

224RR



Control board 24V for gate automation operating Instructions and warnings

ENGLISH

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OVERVIEW

These instructions were prepared by the manufacturer and are an integral part of the product. The operations described are designed for adequately trained and qualified personnel and must be carefully read and kept for future reference.



1 PRODUCT CONFORMITY

The 224RR programmable control board bears the CE label. DEA SYSTEM guarantees the conformity of the product to European Directives 89/336/CE and subsequent amendments (concerning electromagnetic compatibility), 73/23/CE and subsequent amendments (low voltage electrical equipment)



2 WARNINGS

Read these warnings carefully. Failure to respect the following warnings may cause risk situations.

WARNING DEA System reminds all users that the selection, positioning and installation of all materials and devices which make up the complete automation system, must comply with the European Directives 98/37/CE (Machinery Directive), 89/336/CE and subsequent amendments (electromagnetic compatibility), 73/23/CE and subsequent amendments (low voltage electrical equipment). In order to ensure a suitable level of safety, besides complying with local regulations, it is advisable to comply also with the above mentioned Directives in all extra European countries. A1

WARNING Using the product under unusual conditions not foreseen by the manufacturer may cause dangerous situations; this is the reason why all the conditions prescribed in these instructions must be followed. A2

WARNING Under no circumstance must the product be used in an explosive environment or surroundings that may prove corrosive and damage parts of the product. A3



WARNING To ensure an appropriate level of electrical safety always keep the 230V power supply cables apart from low voltage cables (motors power supply, controls, electric locks, aerial and auxiliary circuits power supply), and fasten the latter with appropriate clamps near the terminal boards. A4

WARNING Any installation, maintenance or repair operation on the whole system must be carried out exclusively by qualified personnel. All these operations must be performed only after disconnecting the power supply, and operating in strict compliance with the electrical standards and regulations in force in the nation of installation. A5

WARNING Install the control board according to the instructions given in "F3 Installation". Drill only the holes foreseen by the manufacturer to allow for wires passage, and use the specified clamps. Failure to comply with these instructions may jeopardize the level of electrical safety. A6

WARNING During the motors stroke memorization, the control board detects automatically the presence and type of photocells, safety devices and limit switches which are installed. It is therefore essential that during this phase the latter be properly connected and working. A7

WARNING Wrong assessment of impact forces may cause serious damage to people, animal and things. DEA System reminds all personnel that the installer must ascertain that these impact forces, measured according to EN 12245 prescriptions, are actually below the limits indicated by EN12453 regulation. A8

WARNING Any external safety device installed in order to conform to the limits set for impact forces must comply with EN12978. A9

WARNING Using spare parts not indicated by DEA System and/or incorrect re-assembly may endanger people, animals and property, and may also cause malfunctioning of the product: always use parts provided by DEA System and follow assembly instructions. A10

WARNING Disposal of packaging materials (such as plastic, card board, etc.) must be done according to regulations in force locally. Do not leave plastic bags and polystyrene within the reach of children A11

WARNING Dumping batteries in the ordinary litterbin or leaving them just anywhere is extremely dangerous for the environment. Always use the differentiated waste disposal bins and comply with local regulations in force. A12



3 MODELS AND CONTENTS OF THE PACKAGE

The control board 224RR is available also in the 224RR/B model complete with backup batteries in case of power failure.



4 PRODUCT DESCRIPTION

224RR control board has been designed for the automation of swing gates operated by 24Vdc motors. It is extremely versatile, easy to install and fully complies with European regulations concerning electromagnetic compatibility and electric safety

Main features of the product:

1. setting all parameters by 3 keys and a 4-digit LCD display;
2. possibility of fine tuning of motor speed both during its complete stroke and during the last phase of it (slow-down). It keeps motor torque even at very low speed;
3. possibility to set at will the slow-down duration of each of the two motors separately;
4. Internal anti-crash safety device whose sensitivity can be adjusted (according to a 70-level scale) separately for the two motors and in both operating directions;
5. inputs to connect both normal and powered external safety devices (mechanical ribs or photocell barriers), with the possibility to run a self-test before each operation. Controlled photocells;



- 6. built-in 433,92MHz radio receiver for both HCS and HT12E coding offering the possibility to search and delete each transmitter separately.

WARNING DEA System reminds all users that the selection, positioning and installation of all materials and devices which make up the complete automation system, must comply with the European Directives 98/37/CE (Machinery Directive), 89/336/CE and subsequent amendments (electromagnetic compatibility), 73/23/CE and subsequent amendments (low voltage electrical equipment). In order to ensure a suitable level of safety, besides complying with local regulations, it is advisable to comply also with the above mentioned Directives in all extra European countries. A1



5 TECHNICAL DATA

Power supply	230Vac +/- 10% 50Hz
Flashing light output	24Vdc max 15W art. Lumy 24S
Auxiliary power supply output (+24VAUX)	24Vdc max 200mA
Safety devices power supply output (+24VSIC) ...	24Vdc max 200mA
Electric lock output	max 1 electric lock art. 110
LC/SCA contact capacity	max 5A
Max motor capacity	2 X 70Wmax
Protection level	IP54
Fuse F1	2A 250V retarded
Fuse F2	20A 250V retarded
Radio receiver frequency	433,92 MHz rolling code / dipswitch coding
Max. number of transmitter controlled.....	100



6 OPERATING CONDITIONS

224RR control board is designed for the automation of swing gates operated by 24 Vdc motors. This control board has been designed and tested for operation under "normal" conditions for both residential and industrial use. The level of protection against dust and water and other data are illustrated in "5 Technical Data".

WARNING Using the product under unusual conditions not foreseen by the manufacturer may cause dangerous situations; this is the reason why all the conditions prescribed in these instructions must be followed. A2

WARNING Under no circumstance must the product be used in an explosive environment or surroundings that may prove corrosive and damage parts of the product. A3



7 ASSEMBLY AND WIRING INSTRUCTIONS

WARNING To ensure an appropriate level of electrical safety always keep the 230V power supply cables apart from low voltage cables (motors power supply, controls, electric locks, aerial and auxiliary circuits power supply), and fasten the latter with appropriate clamps near the terminal boards. A4

WARNING Any installation, maintenance or repair operation on the whole system must be carried out exclusively by qualified personnel. All these operations must be performed only after disconnecting the power supply, and operating in strict compliance with the electrical standards and regulations in force in the nation of installation. A5

WARNING Install the control board according to the instructions given in "F3 Installation". Drill only the holes foreseen by the manufacturer to allow for wires passage, and use the specified clamps. Failure to comply with these instructions may jeopardise the level of electrical safety. A6

Connect to the power supply 230 Vac ± 10% 50 Hz through a multi pole switch or a different device that can ensure multi pole disconnection from the power supply, with a contact opening of 3 mm. Use a cable with a minimum section of 3 x 1,5 mm² (e.g. a H07RN-F type).

Make all connections to the terminal board and remember to short-circuit, whenever necessary, all unused inputs. (See table 1 terminal board connection and Fig. 1 basic and complete wiring diagram)


Table 1 Terminal board connection

1-2	 LC/SCA	Free contact max. capacity 5 A : this contact can be used to control an open gate warning light (P27=0) or a courtesy lamp (P27≠0)
3-4	 ELETTR	Electric lock output art. 110 12Vac 15VA
5-6	 LAMP	Flashing light output 24Vdc max 15W art. Lumy 24S (the intermittent output does not demand the use of a flashing light card)
7-8	 M2	Motor 2 output 24Vdc max 70W
9-10	 M1	Motor 1 output 24Vdc max 70W
11	 SIC1	N.C. leaf nr. 1 safety device input. In case of activation it reverses the movement (P18=0) or it stops (P18=1). If unused, short circuit to the terminal n°16
12	 SIC2	N.C. leaf nr. 2 safety device input. In case of activation it reverses the movement (P18=0) or it stops (P18=1). If unused, short circuit to the terminal n°16
13	 FOTOC	N.C. Photocell input. In case of activation it reverses the movement only while closing (P26=0) or it reverses the movement while closing and stops while opening (P26=1). If unused, short circuit to the terminal n°16
14	 +24VSIC	+24Vdc power supply output for controlled safety devices. To be used as power supply of photocell transmitters (in all cases) and of safety devices when testing these latter before each operation
15	 +24VAUX	+24Vdc power supply output for auxiliary circuits and uncontrolled safety devices. To be used as power supply of any auxiliary devices, photocell receivers (in all cases), and of safety devices when testing these latter before each operation
16	COM	Common safety devices
17	FCC2	N.C. motor nr. 2 closing limit switch input. If unused, it may remain disconnected
18	FCC1	N.C. motor nr. 1 closing limit switch input. If unused, it may remain disconnected
19	FCA2	N.C. motor nr. 2 opening limit switch input. If unused, it may remain disconnected
20	FCA1	N.C. motor nr. 1 opening limit switch input. If unused, it may remain disconnected
21	START	N.O. open input. If activated, it opens or closes both motors. It can work in "reversal" mode (P25=0) or "step-by-step" mode (P25=1)
22	PEDON	N.O. pedestrian opening input. If activated, it opens motor nr. 1 only.
23	STOP	N.O. stop input. If activated, it stops the movement of both motors during any operation
24	COM	Common inputs
25		Aerial signal input
26		Aerial ground input
27-28	24VBatt	24Vdc battery power supply input (Follow carefully polarity indications)
29-30	24Vac	24Vac transformer power supply input

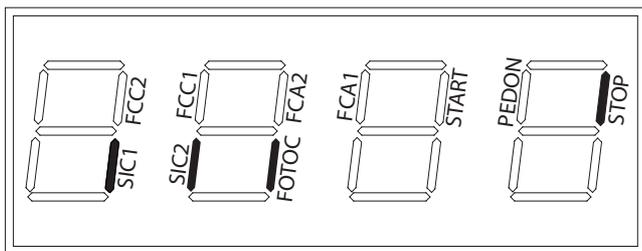


8 USE INSTRUCTIONS

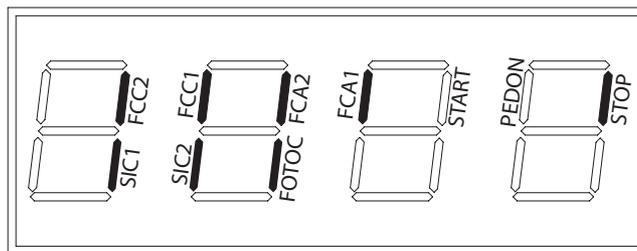
After making all connections to the terminal board, remember to short-circuit, whenever needed, any unused input (see "connection to the control board") and power the card: on the display you will read for a few seconds "rES-" followed by the symbol "----" which stands for gate closed.

8.1 Visualisation of inputs status

Press on the "OK" key to check that all inputs have been properly connected.



Basic installation



Complete installation

By pressing the "OK" key when the control board awaits further instructions (" - - - ") the display shows some vertical segments: each one of them is associated to one of the control board inputs (see the picture above). When the segment is lighted it means that the contact associated to it is closed, on the contrary, when it is switched off the contact is open. In order to do this:

8.2 Setup and memorization of motor stroke

WARNING During motors stroke memorisation, the control board detects automatically the presence and type of photocells, safety devices and limit switches which are installed. It is therefore essential that during this phase the latter be properly connected and working.

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Instructions	Function	Display
	The control board is ready to receive instructions	----
Leaf 1 positioning		
	Scroll down the parameters until you visualize procedure P001	P001
	Confirm! The control board is ready for the positioning of leaf 1	OP-1
	Position leaf 1 in its standstill position while opening ¹	
	Confirm! The control board has memorized the leaf position	P001
Leaf 2 positioning		
	Scroll down the parameters until you visualize procedure P002	P002
	Confirm! The control board is ready for the positioning of leaf 2	OP-2
	Position leaf 2 in its standstill position while opening ¹	
	Confirm! The control board has memorized the leaf position	P002
Motors stroke memorization		
	Scroll down the parameters until you visualize procedure P003	P003
	Confirm! The control board awaits a further confirmation	APP _r
	Confirm by pressing on the OK key for a few seconds! The procedure starts	APP _r
	Now motor 2 starts to close in the slow down phase until it reaches the stroke end while closing (or the limit switch, if used), shortly after that, motor 1 also starts to close in the slow down phase until it reaches the stroke end while closing (or the limit switch, if used).	
	On the display you will read "P003". Motor stroke memorization done!	P003
	Scroll down the parameters until "----". The control board awaits further instructions	----

¹ By pressing on the key the leaf must open, by pressing on the key the leaf must close. If this does not happen, you must swap the two motor cables. Only if you use limit switches, first position the leaf where you want it to stop in closing and then adjust the closing cam so that it presses on the limit switch associated to it in that point. Then position the leaf in the opening position and adjust the opening cam so that it presses on the limit switches associated to it in that point.



8.3 Built-in radio receiver

DEA 224RR control board includes a 433,92MHz built-in radio receiver accepting both transmitters with HCS coding (complete rolling code or just fixed part), and HT12E dip-switch coding.

- The type of coding is selected by programming the working parameter n° 8 "type of coding" (see Table 2 Parameters)
- The receiver memory capacity can contain up to 100 different transmitters.
- When receiving a pulse from the transmitter, depending on your channel selection and linking, the start or the pedestrian inputs are activated. In fact, by programming one of the working parameters it is possible to choose, according to one's needs, which key of the memorized transmitters will activate the start input and which one will activate the pedestrian input (see "4. Channel selection and linking on the transmitter").
- While you memorize each transmitter the display shows a progressive number by which you will be able to trace and, if necessary, delete each transmitter individually.

Instructions	Function	Display
	The control board is ready to receive instructions	----
Deletion of all transmitters		
	Scroll down the parameters until you visualize P004	P004
	Confirm! The control board awaits a further confirmation	CRnC
	Confirm by pressing on the OK key for a few seconds! The procedure starts	CRnC
	Done! The transmitters memory has been deleted	P004
	Scroll down the parameters until you visualize "----". The control board awaits a further confirmation	----
Memorization of transmitters ¹		
	Scroll down the parameters until you visualize P005	P005
	Confirm! The receiver enters in memorization mode the flashing light flickers!	LEAr
	Press on any key of the transmitter	
	Memorization done! The flashing light goes out for 2 seconds the display visualizes the number of the transmitter just memorized (es. "r001")	r001
	The receiver reverts automatically to memorization mode The flashing light flickers!	LEAr
	Memorize all necessary transmitters	
	Wait 10 seconds before quitting the memorization mode The receiver will now receive all the memorized transmitters	----
How to activate the memorization mode without operating on the control board ¹		
	Press simultaneously on key CH1 and CH2, or on the hidden key of a transmitter already memorized	LEAr
How to search and delete a transmitter		
	Scroll down the parameters until you visualize P006	P006
	Confirm! You can now select the transmitter	r001
	Scroll down the transmitter numbers until you reach the transmitter to be deleted (eg. "r003")	r003
	Confirm the deletion by pressing the OK key for a few seconds	r003
	OK! The transmitter is deleted	r---
	You can now select the parameter	P006
	Scroll down the parameters until you visualize "----". The control board awaits further instructions	----



¹ Make sure that the receiver is set to receive the type of coding of the transmitter you wish to memorize: visualize and, if necessary, update parameter n° 8 "type of coding" (see "8.4 Personalization of working parameters "

Channel selection and linking on the transmitter

The built-in receiver can control both the start input and the pedestrian one. By setting the correct value of the parameter "P009 Selection and linking of radio channels" it is possible to decide which key of the transmitter will activate each input. If you check on the "working parameters" table you will realize that the P009 parameter allows you to choose among 16 different combinations. If, for instance, you attribute value "3" to the parameter P009, all memorized transmitters will activate the start input through CH1 and the pedestrian input through CH4. Please refer to chapter "8.4 Personalization of working parameters" in order to select the right combination.

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8.4 Personalization of working parameters

Instructions	Function	Display
	The control board is ready to receive instructions	----
	Scroll down the parameters until you visualize the one you wish to set (ex. P010)	P0 10
	Confirm! The display shows the set parameter value	d 100
	Increase or decrease the value until you reach the value you wish to define	d080
	Confirm! The display shows again the parameter	P0 10
	Scroll down the parameters until you visualise "----".The control board awaits further instructions	----
The automation is now ready to work according to the new working parameters.		

8.5 Resetting of default parameters (p.007)

DEA 224RR control board software includes a reset procedure to restore default values (the one set by the maker) of all settable parameters, see Table 2 Parameters. The value originally set for each parameter is shown in the "working parameters table". In case you should reset all values and restore all default values, proceed as follows:

Instructions	Function	Display
	The control board is ready to receive instructions	----
	Scroll down the parameters until you visualize P007	P007
	Confirm! The control board awaits a further confirmation	DEF-
	Confirm by pressing on the OK button. The procedure starts	DEF-
	All parameters are now set at their original value	P007
	Scroll down the parameters until you visualise "----". The control board awaits further instructions	----

8.6 Safety devices

DEA 224RR control board allows installers to set up installations that truly comply with European regulations concerning automated garage doors and gates. More specifically, this control board allows you to comply with the limits set by the same regulations as to impact forces in case of collision with obstacles. DEA 224RR control board is equipped with a built-in anti-crush safety device that, associated to the possibility of tuning up the motors' speed, allows you to comply with the limits imposed by the above mentioned regulations in most installations.

In particular, you can adjust the anti-crush safety device sensitivity by properly setting the value assigned to the following parameters (see also "8.4 Personalization of working parameters "):

- P014 motor 1 force in opening: from 30 (min. force, max sensitivity) to 100 (max force, neutralized sensitivity)
- P015 motor 1 force in closing: from 30 (min. force, max sensitivity) to 100 (max force, neutralized sensitivity)
- P016 motor 2 force in opening: from 30 (min. force, max sensitivity) to 100 (max force, neutralized sensitivity)
- P017 motor 2 force in closing: from 30 (min. force, max sensitivity) to 100 (max force, neutralized sensitivity)



In case the gate structural features do not allow you to comply with the above force limits, it is possible to use external safety devices inputs (terminals no. 11 and no. 12). "SIC1" and "SIC2" inputs can be configured by setting properly parameter no. 18:

- P018 = 0 "rib" mode functioning: SIC1 = motor 1 rib input, SIC2 = motor 2 rib input.

When one of the two inputs is activated the movement direction of both motors is inverted. If one of the two inputs is activated during the slow-down phase, the activation is interpreted as stroke end thus stopping the movement of the motor associated to that input.

- P018 = 1 "photoelectric barriers" mode functioning: you can use either "SIC1" or "SIC2" or both of them, but remember to short-circuit the unused input. When one of the two inputs is activated, the movement of both motors is stopped.

If you power external safety devices through + 24VSIC output (terminal no.14), their proper working is tested before each manoeuvre.

8.7 Messages shown on the display

224RR control board allows you to visualize on the display several messages concerning its working status and any malfunction:

Message	Description	
MESSAGES CONCERNING WORKING STATUS		
----	Gate is closed	
⌋	Gate is open	
OPEn	Opening under way	
CLoS	Closing under way	
StEP	While in step-by-step mode, the control board awaits further instructions after a start command	
BLoc	Stop command received	
bArr	Sic1 or sic2 activated while working in barrier mode	
ERROR MESSAGES		
Message	Description	Possible solutions
Err1 Err2	They point out that the gate has exceeded: -(Err1), the max allowed number of reversals (50) without ever reaching the end of stroke (or stop) while closing; -(Err2) the max number of uninterrupted operations (10) of the anti-crush safety device; therefore an "emergency maneuver" is under way: the control board sets the motors in a slow down phase and searches the stops (or ends of stroke) in order to reset the positioning system. Once the stops (or ends of stroke) while closing are found again the message disappears and the control board awaits further instructions "----" and then resumes working normally.	In case the gate is not properly closed after the emergency maneuver (maybe because of false stops or obstacles due to mechanical frictions), proceed as follows: - Disconnect the power supply, check manually that no particular frictions and/or obstacles are present during the complete stroke of both leafs. Leave both leafs half-open. - Connect the power supply again and subsequently give a start pulse. At this point both leafs will start to close in slow down phase until reaching the stop (or end of stroke). Make sure that the maneuver is properly completed. Adjust force and motor speed values, if need be. If the gate keeps working inappropriately try to repeat the motor stroke memorization procedure (see paragraph 8.2)
Err3	External photocells and/or safety devices are activated or out of order	Make sure that all safety devices and/or photocells installed are working properly.
Err4	The motors are not connected or it signals control board failure	Make sure that the motors are properly connected. If the message reappears change the control board.
Err5	The control board power supply voltage has exceeded the allowed range	Make sure the power supply voltage on the faston connection no. 29-30 is 22Vac+/-10% and on faston no. 27-28 is 27Vdc+/-10%.



9 MAINTENANCE

WARNING Any installation, maintenance or repair operation on the whole system must be carried out exclusively by qualified personnel. All these operations must be performed only after disconnecting the power supply, and operating in strict compliance with the electrical standards and regulations in force in the nation of installation. A5

WARNING Using spare parts not indicated by DEA System and/or incorrect re-assembly may endanger people, animals and property, and may also cause malfunctioning of the product: always use parts provided by DEA System and follow assembly instructions. A9



10 PRODUCT DISPOSAL

WARNING Disposal of packaging materials (such as plastic, card board, etc.) must be done according to regulations in force locally. Do not leave plastic bags and polystyrene within the reach of children A5

WARNING Dumping batteries in the ordinary litterbin or leaving them just anywhere is extremely dangerous for the environment. Always use the differentiated waste disposal bins and comply with local regulations in force. A9

Demolition of this product does not cause particular dangers. Whenever the regulations in force in the country of installation demand it, it is always advisable and necessary to dispose suitably and separately of each material that make up the product: plastic, ferrous materials, batteries and electric parts.



11 COMPLETE CLOSING ASSEMBLY

Remember that everyone who sells and/ or motorises doors/gates becomes the manufacturer of the automated door/gate machine, and must therefore prepare and preserve a technical folder containing the following documents (see Machinery Directives Enclosure V).

- Assembly drawing of the automatic door/gate.
- Electrical connection and control circuit diagram.
- Risk analysis including: a list of the essential safety requirements provided in machine Directive Enclosure I; a list of the risks posed by the door/gate and a description of the implemented solutions
The installer must also:
 - Keep these operating instructions and the instructions for all other components in a safe place.
 - Prepare the operating instructions and general safety warnings (by filling up these operating instructions) and hand a copy to the end user.
 - Fill in the maintenance handbook and hand a copy to the end user
 - Draw up the EC declaration of conformity and hand a copy to the end user.
 - Fill in the complete EC label or plate and apply it to the automated door/gate.

N.B. The technical folder must be kept for inspection by the competent national authorities for at least ten years starting from the date of the automatic door/gate manufacturing.

WARNING DEA System reminds all users that the selection, positioning and installation of all materials and devices which make up the complete automation system, must comply with the European Directives 98/37/CE (Machinery Directive), 89/336/CE and subsequent amendments (electromagnetic compatibility), 73/23/CE and subsequent amendments (low voltage electrical equipment). In order to ensure a suitable level of safety, besides complying with local regulations, it is advisable to comply also with the above mentioned Directives in all extra European countries.

WARNING Wrong assessment of impact forces may cause serious damage to people, animal and things. DEA System reminds all personnel that the installer must ascertain that these impact forces, measured according to EN 12245 prescriptions, are actually below the limits indicated by EN12453 regulation.

WARNING Any external safety device installed in order to conform to the limits set for impact forces must comply with EN12978.



PROCEDURES		PROCEDURE DESCRIPTION			
P001		Positioning of leaf M1			
P002		Positioning of leaf M2			
P003		Memorization of the motors' stroke			
P004		Deletion of the radio receiver memory			
P005		Transmitters memorizing			
P006		Search and deletion of a transmitter			
P007		Resetting of default parameters			
PARAMETERS		PARAMETER DESCRIPTION			
P008		Type of coding of the radio receiver			
P009		Channel selection and linking to "start" and "pedestrian" inputs			
P010		Motors' speed during normal stroke (calculated as % of max speed)			
P011		Motors' speed during slow-down phase (calculated as % of max speed)			
P012		Slow-down duration of M1 (expressed as % of total stroke)			
P013		Slow-down duration of M2 (expressed as % of total stroke)			
P014		Motor 1 force while opening			
P015		Motor 1 force while closing			
P016		Motor 2 force while opening			
P017		Motor 2 force while closing			
P018		Selection of type of external safety device: rib / barrier. If the ribs are activated the movement direction of both motors is inverted; during slow-down phase, the activation is interpreted as stroke end. If the barrier is activated the movement of both motors is stopped.			
SETTABLE VALUES ¹		USER ²			
000	HCS fixed part only				
001	HCS rolling code				
002	HT12E dip switch				
	start	pedes- trian			
001	CH1	CH2	start	pedes- trian	
002	CH1	CH3	009	CH3	CH4
003	CH1	CH4	010	CH4	CH1
004	CH2	CH1	011	CH4	CH2
005	CH2	CH3	012	CH4	CH3
006	CH2	CH4	013	CH1	CH2³
007	CH3	CH1	014	CH2	CH2³
008	CH3	CH2	015	CH3	CH2³
			016	CH4	CH2³
			50 100	
			30 60..... 100	
			10 25 50	
			10 25 50	
			30 90.. 100	
			30 90.. 100	
			30 90.. 100	
			30 90.. 100	
	000	safety ribs			
	001	photoelectric barriers			



P019	Time of automatic closing (expressed in sec). If = 0 the automatic closing is deactivated	0 <u>10</u> 255
P020	Time of pre-flashing (expressed in sec)	0... <u>2</u> 15
P021	Time of phase displacement in opening (expressed in sec)	1..... <u>10</u>
P022	Time of phase displacement in closing (expressed in sec)	0..... <u>3</u> 10
P023	Collectivity function: if it is activated it deactivates both start and pedestrian inputs for the whole duration of automatic opening and closing	<u>000</u> deactivated
		<u>001</u> activated
P024	Ram blow function: if it is activated, it pushes the motors close for one second before each opening movement, so as to ease the releasing of any electric lock	<u>000</u> deactivated <u>001</u> activated
P025	Operating program: reversal (start->open, start->close, start->open ...), step-by-step (start->open, start->stop, start-close...)	<u>000</u> inversione
		<u>001</u> step-by-step
P026	Photocell function even while opening: if it is activated, the photocell stops the movement while opening until the obstacle is removed. In any case it reverses the direction of movement while closing	<u>000</u> Photocell activated only in closing
		<u>001</u> Photocell activated also in opening
P027	Clean contact operation : - If = 0: open gate warning light, the contact is always closed when the gate is opened, it opens again only when the closing movement is completed - If different from 0: courtesy light, the contact is closed during every movement, it opens again when the motor stops according to a pre-settable delay (expressed in sec)	<u>0</u> 255
P028	Short reversal at end of stroke: when each leaf reaches the end of stroke, it reverses shortly the movement so as to "release" the mechanical stress due to the leaf's pressure on the end of stroke itself.	<u>000</u> deactivated
		<u>001</u> activated
P029	One motor function: if it is activated, the control board controls motor 1 only	<u>000</u> deactivated <u>001</u> activated
P030	Unused parameter	
P031	Unused parameter	
P032	Unused parameter	
P033	Unused parameter	
P034	Unused parameter	

¹ The default value, set by manufacturer at the factory, is written in bold and underlined.
² Column reserved to the installer to fill in with the automation personalised parameters
³ Inactive channel.

Table 2 Parameters