

# **SHARP**

PLEASE READ THIS MANUAL COMPLETELY BEFORE INSTALLING OR USING THE MODULES

## **INSTALLATION MANUAL**

**PHOTOVOLTAIC MODULE**

**NE-80EJE**

**SHARP CORPORATION**

## **1.INTRODUCTION**

This manual contains information of electrical and mechanical installation and safety information which you should know before using photovoltaic module NE-80EJE.

The information in this manual is described on the basis of Sharp's knowledge and experience. But such information and suggestions do not constitute a warranty.

Sharp Corporation reserves the right to make changes to the product, specifications, or to the manual without prior notice.

## **2.INSTALLATION**

Back view of the module is shown in Fig.1. Each module has six 9.0 mm diameter mounting holes. These are used to fix the modules to supporting structure. For withstanding load 2400Pa, module shall be fastened with 4-C holes with M8 bolts.

The terminal box is shown in Fig.2. When connecting the modules to a battery or to other modules, you must carefully observe correct cable connection polarity as shown Fig.3 and Fig.4. If not connected correctly the bypass diodes could be destroyed. This will void your warranty.

By loosening the two cover screws as shown in Fig.2, open the cover of wiring box. Fig.3 shows the inside of the wiring box. The range of typical terminal cabling is AWG 14. Remove the appropriate grommets and route the interconnecting cables through grommets as shown in Fig.3. To remove the grommets, push them from inside of the box.

To connect wires to terminal block, a wire lug connector may be used as shown in Fig.5. For direct wiring, strip back insulation about 16mm and wrap stripped wire around screw under square washer as shown in Fig.6. Tighten terminal screw securely with a proper screwdriver. After completed terminal wiring, secure the cover of wiring box.

When connecting the modules to a battery or to other modules, you must carefully observe correct cable connection polarity as shown in Fig.4. If not connected correctly, the bypass diode could be destroyed. This will void your warranty.

Each photovoltaic module has a hole in the side frame for installation of a bolt, a nut and washer. The ground wire lug connector can be attached to each photovoltaic module using provided bolts, nut and washer as shown in Fig.7. The ground wire shall be not smaller than No.14 AWG (2.1mm<sup>2</sup>).

## **3.MOUNTING STRUCTURE**

An example of acceptable mounting structure is shown Fig.8.

## **4.ELECTRICAL RATINGS**

Rated electrical characteristics are within  $\pm 10$  percent of the indicated values of  $I_{sc}$ ,  $V_{oc}$ ,  $P_{max}$  under Standard Test Conditions (irradiance of 100 mW/cm<sup>2</sup>, AM 1.5 spectrum, and a cell temperature of 25 °C(77° F)).

The above electrical characteristics are based on the results of out going test. The warranty condition is specified in the warranty card separately issued.

Maximum Power (Pmax)	80.0 W
Open-Circuit Voltage (Voc)	21.3 V
Short-Circuit Current (Isc)	5.31 A
Operating Voltage (Vpmax)	17.1 V
Current at Vpmax (Ipmax)	4.67 A
Maximum System Voltage	600 V
Minimum Bypass diode	10 A
Series Fuse	10 A

The above electrical characteristics are based on the results of out going test.  
Please do not expose solar module to sunlight concentrated with mirrors, lenses or similar means.

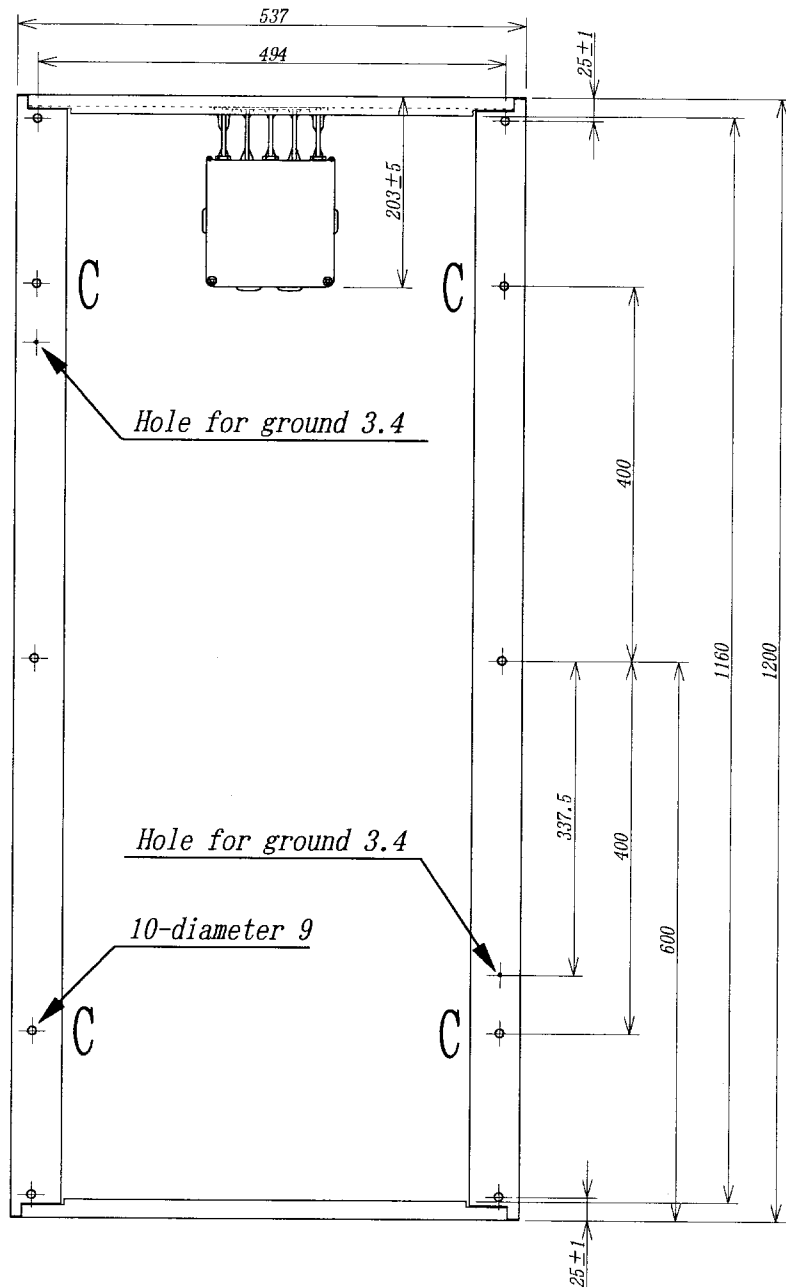
Under normal conditions, a photovoltaic module may experience conditions that produce more current and/or voltage than reported at Standard Test Conditions. Accordingly, the values of Isc and Voc marked on UL Listed modules should be multiplied by a factor of 1.25 when determining component voltage ratings, conductor capacities, fuse sizes and size of controls connected to the module output. Refer to Sec. 690-8 of the National Electric Code for an additional multiplying factor of 125 percent ( 80 percent of rating ) which may be applicable.

Please refer to Section 690-8 of the National Electrical Code for an additional multiplying factor of 1.25 which may be applicable.

In the coverage of Canadian UL listing, installation shall be in accordance with CSA C22.1, Safety Standard for Electrical Installations, Canadian Electrical Code, Part 1.

## 5.CAUTION

- (1) Never touch the end of output cables with bare hands when the module is irradiated. Cover the surface of module by sufficiently thick cloth or something suitable to prevent incident light, and handle the wires with rubber-gloved hands not to receive electric shock.
- (2) Do not wear metallic jewelry which may become cause of electric shock during installation.
- (3) Consult the government office concerned for permit installation and inspection requirement.
- (4) Install modules and ground frames in accordance with applicable law of each country.
- (5) Product should be installed and maintained by qualified personnel.
- (6) Do not drop tools or hard things on the glass of solar module.
- (7) Do not scratch the back film by hard things.
- (8) When part of solar module is shadowed, hot spot may be caused. Therefore do not shadow cells.
- (9) Do not pour chemicals on modules when cleaning.
- (10) Keep modules away from children.

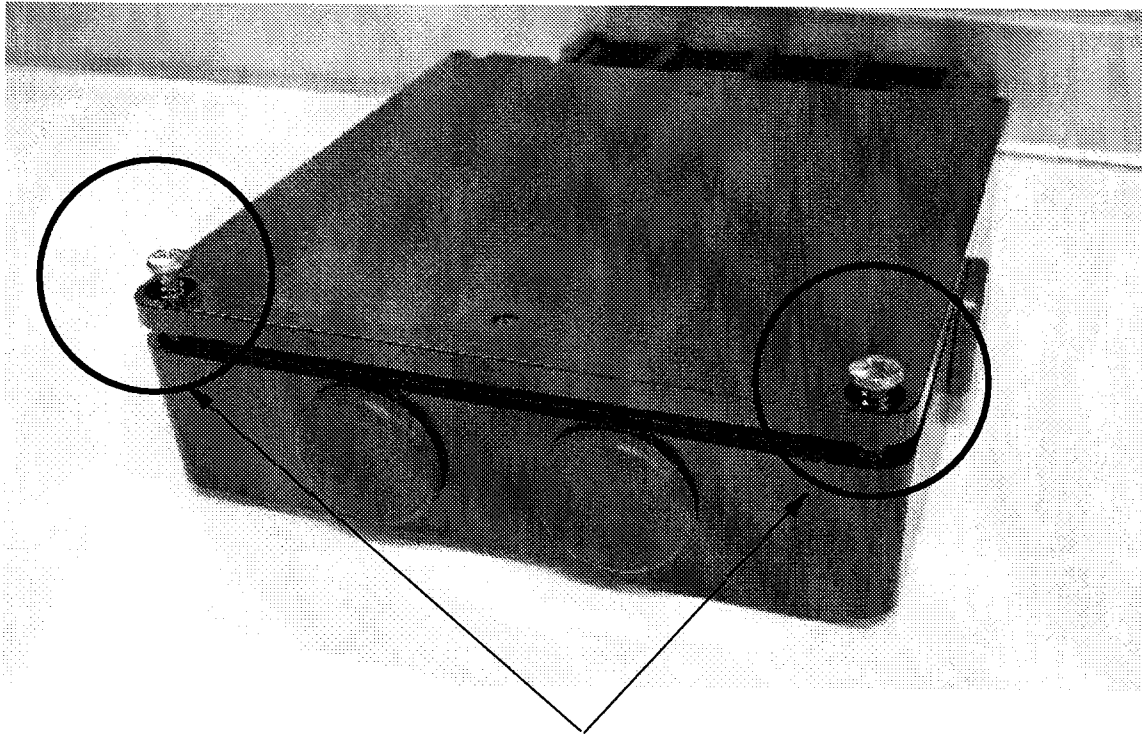


**Fig.1**

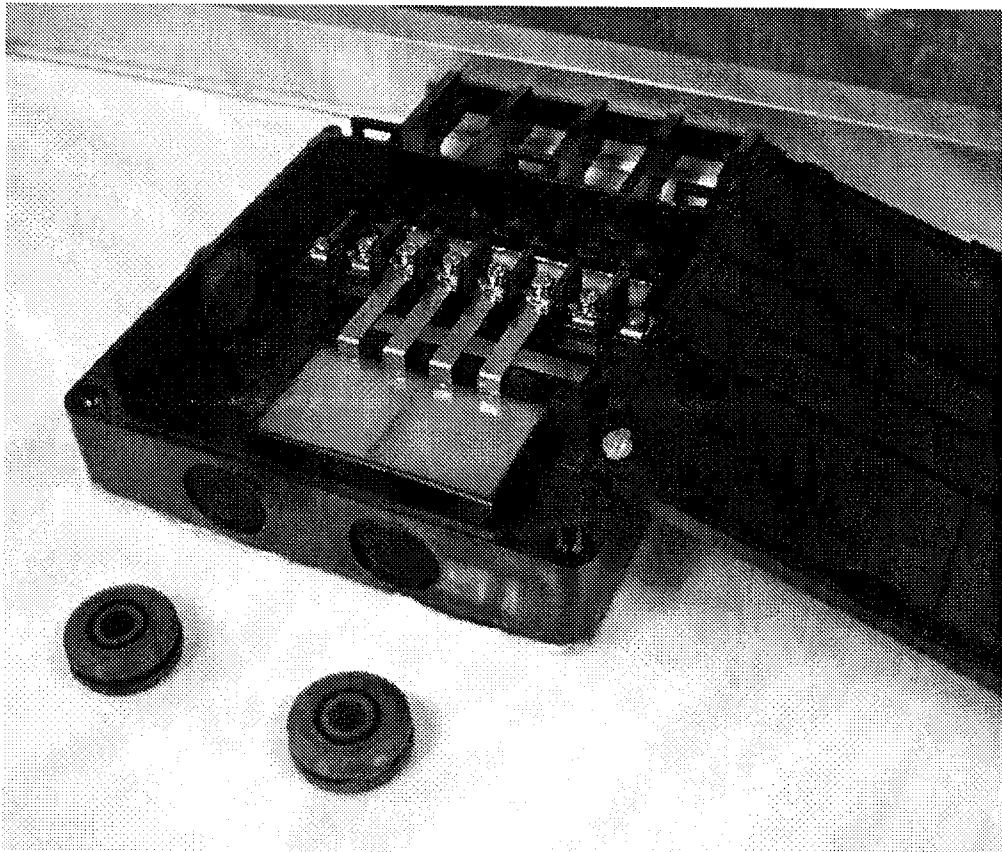
**Table A**

Dimension ; L	Permissible Deviation
0.5 < L < 3	+0.2
3 < L < 6	+0.3
6 < L < 30	+0.5
30 < L < 120	+0.8
120 < L < 400	+1.2
400 < L < 1000	+2
1000 < L < 2000	+3
2000 < L < 4000	+4

Permissible deviations in dimensions without tolerance indication is shown in table A

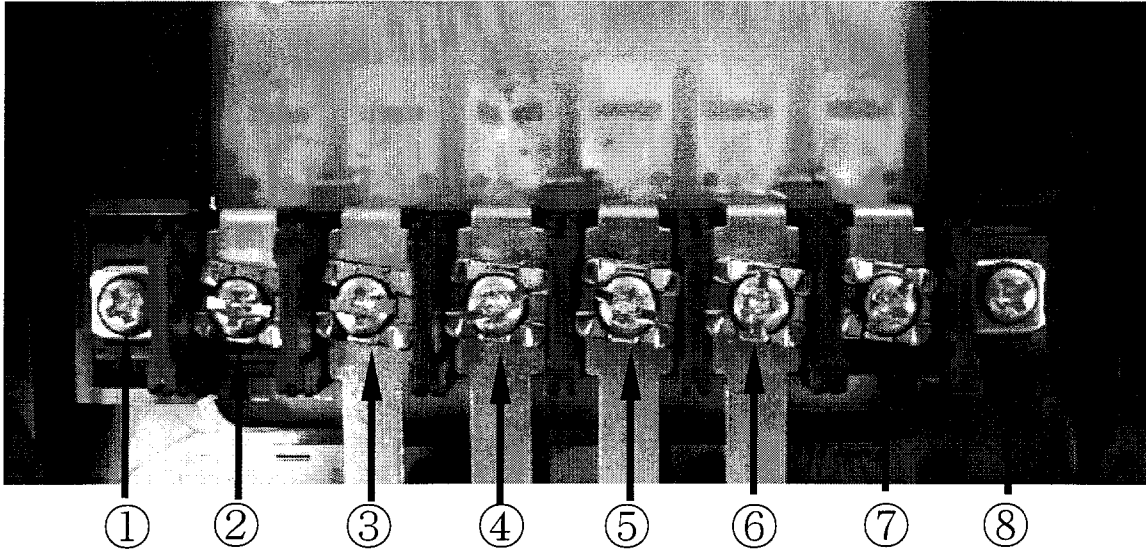


Loosen the two cover screws to open the cover

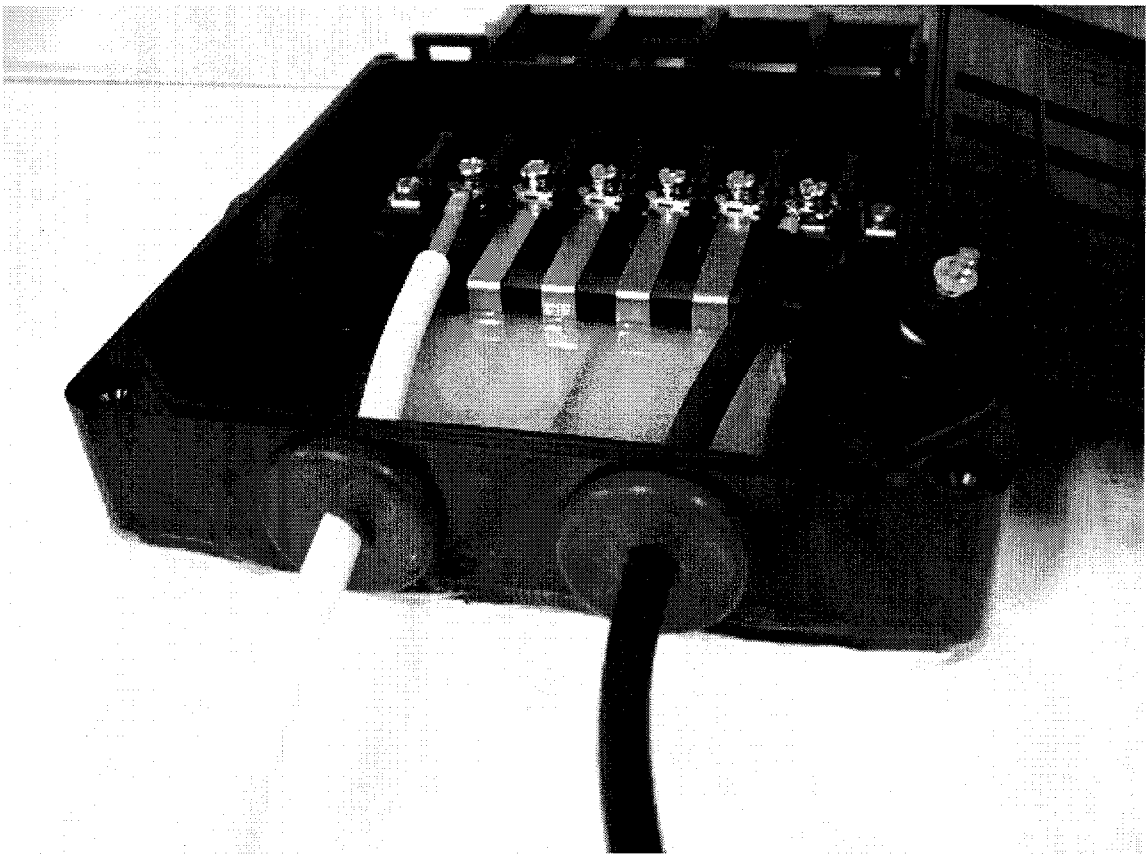


Remove the appropriate grommets. (Push them from inside of the box)

**Fig.2**

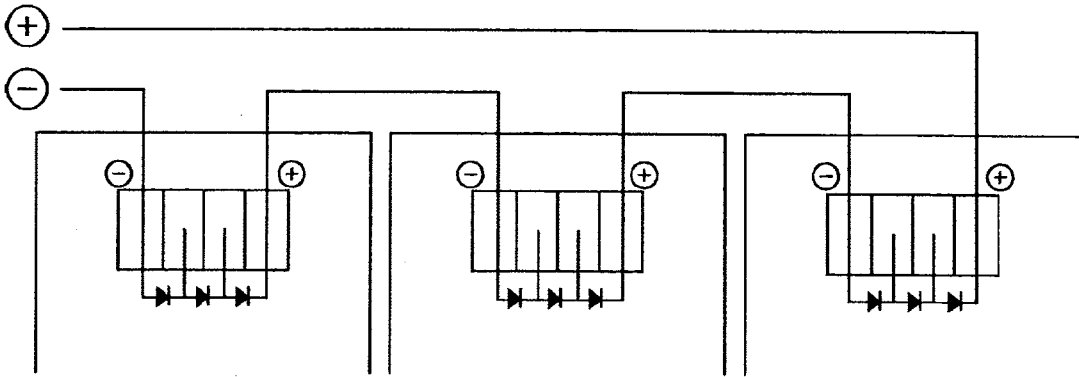


②,③ : Negative Terminal    ④,⑤ : Diode Connection  
⑥,⑦ : Positive Terminal  
※①,⑧ are just for fixing the terminal block to the box.  
So, do not connect any cable to ①,⑧terminal.

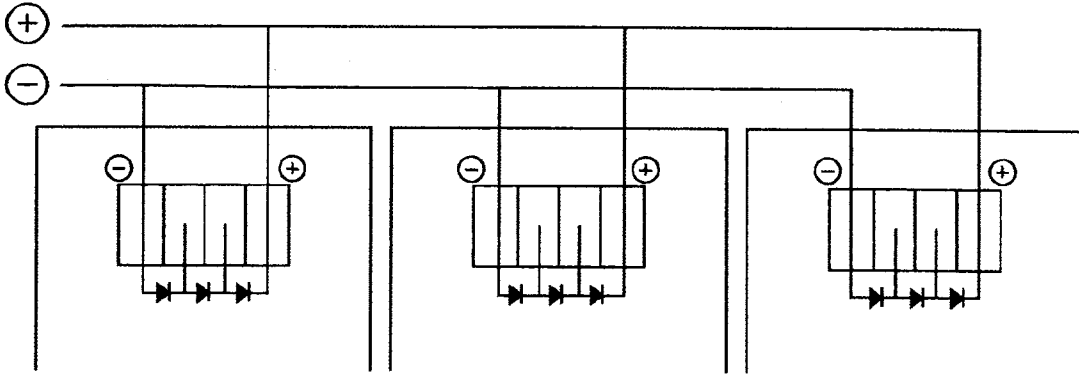


**Fig.3**

**Series Wiring (Voltage Additive)**



**Parallel Wiring (Current Additive)**



**Fig.4**

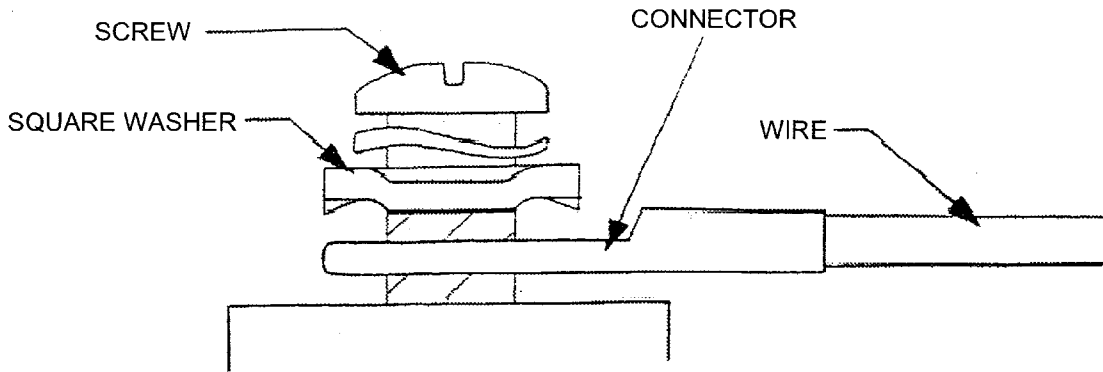


Fig.5

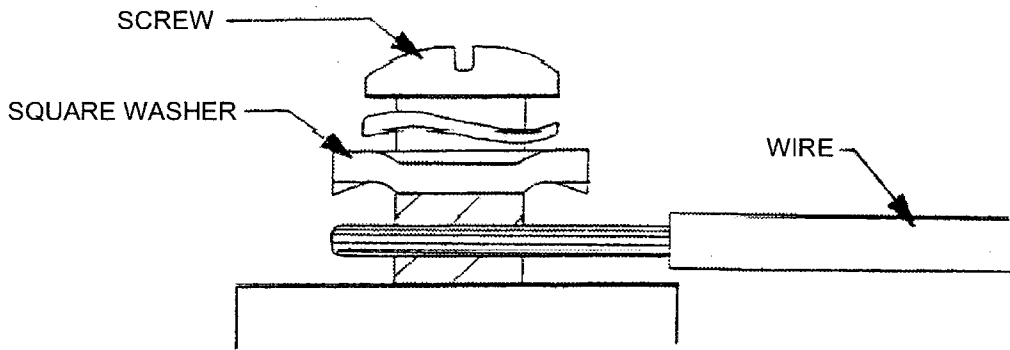


Fig.6

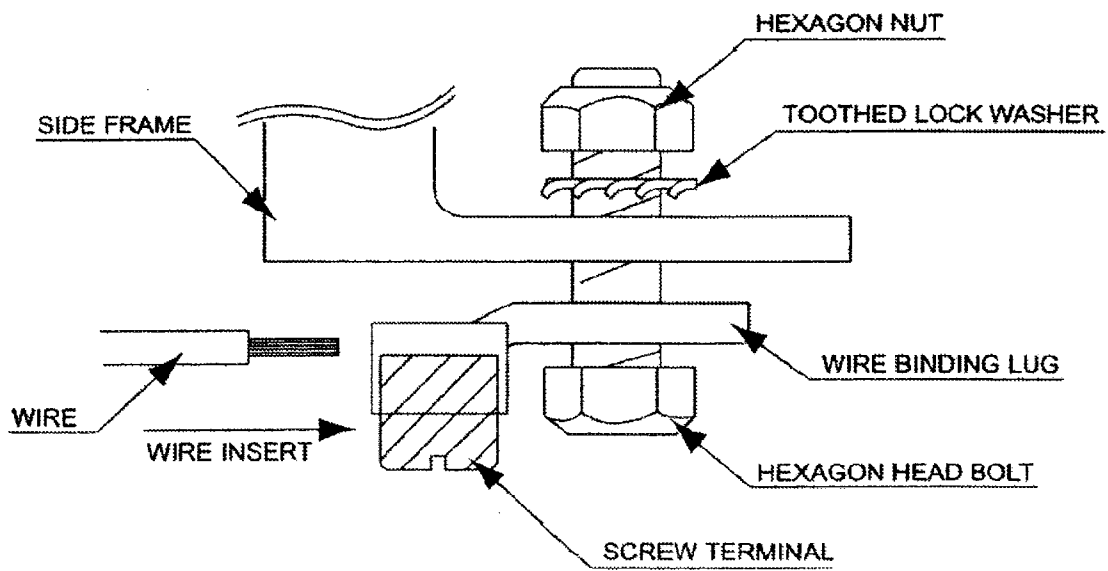
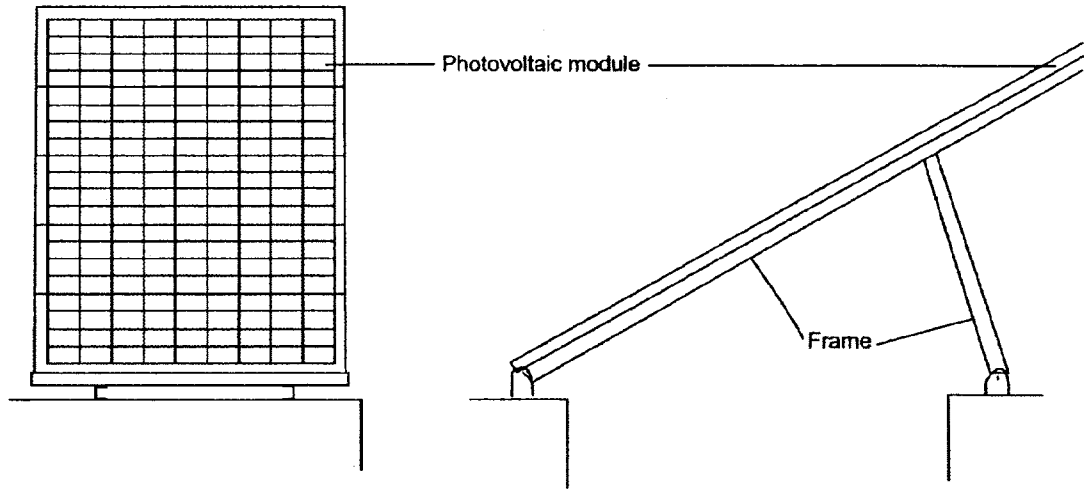


Fig.7





Photovoltaic module mounting method

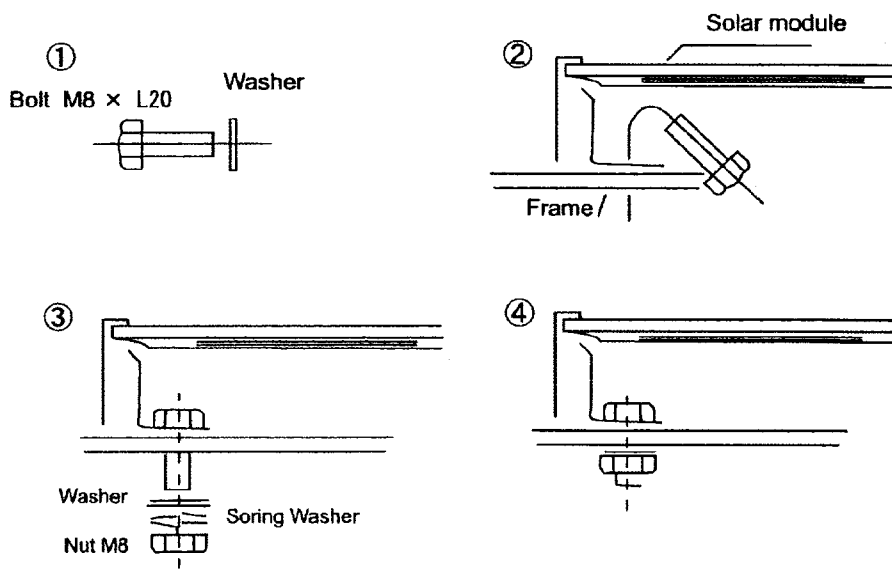


Fig.8