			
		OPENI	Relay contact closed during tests and the opening			
		CLOSI	Relay contact closed when closing			
		PAUSE	Relay contact closed during the pause			
		STOP	Relay contact closed when the door is open and automatic closing is disabled (parameter CH.AU)			
	TEST		12Vdc test			
	APRE		Open command			
	SERR		Lock			

PARAMETER	VALUE	SUBMENU	DESCRIPTION	DEFAULT	CHAPTER	MEMO
REL2			**Relay 2 set up**	NO	23	
	NO		No function			
	CUST		Custom		23	
		WAITI	Relay contact closed while waiting for commands			
		OPENI	Relay contact closed during tests and the opening			
		CLOSI	Relay contact closed when closing			
		PAUSE	Relay contact closed during the pause			
		STOP	Relay contact closed when the door is open and automatic closing is disabled (parameter CH.AU)			
	TEST		12Vdc test			
	CHIU		Close command			
	SERV		Service indicator			
	LUCI		Courtesy lights			
REL3			**Relay 3 set up**	FR.NO	23	
	FR.NO		Relay contact closed when the motor is running			
	LUCI		Courtesy lights			
	NO		No function			
	FR.NC		Relay contact open when the motor is running			
ING1			**Input 1 set up**	APRE	19	
	START		Start cycle (N.O. contact)			
	NO		No function			
	CHIU		Always close (N.O. contact)			
	APRE		Always open (N.O. contact)			
	STOP		Stop (N.C. contact)			
	ST.PE		Partial open (N.O. contact)			
ING2			**Input 2 set up**	CHIU	19	
	ST.PE		Partial open (N.O. contact)			
	START		Start cycle (N.O. contact)			
	NO		No function			
	CHIU		Always close (N.O. contact)			
	APRE		Always open (N.O. contact)			
	STOP		Stop (N.C. contact)			
ING3			**Input 3 set up**	NO	19	
	NO		No function			
	PRES		Force dead man mode (N.O. contact)			
	STOP		Stop (N.C. contact)			
	ST.PE		Partial open (N.O. contact)			
	START		Start cycle (N.O. contact)			

PARAMETER	VALUE	SUBMENU	DESCRIPTION	DEFAULT	CHAPTER	MEMO
RX			**Receiver mode**	START	20	
	START		Channel 1 = START Channel 2 = PARTIAL START			
	APCH		Channel 1 = OPEN Channel 2 = CLOSE			
STOP			**Stop command function**	PROS	19	
	PROS		Stop then resume			
	CHIU		Close then hold			
	APRE		Open then hold			
	INVE		Stop then invert			
FOT1			**Photocell 1 mode**	NO	11	
	NO	P.AP.F 0-100%	No function			
	HOOK		Anti-dragging function			
	MASK		Enabled in closing and with masked operation			
	APCH		Enabled in opening and closing			
FOT2			**Photocell 2 mode**	APCH	11	
	APCH	P.AP.F 0-100%	Enabled in opening and closing	P.AP.F = 0%		
	NO		No function			
	HOOK		Anti-dragging function			
	MASK		Enabled in closing and with masked operation			
FT.TE	0.1"-2.0"		**Photocell test enable**	NO	11.2	
	NO		Function disabled			
COS1			**Safety ribbon 1 mode**	NO	12.3	
	NO		No function			
	AP		Enabled opening			
	APCH		Enabled opening and closing			
	CH		Enabled closing			
COS2			**Funzione costa sensibile 2**	NO	12.3	
	NO		No function			
	AP		Enabled opening			
	APCH		Enabled opening and closing			
	CH		Enabled closing			
CO.TE			**Ribbon type and test**	NO	12.3	
	NO		Mechanic - no test			
	RESI		Resistive			
	FOTO		Optical with test			
ENCO			**Encoder enable**	NO	17-18	
	NO		No function			
	ASSO		For future uses			
	FC.RA	NO-2.0"	Slowing point			
	INTRM		Intermediate positions			
	EN.1C		1-channel encoder			
	EN.2C		2-channel encoder			