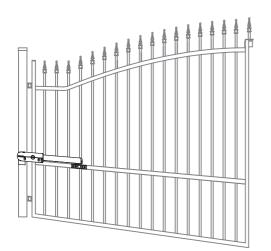
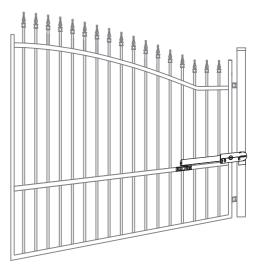
# **EASY WAY 201**

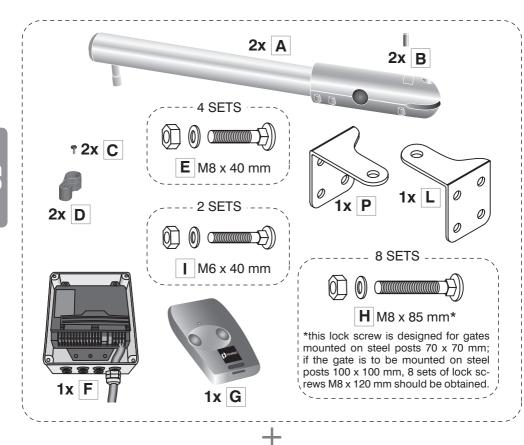
## **DRIVE UNIT FOR SWING GATES**



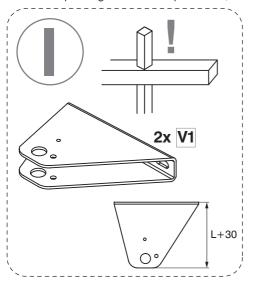


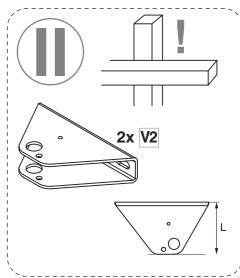






Depending on the model purchased, a suitable connector should be added to the set.





## **TABLE OF CONTENTS**

| Introduction                         | 4   |
|--------------------------------------|-----|
| Safety principles                    | 5   |
| Product description                  | 6   |
| Preparation for assembly             | 8   |
| Installation:                        |     |
| 1. Automatic system installation     | .12 |
| 2. Electrical connections            | .17 |
| 3. Parameter setting                 | .20 |
| Operational use                      | .26 |
| Troubleshooting                      | .28 |
| Accessories                          | .29 |
| In the case of a solar energy supply | 35  |

### Introduction

POLARGOS is a Polish manufacturer of residential and industrial fence systems as well as other steel products that has been operating on the market since 1994.

Due to their many years' experience, as well as their production and marketing facilities, POLARGOS manufactures products for a large number of domestic and foreign customers.

Our aim is to supply products that meet the highest standards of workmanship and fulfill customers' expectations as regards aesthetics and the dominant trends in the fence market.

Thank you for placing your confidence by choosing EASY WAY 201.

Please read this instruction book thoroughly before installation.

## Safety principles

Please read all the instructions in this service manual thoroughly before installation of the product. It is necessary to follow the instructions precisely and retain this document for the whole useful life of the product.

Failure to comply with all of the recommendations concerning installation can lead to severe injury or material damage. POLARGOS shall not bear responsibility in such cases.

This device is not designed to be used by people (including children) with limited physical, sensory or mental abilities, or by people without any experience or knowledge unless under the supervision of the person responsible for their safety or using the instructions provided as regards operation of the device. Children are not allowed to play with fixed control devices. Remote control transmitters must be kept out of the reach of children.

When using a switch without interlock\*\*\*, check to make sure that any other people are at an appropriate distance from the gate.

Check the installation frequently to detect any abnormalities connected with the gate balance or specific signs of wear. Do not use the drive unit if it needs to be repaired or adjusted.

Disconnect the power supply from the device before cleaning or any other maintenance work if it is controlled automatically.

Before installation of the drive unit, check if the driven part is in good technical condition, properly balanced and if it opens and closes well.

Do not pass between the moving part and close fixed elements in view of the danger connected with the movement of the driven parts during opening (crushing, cropping, jamming).

Observe the gate during its movement.

All switches without interlock\*\*\* must be in a position from where the driven part is directly visible but also at a suitable distance from moving elements. The switches must be installed at a height of at least 1.5 m; they cannot be generally accessible with the exception of switches requiring the use of a key.

When the gate is open completely, keep a distance of 500 mm clear behind each leaf.

After installation is completed, check the proper adjustment of the mechanism and proper operation of the protection system and any devices used to switch off the system manually.

Do not throw away unwanted devices or expired batteries together with normal household waste. Householders are obliged to transport all unwanted electronic and electrical equipment to a special waste collection area for their disposal and recycling.



POLARGOS hereby declares that this product conforms to the basic requirements and other relevant regulations of the Directive 1999/5/CE. The Declaration of Conformity is available at www.polargos.eu. This product is authorised for use in the European Union and Switzerland.



<sup>\*\*\*</sup> example: intercom, key switch, code panel, etc.

# **Product description**

This product is designed for gates used at residential properties (description below).

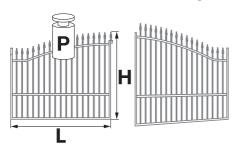
#### Technical data

| Туре  | EASY WAY 201  |
|---|---|
| Supply voltage  | 230 V AC / Solar system   |
| Drive type  | 24 V DC   |
| Driving power   | 40 W  |
| Maximum energy consumption (including gate zone lighting) | 600 W   |
| Energy consumption in stand by mode                       | 4,5 W   |
| Average number of working cycles daily                    | 20 cycles daily   |
| Opening time*   | 16 s up to 90°  |
| Automatic obstacle detection                              | According to EN 12 453 (Attachment A)                               |
| Working temperature                                       | Between -20°C and +60°C   |
| Thermal shield  | Yes   |
| Protection level  | IP 55 for electronic components<br>IP 44 for drives                 |
| Built-in radio wave receiver                              | Yes   |
| Remote controls:  |   |
| Radio frequency   | 433,42 MHz  |
| Range of operational use                                  | 30 m  |
| Number of memory settings                                 | 16  |
| Possible connections:                                     |   |
| Orange light output                                       | Flashing, 24 V, 10 W  |
| Zone lighting output, supplied terminals                  | Max 500 W (at 230 V AC)<br>Max 24 V – 25 W (for solar power system) |
| Accessory supply output                                   | 24 V DC / 200 mA  |
| Emergency battery input                                   | Yes (only for 230 V)  |
| Photocell input   | Yes   |
| Control input of dry contact type                         | Yes   |
| Built in antenna  | Yes   |

<sup>\*</sup> Opening time may vary depending on gate parameters.

## **Product description**

Leaf dimensions and maximum weight

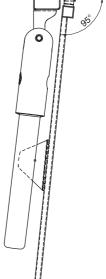


|   | EASY WAY 201 |
|---|--------------|
| Р | 200 kg       |
| Н | 2,00 m       |
| L | 2,00 m       |



Width of each leaf should be between 1 m and 'L'.

 Maximum opening angle (for standard hinges)

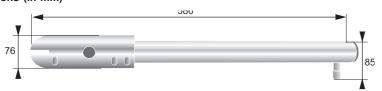


#### Maximum opening angle

(for hinges fastened to the post side)



Dimensions (in mm)



Opening limiter



The motor stops automatically using its internal limiter.

To stop the gate earlier, fix a limiter (not included in the delivery) on the ground to stop the leaves.

#### ■ Checkpoints before installation

#### Gate inspection

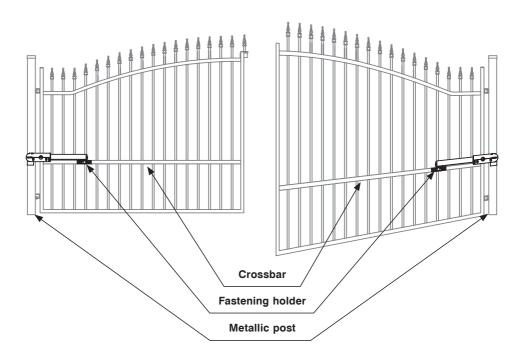
The gate is in good technical condition: it opens and closes without use of force.

The gate remains in a level position during the whole movement cycle.

It opens inwards to the garden.

#### Gate types – only with frames made of metal

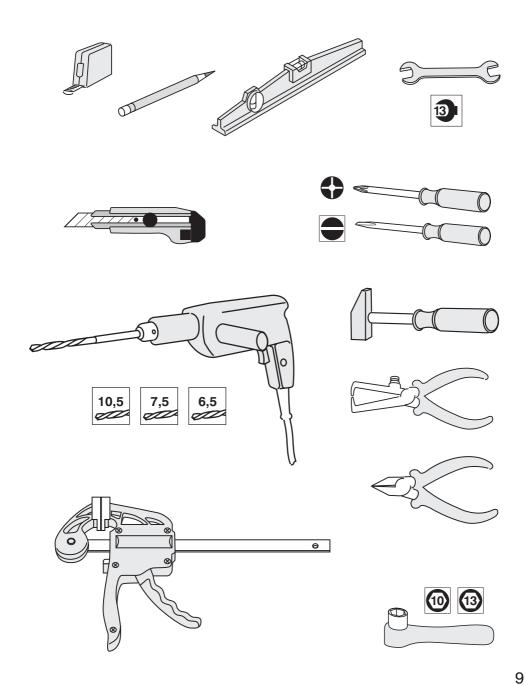
(Subject to observance of the dimensions specified on page 7).



### Inspection of posts

The posts must be at least 70 mm wide. Otherwise, reconstruction may appear necessary to ensure proper corner embedment and fastening.

### Necessary tools



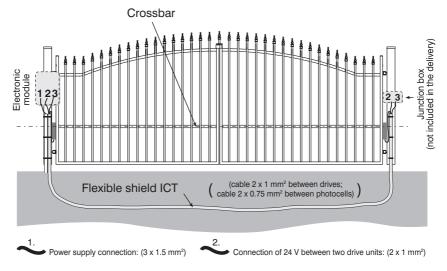
#### Preliminary wiring system

To install the gate drive, proceed as follows:

- Lay down a power supply of 230 V to one of the posts and as close to the drive unit as possible.
- Connect the post together using a cable 2 x 1 mm2 (not included in the delivery).

Provide a shield Orange ICT Ø 25 mm for cables located underground.

If cables cannot be led underground between the posts, use a cable bush that can withstand the weight of vehicles.



#### Mains supply

To ensure operation of the gate opening mechanism, connect a power supply of 230 V – 50 Hz to it.

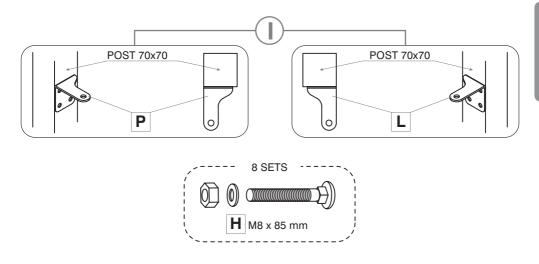
The electrical supply cable must be:

- Designated for the gate opening mechanism only.
  - Protected: by means of a fuse or a circuit breaker 10 A,
    - by means of a differential-current switch (30 mA).
- Installed in accordance with the safety standards concerning wiring systems and effective in the country of use.
  - Multipole disconnection of the power supply is to be provided:
- using a supply cable with a plug
- or by means of a switch where a distance between contacts is at least 3 mm for each pole (according to EN 60335-1).

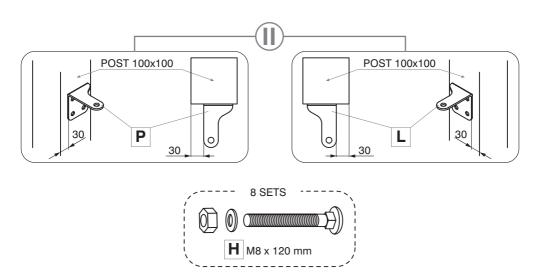
It is recommended to install a lightning arrester (maximum residual voltage 2 kV).

### ■ Preparation of connectors

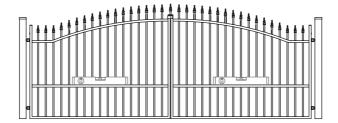
In case ( $\|$ ) use the lock screws M8 x 85 mm included in the delivery.



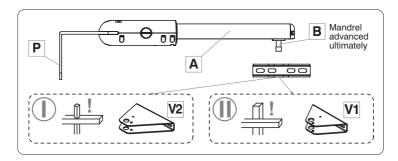
In case where the metallic posts have dimensions 100 x 100 mm, provide 8 sets of lock screws M8 x 120 mm.



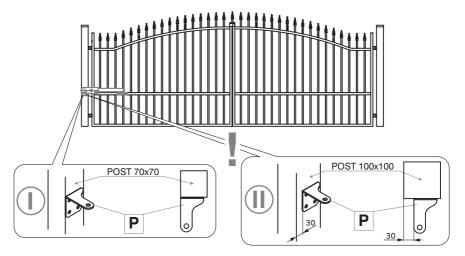
- Preparation of the gate
  - 1 Level the gate leaves.



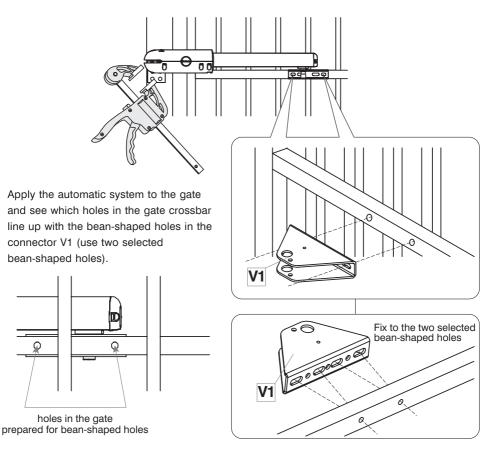
2 Set position of the automatic system.



3 Apply the prepared set to the previously leveled and closed gate. The automatic system cannot rub against the gate fittings.

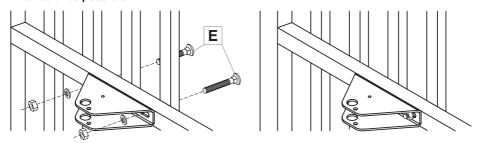


4 Hold the connectors P and L using a clamp.

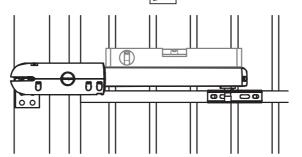


5 Attach the connector to the gate with screws.

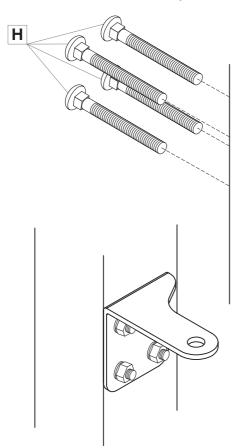
Do not tighten all the way. Some adjustment of the connector by gentle movement should be possible.

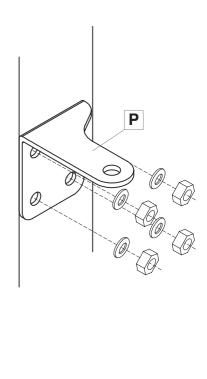


Next, attach the connector to the post (with the gate closed). The post must be drilled with a drill bit 10,5.

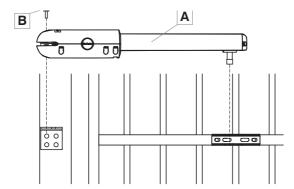


Screw the connector to the post.

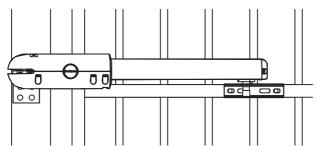




8 Put the automatic system onto the suitably attached connectors.



9 Check the position of the connector on the gate once again and adjust it if necessary.

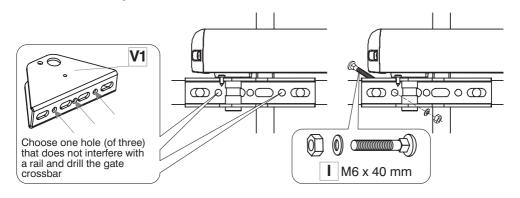


10 Remove the automatic system.

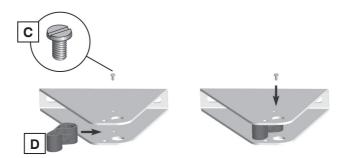
Choose one hole in the connector that does not interfere with a rail.

In its position, drill the gate crossbar with a drill 6,5. Then ream the hole with a drill 7,5 from the street side.

Fit the locking screw M6 x 40 mm.



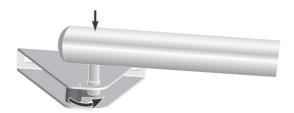
- Assembly of the yoke fastening the leaf V1 or V2
  - Fasten the unlocking element D on the yoke fastening the leaf V1 or V2 using the screw C.





To use the unlocking element properly, follow the assembly direction as shown in the diagram. Do not mount the screw from below.

Fix the yoke fastening the leaf V1 or V2 on the driving mandrel. Attach the unlocking element D to the drive spindle to lock the mandrel.



Repeat step 1 - 12 for the second gate leaf.

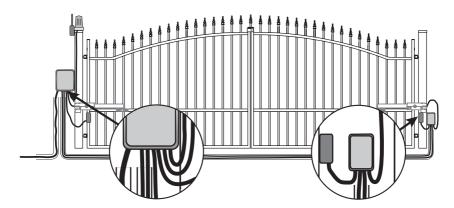
### 2 Electrical connections

#### ■ Stages:

- Location of the electrical box on the post.
- Fastening of the electrical box on the post.
- Connection of the two servomotors.
- Connection of the antenna.
- . Connection to the mains or solar system.

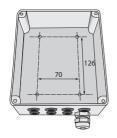
#### ■ Location of the electric box on the post.

The box should be mounted on the same side as the source of power supply.

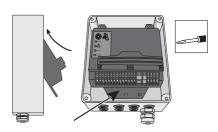


#### Fixing the electrical box on the post.

 Place the box at the post (preferably over one meter above the ground) and use the template to drill installation holes.



Put the electronic system in the box. Press it slightly for proper location. Fix the system using the mounting screws included in the delivery kit.



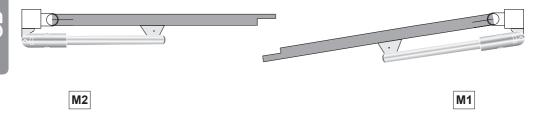
The box shall be mounted with the gland facing downward. The cables will be introduced from below (as shown in the picture).

## 2 Electric connections

#### Connection of two servomotors.

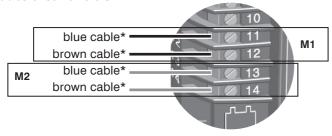
The servomotors must be connected to the electrical box before the box is connected to the mains.

Servomotor M1 must be mounted on the post of the leaf that opens first and closes last.



The servomotor M1 moves the right leaf that opens as the first one and closes as the last one

#### Cables of servomotors:





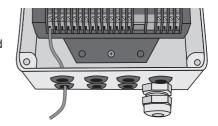
Servomotor M1 must be always connected to terminals 11 and 12. Servomotor M2 must be always connected to terminals 13 and 14.

<sup>\*</sup> The colours of cables used may vary from these shown in the manual. Please take this into account during installation.

## **Electric connections**

Connection of the antenna.

To ensure optimum operation, it is recommended to introduce the antenna cable through a cable bush.





Never cut the antenna cable.

Connection to the mains or solar system



In the case of supply from a solar system, see page 35.



For safety reasons, these operations must be carried out with the power supply disconnected.

1. Insert the cable into the gland.



2. Connect the earth wire. The earth wire (green-yellow) will be needed for some accessories (lighting 230 V Class I).

3. Connect the live and the neutral. Check if the wires are locked properly by pulling them.



It is necessary to always follow the rules regarding cable colours without variation.



| Blue wire            | Neutral |
|----------------------|---------|
| Red-brown-black wire | Live    |
| Groop vollow wire    | Earth   |



Green-yellow wire ∟arth



4. Clamp the gland. Check if the wire is locked properly by pulling it.

#### ■ Stages:

- Explanation of symbols.
- Programming the remote control.
- · Leaf path teaching.
- Automatic mode adjustment.
- Switchover from automatic mode to sequential mode.
- Approval of settings.

#### Explanation of symbols.

| Long pressing above 0.5 s     | <b>\</b> | Indicator is flashing | • |
|-------------------------------|----------|-----------------------|---|
| Short pressing<br>below 0.5 s | 1        | Indicator is lit      | 0 |

#### Programming of remote controls.

Before the system parameters are entered, check if the indicators ON/OFF and PROG are lit and the indicator DANGER is unlit. Carry out the following operations:

#### Operation of remote controls

The drive unit can be controlled by means of one or several remote controls. The following operations must be repeated for each remote control to be programmed.

Two operating modes are available for the drive unit:

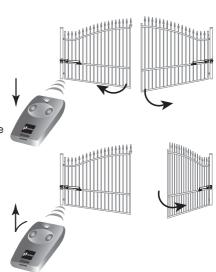
#### ✓ Complete opening only

Complete opening of 2 leaves by short or long pressing of the remotecontrol push-button.

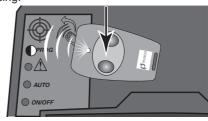
### Opening for pedestrian entry or complete opening

Opening of one leaf only by short pressing of the remote control push-button to allow pedestrian entry.

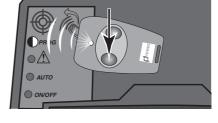
Complete opening of 2 leaves by longer pressing of the remote control push-button.



- Programming of remote controls for complete opening only:
  - Select a remote control push-button to be used for the gate control.
  - Put the remote control in the place indicated on the housing:
- 1 Press the programming push-button and hold it down until the indicator PROG starts flashing slowly (the indicator DANGER will be alight during push-button pressing).
- 2 Release the push-button: it has been memorized.



- Programming of remote controls for opening for pedestrian entry or complete opening: Choose a remote control push-button to be used for the gate control. Put the remote control in the place indicated on the housing:
- 1. Press the programming push-button and hold it down until the indicator PROG starts flashing slowly (the indicator DANGER will be alight during push-button pressing).
- 2. Release the push-button.
- 3. Press the programming push-button again (no later than within 10 seconds) and hold it down until the indicator PROG starts flashing slowly
  - (the indicator DANGER will be alight during push-button pressing).
- 4. Release the push-button: it has been memorized.





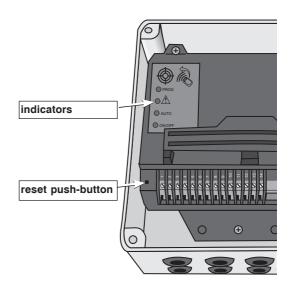
At the end of the programming cycle, only indicators PROG and ON/OFF emit light however the electronic system is awaiting memorization of the path of the leaves.

- Changing the operating mode of the programmed remote controls:
  - To switch the remote control from 'complete opening only' mode to the 'opening for pedestrian crossing or complete opening' mode, it is enough to carry out the operations described above in the section 'Programming of remote controls for opening for pedestrian crossing or complete opening'. The latest settings will replace the previously programmed mode.
  - To switch the remote control from 'opening for pedestrian crossing or complete opening' mode to 'complete opening only' mode, it is enough to carry out the operations described above in the section 'Programming of remote controls for complete opening only'. The latest settings will replace the previously programmed mode.

#### Deletion of remote controls

- Press the reset pushbutton and hold it down for 7 seconds.
- > Four indicators emit light when the push-button is pressed.
- 2. Release the reset pushbutton.
- > Four indicators go out for 2 seconds.
- > Indicator ON/OFF emits light again.
- > Indicator PROG emits light again.

All saved settings are cancelled: the saved remote controls, the gate path, the operating mode, etc.



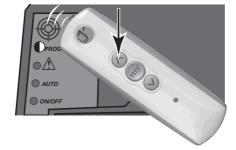
#### How to add remote controls later

Carry out the operations described in the section 'Programming of remote controls' (see information close by).

#### How to add remote controls 'with 3 push-buttons'

Put the remote control in the place indicated on the housing:

- Press the push-button UP or Down and hold it down until the indicator PROG starts flashing slowly (the indicator DANGER will be alight during push-button pressing).
- 2. Release the push-button: the remote control has been programmed.





Programming of more than 16 transmitters is not possible. You must delete all remote controls (see information above) to start programming again.



Any programming of new remote control results in the cancellation of the previous gate path. You must carry out the procedure 'Teaching of movement path of leaves' again (see page 23).

#### ■ Teaching of the movement path of leaves.

The electronic system automatically programmes the following:

- The servomotor power necessary to control the gate in the usual mode.
   Saving of this information enables the detection of any anomalies in operation of the drive unit.
- Gate path in order to complete the opening and closing of the leaves as well as position of stops.

To start the programming procedure, close the leaves, stand at the usual distance from the gate and carry out the following operations:

- 1. Press longer the remote control push-button.
- > After several seconds, the gate starts opening at low speed.
- \* If the gate does not open properly, check the servomotor cables as shown on page 18.



- 2. After the gate is open, press longer the remote control push-button once again.
- > The gate closes, one leaf after the other.



- 3. Press the same push-button once again.
- > The gate opens still at low speed.



- 4. Press the push-button for the last time.
- > Both leaves close almost simultaneously.





After these 4 operations are completed, the indicator PROG goes out; this means the end of the gate path programming procedure.

The cycle must be complete (2 complete and uninterrupted openings / closings). In the case of any interruption, the procedure will be suspended and resumed at the next opening.

#### Checking of the correctness of settings

- 1. Press long the remote control push-button.
- 2. Press the push-button once again to stop the 2 leaves midway.
- 3. Disconnect the power supply for at least 5 seconds.
- 4. Reconnect the power supply.
- 5. Press long the remote control push-button once again.

The leaves MUST move in the opening direction.

If the gate does not open correctly:

- The leaf activated as the first one (controlled by M1) moves in the closing direction > Interchange cables in drive M1.
- The leaf activated as the second one (controlled by M2) moves in the closing direction

> Interchange cables in drive M2.

Once the cables of one or two drive units are interchanged, restart the procedure of teaching of the movement path of leaves.

To this end, restart programming of the remote control (see page 22).

#### Automatic mode adjustment.

#### Precautions

To ensure the gate operation in automatic mode according to EN 12 453, it is necessary to install the following accessories that are available for the drive unit EASY WAY 201:

- photocell set (description and cables, see page 29),
- orange light (description and cables, see page 30),
- · gate zone lighting.

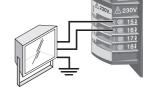


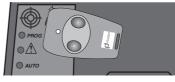
### In the case of solar energy supply, see page 35.

#### **Automatic mode**

After opening, the gate closes automatically after a preset time. The automatic mode will be active once the photocell cables are connected and the following adjustment is carried out:

- 1. Put the remote control in the place indicated on the housing.
- > Indicator AUTO is off.
- 2. Press long (> 5 s) the remote control push-button and hold it down until the indicator AUTO lights up. Release the push-button.
- > Indicator AUTO is flashing.







- Activate opening (from the usual distance) using the remote control.
- > The gate opens at nominal speed.
- 4. Once the gate is open completely:
  - Wait for the required period of time.
  - Activate closing by (shorter or longer) pressing the remote control push-button again.
  - > Both leaves close almost simultaneously.
  - > Indicator AUTO emits light continuously.



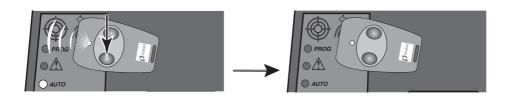


The automatic mode is now active.

#### Switchover from automatic mode to sequential mode

To return to sequential mode (indicator AUTO is lit):

- Put the remote control in the place indicated on the housing:
- Press the transmitter push-button until the indicator AUTO goes out.
- > Sequential mode is now active.



## **Operational use**

#### Operation in sequential mode

#### Operation of complete opening mode

- Press the remote control push-button long.
- > Both leaves should open.

Repeated (shorter or longer) pressing results in the closing of leaves.

- Operation of opening mode for pedestrian entry (if programmed)
  - Press the remote control push-button short.
  - > Only one leaf should open.

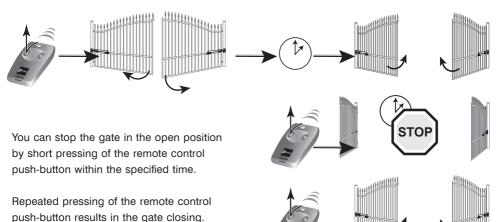
Repeated (shorter or longer) pressing results in The closing of the leaf.





#### Operation in automatic mode

In automatic mode, pressing of the remote control push-button results in the gate opening. Closing occurs automatically after the period of time preset by the user.



■ Operation of remote controls or transmitters with 3 push-buttons



**Opening** by pressing the push-button Up.

**Stop** by pressing of the middle push-button.

**Closing** by pressing the push-button Down.

Remote controls or transmitters with 3 push-buttons are not used to open for pedestrian entry.

## Operational use

#### Operation of lighting

Zone lighting is turned on every time the drive is activated. The light goes out automatically two minutes after the gate movement is finished (if the system is supplied from the mains) or 30 seconds (if the system is supplied from the solar energy source).

#### Battery replacement

- Slide the remote control latch forward and lift the cover.
- Remove the battery using a screwdriver and replace it (3 V CR 2430 or 3 V CR 2032).

Battery life is usually 2 years.

Waste batteries are to be returned to their distributor or transported for disposal.



#### Operational use of the remote control

If a vehicle is equipped with air-conditioning and metalized windscreen, aim the remote the control at the black bar found on the windscreen or at the side window.

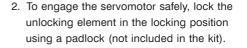
#### ■ Engagement / disengagement of the servomotor



For safety reasons, these operations must be carried out after disconnecting the power supply. Even in the case of a power cut, restoration of power supply can occur at any moment.

- 1. In case of power failure, the gate can be opened as follows:
  - using the emergency battery, see page 31;
  - by disengagement of the servomotor mechanically.

Unlock the driving mandrel by turning the unlocking element. Pull up the servomotor to advance the driving mandrel from the holder fastening the leaf.







## **Troubleshooting**

#### ■ EASY WAY 201 is not responsible for the working of the remote control

- The indicator ON/OFF does not light up after the power supply is connected.
  - Check the mains.
  - ► Check the supply cable.
  - ► Check the fuse.
- The indicator DANGER emits light continuously. This signal indicates photocell failure.
  - Check the photocell setting.
  - Check the photocell power supply.
  - ► Check if photocells are present in automatic mode.
  - ▶ Check if the lamp voltage conforms to the power supply (230 V or 24 V for the solar system).
- The indicator ON/OFF is flashing slowly.
  - ► Improper power: contact the Service department.
  - Excessive load: too strong wind or too heavy gate.
- The indicator ON/OFF is flashing quickly.
  - ► Servomotor is overheating: wait for it to cool down.
  - ▶ Short circuit at the output(s) of the drive unit(s): contact the Service Department
- Servomotors M1 and M2 are not activated or the direction of their operation is not correct.
  - Check the connection to the electricity supply
  - Check the extender between the two servomotors.
  - ► Check the servomotor cables; if necessary, exchange them (see page 18).
- Limited operating range of the remote control.
  - ► Check the antenna cable.
  - Check the transmitter battery.
  - ► Environmental interference (overhead electricity pole, reinforced brickwork, etc.)
  - ► An external antenna is necessary.
- After closing, the gate opens automatically.
  - Move away the bracket fastening the leaf slightly in the opposite direction to the hinges by using the oblong holes.
- After opening, the gate closes automatically.
  - Check the servomotor cables (see page 18).



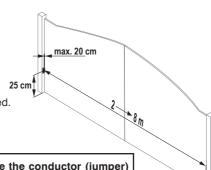
#### Photocells

Photocells cause the gates to stop or reverse their motion in the case of obstacle detection. Installing a set of photocells is possible. Each photocell set consists of:

- A transmitting photocell (TX),
- A receiving photocell (RX).

#### Location of photocells

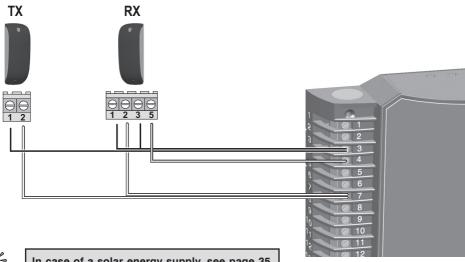
To facilitate the installation of conductors, locate the receiving photocell on the post where the drive unit equipped with the electronic system is placed.





Before the connection of photocells, remove the conductor (jumper) that is installed between the electronic module terminals 3 and 4.

Wiring diagram for the photocell set





In case of a solar energy supply, see page 35.



To ensure better operation of the photocells, fit them with a shield.

#### Safety rule

Photocell operation must be inspected every 6 months. To this end, cover the photocell with one hand during the closing of the gate. Closing should be interrupted.

#### ■ Emergency battery

### Accessories incompatible with solar energy supply.

The emergency battery ensure the gate operation at low speed in the case of electrical failure. The battery is built in the electronic module of the drive unit and connected to it directly.



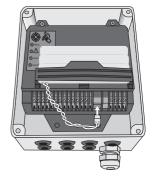
Note: Do not place the battery cable above a power supply source.

- Operating time: 10 cycles in continuous mode or 24 hours if the gate is in good technical condition.
- Optimum charging time for the battery before use: 48 hours.
- · Battery life: 3 years.



To ensure optimum battery life, disconnect the power supply from the gate three times a year and run several cycles with battery operated drive unit.

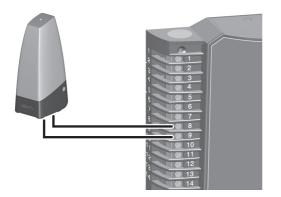








#### Orange light

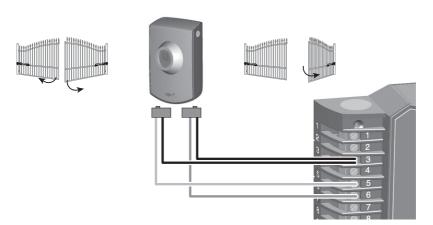


The orange light indicates that the drive is running.

It starts flashing 2 seconds before the gate starts moving.

### ■ Key switch



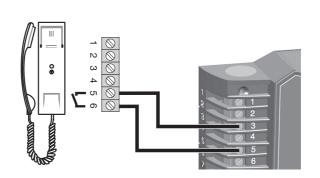


#### Intercom

## Accessories incompatible with solar energy supply.



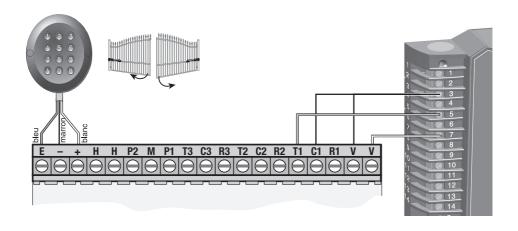


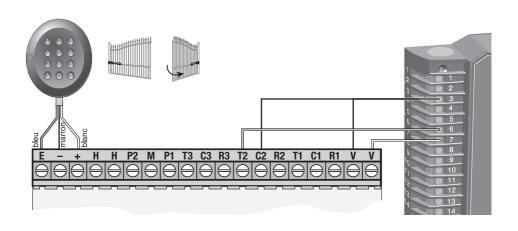




■ Cable panel with code

Accessories incompatible with solar energy supply.





■ Wireless wall switch



■ Radio panel with code



■ Remote control with 2 push-butt

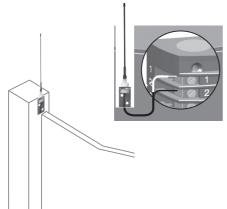


■ Remote control with 4 push-buttons



#### External antenna



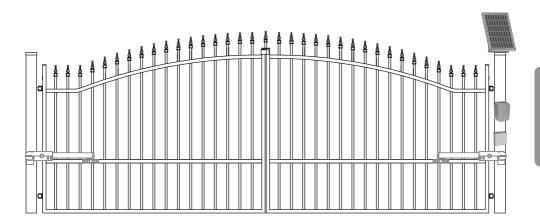


An external antenna having a wider range can replace the wire antenna.

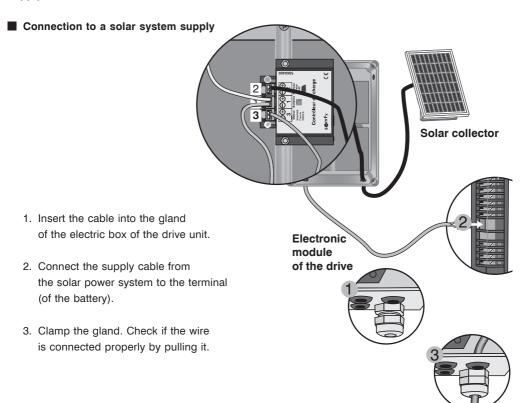
Place it on top of the post and check if it is exposed.

Connection to the electronic module: conductor core to terminal 1, stranded aerial wire to the terminal 2.

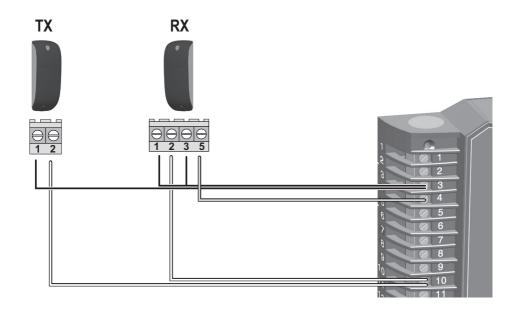
### In the case of a solar energy supply



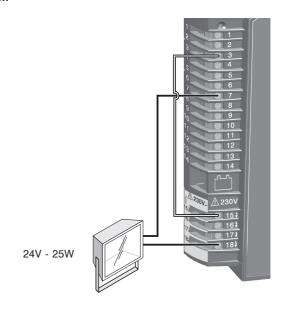
Parameter setting, programming and the drive unit operation remain the same as for a power supply of 230 V.



Wiring diagram for the photocell set



Lamp for gate zone illumination



| Tan- |  |  |  |
|------|--|--|--|
|      |  |  |  |
|      |  |  |  |
|      |  |  |  |
|      |  |  |  |
|      |  |  |  |
|      |  |  |  |
|      |  |  |  |
|      |  |  |  |
|      |  |  |  |
|      |  |  |  |
|      |  |  |  |
|      |  |  |  |
|      |  |  |  |
|      |  |  |  |
|      |  |  |  |
|      |  |  |  |
|      |  |  |  |
|      |  |  |  |
|      |  |  |  |
|      |  |  |  |
|      |  |  |  |
|      |  |  |  |
|      |  |  |  |
|      |  |  |  |
|      |  |  |  |
|      |  |  |  |
|      |  |  |  |
|      |  |  |  |
|      |  |  |  |
|      |  |  |  |

| / co~ |  |
|-------|--|
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |
|       |  |

| - Con- |  |
|--------|--|
|        |  |
|        |  |
|        |  |
|        |  |
|        |  |
|        |  |
|        |  |
|        |  |
|        |  |
|        |  |
|        |  |
|        |  |
|        |  |
|        |  |
|        |  |
|        |  |
|        |  |
|        |  |
|        |  |
|        |  |
|        |  |
|        |  |
|        |  |
|        |  |
|        |  |
|        |  |
|        |  |
|        |  |
|        |  |
|        |  |



ul. Deptak 17, 04-956 Warszawa tel. (+48) 022 872 00 91-93, fax (+48) 022 612 68 60 serwis@polargos.pl www.polargos.eu