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IL n. 269-1
EDIZ. 28/08/2009

Gold400A / Gold600A

I **ATTUATORE ELETTROMECCANICO 230V / 120V IRREVERSIBILE A CREMAGLIERA PER CANCELLI SCORREVOLI FINO A 600 /400 KG**

GB **230V / 120V ELECTRO-MECHANICAL IRREVERSIBLE RACK ACTUATOR FOR SLIDING GATES UP TO 600 /400 KG**

F **OPERATEUR ELECTROMECANIQUE 230V / 120V IRREVERSIBLE A CREMAILLERE POUR PORTAILS COULISSANTS JUSQU'A 600 /400 KG**

E **MOTORREDUCTOR ELECTROMECÁNICO 230V / 120V IRREVERSIBLE A CREMALLERA PARA PUERTAS CORREDERAS HASTA 600 /400KG**

P **ACTUADOR ELECTROMECÂNICO 230V / 120V IRREVERSÍVEL PARA ACCIONAR PORTÕES DE CORRER ATÉ 600 /400 KG DE PESO**

D **ELEKTROMECHANISCHER NICHT UMKEHRBARER STELLANTRIEB 230V UND 120V FÜR SCHIEBETORE BIS ZU 600 /400 KG**

NL **ELEKTROMECHANISCHE, ONOMKEERBARE SCHUIFHEKMOTOR 230V EN 120V VOOR AANDRIJVING SCHUIFHEKKEN TOT EEN GEWICHT VAN 600 /400 KG**

INDEX

IMPORTANT REMARKS

For any installation problems please contact
V2 S.p.A. TEL. (+39) 01 72 81 24 11

V2 S.p.A. has the right to modify the product without previous notice; it also declines any responsibility to damage or injury to people or things caused by improper use or wrong installation.

⚠ **Please read this instruction manual very carefully before installing and programming your control unit.**

- This instruction manual is only for qualified technicians, who specialize in installations and automations.
- The contents of this instruction manual do not concern the end user.
- Every programming and/or every maintenance service should be done only by qualified technicians.

AUTOMATION MUST BE IMPLEMENTED IN COMPLIANCE WITH THE EUROPEAN REGULATIONS IN FORCE:

EN 60204-1 (Machinery safety. electrical equipment of machines, part 1: general rules)
EN 12445 (Safe use of automated locking devices, test methods)
EN 12453 (Safe use of automated locking devices, requirements)

- The installer must provide for a device (es. magnetotermical switch) ensuring the omnipolar sectioning of the equipment from the power supply.
  The standards require a separation of the contacts of at least 3 mm in each pole (EN 60335-1).

- The plastic case has an IP55 insulation; to connect flexible or rigid pipes, use pipefittings having the same insulation level.

- Installation requires mechanical and electrical skills, therefore it shall be carried out by qualified personnel only, who can issue the Compliance Certificate concerning the whole installation (Machine Directive 98/37/EEC, Annex IIA).

- The automated vehicular gates shall comply with the following rules: EN 12453, EN 12445, EN 12978 as well as any local rule in force.

- Also the automation upstream electric system shall comply with the laws and rules in force and be carried out workmanlike.

- The door thrust force adjustment shall be measured by means of a proper tool and adjusted according to the max. limits, which EN 12453 allows.

- We recommend to make use of an emergency button, to be installed by the automation (connected to the control unit STOP input) so that the gate may be immediately stopped in case of danger.

- The appliance is not to be used by children or persons with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction.

- Children being supervised do not play with the appliance.

- For correct installation of the system, we recommend following the instructions issued by UNAC very carefully, which can be consulted at the following web site: www.v2home.com

CONFORMITY TO REGULATIONS

V2 S.p.A. declares that the series of GOLD actuators are in conformity with the provisions of the following EC directives:

2006/95/CEE low voltage
89/336/CEE electromagnetic compatibility
99/05/CEE radio directive
98/37/CEE machine directive

and with the standards referenced here below:

- **EN 60335 - 1, EN 60335 - 2 - 103,**
- **EN 61000 - 2 - 3, EN 61000 - 3 - 3, EN 50336**
- **EN 55014 - 1, EN 55014 - 2**
- **EN 301 489 - 3**
- **EN 300 220 - 3**

Note: Declares that the above mentioned devices may not be operated until the machine (automated gate) is identified, CE-labeled, and declared to be compliant to the specifications of Directive 89/392/EEC and following modifications.

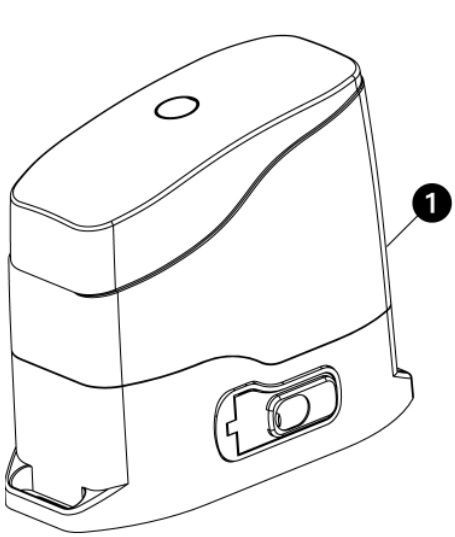
The person in charge for the machine start-up must provide the following records:
- Technical specification paper
- Declaration of conformity
- CE-labeling
- Testing record
- Maintenance record
- Operation manual and directions

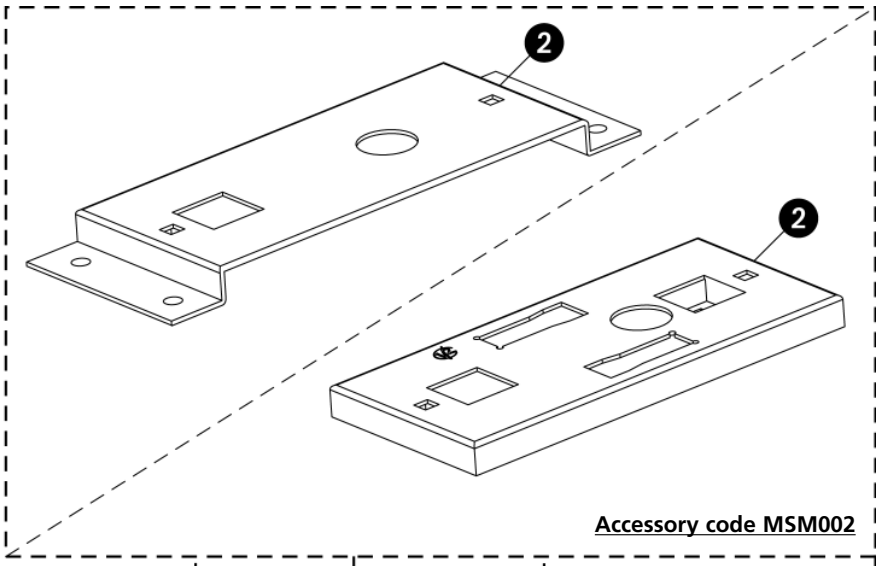
Racconigi 20/10/2008
V2 S.p.A. legal representative
Antonio Cristina

ENGLISH

ENGLISH

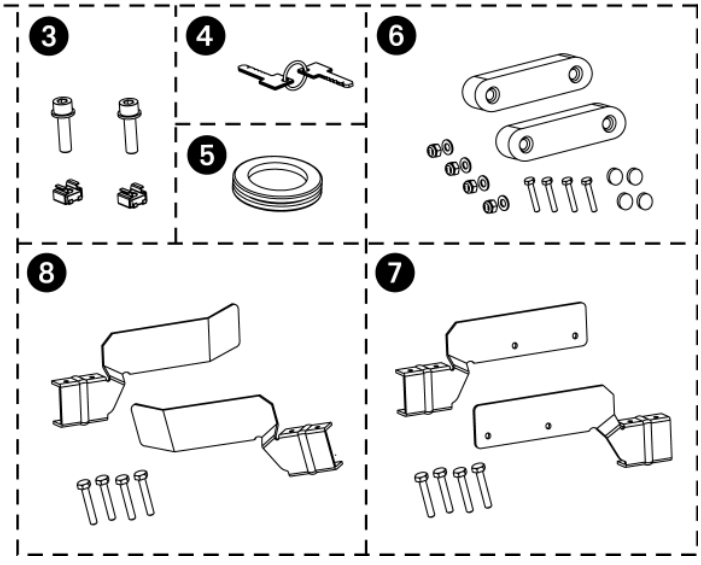
TECHNICAL SPECIFICATIONS	GOLD600A-230V GOLD600AM-230V	GOLD600A-120V GOLD600AM-120V	GOLD400A-230V GOLD400AM-230V	GOLD400A-120V GOLD400AM-120V
Gate maximum weight	600 Kg	600 Kg	400 Kg	400 Kg
Power supply	230V / 50Hz	120V / 60Hz	230V / 50Hz	120V / 60Hz
Maximum power	500 W	500 W	350 W	350 W
Idling current	1.6 A	3.2 A	1.1 A	2.2 A
Full load current	2 A	4 A	1.4 A	2.8 A
Capacitor	16 µF	40 µF	10 µF	25 µF
Gate maximum speed	0.16 mt/sec	0.16 mt/sec	0.16 m/s	0.16 m/s
Maximum thrust	480 N	480 N	380 N	380 N
Duty cicle	30%	30%	30%	30%
Pinion	M4 - Z18	M4 - Z18	M4 - Z18	M4 - Z18
Operation temperature	-20°C ÷ +60°C	-20°C ÷ +60°C	-20°C ÷ +60°C	-20°C ÷ +60°C
Weight	10 Kg	10 Kg	10 Kg	10 Kg
Protection	IP44	IP44	IP44	IP44
Maximum load on 24 VACattachments	3W	3W	3 W	3 W
Protection fuses	F1 = 5A	F1 = 8A	F1 = 5 A	F1 = 8 A





Accessory code MSM002

Ref	Description	Q.ty
1	• Electro-mechanical actuator	1
	• Capacitor	1
	• Control unit	1
2	Metal fastening plate	1
3	Cage nuts + Bolts M8 X 30 + Washers	2
4	Motor overriding key	2
5	Wire lead gasket	2
6	Magnetic limit switch *(only for the model with magnetic limit switch)*	2
7	Magnet holder *(only for the model with magnetic limit switch)*	1
8	Mechanical limit switch *(only for the model with mechanical limit switch)*	2



PREPARATORY STEPS

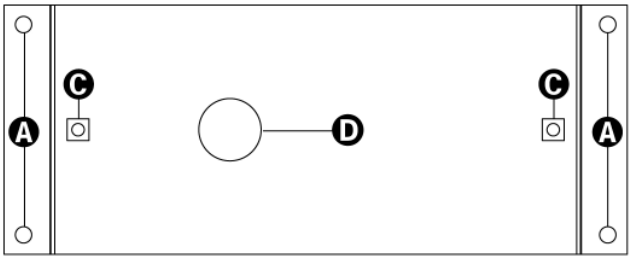
CAREFULLY OBSERVE EUROPEAN REGULATIONS EN12445 AND EN12453 (WHICH REPLACE UNI 8612).

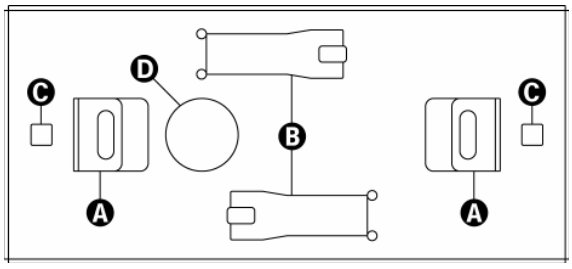
Always check the following:

- Your gate should have a strong and suitable build; no wickets should be present on the sliding gate.
- The sliding gate should not tilt excessively during its entire run.
- The gate should be able to slide freely on its guiding surface without an excessive friction.
- Install both closing and opening limit switches, in order to prevent the gate going off the guiding surface.
- Remove any manual locks.
- Bring power cable ducts near the bottom of the gate (diameter 20 / 30 mm) and of the external devices (photocells, flasher, key selector).

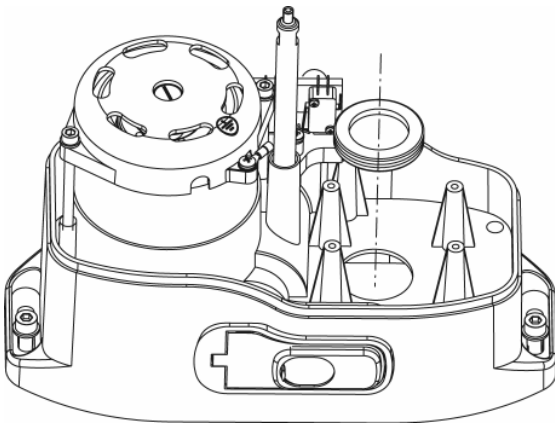
INSTALLATION

- Prepare a cement base raised 40 - 50 mm from the ground on which the metal plate will be fixed.
- Provide a channel for two hoses that will house the cables in the main hole (D) on the counter-plate. Such counter-plate shall be fixed to the ground by means of two anchors next to the already-made holes (A), or sinking the special fins in the cement (B).
- Fix the motor on the counter-plate by means of the cage nuts fitted in the holes (C).



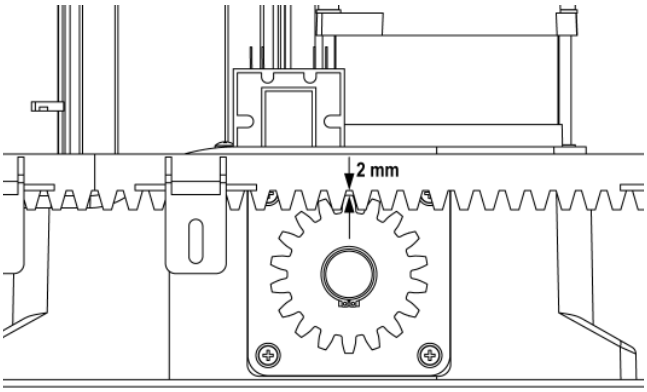


WARNING: insert the gasket in the hole through which the cables pass, as shown in the picture. Pierce the gasket in order to let pass the cables to be connected to the central unit, being careful of narrowing them in order to avoid the entrance of bugs and small animals.



MOUNTING THE RACK

Release the motor and turn the gate completely open.
Fix all the rack elements to the gate, making sure that they stand at the same height than the motor pinion.
It is important that the rack be positioned 1 or 2 mm above the motor pinion, in order to prevent that the motor be damaged under the weight of the gate.

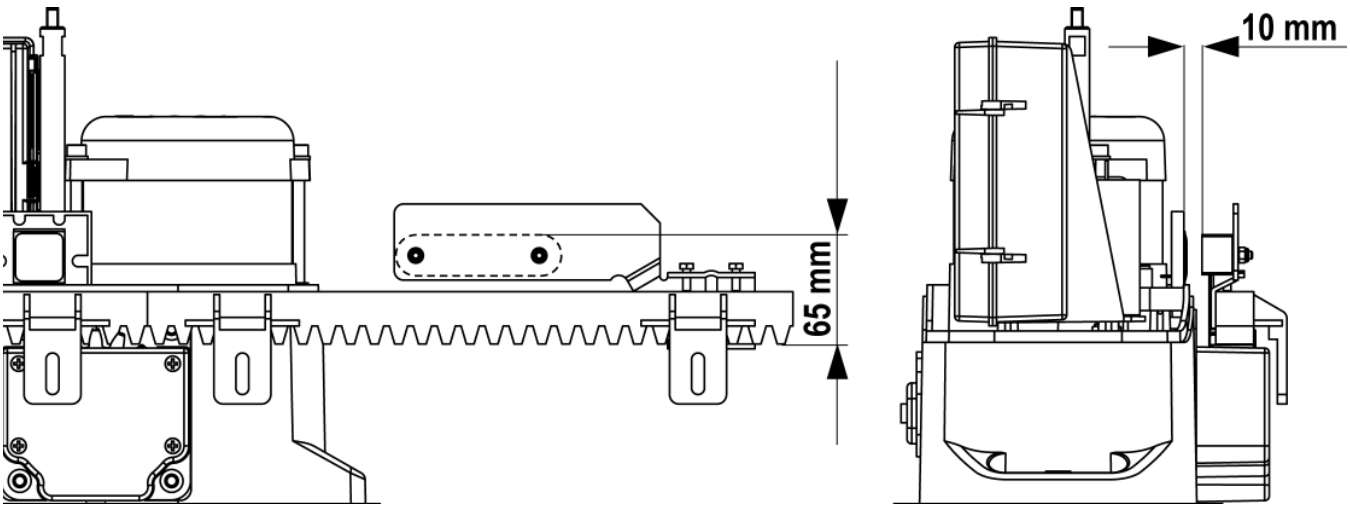


INSTALLING THE MAGNETIC LIMIT SWITCHES

Install the supplied magnet holder on the rack in a way that, in the opening and closing limit positions, the magnet be positioned next to the magnetic sensor behind the hood (as near as possible to the hood).

The supplied magnets have been colored differently in order to be distinguished from each other:

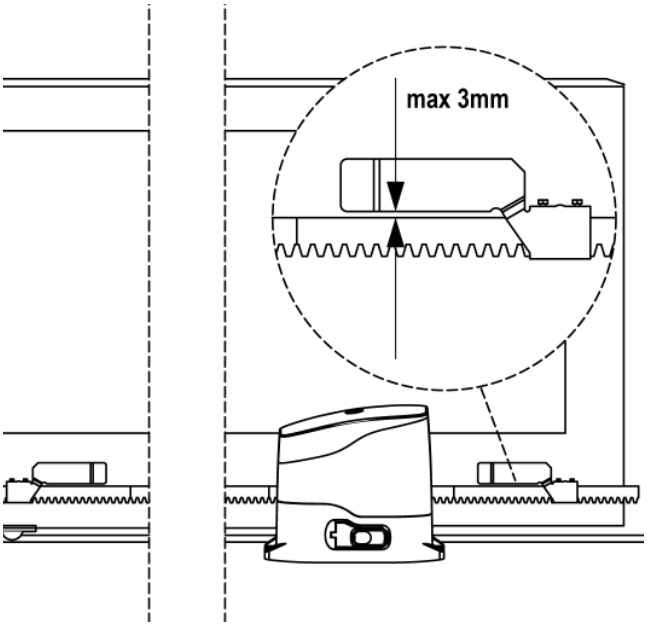
RED MAGNET = CLOSING LIMIT SWITCH
BLUE MAGNET = OPENING LIMIT SWITCH



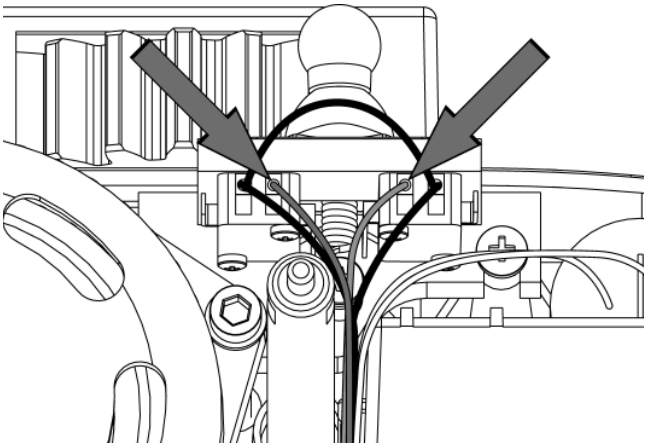
INSTALLING THE MECHANICAL LIMIT SWITCHES

Install limit switches on the rack and fix them using the screws provided in the tool kit.

⚠ **ATTENTION: check that the limit switch bracket will work effectively on the limit switch spring of the motor. If necessary add thickness between the lower part of the rack and the limit switch bracket in order to keep to the measurement as stated in the figure.**



The limit switches are wired for installation with the motor on the right of the gate opening.
If the motor is installed on the left of the gate opening, it will be necessary to invert the blue and brown cables on the limit switch and also the motor connector (C1-C2-C3) on the control unit.

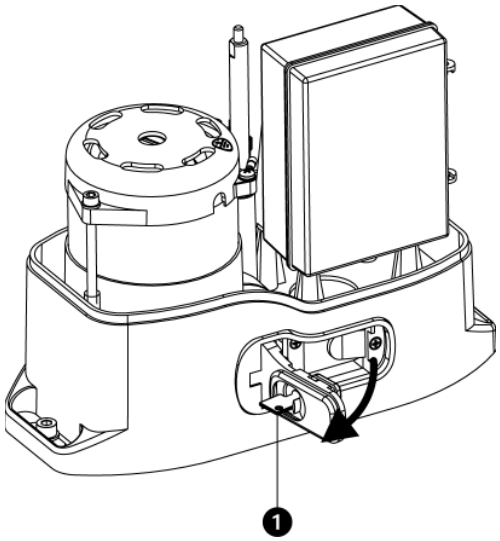


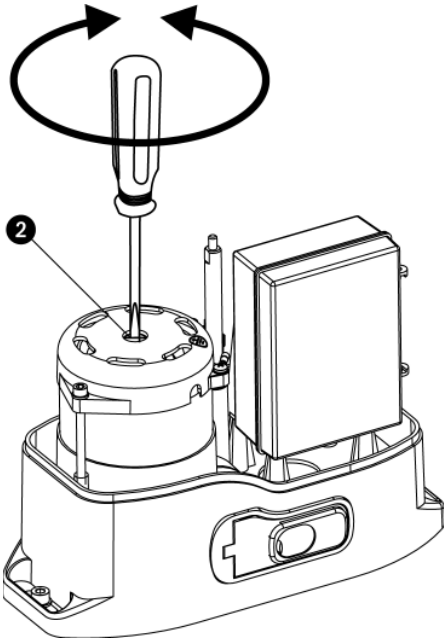
MOTOR OVERRIDING SYSTEM

In case of a blackout, the gate can be operated directly from the motor. Insert the key supplied in the lock 1 on the front side of the motor, perform 1/4 of a turn and open the plastic door completely.

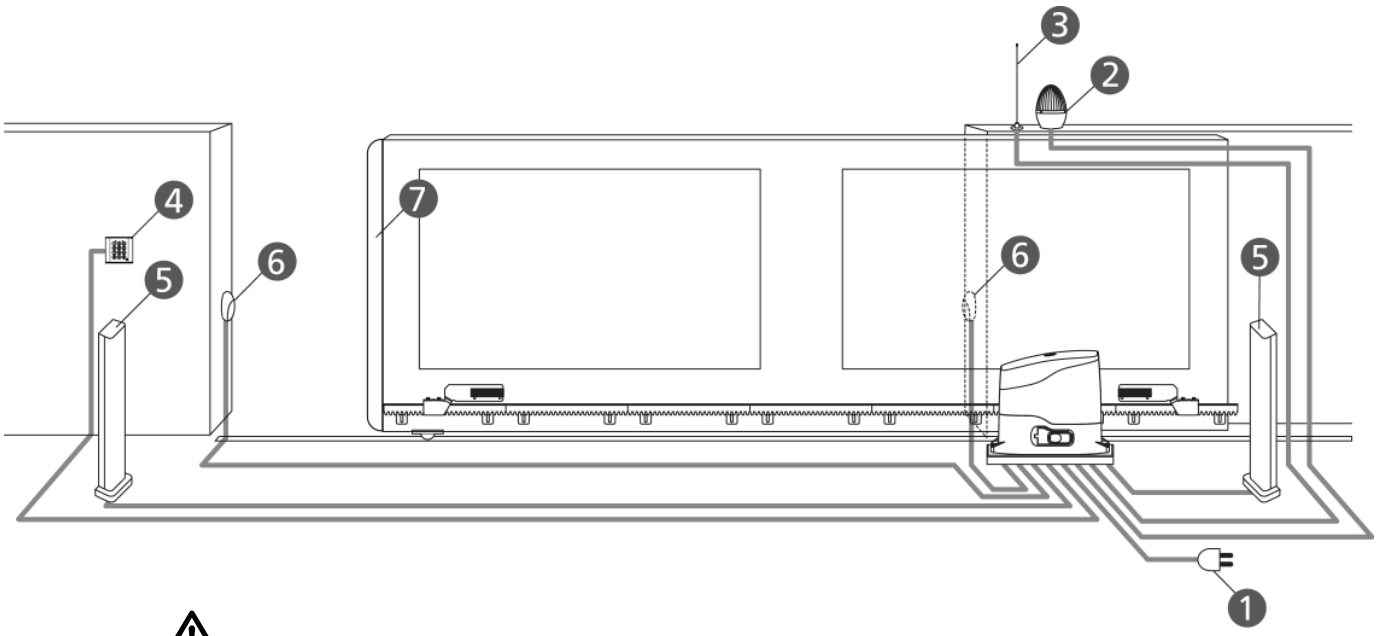
To restore the automation, simply close the door, rotate the key in closed position and slide the specially provided plastic cover onto the lock.

⚠ **WARNING:** In case the leaf overruns its final position and impacts against the safety stroke end (i.e. wrong regulation of the limit switches),and a manual unclamp would be necessary, before using the above procedure, you have to replace the leaf setting away from the safety stroke end using the flat screw on the main motor shaft 2 with a screwdriver.





INSTALLATION LAYOUT



⚠ **WARNING: ALL THE CABLES USED FOR THE INSTALLATION MUST BE MARKED WITH T100°C.**

❶ Power supply	cable 3 x 1,5 mm²
❷ Blinker	cable 2 x 1,5 mm²
❸ External Aerial	cable RG-58
❹ Digital or key selector	cable 2 x 1 mm²

❺ Internal Photocellules	cable 4 x 1 mm² (RX) cable 2 x 1 mm² (TX)
❻ External Photocellules	
❼ Safety edge (EN 12978)	-

ENGLISH

DESCRIPTION OF THE CONTROL UNIT

The PRGS2 control unit is an innovative V2 product guaranteeing safety and reliability for sliding gate automation.

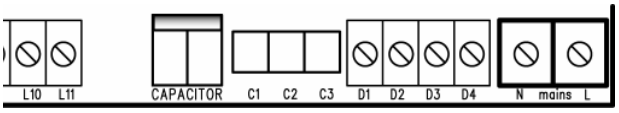
- 230V - 50Hz or 120V - 60Hz power supplies, depending on the model, for 1 x 700 W max. single phase motor.
- Input for keyswitch or push-button.
- Input for safety photocell.
- Input for safety edge, capable of handling standard edges with switch normally closed and conductive rubber edges with nominal resistance of 8.2 kOhms.
- Inputs for open and close limit switches.
- Pre-opening safety device testing.
- Dip-switch programmable operational logic.
- Adjustment of motor power and operation time by means of a trimmer.
- Quick plug-in connector for inserting a **Mr1** series receiver.
- LED monitoring of inputs.
- Courtesy light output.

INSTALLATION

Installation of the control unit, the safety devices and accessories must be performed with the power supply disconnected.

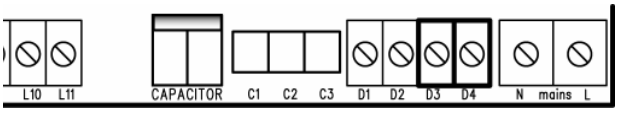
POWER SUPPLY

The control unit must be powered by means of a 230 V - 50 Hz or 120 V - 60 Hz power line, depending on the model, protected by a differential magnetothermal switch in compliance with legal regulations.
Connect the power cables to the control unit **L** and **N** terminals.



BLINKER

The control unit provides for the use of a 230 V - 40 W or 120 V - 40 W blinker with built-in intermittence.
Connect the cables to terminals **D3** and **D4**.

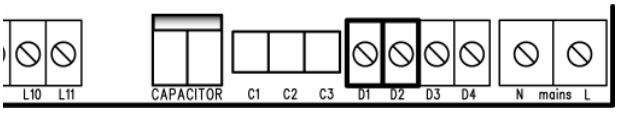


COURTESY LIGHT

This output has a normally-open clean contact relay which closes for approx. 1 second at the start of an opening phase. This switch may be used to activate a courtesy light timer (max. load: 230V - 4A).

PLEASE NOTE: If there is no timer, the courtesy light can be controlled using channel 4 of receiver MR1: bistable or timer programmable channel (read the instructions for the receiver MR1 thoroughly).

The switch is on terminals **D1** and **D2**.



PHOTOCELLS

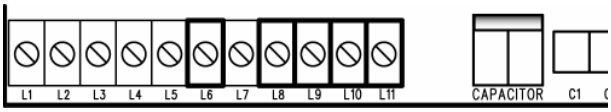
The control unit has a 24VAC power supply for photocells with switch normally closed, and can perform an operational test before starting the gate opening procedure.

The photocell can be used with two settings:

1. **Photocell always active:**
   Intervention of the photocell during opening or closing causes the gate to stop.
   When the photocell restores, the gate re-opens completely.
2. **Photocell NOT active during opening:**
   Intervention of the photocell during opening is ignored.
   Intervention of the photocell during closing causes the gate to re-open completely.

Independently of the setting selected, when the gate is paused while opening, the time count for any automatic re-closure will only start after the photocell restores.

- Connect the photocell transmitter power cables between terminals **L10** (GND) and **L11** (+) on the control unit.
- Connect the photocell receiver power cables between terminals **L10** (GND) and **L9** (+) on the control unit.
- Connect the photocell receiver output between terminals **L6** and **L8** on the control unit.



SAFETY EDGES

The control unit has an input for controlling safety edges; this input is capable of controlling standard edges with switch normally closed, optical edges and conductive rubber edges with nominal resistance of 8.2 kOhms.

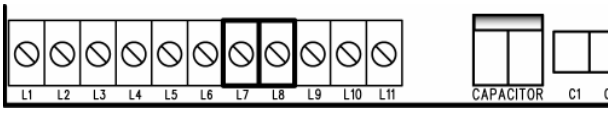
Edges can be used with two settings:

1. **Edge always active:**
   Intervention of the edge during opening or closing causes inversion of the direction of movement in order to free the body that caused the edge to intervene.
   The gate stops after approx. 3 seconds.
2. **Edge NOT active during opening:**
   Intervention of the edge during opening is ignored.
   Intervention of the edge during closing causes the gate re-open completely.

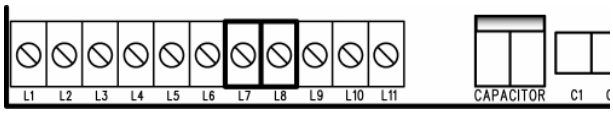
Independently of the settings selected, any subsequent automatic re-closure will be cancelled.

Standard edge with switch normally closed: connect the edge cables between terminals **L7** and **L8** on the control unit.

In order to satisfy the requirements of standard EN12978, it is necessary to install safety edges with a control unit which constantly monitors correct operation. If control units are used with the option of running tests by means of interrupting the power supply, connect the control unit power supply cables between terminals **L10** (GND) and **L11** (+).



Conductive rubber edge: connect the edge cables between terminals **L7** and **L8** on the control unit.



⚠ **PLEASE NOTE:** operational testing on edges is reserved for optical edges and standard edges (only if equipped with suitable control units).
DO NOT enable testing if conductive rubber edges are used or standard edges used without a suitable control unit for controlling function.

⚠ **NOTE:** use the special interface (code 35A024) for connection of the optical bars, de-activating the operational test on the bars.

START INPUT

The START input is preset for connecting devices with the switch normally open. Function depends on the mode of operation set by means of dip-switch 4.

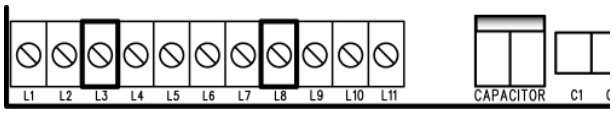
Step mode
Subsequent start commands cause, in order:

→ opening → stop → closure → stop →

"Inversion" mode
Start during opening causes closure.
Start during closure causes opening.
Start with the gate open always results in closure;
The only case where this does not occur immediately is when automatic closure is enabled and start while opening is not accepted: in this specific case, start makes the pause time count start from zero, after which the gate will be re-closed.

In both modes it is possible to disable the Start command during gate opening by means of dip-switch 3.

Connect the start input control device cables between terminals **L3** and **L8** on the control unit.

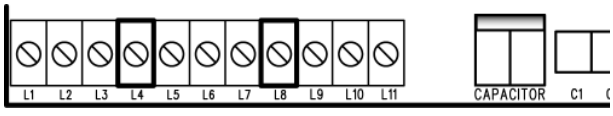


PEDESTRIAN START

With the gate closed, the pedestrian start causes partial opening (approx. half way) of the gate. Subsequent pedestrian start commands will function according to step logic.

During a pedestrian cycle, the start command causes the complete opening of the gate.

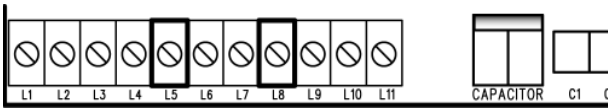
Connect the start input control device cables between terminals **L4** and **L8** on the control unit.



STOP

The STOP input is intended for devices with the switch normally closed.
The STOP command causes the immediate stop of the gate.
A subsequent START command activates the gate in the opposite direction of movement.
If the STOP command is given during opening or pause, then there will be no subsequent automatic re-closure.

Connect the stop input control device cables between terminals **L5** and **L8** on the control unit.



PLUG-IN RECEIVER

The control unit is suitable for plugging-in an MR1 series receiver with high sensitivity super-heterodyne architecture.

⚠ **PLEASE NOTE:** Disconnect the power to the control unit before performing the following operations. Pay the utmost attention to the direction of insertion of plug-in modules.

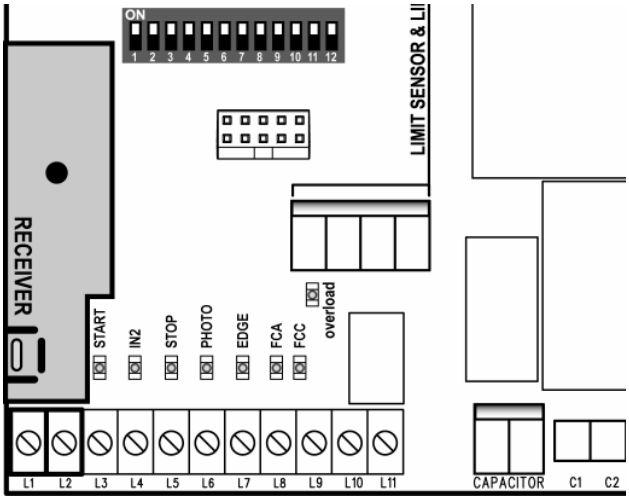
The MR1 receiver module has 4 channels, each with an associated command on the **PRGS2** control unit:

- CHANNEL 1 → START
- CHANNEL 2 → PEDESTRIAN START
- CHANNEL 3 → STOP
- CHANNEL 4 → COURTESY LIGHTS

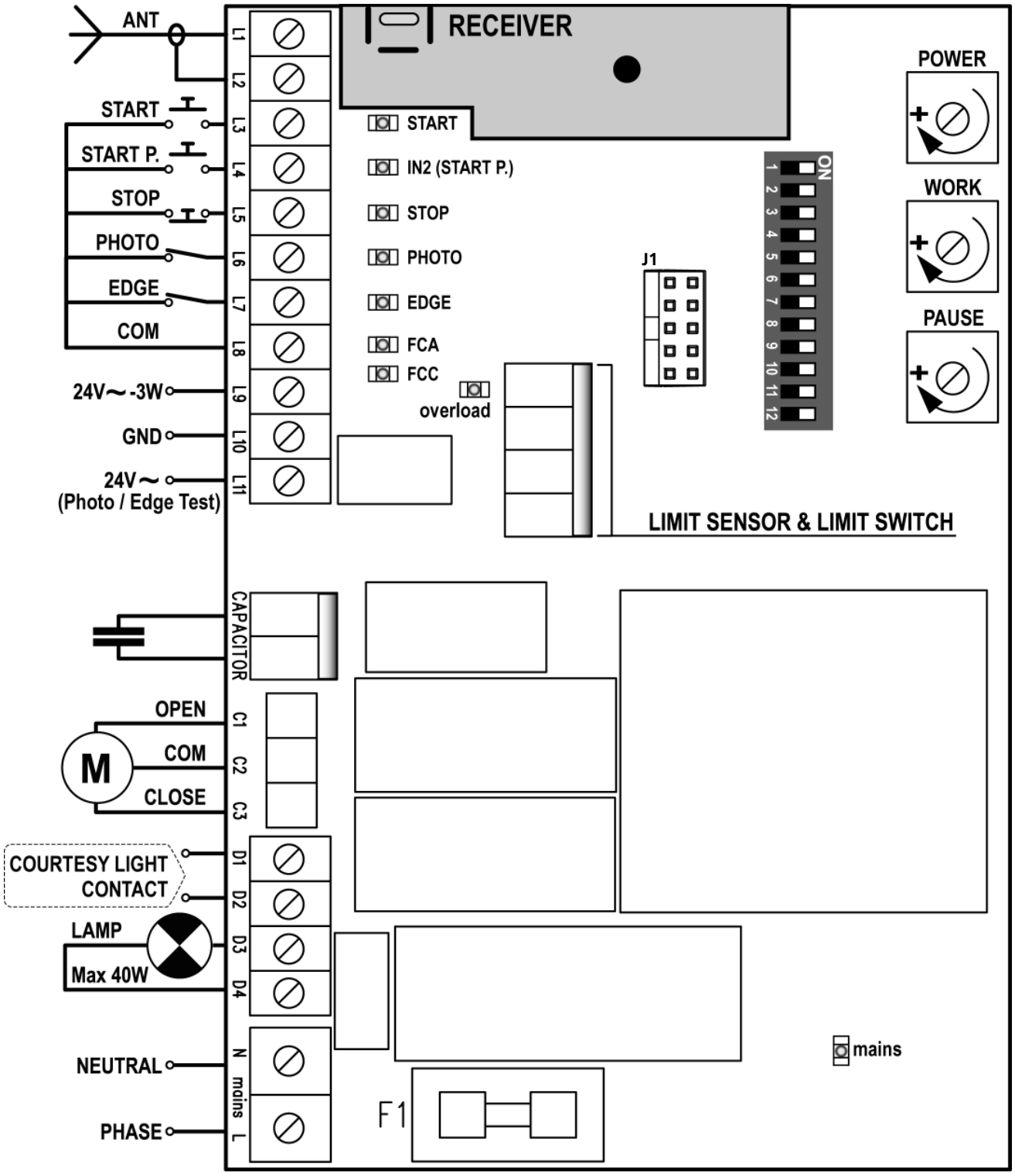
⚠ **PLEASE NOTE:**
Read the instructions supplied with the MR1 receiver thoroughly for details on programming the 4 channels and the operational logic.

EXTERNAL ANTENNA

It is recommended the external antenna be used in order to guarantee maximum radio capacity.
Connect the antenna hot pole to terminal **L1** of the control unit and the braiding to terminal **L2**.



ELECTRICAL CONNECTION TABLE



⚠ CAUTION:

If not used, the normally closed inputs (STOP, PHOTO, EDGE) must be jumpered with the commands common line COM (-)

⚠ CAUTION:

The connection between the control unit and the motor must be made according to the motor position in respect to the gate. The control unit associates an opening to the first START command; therefore, the connector must be positioned in a way (even rotating it by 180° if needed) that the first START command will cause the opening of the gate.

L1	Antenna
L2	Antenna shield
L3	Opening command for a standard connection device with switch normally open.
L4	Pedestrian opening command for a standard connection device with switch normally open.
L5	STOP command. N.C. switch
L6	Photocell. N.C. switch
L7	Edge. Switch N.C. or resistive rubber edge
L8	Commands common (-) line
L9 - L10	24 VAC power output for photocells and other accessories
L10 - L11	Power supply for functional test TX photocell
C1	Motor open
C2	Motor common
C3	Motor close
D1 - D2	Courtesy light timer activation switch
D3 - D4	230V - 40W / 120V - 40W blinker
N	230V / 120V power supply - neutral
L	230V / 120V power supply - phase
J1	NOT USED

ADJUSTMENT OF THE POWER AND OPERATIONAL TIMES

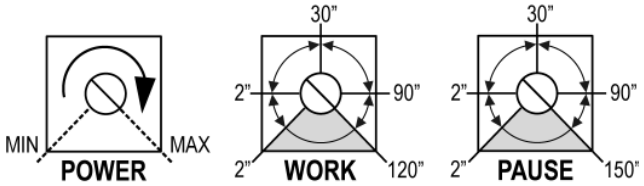
The power and operating times may be adjusted by means of 3 trimmers located on the control unit:

POWER: motor power.
WORK: motor operating time (2 - 120 seconds).

⚠ **PLEASE NOTE:** it is recommended that operating times be set with the slow down function disabled (DIP 5 OFF).

⚠ **WARNING: the adjustment of times has to be made when the gate is still**

PAUSE: pause time before automatic re-closure (2 - 150 seconds).



CONTROL UNIT INDICATORS (LEDS)

The highlighted boxes indicate the state of the LEDs when the gate is resting.

LED	ON	OFF
START	START input closed	START input open
IN2	START P. input closed	START P. input open
STOP	STOP input closed	STOP input open
PHOTO	PHOTO input closed	PHOTO input open
EDGE	Standard or optical edge	
	EDGE input closed (edge not pressed)	EDGE input open (edge pressed)
	Resistive rubber edge	
	EDGE input closed (edge pressed)	EDGE input open (fault)
	Edge NO pressed: 8K2 between EDGE input and common (-)	
FCA	Opening limit switch closed	Opening limit switch open
FCC	Closing limit switch closed	Closing limit switch open
mains	Control unit powered-up	Control unit NOT powered-up
overload	Accessory power supply overload	Accessory power supply within normal operational limits

PROGRAMMING THE OPERATIONAL LOGIC

It is possible for the control unit to use several different operational logic states, by simply moving the dip-switches located on the card. The functions associated with each individual dip-switch are listed below.

DIP	FUNCTION	SETTING		DESCRIPTION
1	Pre-flashing	ON	Disabled	The blinker is switched on when the motor is started
		OFF	Enabled	The blinker is switched on 2 seconds before the motor is started
2	Automatic closure	ON	Enabled	The gate is closed automatically after the period of time set by the PAUSE trimmer
		OFF	Disabled	On completion of the opening step, the gate remains open. It is necessary to instruct closure with another START command
3	Start opening	ON	Not accepted	Any START command issued during opening is not heard
		OFF	Accepted	Any START command issued during opening is accepted
4	Operational logic	ON	Inversion	Start during opening causes closure. Start during closure causes opening.
		OFF	Step	Commands subsequent to starting cause, in order: open → stop → close → stop...
5	Slow down	ON	Enabled	At the end of each opening and closing step, the motor slows down in order to avoid noisy closure and bouncing. **WARNING: With gates that are particularly heavy, or with high friction, breaking is not recommended, as it may lead to undesired stopping**
		OFF	Disabled	
6	Start off	ON	Disabled	At the start of each opening and closing step, the motor is started at maximum power
		OFF	Enabled	
7	Anti-slip	ON	Disabled	The time used for opening or closure will always be the value set by the WORK trimmer, even if the previous operation has been interrupted before the expiry of such time.
		OFF	Enabled	When an opening (or closing) operation is interrupted before expiry of the set time (for example due to the intervention of one of the safety devices or due to a start command), the duration of the subsequent closing (or opening) operation will not be that set by the WORK trimmer, but will be equal to the time effectively elapsed, plus a short supplemental time in order to compensate for the inertia of the gate.
8	Photocell	ON	Always active	Intervention of the photocell during opening or closing causes the gate to stop. When the photocell restores, the gate re-opens completely.
		OFF	NOT active during opening:	Intervention of the photocell during opening is ignored. Intervention of the photocell during closing causes the gate to be re-opened completely.
9	Photocell test	ON	Enabled	The control unit performs a photocell operational test before starting each opening or closing operation. If the photocells are not operating correctly, the gate does not begin to move and the light flashes for approx. 8 seconds. **PLEASE NOTE: connect the photocell TX correctly**
		OFF	Disabled	
10	Safety edge type	ON	Conductive rubber edge	Select this option if using conductive rubber edges with nominal resistance of 8K2.
		OFF	Standard or optical edge	Select this option if using standard edges with switch normally closed or optical edges.
11	Safety edge	ON	Always active	Intervention of the edge during opening or closing causes inversion of the direction of movement in order to free the body that caused the edge to intervene. The gate will be stopped after approx. 3 seconds.
		OFF	NOT active during opening:	Intervention of the edge during opening is ignored. Intervention of the edge during closing causes the gate to re-open completely.
12	Safety edge test	ON	Enabled	The control unit performs an operational test on the edges before starting each opening or closing operation. If the edges are not operating correctly, the gate does not begin to move and the light flashes for approx. 8 seconds. **DO NOT enable testing if conductive rubber edges are used or standard edges are used without a suitable control unit for controlling function.**
		OFF	Disabled	