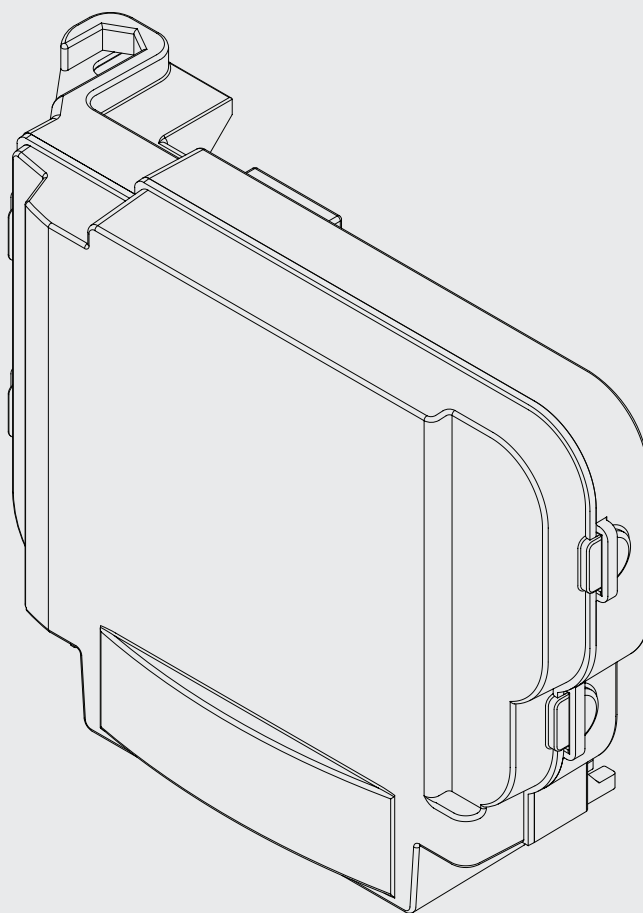
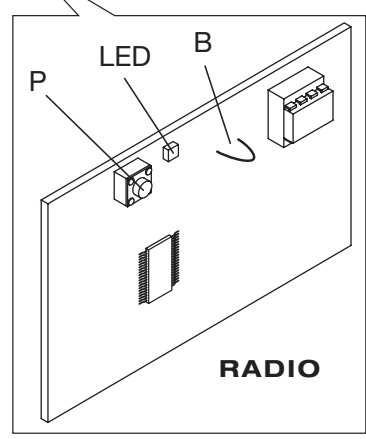
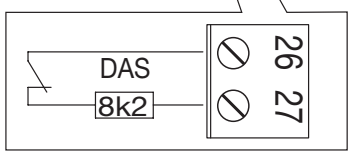
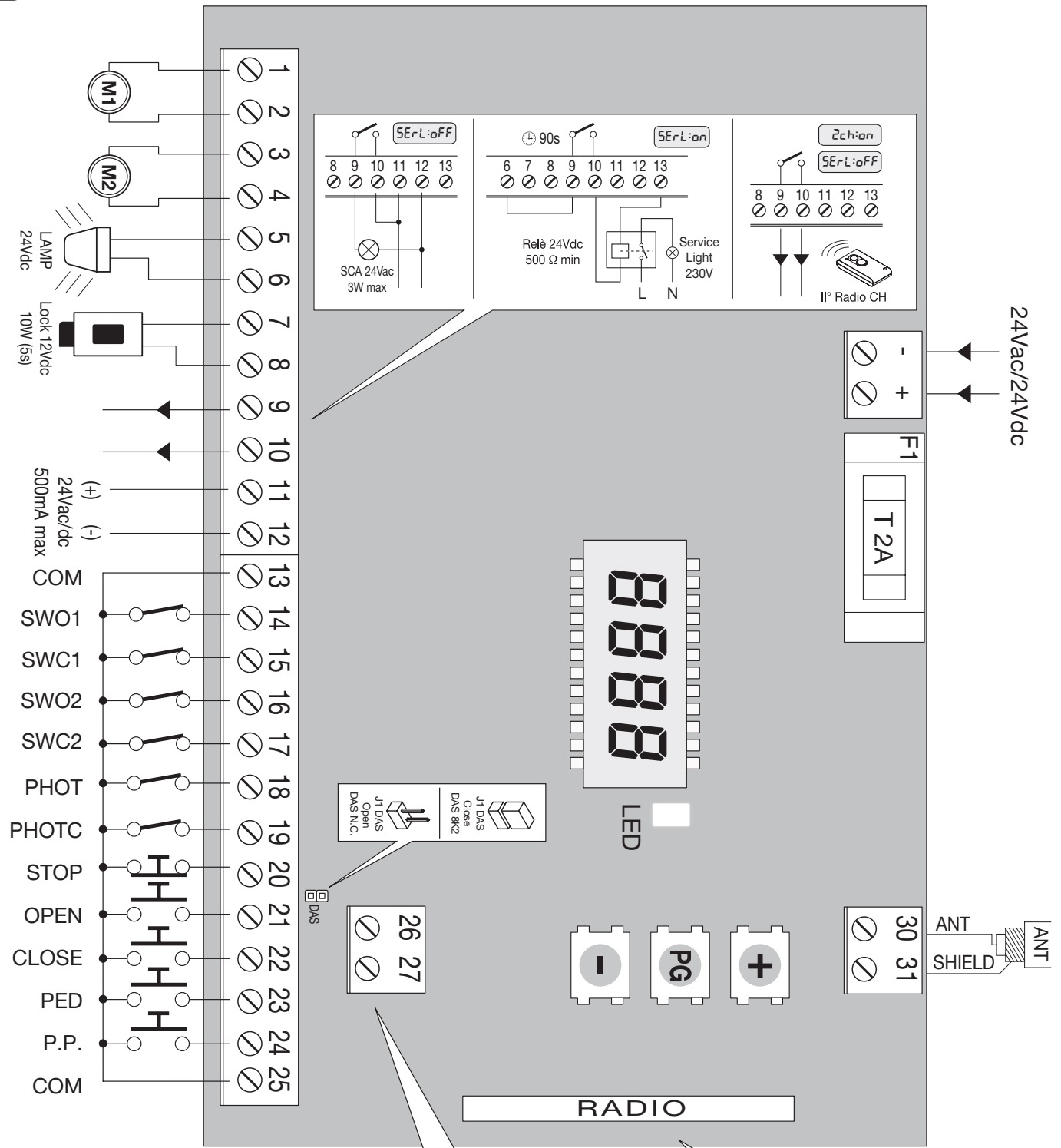


CP.MBE24



BENINCA[®]
TECHNOLOGY TO OPEN





ATTENZIONE: Dopo un'interruzione di rete il primo comando PP dato dalla centrale sarà un comando di **CHIUSURA** (vedi "Verifica Collegamenti")

WARNING: After a power failure, the first PP control signal sent by the control unit will be a **CLOSING** command (see "Checking connections")

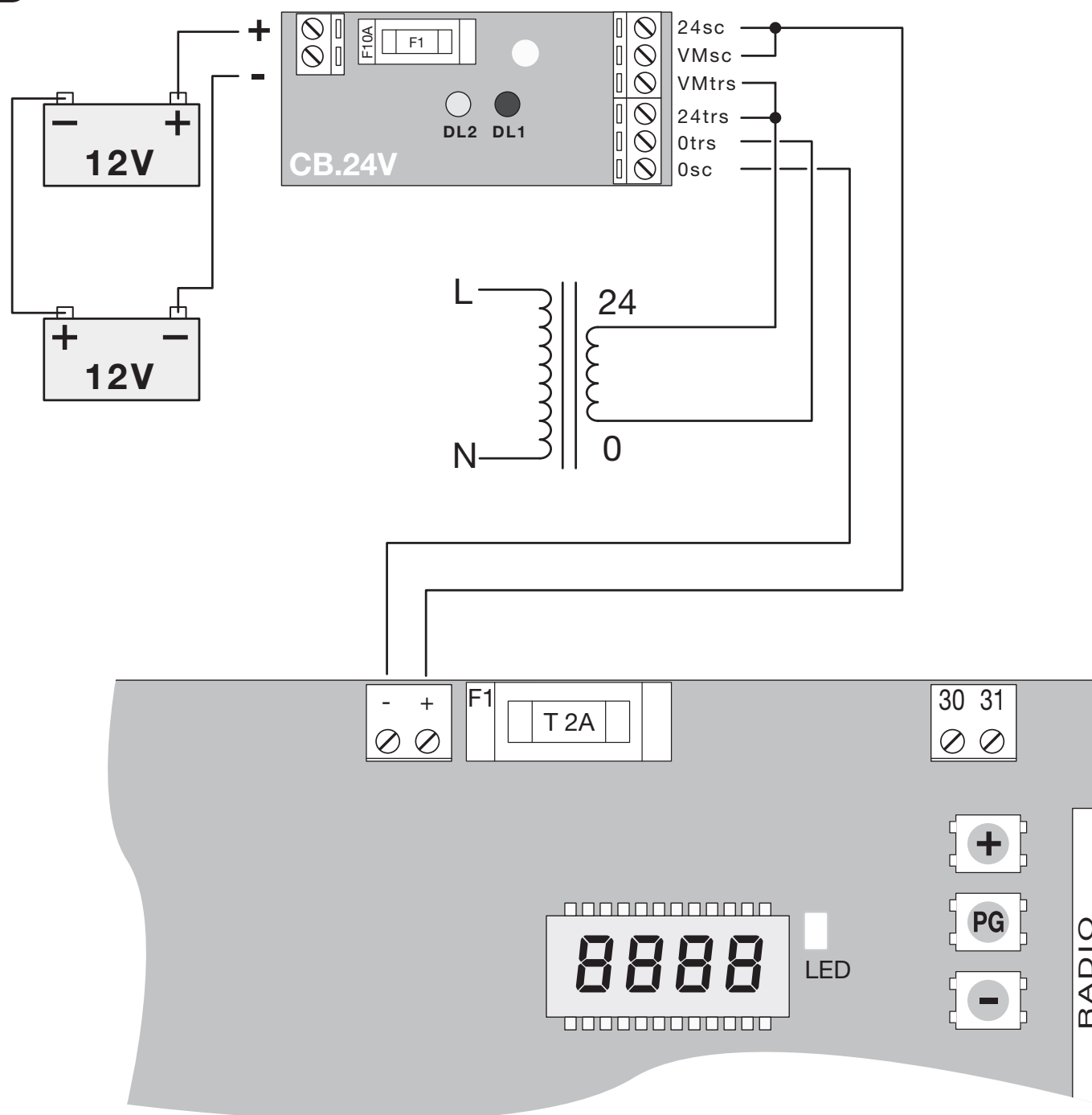
ACHTUNG: Nach einem Stromausfall ist die erste Steuerung PP der Zentrale, die eines **SCHLIEB Vorgangs** (siehe "Anschlüsse kontrollieren")

ATTENTION: Après une coupure du courant électrique la première commande PP donnée par la centrale sera une commande de **FERMETURE** (voir "Vérification Branchements")

ATENCIÓN: Después de una interrupción de red el primer mando PP dado por la central será un mando de **CIERRE** (véase "Comprobación de conexiones")

UWAGA: Po przerwaniu sieci pierwszym poleceniem PP wydanym przez centralę będzie polecenie **ZAMKNIĘCIA** (zobacz "Kontrola połączeń")

2

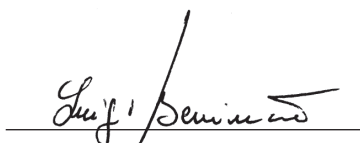


EC declaration of conformity

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

Herewith declares that: control unit **BRAIN 24-RI**.
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, 08/08/2008.



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	1/2 motor 24Vdc
Power maximum motor	120/120 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

BRAIN 24-RI CONTROL UNIT

WIRE DIAGRAM

Wire connections shown in Fig. 1 are described hereunder:

Terminal No.	Function	Description
1-2	Motor 1	Connection, motor 1: 24VDC 120W max
3-4	Motor 2	Connection, motor 2: 24VDC 120W max
5-6	Flashing light	Connection, flashing light 24VDC 15W max.
7-8	Lock	Output, 12Vdc/10W power supply for electric lock (7:0V, 8:+12V)
9-10	SCA/SRL/2CH	Volt-free contact, Normally Open, controlled by logics "2° Ch Radio" (2 nd Radio channel) and "SRL". With "2 nd Radio channel" logics On: active output as 2 nd Radio channel. With "2 nd Radio channel" logics Off: - With "SRL" logics On: Contact for courtesy light control - With "SRL" logics Off: Contact for "SCA" open gate light
11-12	24 Vac/dc	Output, accessory power supply, 24VAC/0.5A max. IMPORTANT: If the battery charger board CB.24V is installed, the output (without mains power connected) has a 24Vdc polarised voltage. Make sure the devices are correctly connected (i.e. 11:+24Vdc / 12:-0Vdc).
13-25	COM	Common for limit switches and all control inputs.
14	SWO1	Input, OPEN limit switch, motor 1 (Normally closed contact)
15	SWC1	Input, CLOSE limit switch, motor 1 (Normally closed contact)
16	SWO2	Input, OPEN limit switch, motor 2 (Normally closed contact)
17	SWC2	Input, CLOSE limit switch, motor 2 (Normally closed contact)
18	PHOT	Input, photocell activated in both opening and closing phases
19	PHOT C	Input, photocell activated in closing phase only (Normally closed contact)
20	STOP	Input, STOP push-button (Normally closed contact) (Normally closed contact)
21	OPEN	Input, OPEN push-button (Normally open contact).
22	CLOSE	Input, CLOSE push-button (Normally open contact)
23	PED	Input, push-button for pedestrian use (Normally open contact), it controls the opening of motor 1
24	Step-by-Step	Input, step-by-step push button (Normally open contact)
26-27	BAR	Input, sensitive edge contact (Normally closed contact) Resistive edge: "DAS" Jumper closed Mechanical edge: "DAS" Jumper open When the edge is activated, the gate movement is stopped and reversed for about 3s.
30-31	Antenna	Connection to the built-in radio receiver card (30-signal/31-screen).
+ / -	24VAC/dc	Input, 24VAC/24VDC power supply. If buffer batteries are used, connect the CB.24V card (in option) as indicated in the table.

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.

TO ACCESS PROGRAMMING:

- 1 – Press the button <PG>, the display goes to the first menu, Parameters "PAR".
- 2 – With the <+> or <-> button, select the menu you want (PAR>>LOG>>NMAN>>RES).
- 3- Press the button <PG>, the display shows the first function available on the menu.
- 4 - With the <+> or <-> button, select the function you want.
- 5 - Press the button <PG>, the display shows the value currently set for the function selected.
- 6 - With the <+> or <-> button, select the value you intend to assign to the function.
- 7 - Press the button <PG>, the display shows the signal "PRG" which indicates that programming has been completed.

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.

When the board is switched on, the software version is displayed for around 5 sec

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

PARAMETERS, LOGIC AND SPECIAL FUNCTIONS

The tables below describe the individual functions available in the control unit.

MENU	FUNCTION	MIN-MAX-(Default)	MEMO
<i>t_{cA}</i>	Automatic closing time. Active only with logic "TCA"=ON. At the end of the set time the control unit orders a closing manoeuvre.	1-240-(40s)	
<i>t_{n1}</i>	Operating time, motor 1. The operating time is adjusted at normal speed during motor 1 opening and closing phases. See Paragraph "Adjustment of the gate leaf speed". By setting the value to 0, the operation is performed with around 2 seconds of pick-up and then the movement is carried on at reduced speed for the entire stroke.	0-180-(5s)	
<i>t_{n2}</i>	Operating time, motor 2. The operating time is adjusted at normal speed during motor 2 opening and closing phases. See Paragraph "Adjustment of the gate leaf speed". By setting the value to 0, the operation is performed with around 2 seconds of pick-up and then the movement is carried on at reduced speed for the entire stroke.	0-180-(5s)	
<i>t_{PEd}</i>	The opening percentage of motor 1 (pedestrian function) is adjusted. If the logics NOLS=ON, the opening percentage will always be 100%, in spite of the preset value. If TM1<5 sec., the opening percentage will always be 100%, in spite of the preset value.	25-50-75-100 (50%)	
<i>t_{SLd}</i>	Duration of braking. Preset a value which must be higher than the braking. See section "Adjustment of speed"	1-30-(15s)	
<i>p_{n01}</i>	The anti-crash device* (amperometric sensor) operation is adjusted in the opening phase, at normal speed - Motor 1.	1-99-(50%)**	
<i>p_{n02}</i>	The anti-crash device* (amperometric sensor) operation is adjusted in the opening phase, at normal speed - Motor 2.	1-99-(50%)**	
<i>p_{n01}</i>	The anti-crash device* (amperometric sensor) operation is adjusted in the closing phase, at normal speed - Motor 1.	1-99-(50%)**	
<i>p_{n02}</i>	The anti-crash device* (amperometric sensor) operation is adjusted in the closing phase, at normal speed - Motor 2.	1-99-(50%)**	
<i>t_{d_{n0}}</i>	Mot.2 opening delay time. Regulates the delay time of motor 2 on opening with respect to motor 1	0-15-(2s)	
<i>t_{d_{n1}}</i>	Mot.1 closing delay time Regulates the delay time of motor 1 on closing with respect to motor 2	0-40-(3s)	
<i>t_{Loc}</i>	Electric lock activation time. The value is expressed in 1/10s (0=0s - 50=5s)	0-50 (5=0,5s)	
<i>s_{Ld5}</i>	Motor speed during braking is adjusted. Values are expressed in percentage with respect to normal operating speed.	20-99 (50)	
<i>p_{S01}</i>	The anti-crash device* (amperometric sensor) operation is adjusted in the opening phase, at reduced speed - Motor 1.	1-99-(50%)**	
<i>p_{S02}</i>	The anti-crash device* (amperometric sensor) operation is adjusted in the opening phase, at reduced speed - Motor 2.	1-99-(50%)**	
<i>p_{S01}</i>	The anti-crash device* (amperometric sensor) operation is adjusted in the closing phase, at reduced speed - Motor 1.	1-99-(50%)**	
<i>p_{S02}</i>	The anti-crash device* (amperometric sensor) operation is adjusted in the closing phase, at reduced speed - Motor 2.	1-99-(50%)**	
<p>* WARNING: AN INCORRECT SETTING OF THESE PARAMETERS MAY RESULT IN AN HAZARD. COMPLY WITH REGULATIONS IN FORCE!</p> <p>** 1: maximum sensitivity - 99:minimum sensitivity.</p>			

PARAMETERS

MENU	FUNCTION	ON-OFF- (Default)	MEMO
<i>tca</i>	Enables or disables automatic closing On: automatic closing enabled Off: automatic closing disabled	(ON)	
<i>ibl</i>	Enables or disables condominium function. On: condominium function enabled. The step-by-step impulse or transmitter impulse has no effect during the opening phase. Off: condominium function disabled.	(OFF)	
<i>scL</i>	Enables or disables rapid closing On: rapid closure is enabled. With open gate, or in the opening phase, the activation of the photocell causes the automatic closure 3sec after the total opening of the gate. It is activated only with TCA:ON Off: rapid closing disabled.	(OFF)	
<i>SLd</i>	Enables or disables slowing. On: Slowing active. Off: Slowing excluded. If the logics NOLS=ON, braking cannot be excluded.	(ON)	
<i>PP</i>	Selects the operating mode of the "Step by step button" and of the transmitter. On: Operation: OPEN > CLOSE > OPEN > Off: Operation: OPEN > STOP > CLOSE > STOP >	(OFF)	
<i>PrE</i>	Enables or disables pre-blinking. On: Pre-blinking enabled. Blinking is activated 3s before the motor starts. Off: Pre-blinking disabled.	(OFF)	
<i>blco</i>	The lock function in the opening phase is enabled or disabled. On: Enabled lock function. Only with logics NOLS=OFF. After activation of the opening limit switches, the control unit delays stop by approximately 0.5sec, so as to allow a better stop of the gate leaf against the stoppers. Off: Disabled lock function.	(OFF)	
<i>blcc</i>	The lock function in the closing phase is enabled or disabled. On: Enabled lock function. Only with logics NOLS=OFF. After activation of the closing limit switches, the control unit delays stop by approximately 0.5sec, so as to allow a better stop of the gate leaf against the stoppers. Off: Disabled lock function.	(ON)	
<i>cLoc</i>	Selects the mode of the OPEN input On: OPEN input with CLOCK function. To be used for connection to a timer for timed opening/closing. (Contact CLOSED- gate open, Contact open, normal operation). Off: OPEN input with OPEN function	(OFF)	
<i>htr</i>	Enables or disables Man present function. On: Man Present operation. During the entire operation, the OPEN/CLOSE push-buttons must be kept pressed. When the STOP input opens, the motor stops. All safety inputs are disabled. Off: Automatic operation.	(OFF)	
<i>nLoc</i>	Selects the type of electric lock used. On: Magnetic electric lock, normally fed at 12Vac/0,5A max. Before each opening manoeuvre the power supply is interrupted for the time set by the parameter TLOC. Off: Electric lock with latch, normally not fed. Before each opening manoeuvre power is fed at 12Vac for the time set by the parameter TLOC.	(OFF)	
<i>mot</i>	Select the 1/2 motors operating mode: On: Only motor 1 operating. Off: Both motors operating.	(OFF)	

LOGIC

	MENU	FUNCTION	ON-OFF-(Default)	MEMO
LOGIC	nols	The operation mode of the amperometric sensor is selected either the limit switches are provided or not. On: No limit switches. During the TSLD time, the activation of the amperometric sensor is read by the control unit as limit switch and stops the motor. During the TM time, the amperometric sensor is read by the control unit as obstacle present and it DOES NOT stop the motor, but reserves the movement. Therefore, without limit switches the TM time must be lower than the total stroke time. Note: To use this function, close the limit switch contacts with jumpers. Off: Limit switches provided. The amperometric sensor activation is interpreted by the control unit as obstacle present in the gate movement area. Similarly to the safety edge activation, the control signal is sent to stop and reverse movement for approx. 3s.	(OFF)	
	serL	Service light function is enabled or disabled on output 9-10. On: at each movement, the contact is closed for approx. 90s. For the light control use the auxiliary relay (24Vdc/500Ω min) . Off: The output has the SCA function, open gate LED: open contact with closed gate, flashing light during gate movement, closed contact with open gate. See wire diagram.	(OFF)	
	hrr	Enables or disables the inversion stroke function On: Function enabled. Before each opening or closing manoeuvre the control unit orders a manoeuvre of 2s in the opposite direction to facilitate the release of the electric lock. Off: Function disabled.	(OFF)	
	2ch	The second radio channel is enabled or disabled onto terminals 9/10. On: 9/10 output preset as second radio channel. The SERL logics must be set to OFF. Off: 9/10 output can be set as SCA or service light.	(OFF)	

MENU	FUNCTION
nrn	Displays the number of complete cycles (open+close) carried out by the automation. When the <PG> button is pressed for the first time, it displays the first 4 figures, the second time it shows the last 4. Example <PG> 00 i2 >>> <PG> 3456: made 123.456 cycles.
res	RESET of the control unit. ATTENTION!: Returns the control unit to the default values. Pressing the <PG> button for the first time causes blinking of the letters RES, pressing the <PG> button again resets the control unit. Note: The transmitter codes are not erased from the receiver.

GATE SPEED ADJUSTMENTS

The figure besides shows the trend of the gate speed (V axis) when time changes (T axis).

The scheme is valid in both opening and closing phases, for both motors.

If a (START) control is given, the door/gate leaf starts moving with a standard speed.

In this phase, the torque is adjusted according to PMO1/PMO2 parameters for the opening phase, and PMC1/PMC2 parameters for the closing phase.

The leaf then continues its stroke at standard speed for the entire time preset by TM1/TM2 parameter.

Braking then starts for the duration preset by TSLD parameter.

Speed during braking is adjusted by SLDS parameter.

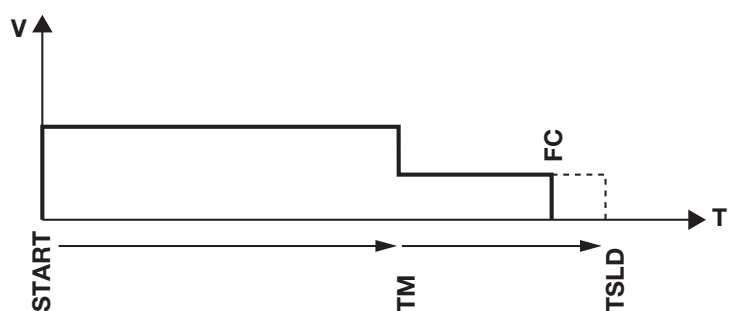
Before the TSLD time has elapsed, the leaf must reach the FC limit switch or the mechanical stop (amperometric sensor triggering).

To obtain a correct presetting of the parameter, proceed as follows:

Check that the NOLS logics is correctly set based on the presence or absence of limit switches.

With NOLS=OFF (limit switches are present):

- 1 Disable braking (SLD=OFF)
- 2 Totally open or close the door/gate, while measuring the time required for the operation.
- 3 Preset the value read on TM1/TM2 parameter, deducting the desired braking time (for example: with 25sec total opening and a 5 sec braking being required: preset TM1/TM2 on 20sec).
- 4 Preset the TSLD value at a value some seconds higher than braking (in our example: 10 sec).
- 5 Reactivate braking (SLD=ON)
- 6 Preset the PMO/PMC values, according to regulations in force.



With NOLS=ON (limit switches are absent):

- 1 Temporarily preset TM1 and TM2 parameters to a value which is undoubtedly higher than the total operating time.
- 2 Carry out a complete operation, and measure the time required for the door leaves to move from a mechanical stopper to the other.
Note: The door leaves will reach the mechanical stopper at full speed; therefore, the amperometric sensor will cause the movement reversion.
- 3 Preset the value read on TM1/TM2 parameter, deducting the desired braking time (for example: with 25sec total opening and a required 5 sec braking: preset TM1/TM2 on 20sec).
- 4 Preset the TSLD value at a value some seconds higher than braking (in our example: 10 sec).
- 5 Preset the PMO/PMC values, according to regulations in force.

HOW TO STORE THE TRANSMITTER CODES IN MEMORY

The control unit is equipped with an incorporated three-channel radio module, with 433.92 MHz frequency able to memorize up to 512 rolling-code transmitters or 1 programmable code.

Through jumper B (fig.1), the type of transmitter used can be selected:

With closed jumper: only rolling-code.

With open jumper: rolling-code and programmable.

To store a transmitter code in memory proceed as follows:

- 1 Press P push button of the radio receiver .
- 2 The LED switches on with RED light for around 3 sec, then the LED switches off and on again.
If a transmitter code is to be stored on the first channel (Step-by-Step function), press the transmitter push button to be memorised within 5 sec.
- 3 If the push-button P of the receiver is pressed again, the LED light turns GREEN for around 3 sec, then the LED switches off and on again.
If a transmitter code is to be stored on the second channel (9/10 output), press the transmitter push button to be memorised within 5 sec.
- 4 If the P push-button of the receiver is pressed again, the LED light turns ORANGE for around 3 sec., then the LED switches off and on again.
If a transmitter with pedestrian function is to be stored in memory, press the transmitter push button to be memorised within 5 sec.
- 5 If push button P on the receiver is pressed again, the LED switches off and the receiver exits the learning mode.

To reset the receiver:

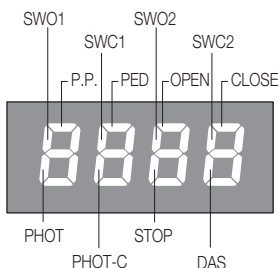
Cut off power supply, press push button P and, keeping it pressed, power the unit again. The LED switches on with fixed red light, and after about 5 seconds, the LED starts flashing with alternate colours. Release the push button and the receiver will be reset and all transmitter codes erased.

TO CHECK CONNECTIONS:

- 1) Cut-off power supply.
- 2) Manually release the wings, move them to approx. half-stroke and lock them again.
- 3) Reset power supply.
- 4) Send a step-by-step control signal by pressing the <-> push-button.
- 5) **The wings should start an CLOSING movement.**

If this is not the case, invert the movement wires of the motor. (1<->2 for motor M1, and 3<->4 for motor M2) and the relevant limit switch inputs (14<->15 for motor M1, and 16<->17 for motor M2).

DIAGNOSTICS



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.

The control unit displays the wording AMP1 or AMP2 if the amperometric sensor triggers, e.g. at end of operation, in both opening and closing phases.

EMERGENCY BATTERY

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

The CB.24V card must be connected between the secondary transformer and the 24V+/24V- 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.

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	PRr	First menu
2		tCR	First function of the first menu
3	PG	040	Value currently set for the function selected
4	+↑ -↓	100	Set the desired value with the <+> and <-> keys
5	PG	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	PG	tCR	First function of the second menu
9	-	PrE	Press <-> several times to select PRE logic
10	PG	oFF	Value currently set for the function selected
11	+↑ -↓	on	Set the desired value with the <+> and <-> keys
12	PG	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.

BENINCA[®]

AUTOMATISMI BENINCA[®] SpA - Via Capitello, 45 - 36066 Sandrigo (VI) - Tel. 0444 751030 r.a. - Fax 0444 759728
