KING 24V

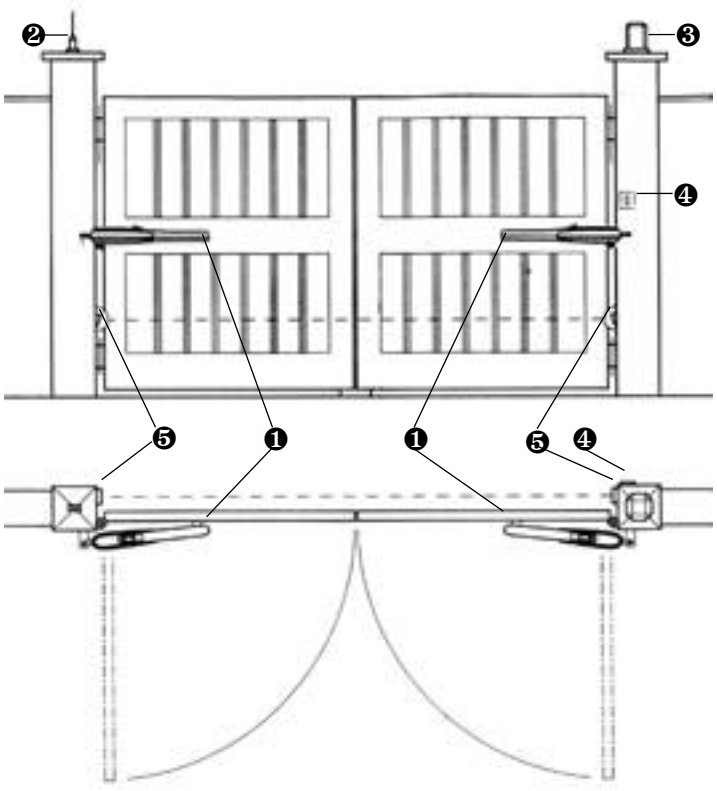
con / avec / with / mit

T2 24V

OPERATORE IRREVERSIBILE PER CANCELLI A BATTENTE
OPERATEUR IRREVERSIBLE POUR PORTAILS À BATTANT
IRREVERSIBLE OPERATOR FOR LEAF GATES
TORANTRIEBE FÜR FLÜGELTORE
OPERADOR IRREVERSIBLE PARA CANCELAS DE BATIENTE

Operatore Operateur Operator Torantrieb Operador	Alimentazione Alimentation Power Supply Stromspannung Alimentacion	Peso max cancello Poids maxi portail Max gate weight Max Torgewicht Peso máx verja	Forza max di spinta Force maxi de poussée Thrust force Max. Schubkraft Fuerza max de empuje	codice code code code codigo
KING 24V	24Vdc	400 kg / 880 lbs	N 1800	AA14028
KING 24V L	24Vdc	500 kg / 1100 lbs	N 1800	AA14029

CE



1 - KING 24V operator
2 - Tuned aerial
3 - Flashing lamp
4 - Key selector
5 - Photoelectric cells (external)

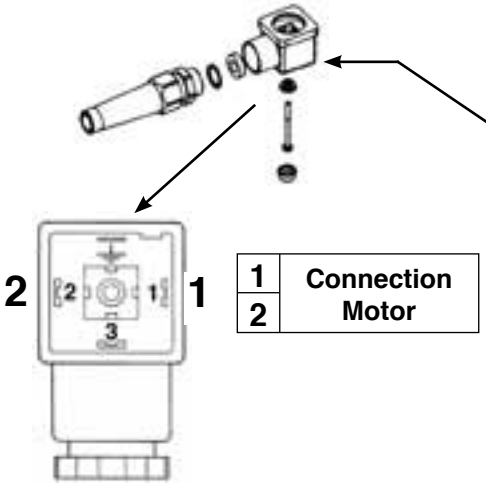
1

TECHNICAL FEATURES

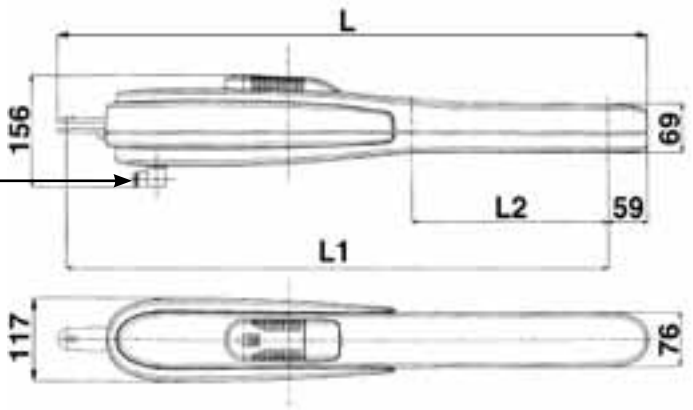
KING 24V is a irreversible operator suitable for opening gates with a leaf length of up to 4,5 metres (Fig. 1).
The KING 24V operator use mechanical stoppers, thus avoiding the need for electrical limit switches.

TECHNICAL DATA	KING 24V	KING 24V L
Max. leaf length	m 3,5*	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	**24V**	
Motor capacity	W 118	
Power absorbed	A 5,4	
Daily operations suggested	n° 150	
Service	90%	
Guaranteed consecutive cycles	n° 200/14s	
Grease	Bechem - RHUS 550	
Weight of electroreducer	kg 10	14
Noise	db <70	
Volume	m^3 0,0184	0,0211
Operating Temperature	°C -10 ÷ +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.



1	Connection
2	Motor



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

Measurements in mm

2

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 24V, 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 (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 meeting the EN 12453 standard

COMMAND TYPE	USE OF THE SHUTTER		
	Skilled persons (out of public area*)	Skilled persons (public area)	Unrestricted use
with manned operation	A	B	non possibile
with visible impulses (e.g. sensor)	C or E	C or E	C and D, or E
with not visible impulses (e.g. remote controldevice)	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

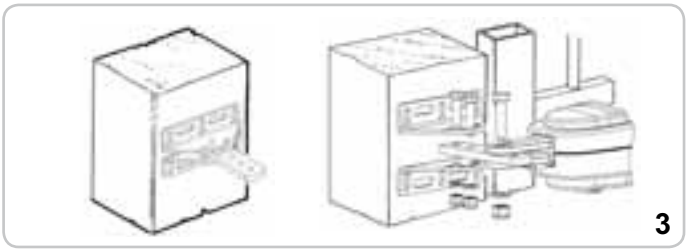
* a typical example are those shutters which do not have access to any public way
A: Command button with manned operation (that is, operating as long as activated), like code ACG2013
B: Key selector with manned operation, like code ACG1010
C: Adjustable power of the motor
D: Safety edges, like code ACG3010 and/or other safety devices to keep thrust force within the limits of EN12453 regulation - Appendix A.
E: Photocells, like code ACG8026 (To apply every 60÷70cm for all the height of the column of the gate up to a maximum of 2,5m - EN 12445 point 7.3.2.1)

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 24V 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.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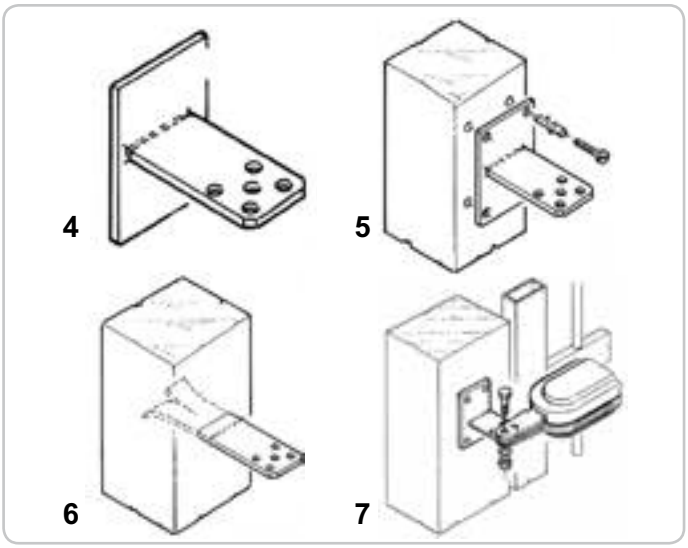
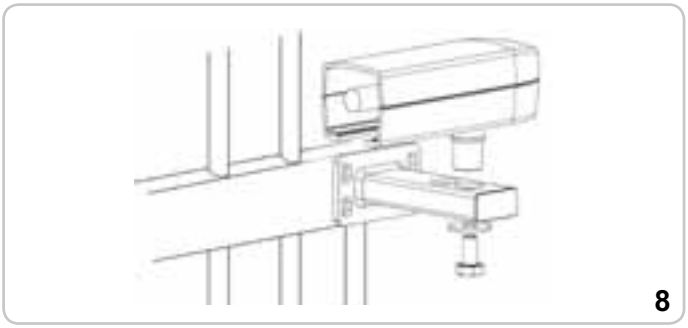
COLUMN ATTACHMENT FOR KING 24V L OPERATOR (code CCA1370 - CCA1319)

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.


4 5 6 7

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 24V and try several times to open and to close the gate, controlling that the operator does not touch the moving gate.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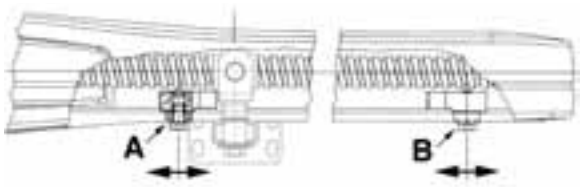
MECHANICAL STOPPER ADJUSTMENT

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) (OPTIONAL)) in the needed position and tighten it as for stopper (A).



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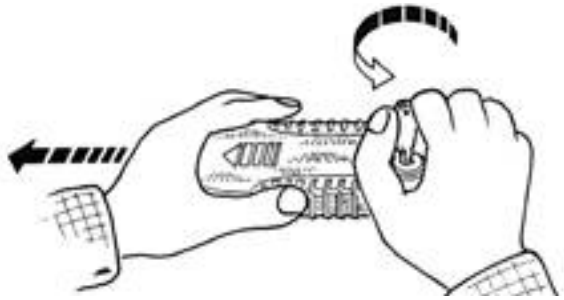
EMERGENCY RELEASE

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, 390N for doors/gates for commercial and industrial sites (values indicated in 5.3.5 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.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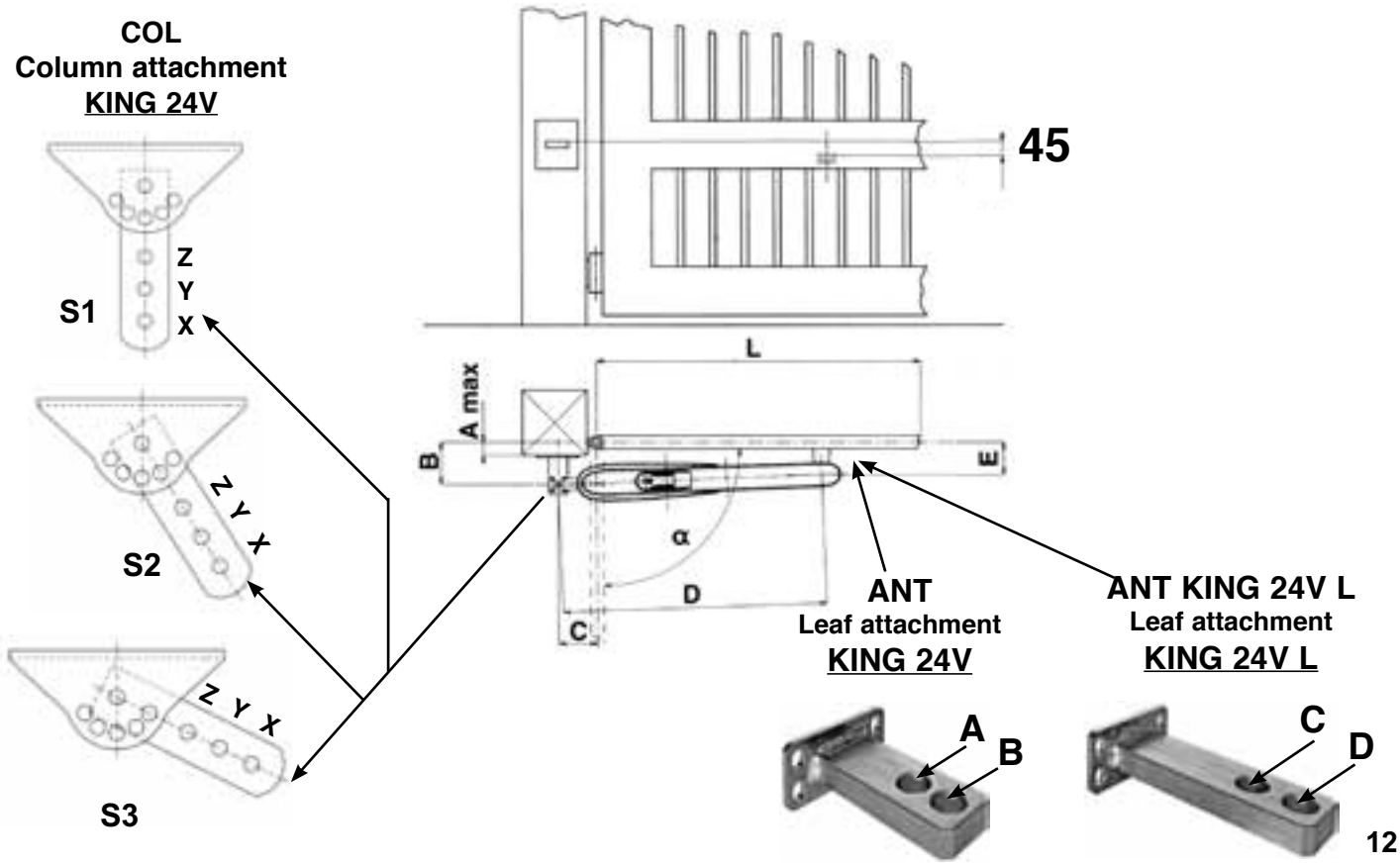

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RESPECT THE MEASURES FOR A CORRECT INSTALLATION

	L Min.÷Max	α	A max	B	C	D	E	T sec	ANT	COL
KING 24V	1÷1,80	90°	45	100	100	815	90	14	A	S3-Y
KING 24V	1,81÷2,20		45	110	110	815	90	18	A	S3-X
KING 24V	2,21÷2,50		70	140	110	815	90	20	A	S1-Z
KING 24V	2,51*÷3,00*		90	170	140	815	115	25	B	S2-Y
KING 24V	3,01*÷3,50*		115	200	140	815	115	27	B	S2-Y
KING 24V L	3,51*÷4,00*		105	190	190	945	150	26	D	-
KING 24V L	4,01*÷4,50*		160	214	120	945	150	20	D	-

	L Min.÷Max	α	A max	B	C	D	E	T sec	ANT	COL
KING 24V	1÷1,80	110°	20	90	140	815	90	20	A	S1-Z
KING 24V	1,81÷2,20			100	130	815	90	21	A	S2-Y
KING 24V	2,21÷2,50*			110	140	815	115	24	B	S1-Y
KING 24V L	2,51*÷3,00*			130	140	945	120	29	C	-
KING 24V L	3,01*÷3,50*			160	150	945	120	19	C	-
KING 24V L	3,51*÷4,00*			160	230	945	150	22	D	-

*** 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.

RESPECT THE MEASURES WITH 2 MECHANICAL STOPPERS

	L Min.÷Max	α	A max	B	C	D	E	T sec	ANT	COL
KING 24V	1÷1,80	90°	45	100	100	775	90	14	A	S3-Y
KING 24V	1,81÷2,20		45	110	110	775	90	18	A	S3-X
KING 24V	2,21÷2,50		70	140	110	775	115	20	B	S1-Z
KING 24V	2,51*÷3,00*		70	160	140	775	115	25	B	S1-Y
KING 24V L	3,01*÷3,50*		60	170	170	905	120	23	C	-
KING 24V L	3,51*÷4,00*		100	190	180	905	120	25	C	-

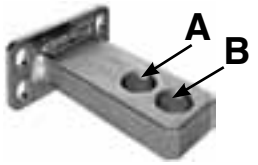
	L Min.÷Max	α	A max	B	C	D	E	T sec	ANT	COL
KING 24V	1÷1,80	110°	20	90	140	775	90	20	A	S1-Z
KING 24V	1,81÷2,20			100	130	775	90	21	A	S2-Y
KING 24V	2,21÷2,50*			110	140	775	115	24	B	S1-Y
KING 24V L	2,51*÷3,00*			130	140	905	120	18	C	-
KING 24V L	3,01*÷3,50*			130	150	905	120	19	C	-

MECHANICAL STOP - OPTIONAL

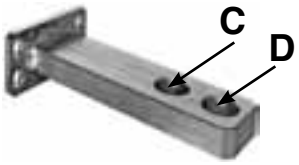
Code ACG8089

Optional mechanical stop to stop closing, if the gate is not fitted with a floor stop (Fig. 14).

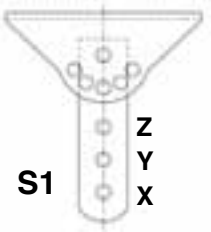
ANT
Leaf attachment



ANT KING 24V L
Leaf attachment KING 24V L



COL
Column attachment
KING 24V



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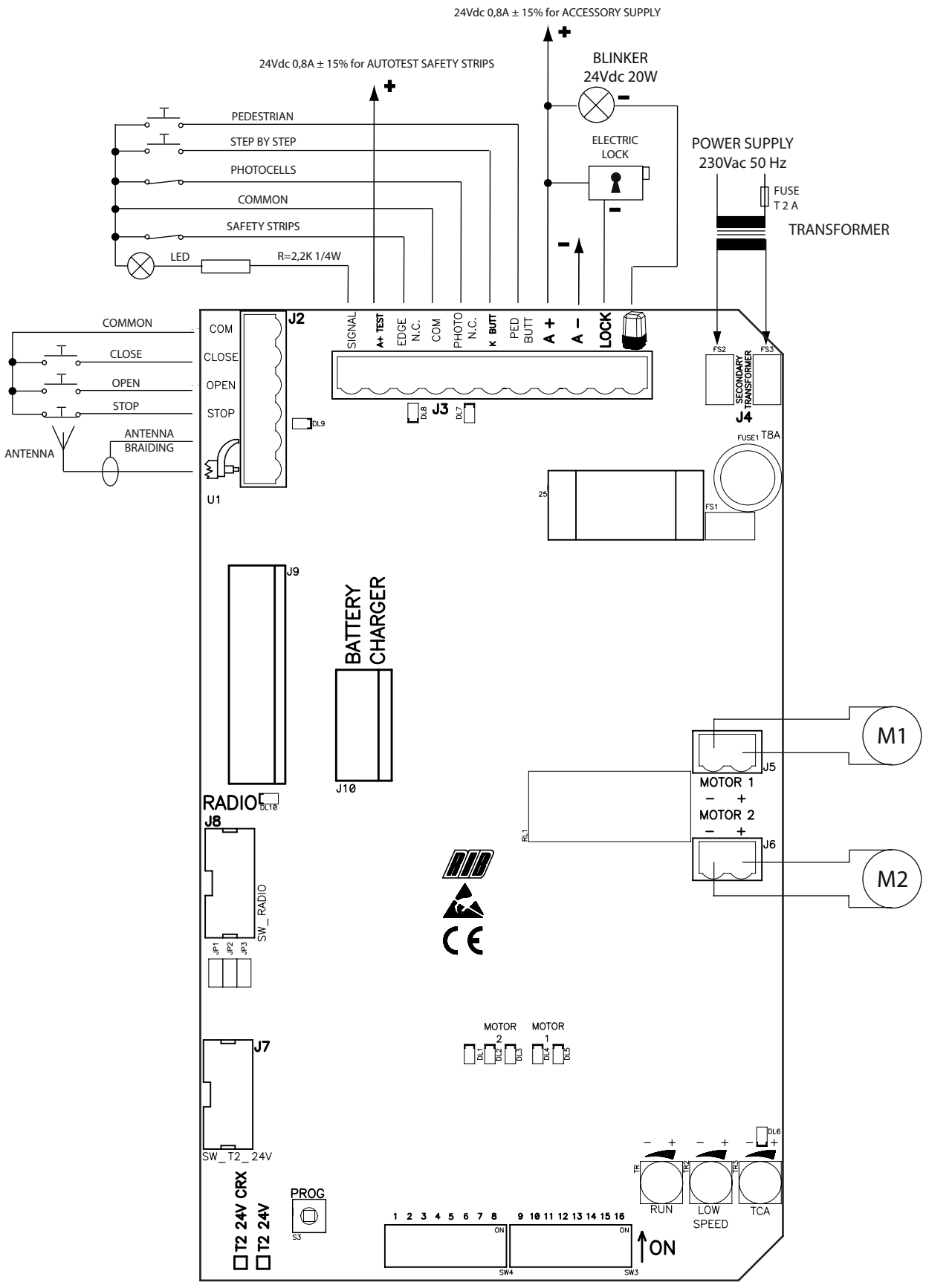
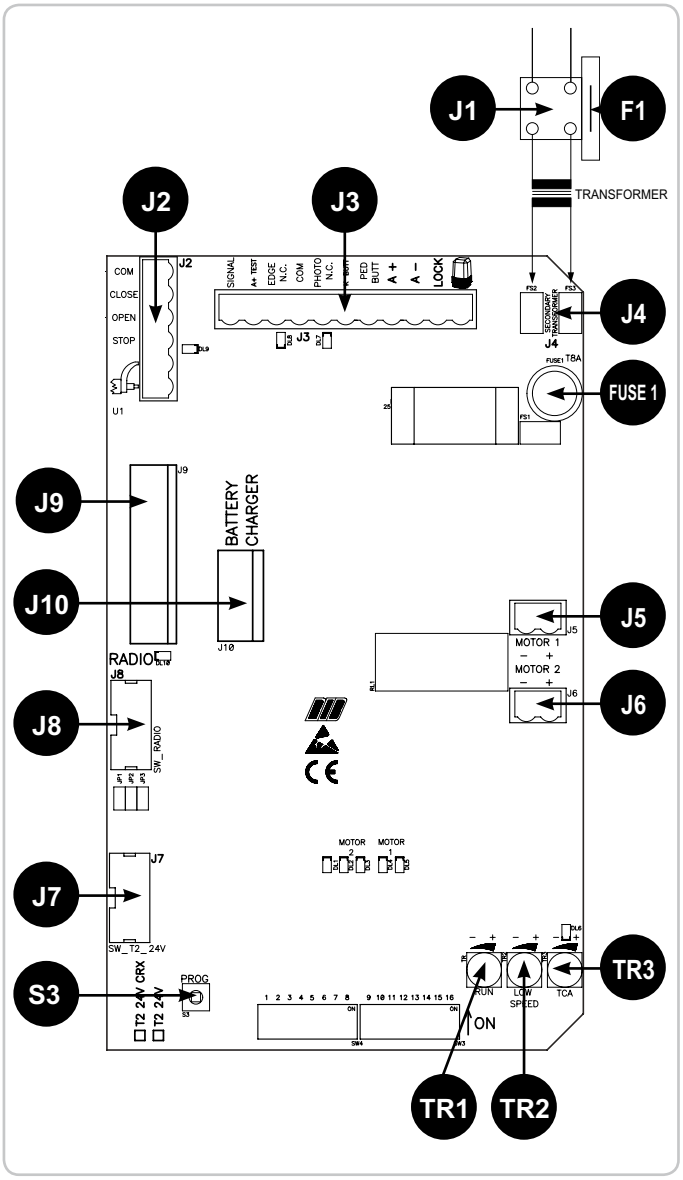
14


24Vdc 0,8A ± 15% for ACCESSORY SUPPLY
24Vdc 0,8A ± 15% for AUTOTEST SAFETY STRIPS
BLINKER
24Vdc 20W
ELECTRIC
LOCK
POWER SUPPLY
230Vac 50 Hz
FUSE
T 2 A
TRANSFORMER
PEDESTRIAN
STEP BY STEP
PHOTOCELLS
COMMON
SAFETY STRIPS
LED
R=2,2K 1/4W
COMMON
CLOSE
OPEN
STOP
ANTENNA
ANTENNA
BRAIDING
J2
COM
CLOSE
OPEN
STOP
U1
SIGNAL
A+ TEST
EDGE N.C.
COM
PHOTO N.C.
K BUTT
PED BUTT
A +
A –
LOCK
J3
DL8
DL7
DL9
FS2
FS3
SECONDARY TRANSFORMER
J4
FUSE1 T8A
FS1
J9
BATTERY CHARGER
J10
RADIO
DL10
J8
SW_RADIO
JP1
JP2
JP3
M1
J5
MOTOR 1
MOTOR 2
J6
M2
RL1
MOTOR 2
MOTOR 1
DL1
DL2
DL3
DL4
DL5
J7
SW_T2_24V
T2 24V CRX
T2 24V
PROG
S3
DL6
TR
TR2
TR3
RUN
LOW SPEED
TCA
1 2 3 4 5 6 7 8
9 10 11 12 13 14 15 16
ON
SW4
SW3

A - CONTROL PANEL FEATURES



J1	N F	Power supply 230 Vac 50/60 Hz - external to the control panel - (120V/60Hz upon request)
J2	COM.	Common contact
	CLOSE	Closing impulse contact (NA)
	OPEN	Opening impulse contact (NA)
	STOP	STOP impulse contact (NC)
	AERIAL	Radio Antenna
J3	SIGNAL	Gate open state and battery state output indicator (24Vdc 3W max)
	A+TEST	+ 24Vdc safety strip self-test power supply
	EDGE N.C.	Safety strip contact (NC)
	COM.	Common contact
	PHOTO N.C.	Photocells contact (NC)
	K BUTT.	Single pulse contact (NO)
	PED. BUTT.	Pedestrian opening contact (NA)
	A+	+ 24Vdc accessories power supply
	A -	- 24Vdc accessories power supply
	LOCK	Electric lock connection (MAX 15W 12V)
		- 24Vdc blinker (code ACG7061) power supply. **Pay attention to the polarity.**
J4	SECONDARY TRANSFORMER	Connection to secondary coil of transformer 18 Vac
J5	MOTOR 1	MOTOR 1 CONNECTION (without polarity)
J6	MOTOR 2	MOTOR 2 CONNECTION (without polarity)
J7	SW T2 24V	Connector dedicated to the factory programming. **DO NOT REMOVE ANY JUMPER! OTHERWISE THE OPERATOR WILL NOT WORK!**
J8	SW RADIO	Connector dedicated to the factory programming (only CRX control board) **DO NOT REMOVE ANY JUMPER! OTHERWISE THE OPERATOR WILL NOT WORK!**
J9	RADIO	Built-in radio module (model CRX), or connector for radio receiver RIB, 24 Vdc supply
J10	BATTERY CHARGER	Connector for charge card of 24Vdc battery (code ACG4648)
TR1	TRIMMER RUN	Trimmer for high speed adjustment operations
TR2	TRIMMER LOW SPEED	Trimmer for low speed adjustment operations
TR3	TRIMMER TCA	Trimmer for automatic closing time adjustment (DISABLED DEFAULT AND DL6 LED OFF)
S3	PROG	Programming button
FUSE 1	T 8 A	Motor protection fuse
F1	T 2 A	Transformer protection fuse

B - SETTINGS

DIP 1 **(ON) - MOTOR ROTATION DIRECTION CONTROL (POINT C)**
DIP 2 **(ON) - TIMER (POINT D)**
DIP 3 **(ON) - ACTIVATES DOOR RELEASE DURING PHASES OF SLOWDOWN AND TOTAL OPENING AND CLOSING (AS PER THE IMPACT TESTS OF EN12453)**
DIP 1-2 **MEMORIZATION/CANCELLATION OF RADIO CONTROL CODES FOR TOTAL OPENING (ONLY MODEL CRX) (POINT E)**
DIP 1-3 **MEMORIZATION/CANCELLATION OF RADIO CONTROL CODES FOR PEDESTRIAN OPENING (ONLY MODEL CRX) (POINT F)**
DIP 2-1 **MICRO-SWITCH CONTROLLER FOR PEDESTRIAN OPENING TIMER**
DIP 4 Photocells always active (OFF) - Photocells active only during closing (ON)
DIP 5 Pre-blinking (ON) - Normal blinking (OFF)
DIP 6 Single pulse command (K BUTT) and step-by-step radio receiver (OFF) - automatic (ON)
DIP 7 Power sensor operation (ON-activated) time operation (OFF-activated).
DIP 8 Electric lock activation (ON-activated)
DIP 9 Electric lock pulse release (ON-activated)
DIP 10 Electric lock pulse engagement (ON-activated)
DIP 11 Easy release activation (ON-activated)
DIP 12 Sensor TEST activation (ON-activated).
DIP 13 Selection of 1 or 2 motor operation (default OFF 2 motors)
DIP 14 KING 24 - ON
DIP 15 KING 24 - OFF
DIP 16 **IMMEDIATE CLOSING AFTER PASSING IN FRONT OF PHOTOCELLS**

ON **ACTIVATED**
OFF **DEACTIVATED**

JP1 => Check that the jumper is inserted!
JP2 => Check that the jumper is inserted!
JP3 => Check that the jumper is inserted!

PROG => S3 Programming button

ADJUSTMENTS

ATTENTION: PUT DIP 3 IN THE ON MODE ONLY AFTER HAVING CARRIED OUT ALL THE PROGRAMMING PROCEDURES.
NOTE: WITH DIP 3 (ON) BRIEF GATE REVERSAL AFTER IMPACT IS ACTIVATED.
THIS BRIEF GATE REVERSAL PERMITS STATIC FORCE TO BE REDUCED TO ZERO WITHIN 5 SECONDS AS PER STANDARD EN12453 POINT A.2.2 (ACCEPTABLE STATIC FORCE), THEREBY COMPLYING WITH THE IMPACT TESTS ALSO OUTLINED BY EN12453).
IF COMPLIANCE WITH THE AFOREMENTIONED STANDARD IS UNNECESSARY, SIMPLY POSITION DIP 3 TO OFF. IN THIS CASE THE GATES STOP WITHOUT REVERSING.

RUN TRIMMER (TR1) high-speed electronic regulator
This trimmer permits motor speed adjustment (the default setting is maximum speed). Adjustment of the automation is useful for compliance with European impact standards.

LOW-SPEED TRIMMER (TR2) Electronic slow speed approach control
The slow speed control is performed by adjusting the LOW- SPEED TRIMMER which changes the voltage output across the motor(s) (turning it clockwise increases the speed). Adjustment is performed to determine the correct speed at the end of opening and closing according to the gate or when there is friction that might cause the system to function poorly.

AUTOMATIC CLOSING TRIMMER - TCA (TR3) TOTAL OR PEDESTRIAN default NOT ACTIVATED and LED DL6 OFF (TRIMMER FULLY ROTATED COUNTERCLOCKWISE)
This trimmer makes it possible to adjust the time for total or pedestrian automatic closing. Only with gate completely (total) or partially (pedestrian) open and LED DL6 on (trimmer rotated clockwise).
The pause time can be adjusted from a minimum of two seconds up to a maximum of two minutes.

LED SIGNALS
DL1 program activated (red)
DL2 gate opening M2 (green)
DL3 gate closing M2 (red)
DL4 gate opening M1 (green)
DL5 gate closing M1 (red)
DL6 automatic closing indicator (red)
DL7 photocell contact (NC) (red)
DL8 sensor contact (NC) (red)
DL9 STOP button (NC) (red)
DL10 radio code program (green)

FUSES
Fuse 1 T 8A MOTOR PROTECTION FUSE
F1 T 2A TRANSFORMER PROTECTION FUSE (on the outside of the T2 24V board)

C - MOTOR ROTATIONAL DIRECTION CONTROL

1 - Set DIP 1 to ON => LED DL1 starts flashing.
2 - Press and hold the PROG button. (movement is now manually controlled - open-stop-close-stop-open - etc.) => GREEN LEDS DL2 and DL4 are lit and the gate panels open with a fixed lag of 2 sec. If they close instead of open, release the button and reverse the two wires on the motor used.
3 - After opening release the PROG button and calibrate the mechanical opening stops (on the operator).
4 - Press and hold the PROG button => RED LEDs DL3 and DL5 turn on and the gate panels close with a time lag of 2 sec.
5 - Continue to hold the PROG button until the gate is completely closed.
6 - Leave the two doors completely closed to set the timer.
7 - Reset DIP1 to OFF => LED DL1 turns off, signaling exit from control.
N.B.: During this check the stop, the photocells and the sensors are not active.

D - SETTING THE TIMER FOR 2 MOTORS (#) WITH POWER SENSOR ACTIVATED (DIP 7 ON)

WHILE SETTING THE TIMER THE POWER SENSOR IS CONTINUOUSLY ACTIVATED.
1 - The gate must be completely closed.
2 - Set DIP 2 to ON => LED DL1 will blink rapidly.
3 - Press the PROG button. => M1 opens.
4 - When the mechanical opening stop is reached, the AUTOMATIC POWER SENSOR stops M1 (memorizing the time and the power) => At the same time M2 is triggered to open.
5 - When the mechanical opening stop is reached, the AUTOMATIC POWER SENSOR stops M2 (memorizing the time and the power).
6 - Press the PROG button. => M2 closes.
7 - Press the PROG button. => M1 closes and sets the lag time between M2 and M1. At the same time LED DL1 stops flashing indicating exit from the programming procedure.
Safety and other gate commands now operate normally (inversions, stop, alarms, etc.).
8 - The gate panels will close in high-speed mode (depending on how you set the RUN trimmer) and near total closure in the slow mode (depending on how you set the LOW-SPEED trimmer).
9 - Upon closing the power sensors stop the gate.
10 - AFTER PROGRAMMING RESET DIP 2 TO OFF.

D - SETTING THE TIME FOR ONE MOTOR (M1) (#) WITH POWER SENSOR ACTIVATED (DIP 7 ON)

CAUTION: FOR ONE MOTOR CONTROL DIP 13 MUST BE POSITIONED TO ON; DURING PROGRAMMING THE POWER SENSOR IS CONTINUOUSLY ACTIVE.
The gate must be completely closed.
1 - Set DIP 2 to ON => LED DL1 will blink rapidly.
2 - Press the PROG button. => M1 opens.
When the mechanical opening stop is reached, the AUTOMATIC POWER SENSOR stops M1 (memorizing the time and the power).
3 - Press the PROG button. => M1 closes.
At the same time LED DL1 stops flashing indicating exit from programming. Safety and other gate commands now operate normally (inversions, stop, alarms, etc.).
Upon closing the power sensor stops the gate.
4 - **AFTER PROGRAMMING RESET DIP 2 TO OFF.**
(#) DURING PROGRAMMING THE SAFETY DEVICES ARE ACTIVE AND STOP THE PROGRAMMING PROCEDURE (LED DL1 FROM FLASHING BECOMES CONSTANT). TO REPEAT PROGRAMMING SET DIP 2 TO OFF, CLOSE THE GATE USING THE PROCEDURE "MOTOR ROTATIONAL DIRECTION CONTROL" AND REPEAT THE DESIRED PROGRAMMING PROCEDURE.

D - SETTING THE TIME FOR 2 MOTORS (#) WITH TIME OPERATION (DIP 7 OFF)

1 - The gate must be completely closed.
2 - Set DIP 2 to ON => LED DL1 will blink rapidly.
3 - Press the PROG button. => M1 opens.
4 - When the mechanical opening stop is reached, wait a second then press the PROG button => M1 stops and M2 opens.
5 - When the mechanical opening stop is reached => wait 1 second and press the PROG button => M2 stops.
6 - Press the PROG button => M2 closes.
7 - Press the PROG button => M1 closes setting the time lag between M2 and M1.
At the same time LED DL1 stops flashing indicating exit from the programming procedure.
Safety and other gate commands now operate normally (inversions, stop, alarms, etc.).
8 - After the set amount of time, the gate will stop.
9 - **AT THE END OF PROGRAMMING RESET DIP 2 TO OFF.**

NOTE: The slowdown is automatically determined by the control board during the time setting phase and is activated at about 50 to 60 cm before reaching the mechanical opening or closing limit.

D - SETTING THE TIME FOR 1 MOTOR (#) WITH TIME OPERATION (DIP 7 OFF)

CAUTION: FOR ONE MOTOR CONTROL DIP 13 MUST SET TO ON

1 - The gate must be completely closed.
2 - Set micro-switch DIP 2 to ON => LED DL1 will blink rapidly.
3 - Press the PROG button => M1 opens.
4 - When the mechanical opening stop is reached, wait a second then press the PROG button => M1 stops.
5 - Press the PROG button => M1 closes.
At the same time LED DL1 stops flashing indicating exit from the programming procedure.
Safety and other gate commands now operate normally (inversions, stop, alarms, etc.).
6 - After the set amount of time, the gate will stop.
7 - **AT THE END OF PROGRAMMING RESET DIP 2 TO OFF.**

D - SETTING PEDESTRIAN OPENING TIMES (#) BOTH FOR TIME AND POWER SENSOR OPERATION

With gate closed:
1 - First set DIP2 to ON (LED DL1 flashes quickly) and then DIP1 to ON (LED DL1 flashes slowly).
2 - Push the pedestrian button (COM-PED.BUTT) => M1 opens.
3 - Push the pedestrian button to stop movement (thereby setting M1 opening).
4 - Push the pedestrian button to start closing.
5 - Upon closing reset DIP 1 and 2 to OFF.

(#) DURING PROGRAMMING THE SAFETY DEVICES ARE ACTIVE AND STOP THE PROGRAMMING PROCEDURE (LED DL1 FROM FLASHING BECOMES CONSTANT).
TO REPEAT PROGRAMMING SET DIP 2 TO OFF, CLOSE THE GATE USING THE PROCEDURE "MOTOR ROTATIONAL DIRECTION CONTROL" AND REPEAT THE DESIRED PROGRAMMING PROCEDURE.

E - RADIO CODE PROGRAMMING FOR TOTAL OPENING

(UP TO 62 CODES - CRX MODELS ONLY)

Programming can be done only when the gate is stationary.
1 - First set DIP 1 to ON and then DIP 2 to ON.
2 - The red LED DL1 flashes ON every 1 sec. and OFF for 10 seconds.
3 - Press the remote control button (usually channel A) within the allotted 10 seconds. If the remote is memorized properly LED DL10 (green) blinks.
4 - The programming time for codes is automatically renewed in order to memorize the next remote control.
5 - To finish programming, wait 10 seconds, or press the PROG button briefly. The red LED DL1 stops flashing.
6 - Reset DIP 1 to OFF and DIP 2 to OFF.
7 - End of procedure.

CANCELLATION OF ALL RADIO CODES FOR TOTAL OPENING

Cancellations can only be performed when gate is stationary.
1 - Set DIP 1 to ON and then DIP 2 to ON.
2 - The red LED DL1 flashes ON every 1 second and OFF for 10 seconds.
3 - Press and hold the PROG button for 5 seconds. Memory cancellation is indicated by two flashes of green LED DL10.
4 - The red LED DL1 remains active and you can add new codes as shown above.
5 - Reset DIP 1 to OFF and DIP 2 to OFF.
6 - End of procedure.

INDICATOR MEMORY FULL OF RADIO CODES FOR TOTAL OPENING

Indication only when gate is stationary.
1 - Set DIP 1 to ON and then DIP 2 to ON.
2 - The green LED DL10 flashes 6 times when the memory is full (62 codes).
3 - LED DL1 will then remain active for 10 seconds enabling possible cancellation of codes.
4 - Reset DIP 1 to OFF and DIP 2 to OFF.
5 - End of procedure.

F - PROGRAMMING PEDESTRIAN OPENING RADIO CODES

(UP TO 62 CODES - CRX MODELS ONLY)

Programming can be done only when the gate is stationary.
1 - Set DIP 1 to ON and then DIP 3 to ON.
2 - The red led DL1 flashes ON for 1 second and OFF for 1 second for 10 seconds.
3 - Press the remote control button (usually channel B) within the allotted 10 seconds. If the remote is properly memorized LED DL10 (green) blinks.
4 - The programming time for codes is automatically renewed in order to memorize the next remote control.
5 - To finish programming wait 10 seconds, or press the PROG button briefly. The red LED DL1 stops flashing.
6 - Reset DIP 1 to OFF and DIP 3 to OFF.
NOTE: If LED DL1 CONTINUES BLINKING QUICKLY IT MEANS THAT DIP 1 IS STILL SET TO ON AND THAT ANY OPERATION IS REFUSED.
7 - End of procedure.

CANCELLATION PROCEDURE FOR ALL PEDESTRIAN OPENING RADIO CODES

Cancellation can only be performed when the gate is stationary.
1 - Set DIP 1 to ON and then DIP 3 to ON.
2 - The red LED DL1 flashes ON for 1 second and OFF for 1 second for 10 seconds.
3 - Press and hold the PROG button for 5 seconds. Memory cancellation is indicated by two flashes of green LED DL10.
4 - The red LED DL1 remains active and you can add new codes as shown above.
5 - Reset DIP 1 to OFF and DIP 3 to OFF.
6 - End of procedure.

INDICATION MEMORY FULL OF PEDESTRIAN OPENING RADIO CODES

Indication only when the gate is stationary.
1 - Set DIP 1 to ON and then DIP 3 to ON.
2 - The green LED DL10 flashes 6 times when the memory is full (62 codes).
3 - The LED DL1 will then remain active for 10 seconds enabling possible cancellation of codes.
4 - Set DIP 1 to OFF and DIP 3 to OFF.
5 - End of procedure.

CONTROL ACCESSORIES OPERATION

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 BUTTON (COM-K BUTTON)

If DIP6 ON => It cyclically performs the commands open-stop-close-stop-open etc.
If DIP6 OFF => Opens the gate when closed. There is no effect if activated while opening. If activated when gate is open, the gate closes. If activated while closing, the gate reopens.

OPEN BUTTON (COM-OPEN)

The button controls the opening movement when the gate is stationary. If activated while closing, it reopens the gate.

CLOCK FUNCTION OF OPEN BUTTON

If you want the Clock Function must request T2 24V with firmware 02. ATTENTION: A CLOCK CONNECTED TO T2 24V with fw 03 or more ACTIVATES THE OPENING MOVEMENT OF THE GATE WITHOUT HAVING THE PROTECTION OF THE SAFETY DEVICES!

This function is useful during peak hours, when vehicle traffic is slow (e.g. entry/ exit of workers, emergencies in parking or residential areas and, temporarily, for moving operations).

CLOCK FUNCTION APPLICATION
It is necessary to request a T2 24V control panel with firmware 02.
By connecting a switch and/or a daily/weekly clock (instead of or in parallel to the open button N.O. "COM-OPEN"), you can open and keep the automation open for as long as the switch is pressed or the clock remains active. Command functions are inoperative with open automation.
Releasing the switch or at the preset time, the automation closes immediately.

CLOSE BUTTON (COM-CLOSE)
Controls the closing movement when the gate is stationary.

REMOTE CONTROL
If DIP6 ON => It cyclically performs the commands open-stop-close-stop-open etc.
If DIP6 OFF => Opens the gate when closed. There is no effect if activated while opening. If activated when gate is open, the gate closes. If activated while closing, the gate reopens.

PEDESTRIAN OPEN BUTTON (COM-PED.BUTT.)
Partial opening and closing control.
During pedestrian opening, pausing or closing, you can control the opening of any command linked to the T2 24V board.
With DIP 6 you can choose the operation mode of the pedestrian push button.
If DIP6 ON => It cyclically performs the commands open-stop-close-stop-open etc.
If DIP6 OFF => Opens the gate when closed. There is no effect if activated while opening. If activated when gate is open, the gate closes. If activated while closing, the gate reopens.

ELECTRIC LOCK (LOCK)
Set DIP 8 to ON to enable control of the electric lock when opening.

ELECTRIC LOCK PULSE RELEASE IN OPENING
Set DIP 9 to ON to enable the electric lock pulse release when opening (provided DIP 8 is ON).
If a command to open the gate is given when the gate is closed, the closing movement is performed for 0.5 seconds and the electric lock is simultaneously activated (followed by a 0.5 second pause and then the opening of the gate).

ELECTRIC LOCK PULSE ENGAGEMENT
Set DIP 10 to ON to enable the pulse engagement of the electric lock when closing. Upon closing, motors are activated for 0.5 seconds at full voltage to ensure lock engagement.

EASY MOTOR RELEASE
Set DIP 11 to ON to enable easy manual release (provided that DIP 10 is ON), upon closing a reverse motion with a fixed time of 0.2 seconds occurs to facilitate manual release.

OPERATION OF SAFETY ACCESSORIES

PHOTOCELL (COM-PHOT)
DIP 4 OFF => if an obstacle is placed in range of the photocells when the gate is closed, the gate does not open. During operation, photocells work when opening (by starting the opening movement only after the obstacle is removed) and closing (by starting the reverse movement only after the obstacle is removed).
DIP 4 ON => if an obstacle is placed in range of the photocells when the gate is closed and the command to open is given, the gate opens (the photocells do not work while opening). Photocells work only during closing (with reverse motion restored after a second, even if they are still engaged).

CONTROL OF IMMEDIATE CLOSING AFTER MOVEMENT IN FRONT OF PHOTOCELLS
DIP 16 ON and DIP 4 OFF => if photocells are engaged during opening, the gate stops and the gate only closes one second after the photocells are disengaged.
DIP 16 ON and DIP 4 ON => if photocells are engaged during opening, the gate continues to open. Upon disengagement of the photocells, the gate stops and reverses closing motion after a one second pause.
If total opening is reached (end of opening time), immediate closing is deactivated and automatic time closing is activated (if TCA trimmer is activated and LED DL6 is on). If during closing there is a rapid movement (e.g. pedestrian) the gate will open again for two seconds and then close once again.
DIP 12 OFF => immediate closing after movement in front of the photocells is deactivated.
N.B.: Please check photocell operation at least every six months.

EDGE (SAFETY STRIP) (COM-EDGE)
If engaged during opening, reverses the motion when closing.
If engaged when closing, reverses the motion when opening.
If it remains engaged again, it performs a further reversal after 2 seconds, then performs an additional short reversal and then gives the sensor failure or engaged alarm (N.O. contact).
If the sensor remains engaged (N.O. contact) no movement is allowed.
If not used, jump the terminals COM-EDGE.

MONITORING OF SAFETY SENSORS (A+ TEST A-)
Sensors can be monitored through the A+ TEST input and DIP 12 ON.
The monitoring consists of a functional test of the sensor run after every full gate opening.
Closing the gate is therefore permitted only if the sensors have passed the functional test after each opening.
CAUTION: MONITORING OF THE SENSOR INPUT CAN BE ACTIVATED WITH DIP 12 ON OR DEACTIVATED WITH DIP 12 OFF. IN FACT, THE FUNCTIONAL TESTING OF SENSORS IS 'POSSIBLE ONLY IF THESE DEVICES HAVE THEIR OWN POWER SUPPLY.
A MECHANICAL SENSOR CAN NOT BE MONITORED, SO DIP 12 SHOULD BE SET TO OFF.

SENSOR AUTOTEST ALARM (DIP 12 ON)
If the sensor fails the monitoring test after opening, an alarm is displayed by the blinker lighting up. Gate closure is not allowed in this condition. Normal operation can be restored only by repairing the sensor and pressing one of the activated controls.

STOP BUTTON (COM-STOP)
The STOP button stops the gate during any operation.
If held when the gate is fully open (or partially when using the pedestrian control) automatic closing is temporarily deactivated (if activated by the TCA trimmer and LED DL6 on). It is therefore necessary to use a new command to make it close.
The automatic closing function is reactivated on the next cycle (if activated by the TCA trimmer and LED DL6 on).

POWER SENSOR ALARM
The T2 24V control panel has automatic sensors that make the movement of the gate reverse in case of impact against objects or persons in accordance with the current EN standards (always use the right tool to ensure compliance with the values imposed by the standard), without special adjustments on the control panel, as it operates using special internal software.
If the power sensor is used in opening or closing (only in high-speed) and then again, in the opposite direction, the gate stops and then reverses for 1 second.
The alarm status will be displayed by the blinker which will remain active for one minute, during which time you can restore gate operation by pressing any command button.

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 engaded for more than 60 seconds, the open, close, 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.
Note 2: the stop command is not to be considered a safety command that can be bypassed in this mode. Therefore, when pressed or damaged, it will not allow any movement of the gate.

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.

BLINKER
N.B.: This control panel can power ONLY BLINKERS ON A (ACG7061) CIRCUIT with lamps up to 24V and 20W.

PRE-BLINKING
DIP 5 - OFF => the motor and blinker begin simultaneously.
DIP 5 - ON => the blinker begins 3 seconds before the motor.

GATE OPEN WARNING LIGHT (COM-SIGNAL)
Signals when the gate is open, partially open or not closed completely. Turns off only when the gate is completely closed.
This signal is active during programming.
N.B.: Max 3 W. If push buttons or lamps are in excess, the control panel processes will be endangered and possibly halt operation.

OPERATION AFTER A BLACK-OUT (WITHOUT BATTERIES)
When the power supply comes back the DL1 led turns on and remains on for all the time the gate stays open. The led will turn off only once the gate is completely closed.
It is recommended to fully open the gate. Let the gate close by itself or with automatic closing, or wait until the blinker stops flashing before commanding it to close.
This will allow the gate to realign. If, motors were released and moved from the normal position when closed during the blackout, the first movement after power returns must be complete.
If the black out occurs when the gate is still moving or when the gate is open and the first command sent after the black out is a closing command, the closing of the gate will be carried out with a total delay between the two gate leaves. Therefore, first the leaf M2 will close completely; once it is off, M1 will start closing. This separate movement of the two gate leaves is done to avoid their incorrect overlapping.

TECHNICAL SPECIFICATIONS

- Temperature range	0 ÷ 55°C
- Humidity	<95% without condensation
- Voltage	230V~ ± 10% (120V/60Hz upon request)
- Frequency	50/60 Hz
- Battery power	20-24Vdc
- Transformer Power	130VA - primary 230Vac secondary 18Vac
- Maximum absorption	50 mA
- Network Micro-switches	100ms
- Maximum power gate open indicator	24Vdc 3W (equivalent to one 3W or 5 LED light bulb with resistor in series at 2.2 K ohm)
- Maximum blinker power	24Vdc 20W
- Power available for photocells and accessories	1A ± 15%
- Power available for radio connector	200Ma

RADIO SPECIFICATIONS (model T2 24V CRX)

- Receiving Frequency	433,92 MHz
- Impedance	52 OHM
- Sensitivity	>2,24µV
- Pick-up time	300ms
- Drop time	300ms

- All inputs must be used as clean contacts because the power is generated internally (secure power) to the board and is set up to ensure compliance with double or reinforced insulation with regard to dangerous voltage.
- Any external circuits connected to the outputs of the control panel must be made in such a manner as to ensure compliance with double or reinforced insulation with regard to dangerous voltage.
- All inputs are controlled by a programmed integrated circuit that performs a self check every time it starts operating.

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 red LEDS DL7, DL8 and DL9
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)
DL9 switched off Stop button malfunction (if Stop is not connected, perform the jump between COM and STOP).
During functioning with personnel present, with DIP 1 at ON, check that during opening of M1 and M2 the green DL2 and DL4 LEDS switch on and that during closing of M1 and M2 the red DL3 and DL5 LEDS switch on.
Or else, reverse the wires of the motor.

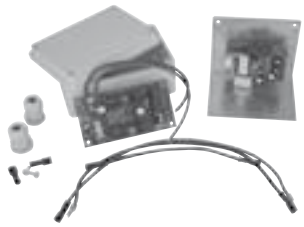
FAULT	SOLUTION
After having carried out the various connections and having supplied voltage, all the LEDS are switched off.	Check fuses F1, FUSE 1. If the fuse is blown, use only a suitable replacement. F1 T 2A TRANSFORMER PROTECTION FUSE (on the outside of the T2 24V board)
The motor opens and closes, but it has no strength and moves slowly.	FUSE 1 8A MOTOR PROTECTION FUSE
The gate opens but does not close after the time set.	Check trimmers RUN and LOW-SPEED adjustment.
	Make sure that the TCA trimmer is activated with LED DL6 on. OPEN button always on, replace the OPEN control button or switch. Sensor Auto test failed, check the connections between the control panel and the sensor power supply. **Warning:** If you are not using a power supply for the sensors, DIP 12 should be OFF.
The gate does not open or close by activating the various K, Radio, Open and Close buttons.	Faulty safety edge contact. Faulty photocells contact with DIP 4 OFF. Fix or replace the relative contact.
The electric lock does not work.	Ensure to have enabled DIP 8 at ON.
LED DL1 blinks rapidly and no movement is activated.	Place dip switches 1, 2 or 3 in the OFF position.

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

RADIO TRANSMITTER SUN

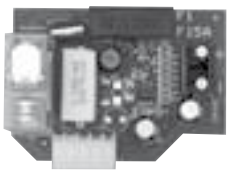

SUN 2CH code ACG6052
SUN CLONE 2CH code ACG6056
SUN 4CH code ACG6054
SUN CLONE 4CH code ACG6058

SET SOLAR AMPLIFIER



Interface for 50W solar panels. code AD00319

BATTERY CHARGE CARD



code ACG4648

BATTERY

Battery 2,2Ah 12V code ACG9515

Wi-Fi DEVICES

MASTER Wi-Fi

RECEIVER CARD TO MANAGE WIRELESS SYSTEM
with connector - 12÷30V ac/dc code ACG6094
with terminal block - 12÷30V ac/dc code ACG6099

NOVA Wi-Fi

PHOTOCELLS WITHOUT WIRES code ACG8037
PAIR OF COLUMS NOVA code ACG8039

TOUCH Wi-Fi

STRIP WITHOUT WIRES code ACG3016

SPARK Wi-Fi

BLINKER WITHOUT WIRES code ACG7064
LATERAL SUPPORT code ACG7042

BLOCK Wi-Fi

KEY SELECTOR WITHOUT WIRES code ACG6098

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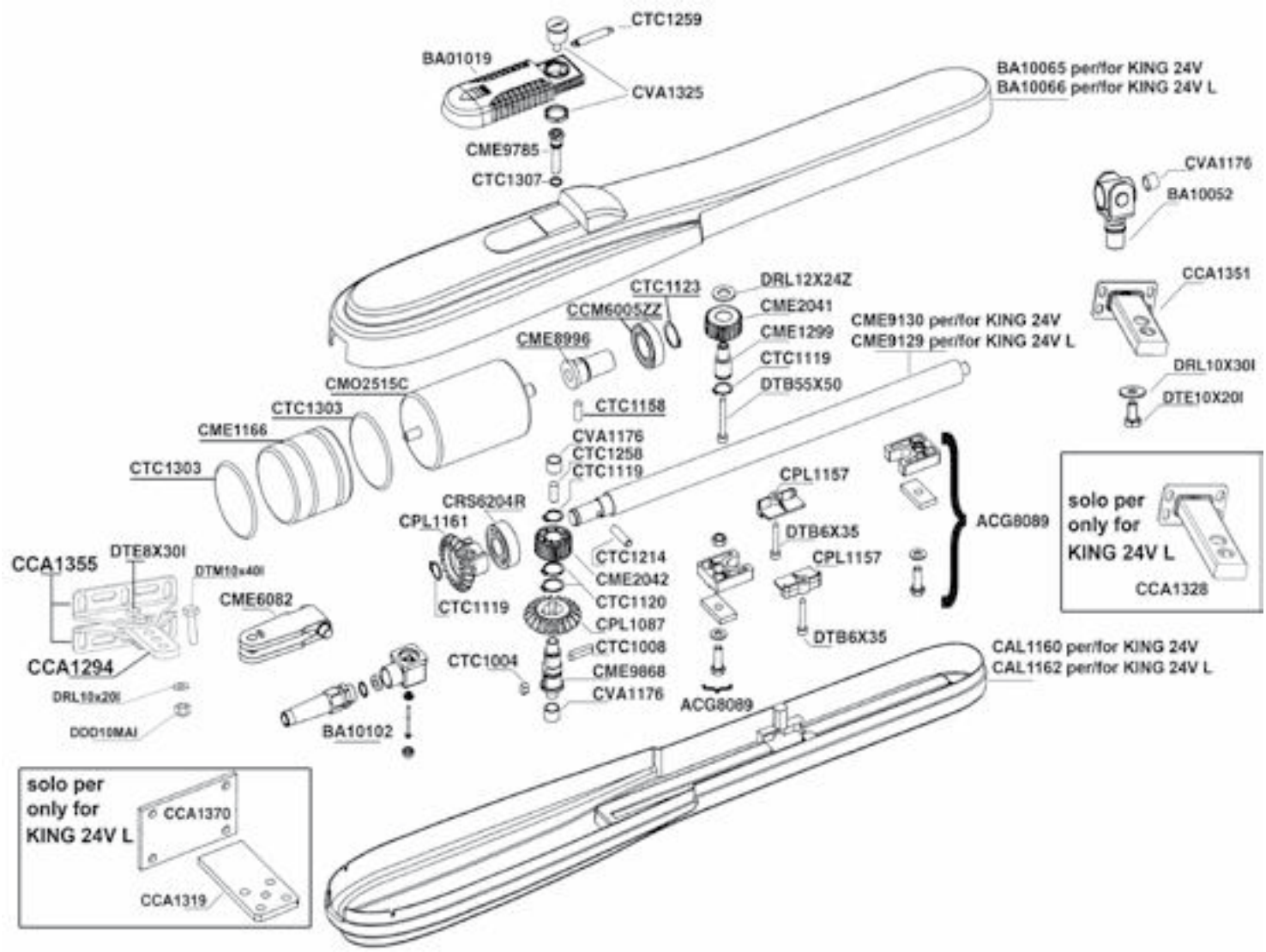
KING 24V



CE

MADE IN ITALY

Questo prodotto è stato completamente progettato e costruito in Italia · Ce produit a été complètement développé et fabriqué en Italie · This product has been completely developed and built in Italy · Dieses Produkt wurde komplett in Italien entwickelt und hergestellt · Articulo totalmente proyectado y producido en Italia

Codice	Denominazione Particolare	Codice	Denominazione Particolare	Codice	Denominazione Particolare
ACG8089	Gruppo Fermo meccanico di chiusura OPZIONALE	CEL1426	Condensatore 35μF 450V x serie 120V/60	CTC1123	Seeger E25
		CME1166	Adattat. motore KING 24V	CTC1158	Spina elettrica 5 20
BA01019	Serie accessori per cilindro KING	CME1299	Perno per ingranaggio serie KING	CTC1214	Spina cilindrica 8x32
BA10052	Gruppo Chiocciola serie KING	CME2042	Corona elicoidale sblocco sx	CTC1258	Molla per sblocco serie KING
BA10065	Gruppo semig. sup. KING completo	CME2041	Corona elicoidale dx serie KING	CTC1259	Molla trazione coperchio serie KING
BA10066	Gruppo semig. sup. KING L completo	CME8996	Vite s/fine KING 12/24V	CTC1303	Anello di tenuta OR 158
BA10102	Conf. accessori connettore, pressacavo, cap. coprirondella, rondella cap.	CME9129	Vite madre KING L	CTC1307	Anello di tenuta OR2037
		CME9130	Vite madre KING	CVA1176	Boccola 12x16x12 Bronzo F7/R7
CAL1160	Semiguscio inferiore KING	CME9785	Perno Sblocco serie KING	CVA1325	Cilindretto per serratura serie KING
CAL1162	Semiguscio inferiore KING L	CME9868	Perno di traino serie KING	DDD10MAI	Dado Autob. M10 Alto Inox
CME6082	Forcella Posteriore serie KING	CMO2515C	Motore KING 24V	DRL10X20I	Rondella Piana 10X20 Inox
CCA1294	Piatto colonna regolabile	CPL1087	Ingranaggio conico	DRL10X30I	Rondella Piana 10X30 Inox
CCA1319	Piatto fissaggio colonna KING L	CPL1157	Tappo per fermo meccanico serie KING	DRL12X24Z	Rondella Piana 12X24
CCA1328	Piatto attacco cancello KING L	CPL1161	Ingranaggio conico serie KING	DTB6X35	Vite TCEI M6x35 zinc.
CCA1351	Attacco cancello serie KING	CRS62042R	Cuscinetto 6204/2RS	DTC55X50Z	Vite TC Croce 5,5x50
CCA1355	Angolare attacco a colonna (2 pezzi) KING	CTC1004	Chiavetta 6 6 12	DTE10X20I	Vite TCEI 6X30 Inox UNI5931
CCA1370	Piastra attacco colonna KING L	CTC1008	Chiavetta 6 6 30	DTE8X30I	Vite TE 8X30 Inox UNI5739
CCM6005ZZ	Cuscinetto motore 6005ZZ	CTC1119	Seeger E17	DTM10X40I	Vite TE 10X40 Inox UNI 5737
CEL1425	Condensatore 10μF 450V x serie 230V/50	CTC1120	Seeger E20		

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SELF INSTALL - NEED TECHNICAL ASSISTANCE?

OPTION 1: DIRECT WITH THE SERVICE DESK – QUICKEST AND MOST EFFECTIVE METHOD

Submit your enquiry direct with the service desk at – service@automaticsolutions.com.au
The service desk has the most experienced staff in Australia to help with your problem but they need your help.

- **Describe your problem in detail and as clearly as possible. Don't forget to include a telephone number.**
- **Be certain to detail which model or models of you are working with.**
- **Send photos of the installation – they love photos. The people at the service desk are good but they are even better when they can see the installation. Send photos of the overall scene so they can see the entire installation. Also send photos of the wiring to the control board and any other part of the installation you think is relevant.**
- **Send video if appropriate. Smartphone's these days take remarkably good video in small file sizes which can be emailed in a moment. If your problem needs a video to show the issue please feel free to send it.**

NOTE: THIS IS BY FAR THE FASTEST AND MOST SUCCESFUL WAY TO SOLVE YOUR PROBLEM
PHOTOS AND VIDEOS ARE THE NEXT BEST THING TO BEING THERE

OPTION 2: LODGE YOUR ENQUIRY LOCALLY - SLOWER BUT CAN STILL BE EFFECTIVE

Make contact with the store of purchase. Branch staffs are typically not technicians and dependent on their length of service will have varying degrees of technical knowledge. If they cannot help however they will certainly either source help locally from their technicians or make contact with the service technicians on your behalf.

OPTION 3: SERVICE CALL WITH AUTOMATIC SOLUTIONS TECHNICIAN – SLOWEST METHOD

If you fall within the local branch service area it may be possible to book a local technician to look at your installation. Wait times will vary dependent on local workloads. The cost is a service fee which includes the first half hour and the hourly rate thereafter. If any Automatic Solutions provided parts are found to be defective and within warranty these will be provided free of charge.
(NOTE: If you suspect that any parts are defective and within warranty you may wish to consider option 4)

A note on this option: If you decide on this option you will be asked to sign an "authorisation to proceed" which will provide legal authority and payment security. This form has three options available of which only the first two are available to you. The third option is for warranty repairs only for full install customers. Self install customers requiring warranty only service need to refer to option four below.

IMPORTANT: IN SHORT THIS OPTION WILL INCUR CHARGES

OPTION 4: RETURN THE PRODUCT IF BELIEVED TO BE FAULTY

As a self install customer who has purchased product if you believe the product to be faulty rather than an installation or site problem you have the option of returning the product for evaluation and to exercise your right to a replacement, repair or refund as applicable. All returned product is forwarded immediately to the service technicians for evaluation and response. There are two main methods available to return product –

- **Direct to the service centre – this is the quickest method as it cuts out the branch delay**
- **Via the branch of purchase – slower because of the delay at the branch**

When choosing this option you need to complete a product return form. This form gives you all the information on procedure involved and where to send to. These are available at the branch of purchase, can be emailed to you (contact your branch), or available here - http://automaticsolutions.com.au/page/warranty.php