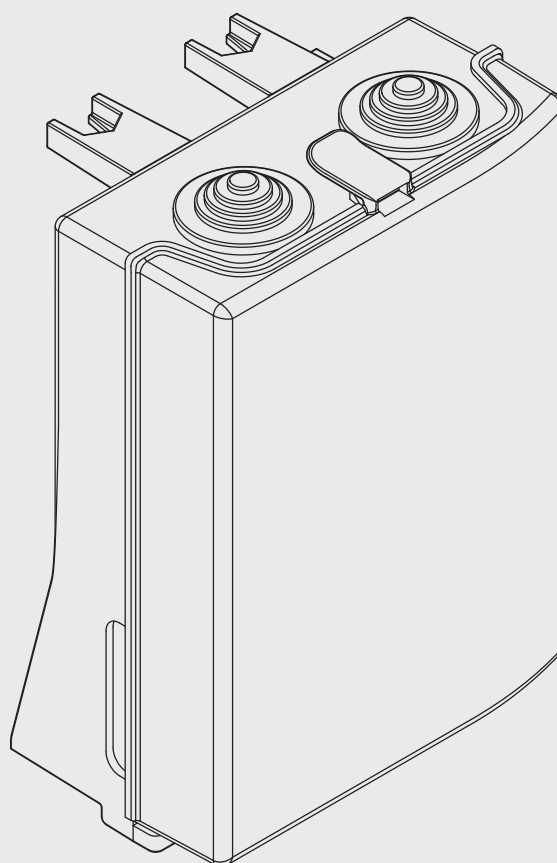
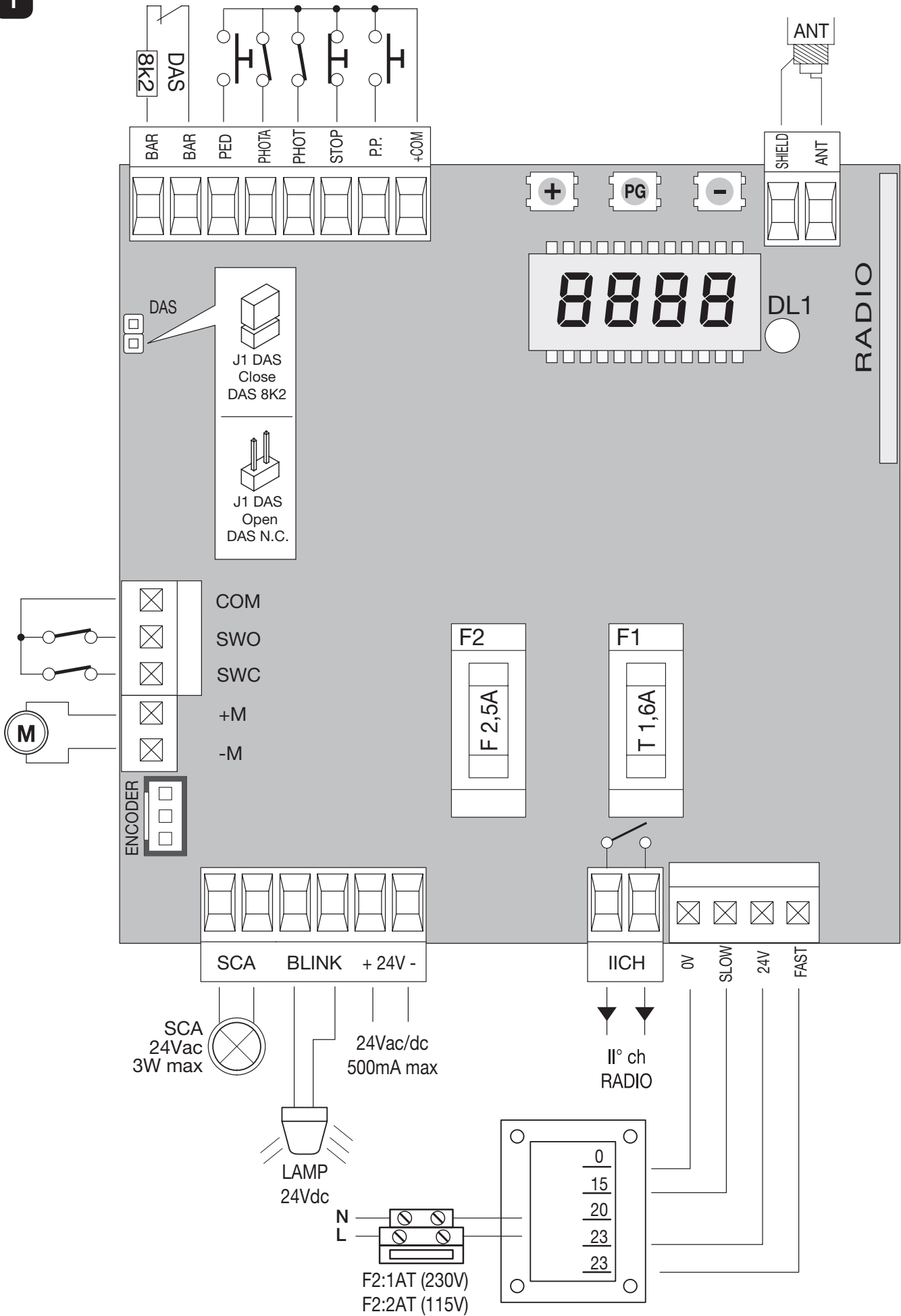


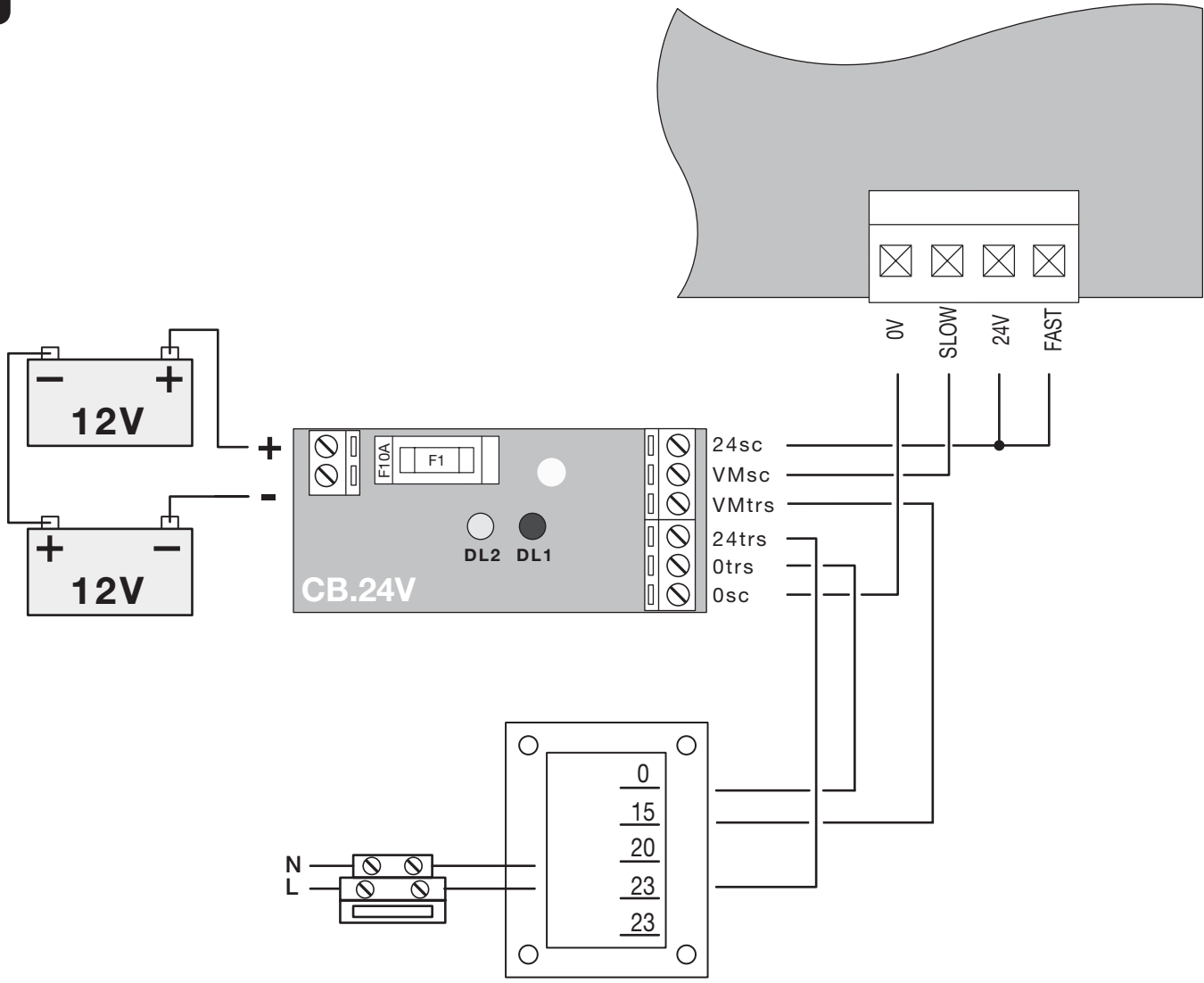
CP.B24



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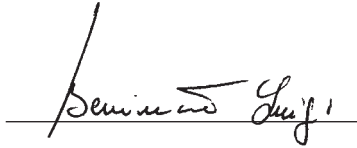


EC declaration of conformity

Manufacturer: **Automatismi Benincà SpA.**
Address: Via Capitello, 45 - 36066 Sandrigo (VI) - Italia

Herewith declares that: control unit **CP.B24.**
complies with the following relevant provisions:
EMC guidelines: **89/336/CCE, 93/68/CEE**
Low voltage guidelines: **73/23/CEE, 93/68/CEE**

Benincà Luigi, Legal responsible.
Sandrigo, 08/04/2008.



WARNINGS

This manual has been especially written to be use by qualified fitters.

None of the information provide in this manual can be considered as being of interest for the end users.

Preserve this manual for future needs.

The technician has to furnish all the information related to the step by step function, the manual and the emergency function of the operator, and to deliver the manual to the final user.



Foresee on the supply net an onnipolar switch or selector with distance of the contacts equal or superior to 3 mms.

Verify that of the electrical system there is an awry differential interrupter and overcurrent protection.

Some typologies of installation require the connection of the shutter to be link at a conductive mass of the ground according to the regulations in force.

The electrical installation and the operating logic must comply with the regulations in force.

The leads fed with different voltages must be physically separate, or they must be suitably insulated with additional insulation of at least 1 mm.

The leads must be secured with an additional fixture near the terminals.

During installation, maintenance and repair, interrupt the power supply before opening the lid to access the electrical parts

Check all the connections again before switching on the power.

The unused N.C. inputs must be bridged.

The descriptions and the present illustrations in this manual are not binding. Leaving the essential characteristics of the product unchanged, the manufacturer reserves himself the right to bring any change of technical, constructive or commercial character without undertaking himself to update the present publication.

TECHNICAL DATA

Contol unit supply	24 Vdc
Power supply	230 Vac 50/60 Hz or 115Vac 50/60Hz according to the version
Output supply	1 motor 24Vdc
Power maximum motor	120 W
Output supply accessories	24Vdc 500mA max.
Protection level	IP54
Operating temp.	-20°C / +70°C
Radio receiver	built in 433,92 MHz configurabile (rolling-code or programmable + rolling-code)
Rolling code transmitters supported	64 rolling-code

CP.B24 CONTROL UNIT

WIRE DIAGRAM

Wire connections shown in Fig. 1 are described hereunder:

Terminals	Function	Description
M+/M-	Motor	Quick connector for motor connection, 24VDC 120W max
COM SWO SWC	Limit switches	Quick connector for limit switch connection. COM: Common to limit switches SWO: Input, OPEN limit switches (N.C. contact) SWC: Input, CLOSE limit switches (N.C. contact)
BAR/BAR	SAFETY EDGE	Input, safety edge contact Resistive edge: Closed "DAS" jumper Mechanical edge: Open "DAS" jumper If the safety edge is activated, the gate stops and the performs a movement reversion for 3s
PED	PEDESTRIAN	Input, pedestrian push-button (N.O. contact). It controls the partial opening of the gate according to the value preset by TPED.
PHOTA	Open Photocell	Input, photocell activated in the opening phase only
PHOT	Photocell	Input, photocell activated in both opening and closing phases
STOP	STOP	Input, STP push-button (N.C. contact)
P.P.	Step-by-Step	Input, step-by-step push button (N.O. contact)
+COM	COMMON	Common to all control inputs.
SHIELD/ ANT	Antenna	Antenna connection to the built-in receiver card SHIELD: Shield/ ANT: Signal
FAST 24V SLOW 0V	Secondary Transformer	Inputs, connection of the secondary transformer FAST: Input, 23V, it powers the motor during operation at normal speed 23V: power supply of accessories SLOW: Input, 15V, it powers the motor during braking 0V: Input, 0V
IICH	2°Ch radio	Output, second radio channel of the built-in radio receiver. N.O. contact, power-free.
+ 24V -	24 VAC/DC	, power supply of accessories, 24VAC/0.5A max. CAUTION: in the event of installation of the battery loader card CB.24V, the output (without mains power supply) will feature a voltage of 24VDC - polarised. Check the correct connection of devices.
BLINK	Flashing light	Connection of the flashing light, 24VDC 15W max.
SCA	SCA	Open gate warning light 24Vac output.
ENCODER	Encoder	Connector for connection of the position optic sensor (encoder).

EMERGENCY BATTERY

In case of power failure, an optional accessory to power the control unit is available.

The kit is composed of CB.24V battery charge card and two rechargeable batteries at 12V/1,2Ah, which can be fitted on the back on the control unit container.

The CB.24V card must be connected between the secondary transformer and the 0/SLOW/24V/FAST inputs, as shown in the diagram of Fig.2.

During mains powered operation, the DL2 green LED is switched on and the card maintains the battery charged.

If no mains power is available, the card powers the system through batteries, the DL1 red LED switches on.

A F10A fuse protects the control unit during operation with an emergency battery.

If no main power is available and batteries are down, both LED's are switched.

The buffer battery works and progressively runs down until it reaches the value of 18V. When this value is reached, the battery is disconnected.

During operation in case of power failure, the output, 24VAC accessories of the control unit, is polarised.

TO CHECK CONNECTIONS

Before programming the control unit, check that the motor is correctly connected:

- 1) Cut off power supply.
- 2) Manually release the gate leaf, move the same at approx. half stroke and block it again.
- 3) Power the system again.
- 4) Send a step-by-step control through a NC push-button temporarily connected to the PP input.
- 5) The gate leaf should open.
If not, reverse the motor connector (M+/M-) and limit switches by reversing the fasto connectors on the microswitches and perform a new self-learning of the stroke.
- 6) Carry out the self-learning of the stroke and trigger thresholds, as shown hereunder in the AUTO menu.

PROGRAMMING

The programming of the various functions of the control unit is carried out using the LCD display on the control unit and setting the desired values in the programming menus described below.

The parameters menu allows you to assign a numerical value to a function, in the same way as a regulating trimmer.

The logic menu allows you to activate or deactivate a function, in the same way as setting a dip-switch.

Other special functions follow the parameters and logic menus and may vary depending on the type of control unit or the software release.

USE OF PROGRAMMING KEYS

Press <PG> key to gain access to the Main Menu (PAR>>LOG>>RADIO>>...). These keys can be selected by pressing + and - keys.

Select the Main menu with <PG> key to enter the desired Function Menu .

- If <+> is pressed, the Function Menu can be scrolled from top to bottom.
- If <-> is pressed, the Function Menu can be scrolled from bottom to top.
- If <PG> key is pressed, presetting to be modified can be entered.
- The preset values can be modified by using <+> and <-> keys.
- The value is programmed if <PG> key is pressed again. The word "PRG" appears on the display.

See paragraph "Programming Example".

NOTES:

Simultaneously pressing <+> and <-> from inside a function menu allows you to return to the previous menu without making any changes.

Hold down the <+> key or the <-> key to accelerate the increase/decrease of the values.

After waiting 30s the control unit quits programming mode and switches off the display.

Pressing <-> with the display turned off means an impulse of P.P.

PARAMETERS, LOGICS AND SPECIAL FUNCTIONS

In the tables hereunder the single functions available in the control unit are shown.

	MENU	FUNCTION	MIN-MAX-(Default)	MEMO
PARAMETERS	t_{cA}	Automatic closure time. Active with logic "TCA"= ON only. At the end of the preset time, the control unit sends a closure control signal.	1-240-(40s)	
	t_{PEd}	The stroke time of the gate leaf is adjusted during the partial opening phase controlled by the pedestrian input.	1-99-(50%)	
	t_{Sn}	The gate leaf stroke during the braking phase is adjusted.	20-250-(50cm)	
	Pn_o	The anti-crash device* (amperometric sensor) operation is adjusted in the opening phase, at normal speed. 1: maximum sensitivity - 99:minimum sensitivity.	1-99-(50%)	
	Pn_c	The anti-crash device* (amperometric sensor) operation is adjusted in the closing phase, at normal speed. 1: maximum sensitivity - 99:minimum sensitivity.	1-99-(50%)	
	Ps_o	The anti-crash device* (amperometric sensor) operation is adjusted in the opening phase, at reduced speed. 1: maximum sensitivity - 99:minimum sensitivity.	1-99-(50%)	
	Ps_c	The anti-crash device* (amperometric sensor) operation is adjusted in the closing phase, at reduced speed. 1: maximum sensitivity - 99:minimum sensitivity.	1-99-(50%)	

*** WARNING:**

An incorrect setting of these parameters may cause danger.

Please comply with regulations in force!

MENU	FUNCTION	DEFAULT	MEMO
<i>tca</i>	The automatic closure is enabled or disabled. Off: disabled automatic closure. On: enabled automatic closure	(ON)	
<i>ibl</i>	The multi-flat function is enabled or disabled. On: enabled multi-flat function. The P.P. (Step-by-step) impulse or the impulse of the transmitter has no effect in the opening phase. Off: disabled multi-flat function.	(OFF)	
<i>ibca</i>	The PP and PED controls during the TCA are enabled or disabled. On: PP and PED controls are disabled. Off: PP and PED controls are enabled.	(OFF)	
<i>scL</i>	The rapid closure is enabled or disabled. On: enabled rapid closure. With open gate or gate in the opening phase, the activation of the photocell causes the automatic closure of the gate 3 sec after its activation. This function is enabled only with TCA:ON Off: rapid closure disabled.	(OFF)	
<i>pp</i>	The operating mode of the "P.P." (Step-by Step) button and of the transmitter is selected. On: Operation : OPEN > CLOSE > OPEN > Off: Operation: OPEN > STOP > CLOSE > STOP >	(OFF)	
<i>pre</i>	Forewarning flashing light enabled or disabled. On: enabled forewarning flashing light. The flashing light is activated 3 sec before the motor starts. Off: disabled forewarning flashing light.	(OFF)	
<i>htr</i>	The Service Man function is enabled or disabled. On: Service Man operation. The OPEN/CLOSE push buttons should be kept pressed for the entire operating time. Off: Automatic operation.	(OFF)	
<i>SLd</i>	Raking is enabled or disabled. On: Braking enabled. Off: Braking disabled.	(OFF)	
<i>Ltca</i>	The forewarning flashing light is enabled or disabled during the TCA time. On: Flashing light enabled. Off: Flashing light disabled.	(OFF)	
<i>cloc</i>	The OPEN input mode is selected. On: OPEN input, with CLOCK function. To be used for connection to timer for timed opening/closing. (CLOSED contact: open gate. OPEN contact: normal operation). Off: OPEN input, with OPEN function	(OFF)	
<i>Enc</i>	The Encoder is enabled or disabled. On: Encoder enabled. Off: Encoder disabled.	(ON)	
<i>cuAr</i>	The programmable code transmitters are enabled or disabled. On: Radio receiver enabled only for rolling-code transmitters. Off: Receiver enabled for rolling-code transmitters and programmable code transmitters (self-learning and DIPswitch) .	(OFF)	
<i>trEL</i>	Check of OPEN and CLOSE relays is enabled or. On: Check activated: if one of the 2 relays is faulty, the motor does not start and the error message "ERR2" is displayed. Off: no check to relays is carried out.	(OFF)	
<i>Soft</i>	Reduced speed starting is enabled or disabled. On: Starting is performed at reduced speed for 2 seconds and then movement is restored to normal speed. Off: Reduced speed start is disabled.	(OFF)	
<i>oPcL</i>	PP input as OPEN and PED input as CLOSED are enabled or disabled. On: PP input is enabled as OPEN and PED input is enabled as CLOSED. Off: PP and PED inputs are enabled with their function.	(OFF)	

LOGICS

	MENU	FUNCTION
RADIO	<i>PP</i>	By selecting this function, the receiver is waiting for (Push) a transmitter code to be assigned to the step-by-step function. Press the transmitter key, which is to be assigned to this function. If the code is valid, it will be stored in memory and OK will be displayed. If the code is not valid, the Err message will be displayed.
	<i>2ch</i>	By selecting this function, the receiver is waiting for (Push) a transmitter code to be assigned to the second radio channel. Press the transmitter key, which is to be assigned to this function. If the code is valid, it will be stored in memory and OK will be displayed. If the code is not valid, the Err message will be displayed.
	<i>CLR</i>	By selecting this function, the receiver is waiting for (Push) a transmitter code to be erased from memory. If the code is valid, it will be stored in memory and OK will be displayed. If the code is not valid, the Err message will be displayed.
	<i>REr</i>	The receiver memory is completely erased. Confirmation is asked to the user.

	MENU	FUNZIONE
	<i>nPRn</i>	The number of cycles (open+close) completed by the system is displayed. When the push-button <PG> is pressed once, the first 4 digits are displayed, if the push-button is pressed once more, the last 4 digits are displayed. E.g. <PG> 0012 >>> <PG> 3456: 123.456 cycles were performed.
	<i>Auto</i>	The self-calibration of the triggering thresholds of the anti-crash device (amperometric sensor), as well as the stroke learning are performed. When the <PG> push button is pressed once, the PUSH wording starts flashing. If the <PG> button is pressed once more the self-calibration procedure starts and the PRG wording is displayed. The gate will carry out at least 3 complete operations. At the end of this procedure, OK is displayed. This procedure can be performed with the gate in any position. The self-calibration procedure can be stopped at any moment with the contemporary pressure of <+> and <->. If the procedure has no positive result, the Err message is displayed.
	<i>RES</i>	RESET of the control unit. WARNING: This resets the control unit to the default values. When the <PG> push-button is pressed once, the RES wording begins to flash, if the push-button <PG> is pressed once more, the control unit is reset. Note: neither the transmitter codes nor the position and stroked of the gate leaf will be erased from the receiver.

STROKE LEARNING

For a correct operation of braking (with SLD logic: ON) it is essential that the stroke is memorised. This can be performed either using the above described AUTO function or when the first operation is completed (then carried out without interruptions) from open limit switch to close limit switch (or viceversa).

If the encoder is activated, the position of the gate leaf is stored in memory and reset also in case of power failure.

If the encoder is disabled, in case of power failure a new complete operation will be required to memorise the stroke and reset braking.

Note: If the automatic system is released and manually operated, the following operation might not perform braking correctly. Also in this case a new complete operation will be required to reset the regular operation of the system.

EXAMPLE OF PROGRAMMING

Let us suppose it is necessary to:

- set an automatic closing time (TCA) of 100s
- activate pre-blinking

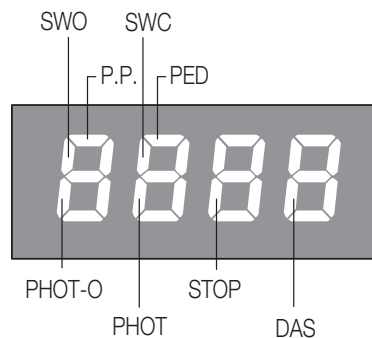
Perform the operations described below step by step:

Step	Press	Display	Notes
1	PG	<i>PRr</i>	First menu
2	PG	<i>LCR</i>	First function of the first menu
3	PG	<i>040</i>	Value currently set for the function selected

4		100	Set the desired value with the <+> and <-> keys
5		PrG	The value is programmed
		tcr	When programming has been made, the display goes to the function just set
6		PRr	Press <+> and <-> simultaneously to go to the higher menu
7		LoG	Second menu
8		tcr	First function of the second menu
9		PrE	Press <-> several times to select PRE logic
10		oFF	Value currently set for the function selected
11		on	Set the desired value with the <+> and <-> keys
12		PrG	The value is programmed
		PrE	When programming has been made, the display goes to the function just set
13		PRr	Press <+> and <-> simultaneously to go to the higher menu and quit programming or wait 30s.

DIAGNOSTICS

In the event of malfunctions, by pressing key + or - the status of all inputs (limit switches, control and safety) can be displayed. One segment of the display is linked to each input. In the event of failure it switches on according to the following scheme.



N.C. inputs are represented by the vertical segments. N.O. inputs are represented by the horizontal segments.

ERROR MESSAGES

The control unit checks the correct operation of the safety devices. In the event of faults the following messages can be displayed:

- ERR Error : self-setting of the amperometric device or storage of remote control codes in memory.
- ERR1 Error : faulty encoder.
- ERR2 Error: OPEN or CLOSE relays are faulty.

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