IMPORTANT REMARKS

For any installation problem please contact our Customer Service at the number +39-0172.812411 operating Monday to Friday from 8:30 to 12:30 and from 14:00 to 18:00.

V2 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).

• After making connections on the terminal board, use one hose clamp to fix dangerous voltage wires near the terminal board and another hose clamp to fix safety low voltage wires used for accessories connection; this way, in case of accidental detachment of a conducting wire, dangerous voltage parts will not come into contact with safety low voltage ones.

• 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 (EEC Machine Directive 2006/42/CEE, Annex IIA).

• The automated vehicular gates shall comply with the following rules: EN 13241-1, EN 12453, EN 12445 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.

• Connect the earthing lead of the motors to the electricity grid earth system.

• Observe all necessary precautions (e.g. anti-static bracelet) for handling parts sensitive to electrostatic discharges.

DECLARATION OF CONFORMITY

V2 S.p.A. hereby declare that FLEXY2 products conform to the essential requirements established in the following directives:

• 2014/30/EU (EMC Directive)

• 2014/35/EU (Low Voltage Directive)

• 99/05/CEE (Radio Directive)

• Directive ROHS2 2011/65/CEE

Racconigi, 12/01/2015
V2 S.p.A. legal representative.egale della V2 S.p.A.
Antonio Livio Costamagna

TECHNICAL SPECIFICATIONS

Power supply	230V / 50Hz	120V / 60Hz
Max motors load	700W	700W
Max accessories load 24V	3W	3W
Working temperature	-20 ÷ +60 °C	-20 ÷ +60 °C
Protection fuse	F1 = 5A delayed	F1 = 8A delayed
Dimensions	170 x 185 x 70 mm	
Weight	800 g	
Protection	IP55	

DESCRIPTION OF THE CONTROL UNIT

The FLEXY2 control unit is an innovative V2 product guaranteeing safety and reliability for swing gate automation.

The FLEXY2 design has been aimed at creating a product which adapts to suit all needs, thus obtaining an extremely versatile control unit satisfying all the necessary requirements for a functional and efficient installation.

- 230V - 50Hz or 120V - 60Hz power supplies, depending on the model, for 2 single phase motors (700W global).

- 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.

- Fitted 433.92 MHz radio receiver

- Possibility of saving 240 Personal Pass transmitters (433.92 MHz)

- LED monitoring of inputs.

- Courtesy light output.

- RJ45 connector to connect the control unit to the programmer PROG2 via standard network cable (UTP)

- IP55 casing.

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.

MOTORS

The control unit can control one or two asynchronous AC motors. If the control unit is used to control only one motor, then this must be connected to the terminals relating to motor 1 (the DELAY trimmer must be set to zero).

Connect the cables for motor 1 as follows:
- Opening cable to terminal **K3**
- Closing cable to terminal **K5**
- Common return cable to terminal **K4**
- Start-up capacitor between terminals **K3** and **K5**

Connect the cables for motor 2 (if present) as follows:
- Opening cable to terminal **K6**
- Closing cable to terminal **K8**
- Common return cable to terminal **K7**
- Start-up capacitor between terminals **K6** and **K8**

PHOTOCELLS

The control unit has a 24VAC power supply for photocells with switch normally closed, and can perform an operational test before to 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 **L4** 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 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 to 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 **L5** 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 **L5** and **L8** on the control unit.

⚠ **PLEASE NOTE: operational testing on edges is reserved for 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.

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 - 4 A).

The switch is on terminals **K1** and **K2**.

BLINKER

The control unit provides for the use of a 230V - 40W or 120V - 40W blinker with built-in intermittence.

Connect the cables to terminals **K9** and **K10**.

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 command 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 **L1** and **L8** on the control unit.

PEDESTRIAN START

With the gate closed, the pedestrian start command causes partial opening (approx. half way) of the gate leaf connected to motor 1.
Subsequent pedestrian start commands will function according to step logic.

During a pedestrian cycle, the start command results in the complete opening of both gate leaves.

Connect the pedestrian start input control device cables between terminals **L2** 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 **L3** and **L8** on the control unit.

LIMIT SWITCH INPUTS

The control unit is configured for connecting a switch with switch normally closed, which is opened when the gate reaches the desired position.

Connect the limit switch cables as follows:
• Closing limit switch between terminals **L6** and **L8**
• Opening limit switch between terminals **L7** and **L8**
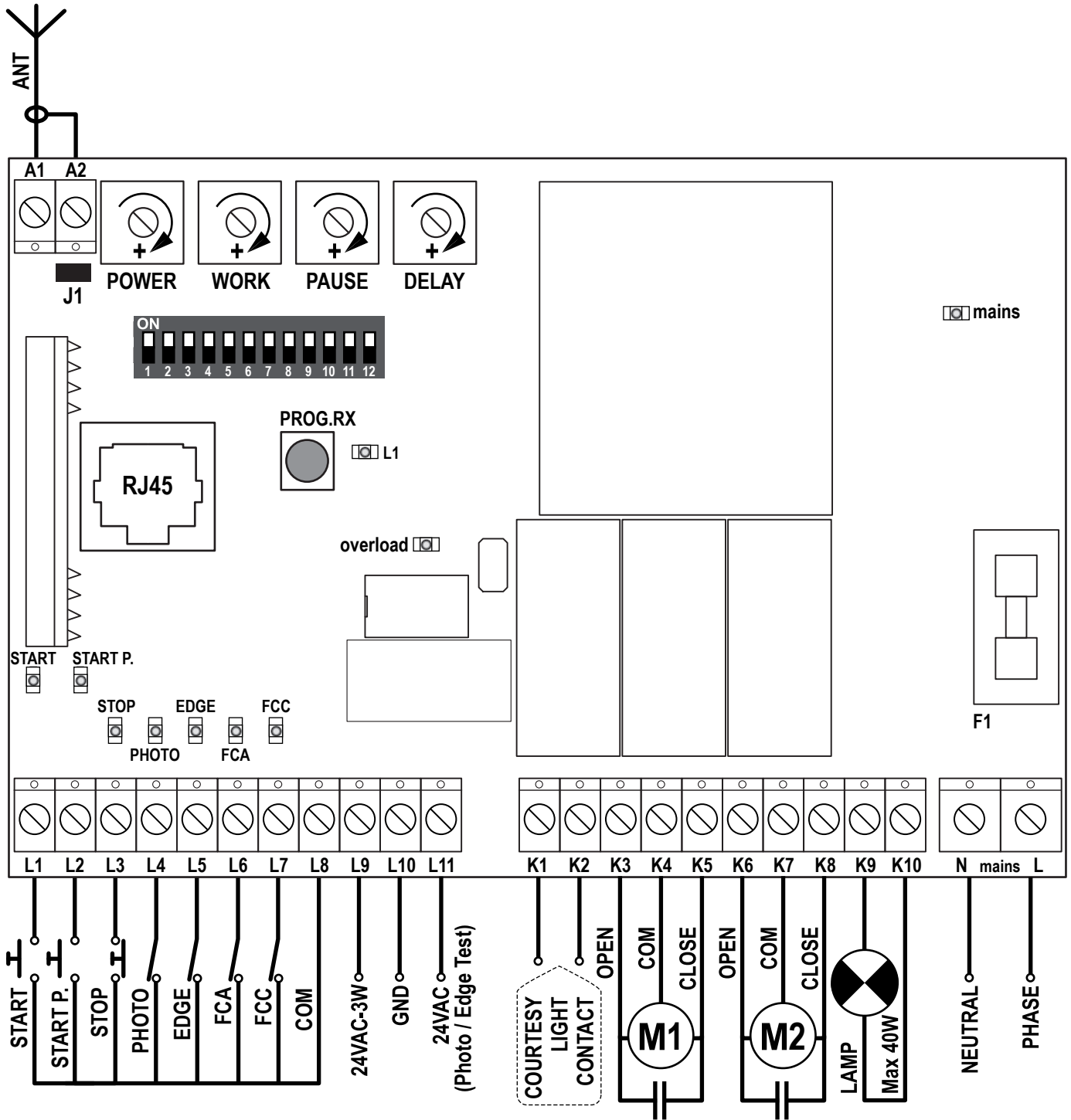
EXTERNAL ANTENNA

It is recommended the external antenna be used in order to guarantee maximum radio capacity.

Connect the antenna hot pole to terminal **A1** of the control unit and the braiding to terminal **A2**

ELECTRICAL CONNECTION

ANT

A1 A2

J1

POWER   WORK   PAUSE   DELAY

mains

ON
1 2 3 4 5 6 7 8 9 10 11 12

RJ45

PROG.RX

L1

overload

START   START P.

STOP   EDGE   FCC

PHOTO   FCA

F1

| L1 | L2 | L3 | L4 | L5 | L6 | L7 | L8 | L9 | L10 | L11 | | K1 | K2 | K3 | K4 | K5 | K6 | K7 | K8 | K9 | K10 | | N | mains | L |

START

START P.

STOP

PHOTO

EDGE

FCA

FCC

COM

24VAC-3W

GND

24VAC
(Photo / Edge Test)

COURTESY
LIGHT
CONTACT

OPEN

COM   M1   CLOSE

OPEN

COM   M2   CLOSE

LAMP
Max 40W

NEUTRAL

PHASE

⚠ **PLEASE NOTE: If not used, the normally closed inputs (STOP, PHOTO, EDGE, FCA, FCC) must be jumpered with the commands common line COM (-)**

- 12 -

A1	Antenna
A2	Antenna shield
L1	Opening command for a standard connection device with switch normally open.
L2	Pedestrian opening command for a standard connection device with switch normally open.
L3	STOP command. N.C. switch
L4	Photocell. N.C. switch
L5	Edge. Switch N.C. or resistive rubber edge
L6	Limit switch open. N.C. switch
L7	Limit switch closed. N.C. switch
L8	Commands common (-) line
L9 - L10	24 VAC power output for photocells and other accessories
L10 - L11	Power supply for functional test TX photocell

| K1 - K2	Courtesy light timer activation switch
K3	Motor 1 open
K4	Motor 1 common
K5	Motor 1 close
K6	Motor 2 open
K7	Motor 2 common
K8	Motor 2 closed
K9 - K10	230V - 40W / 120V - 40W blinker
N	230V / 120V power supply - neutral
L	230V / 120V power supply - phase

CABLE GLAND ASSEMBLY

The casing can accept 4 cable glands in the special easy-break housings.
The type of cable gland is indicated in the figure.

⚠️ PLEASE NOTE:

- Remove the electronic circuit board before drill the casing.

- Drill the container using a suitably sized cutter, according to the dimensions of the cable gland.

- Fix the cable glands using the special nuts.

PG9 - PG11

PG9 - PG11 - PG16
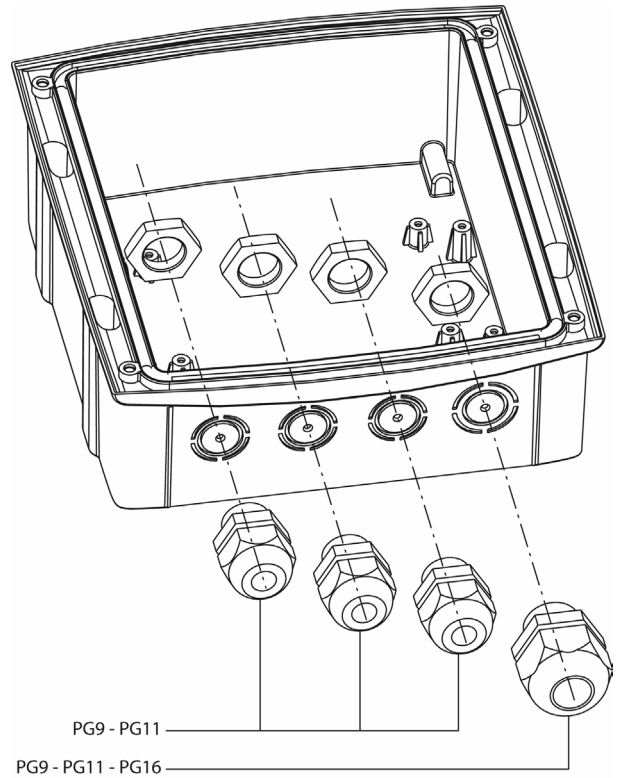
PROGRAMMING THE OPERATIONAL LOGIC

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 motors are started
		OFF	Enabled	The blinker is switched on for 2 seconds before the motors are 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 during opening	**ON**	Not accepted	Any START command issued during opening is ignored
		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 motors slow down in order to avoid noisy closure and bouncing.
		OFF	Disabled	
6	Start off	**ON**	Disabled	At the start of each opening and closing step, the motors are 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 re-open 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 be re-opened 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	

ADJUSTMENT OF THE POWER AND OPERATIONAL TIMES

The power and operating times may be adjusted by means of 4 trimmers located on the control unit:

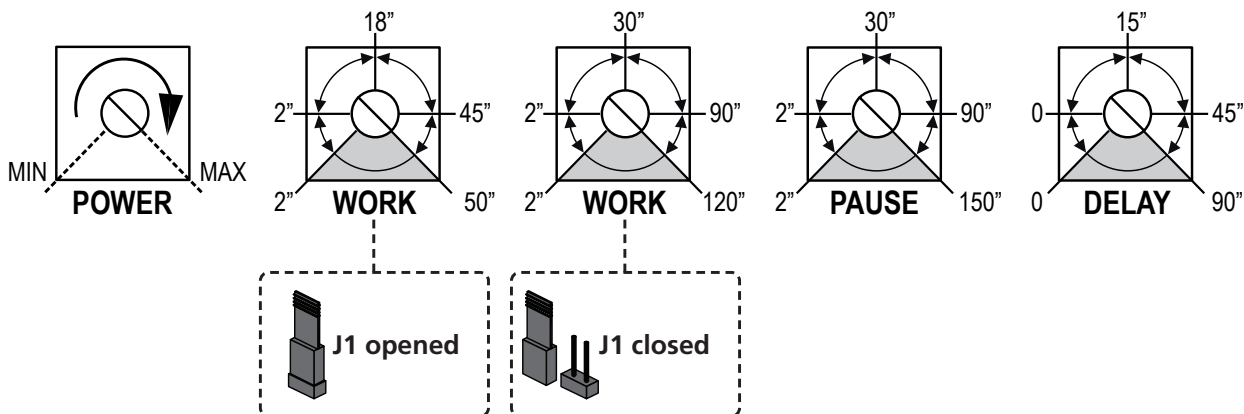⚠ **PLEASE NOTE: it is recommended that operating times be set with the slow down function disabled (DIP 5 OFF).**

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

POWER: motor power.

WORK: motor operating time
J1 closed = 2 - 50 seconds
J1 opened = 2 - 120 seconds

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

DELAY: time delay between the two gate leaves (0 - 90 seconds).

MIN — MAX **POWER**	18" / 2" — 45" / 2" — 50" **WORK**	30" / 2" — 90" / 2" — 120" **WORK**	30" / 2" — 90" / 2" — 150" **PAUSE**	15" / 0 — 45" / 0 — 90" **DELAY**

J1 opened   **J1 closed**

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
START P.	START P. input closed	START P. input open
STOP	STOP input closed	STOP input open
PHOTO	PHOTO input closed	PHOTO input open
EDGE	**Standard 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

STORING OF THE TRANSMITTERS

- Keep PROG.RX pressed until the led L1 lightens

- Release the push-button, the led switches off and it sends out a sequence of single flashings for 5 seconds: the number of short flashings shows the selected channel

- To select the further channels press and release the PROG.RX push-button within 5 seconds, the led changes type of flashing according to the following table:

- Choose the channel you want to memorize and within 5 seconds press and hold the push-button of the transmitter.

- The led L1 switches off and it switches on again: this means that the code has been memorized.

- The device will wait for a further code to memorize for a maximum time of 5 seconds.

SELECTED CHANNEL	FUNCTION	N° Impulses PROG.RX	Flashing			
			single	double	triple	quadruple
CHANNEL 1	START	1	●			
CHANNEL 2	PEDESTRIAN START	2		● ●		
CHANNEL 3	STOP	3			● ● ●	
CHANNEL 4	COURTESY LIGHT	4				● ● ● ●

FULL ERASING of the TRANSMITTERS

To perform a full erasing of the transmitters stored in memory do the following:

- Switch off the power supply of the control unit,

- Press and hold pressed the PROG.RX key of the receiver

- At the same time turn on the power supply again. The L1 led goes on

- Release the PROG.RX key: the led L1 remains on for the duration of the erasing phase (about 5 seconds)

- When the led L1 turns off the erasing procedure is complete and the control unit is ready for a new programming

To perform a partial code erasing the PROG2 portable programmer is required

ROLLING CODE FUNCTION

It is possible to enable and to disable the ROLLING CODE function (normally disabled)

- Press PROG.RX push-button, holding it for 8 seconds.

- L1 led will switch off after 8 seconds. Release the push-button.

- L1 led starts a sequence of flashing for 5 seconds:

  Single flashings → ROLLING CODE is disabled
  Double flashings → ROLLING CODE is enabled

- To modify the parameters press the PROG.RX push-button within 5 seconds after the first flashing of the sequence; L1 led will flash according to the new parameters.

SUBSITUTIVE TRANSMITTER

The substitutive transmitter, generated only by means of WINPPCL, allows to replace by radio a transmitter stored in the receiver.
A single transmission with the specially programmed SUBSTITUTIVE TX, nearby the receiver, replaces the transmitter code with the new one.

Repeat the process with all keys of the SUBSTITUTIVE TX.

Example: Memorized TX A transmitter

It is possible to make three replacements maximum per code, so for TX A you can find:
TX B replaces TX A (TX A is no longer operative)
TX C replaces TX B (TX B is no longer operative)
TX D replaces TX C (TX C is no longer operative)