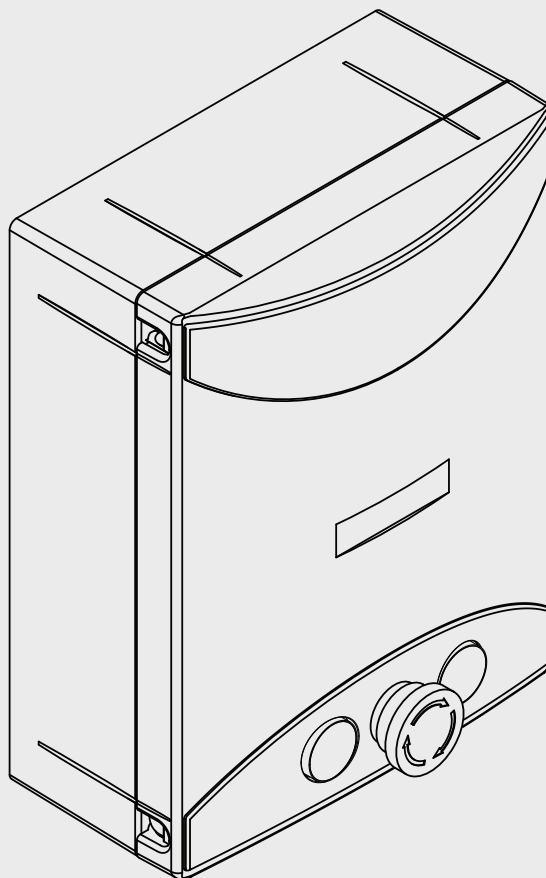


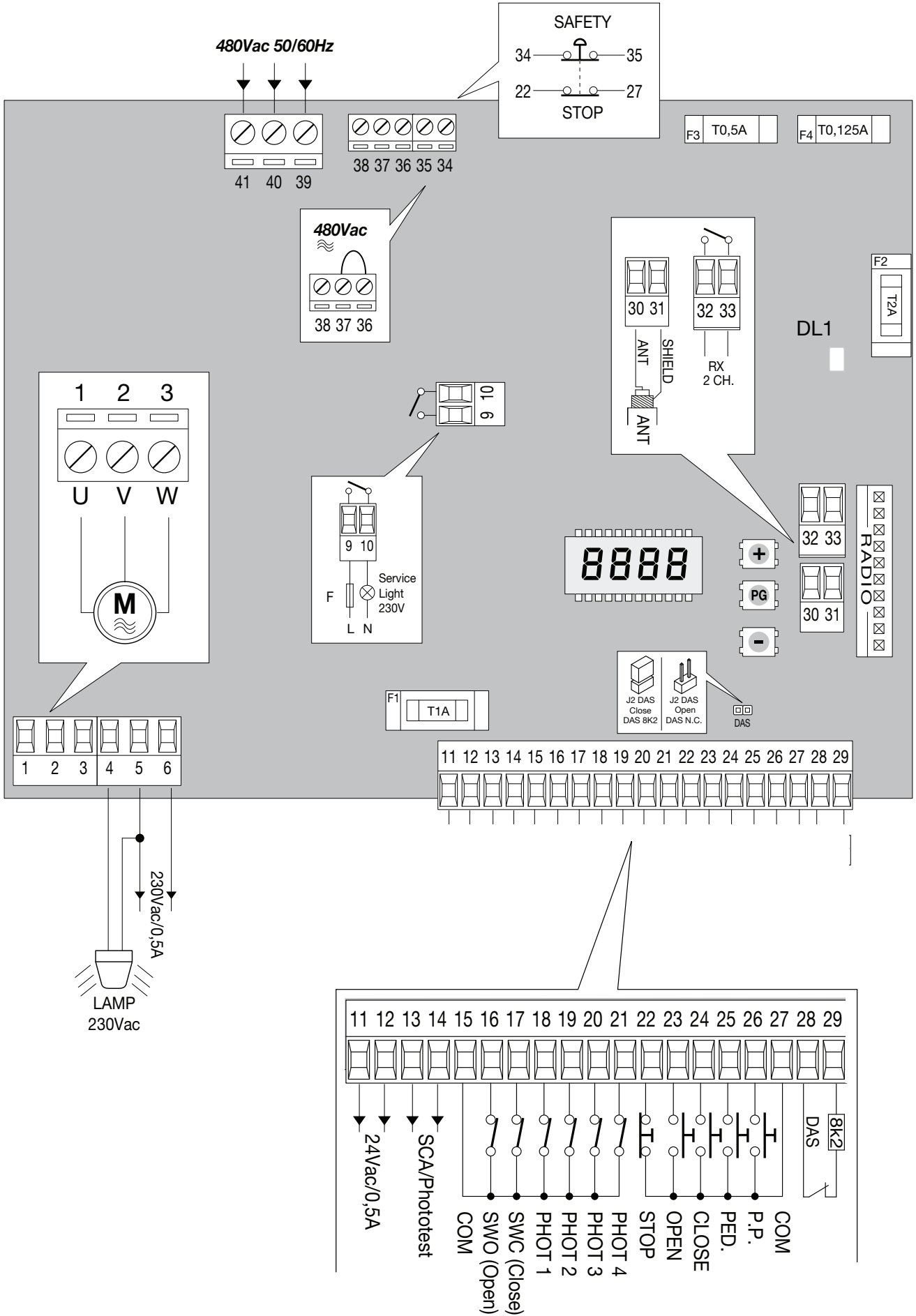
# THINK P 480V



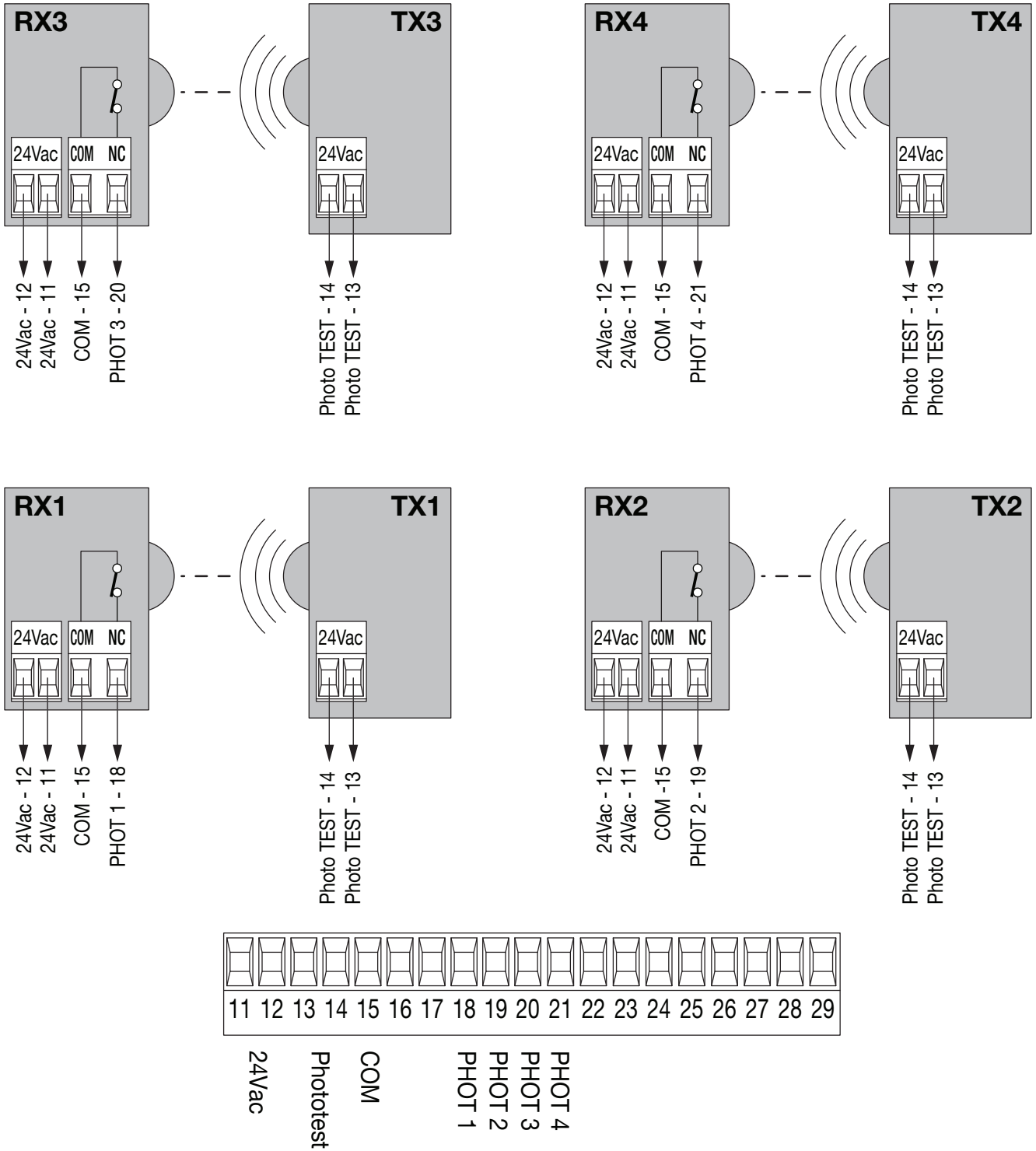
**BENINCA<sup>®</sup>**  
TECHNOLOGY TO OPEN



**THINK**



Collegamento dispositivi di sicurezza verificati / **Connection of tested safety devices**  
**Anschluss geprüfter Sicherheitsvorrichtungen** / *Branchement dispositifs de sécurité vérifiés*  
 Conexión de los dispositivos de seguridad verificados / **Połączenia sprawdzanych urządzeń bezpieczeństwa**



## CE Declaration of Conformity

Declaration in accordance with Directives 2004/108/CE (EMC); 2006/95/CE (LVD)

The Manufacturer:

**Automatismi Benincà SpA**

Address:

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

Declares that the product:

Control box for 1 480V AC motor, ideal for industrial sectional doors and heavy duty sliding doors:

### **THINK.P 480**

conforms with the requirements of the following EC Directives:

• **DIRECTIVE 2004/108/CE OF THE EUROPEAN PARLIAMENT AND COUNCIL**, 15 December 2004, in relation to the harmonisation of the legislation of member states regarding electromagnetic compatibility, in abrogation of Directive 89/336/CEE, per the following harmonised standards:

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

• **DIRECTIVE 2006/95/CE OF THE EUROPEAN PARLIAMENT AND COUNCIL**, 12 December 2006, in relation to the harmonisation of the legislation of member states regarding electrical material intended to be used within certain voltage ranges, per the following harmonised standards:

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

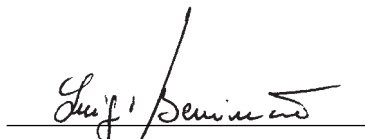
as applicable:

• **DIRECTIVE 1999/5/CE OF THE EUROPEAN PARLIAMENT AND COUNCIL**, 9 March 1999 in relation to radio equipment and telecommunications terminals and the mutual recognition of their conformity, per the following harmonised standards:

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 representative.

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

Power supply	230 Vac 50/60 Hz
Output supply	480Vac three-phase
Power maximum motor	2200 W
Output supply accessories	24Vdc 500mA max.
Protection level	IP54
Operating temp.	-20°C / +50°C
Radio receiver	Removable connector for radio receiver

## THINK Control Unit

### INPUT/OUTPUT FUNCTIONS

THINK Control Unit		
Terminal No.	Function	Description
1-2-3	Motor	Connection, 480Vac motor - three-phase: 1-U/2-V/3-W Check that the voltage selection jumper on terminals 36-37-38 is correctly positioned.
4-5	Flashing light	Connection of flashing light, 230Vac 40W max. Connect a negative electric brake to this output.
5-6	AUX	WARNING: Output, 230Vac 0,5A max.
9-10	Courtesy light	Free N.O. contact (2A 150W) to control the Courtesy light which is timed according to the TLS parameter.
11-12	24Vac	Output, accessory power supply 24Vac/0,5A max
13-14	SCA/PhotoTest	Output, 24Vac/0,5A max. This can be preset as open gate indicator light or as checked devices power supply (PhotoTest) through the TSTP logic. In the event of presetting as PhotoTest, please refer to the diagram "Connection of checked safety devices"
15	COM	Common for limit switches and photocells
16	SWO	Input, OPEN limit switch (N.C. contact)
17	SWC	Input, CLOSE limit switch (N.C. contact)
18	PHOT 1	Input, Photocell 1 (N.C. contact). It can be disabled in the opening phase, see PHO1 logic.
19	PHOT 2	Input, Photocell 2 (N.C. contact). It can be disabled in the opening phase, see PHO2 logic.
20	PHOT 3	Input, Photocell 3 (N.C. contact). It can be disabled in the opening phase, see PHO3 logic.
21	PHOT 4	Input, Photocell 4 (N.C. contact). It can be disabled in the opening phase, see PHO4 logic.
22	STOP	Input, STOP push-button (N.C. contact)
23	OPEN	Input, OPEN push-button (N.O. contact).
24	CLOSE	Input, CLOSE push-button (N.O. contact)
25	PED	Input, pedestrian push-button (N.O. contact)
26	Step-by-step	Input, step-by-step (N.O. contact)
27	COM	Common for all other control inputs.
28-29	DAS	Input, safety edge contact. Resistive edge: closed "DAS" jumper. Mechanical edge: open "DAS" jumper. When the safety edge is activated, the gate movement stops. The gate movement is reversed for approximately 3 sec if the INVA logic is ON. If no safety edge is used: "DAS" Jumper open, jumper between terminals 28-29.
30-31	Aerial	Connection of the antenna to the receiver extractable board (30-signal/31-screen).
32-33	2 <sup>nd</sup> radio channel	Output, 2 <sup>nd</sup> radio channel of the two-channel extractable receiver.

34-35	SAFETY	Emergency stop connection. <b>WARNING:</b> Mains power supply. Remove the jumper and connect a N.C., changeover switch, suited for the mains voltage. See wire diagram.
36-37-38	Selection of Mains power supply	Selection of power supply voltage, short-circuit: 36 and 37 for three-phase power supply (480Vac)
39-40-41	Three-phase power supply	Input, or three-phase mains power supply, 480Vac/50Hz (39-R / 40-S / 41-T).

## Programming

The various functions of the control unit can be programmed by using the LCD display provided on the side of the unit and by setting the desired values on the Programming Menu, as described hereunder.

The Parameters Menu allows for the presetting of a digit value to a function, like an adjustment trimmer.

The Logic Menu allows for the activation and deactivation of a function, like the setting of a Dip-Switch.

The special functions follow the Parameters Menu and the Logic Menu and can vary according to the type of control unit or software review.

### To access programming :

- 1 – Press the <PG> push-button, the first Parameters Menu “PAR” appears on the display.
- 2 – Select the desired menu by using the <+> or <-> keys (PAR>>LOG>>NMAN>>RES>>PAR>>....).
- 3 – Press the <PG> push-button, the display shows the first function available in the Menu.
- 4 – By using the <+> or <-> keys select the function to be modified.
- 5 – Press the <PG> push-button, the currently preset value for the selected function is displayed.
- 6 – By using the <+> or <-> keys, select the value which is to be assigned to the function.
- 7 – Press the <PG> push-button and the “PRG” message is displayed. This means that programming has been completed.

### Note:

The <+> e <-> push-buttons, when the unit is not in programming mode, perform the OPEN and CLOSE function, respectively, in service man mode (the buttons should be kept pressed for the entire duration of the operation).

When upon a Function Menu, press keys <+> e <-> simultaneously to pass to higher menu without making any change.

When the unit is switched on, the Software version is displayed for around 2sec.

Keep either keys <+> or <-> pressed to speed up the increase/decrease of values.

After 60 sec wait, the control unit exits the Programming mode and the display switches off.

## Parameters, Logic and Special Functions

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

	MENU	FUNCTION	Settable values MIN-MAX-(Default)	MEMO
<b>PARAMETERS</b>	<i>t<sub>CA</sub></i>	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)	
	<i>t<sub>M</sub></i>	Motor operating time. The operation time is adjusted during the opening and closing phases of the motor.	5-180-(40s)	
	<i>t<sub>PEd</sub></i>	The stroke time of the gate leaf is adjusted during the partial opening phase (pedestrian mode).	5-180-(10s)	
	<i>S<sub>nS<sub>o</sub></sub></i>	* The amperometric sensor sensitivity is adjusted in the opening phase. This is operating only with logic AMP:ON. 1: maximum sensitivity - 99: minimum sensitivity. The sensor triggering in the opening phase stops the movement immediately.	1-99-(20%)	
	<i>S<sub>nS<sub>c</sub></sub></i>	* The amperometric sensor sensitivity is adjusted in the closing phase. This is operating only with logic AMP:ON. 1: maximum sensitivity - 99: minimum sensitivity. When the sensors triggers in the closing phase, the gate stops immediately and a reversion movement (opening) starts for approximately 3 sec.	1-99-(20%)	
	<i>t<sub>LS</sub></i>	The activation time of the courtesy light is adjusted. The contact closes with the beginning of the opening operation. The time counting starts only with gate completely closed.	1-240-(1s)	
	<i>SAFA</i>	This is operating only with logic SMOT:ON. The motor protection switch triggering is adjusted. The value is expressed in Amperes. 1: triggering of protection switch at 1 Ampere of consumption 14: protection disabled.	1-14-(6A)	

### \* WARNING:

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

MENU	FUNCTION	Settable values ON-OFF-(Default)	MEMO
<b>t c A</b>	The automatic closure is enabled or disabled. Off: disabled automatic closure. On: enabled automatic closure.	(ON)	
<b>i b L</b>	The multi-flat function is enabled or disabled. Off: disabled multi-flat function. 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)	
<b>S c L</b>	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)	
<b>PP</b>	The operating mode The operating mode of the "P.P." (Step-by Step) button and of the transmitter is selected. Off: Operation: OPEN > STOP > CLOSE > STOP > On: Operation : OPEN > CLOSE > OPEN >	(OFF)	
<b>P r E</b>	Forewarning flashing light enabled or disabled. Off: disabled forewarning flashing light. On: enabled forewarning flashing light. The flashing light is activated 3 sec before the motor starts.	(OFF)	
<b>c L o c</b>	The OPEN input mode is selected. Off: OPEN input, with OPEN function. 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)	
<b>h t r</b>	The Service Man function is enabled or disabled. Off: Automatic operation. On: Service Man operation. The OPEN/CLOSE push-buttons should be kept pressed for the entire operating time.	(OFF)	
<b>b L c</b>	The lock function is enabled or disabled. Off: Lock function disabled. On: Lock function enabled. After the triggering of the closure limit switches, the control unit delays the stop by approx. 0.5sec in order to allow a better resting of the gate leaf onto the stoppers. DAS input is activated in the closing phase only. <i>Note: In case of sliding gates, leave to OFF.</i>	(OFF)	
<b>P h o 1</b>	Photocell 1 input in the opening phase is enabled or disabled. On: Photocell 1 is activated in the closing phase only. Off: Photocell 1 is activated in both opening and closing phases.	(OFF)	
<b>P h o 2</b>	Photocell 2 input in the opening phase is enabled or disabled. On: Photocell 2 is activated in the closing phase only. Off: Photocell 2 is activated in both opening and closing phases.	(OFF)	
<b>P h o 3</b>	Photocell 3 input in the opening phase is enabled or disabled. On: Photocell 3 is activated in the closing phase only. Off: Photocell 3 is activated in both opening and closing phases.	(OFF)	
<b>P h o 4</b>	Photocell 4 input in the opening phase is enabled or disabled. On: Photocell 4 is activated in the closing phase only. Off: Photocell 4 is activated in both opening and closing phases.	(OFF)	
<b>t S t P</b>	The operating mode of output SCA/TESTPHOT is selected. On: Photocell power supply in Test mode as per diagram at page 4. Before each operation all PHOT inputs are checked. If the result is negative, the operation will not take place. Off: Output preset as open gate warning LED.	(OFF)	
<b>F A U T</b>	The check function of single failure is enabled or disabled. Off: Single failure check is disabled. On: Single failure check enabled in compliance with the Machinery Directive 98/37/CE.	(OFF)	
<b>A N P</b>	The anti-crash amperometric sensor is disabled or enabled. Its sensitivity is adjusted by parameters SNSO and SNSC. On: Amperometric sensor activated. Off: Amperometric sensor deactivated.	(OFF)	

LOGIC

	MENU	FUNCTION	Settable values ON-OFF-(Default)	MEMO
<b>LOGIC</b>	<b>2PhA</b>	Lack of phase check in case of three-phase power supply is enabled or disabled. On: Check activated. Off: Check deactivated.	(OFF)	
	<b>invA</b>	The movement reversion in the event of triggering of the amperometric sensor or the DAS input is activated or deactivated. On: Reversion activated. The activation of the edge or the sensor causes a movement reversion (opening) for approx. 3 sec. Off: Movement reversion not activated. The activation of the edge or the sensor causes the immediate stopping of the gate movement.	(OFF)	
	<b>SNot</b>	The motor protection switch is enabled or disabled. Its sensitivity is adjusted by SAFM parameter. On: amperometric sensor activated. Off: amperometric sensor deactivated.	(OFF)	
	<b>doSP</b>	The rapid movement reversion is enabled or disabled after the activation of the photocell in the closing phase. ON: Rapid reversion activated. The movement reversion time, in the event of activation of the photocell, is reduced to approx. 1 sec. To be used only on light-weight and fast doors. OFF: Rapid reversion deactivated. The movement reversion time, in the event of activation of the photocell, is approx. 3 sec.	(OFF)	

MENU	FUNCTION
<b>nPA</b>	The number of the 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.
<b>rES</b>	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.

### IMPORTANT: Photocell inputs not in use

All photocell inputs are short-circuited by default (PHOT1/2/3/4) with the COM terminal. With this presetting, the control unit can be operated also without photocells.

After connecting and setting the photocells required by the type of system, the inputs which are not in use should be short-circuited to the inputs in use by copying the settings in the PHOx parameter, as shown hereunder:

*1 pair of photocells on input PHOT1, active in the closing phase only:*

Logic PHO 1	Logic PHO 2	Logic PHO 3	Logic PHO 4	JUMPERS
<b>ON</b>	<b>ON</b>	<b>ON</b>	<b>ON</b>	

*1 pair of photocells on input PHOT1, active in both opening and closing:*

Logic PHO 1	Logic PHO 2	Logic PHO 3	Logic PHO 4	JUMPERS
<b>OFF</b>	<b>OFF</b>	<b>OFF</b>	<b>OFF</b>	

*1 pair of photocells: active in both opening and closing (PHOT1)  
+ 1 pair of photocells: active in the closing phase only (PHOT2):*

Logic PHO 1	Logic PHO 2	Logic PHO 3	Logic PHO 4	JUMPERS
<b>OFF</b>	<b>ON</b>	<b>ON</b>	<b>ON</b>	



2 pairs of photocells, active in both opening and closing (PHOT1 e PHOT2)  
 + 1 pair of photocells, active in the closing phase only (PHOT3):

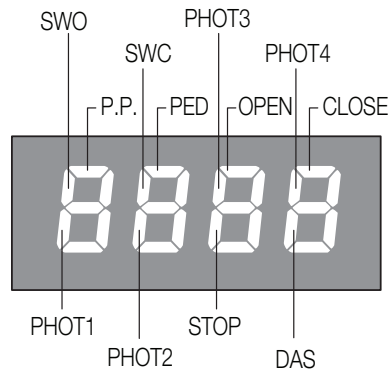
Logic PHO 1	Logic PHO 2	Logic PHO 3	Logic PHO 4	JUMPERS
<b>OFF</b>	<b>OFF</b>	<b>ON</b>	<b>ON</b>	

2 pairs of photocells, active only in the closing phase (PHOT1 e PHOT2)  
 + 1 pair of photocells, active in both opening and closing phases (PHOT3):

Logic PHO 1	Logic PHO 2	Logic PHO 3	Logic PHO 4	JUMPERS
<b>ON</b>	<b>ON</b>	<b>OFF</b>	<b>OFF</b>	

### Diagnostics

Each input is matched to one segment of the display; in the event of activation, it switches on according to the following diagram.



The Normally Closed (N.C.) inputs are represented by vertical segments. The Normally Open (N.O.) inputs are represented by 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:

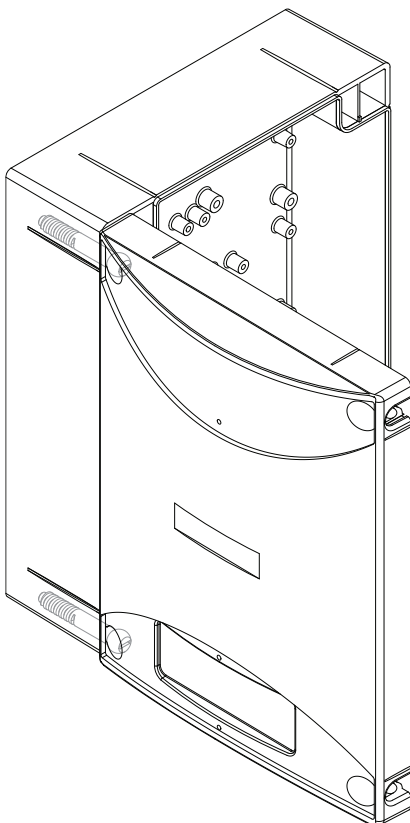
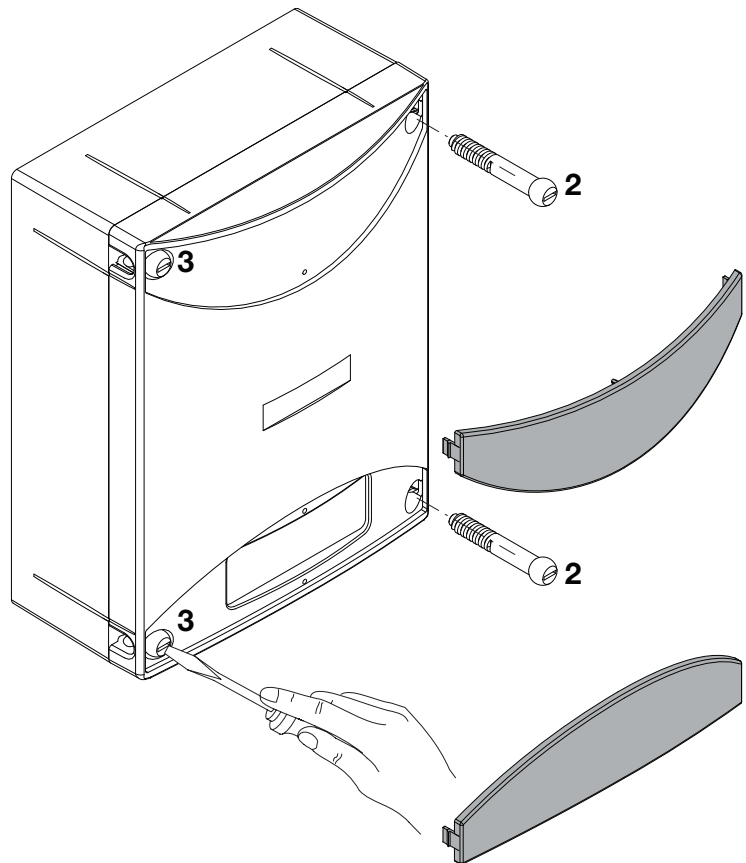
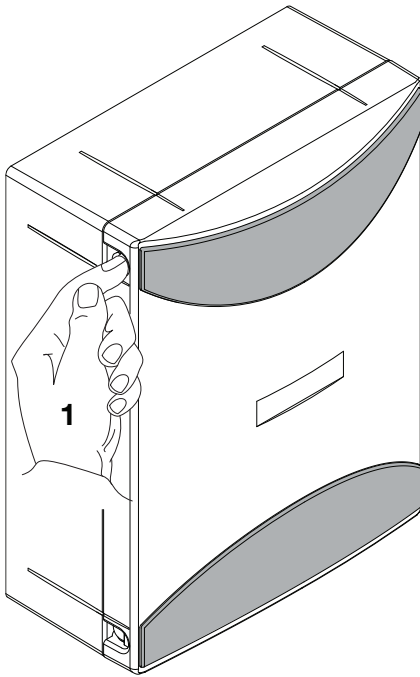
- ERR1** Error, check photocells. Check connections and the correct operation of photocells.
- ERR2** Activation of the anti-crash amperometric sensor. Check the presence of any obstacles.
- ERR3** Check of single failure has negative result. Contact the technical assistance.
- ERR4** Triggering of the motor protection switch. Check the value of the parameter SAFM and check the motor consumption.
- ERR5** Lack of one of the three phases. Check the correct connection of power supply of the three-phase mains.

### Fuses

- F1** Protection fuse, accessories
- F2** Protection fuse, logic board
- F3** Protection fuse, flashing light and electric brake.s
- F4** Primary protection fuse of the transformer.

### 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.



- 1 Premere le alette sui fianchi per sganciare le due maschere copriviti.
- 2 Rimuovere le due viti sul lato di apertura desiderato.
- 3 Allentare le due viti con funzione di cerniera senza rimuoverle, in modo da consentire l'apertura del coperchio.

- 1 Presser les deux ailettes latérales pour décrocher les deux cache-vis.
- 2 Enlever les deux vis sur le côté d'ouverture désiré.
- 3 Desserrer les deux vis faisant fonction de charnière sans les enlever, de manière à permettre l'ouverture du couvercle.

- 1 Press the tabs on the sides to release the two masks that cover the screws.
- 2 Remove the two screws on the desired opening side.
- 3 Slacken the two screws that act as a hinge without removing them, so as to allow opening of the cover.

- 1 Presionar las aletas en los lados para desenganchar las dos tapas cubretornillos.
- 2 Extraer los dos tornillos del lado de apertura deseado.
- 3 Aflojar los dos tornillos con función de bisagra sin extraerlos, a fin de poder abrir la tapa.

- 1 Auf die seitlichen Laschen drücken, so dass die beiden Schraubenblenden befreit werden.
- 2 Die beiden Schrauben an der gewünschten Öffnungsseite ausbauen.
- 3 Zuletzt die beiden als Scharnier dienenden Schrauben lockern, aber nicht ausbauen, damit der Deckel geöffnet werden kann.

- 1 Nacisnąć boczne klapki w celu odhaczenia dwóch masek nakrywających śruby.
- 2 Wyciągnąć dwie śruby po wybranej do otwierania stronie.
- 3 Poluzować dwie śruby blokujące bez wyciągania ich, w sposób umożliwiający otwarcie nakrywki.

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