

Green Energy

DEA[®]

move as you like

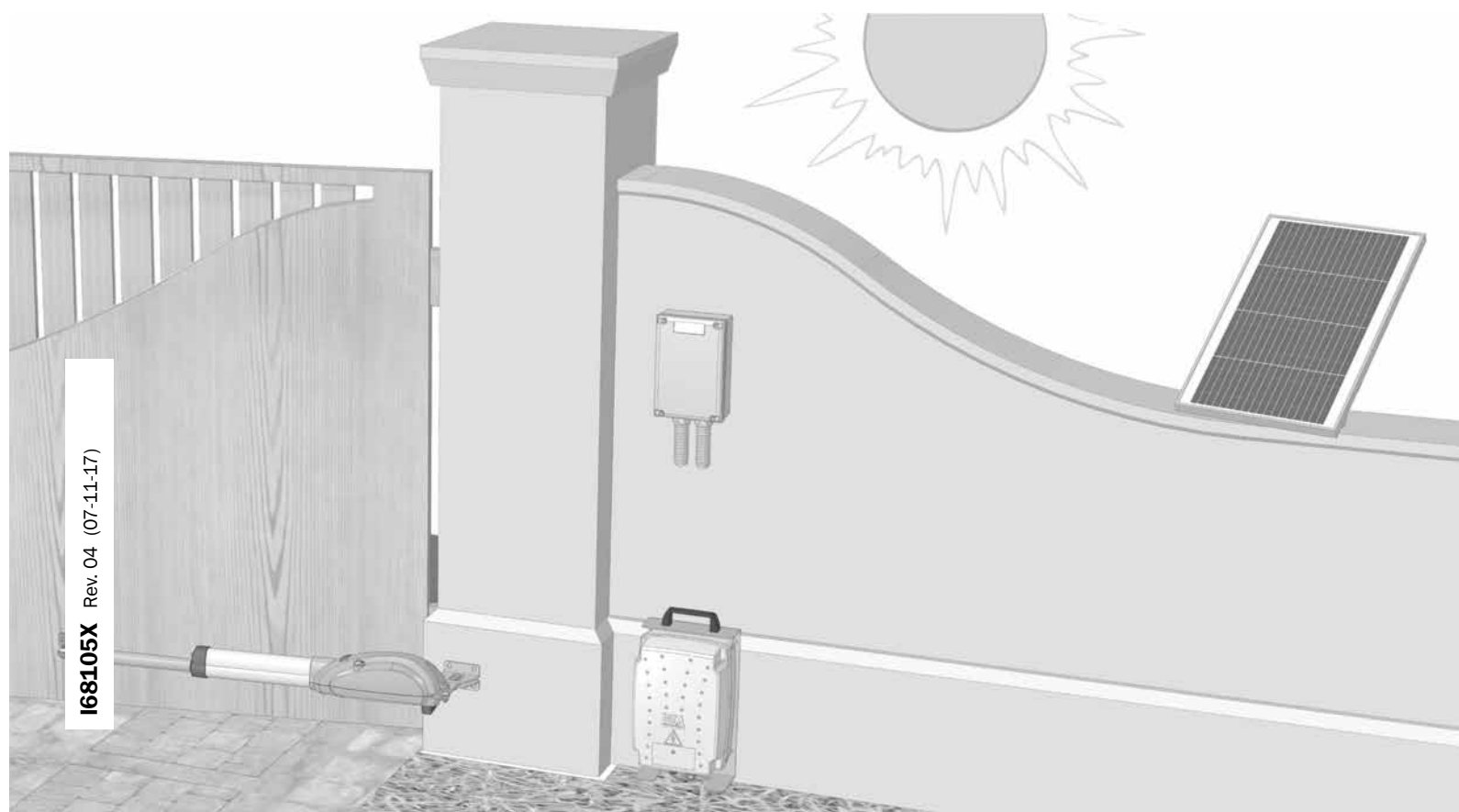
Green Energy

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Solar panel kit

Operating instructions and warnings



168105X Rev. 04 (07-11-17)

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Product conformity


DEA System guarantees the conformity of the product to European Directives 2006/42/CE (concerning Machinery Directive), 2014/53/UE "RED Directive". See the **Declaration of Conformity**.


1 WARNINGS SUMMARY


Read these warnings carefully; failure to respect the following warnings may cause risk situations.

 **WARNING** USING THIS PRODUCT UNDER UNUSUAL CONDITIONS NOT FORESEEN BY THE MANUFACTURER CAN CREATE SITUATIONS OF DANGER, AND FOR THIS REASON ALL THE CONDITIONS PRESCRIBED IN THESE INSTRUCTIONS MUST BE RESPECTED.

 **WARNING** UNDER NO CIRCUMSTANCES MUST THE PRODUCT BE USED IN EXPLOSIVE ATMOSPHERES OR SURROUNDINGS THAT MAY PROVE CORROSIVE AND DAMAGE PARTS OF THE PRODUCT.

 **WARNING** ALL INSTALLATION, MAINTENANCE, CLEANING OR REPAIR OPERATIONS ON ANY PART OF THE SYSTEM MUST BE PERFORMED EXCLUSIVELY BY QUALIFIED PERSONNEL WITH THE POWER SUPPLY DISCONNECTED WORKING IN STRICT COMPLIANCE WITH THE ELECTRICAL STANDARDS AND REGULATIONS IN FORCE IN THE NATION OF INSTALLATION.

 **WARNING** USING SPARE PARTS NOT INDICATED BY **DEA** SYSTEM AND/OR INCORRECT RE-ASSEMBLY CAN CREATE RISK TO PEOPLE, ANIMALS AND PROPERTY AND ALSO DAMAGE THE PRODUCT. FOR THIS REASON, ALWAYS USE ONLY THE PARTS INDICATED BY **DEA** SYSTEM AND SCRUPULOUSLY FOLLOW ALL ASSEMBLY INSTRUCTIONS.

 **WARNING** IN COMPLIANCE WITH EU DIRECTIVE 2012/19/EG ON WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT (WEEE), THIS ELECTRICAL PRODUCT SHOULD NOT BE TREATED AS MUNICIPAL MIXED WASTE. PLEASE DISPOSE OF THE PRODUCT AND BRING IT TO THE COLLECTION FOR AN APPROPRIATE LOCAL MUNICIPAL RECYCLING.

2 PRODUCT DESCRIPTION

Green Energy is a **solar power device** for **DEA** System automatic gate operators. The panel converts solar energy into electrical energy, stored in the accumulator. This provides power to the installation at any time of day (or night), including bad weather; it is particularly suitable for automation located away from the fixed electricity.

The Green Energy kit consists of:

- n°1 Energy accumulator consisting of 2 rechargeable batteries and a 12V Solar Battery Charger PCB.
Inspect the contents of the package by comparing Fig. 1;
- n°1 Battery charger (art. Charger).

3 TECHNICAL DATA

	ACCUMULATOR
Rated voltage	24 V
Maximum sink current	10 A
Battery capacity	18 Ah
Protection degree	IP44
Operating temperature (°C)	-20°C ÷ +50°C
Complete recharge time	About 24 hours (by using fixed power supply)
Dimensions	585 x 245 x 185
Weight	16 Kg

	PANEL (not supplied)
Rated voltage	24 V
Peak power	30 Wp
Operating temperature (°C)	-40°C ÷ +85°C
Dimensions	660 x 390 x 25
Weight	3,7 Kg

4 LIMITS

Before installing Green Energy determine the actual installation power supply possibility. Then proceed taking into account the following constraints:

- Ensure that the space surrounding the installation is sufficient;
- Consider the maximum length of the photovoltaic panel power supply cable panel (4 m) and the power supply cable of the automation (4 m);
- Identify an area constantly illuminated by the sun all day long and all year round;
- Ensure that the area chosen for the assembly is in a location protected from impact damage;
- Make sure the surface chosen for the installation is made of solid material to ensure a stable fixation;
- The selected area should be away from vegetation, walls or other obstacles that could cast a shadow on the sensitive surface of the photovoltaic panel;

Warning: Partial shade (**also small**), significantly reduces the energy capacity of the panel.

- Keep small distances between the accumulator and the operator to optimize the performance and durability;
- Adequately protect the battery from both high and low temperatures.

The battery tends to reduce significantly the yield at low temperatures while on the other hand, accelerates the decay of the parts at high temperatures.

- Check the maximum number of operations/day executable, using the following formula:

$$\text{Operations/day} = \frac{(\text{Rggmm} \times 3,64) - 3490}{I \times t}$$

where:

Rggmm =

Daily solar radiation - monthly average "expressed in" Wh/m². "Indicates the amount of solar radiation "available" in a day on average, in a certain place. "Table 1" shows this value for locations located at a latitude of 45 degrees North and 45° South, for each month of the year. These values allow a rough calculation for other latitudes. However, it is advisable to see the related "maps of solar radiation", usually available on the web, for places in very different latitudes

Table 1 "DAILY SOLAR RADIATION - MONTHLY AVERAGE" (Rggmm)
(Latitude 45°)

MONTH (NORTH Emisphere)	Rggmm "Wh/m ² "	MONTH (SUD Emisphere)
January	3034	July
February	3837	August
March	4703	September
April	4972	October
May	5268	November
June	5456	December
July	5616	January
August	5268	February
September	4750	March
October	3729	April
November	2993	May
December	2314	June

I =

Total current drawn by the installation expressed in "A". "Table 2" shows the approximate values of absorption for each **DEA** System operator and for accessories commonly used in a standard installation.

Table 2 "OPERATORS ABSORPTION VALUES FOR A TYPICAL INSTALLATION"

OPERATOR	ABSORPTION (A)		
	Gate loading		
	Minimum	Medium	Maximum
5/24	1,5	3	4,5
8/24	2	4	6
REV	2,5	3,5	5
902/24	1,5	3	5
LOOK - MAC	0,8	2	3,5
GHOST/24	1,5	3	6
500 - 502	1	2,5	5
ANGOLO - GEKO	0,8	2	3
PASS/24	2,5	3	3,5
STOP/24	2,5	3,5	5
ACCESSORIES			
MINILUX - 104 - 105	0,04		
LINEAR	0,05		
LED24/AI	0,1		

t =

Manoeuvres total time, expressed in seconds (s).

Example:

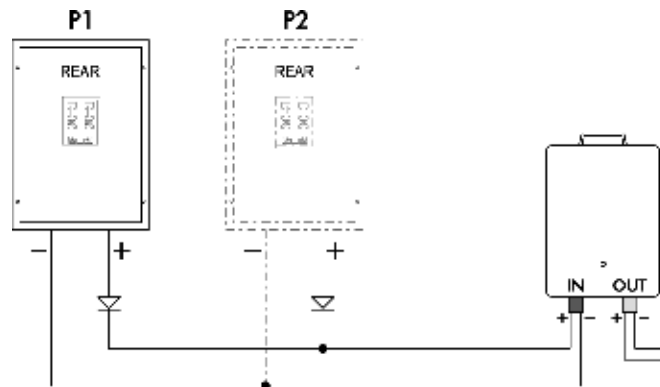
Automation for a swing gate with control panel art. NET24N based in Vicenza (latitude 45° 32')

- 2 x LOOK operators;
- 1 pair of photocells art. LINEAR
- 1 flashing light art. LED24/AI
- leaf weight: medium
- period considered: April

$$\begin{aligned}
 & \text{(from Table 1)} \\
 & R_{ggmm} = 4972 \\
 & \text{(from Table 2)} \\
 & I = 2 \times 2A + 0,05A \quad 0,1A = 4,15A \\
 & t = 17 \text{ sec. open} + 17 \text{ sec. close} = 34 \text{ sec.}
 \end{aligned}
 \left. \vphantom{\begin{aligned} R_{ggmm} &= 4972 \\ I &= 2 \times 2A + 0,05A \\ t &= 17 \text{ sec. open} + 17 \text{ sec. close} \end{aligned}} \right\} \begin{aligned} & N^{\circ} \text{ operations/day} = \frac{(4972 \times 3,64) - 3490}{4,15 \times 34} \\ & = 103,53 = \boxed{103} \end{aligned}$$

If the number of operations is not sufficient, you can connect the accumulator to one or more additional panels (up to 2 max). The various panels will be connected in parallel using the "diode" provided.

In this case, the calculation of the number of operations must be carried out by multiplying the value of RGGMM by the number of panels used.



5 INSTALLATION AND ASSEMBLY

For a satisfactory installation of the product is important:

- Define the correct orientation of the panel on the horizontal plane according to the following assessments:
 - For countries at **NORTH** of the equator , panel should be oriented **exactly at SOUTH**;
 - For countries at **SOUTH** of the equator the panel should be oriented **exactly at NORTH**;
- Determine the correct angle on the vertical plane of the panel according to the following assessments:
To obtain maximum efficiency from the solar panel when daylight hours are less (winter), you must tilt the cover so that the sun's rays hit the same perpendicular. Tilt the panel by an amount equal to the degree of the latitude of the place designated for the assembly (the value can be obtained at any map).
Example: Madrid = 40 ° - Milan = 45 ° - London = 51 ° (see Picture 3).

Defined and satisfied these prerequisites, proceed to the assembly:

FIXING OF SOLAR PANEL (Pic. 2)

- Assemble the side brackets;
- Install the support bracket without tightening the screws;
- Fix the support bracket in the installation place, making sure to have appropriate channels;
- Tilt the panel according to estimates previously made;

ACCUMULATOR MOUNTING

- Mount the omega to the wall in a position close to the automation to be powered (Pic. 4);
- Hook the battery to the omega.

6 ELECTRICAL CONNECTIONS

⚠ WARNING The Green Energy Panel is designed to be used in combination with the control panel NET24N with the function "energy saving" active P061=1).
If used with other control boards, it could not grant an adequate number of cycles.

After attaching the panel and the battery, you will need to continue passing the panel cable (**External standard 2x1mm² cable not supplied. See Pic. 10**) through the stem of protection to the accumulator. Similarly, you will have to pass the automation power cable (**Art CA/24 not supplied**) to the accumulator by forcing it through any channel or conduit.

Passed the cables, you should proceed with the installation of the "L socket" in this way:

- Check that the cables length is adequate. If too long, adjust them;
- Insert the "L socket" components inside the cable as shown on Picture 6;
- Wire connectors (**BLACK for the panel (Pic. 7.a) and GRAY for the operator (Pic. 7.b)**) paying attention to polarity. The black connector has a jumper that must NOT be removed;
- Finally, place the sealing ring on the connector and tighten the connector clamp.

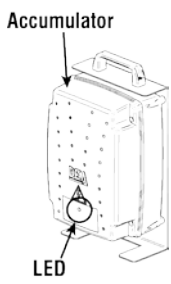
After this, first connect the BLACK connector to the "IN" socket on the accumulator, securing it with the supplied screw and **only then** connect the GREY connector to the "OUT" socket on the accumulator and secure it with the screw included (Pic. 9).

To avoid self-discharge of the accumulator, if the same is not connected to solar panel, the output is automatically disconnected and is therefore not possible to connect any load. In this case the LED is off. If the LED should remain off even after the connection to the solar panel, this indicates that the battery is fully discharged (this condition is due to the long time in storage batteries).

In this case, you can:

- Wait until the panel charges the battery (the output is automatically reconnected once achieved the required charge level for the correct operation of the installation);
- Make a fast recharge by connecting the AC charger (**art. Charger**) to the black connector "IN". Wait for the message fully charged battery (1 flash). It is however advisable to perform a full charge before the installation in such a way as to ensure maximum efficiency.

Warning: If the batteries are very low, the LED on the accumulator remains off until the battery voltage reaches the threshold for minimum voltage to activate the electronic circuits.

	LED	Battery status
	Off	Batteries fully discharged or connector "IN" unplugged
	3 Flashes	Battery discharged. The output maybe disconnected automatically
	2 Flashes	Sufficient battery
	1 Flashes	Fully charged batteries

7 MAINTENANCE

The Green Energy photovoltaic panel requires no special precautions, you need to check its good condition and clean the surface. To ensure an adequate level of efficiency, it is advisable to make such inspections at intervals not exceeding 6 months.

Replace the battery when, due to aging, does not guarantee the proper autonomy of the system.

In case of failure you can refer to the table "TROUBLESHOOTING GUIDE". If the advice given does not lead to the solution contacting **DEA** System.

TROUBLESHOOTING GUIDE	
Description	Possible solution
The control panel does not turn on	<ul style="list-style-type: none"> - The operator is not properly fed, check the connections and the conditions of the power cable and eventually provide for their replacement / repair. - Check that the battery charge level is sufficient to power the installation. If the battery is fully discharged, make a quick charge using art. Charger or wait until the panel charged the battery enough.
Batteries discharge too fast	<ul style="list-style-type: none"> - Check the good condition of the accumulator and if necessary replace it. - Check that the number of operations performed by the installation per day falls in the value given by the formula for the calculation of cycles in Chapter 3.
Batteries don't charge	<ul style="list-style-type: none"> - Check the photovoltaic panel is correctly installed. - Check the connections and conditions of the power cable and eventually provide for their replacement / repair. - Check the good condition of the accumulator and if necessary replace it.

8 PRODUCT DISPOSAL

Green Energy is composed of materials of different types, some of these can be recycled, others will be discarded.

Proceed as follows:

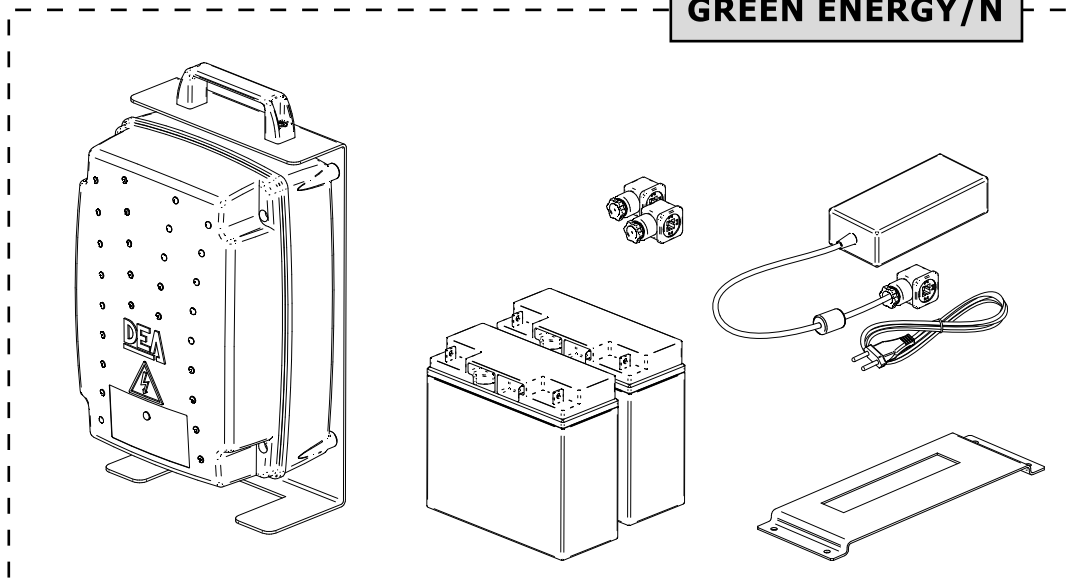
- Remove the accessory from the power supply and disassembly in reverse order from that described in "Installation";
- Remove the electronic components;
- Sorting and disposing of various materials in strict accordance with the rules in force in the Country of sale.



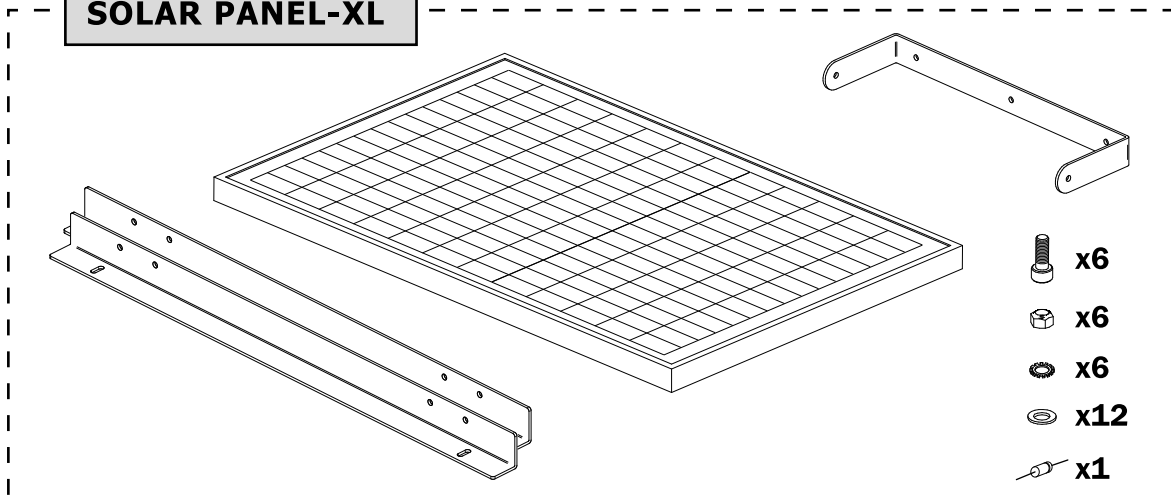
WARNING In line with EU Directive 2012/19/EG for waste electrical and electronic equipment (WEEE), this electrical product must not be disposed of as unsorted municipal waste. Please dispose of this product by returning it to your local municipal collection point for recycling.

1

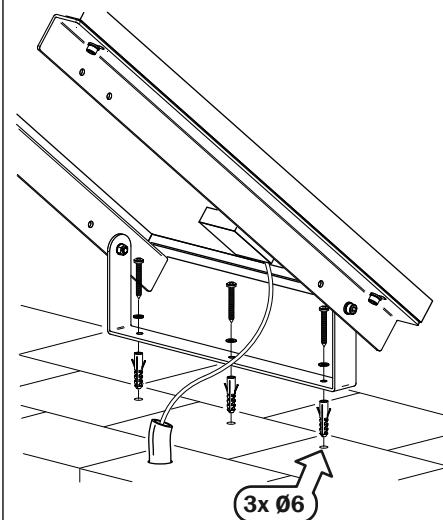
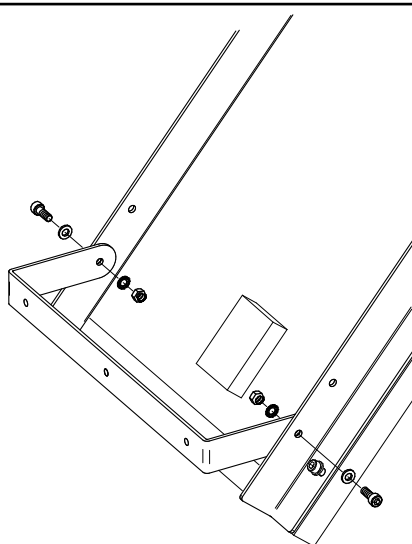
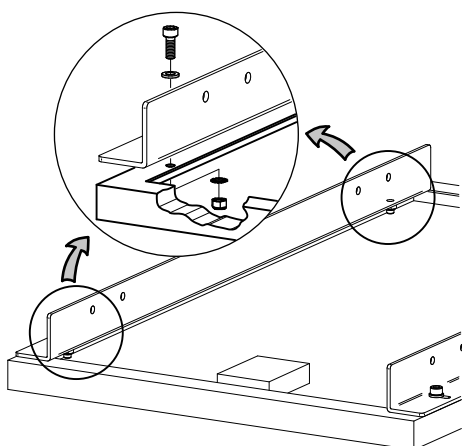
GREEN ENERGY/N



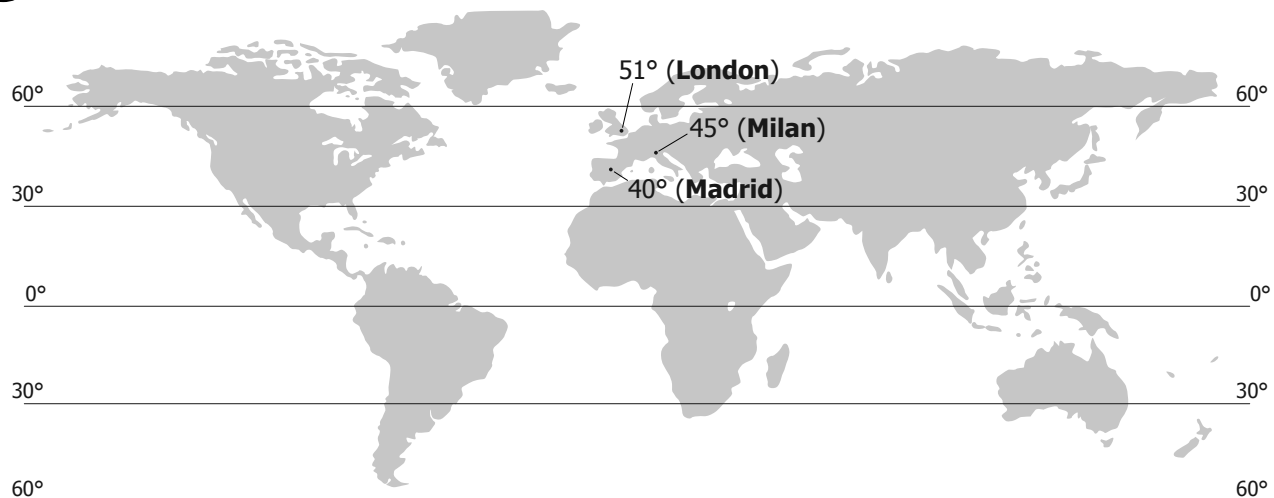
SOLAR PANEL-XL



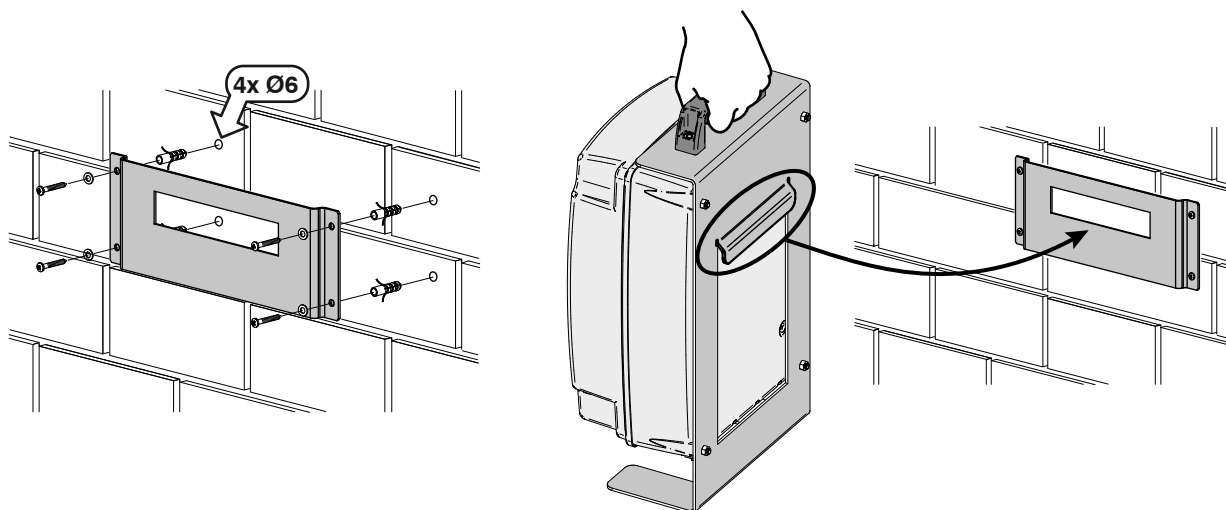
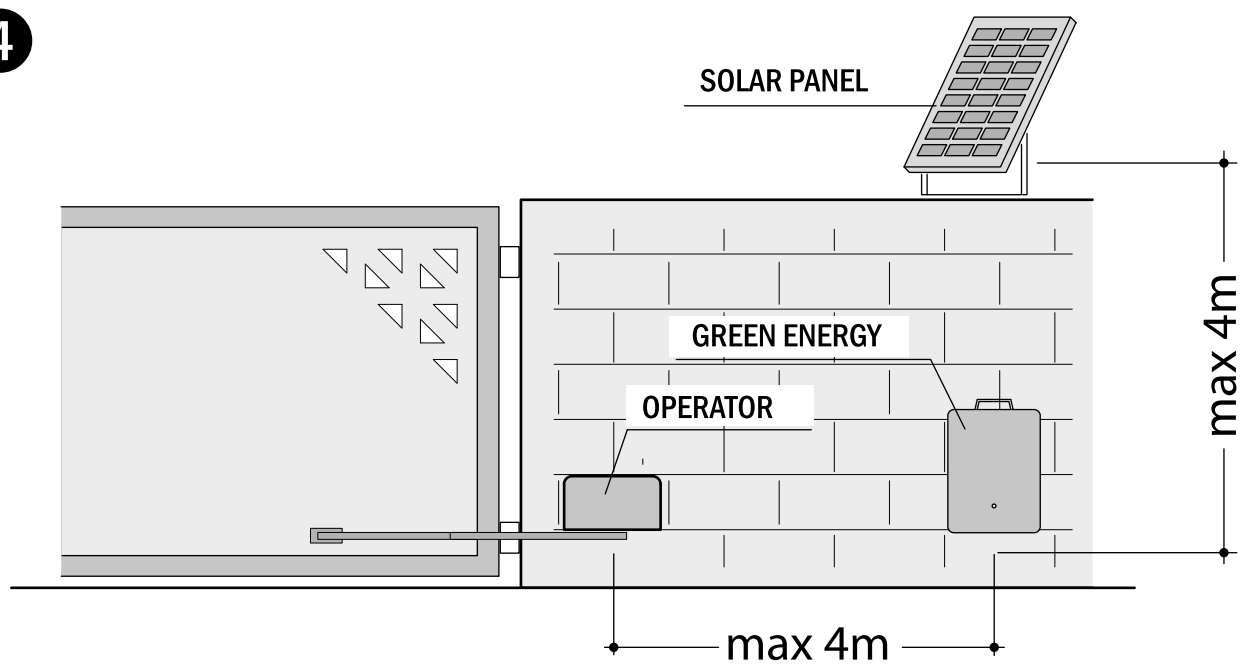
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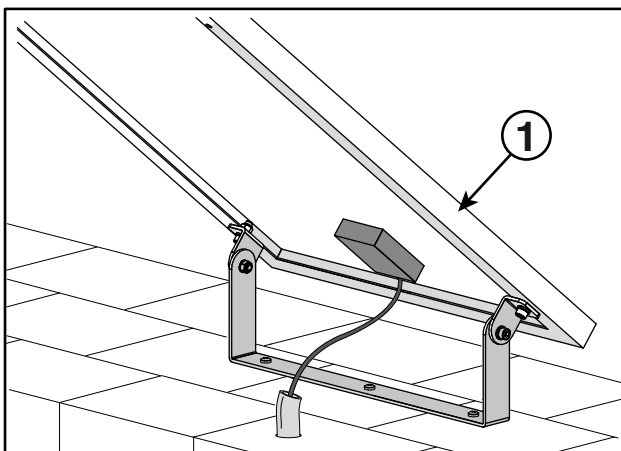
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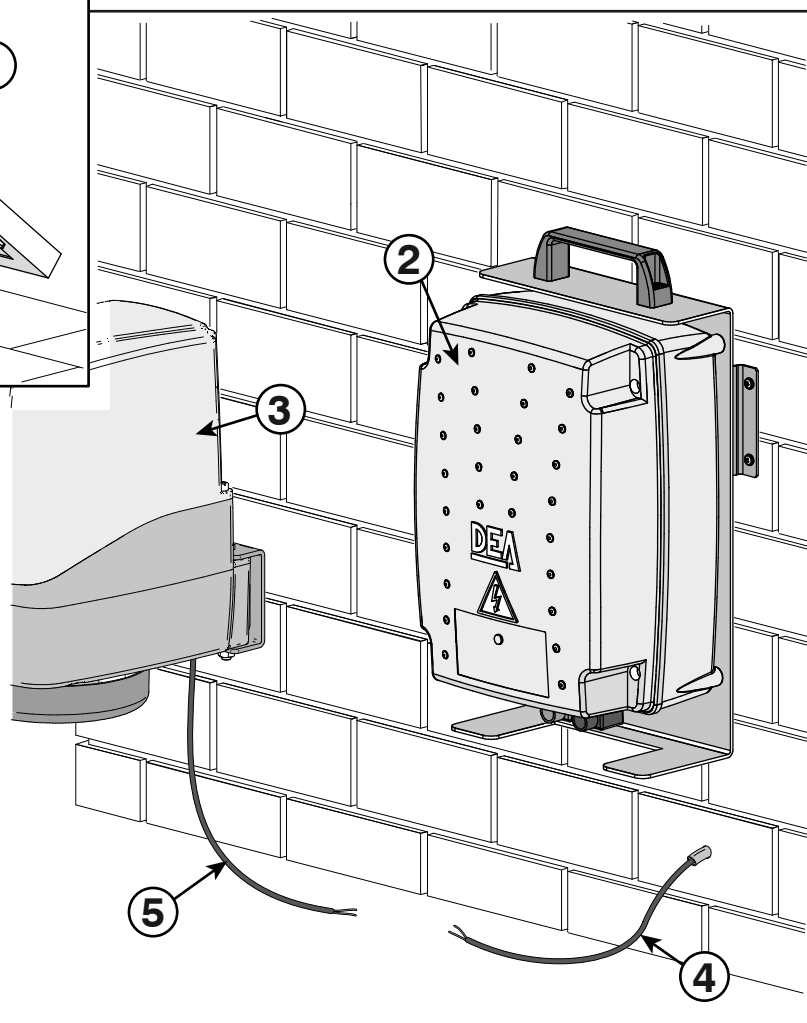
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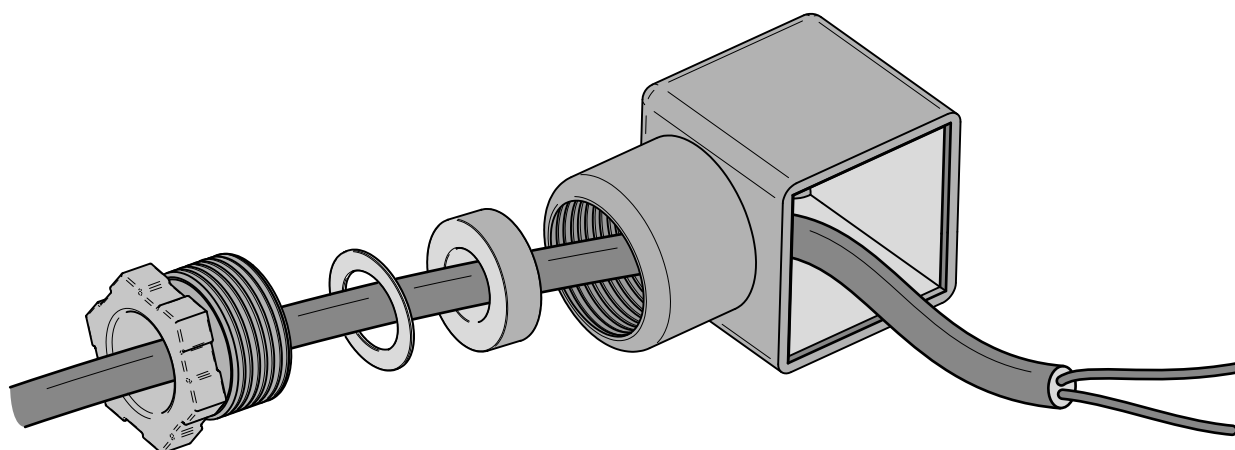
5



1	Pannello - Panel - Panneau - Painel
2	Accumulatore - Accumulator - Accumulateur - Acumulador - Akumulator
3	Motoriduttore - Operator - Moto-réducteur - Motorreductor - Operador - Motoreduktor
4	Cavo alimentazione pannello - Panel power supply cable - Câble d'alimentation panneau - Cable alimentación panel - Cabo de alimentação do painel solar - Przewód zasilający panel
5	Cavo alimentazione motoriduttore - Operator power supply cable - Câble d'alimentation moto-réducteur - Cable alimentación motorreductor - Cabo de alimentação do operador - Przewód zasilający motoreduktor



6

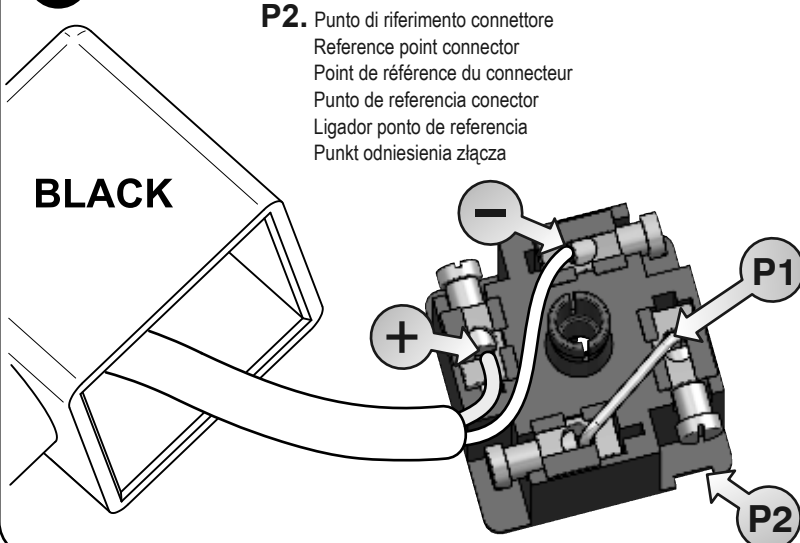


7 .a

P1. Ponticello - Jumper - Pont - Puente
Jumper - Mostek

P2. Punto di riferimento connettore
Reference point connector
Point de référence du connecteur
Punto de referencia conector
Ligador ponto de referencia
Punkt odniesienia złącza

BLACK



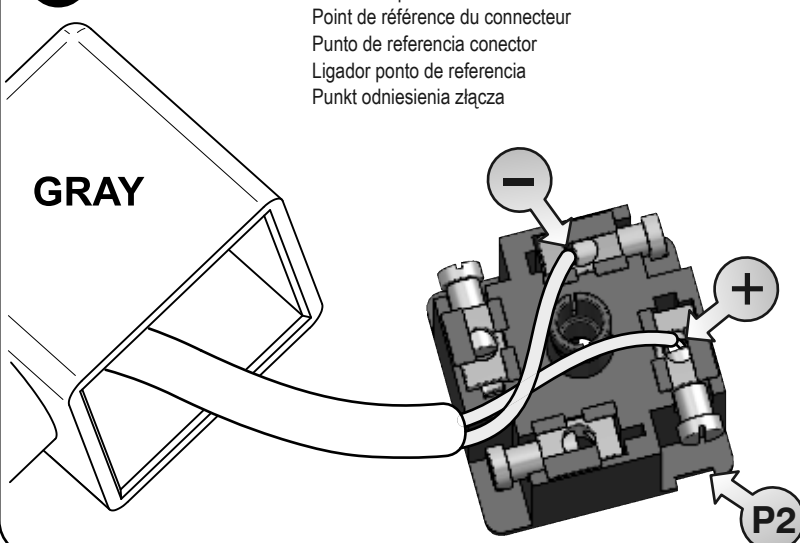
! 10mm 4mm

Spelare il cavo seguendo le misure dell'immagine
Split the cable according to the image size
Dénudez le câble en suivant les dimensions de l'image
Pelar el cable siguiendo la medida de la imagen
Dividir o cabo de acordo com o tamanho
Przystosować przewód zgodnie z wymiarami podanymi na rysunku

7 .b

P2. Punto di riferimento connettore
Reference point connector
Point de référence du connecteur
Punto de referencia conector
Ligador ponto de referencia
Punkt odniesienia złącza

GRAY

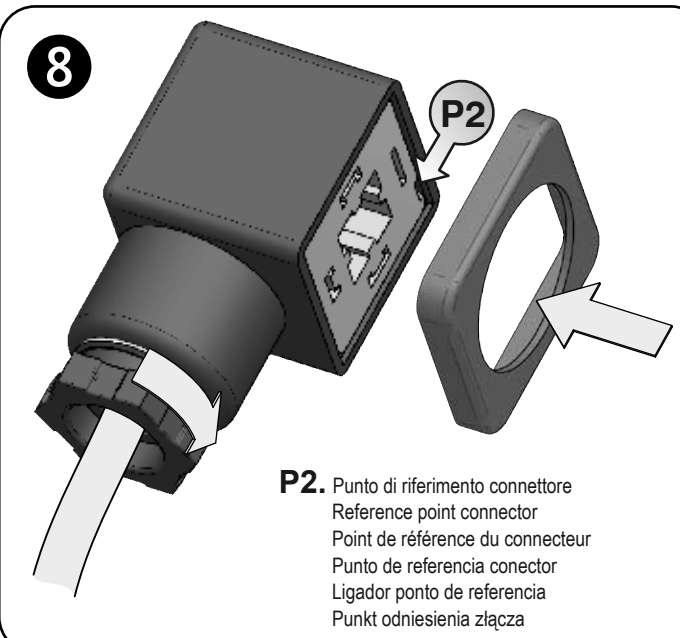


! 10mm 4mm

Spelare il cavo seguendo le misure dell'immagine
Split the cable according to the image size
Dénudez le câble en suivant les dimensions de l'image
Pelar el cable siguiendo la medida de la imagen
Dividir o cabo de acordo com o tamanho
Przystosować przewód zgodnie z wymiarami podanymi na rysunku

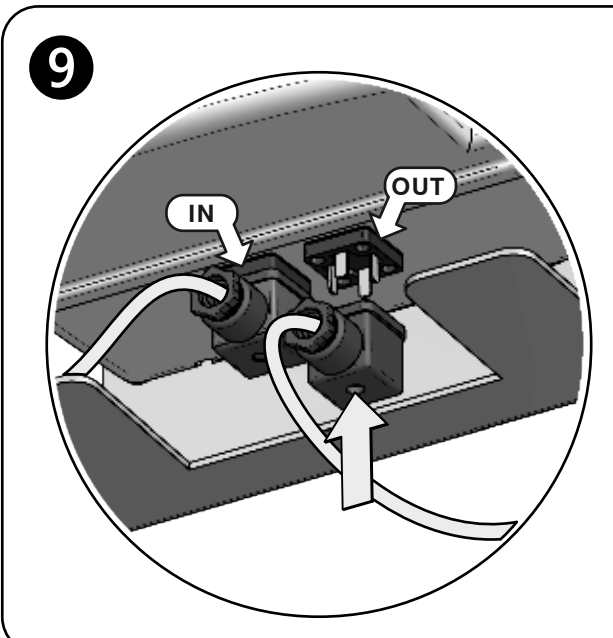
8

P2. Punto di riferimento connettore
Reference point connector
Point de référence du connecteur
Punto de referencia conector
Ligador ponto de referencia
Punkt odniesienia złącza



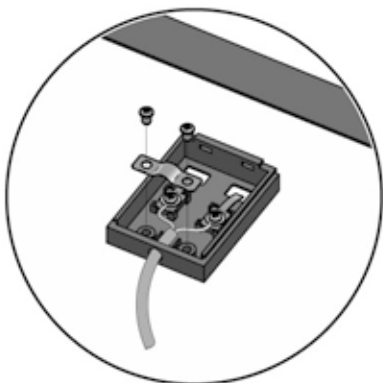
9

IN **OUT**

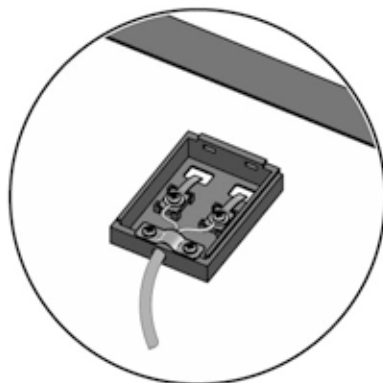


10

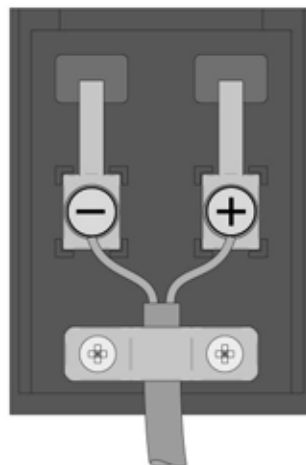
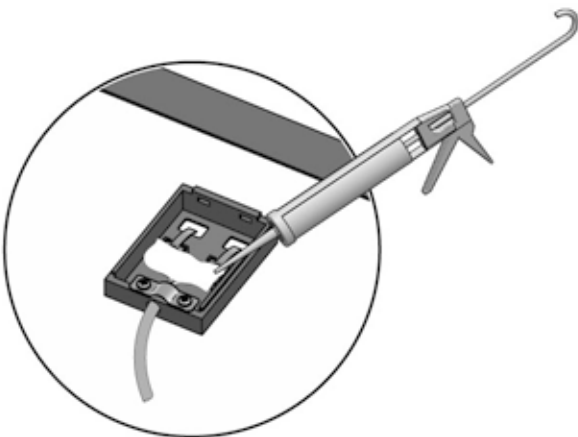
1



2



3



11

Cablare le fotocellule dell'impianto come indicato e assicurarsi che il parametro P061 sia impostato a 001.

Wire the photocells of the plant as shown and make sure that parameter P061 is set to 001.

Câblez les photocellules de l'installation comme indiqué et assurez-vous que le paramètre P061 est réglé sur 001.

Conecte las fotocélulas de la planta como se muestra y asegúrese de que el parámetro P061 esté configurado en 001.

Conecte as fotocélulas da planta como mostrado e verifique se o parâmetro P061 está definido para 001.

Połącz fotokomórki instalacji tak, jak pokazano i upewnij się, że parametr P061 jest ustawiony na 001.

