



## MANUAL FOR FEINA SOLAR TRACKER SF4



1- The pedestal is fixed to the ground, a column or roof using 4 M10 screws. The edges of the panel must be in a N-S and E-W direction.



2- The base of the tracker is put in place. This part's axis of symmetry must go in a north-south direction.



3- The assembly is put in place, fixing it with an inclination corresponding to the latitude of the site. For example, if we are at latitude  $40^\circ$ , we must put it at  $40^\circ$  with respect to the horizontal.



4- The two panel support bars are put in place and fixed with the clamps specially for the purpose. If the bars are too long for the panels they are to be placed on, the ends can be cut off.



5- The intended panels are put in place with the clamps supplied.  
Maximum surface area:  
3.4 m<sup>2</sup>.  
Make sure that when it is at its furthest east or west it does not touch the ground or roof. If necessary, the pedestal must be changed.



6- The electronic box is put in place, fixing it to one of the screws holding the tracker to the pedestal.

The motor and micro-switch are plugged in (to do this, the black motor protection box has to be removed).

The electronics are plugged in to 12 volt direct current.

Put grease in all gears and points of friction.

This is repeated once or twice a year.

## **TRACKER FOR 3.4 M<sup>2</sup>.**

### **Uses**

For isolated homes, for road and motorway signs, for closed circuit cameras on motorways and other places, for mobile phone antennae, for independent street lamps, etc.

The improvement in performance compared to fixed panels is 26-30%, so this tracker is worthwhile from 1 m<sup>2</sup> of panels up to a maximum of 3.4 m<sup>2</sup>.

### **Switching on**

The tracker will be mechanically mounted so that it is facing approximately south (north in the southern hemisphere, changing the motor connections so it goes the other way).

It will be given a power supply of 12 volts, direct current. The cable section must be 1mm<sup>2</sup> at most and the batteries are more than 10 metres away.. If they are further away, the cables need to be slightly thicker.

The button is then pressed. The first thing it will do is to move the motor eastwards, until it hits the mechanical stop on the eastern side. After 4 seconds, the electronics will detect it has reached the end and stop. At this point the button must be pressed again, depending on the time.

If it is pressed once, it will be positioned at 9:00 (solar time) and the clock will also be set to this time.

Once the motor has stopped, if it is pressed again it will be positioned at 10:00

three times at 11:00

four times at 12:00

five times at 13:00

six times at 14:00

seven times at 15:00

eight times at 16:00

and nine times at 17:00

It should be said that great precision is not required. If it is 9:35 or 10:20, it can be set at 10:00 and the tracking error will be small. It must be pointed out that solar time must always be used.

At 21:00, the tracker will go back almost as far as the stop, to wait for 9:00 again.

### **Setting the time**

If after a time it is detected that it is too slow or fast, it is only a question of switching it on again – turning it off and setting the time again.

### **Operational security details**

The equipment will store the hour and the minute in the memory at all times. So, if it is turned off, the hour and minute will be stored.

If it is accidentally turned off for a moment, when it is switched on again it will do the same as when first turned on. It will wait until its button is pressed. As no-one will press it within 3 minutes, the control will understand that it has been turned off accidentally and it will put itself in the position corresponding to the last time recorded.

If it is turned off for only a few seconds, the clock will be at approximately the right time, but if it has been off for many minutes the clock will be slow by that number of minutes.

The clock will lose or gain a maximum of 4 seconds a day, or 24 minutes a year.

### **Others**

The electronics will consume approximately 1.6 w/h a day. When operating, the motor consumption will be approximately 2 amperes at 12 volts, that is, 24 watts, but the

total consumption throughout the day will be 0.4 w/h. However, the total consumption will be around 2.0 w/h a day.

To show it is working, the green LED will light up for a second every minute.

If it detects an operational error, that is, if the motor or microswitch are not working or the connections fail, apart from stopping everything, it will make the green LED flash. If you push the blue button more than 8 seconds, it reset the control. Like a OFF and a ON. (V A02).



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