Photovoltaic Mounting Systems



# **S:FLEX System Solutions**



Flat roof, pitched roof, balcony, façade and ground mount structures for flexible and fast installations



| Balcony system   |  |
|--|--|
| System for balcony power plants  | 03   |
| Façade and Pitched Roof System   |  |
| Insertion system ELS   | 04   |
| Pitched Roof Systems   |  |
| Roof hooks<br>Roof hooks Hybrid/XL<br>Roof hook plain tile<br>Standing seam clamps<br>Standing seam clamps with rails<br>High-bead rail HK 125/172<br>High-bead rail HK 125 XL 50/100<br>Bracket for sheet metal<br>High-bead rail Lift<br>Trapezoidal sheet metal rail Lift<br>Trapezoidal sheet metal rail Vario<br>Trapezoidal sheet metal rail<br>Hanger bolts and solar fasteners<br>Flat Direct for foil/bitumen roofs and sandwich elements<br>Flat Direct with assembly posts<br>Delta triangles with hanger bolts<br>Delta triangles with trapezoidal sheet metal rails | 05<br>06<br>07<br>08<br>09<br>10<br>11<br>12<br>13<br>14<br>15<br>16<br>17<br>18<br>19<br>20<br>21 |
| Flat Roof Systems<br>LEICHTmount RAIL 2.1 S/EW with low ballast<br>Green roof<br>Delta Concrete  | 22, 23<br>24<br>25   |
| Ground-Mount Systems   |  |
| Delta Concrete<br>Carport Single/Double<br>LEICHTmount G S/EW with ballast   | 26<br>27<br>28, 29   |
| Accessories for Equipotential Bonding  |  |
| Grounding components   | 30   |
| Contact<br>S:FLEX offices internationally  | 31   |
|  |  |

PV frame technology by professionals for practitioners – from pre-assembled components to fully customised solutions!







Application: Metal balcony railings with vertical bars Fastening: Mechanical attachment to railing and bars Module type: Framed modules with up to 2 m<sup>2</sup> module surface Module pitch: Up to 8° against the parapet Wind load: Up to 2.4 kN/m<sup>2</sup> Building height: 25 m max. Advantages: – Constructive consideration of the low design loads

- Constructive consideration of the low desig of balconies
- Particularly easy and risk-free attachment with rails attached to the modules that slide securely into the balcony mounting
- Standard-compliant linear bearing of the PV modules

# System for pitched roofs and façades Mounting with insertion system ELS









# Application:

Façades, noise protection walls and massive balustrades or pitched roofs with roof tiles, sheet metal roofs

# Fastening:

Façade: on-site

Pitched roof: compatible with all S:FLEX fastening solutions for tiled roofs and metal sheet roofing

# Roof pitch:

10 to 75 degrees

### Module type:

Framed modules, all common sizes

#### Module orientation:

Portrait/landscape

- Aesthetically pleasing modular surfaces with clean finishes
- All components for a special look available in black
- Suitable for module frame heights of 25 to 45 mm using just one type of insertion rail
- Newly developed module clamps that prevent rattling of the modules and thermally induced glass breakage/cracks
- Simple grounding, optimized service-friendliness



















Standing seam clamp 2.1

Standing seam clamp DCO



6 6

Standing seam clamp CL

End clamp AK II Klick 30-50 A





Mid clamp AK II Klick 30-50 A

### **Application:**

Standing seam clamp 2.1: Seamed roofing, e.g. standing seam, round seam, angle seam Standing seam clamp DCO and CL: Industrial metal roof systems, e.g. Domitec/GBS, Klip-Lok 700, RibRoof 465 **Fastening:** Non-penetrative **Module type:** Framed modules **Module orientation:** Landscape/portrait (for clamping on the short side) **Layers of rails:** Single layer **Advantages:** – Modules mounted directly to the standing seam clamps

- No rails necessary
- Low material/logistics/installation costs
- Quick mounting
- No roof penetration















HS rail HK 125 XL 100 complete



>

HS rail HK 125 XL 50

complete

HS bracket XL 130





Mid clamp AK II Klick 30-50 A

Application: Trapezoidal sheet metal Fastening: Screwed or riveted onto raised corrugations Module type: Framed modules Module orientation: Landscape Layers of rails: Single layer Advantages:

- Low material / fitting costs
- Rail heights of 50 or 100 mm guarantee a sufficient distance from the roof covering for optimal rear ventilation and use at high temperatures
- Floating mounting with brackets reduces the number of expansion joints and enables optimal use of the roof area
- High-bead rails covered with protective fleece
- Brackets come pre-drilled and with EPDM sealing tape covered bottom side











with small adapter

**Rear rail** with large adapter





End clamp AK II Klick 30-50 A



Application: Trapezoidal sheet metal Fastening: Screwed with sheet metal screws to the raised seams **Options:** South and East-West orientation Module type: Framed and frameless modules, all common sizes Module orientation: Portrait/landscape **Module pitch Lift:**  $5^{\circ}$  with portrait installation /  $7^{\circ}$  with landscape installation **Roof pitch:** 20° max. Advantages: - Low material and fitting costs - Optimised irradiation angles for higher yields - Better self-cleaning

- Maximum use of space through optional East-West orientation
- prefabricated with holes and EPDM sealing tape











Trapezoidal sheet metal rail Vario with Multi adapter front

End clamp EH AK II Klick 30-50 A





# Mid clamp MH AK II Klick 30-50 A

### Application:

Corrugated roof tile and curved trapezoidal sheet metal (barrel roofs with a radius larger than 3.5 m)

#### Fastening:

Riveted or screwed with sheet metal screws to the raised seams

### Module type:

Framed modules

Module orientation:

Portrait/landscape

Layers of rails:

Single layer

- Tension-free installation on curved roofs
- Tension-free installation on corrugated roof tiles
- Perfectly adapted to the roof shape
- Trapezoidal sheet metal rail Vario is supplied prefabricated with 26 holes (5 mm) and EPDM sealing tape covered bottom side







End clamp AK II Klick 30-50 A





Mid clamp AK II Klick 30-50 A

**Cross adapter clamp AK** 





Mounting rail ST-AK 13/60

Application: Trapezoidal and corrugated sheet metal Fastening: Screwed or riveted onto raised corrugations Module type: Framed and frameless modules Module orientation:

Landscape/portrait

Layers of rails:

Single/double layer

- Low material / fitting costs
- Every size of module array possible
- Rail lengths of 395 mm, 3150 mm and 6200 mm
- High rigidity rails suitable for heavier loads
- Rail segments 395 mm (Trapezoidal sheet metal AK complete / I=395 mm) are supplied prefabricated with 24 holes (5 mm) and EPDM sealing tape covered bottom side















### Mounting rail ST-AK 13/60

End clamp AK II Klick 30-50 A



**Cross adapter clamp AK** 



Hanger bolt M10x200

Bracket 60mm M10

### **Application:**

Fibre-cement boards/sandwich elements/ trapezoidal sheet metal **Pitch:** 

ltcu:

Available in increments of 5° up to 45°, other angles available upon request

### Module type:

Framed and frameless modules

Module orientation:

Portrait/landscape

- Free choice of size and position of the module array possible
- Perfect also for small systems of 1, 2, 4 or 8 modules
- Triangles are shipped folded up for less freight and storage costs









### Mounting rail ST-AK 13/60

End clamp AK II Klick 30-50 A





Mid clamp AK II Klick 30-50 A

Cross adapter clamp AK



S:FLEX Triangle Delta AK 1230 5° – 45°

Trapezoidal sheet metal rail I=395

### **Application:**

Trapezoidal and corrugated sheet metal **Pitch:** 

Available in increments of 5° up to 45°,

other angles available upon request

# Module type:

Framed and frameless modules

# Module orientation:

Portrait/landscape

### Advantages:

- Free choice of size and position of the module array possible
- Perfect also for small systems of 1, 2, 4 or 8 modules
- Triangles are shipped folded up for less freight and storage costs

21

















- Designed to be used on flat concrete roofs
- Excellent rear ventilation ensuring high yields, making it particularly suitable for hot regions
- Light-weight, material-saving design
- Offers the possibility to build over obstacles
- No drilling of aluminium on site

**Grounding kit** 

End clamp Hawk HK 25-45 I=40







Base rail Delta Concrete



100

Pillar Delta Concrete FS 9/40

Top Delta Concrete



Base Delta Concrete

End clamp Hawk HK 25-45 I=40 Grounding kit





Mid clamp Hawk HK 25-45 I=40 Grounding kit **Application:** Ground mount system Fastening: Concrete, screw fastening **Options:** South and East-West orientation Module type: Framed, frameless (additional horizontal rail), bifacial Module orientation: Landscape/portrait Module pitch: up to 20° Pitch: N-S: any; E-W: module area 1°/ terrain 10° Maximum module field size: 12x4 modules (landscape) / 12x3 modules (portrait) **Advantages:** - Designed for ground-mount on concrete foundations - Light-weight, material-saving design - Offers the possibility to build over obstacles - No drilling of aluminium on site





Colour:

Matt black (RAL 9005), anthracite trapezoidal sheet

Carport Double dimensions – front view

5250

5922





LEICHTmount G S Front Part LEICHTmount G S ELICHTmount G S End Part

Application: Ground Mount System Module orientation: South Module tilt: 15°/20° Module type: Framed modules Max. ground slope: 20° System size: 2 x 3 modules min. Advantages:

- No pile driving or major excavation work needed
- Suitable for a wide range of surfaces such as earth, gravel, concrete
- Reduced transport and storage costs thanks to low volume packaging







with grounding pins

Application: Ground Mount System Module orientation: East–West Module tilt: 10° Module type: Framed modules Max. ground slope: 20° System size: 2 x 4 modules min. Advantages: – No pile driving or major excavation work needed

- Suitable for a wide range of surfaces such as earth, gravel, concrete
- Reduced transport and storage costs thanks to low volume packaging













### Grounding clamp DEHN Uni

- To integrate the mounting system into the building's equipotential bonding system and to connect it to earth
- Stainless steel to prevent contact corrosion
- Connection by means of hammerhead bolt and locking nut (positive and frictional locking)
- Diameter of clamping area for aluminium round wire: 8-10 mm / Connection cross-section of equipotential bonding conductor: 4-50 mm<sup>2</sup>

### **OBO equipotential bonding clamp**

- For equipotential bonding of the mounting rails by means of aluminium round wire
- Connection by means of hammerhead bolt and locking nut (positive and frictional locking)
- Diameter of clamping area for aluminium round wire: 8-10 mm

### Splice 5/7/13 Grounding

 Equipotential bonding between the rails by means of a corresponding connector with stainless steel earthing blades

### MH AK Klick 30-50 Earthing plate / Earthing plate 4x2

- For integration of the module frames into the equipotential bonding system
- Equipotential bonding between the module frame and substructure
- Breaks through the anodised layer
- Stainless steel
- For pre-assembly and installation on site

### Earthing cable clip

- For connection of two metallic components to each other (e.g. rail and module frame or 2 module frames to each other) by means of cables
- For material thickness from 1.5 to 2.5 mm
- For electrical cables with a cross-section of 6 mm<sup>2</sup>





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