



SEA
Sistemi elettronici
di Aperture Porte e Cancelli

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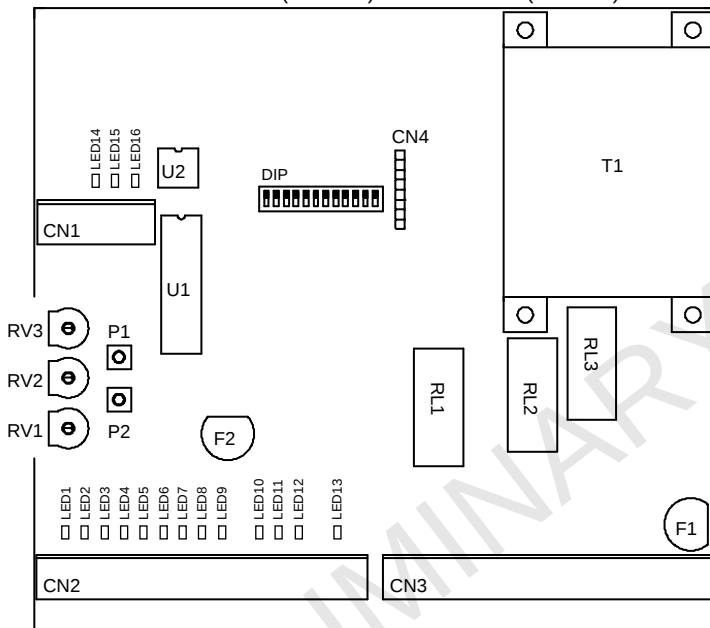
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English

ELECTRONIC CONTROL UNIT GATE 2

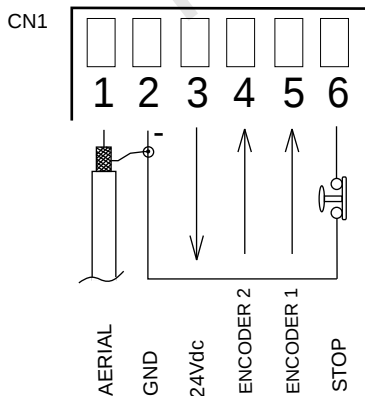
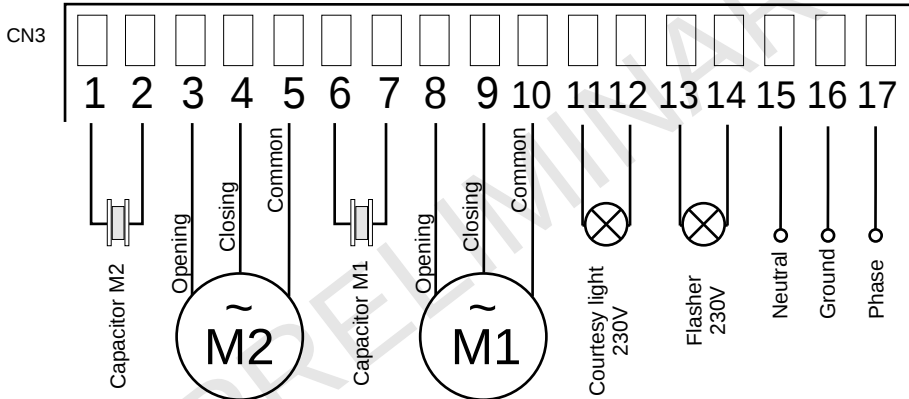
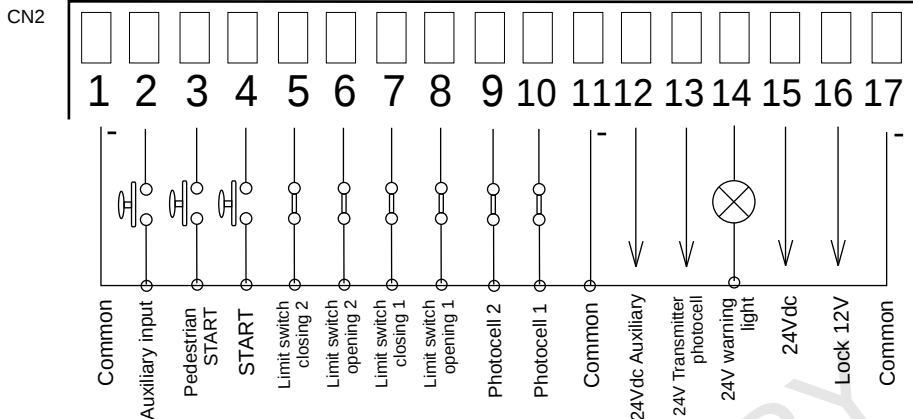
cod. 23001125 (433MHz) cod. 23001126 (868MHz)



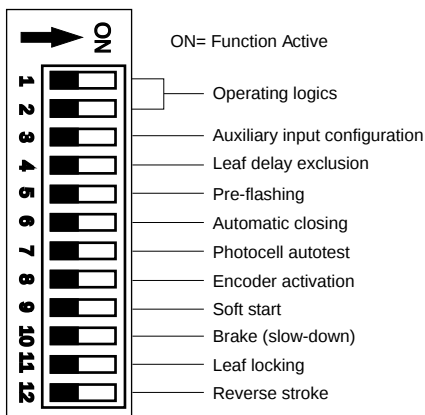
LED1 = Aux input	CN2 = 24V input/output connector
LED2 = Pedestrian start	CN3 = Motor and power supply connector
LED3 = Start	CN4 = Connector for optional display
LED4 = Closing limit switch Motor 2	Rv1 = Motor torque adjustment
LED5 = Opening limit switch Motor 2	Rv2 = Brake length adjustment (slow down length)
LED6 = Closing limit switch Motor 1	Rv3 = Pause time adjustment
LED7 = Opening limit switch Motor 1	P1 = Operating time memory button
LED8 = Photocell 2	P2 = Remote control memory button
LED9 = Photocell 1	DIP = Dip-switch function setting
LED10 = 24V Auxiliary output	F1 = Power supply and motor fuse (6.3AT)
LED11 = Transmitter photocell output	F2 = Accessories fuse (2A)
LED12 = Warning light	T1 = Transformer
LED13 = Electric locking	RL1 = Motor power supply relay
LED14 = Encoder 2	RL2 = Motor operating direction relay
LED15 = Encoder 1	RL3 = Courtesy light relay
LED16 = Stop	U1 = Micro-controller
CN1 = 24V input/output connector	U2 = EEPROM memory



CONNECTIONS



DIP





SETTING OPERATING LOGICS



MANUAL LOGIC

A START command opens the gate. A second START while the gate is opening STOPS movement. A START command while the gate is closing stops movement.



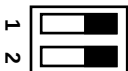
SAFETY LOGIC

A START command opens the gate. A second START while the gate is opening reverses direction. A START command while the gate is closing reverses direction.



AUTOMATIC LOGIC 1

A START command opens the gate. A second START while it is opening is not accepted. A command while it is paused is not accepted. A command while it is closing reverses direction. **P.N.:** set DIP SWITCH 6 to ON for automatic closing.



AUTOMATIC LOGIC 2

A START command opens the gate. A second START while it is opening is not accepted. A command while it is paused closes the gate immediately. A command while it is closing reverses direction. **P.N.:** set DIP SWITCH 6 to ON for automatic closing.

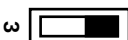


AUXILIARY INPUT CONFIGURATION



SAFETY EDGE (N.C. contact)

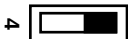
When the Safety Edge Contact opens, the gate reverses direction and stops after about 1 second. A START command is required to restart movement



TIMER (N.A. contact)

If a TIMER is connected to this input the gate can be opened and kept open as long as the contact remains closed. Using a 24-hour or 7-day timer allows gate opening times to be scheduled as required. When the TIMER contact is open the automatic operation functions according to pre-set logics.

OTHER FUNCTIONS



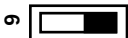
LEAF DELAY EXCLUSION

By activating this function, the leaf delays (opening and closing) can be excluded. This function is recommended with two not superimposed leaves.



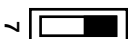
PRE-FLASHING

When this function is activated the flashing lamp and warning light begin flashing about 3 seconds before the motor starts, both when closing and opening.



AUTOMATIC CLOSING

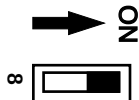
Activating this function causes the gate to close automatically, after the time set by the trimmer Rv3. This function can be activated independently of the operating logic set (DIP SWITCH 1 and 2).



PHOTOCELL AUTOTEST

When this function is activated a test is carried out on the photocells before any gate movement takes place. To enable this function the photocell transmitter must be connected to terminals 13 (24V) and 17 (Negative) of connector CN2.

The flashing lamp and troubleshooting LED will both flash slowly if a malfunction occurs.

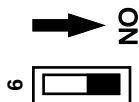


ENCODER MANAGEMENT

The signals sent from an encoder located on the motor or gate are managed when this function is activated. This results in any obstacles found in the gate's path being detected and reverses the gate direction of movement.

The flashing lamp and troubleshooting LED will both flash slowly if a malfunction occurs.

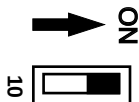
P.N.: if an encoder is not fitted, set the DIP SWITCH to OFF.



"SOFT" START

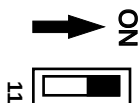
When this function is activated, the motor will start at a lower torque to avoid stresses and strains on the gate's mechanical components. The starting torque is a percentage of the normal operating torque.

P.N.: It is not advised to operate this function when the gate is very heavy or does not run smoothly.



BRAKING (SLOW DOWN) AT LIMIT STOP

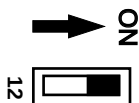
When this function is activated motor speed reduces slowly before the limit switch is reached or before the end of the operating time. This function is designed to bring the leaf gently up to the stop position and prevent the gates clashing. The closing speed is fixed, while the slow-down time can be adjusted using the trimmer Rv2.



LEAF LOCKING

When this function is activated, at the end of the slow-down phase, and when the leaf is up against the mechanical stop, the motor is supplied at maximum power for about 1 second. This increases the oil pressure in the motor and makes the hydraulic lock more effective.

P.N.: this function **SHOULD NOT** be activated when used on sliding gates since it could cause over-running of the limit switches and the automation system to jam.



REVERSING STROKE

This function (to use exclusively on swing gates) is used to facilitate the electric lock release. Before beginning the opening cycle, as soon as the start order is given, the leaves are supplied for about 1 sec. in closing.

TRIMMER REGULATIONS



OPERATING TORQUE ADJUSTMENT

This trimmer is used to adjust the motor torque. This adjustment is essential for operators without mechanical or hydraulic anti-crush devices and must be carried out so that there is no risk of people or objects being crushed. It must always be executed in accordance with current legislation on the subject.



BRAKE (slow-down) LENGTH ADJUSTMENT

This trimmer is used to adjust the length of the slow-down.



PAUSE LENGTH ADJUSTMENT

This trimmer allows the PAUSE time to be adjusted between 0 and 120 seconds. Set DIP SWITCH 6 to the ON position to enable automatic closing.

N.B.: TURNING THE TRIMMERS CLOCKWISE INCREASES THE TIMES/VALUES



SELF-LEARNING OF OPERATING TIMES FOR SWING GATES (WITHOUT LIMIT SWITCH)

NOTE: In case of installed encoders SAFETY GATE, DIP 8 must be on ON

STEP 1

1 Make all the electrical connections and jumpers on all the unused N.C. contacts (photocells, limit switches, etc).

If a geared motor equipped with a mechanical or hydraulic anti-crush safety device is being used, set the operating torque (trimmer Rv1) to the maximum value and then adjust the motor torque using the special by-pass valves or clutch adjustment screws located on the actuators.

If a motor without a mechanical or hydraulic anti-crush safety system is being used, set the operating torque to the maximum value **ONLY** for the self-learning process. Immediately afterwards, set a torque value that will ensure anti-crush safety, in accordance with current legislation.

ATTENTION!

THIS PROCEDURE IS POTENTIALLY DANGEROUS AND MUST BE CARRIED OUT ONLY BY SPECIALIZED PERSONNEL, ADOPTING ALL SAFETY PRECAUTIONS.

STEP 2

2 Disconnect the power supply (Fig. 1), release the gate (Fig. 2) and position the leaves in the half-open position (Fig. 3). Re-lock the motor (Fig. 4) and turn ON the power (Fig. 5).

Fig. 1

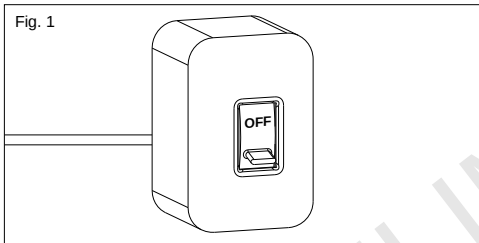


Fig. 2

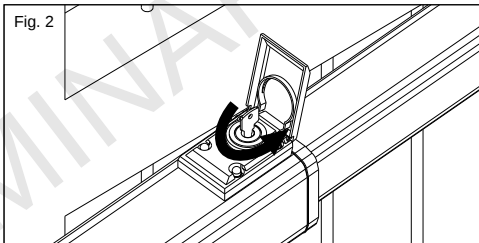


Fig. 3

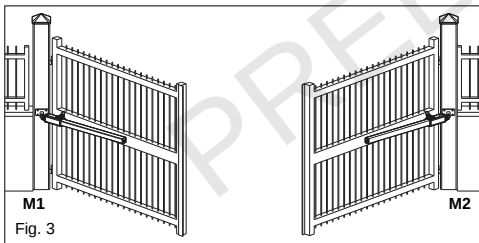


Fig. 4

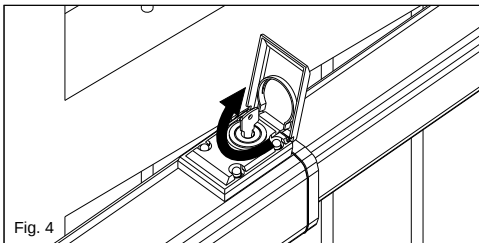
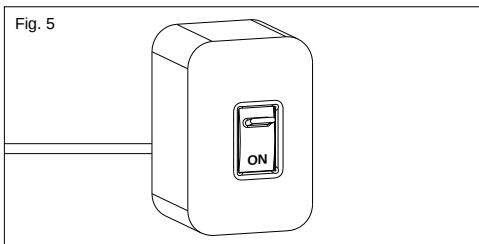


Fig. 5





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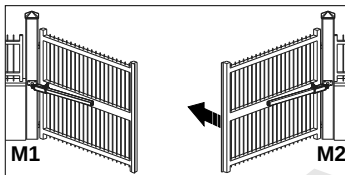
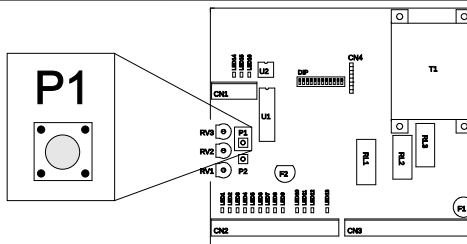


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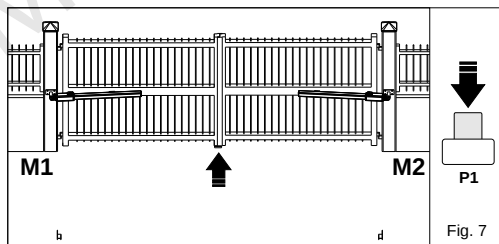
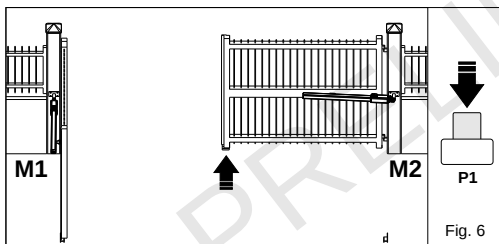
- Press and Hold button P1 (LED 10 will come ON) until motor M2 will start to close the gate*.

Release P1.



- * If the motor start to open the gate, take OFF the power and reverse the motor phases. Make the same type of connection on motor M1 as well. Repeat the programming procedures (STEP 2).

- 3 STEP3**
(from STEP 2) When the leaf reaches the closing mechanical stop, press button P1 (Fig. 6). Motor M1 will also start a closing cycle.
When the gate reaches the closing mechanical stop, press P1 again (Fig. 7).

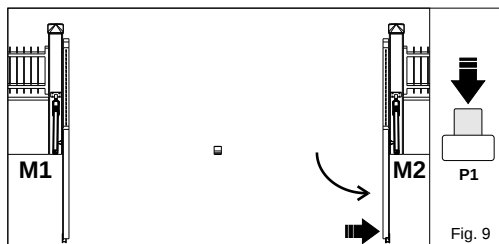
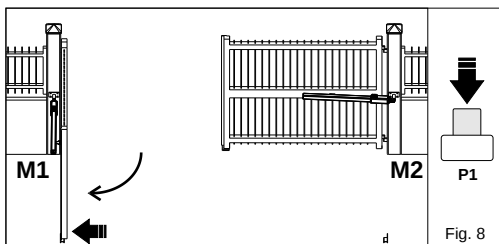


The leaf stops and M1 starts an opening cycle.

After some seconds push P1 again to set the phase displacement in closing ONLY with DIP 4 OFF.

When the leaf reaches the opening mechanical stop, press P1 again (Fig. 8).

Motor M2 will also start an opening cycle. When it reaches the opening mechanical stop, press P1 again (Fig. 9).





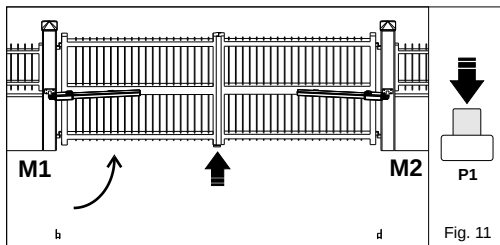
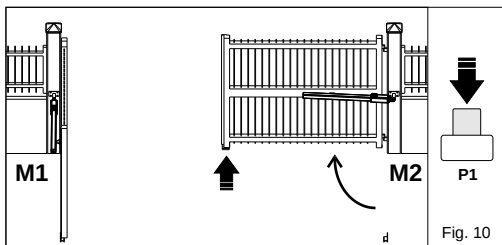
Motor M2 will start a closing cycle automatically.

After some seconds push P1 again to set the phase displacement in closing ONLY with DIP 4 OFF.

When the leaf reaches the closing mechanical stop, press P1 again (Fig. 10).

At this point motor M1 will start a closing cycle.

When the closing mechanical stop is reached, press P1 again (Fig. 11).



When motor M1 reaches the closing mechanical Stop, press P1 for the last time.
Programming is completed.

Check that the times are saved properly by giving a START command or pressing button P1.

4 STEP 4

If used with a motor without a mechanical or hydraulic anti-crush safety device, adjust trimmer Rv1 to values that will ensure anti-crush safety, in accordance with current legislation.

If, after adjusting the operating torque, the operating time is insufficient (e.g. the leaf fails to open or close completely), repeat STEP 2 with the motor torque value set for the normal use of the system.

Adjust the slow-'down length (if enabled), using trimmer Rv2.

SET UP OF THE ENCODER MANAGEMENT - SAFETY GATE type

After executing the four programming phases of the card, after connecting the encoders of both the motors and executing the regulations of the force couple through the RV1 trimmer and/or mechanical adjusting devices (by-pass valves), place DIP 8 in ON position and repeat the programming process.

If necessary it is possible to exclude the SAFETY GATE managements placing DIP 8 in OFF without repeating the process of time self-learning.

USE OF GATE2 CONTROL UNIT WITH ONE SINGLE LEAF

It is possible to use the GATE 2 control unit to move one single swing leaf (without limit switch) or sliding leaf (with limit switch).

To arrange the control board to the programming and the use of one single leaf it is sufficient not to link the limit switches connections of the M2 motor (motor not connected).



WORKING TIME SELF-LEARNING ON A SLIDING GATE WITH DOUBLE LEAF (WITH LIMIT SWITCH)

1 STEP 1
Make all the electrical connections and jumpers on all the unused N.C. contacts (photocells, limit switches, etc).

If a geared motor equipped with a mechanical or hydraulic anti-crush safety device is being used, set the operating torque (trimmer Rv1) to the maximum value and then adjust the motor torque using the special by-pass valves or clutch adjustment screws located on the actuators.

If a motor without a mechanical or hydraulic anti-crush safety system is being used, set the operating torque to the maximum value ONLY for the self-learning process. Immediately afterwards, set a torque value that will ensure anti-crush safety, in accordance with current legislation.

ATTENTION!

THIS PROCEDURE IS POTENTIALLY DANGEROUS AND MUST BE CARRIED OUT ONLY BY SPECIALIZED PERSONNEL, ADOPTING ALL SAFETY PRECAUTIONS.

2 STEP 2
After cutting the power supply off from the system, release the gate and place the leaves near the closing limit switches. Reset the mechanical lock and the net power supply.

- Keep P1 push button (Ptime) pushed, led 10 will light on.
- Continue pushing P1 until the starting up of the M2 motor in closing.
- Release P1

If the motor starts to move in opening, cut the power supply off again and reverse the phases of the motor and the limit switch connections.

Repeat the programming process (step 2).

3 STEP 3
The motor closes (from step 2), stopping when it reaches the limit switch in closing.
The motor M1 will start also a closing cycle, stopping when it reaches the respective limit switch.
From this moment it will be automatically executed a complete opening / closing cycle for both leaves.
When both leaves are completely closed, the programming has finished (led 10 switched off).

4 STEP 4
If used with a motor without a mechanical or hydraulic anti-crush safety device, adjust trimmer Rv1 to values that will ensure anti-crush safety, in accordance with current legislation.
If, after adjusting the operating torque, the operating time is insufficient (e.g. the leaf fails to open or close completely), repeat STEP 2 with the motor torque value set for the normal use of the system.

Adjust the slow-'down length (if enabled), using trimmer Rv2.



SETTING UP OF THE ENCODER MANAGEMENT

After executing the four programming phases of the card, after connecting the encoders of both the motors and executing the regulations of the force couple through the RV1 trimmer and/or mechanical adjusting devices (clutch), place DIP 8 in ON position and repeat the programming process.

If necessary it is possible to exclude the Encoder managements placing DIP 8 in OFF without repeating the process of time self-learning.

USE OF GATE2 CONTROL UNIT WITH ONE SINGLE LEAF

It is possible to use the GATE 2 control unit to move one single swing leaf (without limit switch) or sliding leaf (with limit switch).

To arrange the control board to the programming and the use of one single leaf it is sufficient not to link the limit switches connections of the M2 motor (motor not connected).

PROGRAMMING A TRANSMITTER ON START

Press button P2 (PCode). LED10 turns ON.

Give a START command with the transmitter, using the button chosen for the start command.

The LED will flash twice to confirm that the Transmitter code has been memorized and will remain ON waiting for further transmitters. If no further code is memorized within 10 seconds, the LED automatically turns off and exits the programming procedure.

ATTENTION: If an already existing code in the memory is entered, it will be deleted (4 flashes).

PROGRAMMING A TRANSMITTER ON PEDESTRIAN START

Press button P2 (PCode). LED10 turns ON.

Press button P1 (PTime). LED10 will start to flash quickly

Give a START command with the transmitter, using the button chosen for the start command.

The LED will flash twice for a long time to confirm that the Transmitter code has been memorized and will remain ON waiting for further transmitters. If no further codes are memorized within 10 seconds, the LED automatically turns off and exits the programming procedure.

ATTENTION: If an already existing code in the memory is entered, it will be deleted (4 long-lasting flashes).

DELETING OF ALL THE TRANSMITTERS

Push P2 button (PCode) and keep it pushed.

LED 10 will start a sequence of flashings.

Wait the led stops to flash and release P2 push button (PCode).

LED10 will flash 6 times to confirm the occurred deleting.



SAFETY PRECAUTIONS

The electrical installation work and choice of operating logic must conform to current regulations.

A 16A 0.030A differential switch must be fitted in any case. Keep the power cables (motors, power supplies) separate from the control cables (buttons, photocells, radio, etc). It is recommended that two separate sheaths be used to avoid interference.

SPARE PARTS

To obtain spare parts contact:

SEA s.r.l. ZONA Ind.le, 64020 S.ATTO Teramo Italia

INTENDED USE

The 23001125/26 electronic control unit has been designed to be used solely as a control unit for the automation of sliding gates, swing gates, garage-doors, folding doors, barriers.

SAFETY AND ENVIRONMENTAL COMPATIBILITY

Please do not spoil the environment with product and/or circuit packaging material.

STORAGE

STORAGE TEMPERATURES			
T_{min}	T_{Max}	Humidity $_{min}$	Humidity $_{Max}$
- 40°C	+ 85°C	5% no condensation	90% no condensation

The product must be stored using the appropriate equipment.

DECOMMISSIONING AND MAINTENANCE

The decommissioning and/or maintenance of the 23001125/26 electronic unit must only be carried out by experienced and authorized personnel.

LIMIT OF GUARANTEE

The 23001125/26 electronic control units are guaranteed for a period of 24 months from the date stamped on the unit. The guarantee will cease to apply if the unit is incorrectly installed, not used for the purpose intended, tampered with or modified in any way. The validity of this guarantee applies only to the original purchaser.

NOTE: THE MANUFACTURER CANNOT BE HELD RESPONSIBLE FOR ANY DAMAGE OR INJURY CAUSED BY THE INCORRECT USE OF THIS PRODUCT.

SEA reserves the right to make any changes or amendments to its products and/or this manual that it sees fit, without the need to give prior notice.