PHOTOWATT
INTERNATIONAL S.A.

# INSTALLATION OF PHOTOVOLTAIC MODULES

## 1 - TILT ANGLE :

- In case of no particular indication advised by a specialist, the module has to be titled so as to receive the maximum light during low sunshine periods of operation. Generally it leads to a tilt angle equal to the latitude plus 15 to 20° for non-tropical areas and an utilization all over the year. For intertropical areas, the tilt angle is equal to the latitude while respecting a minimum tilt angle of +10° in order to ensure the self-cleaning of the module ( water, dust...).
- Take care that no shadow ( of grass, tree, building, .... ) is projected onto the module during high sunshine periods, whatever the season.

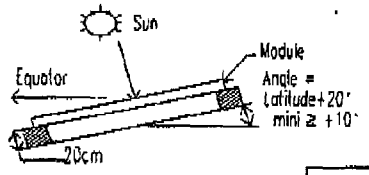



Figure 1

## 2 - MOUNTING :

- To avoid any water around and in the connection box, it is better that its will be not mounted at the bottom of the module ( figure 2 ).
- An horizontal mounting can be used to make the installation easier ( figure 2 ).
- Do not forget to loop the cable in order to prevent water from going to the cable gland : (*) examples of loop to avoid " water drop ".
- Keep a space of 20cm at least under the module to enable the free air circulation which grants a good ventilation ( figure 1 ).
- Use stainless screws, preferably in aluminium .
  Do not nail down, bore or weld the module mounting frame.

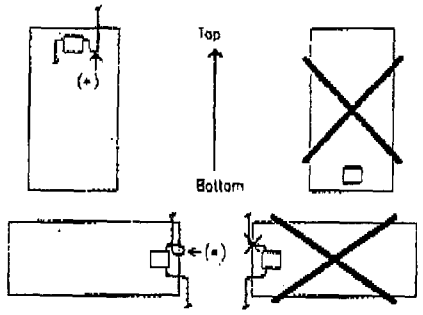



Figure 2

## 3 - PROTECTION :

- Use cables provided for outdoor applications.
- External diameter of cables : 12mm (10 to 12.5mm) to ensure the watertightness of the cable gland ( one cable per cable gland ). Do not borthe cover of an unused cable gland ( figure 3 ).
- To protect every metallic part from corrosion, coat all of them with a silicon grease ( supplied with the module ). Coat the cable passing-trough in the cable glands, and also the joint of the connection box before closing the cover with the 4 screws. In highly corrosive environments ( sea side, humidity, chemical fumes ), apply carefilly the silicon grease especially to metallic parts.

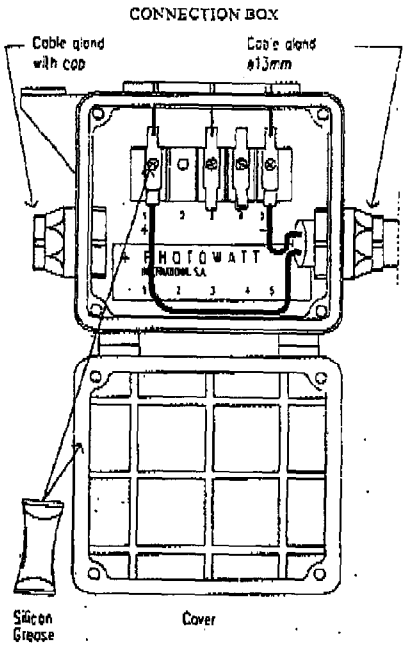
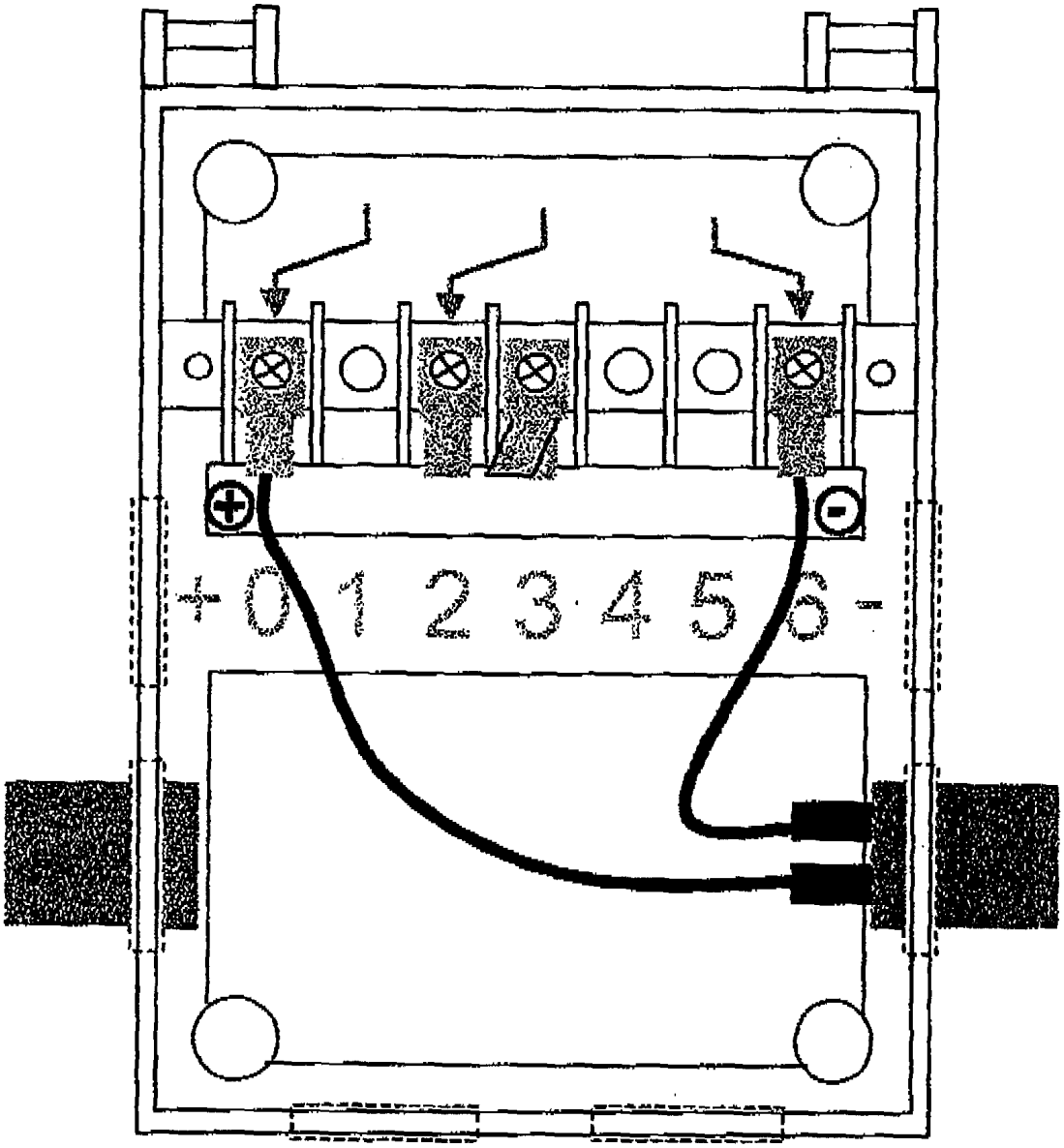



Figure 3

## 4 - MAINTENANCE :

- When necessary, clean the front face of the module with a soft cloth, dry or humid.
- Do not use greasy products ( which make dirty ) or metallic tools ( which may damage the glass ).

# PW 750 – OUTPUT WIRING




Matrix

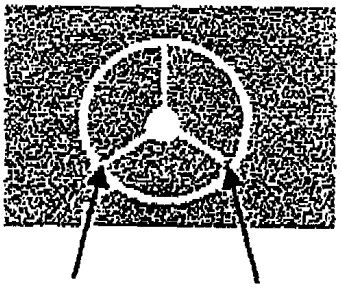
# PW 1000 12 V – 24 V

## INSTALLATION AND CARE

wiring to avoid any drops of water accumulating.
Leave enough space behind the module (at least 20 cm if possible) to allow for proper ventilation by free flow of air.

### PREPARATION AND WIRING OF THE JUNCTION BOX

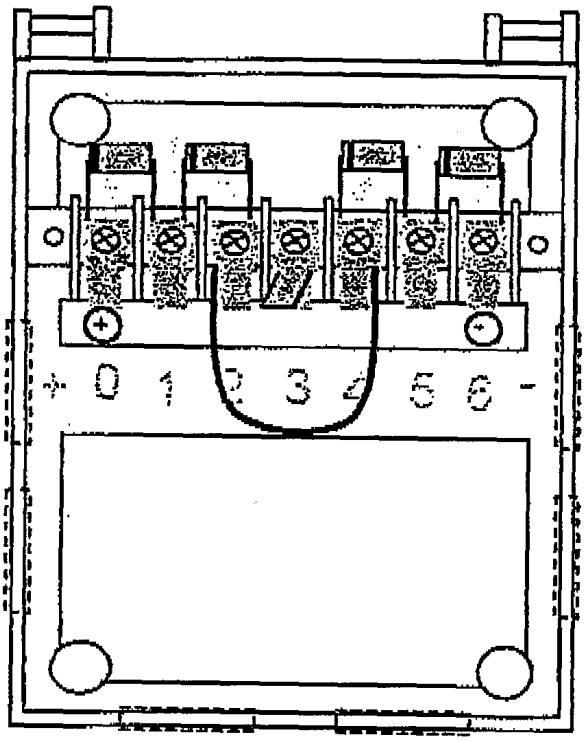
The cable glands must be placed in one of the 6 positions provided. Punch out the circle of thinner plastic in the chosen hole with a screw driver or similar instrument.
Be careful not to touch the back of the module.
Do not push on the center of the circle.



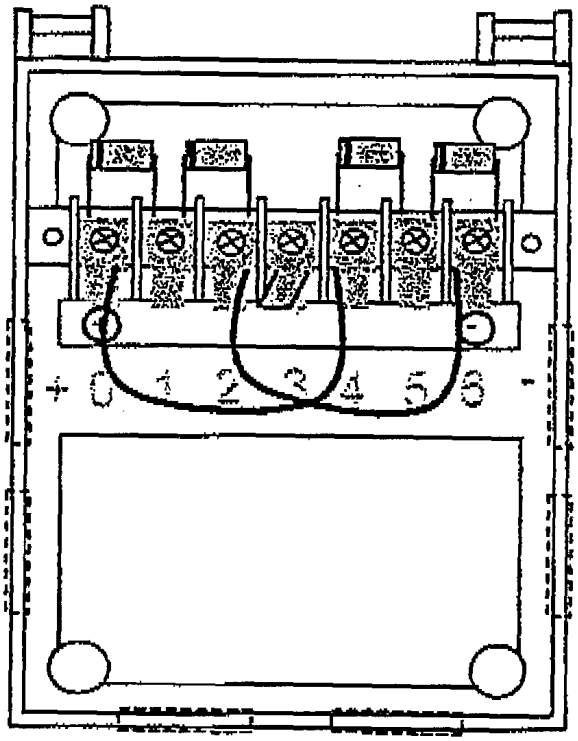
Push on a point
on the edge of the circle

### CHOICE OF VOLTAGE

This module can be used at 12 V (connect terminal 0 to 4 and terminal 2 to 6) or at 24 V (connect terminal 2 to 4) as shown in the drawings below, using the wires supplied.
In both cases (12 V or 24 V), the positive connection (+) should be on terminal 0 and the negative connection (-) on terminal 6.
Use cables suitable for outdoor use only.
After the connections have been made, coat all metal parts with the silicone grease in the pouch to protect the module from corrosion.
Close the junction box with the 2 captive screws in the cover.
If a sealed box is preferred, put an O-ring in the groove around the cover and then place the 2 screws provided in the bag in the other 2 holes in the cover near the hinges. (A sealed box may, however, trap moisture and condensation in the box.)
Whenever the cover must be removed or replaced, open it 180° before prying it from the hinges.




Junction box for 24 V application




Junction box for 12 V application