

World Premiere // SkyCarrier 1000

## **SkyCarrier 1000 – New development of a photovoltaic tracking system for use close to the equator**

The SkyCarrier 1000 will be presented to the public for the first time at Intersolar 2009 in Munich.

The SkyCarrier 1000 developed by a+f GmbH is a newly developed tracking system for open space solar power plants close to the equator and supplements the SkyCarrier range of products made by a+f GmbH. The perfect area of operation is located between 0° and 25° of latitude north and south of the equator. Due to the steep path followed by the sun between the Tropic of Capricorn and Tropic of Cancer, tracking is only necessary around the horizontal axis in order to ensure that the photovoltaic modules are always optimally aligned to the sun.

Through its tracking around a horizontal axis, the SkyCarrier 1000 achieves an additional yield of up to 25% in comparison to a conventional fixed installation. An outstanding feature of the new development is the very small installation height of around 2.20 meters. As a result it is possible to connect together a variable number of module rows with a length of approximately 23 meter each. Depending on the module type used, the SkyCarrier 1000 can supply up to 48 kWp with seven rows. Through the reciprocal wind shelter of the module rows it has been possible to significantly optimise use of the materials in the tracking system and reduce the work involved in its installation.

Furthermore, the single-axis tracking system has been developed in such a way that the module surface can be equipped with solar modules of a wide range of manufacturers. The rotational axis of the tracking system ensures that the angle of inclination of the module surface moves at an angle of +/- 60° to the horizontal and therefore the modules are always aligned perfectly towards the sun.

The tracking device is driven by mechanically independent motors which are coupled together electrically multistage planetary gear and two rope drives. As is the case with the other models, no sensitive sensors are used. Throughout the year the tracking system of the SkyCarrier 1000 follows the path of the sun. The information required for tracking is obtained by the drive motor via a maintenance-free PLC (programmable logic controller), in which astronomical data is stored. The signals required for this are received by the PLC from an electronic clock, an incremental encoder between the gears and the drive motor, as well as mechanical sensing devices. In this manner accurate alignment in accordance with the current position of the sun is guaranteed round-the-clock.

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The Internet provides the opportunity for permanent function monitoring and protocolling of the system. Monitoring of the plant is made considerably easier and the obligatory administration reduced to a minimum.

Depending on customer requirements, the number of single vanes resp. module rows of the SkyCarrier 1000 can be installed individually. As a consequence it is possible to adapt the size in accordance with the land available and provide tailor-made project implementation.

The latest innovation supplements the product portfolio of a+f GmbH within the SkyCarrier range and is intended to further contribute towards market development in the Middle East.

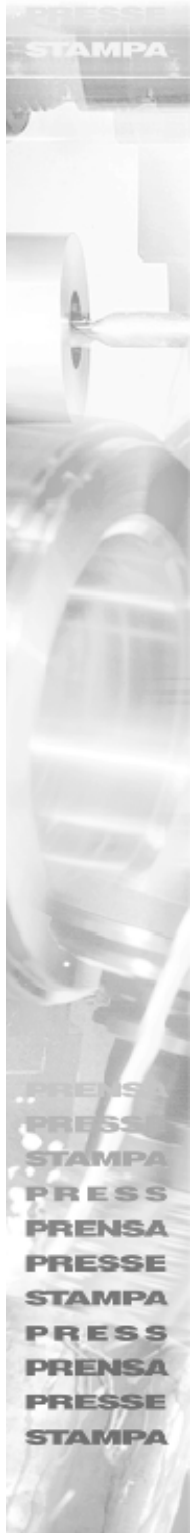
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**Key Facts of the SkyCarrier 1000:**

- \_ PLC-controlled tracking for up to 25% more power in comparison to permanently installed market solutions
- \_ Module surface of up to 261 m<sup>2</sup>
- \_ Angle of rotation  $\pm 60^\circ$
- \_ Installation height approximately 2.2 m above the open ground
- \_ Extremely stable steel construction
- \_ The perfect area of operation is between  $0^\circ$  and  $25^\circ$  of latitude north or south of the equator
- \_ Use with all standard types of module possible
- \_ Can be used as a single SkyCarrier or in large solar power plants
- \_ Due to its solid foundation the system is always ideally positioned to provide maximum yield even in strong winds
- \_ Wind load: according to EN 1991-1-4:2005, up to 140 km/h (=12 on the Beaufort scale, 39 m/s, corresponding to a hurricane)
- \_ Tested in the wind canal
- \_ Significant advantages compared to 2-axis systems with respect to reliability and safety
- \_ Long service life with minimal servicing requirements

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The SkyCarrier 1000 stands out in particular due to its small installation height of around 2.20 meters.

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Depending on customer requirements, an individual number of single vanes or module rows of the SkyCarrier 1000 can be installed.

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