

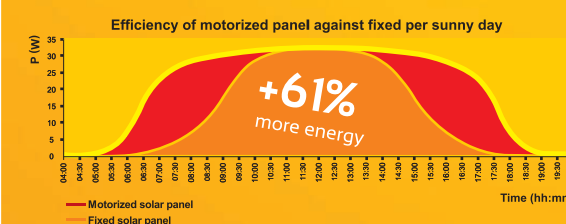
## Dual-Axis **SOLAR TRACKER** for 2 panels for 0,5 kWp @ 15% pan. eff.

- With time-derived astronomical positioning for the automatic sun-tracking
- Dual-Axis solar tracker with embedded positioner
- Time controlled astronomical algorithm for sun tracking
- Simple installation and synchronization of sun time
- Usable for PV, CPV and lighter thermal panels and heliostats
- 7 hours of automatic tracking at perpendicular angle
- User friendly web interface for monitoring, setting and upgrading
- USB communication port, optionally RS485
- For surface area up to 3,3m<sup>2</sup> and max 40 kg
- Made in Europe

**GREEN ENERGY**

**solar kit**  
www.solar-kit.com

**+61%**  
more energy



Real energy measurement of two equal solar panels (fixed and motorized)  
Three equal solar panels were exposed to the sun and the converted electrical power was measured.  
**Test conditions:** Solar panels (all): 0.5 kWp (producer spec. at AM 1.5), **Date:** July 2010  
**Time:** 4:00 to 20:00 (sun time), **Geo. latitude:** 46° N, **Weather conditions:** sunny  
**Results:** **Average energy of fixed:** 2508 Wh, **Average energy of motorized:** 4062 Wh,  
**Note:** sum of motor energy consumption through all day at full load is 17.52Wh or 0.43%  
of all collected energy, **Efficiency of the motorized panel:** 161,3%

## Mechanical Capabilities

Number of turning axis	Dual-Axis
Hour Angle Limit	100°, software and hardware limit 50°E to 50°W
Elevation angle	15 - 90°, adjustable start
Type of hour-angle motor	Linear Motor SM455IOM2 with stroke of 510 mm
Type of elevation-angle motor	Linear Motor SM455IOM2 with stroke of 510 mm
Hour-angle shaft diameter and length	Ø48 mm, L=1400 mm (steel)
Backstructure size	2 pcs of 1000 (H) mm & 4 pcs of 1000 (V) mm
Type of backstructure clamp	Toothed scissors grippers - 8 pcs
Tube diameter for mounting	Ø60 - 68 mm (not included with kit)
Max. dimensions of a solar panel	2 pieces of 0,99 m x 1,65 m in total 3,3 m2
Max. weight of a solar panel	2 pcs per 20 kg
Estimated service life	800-1000h of motor operation (DC motor replace on 8 years if each day one cycle), backup battery replace on 3-5 years if battery in, all other 25 years

## Positioning System Data

Tracking accuracy	<0.5° (optionally <0.1° - for additional payment)
Operating Protocol	TdAPS (Time derived Astronomical Positioning System)
Type of Positioning System	Servo driver positioner with TdAPS arc logic function calc.
Type of positioner	Din Rail positioner MICRO and extensor cables
Type of timer	GMT clock with EOT and calendar
Type of application program for supervision and setting	Solar tracking system monitor via web site
Setting and changing data via PC	Yes
Monitoring possibility via PC	Yes
Turned on the position sent from PC	Yes, it turn on position sent from PC, also all other setting can be commanded with string sent from PC
Turning time interval	1min. - 15min.

## Communication Data

Type of communication interface	USB interface
Networking solution for control from centre	RS485

## Firmware - Software

Upgrading possibility via PC	Yes, firmware via PC with help of Helios Analytics
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## Electrical Data

Motor Power Supply	24 VDC ± 15% (25A current capacity) SMPS must have 150% inrush current
Backup battery	CR 2512 coin
Standby consumption (when is not moving)	20 mA ± 25% @ 24VDC
Power supply connection	1 piece of 2 Wire Cable with an Internal Cu Conductor of 1.0mm2 (not included with kit)
Junction Box	190 (L) x 140 (W) x 70 (H) mm with connection harness

## Environmental Data

Operating temperature	-25°C to +70°C (optionally with artic grease for temperatures from -40°C up to +70°C)
Operation at humidity	0% to 100%, relative humidity
Max. safe wind speed	max. 144 km/h

## Corrosion, weather and chemical resistance

Hot-dip galvanizing (HDG, EN ISO 1461)	75-100 m (equivalent of 50 years)
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## Packaging

Dimensions of a packed product	1 box of 165 (L) x 22 (W) x 27 (H) cm
Product weight	41 kg

## Quality Certificates

International Protection Rating (IEC 60529)	IP63
Electromagnetic Compatibility (EMC Directive 89/336/EEC)	Yes
Low Voltage Equipment Directive (EEC Council Directive 73/23/EEC)	Yes

## Optional Properties

Anti-Shadowing Function	Yes, included
HelioStat usage	Yes, for additional payment

