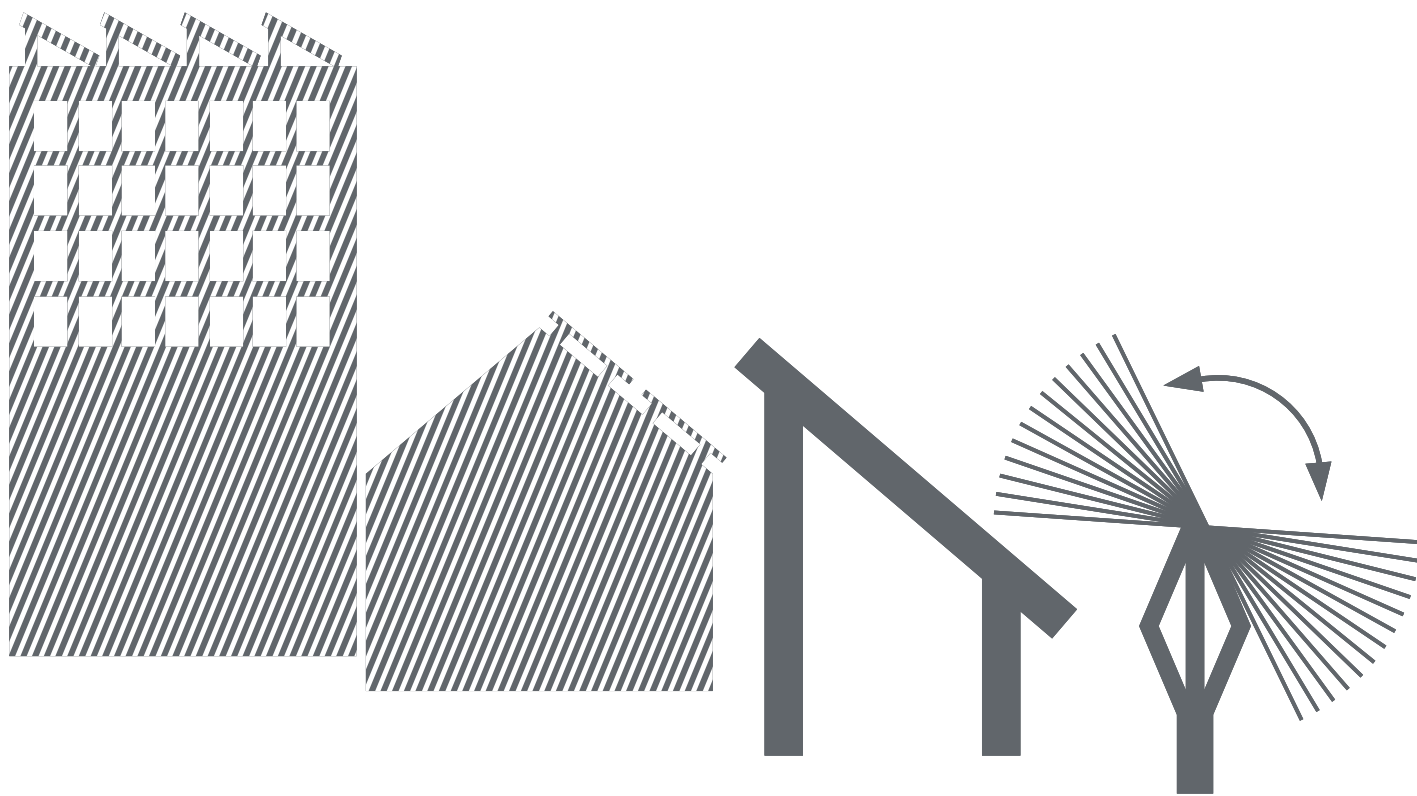
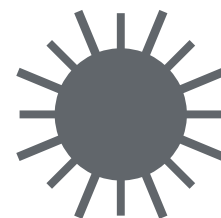




GROUND MOUNTED SYSTEMS



THE SIGMA RANGE

OUR SIGMA RANGE IS DESIGNED FOR SMALL, MEDIUM, AND LARGE GROUND MOUNT PROJECTS.

OUR FIXED-TILT AND TRACKER SOLUTIONS HOLD LAMINATE OR FRAMED PANELS AND ARE SUITABLE FOR BOTH PHOTOVOLTAIC AND SOLAR THERMIC PANELS.

We aim to offer strong constructions to our customers in order to maximise the overall efficiency of their photovoltaic plants.

Ramming posts replace expensive ground work, whilst the variable prop heads enable construction even on uneven ground. Depending on the customer's requirements, weather conditions and distance, we use long lasting, corrosion resistance aluminium or steel frames in order to minimise project costs.

In the last five years alone, we have installed over 2 GWp of the Sigma structure in 18 different countries. The four maxims which have consistently guided us over the last 20 years distinguish our products and services:

PERFECT TECHNOLOGY

We develop and produce high-quality aluminium and steel frames. Our engineers are continuously improving the structural design, use of materials and mounting processes.

TOP QUALITY

We provide the utmost in quality, work efficiently and reliably, and deliver on time. Our products and our quality management are certified.

EFFICIENT LOGISTICS

Our packaging solutions optimise the freight costs. As an approved exporter and importer, we support the entire customs process.

RELIABLE CUSTOMER SERVICE

We provide customized solutions and detailed offers inclusive of all structural calculations. For long-term project efficiency.

THE SIGMA ASSEMBLY SYSTEM

Whether aluminium or steel, fix-tilt or tracker: our Sigma structures carry all modules and permit countless different module arrangements.

THE TECHNICAL DETAILS AND MATERIALS OVERVIEW

SIGMA SYSTEMS

PV-MODULS	framed, unframed
MODULE ANGLE OF ELEVATION	as preferred
DISTANCE FROM LOWER EDGE OF MODULE TO THE GROUND	as preferred
MODULE ORIENTATION	portrait, landscape
GROUND CLEARANCE	based on structural calculations
WARRANTY	10 years
GROUND SLOPE NORTH-SOUTH	as preferred
MODULE CLAMP	Clickstone, laminate clamp
ADJUSTABILITY	adjustment during pile-driving
FOUNDATION	driven piles, ground screws, concrete foundation, cast in concrete

MATERIALS COMPARISON

ALUMINIUM

Very flexible for project-specific adaptation
Low weight for transportation and assembly
Adapts well to different terrains
High resistance to corrosion

STEEL

More affordable than aluminium for large projects
Long-lasting thanks to high-quality galvanizing
Assembly-friendly design
Very robust construction

SIGMA ALUMINIUM

Depending on the project-specific design, various requirements can be implemented.
The frame permits assembly parallel to the ground even by very uneven terrains.



MAXIMUM TABLE LENGTH	approx. 20 m
STANDARDS	Eurocode 1 – Impacts on structures Eurocode 9 – Design of aluminium structures
SMALL PARTS	stainless steel, geomet-coated steel, hot-galvanized steel, aluminium
BONDING	integrated bonding – low-ohmic transition resistances between components**
RAMMING POSTS	hat-profile posts, Sigma posts, C-profile (IPE-profile)
CORROSION PROTECTION	hot-galvanized steel parts
GROUND INCLINATION EAST-WEST	up to 15°
MODULE CLAMP	Clickstone, hammerhead (laminated clamp)
MODULE SUPPORT	CS rails, clip rails

MODULE CONFIGURATION

	STANDARD MODULE *		UNFRAMED MODULE	
	portrait	landscape	portrait	landscape
SINGLE-POST	1 - 2	2 - 4	-	2 - 6
DOUBLE-POST	2 - 4	3 - 6	-	4 - 9

*Assumed module dimensions: standard = 60 cells (165 x 1 m) / (standard 60 or 72 cells); ** on request

SIGMA STEEL

The steel variant of the Sigma range is more cost-effective with output of approx. 5 MW or more. Naturally we also offer single- and double-post systems in the steel version.



MAXIMUM TABLE LENGTH	approx. 30 m
STANDARDS	Eurocode 1 – Impacts on structures Eurocode 3 – Design of steel structures
SMALL PARTS	stainless steel, geomet-coated steel, hot-galvanized steel, aluminium
BONDING	UL certification (integrated bonding – low-ohmic transition resistances between components)
RAMMING POSTS	C-profile (IPE-profile), hat-profile posts
CORROSION PROTECTION	steel profiles coated in zinc magnesium, hot-galvanized pile-driven mounting posts
GROUND INCLINATION EAST-WEST	up to 10°
MODULE CLAMP	Clickstone, hammerhead (laminare clamp)
MODULE SUPPORT	CS rails, C module support rail

MODULE CONFIGURATION

	STANDARD MODULE *		UNFRAMED MODULE	
	portrait	landscape	portrait	landscape
SINGLE-POST	2	2 - 4	-	4 - 6
DOUBLE-POST	2 - 4	3 - 6	-	4 - 9

*Assumed module dimensions: standard = 60 cell (165 x 1 m)/ (standard 60 or 72 cells); ** on request

SIGMA TRACKER

The moving unit in the Sigma range for even greater solar yields.
The system is based on the Sigma Steel and tracks the course of the sun.



MAXIMUM ROW LENGTH	125 m
STANDARDS	Eurocode 1 - Impacts on structures Eurocode 3 - Design of steel structures Eurocode 9 - Design of aluminium structures
SMALL PARTS	stainless steel, geomet-coated steel, hot-galvanized steel, aluminium
BONDING	Low-ohmic transition resistances between frame components without additional parts
FOUNDATION	Driven piles, concrete foundation, screw piles
CORROSION PROTECTION	steel profiles (anti-corrosion coating), hot-galvanized pile-driven mounting posts
GROUND INCLINATION	from 45° east to 45° west
MODULE CLAMP	Clickstone, hammerhead (laminated clamp)
MODULE SUPPORT	CS rails
MODULE ARRANGEMENT	portrait = 1-3, landscape = 2-6 **

* Depending on project-specific design

SPECIFIC DETAILS

WIND LOAD MOVEMENT	up to 100 km/h
SNOW LOAD	1 kN/m ² (can be upgraded to take greater loads)
SAFETY POSITION	up to 260 km/h
WARRANTY	fixed components 10 years, moving parts 5 years
COMPONENTS MANUFACTURER	spur gear motor and controls (Siemens)
DRIVETRAIN PER MODULE AREA	1 drivetrain for 240 modules, or approx. 480 m ² (standard)
TEMPERATURE	-25°C - +60°C



PROJECT

POWER OUTPUT

LOCATION

POBEDA

50 MW

BULGARIA

FINOW II & III

60 MW

GERMANY

KENKOT HILL

38 MW

UK

WELSPUN

15 MW

INDIA

FUKUSHIMA

13 MW

JAPAN

MA'AN

12 MW

JORDAN

PEDRO GREEN

50 MW

PHILIPPINES

UCEA DE SUS

55 MW

ROMANIA

THAI SOLAR

32 MW

THAILAND

VOSHOPD I

54 MW

UKRAINE

With 8 GW of installed capacity, we are one of the biggest manufacturers of mounting systems for photovoltaic and solar thermal systems in the world.

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