The **Stagnoli H230** is the control station that has been studied for Hercules 230V automation.

Made using only prime quality materials, it has been planned for low absorption at rest allowing a low consumption of electricity.
Particular attention has been paid to professionals in the sector by making it easier to programme the station by using a multi-language display.

WARNINGS AND SAFETY REGULATIONS

•**This manual has been created by Stagnoli for specific use by professional and qualified staff.**

•**It is advisable to read the instruction manual right through before proceeding with installation.**

•**During wiring the system must not be live.**

•**Automatic gate systems must be installed by qualified technical staff in compliance with legal requirements.**

•**DOUBLE SAFETY: The station has two safety sensors: one with encoder and the other is amperometric.**

•**Before installing check that the gate is firm, well fixed and has measurements, dimensions and fixings that are suitable for Hercules automation.**
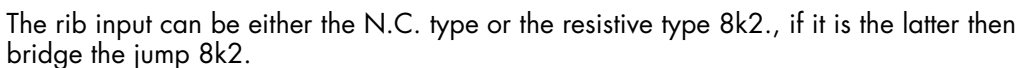
Inform the end user precisely of the method of use, residual dangers, the need for maintenance and the need to check safety devices at least once every six months.
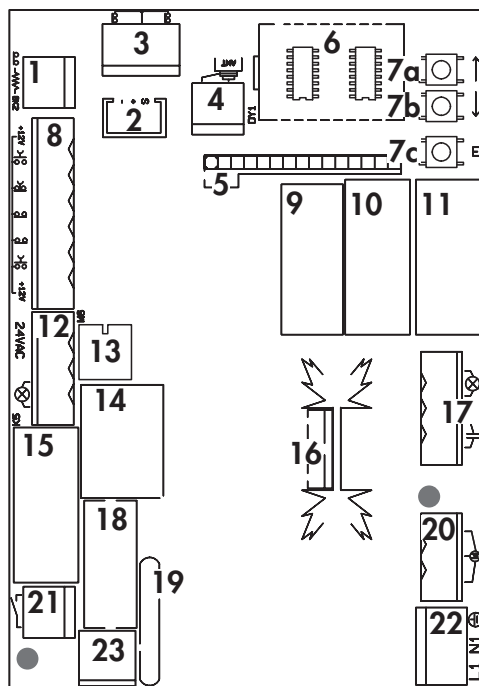
1　Rib entry terminal
2　Encoder connector
3　Limit stop connector
4　Radio aerial terminal
5　Receiver module
6　Display
7　Setting keys
8　Input/Control connectors
9　Direction Relays
10　Braking relays
11　Flashing relays
12　24V Terminal/courtesy light output
13　System memory (removable)
14　Light output relay
15　N.O. contact output relay
16　Triac motor gear
17　Condensator - flasher connector
18　1A Fuse
19　PTC 1A
20　Motor connector
21　N.O. output terminal
22　230V protected input terminal
23　24Vac input terminal

Labels in diagram: LINE, common, +12V, start, st1, stop, st3, st2, ph1, encodeur, photocells in closing, ph2, ph3, photocells in closing and opening, pedestrian, +12V, common, 24Vac, 24W 5w, open gate detector (SCA), N.O. output, flasher, 230V 40W, L N, FUSE, L1 N1, 230, TRANSFORMER, 12 0 12

The current feed line (230V L,N,⏚) towards the automated device must be protected by a magnetometric switch or by a pair of 5A fuses. A differential switch is recommended but not indispensable if it is already found at the top of the system.

Feed the device with a $3x1,5mm^2$ cable (phase+neutral+earth). If the distance between the board and the connection to the earthing system exceeds 30m it is necessary to provide an earth plate near the board.

Cabling must be done when the station is switched off.

Input of N.C. type contacts (normally closed), if they are not used, must be bridged with an ordinary terminal (+24V). If there are more N.C. contacts for the same input they must be placed in series (example: ph1 and ph2 in the diagram).

Inputs of N.O. type contacts (normally open), if not used, must be left free. If there are more N.O. contacts for the same input they must be placed in parallel (example: st1 and st2 in the diagram).

The rib input can be either the N.C. type or the resistive type 8k2., if it is the latter then bridge the jump 8k2.

Operating procedure at the first start up

•Undertake the electric wiring for the plant and
check when the card is switched off.

•Unblock the gate and check its movement (the
rack must not be supported by the motor pinion).
The stroke of the gate must not have any areas of
stiffness during movement, it must be smooth.

display

LED indicator for
power supply

•Block the gate and supply current to the station.
At this point the electric mains detection led will
light up and the display will show r|-00 or r-|00 where the horizontal line (-)
indicates the opening direction of the gate. If this does not occur check that the
station receives power and check the inputs activated (see the description of the
display diagnostics).

•Activate the safety devices one at a time and check that the display shows the re-
lative diagnostics wording. For example, activate the photoelectric cell and check
that the message pho shows on the display.
Enter the menu and select the item apprendimento (learning).
Operating with encoders: the first two manoeuvres help to identify the start and
end of the stroke of the motor. The two that follow detect the speed of the motor
when the gate is closing and opening. In this phase, monitor the values shown
on the display.
Operating without encoders: the motor undertakes two manoeuvres during which
the time required to complete a stroke, is calculated.

•At the end of the learning phase the display will show ok if programming was
done correctly, or err if errors occurred. To exit the programme press the select
key.

•Correctly set the levels of anti-crushing force in opening and in closing, these
must be greater than the maximum values viewed during learning.

WARNING: this regulation can influence the degree of safety of an automated
device.

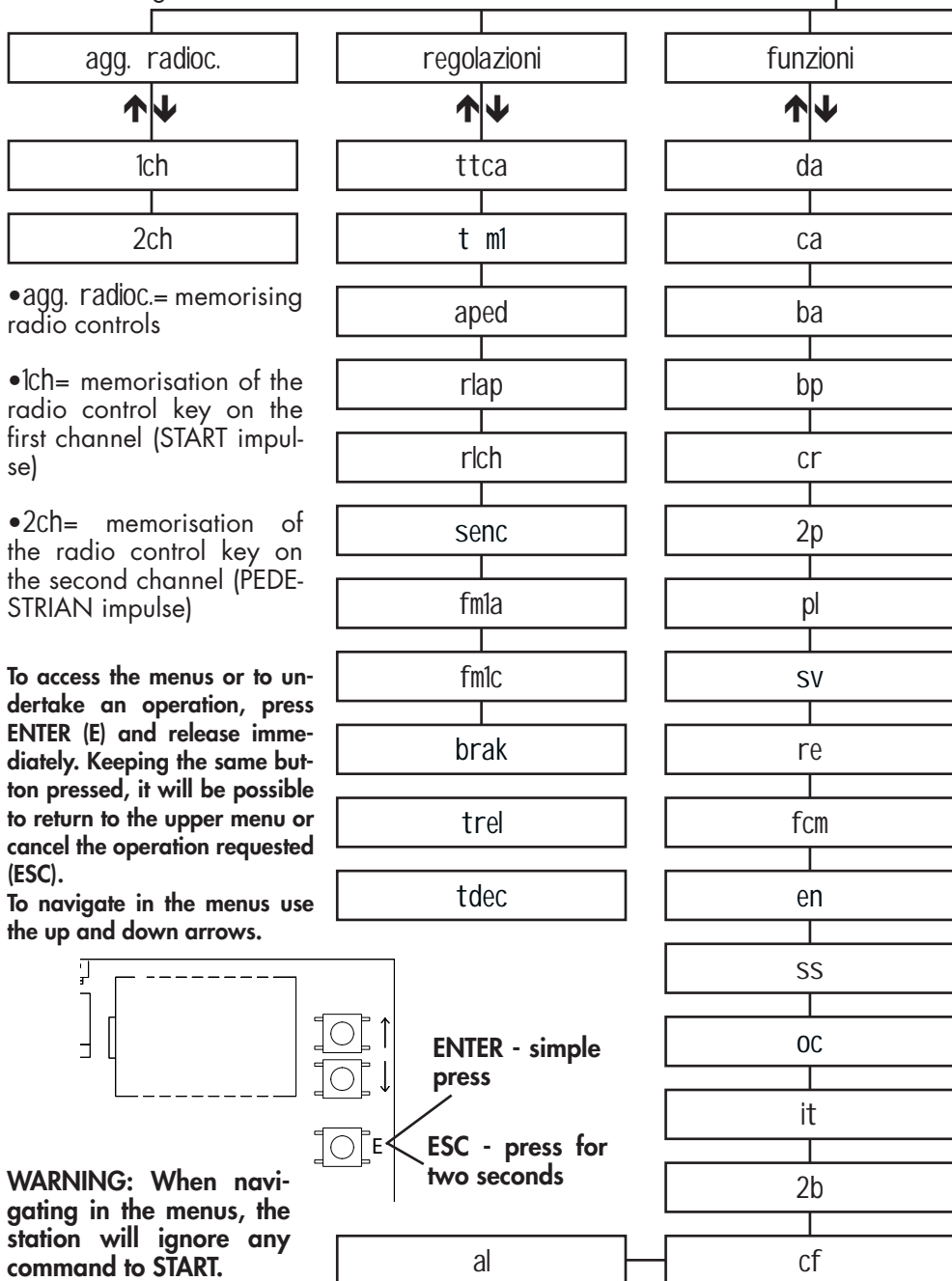•Carry out some test cycles checking the correct operation of the entire system.

•Measure the force of impact of the gate according to the specifications of regu-
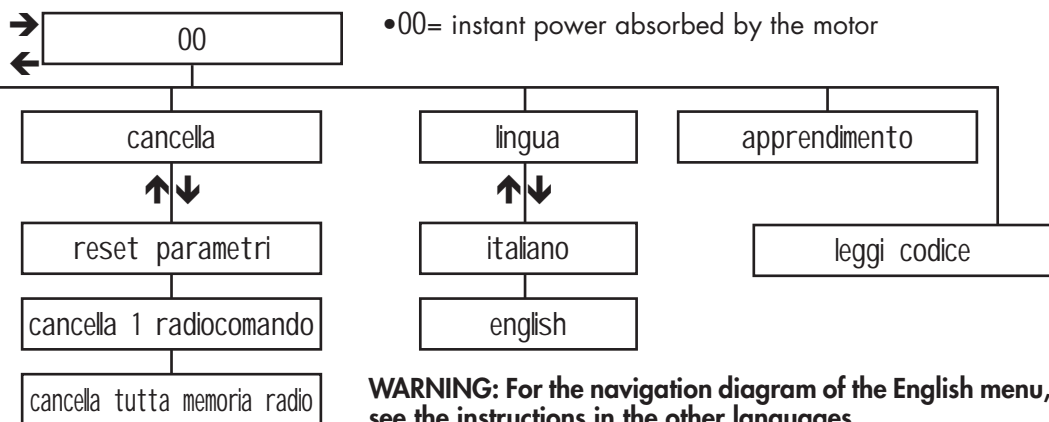lation EN12445.
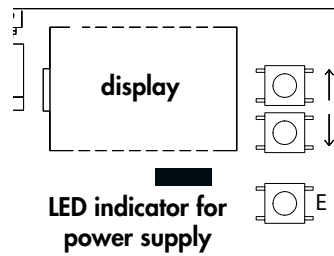
• r= rolling code receiver indicator
• -|= encoder operation indicator with gate movement direction
• 00= registered transmitters

| r|-00 | ← |
| | → |

agg. radioc.	regolazioni	funzioni
↑↓	↑↓	↑↓
1ch	ttca	da
2ch	t m1	ca
	aped	ba
	rlap	bp
	rlch	cr
	senc	2p
	fm1a	pl
	fm1c	sv
	brak	re
	trel	fcm
	tdec	en
		ss
		oc
		it
		2b
	al	cf

• agg. radioc.= memorising radio controls

• 1ch= memorisation of the radio control key on the first channel (START impulse)

• 2ch= memorisation of the radio control key on the second channel (PEDESTRIAN impulse)

To access the menus or to undertake an operation, press ENTER (E) and release immediately. Keeping the same button pressed, it will be possible to return to the upper menu or cancel the operation requested (ESC).
To navigate in the menus use the up and down arrows.

ENTER - simple press

ESC - press for two seconds

WARNING: When navigating in the menus, the station will ignore any command to START.

GB

→
← 00

• 00= instant power absorbed by the motor

| cancella | lingua | apprendimento |

↑↓   ↑↓

| reset parametri | italiano | |
| | | leggi codice |

cancella 1 radiocomando   english

cancella tutta memoria radio

WARNING: For the navigation diagram of the English menu, see the instructions in the other languages.

regolazioni
- ttca= automatic closing time
- t m1= motor working time
- aped= pedestrian opening
- rlap= slowed stroke in opening
- rlch= slowed stroke in closing
- senc= encoder sensitivity
- fm1a= motor power in opening
- fm1c= motor power in closing
- brak= braking current
- trel= N.O. output activation time
- tdec= deceleration time

funzioni
- da= opening direction
- ca= automatic closing
- ba= blocks impulses during opening
- bp= blocks impulses during pause
- cr= rapid closing
- 2p= open/close operation
- pl= preflashing
- sv= suction lock
- re= energy saving
- fcm= magnetic limit stop
- en= encoder operation
- ss= soft start
- oc= open/close operation
- it= itotal inversion after meeting an obstacle
- 2b= two safety ribs
- cf= operation of the fixed code receiver
- al= alarm

cancella
- reset parametri= setting of factory parameters
- cancella 1 radiocomando= cancels one transmitter
- cancella tutta memoria radio= cancel all registered transmitters

- apprendimento= learning the stroke
- leggi codice= to identify and recognise transmitters

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Addition of radiocontrols

•Before memorising a transmitter make sure that it is compatible with the type of receiver that is integrated (the first time the display shows r, if the receiver is in rolling code mode, or f if the receiver is in fixed code mode). The receiver can memorise rolling codes type HCS300 STAGNOLI with billions of combinations or fixed codes type HT53200 with 13 bits or the fixed part of a rolling code (28 bit SN). It is possible to memorise up to 76 codes.

•Enter the menu agg. radioc., move over the wording display 1ch or 2ch and select the channel that is to be added. Press ENTER, the wording press will appear to press the key that must be memorised. At this point the display shows the wording ok if the operation has been done correctly, err if there are registration errors or full if the receiver memory is full.

•An external antenna installed far from the ground, increases the visibility between the transmitter and the receiver. The power of the receiver can be reduced if metal parts or reinforced concrete are placed next to it.

Regulating

•ttca (**automatic closing time**)= this is the time from the when the gate is opened fully to when it is closed automatically. If the photoelectric cell is engaged, the ttca time is counted from the time when the photoelectric cell is freed. The default time set by Stagnoli is 10 secs and it can be regulated from 1 to 240secs.

•tm 1 (**motor working time**)= this is the maximum work time of the motor when opening and closing. For greater safety regulate this parameter so that it is slightly above the time it really takes for the gate to complete a single manoeuvre. The default time set by Stagnoli is 120 secs and it can be regulated from 5 to 240secs.

•aped (**pedestrian opening**)= this is the length of the stroke stated in centimetres of the partial opening, namely the pedestrian mode. The default value set by Stagnoli is 70 secs and it can be regulated from 30 to 150.

•rlap (**slowed stroke in opening**)= the station slows down the stroke of the motor in the end part of its opening phase. The default stroke set by Stagnoli is 0 cm and it can be regulated from 0 to 70 cm. With rlap=0 there is no slowing down.
N.B: In slowing phase, the motor works with 1/3 of its nominal speed. In this phase, the force, applied on the motor is reduced and not adjustable.

•rlch (**slowed stroke in closing**)= the station slows down the stroke of the motor in the end part of its closing phase. The default stroke set by Stagnoli is 0 cm and it can be regulated from 0 to 70 cm. With rlch=0 there is no slowing down.
N.B: In slowing phase, the motor works with 1/3 of its nominal speed. In this phase, the force, applied on the motor is reduced and not adjustable.
WARNING: **before setting the slowing phase check that the gate has been installed correctly and that during the slowing down phases the motor has enough power to complete the stroke. If this is not the case do not use slowing down functions**. In this phase, the motor has less power and the way this parameter is set can influence the level of safety of the system itself. When operating without encoder, slowing

down is run with a time logic that is less precise than one with an encoder. Once this phase has been done, check the force of impact of the gate.

•senc **(encoder sensitivity)**= anti-crushing sensitivity of the motor with encoder activated (en=1 function). The default value set by Stagnoli is 50 and it can be regulated from 0 to 99.

WARNING: In regulating this parameter remember that a low senc value indicates greater anti-crushing sensitivity. Stagnoli advises setting this parameter with a safety margin that is at least +10 compared with the maximum value shown on the display in the second screen during the movement of the motor. At the end of installation check that the force of impact is in compliance with the regulation EN12453.

•fmla **(force of the motor in opening)**= is the force of the motor stated in percentage compared with the maximum force that the same can generate. The default value set by Stagnoli is 5 and it can be regulated from 1 to 10.

•fmlc **(force of the motor in closing)**= is the force of the motor stated in percentage compared with the maximum force that the same can generate. The default value set by Stagnoli is 5 and it can be regulated from 1 to 10.

WARNING: the setting of these two parameters can influence the level of safety of the system itself. At the end of installation check that the force of impact is in compliance with the regulation EN12453.

•brak **(braking current)**= this is the current that the motor exercises in the gate stopping phase. The default current set by Stagnoli is 5 and it can be regulated from 0 to 10.

•trel **(N.O. exit activation time)**= it is the N.O. exit activation time from the receipt of the motor movement command (see SV function). The default time set by Stagnoli is 2 secs and it can be regulated from 1 to 240secs.

•tdec **(deceleration time)**= it is the time used by the motor to slow down the stroke when opening and closing with en=0 function. If the function en=1, this regulation comes about automatically as the encoder reads the speed and position of the gate. The default time set by Stagnoli is 1 sec and it can be regulated from 1 to 4 secs.

Functions
•da **(opening direction)**= indicates the opening direction of the gate that is viewed on the main screen after the indicating the type of receiver (r|-00 or r-|00).
To change the gate opening direction go to da on the display and change the parameter from 0 to 1 depending on the desired direction.

•ca **(automatic closing)**= automatic closing of the gate after it has opened completely.
ca=0 function not enabled.
ca=1 function enabled.
Set the ttca regulation to customise the time that must pass from the end of opening and the start of automatic closing. N.B: If ca=1 and 2p=0, the command to

START, activated while the gate is opening, will stop the gate and the ttca automatic closing time will be loaded.

•ba **(blocks impulses during opening)**= the station ignores the START impulses during the opening phase.
ba=0 function not enabled.
ba=1 function enabled.

•bp **(blocks impulses during pause)**= the station ignores the START impulses during the pause between opening and automatic closing (ca=1).
bp=0 function not enabled.
bp=1 function enabled.
These functions are useful when there are various passages with different inputs through the same entry point.

•cr **(rapid closing)**= if there is a passage through the photoelectric cells during the opening phase, the regulation time ttca (if activated and greater than 3 secs) is automatically reduced to 3 secs.
cr=0 function not enabled.
cr=1 function enabled.

•2p **(open/close operation)**= 2p=1 function enabled: at each START impulse, the movement of the gate changes direction (OPENING - CLOSING).
2p=0 function not enabled. the gate movement sequence becomes OPENING - CLOSING (ttca) - CLOSING - STOP.

•pl **(preflashing)**= after the START signal, the flasher or courtesy light activates for two seconds before the opening or closing phase begins.
pl=0 function not enabled.
pl=1 function enabled.

•sv **(suction lock)**= activating this function the N.O. exit always has the contact closed, except for the time regulated by the parameter trel as from the start of the motor movement. This mode runs the operations of a suction electrolock.
sv=0 function not enabled (the N.O. contact is activated only for the trel time).
sv=1 function enabled (the N.O. contact is always active and it deactivates only for the trel time).

•re **(energy saving)**= keeps the photoelectric cells off while the system is not active permitting energy saving. The photoelectric cells therefore remain active only while the gate is in movement and for four seconds after the end of the stroke.
re=0 function not enabled.
re=1 function enabled.
Connect the current feed +/-24V of both the transmitter and receiver of the photoelectric cells of the open gate detector output (SCA).
By activating the function al, the re one cannot be activated.

•fcm **(magnetic limit stop)**= activates the operation of the magnetic limit stop.
fcm=0 function not enabled.
fcm=1 function enabled.

•en **(encoder operation)**= runs the operation of the motor with encoder. This function can be activated if there is the relative sensor applied on the motor shaft. The encoder allows inverting the manoeuvre in case of obstacles and an extremely precise operation of the slowing down processes.
en=0 encoder not activated.
en=1 encoder activated.

•ss **(soft start)**= allows the motor to undertake a soft start and without an initial starting point to diminish stress of the mechanical parts of the system. Activating this function, the motor delivers less power in its starting phase.
ss=0 function not enabled.
ss=1 function enabled.

•oc **(open/close function)**= the START terminal input becomes OPEN and the PEDESTRIAN terminal input becomes CLOSE. In this mode one control opens the gate and another closes it without intermediate stops. The PEDESTRIAN and START functions can be activated with the radio control on the first and second channels respectively.
oc=0 function not enabled.
oc=1 function enabled.

•it **(total inversion)**= activating this function (with en function activated), if the motor encounters an obstacle in the opening or closing phase, it inverts the motion and reaches the limit stop. If the function has not been activated, when the motor encounters an obstacle in the opening or closing phase, it inverts the motion by 50cm before it stops.
it=0 function not enabled.
it=1 function enabled.

•2b **(two safety ribs)**= Operates with two safety ribs 8k2 connected in parallel.
2b=0 function not enabled.
2b=1 function enabled.

•cf **(operation of the fixed code integrated receiver)**= cf=0 receiver functions with rolling codes.
cf=1 receiver functions with fixed codes.
Functioning with receiver fixed codes or rolling codes can also be seen on the initial page of the display, where r-00 indicates the rolling code functioning and f-00 functioning with fixed code.

•al **(alarm)**= Alarm signalling that the gate has remained open. This function activates the SCA output after 20 seconds have passed from the end of the time regulated by ttca and the gate is still open.
al=0 function not enabled.
al=1 function enabled.
N.B: By activating the function al, the re one cannot be activated.

Cancel
•reset parametri (reset parameters)= to cancel the regulation parameters and

those of regulated functions and reset the factory settings, enter the menu cancella (cancel), go to reset parametri (reset parameters) on the display and press ENTER. The message RESE is shown, it flashes until the decision to reset all the parameters is confirmed or the operation is cancelled. The default parameters are: ttca=10, t m1=120, aped=70, rlap=0, rlch=0, senc=50, fm1a=5, fm1c=5, brak=5, trel=2, tdec=1, da=1, ca=1, ba=0, bp=0, cr=0, 2p=0, pl=0, sv=0, re=0, fcm=0, en=0, ss=0, oc=0, it=0, 2b=0, cf=0, al=0.

•cancella 1 radiocomando (cancel 1 radio control)= to cancel a transmitter code, enter the menu cancella (cancel), then go to the wording cancella 1 radiocomando (cancel 1 radio control) on the display and press ENTER. The message PREMI (PRESS) will appear. Now press the transmitter key that must be cancelled. If the operation has been done correctly, the message OK will appear. If this has not been done correctly, the message ERR will appear.

•cancella tutta memoria radio (cancel all the radio memory)= to cancel all the recorded transmitters, enter the menu cancella (cancel), then go to the wording cancella tutta memoria radio (cancel all radio memory) on the display and press ENTER. The message PRG will appear, it flashes until the decision to cancel all the recorded codes is confirmed by pressing ENTER or the operation is cancelled by keeping the same key pressed for longer.

N.B: To cancel the memory of the receiver, it is neccessary to confirm twice the cancellation (cancella tutta memoria radio **and** PRG**).**

Language
The display is available in two languages: italian and english.
To select the chosen language go to the menu lingua (language) and press ENTER. Go to italiano or english and confirm by pressing ENTER.

Learning
This operation allows the automation to automatically establish the start and end of a stroke. Before proceeding with this operation ensure that the gate has been installed correctly and strongly and that the en function of the station has been activated (Stagnoli supplies the station with this function already activated).
When the wording apprendimento (learning) appears on the display, press ENTER.
Operating with encoder: the first two manoeuvres help to identify the start and end of the stroke of the motor, the two that follow detect the speed of the motor when the gate is closing and opening. In this phase, monitor the values shown on the display. Set the senc regulating values so that they are greater than the values read (if the senc value is low, it indicates the increased sensitivity of the encoder).
Operating without encoder: the motor undertakes two manoeuvres during which the time required to complete a stroke is calculated.
Should consumption be shown to be excessively high, check that there are no areas where the gate has greater friction. If the operation has been done correctly, the message OK will appear. If this has not been done correctly, the message ERR will appear.
WARNING: during learning manoeuvres the station will ignore START AND PEDESTRIAN commands and will work with the force parameters that have been set.

Even if the safeties remain active ensure that there are no objects or people in the area of operation of the gate.

Read codes
It is possible to check if a code has already been memorised. Position yourself on the wording leggi codice (read code), press ENTER, the display will show the message PREMI (PRESS). Now press the transmitter key that must be checked, a series of screens describing the code will be viewed:
•first screen: S r 01 or - f 01.
The first letter indicates the manufacturer of the radio control, where S means Stagnoli and - a generic manufacturer.
The second letter indicates the type of code, where r indicates a rolling code and f a fixed code.
The last two indicate the code of the key that was pressed.
•second screen: P_00, where P indicates the word "position" and the number that follows (progressive from 0 to 75), indicates the position occupied by the transmitter in the memory. If the transmitter is not found in the memory the display will show ----.
•third and fourth screens: show the hexadecimal code of the transmitter.

Statistics screens
The control centre has four statistics screens that are viewed by keeping the key ENTER pressed once the display is positioned on the main menu:
•first screen: H500, where H means Hercules motor and 500 the maximum weight of the gate in kilos.
•second and third screens: 0000 0000 indicates the number of complete manoeuvres undertaken.
•fourth screen: indicates the stroke in the memory.

Diagnostics screens
The station can recognise problems or alarms that can occur in the system therefor it can signal some messages on the main display to allow the problem to be identified:
•1 rf= activation of the START command on the first radio frequency channel.
•2 rf= activation of the START command on the second radio frequency channel.
•sta= activation of the START command on the terminal board input.
•ped= activation of the pedestrian entry command.
•st0= activation of the STOP command on the terminal board input.
•ph0= activation of photoelectric cells input on the terminal board.
•phA= activation of the photoelectric cells input on the terminal board in the opening phase.
•bar= activation of the entry of the safety ribs.
•sw0= activation of the entry of the limit stop on opening.
•swc= activation of the entry of the limit stop on closing.
•am 1= operation of the current meter sensor on the first motor.
•enc1= operation of the sensor with encoder on the first motor.
•prg= programming regulations or operations underway.
•0K= successful outcome of operation.
•ERR= unsuccessful outcome of operation.
•full= radio control memory full.
•attendi= wait.
•tout= waiting time expired.

F.A.Q. - Frequently Asked Questions

Why choose a rolling code transmitter instead of a fixed one?
IRolling code transmitters are safer as they cannot be cloned and have over 200 million combinations that change with each transmission. Fixed code transmitters, instead, have 1024 code combinations that do not change with each transmission.

The station does not recognise the transmitter. Why?
Check that you are using the same type of station and transmitter. It is possible to check the type of transmitter used by the station from the main screen and change if necessary by setting the parameter cf.

Technical Data
- Automation current: 230V - 50/60Hz.
- Primary transformer protection fuse: F5A/230V.
- 24V accessory output protection fuse: T1A.
- Integrated receiver (433Mhz): maximum capacity 76 radio codes.
- Operating times: -20° +55°
- Maximum rated output of the motor: 500W
- Maximum power of the flasher output: 40W
- Maximum power of the open gate signal output (SCA): 5W