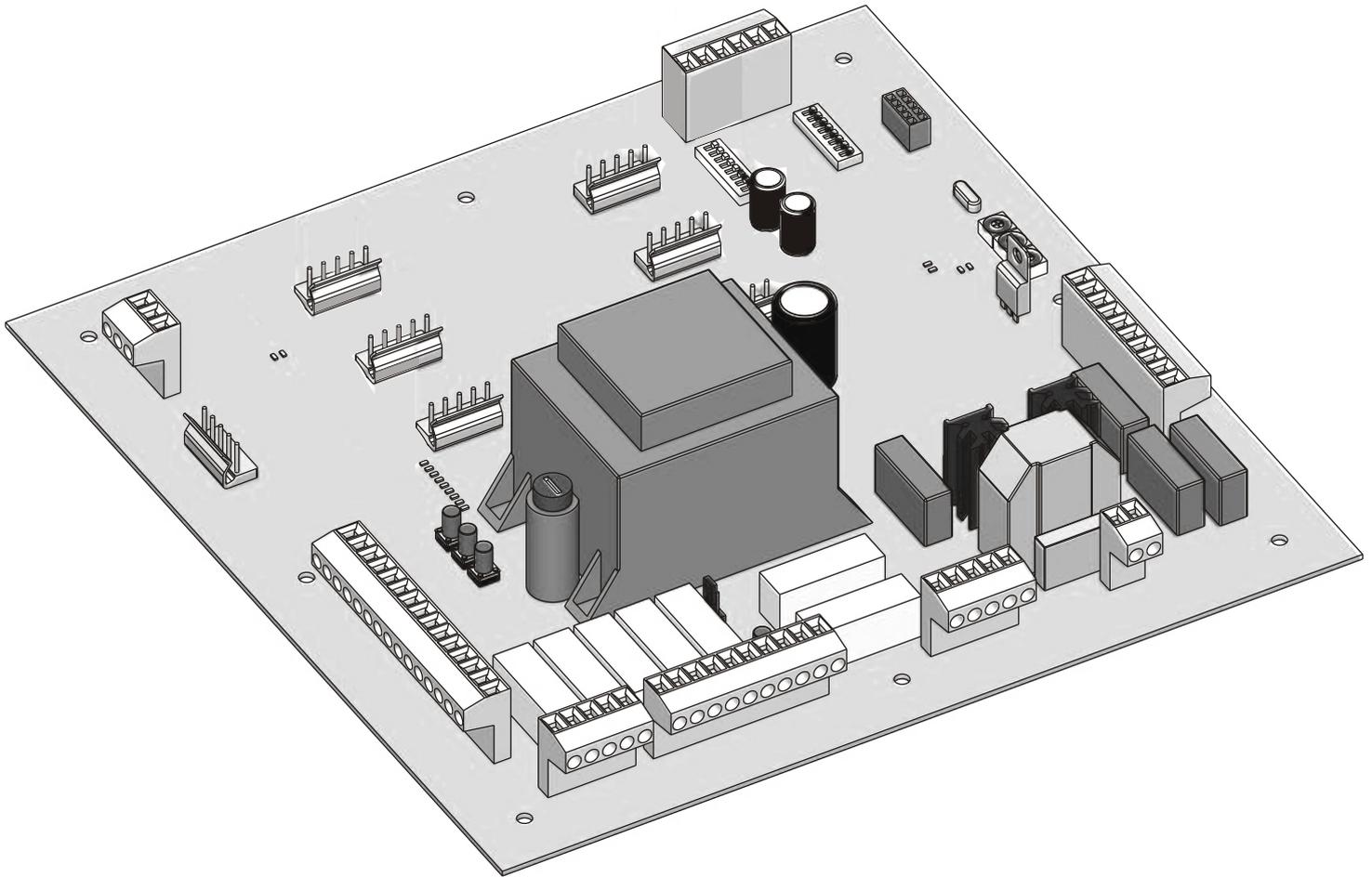


PRE-GATE

CONTROL UNIT



SEA USA Inc.
10850 N.W. 21st unit 160 DORAL MIAMI
Florida (FL) 33172
Phone:++1-305.594.1151 Fax: ++1-305.594.7325
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WARNING: Not following these instructions may cause severe injury or death to person

IMPORTANT SAFETY INSTRUCTIONS



WARNING - To reduce risk of severe injury or death:

1) READ AND FOLLOW ALL INSTRUCTIONS

2) Never let children operate or play with door controls. Keep the remote control away from children.

3) Always keep the moving system in sight and away from people and objects until it is completely closed or stopped. **NO ONE SHOULD CROSS THE PATH OF THE MOVING SYSTEM.**

4) Test the system gate operator monthly. The system **MUST** reverse on contact with a rigid object or when an object activates the non-contact sensors. To obtain a reverse on contact with an object on hydraulic linear and in-ground operators SEA recommend to install the patented safety device "SAFETY GATE" for each leaf. After adjusting the force or the limit of the travel, retest the gate operator. Failure to adjust properly the gate operator properly can increase the risk of severe injury or death.

5) Use the manual release only when gate is not moving

6) **KEEP GATES PROPERLY BALANCED AND MAINTAINED.** An improper balancing or maintenance increases the risk of severe injury or death. Have a qualified service person to make repairs to cables, spring assemblies and other hardware.

7) The entrance with a gate operators system is for vehicles only. Pedestrian **MUST** use separate entrance.

8) Every gate operator installation **MUST** have secondary protection devices against entrapment, such as edge sensors and photo beams more in particular in places where the risk of entrapment is more likely to occur.

END USER INSTRUCTIONS



The installer is responsible for grounding the operator system, for providing the main power breaker switch, and for making sure that the entire gate systems meets all applicable electrical codes.



SAVE THESE INSTRUCTIONS

GROUNDING

IMPORTANT SAFETY INSTRUCTIONS



Good grounding and proper surge suppression are an integral part of proper installation for a gate operator system. One or all of the following may require surge suppressors: high voltage power lines, low voltage power lines, telephone lines, data lines, low voltage control lines and loops. How much surge suppression is required depends upon how susceptible the area is to lightning and power surges. Regardless, good grounding is essential. To realize maximum protection, proper grounding and proper surge suppression is absolutely necessary.



If the circuit breaker box is located close to the gate operator system, for example, in a guard house, then the ground from that circuit can be used to ground the gate operator system. Eliminate all 90° bends in ground wires and keep a minimum of three feet between the surge suppressor and the equipment being protected.



If the power source or circuit breaker box is not located close to the gate operator system an Isolated Ground Zone (IGZ) needs to be created. An IGZ can also be created if the circuit breaker box is located close by the gate operator system. An IGZ is an imaginary circle drawn around the gate operator system. The gate operator system not only includes the gate operators and control panel, but all of the accessories and devices associated with it at that controlled entry point. This includes loop detectors, card readers, digital entries, telephone entries, any device that has a ground or requires a ground and all of the surge suppressors. The ground bus is a common ground point called a Single Point Ground (SPG). It is used to bond all the equipment and device grounds in the IGZ together. The SPG is very important because it helps eliminate different ground potentials that can be present on the equipment. In such cases, equipment damage occurs even with surge suppressors.



Do not use or connect the ground wire coming from the circuit breaker box. By using an Isolated Ground Zone, you are separating the gate operator system from the house or building ground. This eliminates ground potentials. It is recommended that the ground bus be located in a separate NEMA type enclosure. All grounds will be tied to this ground bus. Some points to remember:

Keep all ground wires as straight as possible. Do not have any sharp 90° bends. Have a minimum of 3 feet of wire between the surge suppressor and the equipment being protected.

Equipment ground wire should be a minimum of 12 AWG. The main ground wire from the bus bar to the ground rod should be an 8 or 6 AWG copper wire. Ground rod should be a minimum of 10 feet in length, longer depending on local soil conditions.



For more information regarding good grounding practices check: National Electric Code art. 250; IEEE Emerald Book, standard 100; International Association of Electric Inspectors.

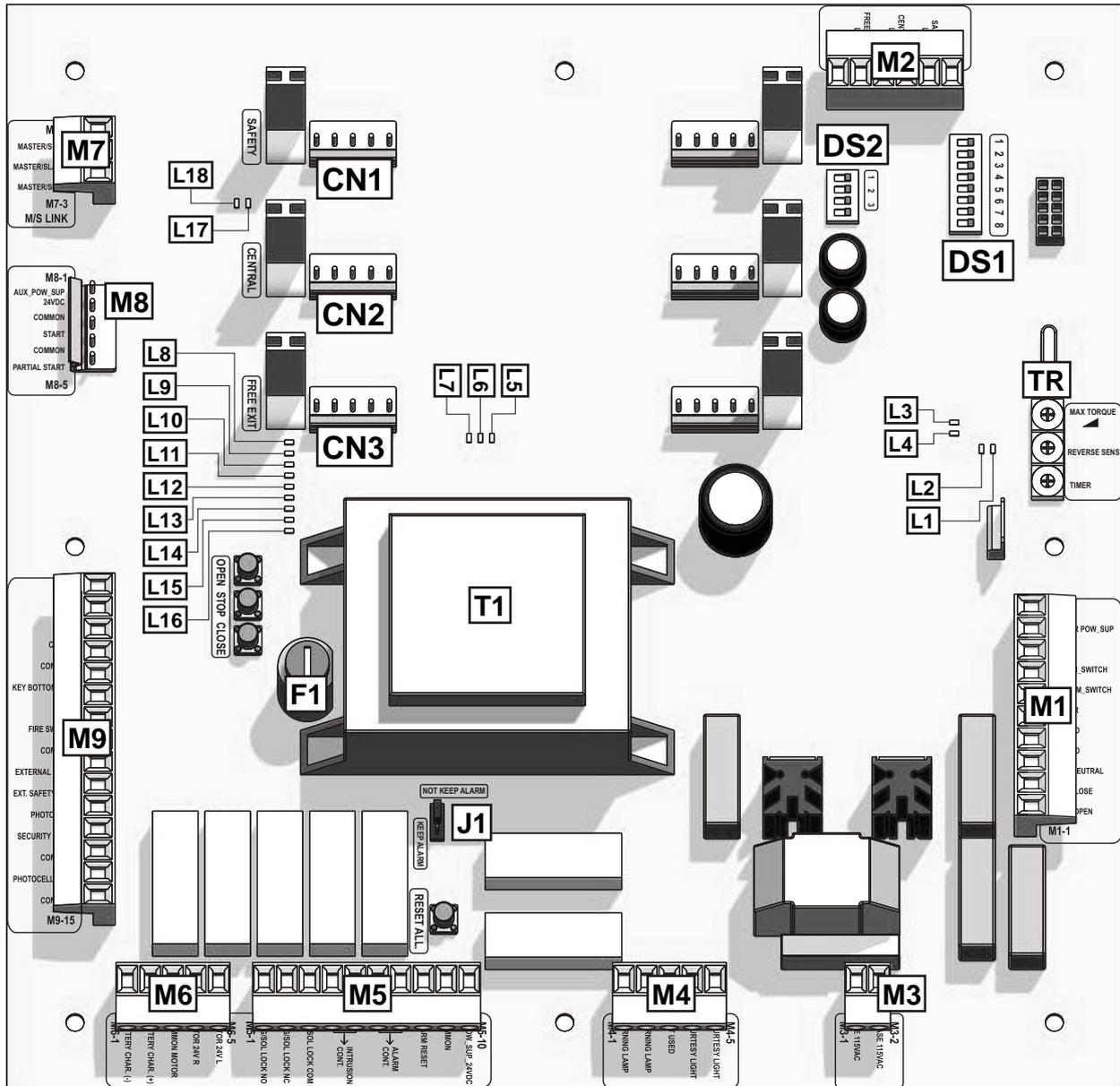


SAVE THESE INSTRUCTIONS



READ AND FOLLOW ALL INSTRUCTIONS

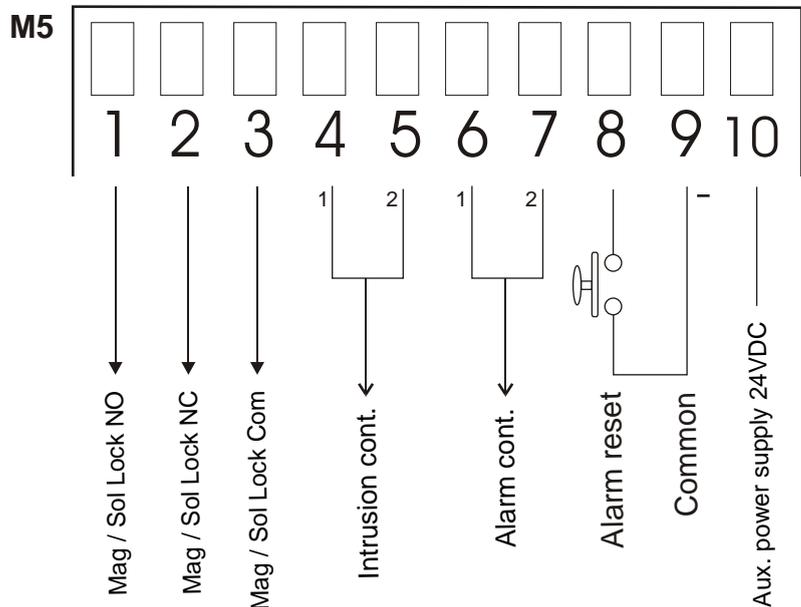
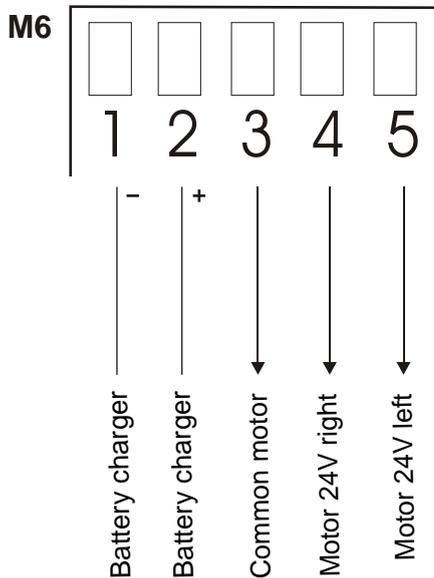
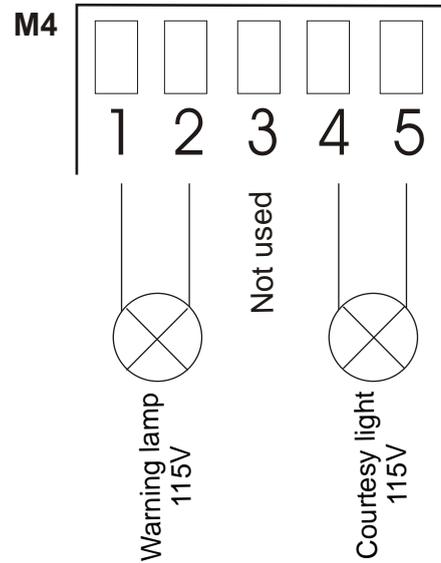
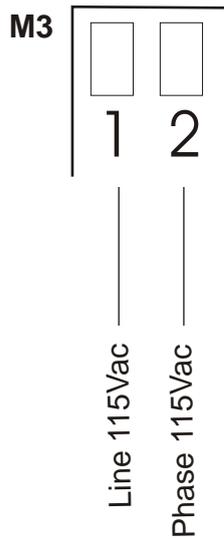
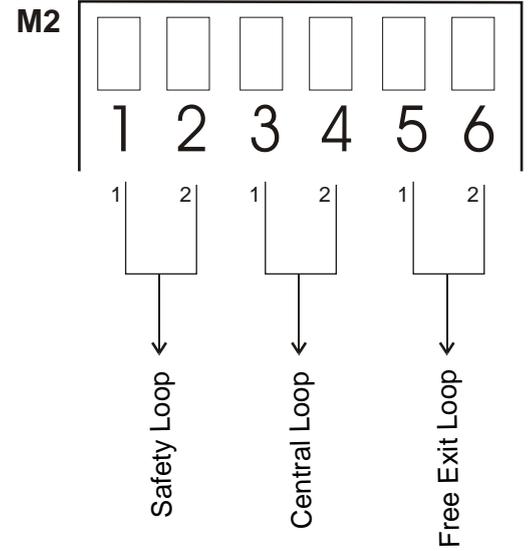
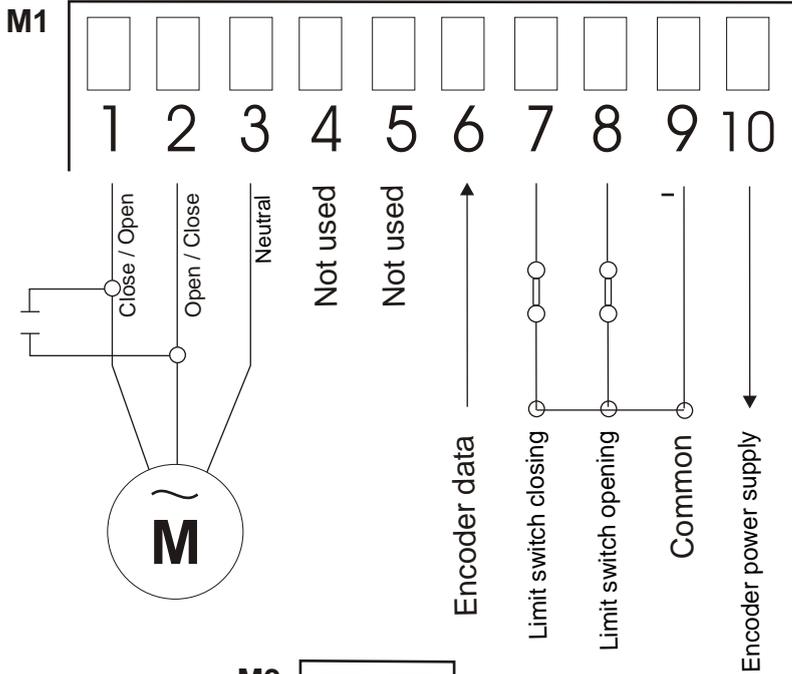
PARTS SPECIFICATION



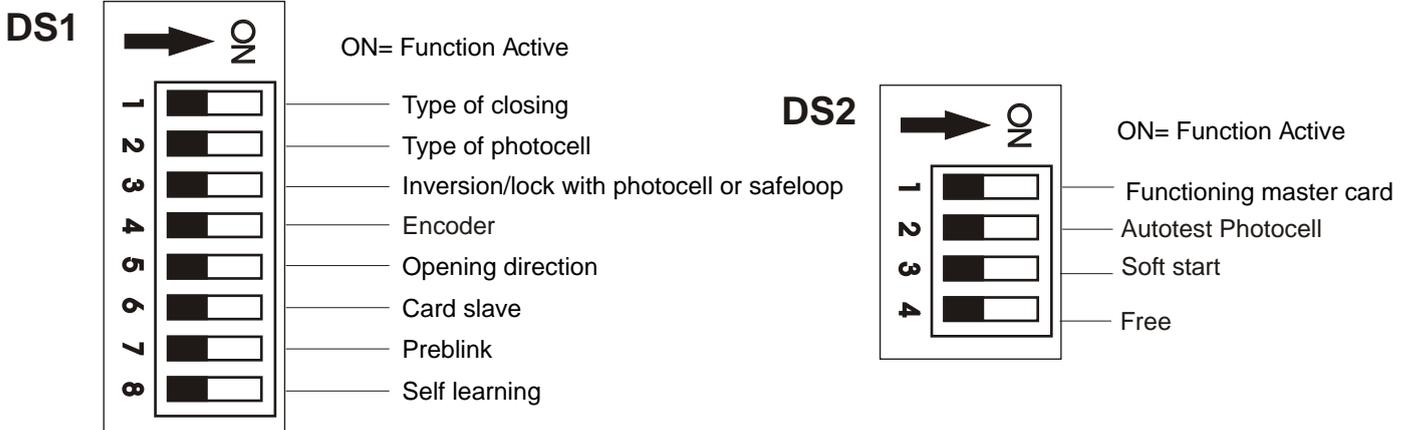
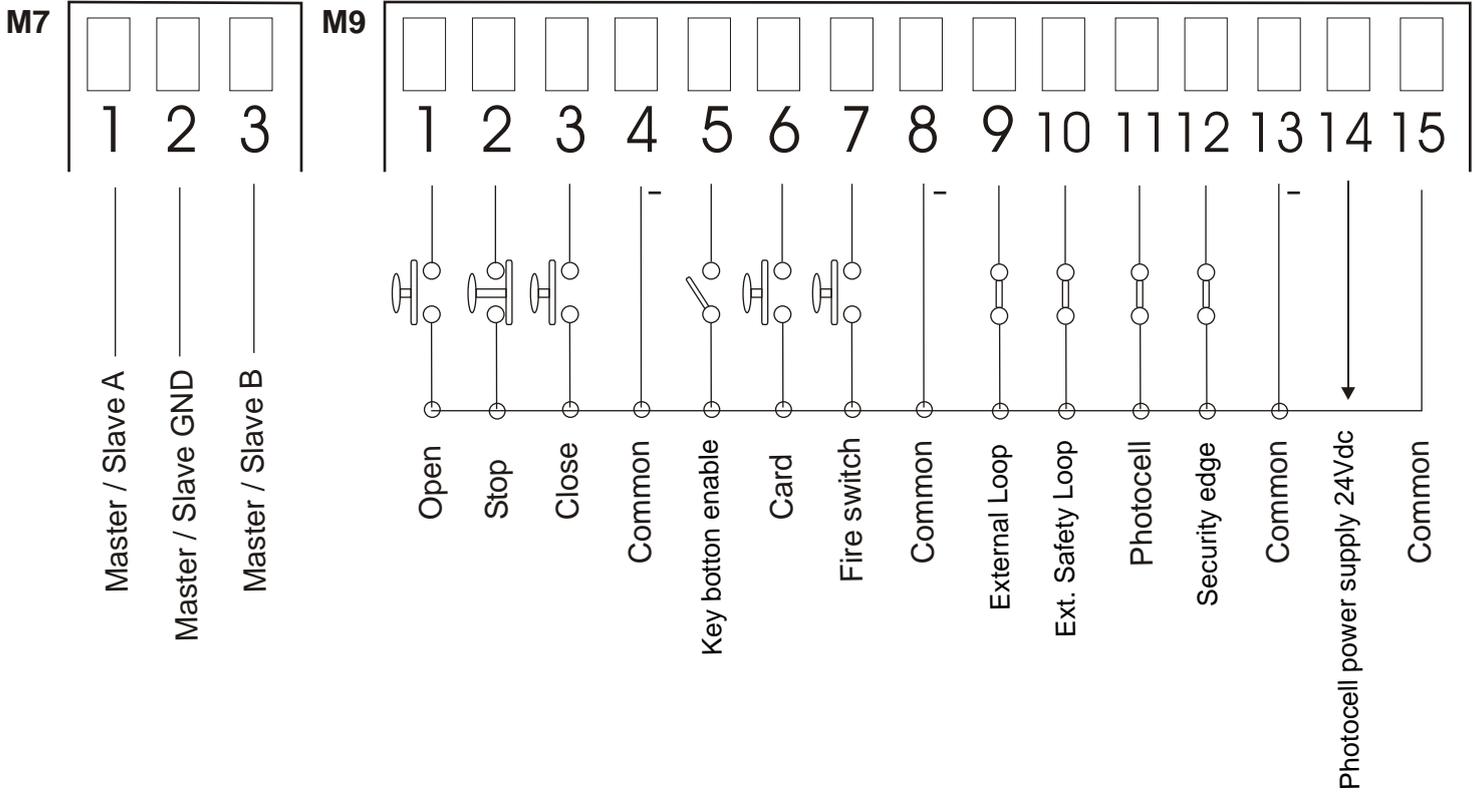
- CN1** = Safety loop connector
- CN2** = Central loop connector
- CN3** = Free Exit loop connector
- M1** = Motor connector
- M2** = Loop connector
- M3** = Power line (hight voltage) connector
- M4** = Service lamp connector
- M5** = Alarm and Lock connector
- M6** = Backup unit connector
- M7** = Master/Slave connector
- M8** = Plug-in radio receiver connector
- M9** = Input connector
- DS1** = Dip-switch
- DS2** = Dip-switch
- F1** = Master fuse
- J1** = Keep/not Keep alarm
- T1** = Transformer
- TR** = Trimmers

- L1** = Led access limit switch gate closed
- L2** = Led access limit switch gate open
- L3** = Led access photocells (n.c.)
- L4** = Led access border
- L5** = Led module safe loop
- L6** = Led module centre loop
- L7** = Led module exit loop
- L8** = Led access receiver pedestrian
- L9** = Led access push button open
- L10** = Led access push button stop
- L11** = Led access push button close
- L12** = Led access card
- L13** = Led access fire
- L14** = Led access exit loop
- L15** = Led access safe loop
- L16** = Led access receiver start
- L17** = Led exit TX serial
- L18** = Led access RX serial

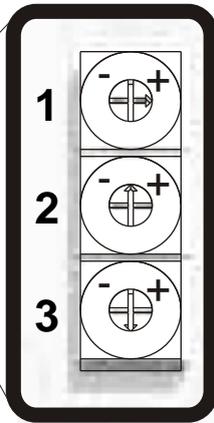
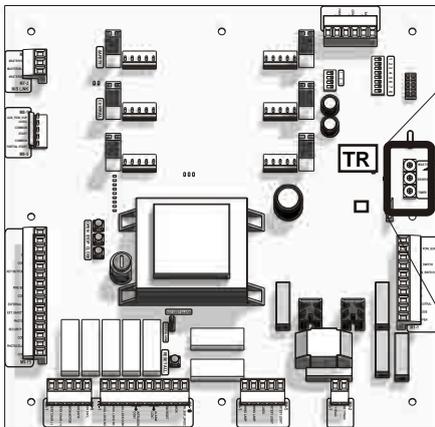
CONNECTIONS



CONNECTIONS



TRIMMER REGULATION



1. Trimmer **MAX TORQUE**

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.

2. Trimmer **REVERSE SENSE**

Sensibility adjustment of the gate collision detection (only with encoder present)

3. Trimmer **TIMER**

This trimmer allows the PAUSE time to be adjusted between 0 and 60 seconds. Set DIP SWITCH 1 to the ON position to enable automatic closing.

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

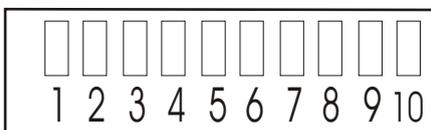


SELFLEARNING PROCEDURE

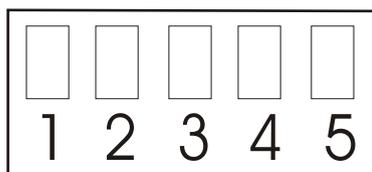
- Bridge the photocell (if DS 1-2 is to OFF position), the safety edge and STOP if they are not connected.
- If the encoder is used put DIP4 of DS1 on ON
- Release the operator and close the gate manually (limit switch of closing occupied)
- Reactivate the mechanical block
- Put Dip 8 on "ON" and press the pushbutton OPEN or START
- Wait for the complete opening of the gate and reposition DIP 8 on OFF.

MOTOR CONNECTIONS

M1



M6



Left hand:

Limit switch1 (M1): 7 yellow
Limit switch2 (M1): 8 green
Motor (M1): 1 purple
Motor (M1): 2 White
Motor (M1) neutral: black
Motor 24 (M6):

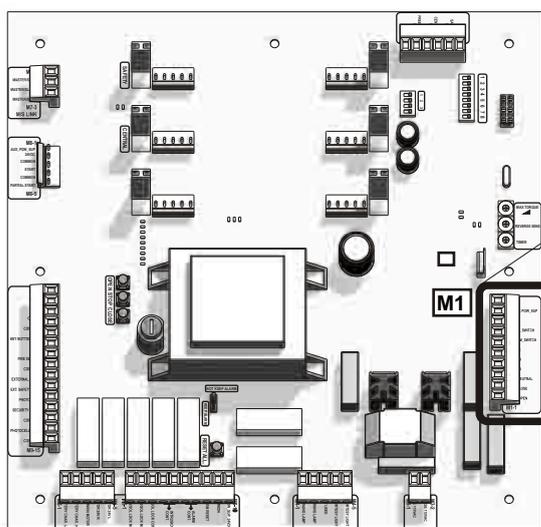
- 1 (-) battery / com motor
- 2 (+) battery
- 3 (+) battery
- 4 not connected
- 5 left motor

right hand :

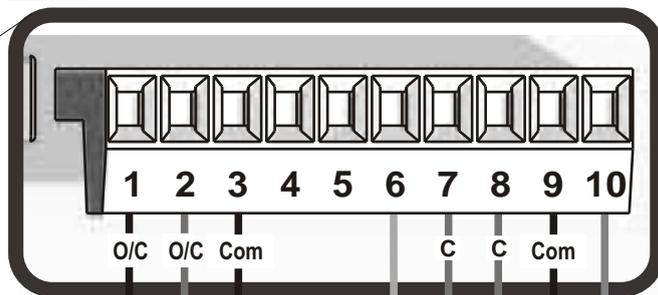
limit switch1 (M1): 8 yellow
limit switch2 (M1): 7 green
Motor (M1): 2 purple
Motor (M1): 1 White
Motor (M1) neutral: black
Motor 24 (M6):

- 1 (-) battery / com motor
- 2 (+) battery
- 3 (+) battery
- 4 right motor
- 5 not connected

MOTOR 115V, LIMIT SWITCH, ENCODER



M1



1 O/C 2 O/C 3 Com 4 5 6 C 7 C 8 Com 9 10

Black White Green Brown

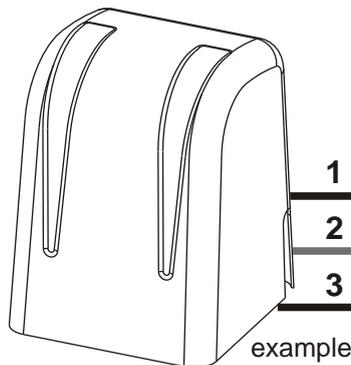
Motor 115Vac

Output for motor connection

O = OPEN

C = CLOSED

Com = COMMON
(motor black cable)



Limit Switches

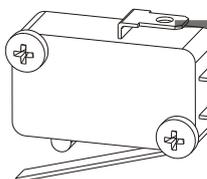
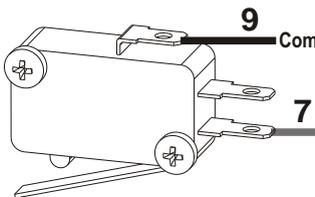
They can be of different types:

- inductive limit switch
- mechanical limit switch with lever
- limit switch with spring
- limit switch for motor-reducer with chain.

All these limit switches must be manufactured by SEA for a complete compatibility of the connectors

Com = Common

Limit Switch closing



Limit Switch opening

Encoder (reversing sensor)

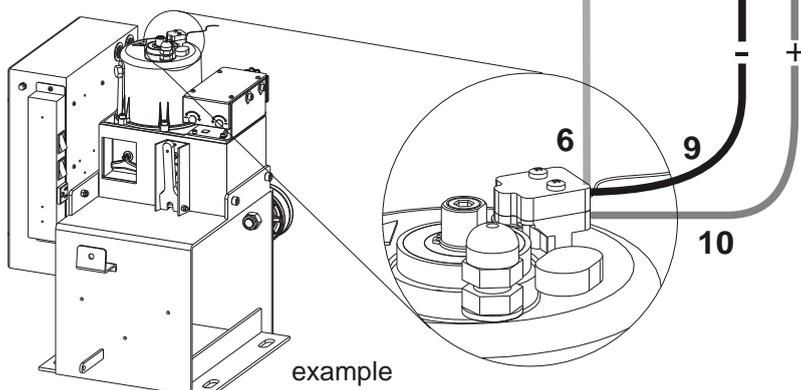
The encoder is a system which detects any obstacle during the running of the gate.

To use this system it is necessary to purchase a SEA motor provided with encoder.

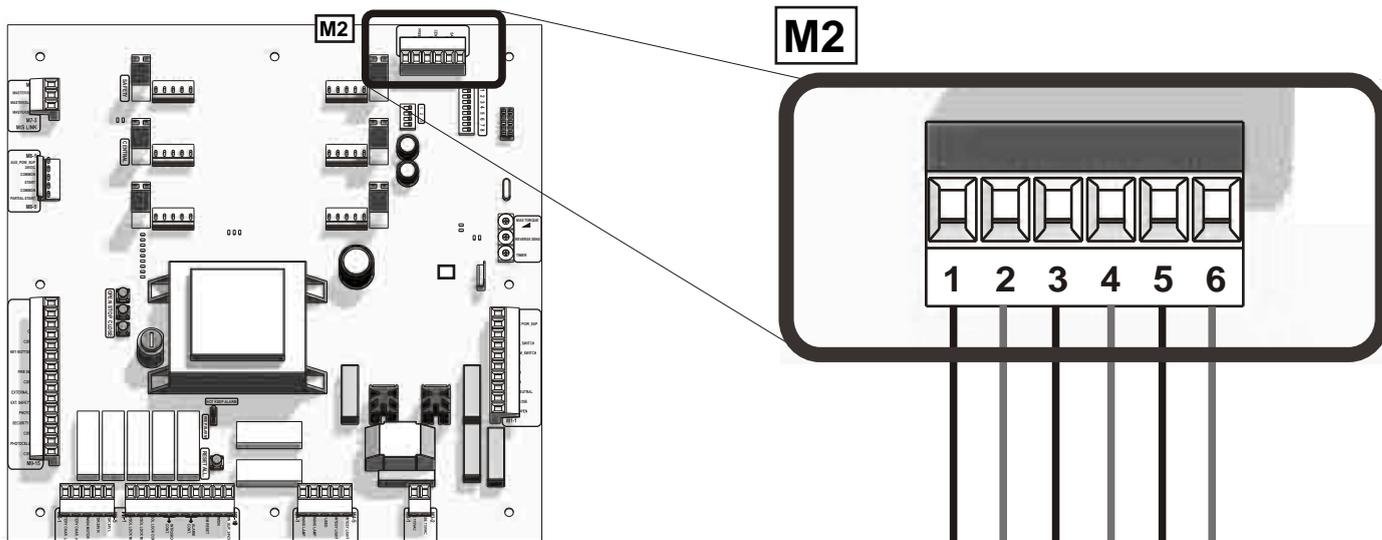
If the encoder function is activated (DIP 4 to OFF position), in case it will detect an error or an obstacle, you will get the movement reverse for about 2 seconds.

! Never disconnect the operating of this primary entrapment protection.

WARNING: SEA will never be responsible in case of damages if the reversing sensor has been disconnected.



SAFETY LOOP, CENTRAL LOOP, EXIT LOOP



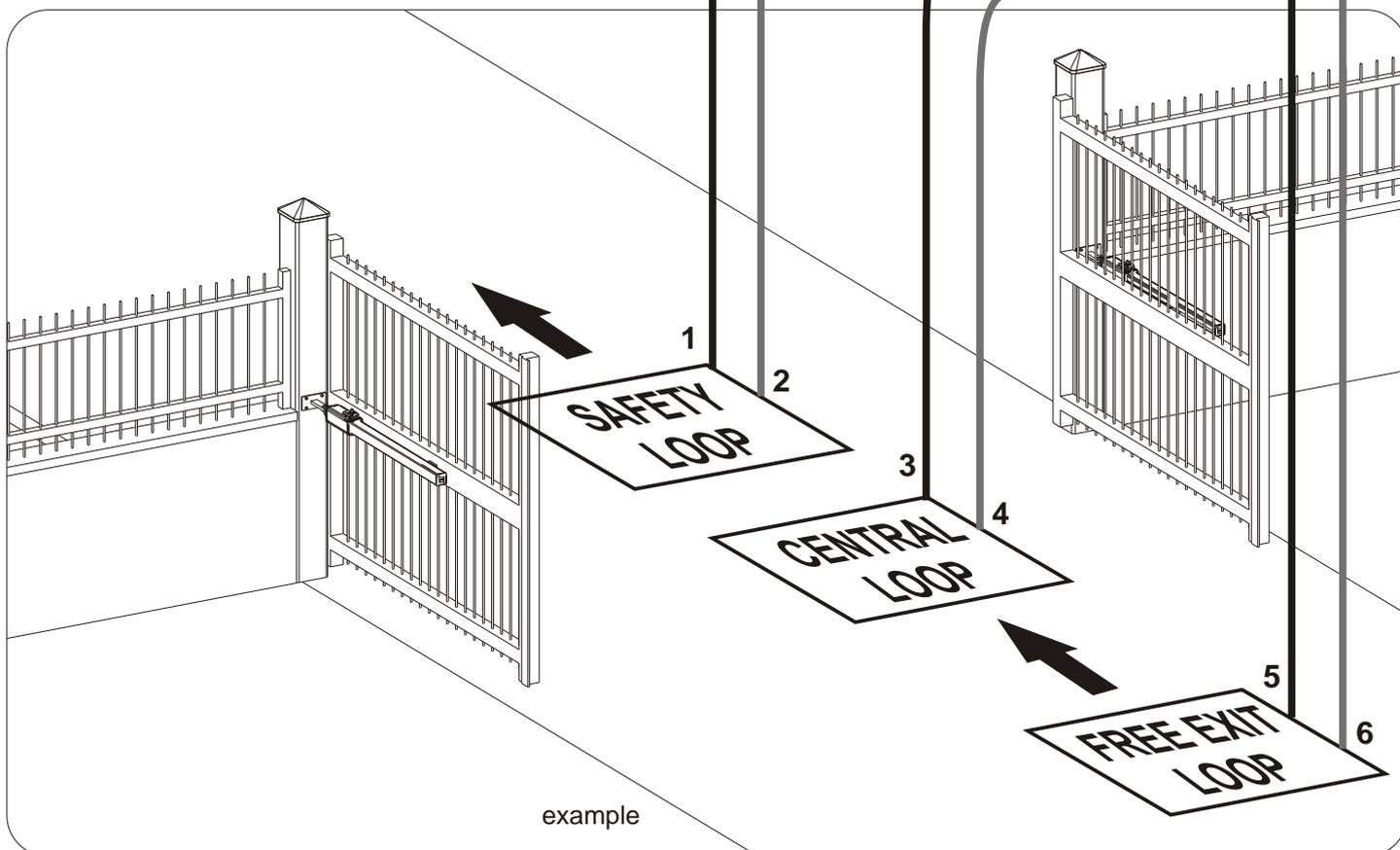
On the control unit there can be sited three loop detector modules for the detection of a vehicle:

Module safety: behaves like a **SAFETYLOOP**

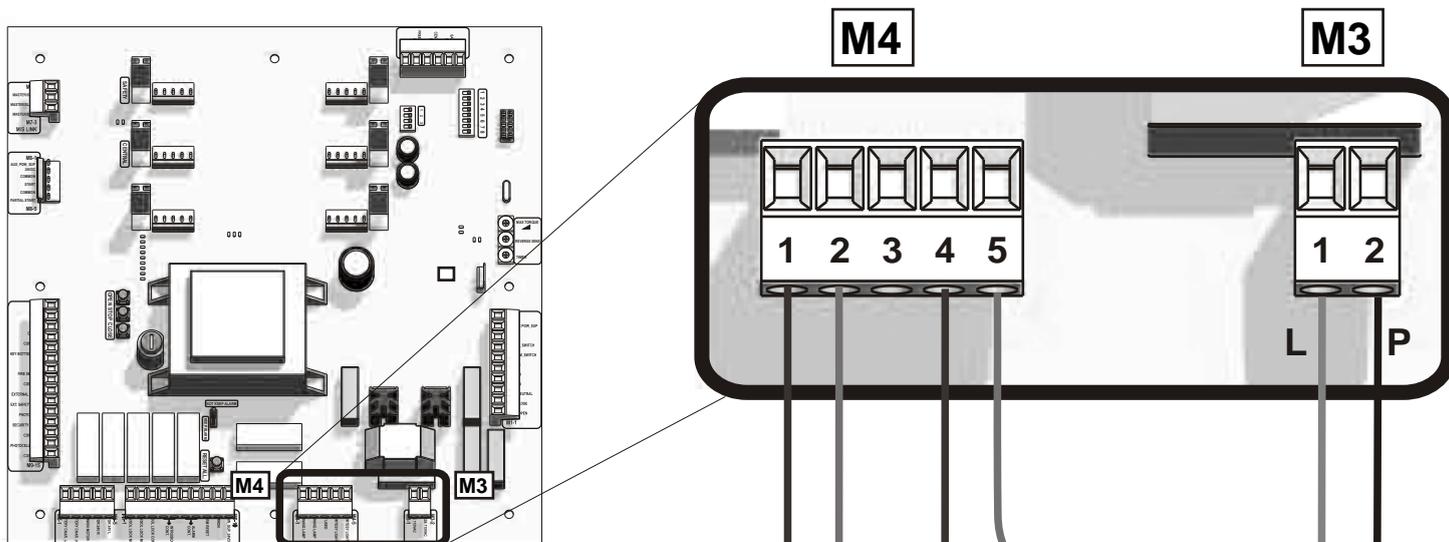
Module centre: behaves like a photocell (**function not enabled**)

Module exit: if the DIP DS1-1 is placed to OFF and a loop is connected to the entry **EXLOOP**, when an obstacle occupies the loop, it causes the reclosing of the gate. .

If DS1-1 is switch ON the EXLOOP work like a timer.



POWER SUPPLY, WARNING LAMP, COURTESY LIGHT



Flashing Lamp (115V)

The flashing lamp is an important accessory which warns the gate operating.

Exit by relay RL2 (com M4/2, no M4/1) activates some seconds before the gate begins to move, and switches off some seconds after the gate has stopped.

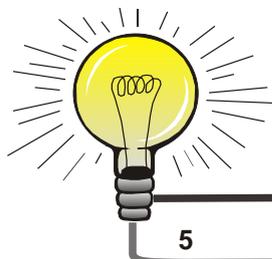
The exit rests closed during the functioning, this means that the intermittence of the flashing light is not controlled.



Note: this connection can be executed through the 24V auxiliary exit instead through the 110V exit

Courtesy Light (115V max 100W)

Exit by relay RL1 (com M4/5, no M4/4) the relay switches on for the whole opening cycle of the gate and stays on also after the gate's closing for a time period which has to be defined.

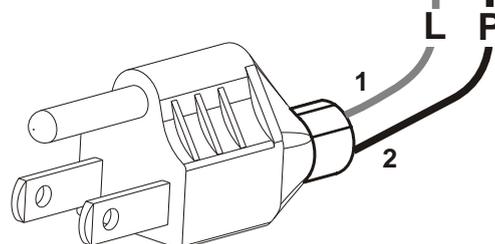


Power input

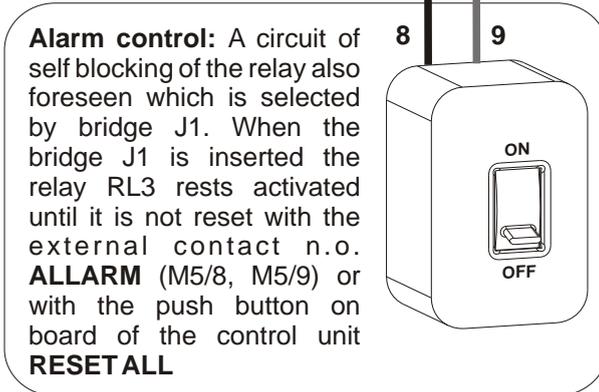
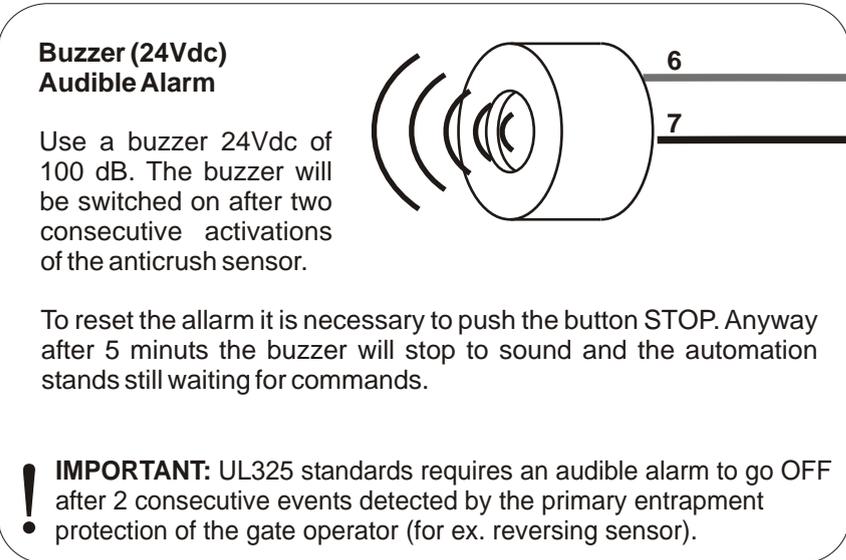
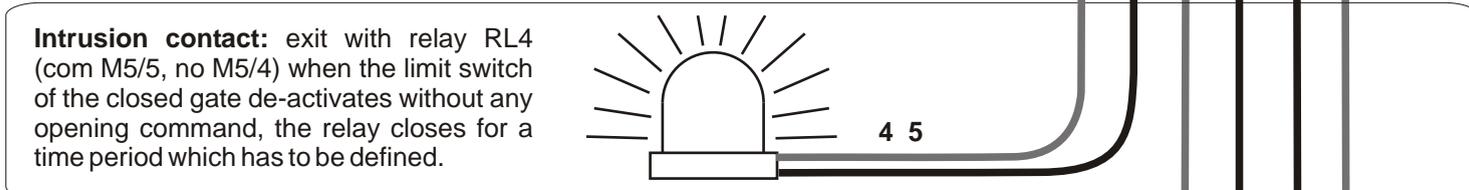
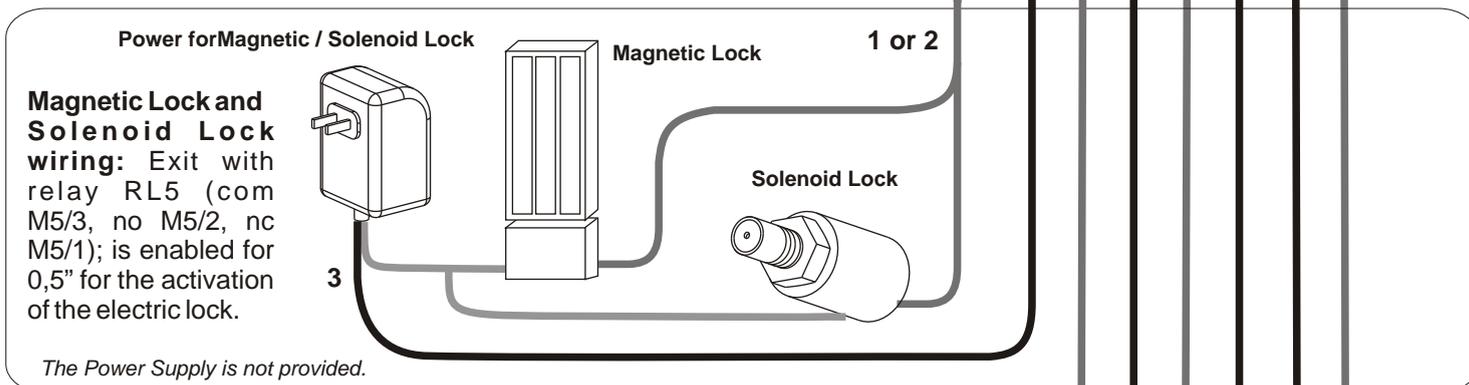
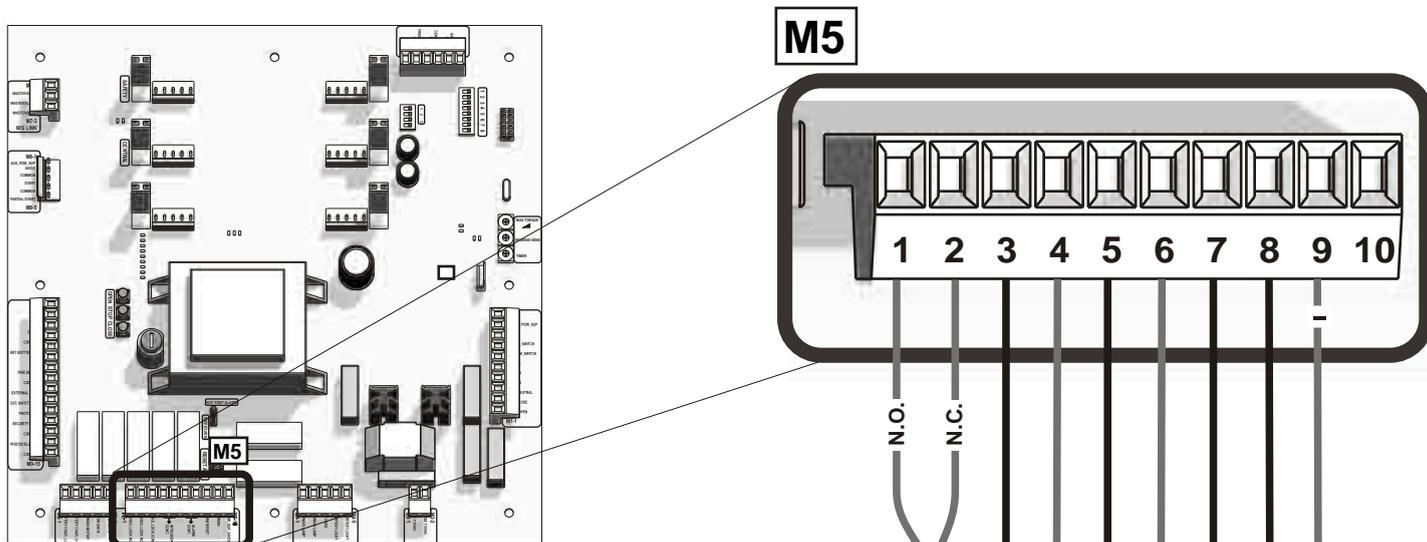
Input for the connection of the electric power.

P = PHASE
L = LINE

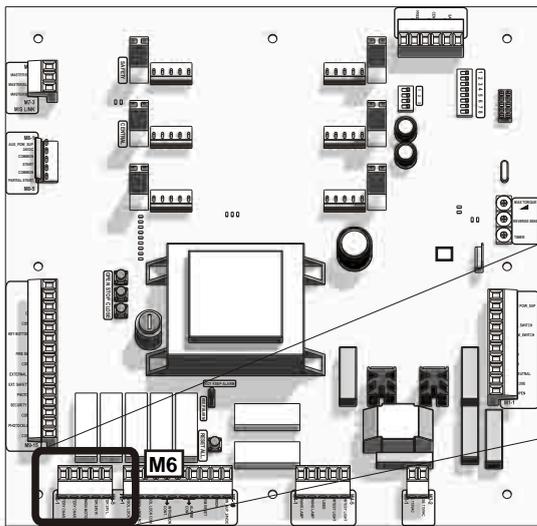
NOTICE: for the connection to the electric power see the law in force.



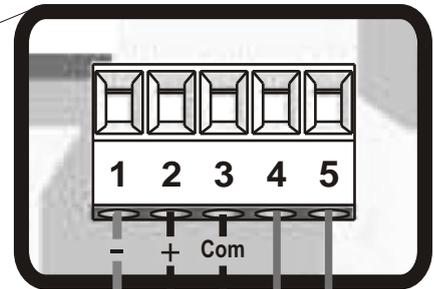
MAGNETIC LOCK, SOLENOID LOCK, INTRUSION CONTACT, BUZZER



BATTERIES, 24Vdc MOTORS

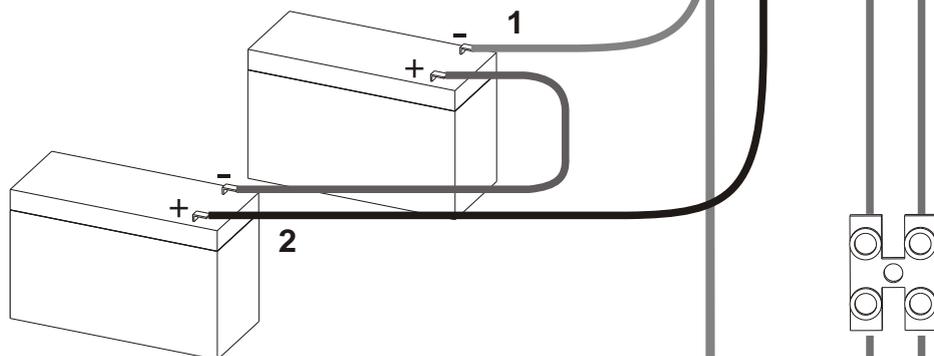


M6



24Vdc Battery charger

The backup battery allows to execute an opening cycle in case of power cut, so that it's possible to exit through the gate and keep the gate open until the current will be reconnected.

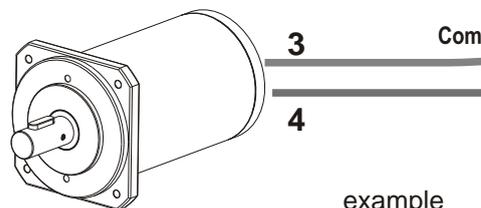


Motor 24Vdc RIGHT

Control of the gate opening in case of power failure. This control closes two contacts of two relays which control an external module for the administration of the movement of a motor with 24 Vdc continuous current.

The contacts are the following:
24Vdc Motor on the right hand side M6/4 closed on M6/3

Com = COMMON

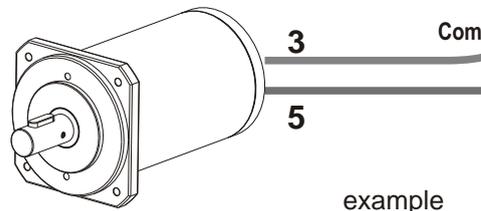


Motor 24Vdc LEFT

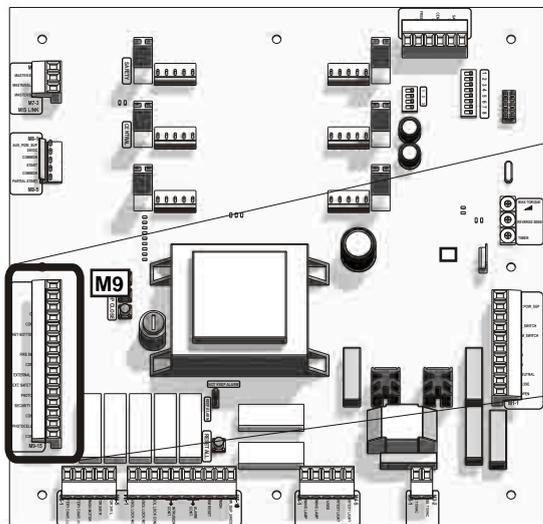
Control of the gate opening in case of power failure. This control closes two contacts of two relays which control an external module for the administration of the movement of a motor with 24 Vdc continuous current.

The contacts are the following:
24Vdc Motor on the left hand side M6/5 closed on M6/3

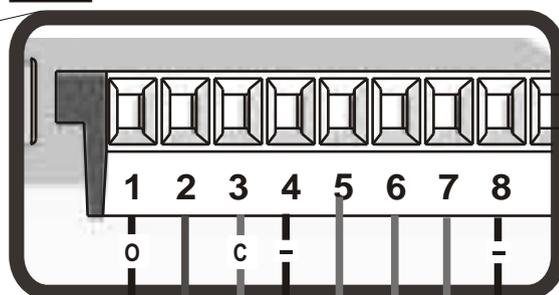
Com = COMMON



OPENING/CLOSING, KEY BUTTON ENABLE, CARD READER, FIRE SWITCH



M9

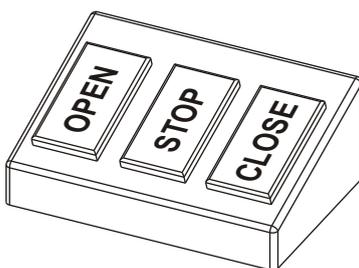


Opening/Closing switch

OPEN: contact n.o. controls the opening command of the gate which remains opened until a new closing command is given or until an adjusted time period (3 to 60 sec.) through Timer has passed.

STOP: Contact n.c. stops immediately the movement of the gate, furthermore it resets some alarm conditions.

CLOSE: Contact n.o. controls the closing of the gate.

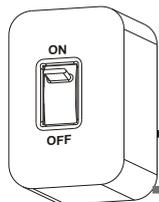


1
2
3

o = open
c = close

Key button enable: The first three accesses are foreseen for a pushbutton board sited in a porter's lodge, and it is foreseen that it can be switched off during certain hours during day. Therefore the following three accesses are enabled through **key button ENABLE (M9/5)** with the following configuration:

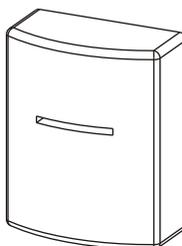
Key button ENABLE closed at GND => OPEN, STOP, CLOSE enabled and EXLOOP switched off
Key button ENABLE open => OPEN, STOP, CLOSE switched off and EXLOOP enabled



4
5

Card/Start:

Contact n.o. controls the opening of the gate; the re-closing can be executed by a command from the external loop car presence or after an adjusted time period (3 to 60 sec., by trimmer "TIMER").



4
6

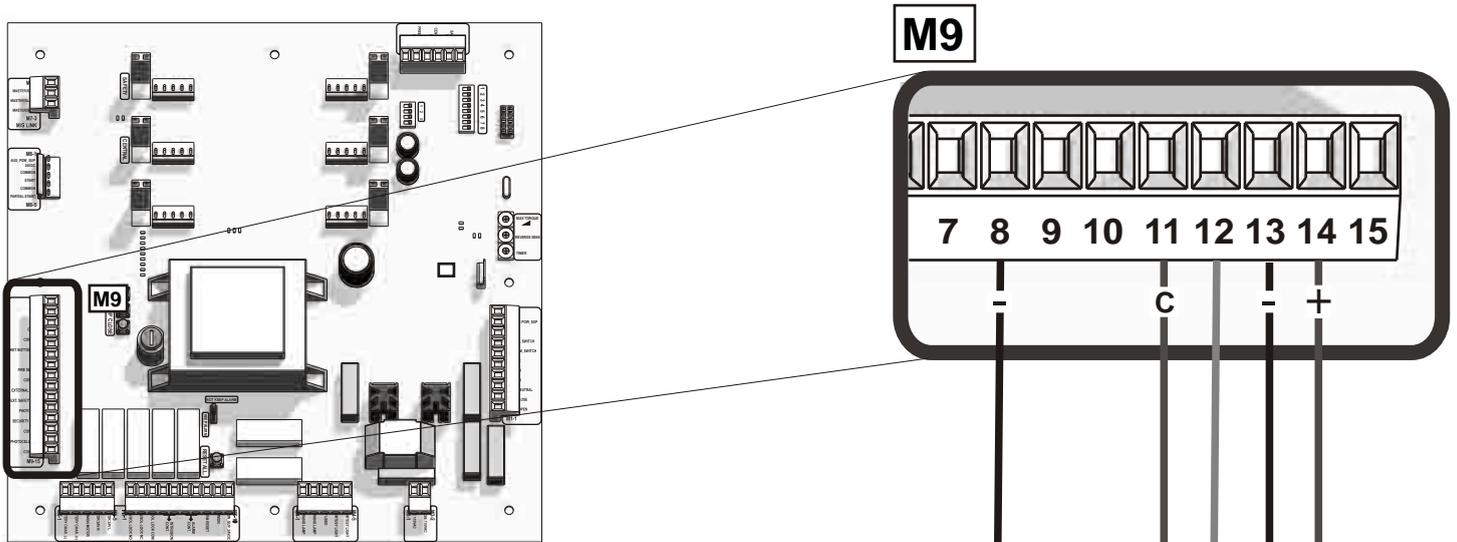
Fire Switch:

Contact n.o. controls the opening of the gate, which rests opened until the consents has been taken away. When released the gate automatically closes again if the DIP DS1-1 is on ON, otherwise to restore the movement is necessary to activate first the Stop and then the START.



7
8

PHOTOCELLS, SAFETY EDGE



Safety edge input:

It is a n.c. contact, which stops immediately the movement of the gate. A further safety can be obtained making a connection with the safety edge mentioned on the side. If it is start up, the safety edge reverses the movement of the gate for two seconds and it stops.

Notice: if the safety input is not used, make a Jumper between 12 and 14.

PHOTOCELL: Photocells connection

This contact can function in n.o. or n.c. mode, depending on how the dip switch DS1-2 has been adjusted:

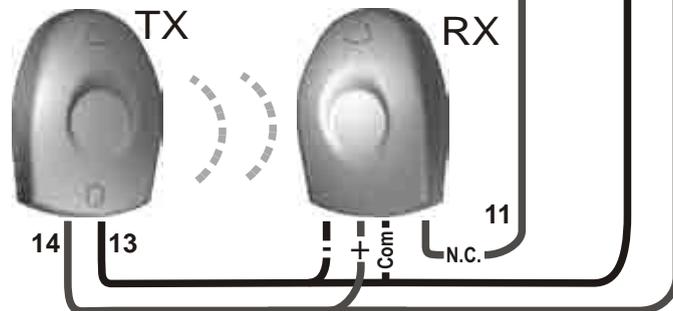
DS1-2 = ON => function n.o.

DS1-2 = OFF => function n.c.

When activated the movement of the gate stops immediately, if it is occupied for more than two seconds, the gate will reverse the movement..

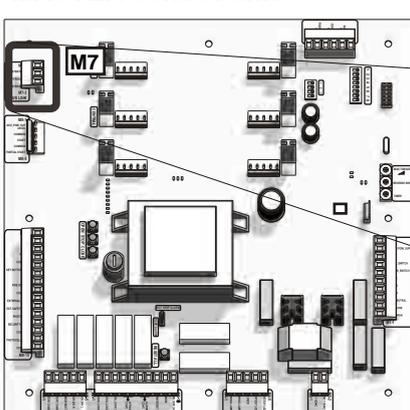
+ = 24Vdc - = 0Vdc C = Contact

Com = Common

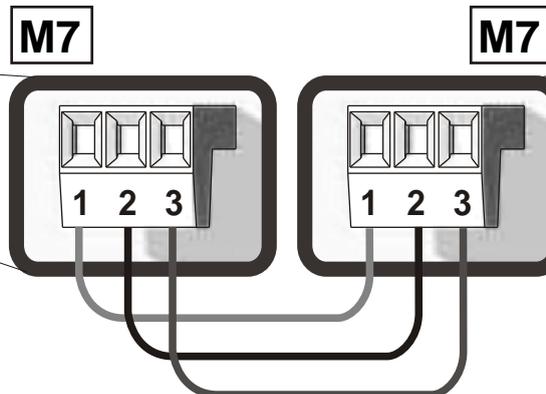
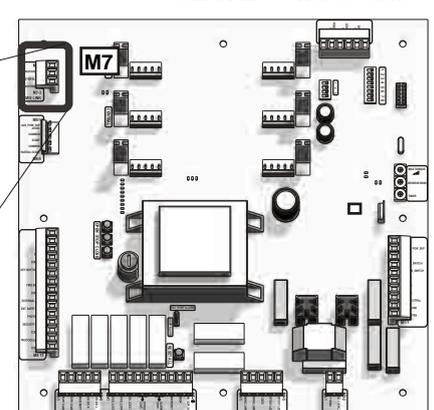


MASTER / SLAVE CONNECTIONS

MASTER control unit

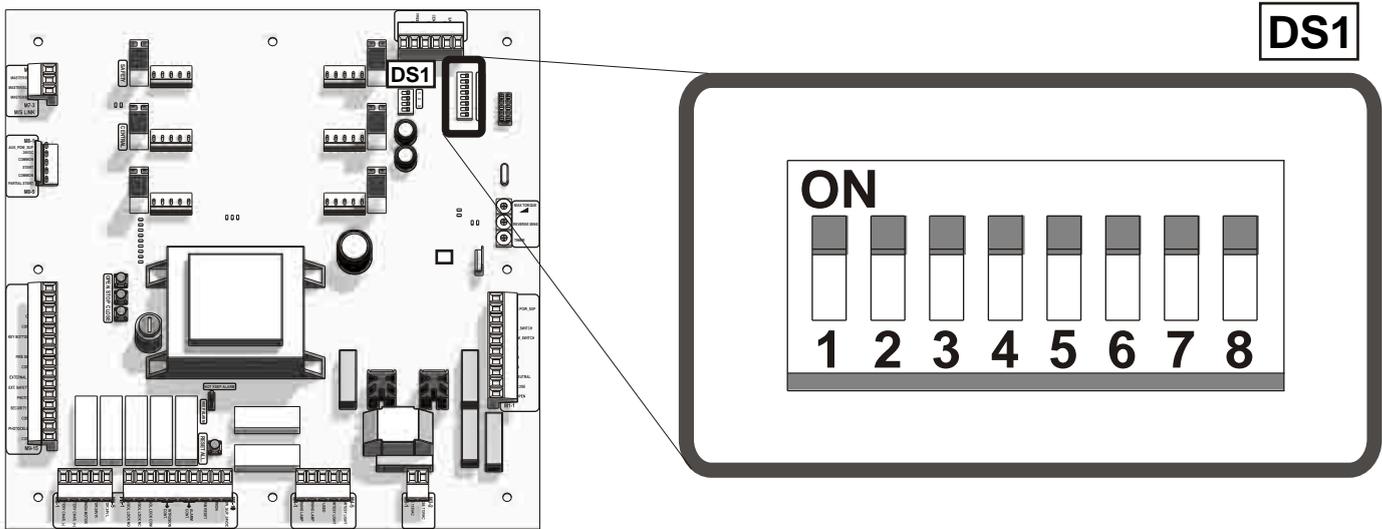


SLAVE control unit



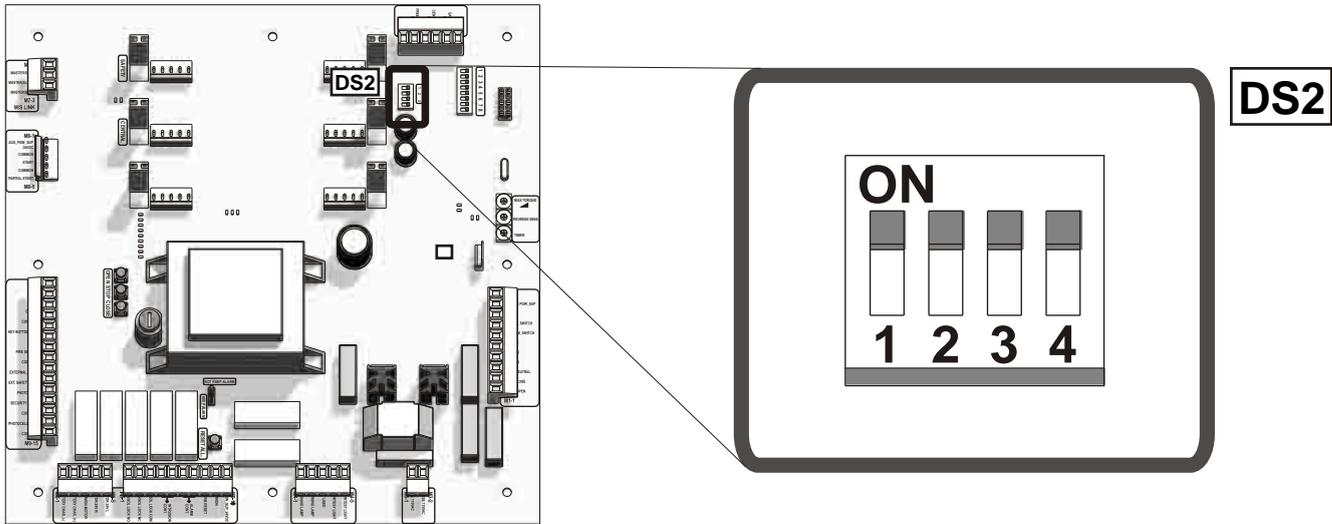
It is selected by a dip switch in the following way: DS1-6 = ON => presence SLAVE card DS1-6 = OFF => absence SLAVE card
If the use of the SLAVE card is foreseen, gate with two leaves, it is connected to the Master card through serial connection RS485 and receives from this last one all information, also those of security.

DIP SWITCHES



DS1	ON/OFF	DESCRIPTION
1	ON	Closing for automatic cycle established by trimmer TIMER (3-60 sec.)
	OFF	Closing for automatic cycle with detection attraverso l'EXLOOP
2	ON	Photocell n.o.
	OFF	Photocell n.c.
3	ON	When a car transits on the safeloop or the photocell intervened, in closing, stops for 3 sec. then opens until the alarm stops
	OFF	When a car transits on the safeloop or the photocell intervened, stands still as long as passage rests occupied.
4	ON	Encoder Presence
	OFF	Encoder Absence
5	ON	Opening on the right hand side of the leaf commanded by Master card, on the left hand side for the one commanded by the Slave card
	OFF	Opening on the left hand side of the leaf commanded by Master card, on the right hand side for the one commanded by the Slave card
6	ON	Slave card presence
	OFF	Slave card not present
7	ON	Preblink activated
	OFF	Preblink disabled
8	ON	Learning modality: execute one complete opening to memorize the moving time if there is no encoder or the position if there is an encoder. Afterwards put the DIP on OFF.
	OFF	Learning executed

DIP SWITCHES



DS2	ON/OFF	DESCRIPTION
1	ON	The master card functions normally
	OFF	The master card functions as Slave
2	ON	Autotest Photocell Enable
	OFF	Autotest Photocell Disable

3	ON	Soft start enabled
	OFF	Soft start disabled

4	ON	Free
	OFF	Free

SALES CONDITIONS and WARRANTY

GENERAL WARNING: Installation must be realized using parts and accessories approved by SEA. SEA is not responsible for incorrect installations and/or non-compliance with safety standards according to the law in-force. SEA is in no way liable for any damages and/or malfunctioning due to using parts and accessories non-compliant with the UL325 safety standards.

ORDERS: Orders are processed upon approval by SEA. Buyers must confirm orders by sending a written Purchase Orders to SEA. Purchase Orders are intended as confirmation of orders and binding for the buyer, which accepts SEA sales condition.

QUOTATION: Quotation and special offers with a non-specified duration expires automatically after 30 days.

PRICES: Prices are based on the Price List in force. Discounts and quotation from Sales Rep. and other selling branches must be approved by SEA. Prices are F.O.B SEA Warehouse in Miami and do not include shipments costs. SEA reserves the right to modify the price list at any time and provide notice to its sales network.

PAYMENT: Method of payments and terms are notified by SEA and displayed on the commercial invoice.

DELIVERY: The delivery time on the invoice is not binding and represents an estimated delivery. Shipments costs will be charged to the buyer and SEA is not responsible for delays and/or damages occurred to the products during shipment.

COMPLAINS: Complains and/or claims must be notified to SEA within 7 business days after receiving the products. Claims and complains must be supported by original documents. Customer must contact the factory for instructions and authorization. Merchandise returned for credit must be current, uninstalled and unused and returned in its original packaging. Freight must be pre-paid on all authorized returns.

REPAIRS: Repairs and parts are subject to the availability in stock. Shipment of products for repairs must be pre-paid by the customer. Products shipped without authorization, sender's details and description of the problems will be refused. Customers must contact SEA for instructions.

WARRANTY: for the original buyer only:

Hydraulic and oil-bath motors: 36 months warranty from the date of invoice on manufacturing, assembling and workmanship defects.

Electro-mechanic motors and electronic control systems: 24 months warranty from the date of invoice on manufacturing, assembling and workmanship defects.

Lepus and Full Tank Standard model: 60 months warranty from the date of invoice on manufacturing, assembling and workmanship defects.

No warranty will be recognized for damages due to incorrect installation and/or improper use for which the product was intended. SEA warranty obligations shall be limited to repair or replace the defective product/parts at SEA option, upon examination of the products by SEA technical Staff. All replaced parts must remain property of SEA. The warranty status of the product remains an unquestionable assessment of SEA. Buyer must ship pre-paid defective products. Products under warranty will be returned pre-paid by SEA. Recognized defects, whatever their nature, will not produce any responsibility and/or damage claims to SEA USA Inc and SEA s.r.l. Warranty shall not cover any required labor activities. Warranty will in no case be recognized if alterations and any other changes will be found on products. Warranty will not cover damages caused by carriers, expendable materials and faults due to improper use with the products specifications. No indemnities are recognized during repairing and/or replacing of the products under warranty. SEA USA Inc. and SEA s.r.l. decline any responsibility for damages to person and objects deriving from non-compliance with safety standards, installation instructions or use of the products sold. It is intended that warranty will be recognized only on products bought through the SEA authorized network. Products must be installed by professionals. No warranty will be recognized if products are installed directly by the final user. Warranty does not apply in case of unexpected events such as fire, flood, electrical power surge, lightning, vandalism and others.

SEA USA Inc. is not responsible for errors in technical information printed in catalogs and installation manuals.



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