ECO-WORTHY SOLAR TRACKER CONTROLLER 2021

WindSpeed Sensor

Light Sensor   Power +12V Directionals
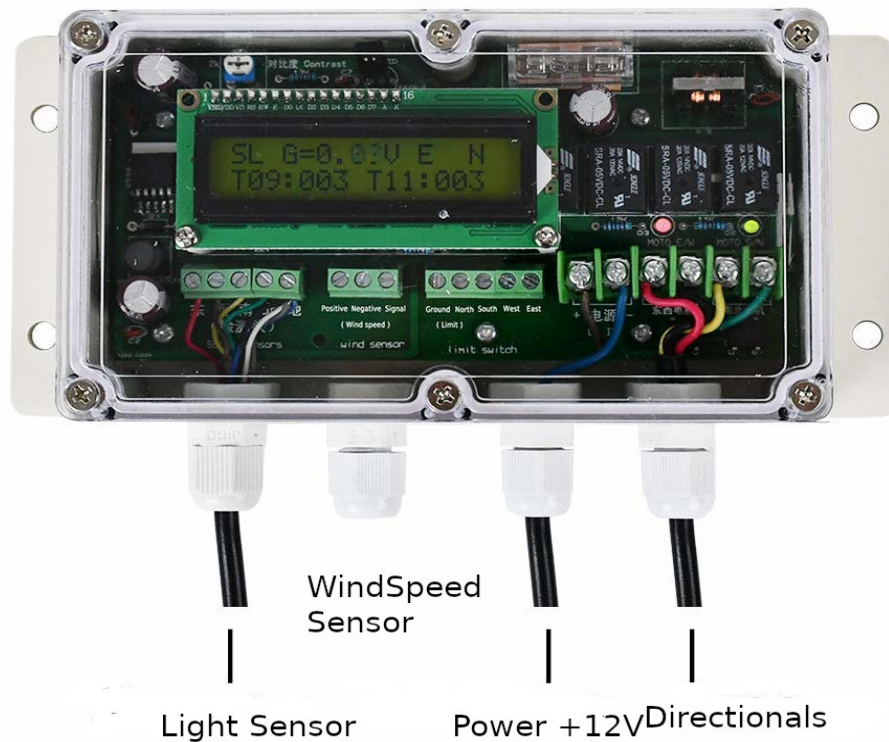
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Parameters of the LCD display:

AT   Automatic Tracking State

TX   Waiting period after automatic tracking alignment in seconds

TY   Waiting period after automatic tracking alignment in seconds

E,W, N,S   East, West, North, South

V   Voltage (of voltage sensor).

FS   Wind Speed

FSLOCK

F   voltage value of wind speed

SH   Shadow/Cloudy automatic tracking state

MT   Manual operation state

SL   Weak Sunshine

T3   Device drive time eastward after high wind speeds sensed

T4   Device drive time westward ?

T5   Device drive time northward after high wind speeds sensed

T6   Device drive time southward after T5 in seconds after high wind speeds sensed

T7   High wind Self lock time (600 seconds?)

T8   Delay for weak sunshine duration (30 minutes/1800 seconds)

T9   Device drive time eastward (weak sunshine) (recommend east to west time * 1.2)

T10   Device drive time westward (weak sunshine) west to east to final position.

T11   Device drive time northward (weak sunshine) (recommend south to north * 1.2)

T12   Device drive time southward (weak sunshine) north to south final position.

T13   Weak Sunshine recover time (recommend 10).

V1   Tracking precision voltage accuracy (perhaps east west)

V2   Wind speed control voltage value (hysteresis to wind speed set voltage 0.015).
V3   Weak Sun control voltage value – all four heads less than this value (currently 1.50V)

Using the Display

Using the East and West directional buttons on the remote while in normal operating mode the display
will cycle through the dynamic variables such as mode, Sensor levels, Wind Sensor level, Power
Supply voltage, timer values, and so forth.

Setting Parameters for No Sunshine or High Winds

When the device detects weak sunshine or high wind it beings by moving Eastward T9 seconds (for sun) or T3 seconds (for wind). It then moves Westward for T10 seconds (for sun) or T4 seconds (for wind). Next it moves T11 seconds (for sun) or T5 seconds (for wind) towards the North. Then it moves T12 seconds (for sun) or T6 seconds (for wind) South. The device then waits T13 seconds (for sun) or T7 seconds (for wind) before it will begin to track if the low sun or high wind condition is not detected again while it is waiting.

Left and right arrows change which parameter is being set, up or down arrows change parameter values.

Hold SET key for 5 seconds to enter parameters from the manual mode.

Holding the QUIT key for 5 seconds in the automatic mode turns background light on and off.

Notes: All time values were 10 seconds from the factory T3-T13
TX and TY were 10 seconds.
V1 0.02 Volts
V2 0.20 Volts
V3 1.50 Volts

Measured time from West to East was 35 seconds
Measured time from South to North was 21 seconds.

New set times: T9 = 25*1.2 = 42 seconds East
                    T10 = 35/2 = 17.5 → 18 seconds West
                    T11 = 21*1.2 = 25 seconds North
                    T12 =21/2 = 10.5 → 10 seconds South
                    Set February 22, 19:20

February 24 11:20
        T9 = 42 seconds East.
        T10 = 19 seconds West (empirically more level).
        T11 = 25 seconds North
        T12 = 0 seconds South (no need to move South).