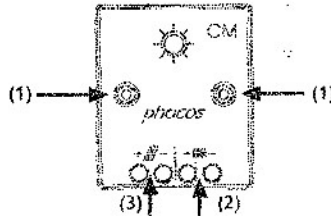


bathrooms).  
The regulator warms up during operation. It shall be installed on a non flammable surface only.

### Connection the Charge Controller



- Mount it on a dry, plain and non flammable surface. Use the mounting holes (1).
- Connect the wires leading to the battery to terminals (2) with the correct polarity prior to connecting these wires to the battery.
- Connect the wires to battery terminals with the correct polarity. It is recommended that you protect the battery by connecting a fuse directly to the battery terminal.
- Connect the wires leading to the solar array to terminals (3) with the correct polarity. To avoid sparks, shade the solar array during connection. The maximum short circuit current must not exceed the nominal current of the regulator.

We recommend some form of mechanical strain relief close to the regulator for all wires.

### Safety Functions

**Battery reverse polarity:** If the battery is connected with reverse polarity by accident, the regulator will not get damaged.

**Solar array reverse polarity:** An electronic fuse protects the regulator if the array is connected with reverse polarity.

### Display Functions

The regulator has a display LED.  
If the LED is lit green, the battery is charging.

### Recommendations for Use

The regulator does not need any maintenance or service. Remove dust with a dry tissue. It is important that the battery gets fully charged frequently (at least monthly). Otherwise the battery will be permanently damaged. A battery can only be fully charged if not too much energy is drawn during charging. Keep that in mind, especially if you install additional loads.

### Technical Data

Nominal voltage	12V
Boost voltage	14.5V
Float voltage	13.7V
Max. solar panel current	CM04-2.1: 4A CM10-2.1: 10A
Dimensions	72.6 x 61 x 30.4mm
Weight	66g
Max. wire size	16 mm <sup>2</sup>
Self consumption	<4 mA
Ambient temperature range	-40 - + 50°C
Case protection	IP 22

ISO9001:2000

CE RoHS

### General Safety Recommendations

- Batteries store a large amount of energy. Never short circuit a battery under all circumstances. We recommend connecting a fuse (slow acting type, according to the nominal regulator current) directly to the battery terminal.
- Batteries can produce flammable gases. Avoid making sparks, using fire or any naked flame. Make sure that the battery room is ventilated.
- Avoid touching or short circuiting wires or terminals. Be aware that the voltages on specific terminals or wires can be up to double the battery voltage. Use isolated tools, stand on dry ground and keep your hands dry.
- Keep children away from batteries and the charge regulator.
- Please observe the safety recommendations of the battery manufacturer. If in doubt, consult your dealer or installer.

### Intended Use

The charge controller is intended for use in photovoltaic systems with 12 V nominal voltage. It shall be used with vented or sealed lead acid batteries only.

### Liability Exclusion

The manufacturer shall not be liable for damages, especially on the battery, caused by use other than as intended or as mentioned in this manual or if the recommendations of the battery manufacturer are neglected. The manufacturer shall not be liable if there has been service or repair carried out by any unauthorised person, unusual use, wrong installation, or bad system design.

Opening case voids warranty.

### Description of Function

The charge controller protects the battery from being overcharged by the solar array. The charging characteristics include several stages. Ambient temperature influences the charging characteristics. The charge controller has a number of safety and display functions.

### Choosing the Position

The regulator is intended for indoor use only. Protect it from direct sunlight and place it in a dry environment. Never install it in humid rooms (like