Suntrack User Guide

The user manual

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User Guide

Introduction.
This is suitable for both the everything included Kit#1 and the users with own motors.

Description
With daily use only position 1 of the slide switch is used. The mirror can focus on a target or power off, the mirror will then go to the park position. Turn to a parking position where the mirror is rotated slightly to the ground. The mirror can always remain focused on one goal, when the sun rises the next day the mirror will move toward it and then continue. There are 4 working modes: follow target T1..T5 and follow the sun.

Starting
Starting the suntracker from power up first the time and location needs to be received by the GPS receiver. When GPS is not synced yet it is possible to manual move the mirror but no tracking.
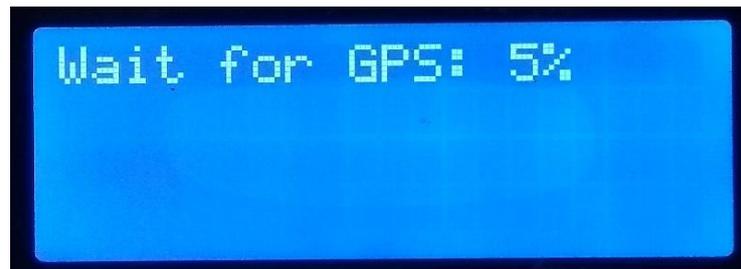
The percentage increased as time, date and location are received. Next screen is display when ready.

Display normal
When the unit is ready this display will be shown.

- A. Greenwich Mean Time (GMT) and Date
- B. Position of the sun in Azimuth and Elevation
- C. Position of the mirror in steps of the motor. Horizontal, vertical
- D. Current mode of the system, Follow Target 1
- E. GPS icon. Steady is ok, blinking is wait for synchronization

Position 1: set position

This is the normal position. Position 1 .. 4 relates to the slider. It can call stored points and be targeted directly at the sun. With Park the mirror will go to the park position.
Note: To turn backlight on press an unused key on the remote: G on or off

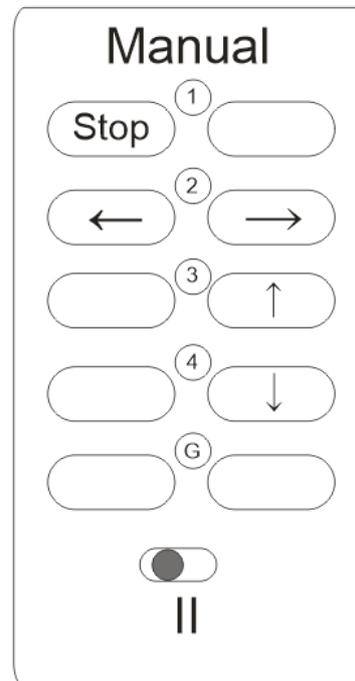| Key	Function
Stop	stop immediately.
Park	parking position
T1..T5	recorded point calls.
Sun	right into the sun.
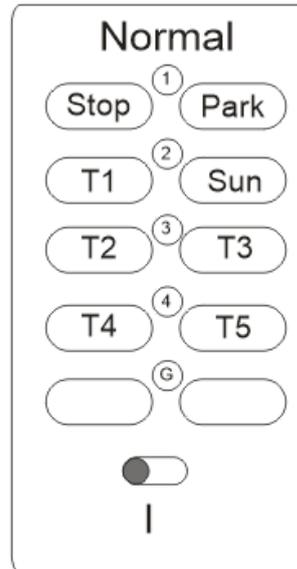
Position 2: manual move

This is for manual movement. If the mirror is manual moved the new point will be followed as a manual target. So mode 'Follow MANUAL'

| Key	Function
Stop	stop immediately.
Left	turn clockwise.
Right	turn anticlockwise.
Up	Up
Down	Down

Position 3: Calibrate

Learn to operational area by touching the internal end switches. It is only necessarily to learn the highest position only once. This is needed when the end screws are adjusted.

- First go to the minimum positions, short press Counter Clockwise and Down. The controls are immediately turned 1º away from the end.
- Run to the maximum position. Short press Clockwise and Up. Note that it is usually not possible to go to Xmax and Ymax simultaneously, the engines will clash.
- The LCD now shows the deviation (Devitn) it should be between -20 and +20. When a higher value is found the extended cable can cause this. Try without them.
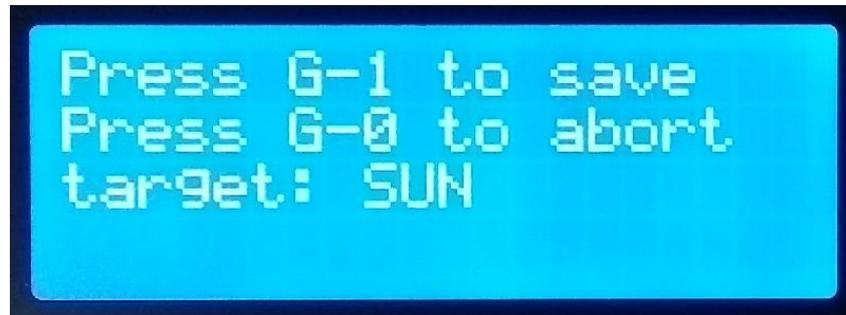

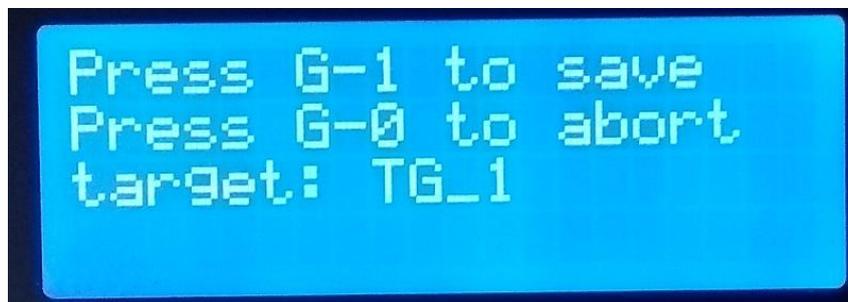| Key	Function
Stop	stop immediately.
Xmax	turn to the maximum horizontal position (clockwise)
X-zero	turn to zero. (anticlockwise)
Ymax	turn to the maximum vertical position. (up)
Y-zero	turn to zero. (down)
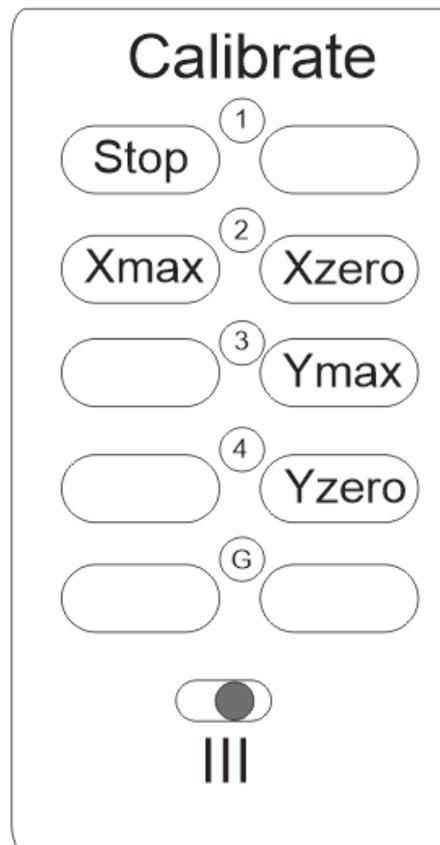
Position 4: Store

Saving Target 1 .. 5 and sun position. The sun position needs only be calibrated when installing or changing hardware. Saving the positions must be confirmed with the *save* avoid unwanted stores.

To save a position press target1 and confirm with *Save*
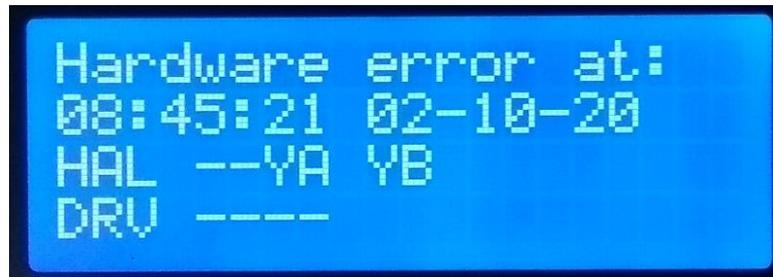

Key	Function
Stop	Stop immediately.
T1..5	The position to be stored.
Sun	Calibration of sun position
Park	Save parking position
Save	Confirm
Abort	Cancel save
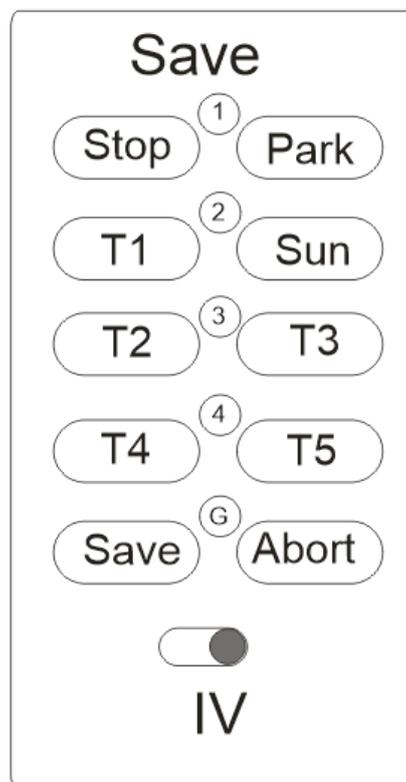
Problems

The control is equipped with various protection devices. This can cause a message on the LCD. The display stops at the time of fail. The backlight will turn on.

Problem	description
Does not stay on target	Have the motors mounted leveled, Perform a zero calibration, calibrate the sun position.
Zero calibration fails	When high values a displayed (deviation more than 20) probably extended cables were used, try the default setup first.
Wait for GPS	Wait for a valid signal, place the receiver close to a window
wait for GPS stays at 0%	The internal GPS receivers does not work. Power off and on the system
HAL XA XB YA YB	There is power to the motors but no movement on the sensor. The motor is jammed or there is a cable lock or breakage. Calibrate the zero position again. The 12V supply voltage can be low, the resistance of the CAT6 cable can be too high.
EndX of EndY	Endy EndX or the limit switch is always seen. The controls are immediately rotating 1 ° away from the end and can not always be seen. The switch is broken or there is a cable lock or breakage.
flashing GPS icon	The flashing colon means that no GPS clock read the last 24 hours. Make sure the controller box is in a position to receive the GPS signal.
backlight turns off	The backlight on the LCD goes off after 3 minutes. Turn it on by pressing an unused button for example, G0 or G1
not responding to remote.	If engines do not run in mode 1 or 2, the maximum X or Y are may be low. Do a calibration min and max. position 3.
not responding to remote.	Replace the CR2032 battery of the remote control.
not responding to remote.	Each remote controller has an unique serial number and needs to be learned. Only 1 remote can be active. To learn a new remote control see the advanced manual.
recorded point has moved.	Make sure the mounting of the rotors is still leveled. Do a zero calibration position 3 with Xmin and Ymin.
time / date incorrect	Time is always a GMT no daylight saving.
High deviation at calibration	Check the CAT-6 cable increasing the length with a not certified cable can cause problems since the cable is not used for ethernet.
Display show: Outrange	The calculated position is not possible. It is out of the hardware limits.