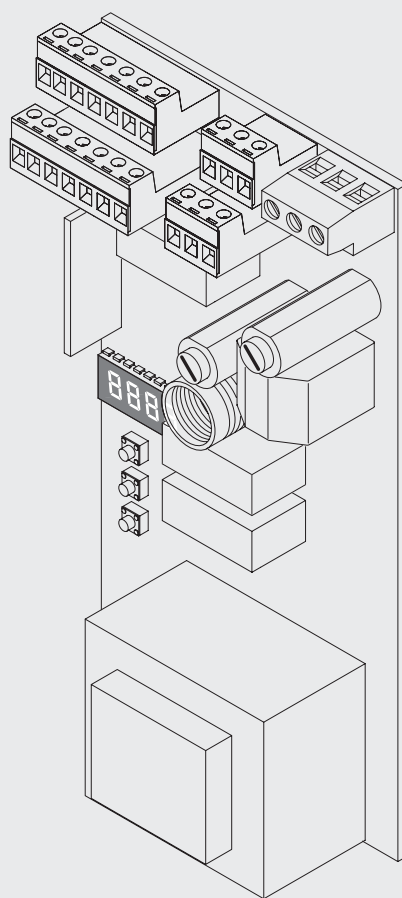
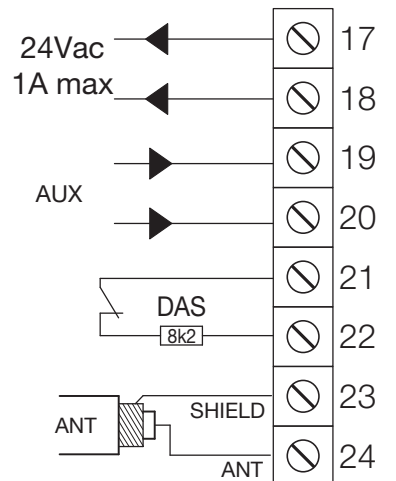
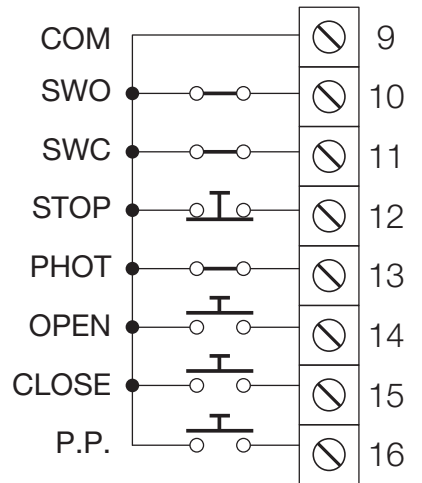
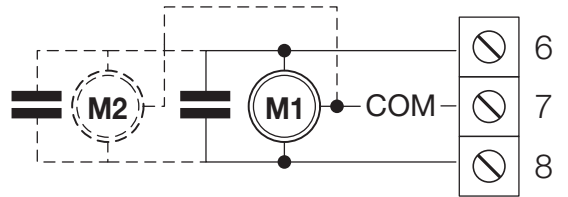
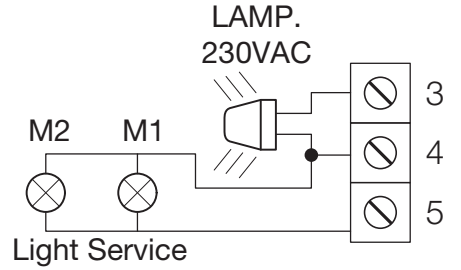
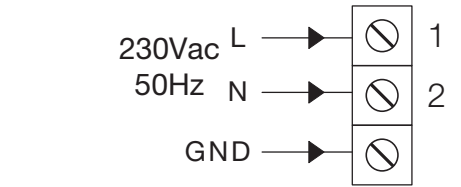
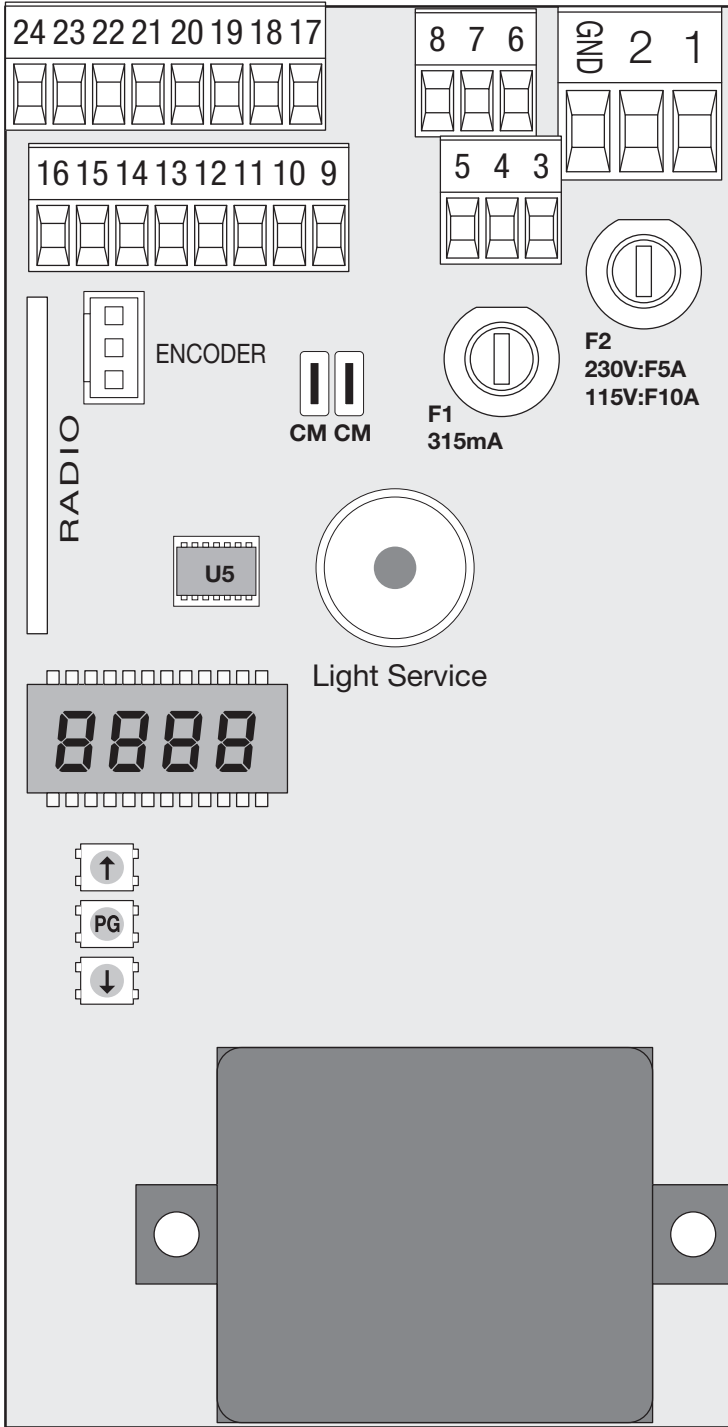


# CP.ZED230-E

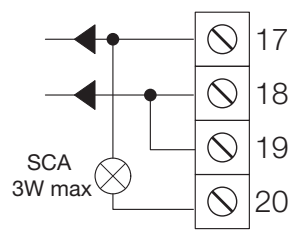


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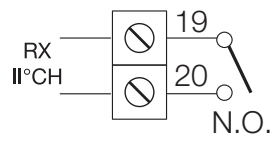
2

**RUH:0**



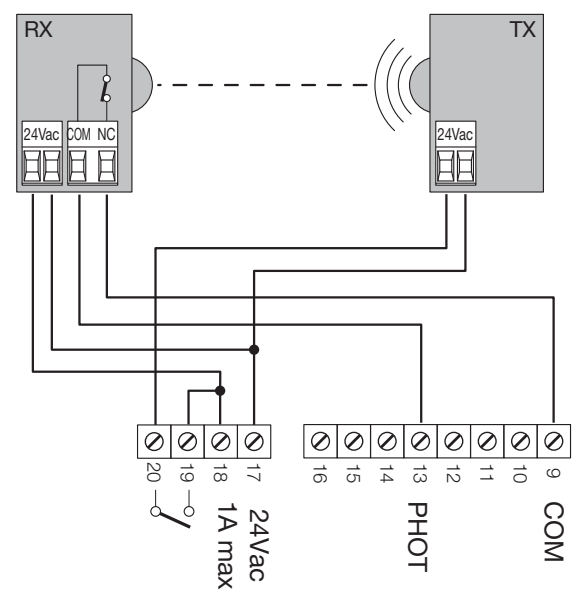
**SCA**

**RUH:1**



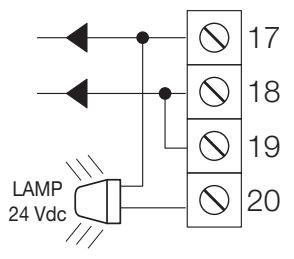
**II° CH RADIO**

**RUH:2**



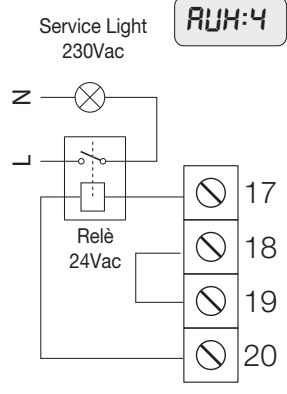
**PHOTO TEST**

**RUH:3**



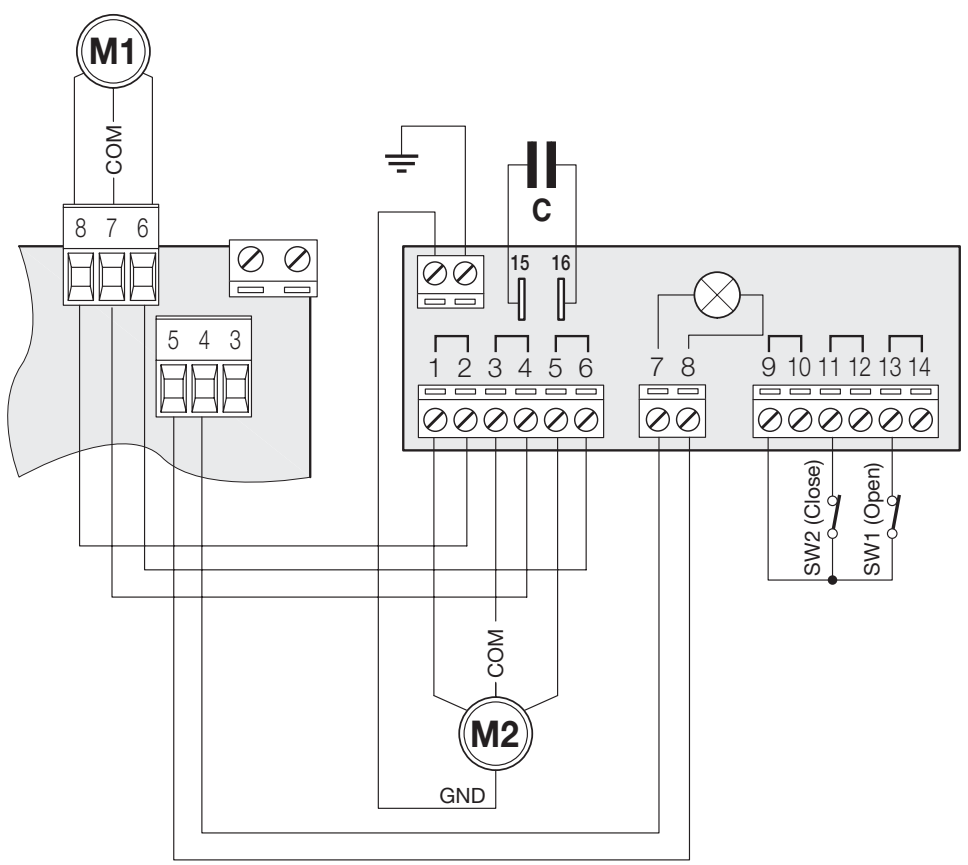
**LAMP**

**RUH:4**



**SERVICE LIGHT**

3



## EC Declaration of conformity

Declaration pursuant to Directives 2004/108/EC(EMC); 2006/95/EC(LVD)

Manufacturer:

**Automatismi Benincà SpA**

Address:

**Via Capitello, 45 - 36066 Sandrigo (VI) - Italy**

Declares that the product:

**Control unit CP.ZED230-E**

is compliant with the conditions of the following EC Directives:

• **DIRECTIVE 2004/108/EC OF THE EUROPEAN PARLIAMENT AND COUNCIL** of December 15 2004 regarding the approximation of the legislations of the member States relative to electromagnetic compatibility and that repeals directive 89/336/CEE, according to the following concurred norms:

EN 61000-6-2:2005, EN 61000-6-3:2007.

• **DIRECTIVE 2006/95/EC OF THE EUROPEAN PARLIAMENT AND THE COUNCIL** of December 12 2006 concerning the approximation of the legislations of the member States relative to electrical material destined to be used within certain voltage limits, according to the following concurred regulations:

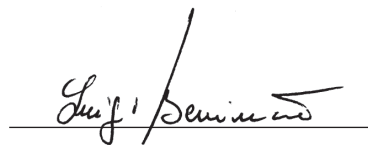
EN 60335-1:2002 + A1:2004 + A11:2004 + A12:2006 + A2:2006 + A13:2008; EN 60335-2-103:2003.

if applicable :

• **DIRECTIVE 1999/5/EC OF THE EUROPEAN PARLIAMENT AND THE COUNCIL** of March 9 1999 regarding radio devices and terminal and telecommunications devices and the reciprocal recognisances of their conformity, according to the following concurred regulations: ETSI EN 301 489-3 V1.4.1 (2002) + ETSI EN 301 489-1 V1.4.1 (2002) + ETSI EN 300 220-3 V1.1.1 (2000) + EN 60950-1 (2001)

Benincà Luigi, Legal manager.

Sandrigo, 02/11/2010.



## 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

Control unit supply	230 Vac 50/60 Hz or 115Vac 50/60Hz according to the version
Output supply	1/2 motor 230Vac
Power maximum motor	300+300 W
Output supply accessories	24Vac 1Amax.
Protection level	IP54
Operating temp.	-20°C / +70°C
Radio receiver	built in 433,92 MHz configurable (rolling-code or programmable + rolling-code)
Rolling code transmitters supported	64 rolling-code

## CP.ZED230-E CONTROL UNIT WIRE DIAGRAM

Wire connections shown in Fig. 1 are described hereunder:

Terminal No.	Function	Description
1-2	Power supply	Input, 230VAC 50Hz (1-Phase/2-Neutral)
3-4	Flashing light	Connection of flashing light, 230Vac 40W max.
4-5	Motor light	Connection to the courtesy light (230VAC 40+40W max.).
6-7-8	Motor 1/2	Connection to motor 1/2 : (6-speed/7-Com/8-speed)* Should 2 motors be used, connect the second motor in parallel.
9	COM	Common for limit switch and all control inputs.
10	SWO	Input, OPEN limit switch (N.C. contact)
11	SWC	Input, CLOSE limit switch (N.C. contact)
12	STOP	Input, STOP push button (N.C. contact)
13	PHOT	Input, connection to safety devices, N.C. contact (e.g. Photocells)
14	OPEN	Input, OPEN push button (N.O. contact)
15	CLOSE	Input, CLOSE push button (N.O. contact)
16	Step-by-Step	Input, step-by-step push button (N.O. contact)
17-18	24 Vac	Output, power supply of accessories, 24Vac/1A max.
19-20	AUX	Normally Open (N.O.) contact, not powered, configurable as SCA/II°CH/PHOTO TEST.
21-22	COSTA	Input, safety edge contact Resistive edge: Closed "DAS" jumper Mechanical edge: Open "DAS" jumper If the safety edge is activated in the opening phase, the gate stops. In the closing phase, the gate stops and the performs a movement reversion (opens) for 3s.
23-24	Aerial	Connection to the radio receiver card of the aerial (23-screen/24-signal).
CM-CM	Capacitor	Connected to motor capacitor
J3	Radio receiver	Built-in radio receiver

### IMPORTANT:

**Should two motors be used, connect the limit switches of one single motor to the control unit.**

**The connection between CP.ZED230-E and the ZED.SC card is shown in Fig.3.**

### FUSES

- F1** Output protection fuse of accessories and signals  
**F2** Motor protection fuse

### 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. These keys can be selected by pressing ↑ and ↓ keys.

- 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.

If the push-button <↓> is pressed with display off, this is like giving a step-by-step control.

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.

After waiting 60s the control unit quits programming mode and switches off the display.

## PARAMETERS, LOGICS AND SPECIAL FUNCTIONS

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

PARAMETERS (PRG)			
MENU	FUNCTION	MIN-MAX-(Default)	MEMO
tcR	Automatic closure time. It is activated only with "tcR"=ON logic. At the end of the preset time, the control unit controls a closure operation.	1-240-(40s)	
tn	Motor operating time. The total stroke time in the motor opening and closing phases is adjusted. With the ENC:ON logics, this value is automatically preset by the parameter self-adjustment procedure (AUTO).	2-180-(60s)	
tSn	The space covered by the door leaf during braking in the closing phase is adjusted. Braking in the opening phase is automatically preset at 1/4 of the closing space. 0 = braking is disabled. With ENC:OFF logics the value is expressed in seconds. Braking after the triggering of the limit switch is adjusted.	0-99-(10%)	
Pno	The torque applied to the motor in the opening phase is adjusted.*	1-99-(40%)	
Pnc	The torque applied to the motor in the closing phase is adjusted*.	1-99-(40%)	
PSo	The torque applied to the motor during braking in the closing phase is adjusted.*	1-99-(40%)	
PSc	The torque applied to the motor during braking in the opening phase is adjusted*	1-99-(40%)	
tLS	The activation time of the service light is adjusted. With parameter :0, the area light function is activated. The light is switched on when the motor is moving and during the TCA dwell time. The light switches off when the motor stops.	0-240-(60s)	
SEAr	The triggering threshold of the anti-crash device (Encoder) during the normal speed phase.* 99: maximum sensitivity - 0: minimum sensitivity	0-99-(0%)	
SEAr	The triggering threshold of the anti-crash device (Encoder) during braking.* 99: maximum sensitivity - 0: minimum sensitivity	0-99-(0%)	
RUH	The operating mode of the auxiliary output to terminals 19/20 is preset. See wire connections in figure 2. 0: output configured as SCA (open gate indicator light): Off with closed door, on with open door, slow flash during opening, rapid flash during closing. 1: output configured as radio channel II integrated receiver. 2: output configured as PHOT TEST (photocell test). 3: output configured as flashing light. 4: output configured as service light additional to the light on the geared motor. Its activation time is adjusted by TLS parameter.	0-4-(0)	

### \* WARNING:

**An incorrect setting of these parameters may cause danger.  
Please comply with regulations in force!**

<b>LOGIC (LoU)</b>			
<b>MENU</b>	<b>FUNCTION</b>	<b>ON-OFF- (Default)</b>	<b>MEMO</b>
<b>tcA</b>	The automatic closure is enabled or disabled On: enabled automatic closure Off: disabled automatic closure	(OFF)	
<b>ibL</b>	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 have no effect in the opening phase. Off: disabled multi-flat function.	(OFF)	
<b>PP</b>	The operating mode of "P.P. Push button" and of the transmitter are selected. On: Operation : OPEN > CLOSE > OPEN > Off: Operation: OPEN > STOP > CLOSE > STOP >	(OFF)	
<b>PrE</b>	Forewarning flashing light enabled or disabled. On: enabled forewarning flashing light. The flashing light is activated 3 s before the starting of the motor. Off: disabled forewarning flashing light.	(OFF)	
<b>bLc</b>	The lock function in the closing phase is enabled or disabled. See paragraph "Operating mode with Enabled/Disabled encoder". On: Lock function is enabled. Off: Lock function is disabled.	(ON)	
<b>LtcA</b>	During the TCA time, the blinker is enabled or disabled. On: Activated blinker. Off: De-activated blinker.	(OFF)	
<b>SPn</b>	The pick-up function with ENC:OFF logics is activated or deactivated. On: the function is enabled. The first two seconds of operation are carried out at maximum torque. With ENC:ON logics, pick-up is automatically adjusted by the control unit.	(OFF)	
<b>htR</b>	The Operator function is enabled or disabled. On: Operator function enabled. During operation, the OPEN/CLOSE push-buttons must be kept pressed. Off: Automatic/semiautomatic operation.	(OFF)	
<b>ibcA</b>	During the TCA phase, the PP and PED controls are enabled or disabled. On: PP and PED controls are disabled. Off: PP and PED controls are enabled.	(OFF)	
<b>Enc</b>	The Encoder is enabled or disabled. On: Enabled encoder. Off: Disabled encoder (to be used with ZED series motors that are not equipped with built-in Encoder). NB: The Encoder can be possibly reset (from OFF to ON). A new self-calibration procedure is required (AUTO menu).	(ON)	
<b>cuAr</b>	The code programmable transmitters is enabled or disabled. On: Radio receiver enabled only for rolling-code transmitters. Off: Receiver enabled for rolling-code and programmable code transmitters (self-learning and Dip Switch).	(OFF)	
<b>PhcO</b>	The operating mode of the PHOT input is selected. On: PHOT input is activated in both opening and closing. In the opening phase: when the contact is opened, the motor stops. When the photocell is released, the motor restarts with an opening movement. In the closing phase: when the contact is opened, the motor stops. When the photocell is released, the motor inverts its movement direction (opens). Off: PHOT input is activated only in the closing phase. In the closing phase: when the contact is opened, the motor stops and the movement direction is immediately reversed (opens).	(OFF)	
<b>rEN</b>	The remote storage of the radio transmitter codes is enabled or disabled (see par. REMOTE LEARNING). On: Enabled remote storage Off: Disabled remote storage.	(OFF)	

## RADIO (rRd)

MENU	FUNZIONE
PP	By selecting this function, the receiver awaits (Push) for a transmitter code to be assigned to the step-by-step function. Press the transmitter key to be assigned to this function. If the code is valid, it is stored in memory and OK appears. If the code is not valid, the wording Err is displayed.
2ch	<b>With AUX:1 parameter, the radio channel II function to terminals 19/20 is activated.</b> <b>With AUX:0 e AUX:2 parameter, the service light is activated according to the time preset by TLS parameter.</b> By selecting this function, the receiver awaits (Push) the pressure of the key to be matched with that function. If the code is valid, the same is memorised and the OK message is displayed. If the code is not valid, the Err message is displayed.
clr	By selecting this function, the receiver awaits (Push) for a transmitter code to be erased from memory. If the code is valid, it is erase and OK appears. If the code is not valid or is not in memory, the wording Err is displayed.
rEr	Completely erase the receiver memory. Confirmation of operation is required.

## CYCLES NUMBER (nRRn)

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 12 >>> <PG> 3456: made 123.456 cycles.

## MAINTENANCE CYCLES (RRc t)

This function enables to activate the maintenance request notice after a number of manoeuvres determined by the installer.  
To activate and select the number of manoeuvres, proceed as follows:  
Press button <PG>, the display will show OFF, which indicated that the function is disabled (default value).  
With the buttons <+> and <-> select one of the numeric values proposed (from OFF to 100). The values are intended as hundreds of cycles of manoeuvres (for example: the value 50 indicates 5000 manoeuvres).  
Press the OK button to activate the function. The display will show the message Pr oG.  
The maintenance request is indicated to the user by keeping the indicator lamp lit up for other 10 sec after the conclusion of the opening or closing operation.  
The warning of maintenance required is indicated to the user through the flashing of the courtesy light LEDs during the opening and closing phases.

## RESET (rE5)

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 rE5, pressing the <PG> button again resets the control unit. Note: The transmitters are not erased from the receiver nor is the access password.

## PROTECTION CODE (codE)

It allows to type in an access protection code to the programming of the control unit.  
A four-character alphanumeric code can be typed in by using the numbers from 0 to 9 and the letters A-B-C-D-E-F.  
The default value is 0000 (four zeros) and shows the absence of a protection code.  
While typing in the code, this operation can be cancelled at any moment by pressing keys + and - simultaneously. Once the password is typed in, it is possible to act on the control unit by entering and exiting the programming mode for around 10 minutes in order to allow adjustments and tests on functions.  
By replacing the 0000 code with any other code, the protection of the control unit is enabled, thus preventing the access to any other menu. If a protection code is to be typed in, proceed as follows:

- select the Code menu and press OK.
- the code 0000 is shown, also in the case a protection code has been previously typed in.
- the value of the flashing character can be changed with keys + and -.
- press OK to confirm the flashing character, then confirm the following one.
- after typing in the 4 characters, a confirmation message "CONF" appears.
- after a few seconds, the code 0000 appears again
- the previously stored protection code must be reconfirmed in order to avoid any accidental typing in.

If the code corresponds to the previous one, a confirmation message "oH" appears.  
The control unit automatically exits the programming phase. To gain access to the Menus again, the stored protection code must be typed in.

**IMPORTANT: TAKE NOTE of the protection code and KEEP IT IN A SAFE PLACE for future maintenance operations.**  
**To remove a code from a protected control unit it is necessary to enter into programming with the password and bring the code back to the 0000 default value.**  
**IF YOU LOOSE THE CODE, PLEASE CONTACT THE AUTHORISED SERVICE CENTER FOR THE TOTAL RESET OF THE CONTROL UNIT.**



## INSTALLATION

The CP.ZED230E control unit can be used with various versions of the ZED gear motor:

ZED with 2 limit switches (opening and closing).

ZED with 1 limit switch (usually used as opening limit switch or auxiliary operations)

ZED without limit switch

If one or more limit switch are missing, the operation stop is controlled by the control unit after memorizing the opening/closing positions.

The following procedure shall apply for all versions:

- 1) Power the control unit
- 2) Manually unlock and completely close the door.
- 3) If provided, adjust the closing limit switch cam, the SWC display segment switches on (see section "Diagnostics"). If the SWO segment switches on, invert the SWO<>SWC limit switch wires.
- 4) Move the door into the desired open position. Provide for some overrun centimetre.
- 5) If provided, adjust the opening limit switch cam. The SWO display segment switches on.
- 6) Lock the door again.
- 7) Start a self-test operation:
  - Press PGM, select the AUTO Menu with push-buttons <↑> and <↓> il menu AUTO.
  - Press PGM, the word AUTO starts flashing.
  - Press PGM again, the word "UP" is displayed.
  - If the door is not in the desired position, press and keep the <↑> to open the door or <↓> to sjut the door, release the push-button in the opening position to be stored in memory .

Note:

- if, by pressing <↑>, the door closes, this means that the connection to the motor is incorrect. Therefore invert the operation wires (6<>8) and repeat the procedure from item 7.
- the opening potizion can be adjusted in the SERVICE MAN mode; therefore, all safety devices are de-activated. A previously memorized transmitter can be used as an alternative to push-buttons <↑> and <↓>.
- Press PGM again to start the self-learning procedure. The PRG message is displayed. The control unit controls a total closure operation, followed by an opening and closing operation.
- At end of procedure, the message OK is displayed.

NB.: If the "ERR" error message appears during the self-test phase, see section "Error messages".

Exit the programming mode by pressing keys <↑> and <↓> simultaneously, or by waiting for 30 seconds (time-out).

## OPERATING MODE WITH ENABLED/DISABLED ENCODER

### With ENC=ON LOGICS:

- the anti-crash sensor is activated. The sensitivity must be adjusted through the SEAV and SEAR parameters according to regulations in force.

Once the stroke length is stored in memory by the control unit, the latter will automatically manage the braking phases during opening and closing. The braking space can be increased or decreased by the TSM parameter. The stroke is constantly updated and stored in memory together with the gate position in the event of power failure.

If the BLOC logics is ON, after the TSM braking time has elapsed, the stop will be delayed by around 1s when the limit switch is triggered.

### With the ENC=OFF LOGICA (To be used with motors without encoder):

- the anti-crash sensor is deactivated.

- if the parameter TSM>0 (braking activated), the control unit starts the braking phase after triggering the limit switch. Duration is preset through the parameter itself.

NB: Preset the TM parameter for a value higher than the stroke time.

In this position, the BLOC logics is irrelevant.

## TRANSMITTER REMOTE LEARNING

If the transmitter code is already stored in the receiver, the remote radio learning can be carried out (without accessing the control unit).

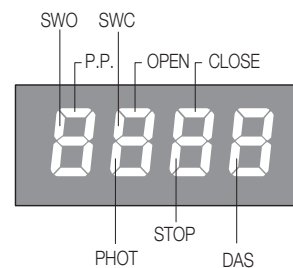
IMPORTANT: The procedure should be carried out with gate in the opening phase, during the TCA dwell time.

Proceed as follows:

- 1 Press the hidden key of the transmitter, the code of which has already been stored in memory.
- 2 Within 5 seconds, press the already memorised transmitter key corresponding to the channel to be matched to the new transmitter. The flashing light switches on.
- 3 Within 10 seconds, press the hidden key of the new transmitter.
- 4 Within 5 seconds, press the key of the new transmitter to be matched to the channel selected at item 2. The flashing light switches off.
- 5 The receiver stores the new transmitter code and exits from the programming mode immediately.

## 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.



## ERROR MESSAGES

The control unit checks the correct operation of the safety devices. In the event of failure, the following messages may be displayed:

- Err* Error, self-learning stroke:
- activation of any input by the user
  - door leaf i the closing limit switch
  - HTR:ON logics
  - memorisation of remote controls
- Err 1* Check of management circuit integrity has failed
- Err 2* Error, PHOTO TEST
- Err 3* Encoder is broken.

## WASTE DISPOSAL

If the product must be dismantled, it must be disposed according to regulations in force regarding the differentiated waste disposal and the recycling of components (metals, plastics, electric cables, etc..). For this operation it is advisable to call your installer or a specialised company.

**BENINCA<sup>®</sup>**

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