

- 1 - KING ICE operator
- 2 - Tuned aerial
- 3 - Flashing lamp
- 4 - Key selector
- 5 - Photoelectric cells (external)

TECHNICAL FEATURES

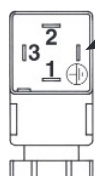
KING ICE is a irreversible operator endowed with an in built heater probe, suitable for opening gates with a leaf length of up to 5 metres (Fig. 1) even in extremely cold areas. Thanks to its T2 control panel, KING ICE is automatically warmed up when the temperature of the motor goes below 10°C; thus assuring a perfect functioning even at -30°C.

The KING ICE operator use mechanical stoppers, thus avoiding the need for electrical limit switches.

TECHNICAL DATA		KING ICE	KING ICE L
Max. leaf length	m	4	5
Max. leaf weight	kg	400	500
Max. travel	mm	345*	475*
Average opening time	s.	14÷27	29÷38
Operating speed	m/s.	0,0125	
Thrust force	N	1800	
EEC Power supply		230V~ 50Hz	
Motor capacity	W	290	
Power absorbed	A	1,2	
Capacitor	µF	10	
Normative cycles	n°	17 - 14s/2s	10 - 33s/2s
Daily operations suggested	n°	150	
Service		60%	
Guaranteed consecutive cycles	n°	20/14s	15/33s
Grease		Bechem - RHUS 550	
Weight of electroreducer	kg	10	14
Noise	db	<70	
Volume	m³	0,0184	0,0211
Operating Temperature	°C	-30 ÷ +55°C	
Protection	IP	44	

* With incorporated mechanical stop that cuts in during opening. - If the mechanical stop is used during closing (optional), the maximum travel is reduced by 50 mm.

KING ICE has a 1 m cable already connected to the PROBE



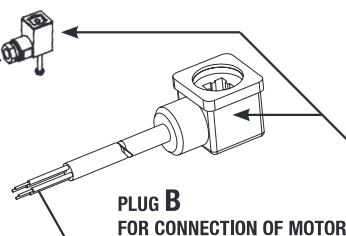
PLUG A
FOR CONNECTION OF
THERMAL PROBE

1 to be connected to the terminal block J7 on the T2 pc board

2 available

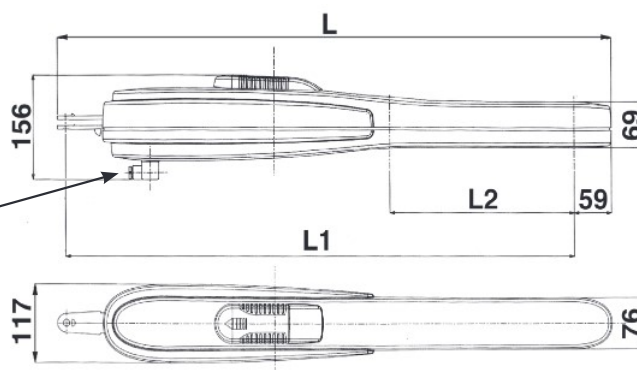
3 to be connected to the terminal block J7 on the T2 pc board

free



PLUG B
FOR CONNECTION OF MOTOR

1	V	OPEN
2	W	CLOSE
3	U	COMMON
Yellow/Green		⏏



KING ICE	L=888	L1=815	L2=340
KING ICE L	L=1020	L1=945	L2=470

Measurements in mm

PRE-INSTALLATION CHECKS

The leaf must be fixed firmly on the hinges to the pillars, must not be flexible during the movement and must move without frictions.

Before the installation of KING ICE, verify all dimensions etc.

There's no need for any modification, if the gate is like that shown in Fig. 1.

Gate features must be uniformed with the standards and laws in force. The gate can be automated only if it is in a good condition and its conditions comply with the EN 12604 norm.

- The gate leaf does not have to have a pedestrian opening. In the opposite case it is necessary to take the appropriate steps, in accordance with EN 12453 norm point 6.5.1 (for instance; by preventing the operation of the motor when the pedestrian opening is opened, by installing a safety microswitch connected with the control panel).
- No mechanical stop shall be on top of the gate, since mechanical stops are not safe enough.

Parts to install according to EN 12453 standard			
COMMAND TYPE	USE OF THE SHUTTER		
	Skilled persons (out of public area*)	Skilled persons (public area)	Not skilled persons
Hold-to-run operation	A	B	Not possible
Impulsive - in sight (e.g. push-button)	C or E	C or E	C and D, or E
impulsive - out of sight (e.g. remote)	C or E	C and D, or E	C and D, or E
automatic	C and D, or E	C and D, or E	C and D, or E

* a typical example are those doors which do not have access to any public way
 A: Hold-to-run operation made by push-button ex: code ACG2013
 B: Hold-to-run operation made by key selector ex: code ACG1010
 C: Adjustable power of the motor or photocells to respect impact forces as indicated in Annex A
 D: Safety strips and/or other additional devices to reduce the probability of contact with the door.
 E: Devices installed in such a way that a person can not be touched by the door.

FIXING THE ACTUATOR ATTACHMENT TO THE COLUMN

To obtain a correct movement of the leaf gate it is necessary to respect the measures **(to see the TABLES of the measures)**.

COLUMN ATTACHMENT FOR KING ICE OPERATOR (code CCA1293 - CCA1294)

If the column is in iron, the attack can be screwed directly using four metric screws M8. If the column is in concrete, the attack can be fixed with four expansion screws Ø 8 mm (Fig. 3).

In the case you have a wall parallel with the open gate, you must provide a niche in which to place the operator.

COLUMN ATTACHMENT FOR KING ICE L OPERATOR (code CCA1370 - CCA1319)

To obtain a correct movement of the leaf gate it is necessary to respect the measures.

If there is an iron pillar you can weld the attachment directly.

If there is a cement pillar, you can use the fixing plate as in Fig. 5 which is fastened with 4 Fischer-screws of Ø 8 mm.

There is also the possibility to cement the attachment welding an anchor at its base Fig. 6.

Naturally you have to respect predetermined fixing measures.

Afterwards you must weld the other actuator's attachment to the gate (Fig. 8).

In the case you have a wall parallel with the open gate, you must provide a niche in which to place the operator.

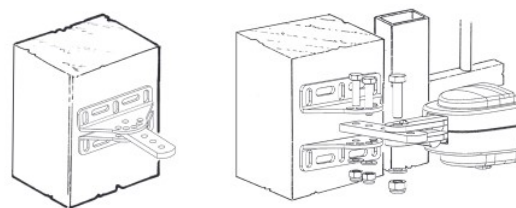
FIXING THE OPERATOR ATTACHMENT TO THE GATE

(to see the TABLES of the measures).

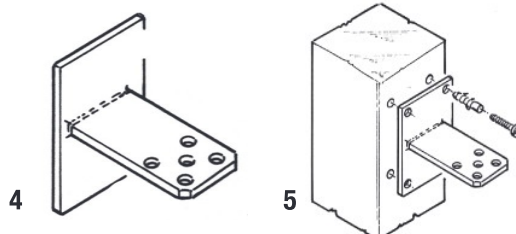
Before inserting the pin into the gate attachment, grease thoroughly.

Weld the base at the right height (Fig. 8).

Fix the KING ICE and try several times to open and to close the gate, controlling that the operator does not touch the moving gate.

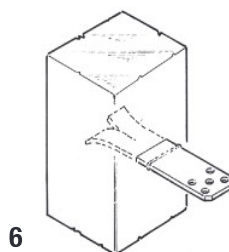


3



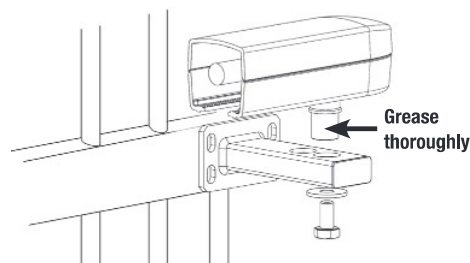
4

5



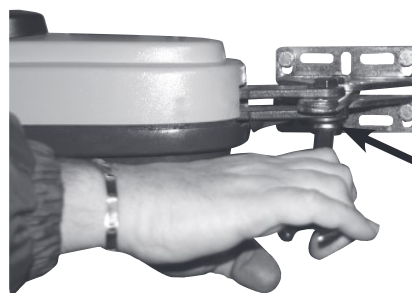
6

7



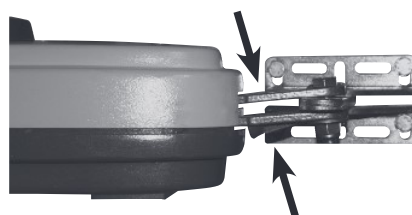
Grease
thoroughly

8



YES !

Be sure to tighten the bolt that holds the bracket to the operator so that it can rotate freely.



NO !

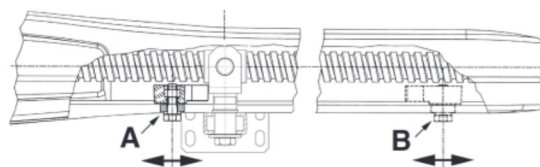
The operator must not vary its height during the movement.

MECHANICAL STOPPER ADJUSTMENT

To adjust the stoppers you have to follow the scheme (Fig. 9).

To set the opening limit it's enough to fix the stopper (A) in the needed position by tightening the 8mA screw with a n. 13 key.

To obtain the desired closing limit you must adjust the stopper (B) in the needed position and tighten it as for stopper (A).



9

EMERGENCY RELEASE

To move the gate manually it is necessary to release the operator inserting the special key and turning it 2 times in the anti-clockwise sense (Fig. 11).

In order to carry out the manual operation of the gate leaf the followings must be checked:

- That the gate is endowed with appropriate handles;
- That these appropriate handles are placed so to avoid safety risks for the operator;
- That the physical effort necessary to move the gate leaf should not be higher than 225 N, for doors/gates for private dwellings, and, 390 N for doors/gates for commercial and industrial sites (values indicated in 5.4.5 of the EN 12453 norm).



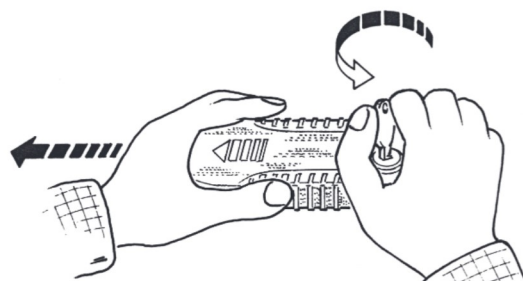
10

MAINTENANCE

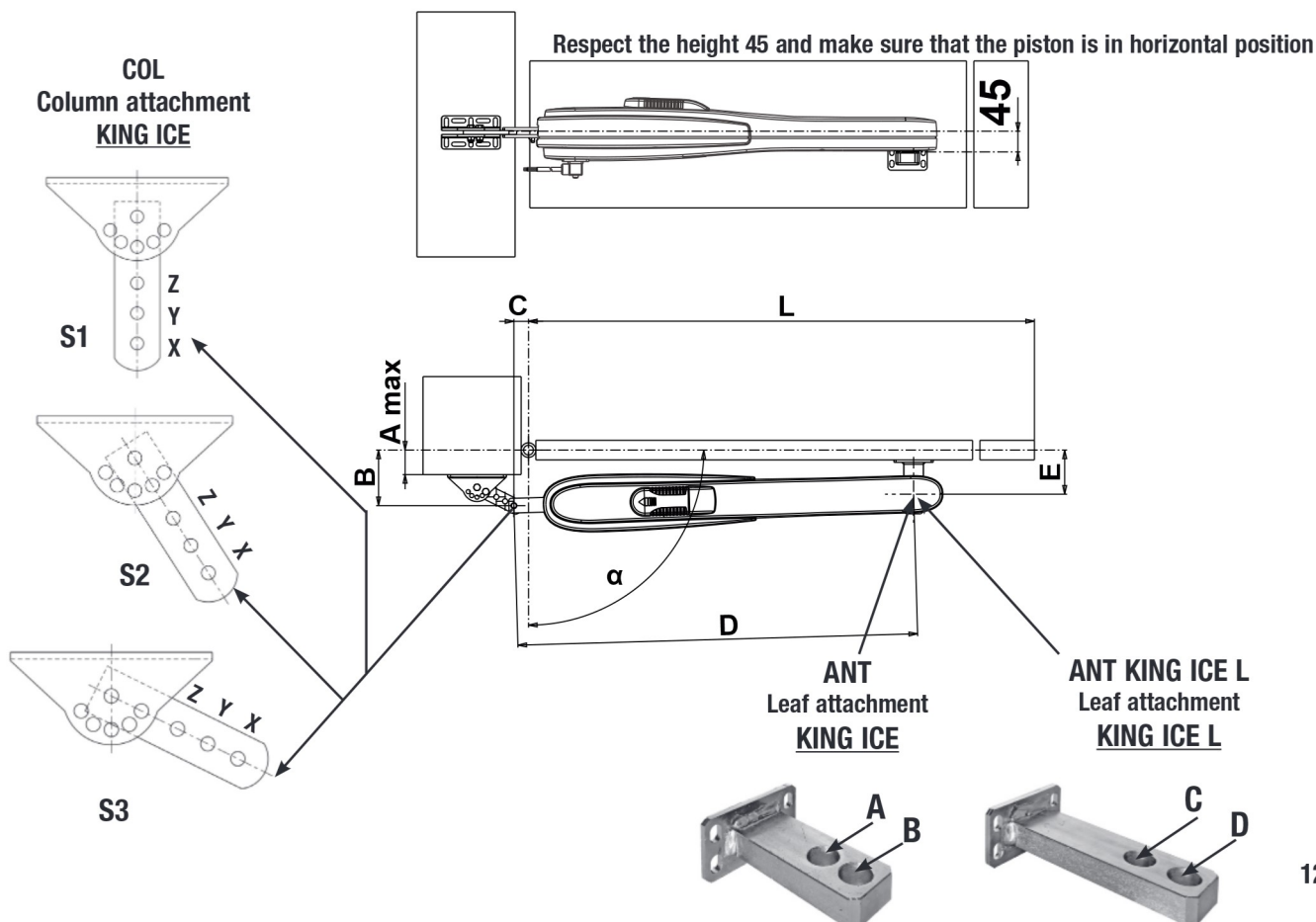
To be undertaken only by specialized staff after disconnecting power supply.

Lubricate the hinges and check the oil level and thrust force generated by the operator on the gate once a year.

Lubricate the nut screw with silicon grease every two years.



11



12

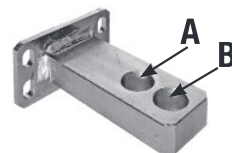
RESPECT THE MEASURES WITH 2 MECHANICAL STOPPERS

	L Min.÷Max	α	A max	B	C	D	E	T sec	ANT	COL
KING ICE	1÷1,80	90°	45	100	100	775	90	14	A	S3-Y
KING ICE	1,81÷2,20		45	110	110	775	90	18	A	S3-X
KING ICE	2,21÷2,50		70	140	110	775	115	20	B	S1-Z
KING ICE	2,51*÷4,00*		70	160	140	775	115	25	B	S1-Y
KING ICE L	3,01*÷3,50*		60	170	170	905	120	27	C	-
KING ICE L	3,51*÷5,00*		100	190	180	905	120	30	C	-

	L Min.÷Max	α	A max	B	C	D	E	T sec	ANT	COL
KING ICE	1÷1,80	110°	20	90	140	775	90	18	A	S1-Z
KING ICE	1,81÷2,20			100	130	775	90	20	A	S2-Y
KING ICE	2,21÷4,00*			110	140	775	115	21	B	S1-Y
KING ICE L	2,51*÷3,00*			130	140	905	120	22	C	-
KING ICE L	3,01*÷5,00*			130	150	905	120	23	C	-

* In the case of leaf longer than 2,5 metres, an electric lock must be fitted to ensure efficient closing.
If the pillar is too large, and it is not possible to adjust the actuator respecting the measure (B), you must make a niche in the pillar or you have to move the gate to the edge of the pillar.

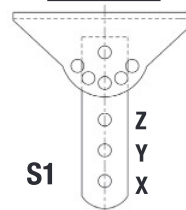
ANT
Leaf attachment



ANT KING ICE L
Leaf attachment **KING ICE L**

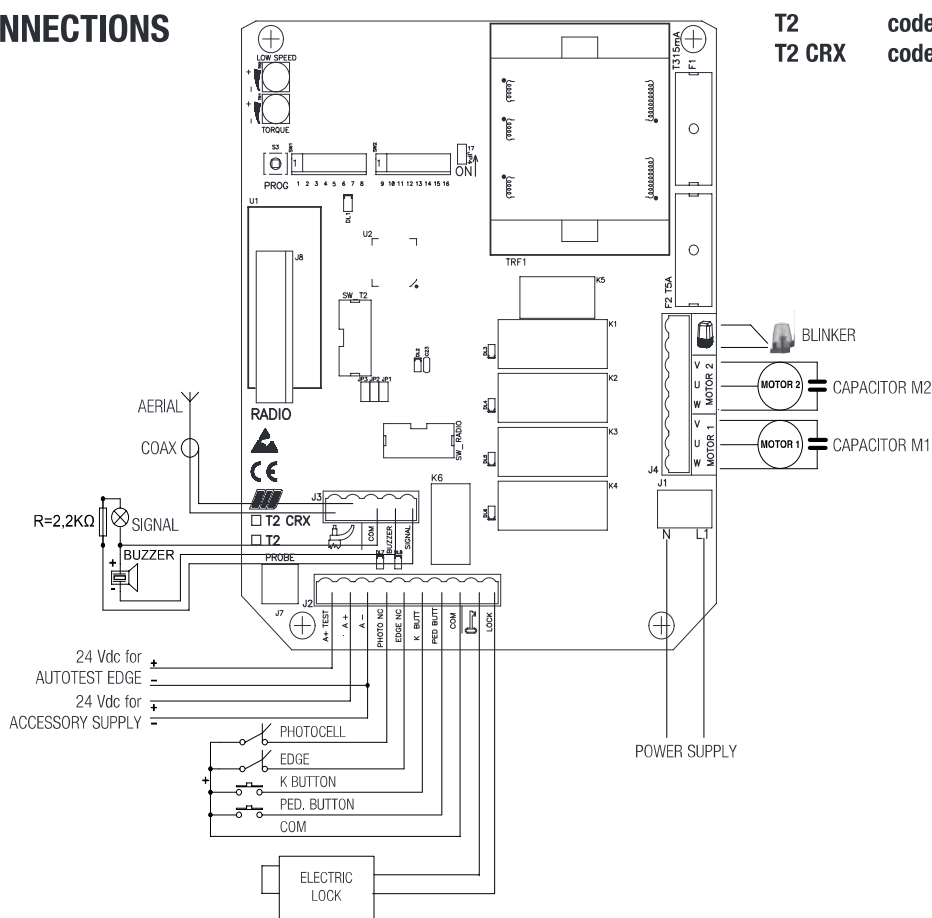


COL
Column attachment
KING ICE



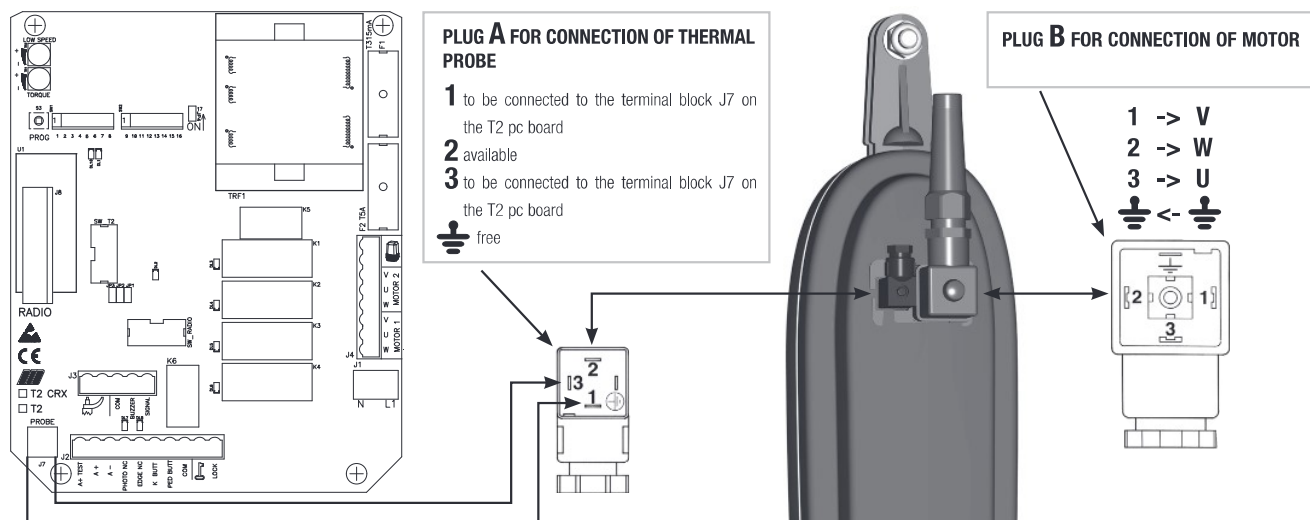
13

ELECTRIC CONNECTIONS



T2 code AC07086
T2 CRX code AC07085

CONNECTION IN BUILT HEATER PROBE ON THE KING ICE



ON BOARD HEATER SYSTEM

The KING ICE motor is arranged to be connected through Plug A to a thermal probe to check the external temperature.

Carry out the connection between J7 on the T2 pc board and the plug A on the KING ICE motor as explained in the drawing.

For the connection, use a two-wire cable with a minimum diameter of 1 mm². KING ICE has a 1 m cable already connected to the PROBE. Maximum distance motor with PROBE to T2 control panel: 10 m.

The probe for motor heating is a device intended to be used in extremely cold environment (up to -30°C) to avoid motor freezing. Such device activates automatically when the gate is steady (the position being irrelevant, provided it is not moving). The work of the heater is indicated by both the DL6 and DL7 leds for the motor number 1, and by the DL4 and DL5

leds for the motor number 2.

When the motor is running the heating system is inoperative.

On elapsing of 10 seconds delay from gate stop, the heating system gets activated (in case the environment temperature in the motor area is below 10°C).

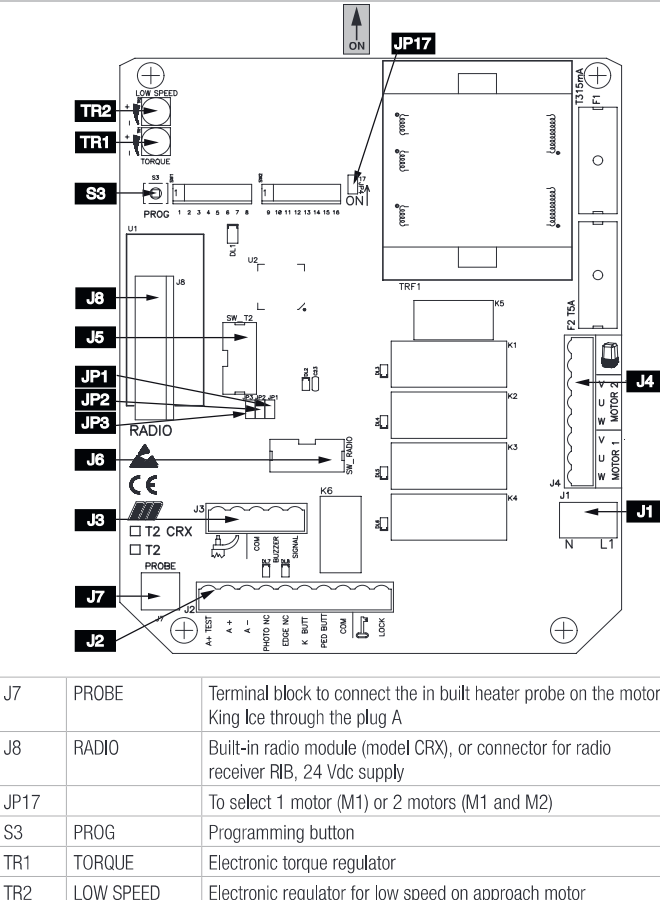
Upon achieving a 20°C temperature the heating system deactivates, maintaining a constant environment temperature.

TECHNICAL DATA

Operation voltage	5Vdc
Resistance	10K ±2% (at 25°C)
Working temperature	-30 ÷ +55°C

POINT A - CONTROL PANEL FEATURES

J1	N - L1	Main power supply 230 Vac 50/60 Hz (120V/60Hz upon request)
J2	A+ TEST	Safety strip self-test power supply +24 Vdc
	A+	Accessories power supply +24 Vdc
	A-	Accessories power supply -24 Vdc
	PHOT NC	Photocells contact (NC)
	EDGE NC	Safety strip contact (NC)
	K BUTT.	Single pulse contact (NO)
	PED. BUTT.	Pedestrian opening contact (NO)
	COM	Common contact (common line for all the command and safety inputs)
	LOCK	Electric lock connection (MAX 15W 12V)
	AERIAL	Radio Antenna
J3	COM	Common contact (common line for all the command and safety inputs)
	BUZZER	Buzzer contact (24 Vdc max 200 mA)
	SIGNAL	Gate open state output indicator (24 Vdc 3W max)
J4		Flashing light (max 40W)
	U - MOTOR 2	MOTOR 2 COMMON CONNECTION
	V-W - MOTOR 2	MOTOR 2 PHASE AND CAPACITOR CONNECTIONS
	U - MOTOR 1	MOTOR 1 COMMON CONNECTION
	V-W - MOTOR 1	MOTOR 1 PHASE AND CAPACITOR CONNECTIONS
J5		DO NOT REMOVE ANY JUMPER! - OTHERWISE THE OPERATOR WILL NOT WORK!
J6	SW RADIO	DO NOT REMOVE ANY JUMPER! - OTHERWISE THE OPERATOR WILL NOT WORK! - (only CRX control board)



POINT B - SETTINGS

DIP 1 (ON) MOTOR ROTATION DIRECTION CHECK (See Point C)

DIP 2 (ON) PROGRAMMING (See Point D)

DIP 1-2 STORAGE/DELETION OF RADIO CODES FOR COMPLETE OPENING (DIP 1 ON followed by DIP 2 ON) (POINT G) ONLY FOR CRX MODELS

DIP 1-3 STORAGE/DELETION OF RADIO CODES FOR PEDESTRIAN OPENING (DIP 1 ON followed by DIP 3 ON) (POINT H) ONLY FOR CRX MODELS

DIP 2-1 PROGRAMMING OF THE PEDESTRIAN OPENING (See Point F)

DIP 3 ON - Automatic Closing ENABLED
OFF - Automatic Closing DISABLED

DIP 4 ON - Photocells active only in closing
OFF - Photocells always active

DIP 5 ON - blinker pre-flashing
OFF - blinker normal-flashing

DIP 6 OFF - STEP BY STEP
Single pulse contact (K BUTT)
Pedestrian button (PED BUTT)
Radio Receiver command
ON - AUTOMATIC
Single pulse contact (K BUTT)
Pedestrian button (PED BUTT)
Radio Receiver command

DIP 7 ON - low speed in approaching ENABLED
OFF - low speed in approaching DISABLED

DIP 8 ON - electric lock command ENABLED
OFF - electric lock command DISABLED

DIP 9 ON - Hammering on complete close position to ease Manual Release
- Hammering before opening to ease electric lock unlocking
OFF - no impulse

DIP 10 ON - Extra thrust when reached closing position to make sure that the mechanical bolt is fixed into the ground
OFF - no impulse

DIP 11 ON - black out function ENABLED
OFF - black out function DISABLED

DIP 12 ON - close command after the transit through the photocell ENABLED
OFF - close command after the transit through the photocell DISABLED

DIP 13 ON - safety strip self-test ENABLED
OFF - safety strip self-test DISABLED

DIP 14 OFF

DIP 15 OFF

DIP 16 OFF

JP 17 OPEN JUMPER 1 motor (M1) - 1 leaf
CLOSE JUMPER 2 motors (M1 and M2) - 2 leaves

JP1 => Pay attention that the jumper is inserted!

JP2 => Pay attention that the jumper is inserted!

JP3 => Pay attention that the jumper is inserted!

TORQUE TR1 Electronic regulator for motor torque

Adjustment of motor torque is carried out using the TORQUE Trimmer which varies the output voltage to the head/s of the motor/s (turn clockwise to increase torque).

This torque control is activated after 2 seconds from any manoeuvre begging, whereas the motor is turned on at full power to guarantee the starting at the manoeuvre begging.

PAY ATTENTION: IF THE TORQUE TRIMMER SETTING IS CHANGED, IT IS PREFERABLE TO REPEAT THE TIME PROGRAMMING.

LOW SPEED TR2 Electronic regulator for low speed on approach

Adjustment of low speed is carried out using the LOW SPEED Trimmer which varies the output voltage to the head/s of the motor/s (turn clockwise to increase speed). Adjustment is carried out to establish the correct speed at the completion of opening and closing, depending on the structure of the gate, or if there is any light friction that could compromise the correct working of the system. The low speed is activated (DIP7 OFF) when the gate leaf is 0.50-0.60 meters away from the complete close or open position.

ATTENTION: WHEN USING HYDRAULIC OPERATORS. When using the hydraulic operators the deceleration phase may not operate correctly; in that case it is advisable to disable the feature of the deceleration by putting DIP 7 in the OFF mode

LED WARNING

DL1 - programming activated (red)

DL2 - radio code programming (green) (only for CRX)



DL3 - gate opening M2 (green)

DL4 - gate closing M2 (red)

DL5 - gate opening M1 (green)

DL6 - gate closing M1 (red)

DL7 - photocell contact (NC) (red)

DL8 - safety strip contact (NC) (red)

FUSES

F1 T315mA Accessories protection fuse

F2 5A Motor protection fuse

POINT C - MOTOR ROTATION DIRECTION CHECK

1 - Unlock the operators with the Manual Release - swing open the leaves about halfway and lock again the operators.

2 - Turn DIP1 to ON position The red LED DL1 starts blinking.

3 - Press the PROG button and hold it - When GREEN LEDS DL3 and DL5 are on, the gate leaves are opening (with a phase shift of 2 seconds). Check the leaves swinging and the opening mechanical stopper position (movement is now performed in "man present" mode, open-close-open-etc.). If any of the leaf closes instead of opening, release PROG button, turn off the main power and reverse the two phase wires (V1/2 and W1/2) of the relevant motor/s.

4 - Press the PROG button and hold it to CLOSE completely the gate. When RED LEDS DL4 and DL6 are on, the gate leaves are closing (with a phase shift of 4 seconds). Check leaves swinging and the closing mechanical stopper position.

5 - After 3 seconds motor starting and for the next 10 seconds motor working, the torque controls automatically activated. Set the motor torque by the TORQUE Trimmer/s which varies the output voltage to the motor/s (turn clockwise to increase the torque).

6 - After other 10 seconds motor working, the low speed controls automatically activated (DIP7 ON). Set the motor low speed by the LOW SPEED Trimmer to select the gate leaf low speed in approaching.

7 - Close completely the gate.

8 - Turn DIP1 to OFF position, LED DL1 turns off.

During Point C procedure, safety devices (photocells and safetystrip) are not active and the remote control cannot operate.

(#) In Point D, Point E and Point F procedures, all the safety devices (photocells and safety strip) will be active, so they must be properly installed and connected to the control board. Any changing of the safety devices input state, will stop the Point D, Point E or Point F procedure that must be repeated from the beginning.

POINT D - PROGRAMMING FOR 2 MOTORS (#)

1 - The gate must be fully closed.

2 - Turn **DIP2 to ON** position, LED DL1 starts blinking

3 - **Press PROG. Button**, motor M1 opens.

4 - Once reached the open position, let 1 second pass and **press the PROG button** to cut out motor M1 (time travel of M1 has now been just stored with this operation).

5 - Motor M2 opens, automatically.

6 - Once reached the open position, let 1 second pass and **press the PROG button** to cut out motor M2 (time travel of M2 has now been just stored with this operation). The gap of time between now (stop of motor M2) and the next pressing of the PROG. button (see step 7 below) will be then stored as waiting time for Automatic Closing feature.

7 - **Press PROG. button**, M2 closes and the Automatic Closing time is stored (see DIP3 function to enable or disable the Automatic Closing feature). The gap of time between now (close of motor M2) and the next pressing of the PROG. button (see step 8 below) will be stored as time delay between motor M2 and motor M1 closing, during normal operations.

8 - **Press the PROG. button**, motor M1 closes thus setting the delay time between M2 and M1, as explained in step 7 above.

9 - The LED DL1 will turn OFF, signalling exit from the Point D procedure. Closing of the gate will be carried out at normal speed and only on approaching total closing at low speed (depending on the adjustment of LOW SPEED trimmer).

10 - **Turn DIP2 to OFF** position.

During Point D procedure, the safety devices (photocells and safety strip) are active.

POINT E - PROGRAMMING FOR 1 MOTOR (M1) (#)

ATTENTION: in order to manage one motor only, OPEN JUMPER JP17.

1 - The gate must be fully closed.

2 - Turn **DIP2 to ON** position, the LED DL1 starts blinking

3 - **Press PROG. button**, the motor M1 opens.

4 - Once reached the open position, let 1 second pass and **press the PROG button** to cut out motor M1 (time travel of M1 has now been just stored with this operation). The gap

of time between now (stop of motor M1) and the next pressing of the PROG. button (see step 5 below) will be then stored as waiting time for Automatic Closing feature.

- 5 - **Press PROG. button**, M1 closes and the Automatic Closing time is stored (see DIP3 function to enable or disable the Automatic Closing feature).
- 6 - The LED DL1 will turn OFF, indicating exit from the Point E procedure. Closing of the gate will be carried out at normal speed and only on approaching total closing at low speed (depending on the adjustment of LOW SPEED trimmer).
- 7 - Turn **DIP2 to OFF** position.

During Point E procedure, the safety devices (photocells and safety strip) are active.

POINT F - PROGRAMMING OF PEDESTRIAN OPENING (#)

- 1 - The gate must be fully closed.
- 2 - Turn **DIP2 to ON** position, the LED DL1 starts blinking quickly.
- 3 - Immediately, turn also **DIP1 to ON** position, the LED DL1 starts blinking slowly.
- 4 - **Press the pedestrian pushbutton PED. BUTT**, motor M1 opens
- 5 - When the motor M1 leaf is opened enough for the pedestrian crossing, press the pedestrian pushbutton to stop the travel (thus defining the opening stroke of motor M1). The gap of time between now (stop of motor M1) and the next pressing of the PROG. button (see point 6 below) will be stored as waiting time for Pedestrian Automatic Closing feature.
- 6 - **Press the pedestrian pushbutton PED. BUTT**, M1 closes and the Pedestrian Automatic Closing time is stored (see DIP3 function to enable or disable the Automatic Closing feature).
- 7 - Turn **DIP1 to OFF** position.
- 8 - Turn **DIP2 to OFF** position.

During Point F procedure, the safety devices (photocells and safety strip) are active.

POINT G - PROGRAMMING RADIO CODES FOR COMPLETE OPENING (UP TO 62 CODES - ONLY FOR CRX MODELS)

You can only programme the codes if the gate is closed.

- 1 - Position DIP 1 to ON and then DIP 2 to ON.
- 2 - The red programming DL1 LED will flash ON and OFF, one second on each, for 10 seconds.
- 3 - Press the remote control button (normally channel A) within the 10 seconds proscribed. If the remote control has been correctly programmed, the DL2 LED (green) will flash once.
- 4 - The code programming time resets automatically so that you can programme the next remote control.
- 5 - To finish programming, let 10 seconds pass and then press the PROG. button briefly. The red DL1 LED will stop flashing.
- 6 - Reposition DIP 1 to OFF and DIP 2 to OFF.
- 7 - You have completed the procedure

PROCEDURE FOR DELETING ALL RADIO CODES USED ONLY FOR COMPLETE OPENING

You can only delete the codes if the gate is closed.

- 1 - Position DIP 1 to ON and then DIP 2 to ON.
- 2 - The red programming DL1 LED will flash ON and OFF, one second on each, for 10 seconds.
- 3 - Press and hold the PROG button for 5 seconds. The green DL2 LED will flash twice to confirm that the stored codes have been deleted.
- 4 - The red programming DL1 LED remains active and you can programme new codes as shown above if required.
- 5 - Reposition DIP 1 to OFF and DIP 2 to OFF.
- 6 - You have completed the procedure.

HOW TO CHECK IF THE MEMORY IS FULL FOR RADIO CODES USED ONLY FOR COMPLETE OPENING

You can only check the memory if the gate is closed.

- 1 - Position DIP 1 to ON and then DIP 2 to ON.
- 2 - The green DL2 LED will flash 6 times if the memory is full (64 codes have been stored).
- 3 - After this, the DL1 programming LED will remain active for 10 seconds, so that you can delete all codes if required.
- 4 - Reposition DIP 1 to OFF and DIP 2 to OFF.
- 5 - You have completed the procedure

POINT H - PROGRAMMING RADIO CODES FOR PEDESTRIAN OPENING (UP TO 62 CODES - ONLY FOR CRX MODELS)

You can only programme the codes if the gate is closed.

- 1 - Position DIP 1 to ON and then DIP 3 to ON.
- 2 - The red programming DL1 LED will flash ON and OFF, one second on each, for 10 seconds.
- 3 - Press the remote control button (normally channel B) within the 10 seconds proscribed. If the remote control has been correctly programmed, the DL2 LED (green) will flash once.
- 4 - The code programming time resets automatically so that you can programme the next

remote control.

- 5 - To finish programming, let 10 seconds pass and then press the PROG. button briefly. The red DL1 LED will stop flashing.
- 6 - Reposition DIP 1 to OFF and DIP 3 to OFF.

N.B: IF THE DL1 LED CONTINUES TO FLASH RAPIDLY, THIS MEANS THAT DIP 1 IS STILL POSITIONED TO ON AND ANY MANOEUVRE HAS BEEN DELETED.

- 7 - You have completed the procedure.

PROCEDURE FOR DELETING ALL RADIO CODES USED ONLY FOR COMPLETE OPENING

You can only delete the codes if the gate is closed.

- 1 - Position DIP 1 to ON and then DIP 3 to ON.
- 2 - The red programming DL1 LED will flash ON and OFF, one second on each, for 10 seconds.
- 3 - Press and hold the PROG button for 5 seconds. The green DL2 LED will flash twice to confirm that the stored codes have been deleted.
- 4 - The red programming DL1 LED remains active and you can programme new codes as shown above if required.
- 5 - Reposition DIP 1 to OFF and DIP 3 to OFF.
- 6 - You have completed the procedure.

HOW TO CHECK IF THE MEMORY IS FULL FOR RADIO CODES USED ONLY FOR COMPLETE OPENING

You can only check the memory if the gate is closed.

- 1 - Position DIP 1 to ON and then DIP 3 to ON.
- 2 - The green DL2 LED will flash 6 times if the memory is full (64 codes have been stored).
- 3 - After this, the DL1 programming LED will remain active for 10 seconds, so that you can delete all codes if required.
- 4 - Reposition DIP 1 to OFF and DIP 3 to OFF.
- 5 - You have completed the procedure.

FUNCTIONING OF CONTROL ACCESSORIES

ATTENTION: ONLY IMPULSIVE COMMANDS HAVE TO BE CONNECTED.

Make sure that any other type of command accessories (e.g. mass detectors) used on the installation are set in the IMPULSIVE mode, otherwise, the gate will be operated even without the protection of the safety devices.

STEP BY STEP or AUTOMATIC commands

(K BUTT button, PED BUTT button, RADIO REMOTE button)

DIP 6 - OFF The K BUTT, the PED BUTT button, the RADIO REMOTE buttons perform the cyclic command open-stop-close-open-stop-etc.

DIP 6 - ON The K BUTT, the PED BUTT button, the RADIO REMOTE buttons perform:

- the open command, if pressed with the gate completely closed
- the close command, if pressed with the gate completely opened
- no effect, if pressed during the gate opening
- the gate re-open, if pressed while the gate is closing

The K BUTT opens the gate completely, whereas the PED BUTT opens the gate partially as described in Point F.

CLOCK FUNCTION

If you want the Clock Function must request T2 with firmware NOUP 14. ATTENTION: A CLOCK CONNECTED TO T2 with fw 09 or more ACTIVATES THE AUTOMATIC MOVEMENT OF THE GATE WITHOUT HAVING THE PROTECTION OF THE SAFETY DEVICES!

The Clock Function is useful during rush hours, when traffic is heavy and the flow is slow (e.g. entrance/exit of employees, emergencies in residential areas or car parks and, temporarily, for removal vans) and it's necessary to keep the gate opened.

CLOCK FUNCTION APPLICATION

It is necessary to request a T2 control panel with firmware NOUP 14.

Select the automatic functioning DIP 6 ON.

It can be done by connecting a switch and/or a daily/weekly clock either in parallel to the K BUTT button or instead of the K BUTT button. When the control board receives this command, the gate will open and by keeping this contact closed for all the time of the gate opening, the Clock Function is automatically activated. In fact, once reached the open position, the gate will remain opened and all of the control board functions are blocked. Only when K BUTT contact is released, the control board functions are re-activated and the Automatic Closing restarts (if enabled) doing the countdown to the gate closing.

PEDESTRIAN command (PED BUTT - COM)

This command is useful to open the gate partially, just enough, for example, to permit a pedestrian crossing. In fact, the Pedestrian command (see Point F) is carried out only by opening the motor M1 just enough for a pedestrian to pass, as described into the Point F

procedure. From the Pedestrian opening position the Automatic Closing can be enabled or disabled with DIP3. From the Pedestrian opening position, the gate can be completely opened by the OPEN or by the K BUTT button or by the RADIO button.

AUTOMATIC CLOSING (from the COMPLETE open position)

The Automatic Closing from the complete open position can be enabled turning ON the DIP3. The maximum gap of time that can be programmed is 5 minutes (see Point D and E).

AUTOMATIC CLOSING (from the PEDESTRIAN open position)

The Automatic Closing from the pedestrian open position can be enabled turning ON the DIP3. The maximum gap of time that can be programmed is 5 minutes (see Point F).

ELECTRIC LOCK (LOCK A+) command

The DIP 8 in the ON position enables the Electric Lock (MAX 15W 12V) command. The Electric Lock (LOCK A+) will be automatically turned ON each time the gate opens. If the DIP8 is OFF, the Electric Lock command is DISABLED. The Electric Lock remains active for 1,5 seconds.

MANUAL RELEASE FACILITY

The DIP 9 in the ON position enables the Manual Release Facility. Once the gate has completely closed, a short reversal manoeuvre (0.2 seconds) will be done to ease manual release.

ELECTRIC LOCK unlocking FACILITY 12VAC

The DIP 9 in the ON position enables the Electric Lock unlocking Facility. From close position, just before opening, the gate will perform a short closing manoeuvre (0.5 seconds) to ease unlocking from electric lock.

ELECTRIC LOCK coupling FACILITY

The DIP 10 in the ON position enables the Electric Lock coupling Facility. Once the gate has closed, a short hammering close pulse (0.5 seconds) will be done at full power to guarantee the electric lock or mechanical bolt coupling.

FUNCTIONING OF SAFETY ACCESSORIES

PHOTOCELL (PHOT - COM)

In case the switch DIP4 is in the OFF position, the photocells are active both in gate opening and in gate closing. In this configuration, if an obstacle cuts the photocell beam:

- while the gate is closing, the gate will open
- while the gate is opening, the gate will stop and will restart opening when the obstacle is removed
- while the gate is still, it will not move neither in opening nor in closing.

In case of the switch DIP4 is in the ON position, the photocells are active only in gate closing.

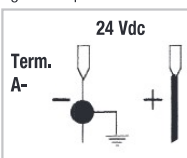
In this configuration, if an obstacle cuts the photocell beam:

- while the gate is closing, the gate will open
- while the gate is opening, the gate will continue open
- while the gate is still, it will open if a open command is request, it will remain still if a close command is request.

The photocell input (PHOT - COM) is a NORMALLY CLOSED contact.

In case there are more couple of photocells, the contacts from all the photocell receivers must be connected in series. In case the photocells are not installed, this contact must be short circuited with a wire jump (from PHOT to COM) to permit the gate to operate.

ATTENTION: In case the receiver led remains lit, malfunctioning of the main supply is suspected. It is advisable to connect electrically to earth the columns or the photocells stands to the terminal A-, to shield the photocells from external noise. Be careful not to short circuit the system when the supply phases are inverted!



AUTOMATIC CLOSING AFTER THE TRANSIT THROUGH THE PHOTOCELL

DIP12 ON and DIP4 OFF => If the gate is opening and a vehicle crosses the photo beam, the gate will stop. When the vehicle leaves, the gate will close automatically after 1 second pause.

DIP12 ON and DIP4 ON => If the gate is opening and a vehicle crosses the photo beam, the gate will continue to open. When the vehicle leaves, the gate will stop and then closes automatically after 1 second pause.

DIP 12 ON and DIP 3 ON => (Automatic closing activated), when passing through the gate in open position, as soon as the beam of the photocells is cut and released, the closing of the gate will activate immediately.

DIP 12 ON and DIP 3 OFF => (Automatic closing disabled), when passing through the gate in open position, even if the beam of the photocells is

cut and released, the gate will remain opened.

DIP 12 OFF => immediate closure after transit from the photocells disabled.

PAY ATTENTION: it is highly recommended to check photocells operation at least every 6 months.

SAFETY STRIP (EDGE - COM)

If an obstacle presses the safety strip:

- while the gate is still, it will not move neither in opening nor in closing
- while the gate is closing, the gate will open
- while the gate is opening, the gate will close.

In case the safety strip is held pressed a further quick reversion, after 2 seconds, is performed. The gate interrupts any movement and this alarm state is indicated by 1 minute Blinker flashing. The normal gate operations can be restored by pressing any push button or radio commands.

The safety strip input (EDGE - COM) is a NORMALLY CLOSED contact.

In case there are more than one safety strip, all their contacts must be connected in series.

In case the safety strip is not installed, this contact must be short circuited with a wire jump (from EDGE to COM) to permit the gate to operate and the Safety Strip test must be disabled (DIP 13 OFF).

FUNCTIONING IN DEAD MAN MODE WHEN THE SAFETY DEVICES ARE FAILING

If the safety edge fails or remains engaged for more than 5 seconds, or if photocell fails or remain engaged for more than 60 seconds, the K BUTTON and PEDESTRIAN commands will work only in dead man mode.

The signal that this mode has been activated is given by the blinking of the programming led. With the blinking of the programming led, the opening and closing operation are allowed only with the command button pressed and held. The radio commands and that of automatic closing, will be excluded, since their use in this mode, is not allowed by the norms.

Once the failing safety device is repaired, in automatic after 1 second, all standard commands that were selected, such as step by step, automatic mode, radio commands and automatic closing start functioning again.

Note 1: during this functioning in dead man mode, in case of damage to the safety strips (or photocells) the photocells (or safety strips) still work by interrupting the operation in progress.

During the dead-man operation, press and hold the K BUTTON or the PED BUTTON for the complete operation, and until the switching off of the leds of the motors (DL3 - DL5 total opening M2 - M1 - pedestrian DL5 - DL4 - DL6 total closing M2 - M1 - pedestrian DL6), or of the blinker, when installed.

The dead-man operation is only an emergency operation which must be activated for a very short period and with the complete installation at sight so to have a secure and safe control of the system. As soon as possible however, the failing safety devices must be repaired and activated.

TESTING THE SAFETY STRIP equipment

The switch DIP13 ON enables to test the safety strip equipment. The test is performed every time the gate completes a full opening. The test is available **only if the safety strip device is equipped with a dedicated power supply input**. In fact, the safety strip equipment power supply input can be connected to the A+TEST and A- outputs (DIP13 ON). Automatically, every time the gate completes a full opening, just before closing, the control board switches OFF the A+TEST and A- power supply output for a very short time. While the safety strip power supply is switched OFF, if everything is working fine the safety strip contact (EDGE - COM) must open. In case the test fails, no other gate manoeuvre will be allowed. NOT ALL THE SAFETY STRIPS CAN BE TESTED, THUS THE SWITCH DIP13 MUST BE LEFT OPEN.

BLINKER

Connect the flashing light to the blinker output, use flashing lights ACG7059 and bulbs of 40W maximum.

PRE-FLASHING function

The DIP 5 in the ON position enables the pre-flashing, the BLINKER starts flashing 3 seconds before every movement of the gate. The DIP 5 in the OFF position disables any pre-flashing, the BLINKER starts flashing and the motors will start at the same time.

BUZZER

The current supplied to the Buzzer will be 200 mA at 24 Vdc.

During the normal operation of the gate, opening and closing, the buzzer will buzz intermittently. Only during the alarm situations (safety strip) the buzzing will almost be constant.

GATE OPEN INDICATOR (SIGNAL - COM)

Should you need to have an indication about the leaf position, the output SIGNAL - COM can be connected to a 24 Vdc bulb of 3W maximum. It is turned ON when the gate is open or

partially open, it is turned OFF only when the gate is completely closed.
WE RECOMMEND NOT TO OVERLOAD THE INDICATOR OUTPUT (SIGNAL - COM) OTHERWISE THE GATE FUNCTIONING COULD BE COMPROMISED OR THE CONTROL BOARD COULD BE DAMAGED

RESTORATION OF OPERATIONS AFTER A BLACKOUT

If DIP 11 is turned OFF the blackout function is DISABLED.

If DIP 11 is turned ON the blackout function is ENABLED.

In case of a blackout occurs and the blackout function is enabled (DIP11 ON), when the main power returns, automatically the operator will function according to the chart 1.

CHART 1

During blackout	At the return of the main power supply
If the gate is totally closed	It will remain closed
If the gate is opening	It will continue opening
If the gate is totally open (with DIP3 OFF)	It will remain open, waiting for any command
If the gate is totally open (with DIP3 ON)	It will remain open and then, when the time of the Automatic Closing is expired, the gate will close
If the gate is closing	It will continue closing
If the gate is in the safety edge alarm state	The safety edge alarm will renewed

TECHNICAL SPECIFICATIONS

- Humidity < 95% without condensation
- Power supply voltage 230 o 120V~ ±10%
- Frequency 50/60 Hz
- Maximum absorption 36 mA
- Interruptions in electricity supply 100ms
- Maximum power of gate open indicator 24 Vdc 3W (equivalent to 1 bulb of 3W or 5 LED with serial resistance of 2,2 Kohm)
- Maximum load of blinker output 40W with resistive charge
- Current available for photocells and accessories 500mA 24 Vdc
- Current available on radio connector 200mA 24 Vdc

TECHNICAL RADIO SPECIFICATIONS (Only CRX models)

- Reception frequency 433,92MHz
- Impedance 52ohm
- Sensitivity >2,24µV
- Excitation time 300ms
- De-excitation time 300ms
- Codes in store N° 62 total
- All the inputs must be used as clean contacts because the power supply is generated internally (safe voltage) in the card and it is set in a way to guarantee the use of the double insulation and reinforced in relation to parts with hazardous voltage.
- Any external circuits connected to the outputs of the control board, must be carried out to make sure the double or reinforced insulation is used in relation to parts with hazardous voltage.
- All the inputs are run by a programmed integrated circuit which carries out a self-check at the beginning of each operation.

TROUBLE SHOOTING

After having carried out all connections, by carefully following the layout and having positioned the gate in intermediate position, check the correct ignition of LEDS DL7, DL8.

In case of no ignition of the LEDS, always with gate in intermediate position, check the following and replace any faulty components.

DL7 switched off Faulty photocells

DL8 switched off Faulty safety edge (In case the edge is not connected, carry out jumper between COM and EDGE)

During functioning with personnel present, with DIP 1 at ON, check that during opening of M1 and M2 the green DL5 and DL3 LEDS switch on and that during closing of M1 and M2 the red DL6 and DL4 LEDS switch on.

If not, invert clamps V and W on the motor terminal board of the interested motor.

FAULT	SOLUTION
After having carried out the various connections and having supplied voltage, all the LEDS are switched off.	Check the integrity of fuses F1 and F2. In case of interrupted fuse use only of adequate value F2 = 5A F1 = T315mA.
The motor opens and closes, but it has no strength and moves slowly.	Check trimmers TORQUE and LOW-SPEED adjustment.
The gate opens but does not close after the time set.	Ensure to have set DIP 3 at ON. Button K BUTTON always inserted in automatic functioning mode (DIP 6 ON). Replace button or switch of the selector switch. Failed edge self-test => check the connections between electronic board and edge feeder. Attention: if not using a feeder for edges, DIP 10 must be at OFF position.
The gate does not open or close by activating the various K and RADIO buttons.	Faulty safety edge contact. Faulty photocells contact with DIP 4 OFF. Fix or replace the relative contact.
By activating the K button the gate does not move.	Impulse K always inserted. Check and replace any buttons or micro-switches of the selector switch.
The electric lock does not work.	Ensure to have enabled DIP 8 at ON.

ACCESSORIES

For the connections and the technical data of the optional equipments follow the relevant handbooks.

RADIO TRANSMITTER SUN



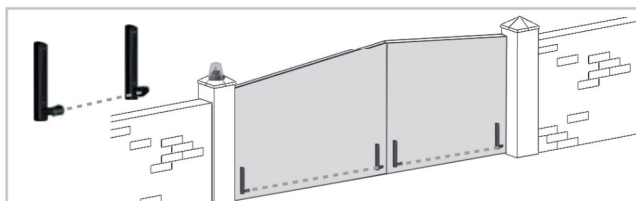
SUN 2CH	code ACG6052	SUN 4CH	code ACG6054
SUN CLONE 2CH	code ACG6056	SUN CLONE 4CH	code ACG6058

CODE LEARNIG SYSTEM RADIORECEIVERS



S433 1CH	1-channel with connector	code ACG5081
S433 1CH	1-channel with terminal Block	code ACG5082
S433 2CH	2-channels with connector	code ACG5083
S433 2CH	2-channels with terminal Block	code ACG5084
S433 4CH	4-channels with connector	code ACG5085
S433 4CH	4-channels with terminal Block	code ACG5086

VERTIGO



PHOTOCELLS SUBSTITUTING THE SAFETY STRIP
VERTIGO 8 cod. ACG8044 - VERTIGO 10 cod. ACG8045
VERTIGO WIRELESS 8 cod. ACG8061 - VERTIGO WIRELESS 10 cod. ACG8062

MECHANICAL BOLT



For 2-leaf gates to latch closed gate to the ground. code ACG5000

SPARK



In order to make the systems mentioned above give the best performances, you need to install an antenna tuned on the frequency of the radio receiver installed.

N.B. Pay attention to not let the central wire of the cable to come into contact with the external copper sheath, since this would prevent the antenna from working.

Install the antenna vertically and in such a way the remote control can reach it.

SPARK BLINKER WITH IN-BUILT INTERMITTENT CARD	code ACG7059
LATERAL SUPPORT	code ACG7042
SPARK ANTENNA 433	code ACG5452

NOVA - NOVA WIRELESS



PHOTOCELLS NOVA - range 25 m	code ACG8046
PHOTOCELLS NOVA WIRELESS - range 25 m - 3 years batteries life	code ACG8047
PAIR OF COLUMNS for NOVA	code ACG8039

FIT SLIM



PHOTOCELLS for the wall-installation	code ACG8032
PAIR OF COLUMNS FOR FIT SLIM	code ACG8065
FIT SLIM photo-cells have synchronism function in AC current and ranges of 20 m.	
You can fit many couples close together thanks to the synchronising circuit.	
Add the SYNCR0 TRANSMITTER TX SLIM SYNCR0	code ACG8029 for more than 2
photo-cells couples (up to 4).	