



*We carry the energy of the sun!*



**SOLAR PANEL SUPPORT SYSTEMS**

[www.kiracmetal.com](http://www.kiracmetal.com)





[www.kiracmetal.com](http://www.kiracmetal.com)



Kıraç Group was established in 1981 with the vision to become a leading actor in the electrical market. The group includes separate entities titled as Kıraç Elektrik, Kıraç Metal, Kıraç Otomasyon, Kıraç Galvaniz, Emcekare, Pioneer Metal, Kıraç Group İnşaat and Kıraç Bilişim interconnected with each other creating a culture of inhouse support across eight different sectors. The Group invests in the future by prioritizing customer satisfaction through top quality products and services it offers since its establishment. The Group is conducting successful operations in Europe, Asia, Middle East and North America.

Kıraç Metal Ürünleri San. ve Tic. Ltd. Şti. was established in 2002 in order to manufacture cable trays. The Company has completed successful projects with its experienced and dynamic team. Its main manufacturing facility is located in Eskişehir Organized Industrial Zone. The facility is established on a total area of 20,250 sq.m having an indoors space of 12,150 sq.m. With a manufacturing capacity of 1,000 Tones/Month, Kıraç Metal produces Solar Panel Support and Mounting Systems, Cable Trays and Ladders, Supporting Components and Fittings plus Industrial-Type Electrical Panels. The facility is also designed to incorporate flexibility to adjust its manufacturing flow for tailored products. As one of the leading global manufacturers, Kıraç Metal is the choice of consumers for its high quality and customer oriented product and services, on time delivery policy and its pre/post-sales services. Kıraç Metal Ürünleri San. ve Tic. Ltd. Şti.'s primary export market is Europe while its products reach numerous other countries around the world.

[www.kiracgroup.com](http://www.kiracgroup.com)



After solar panels and invertors, the most crucial equipment in a solar power plant are solar panel support systems. The reliability and effectiveness of a power plant is directly correlated with how support systems are designed in terms of strength and durability. Any mistake made during design phase may cause substantial damage to the facility. Furthermore, mounting equipment utilized in installing and connecting support equipment shall be selected from corrosion resistant materials which can withstand severe ambient conditions.

Kiraç Metal offers optimal solutions for support systems design by incorporating high-tech equipment to its advanced engineering capabilities. Variable and constant loads such as ground structure, snow load, earthquake load, wind load etc. are important in selecting support systems. Kiraç Metal has developed specific solutions for all types of land and roof applications. Kiraç Metal has a pioneering role in sector's development due to its capacity to manufacture support systems essential for solar power plants according to international standards enabling the meeting of varying market demand.

[www.kiracmetal.com](http://www.kiracmetal.com)



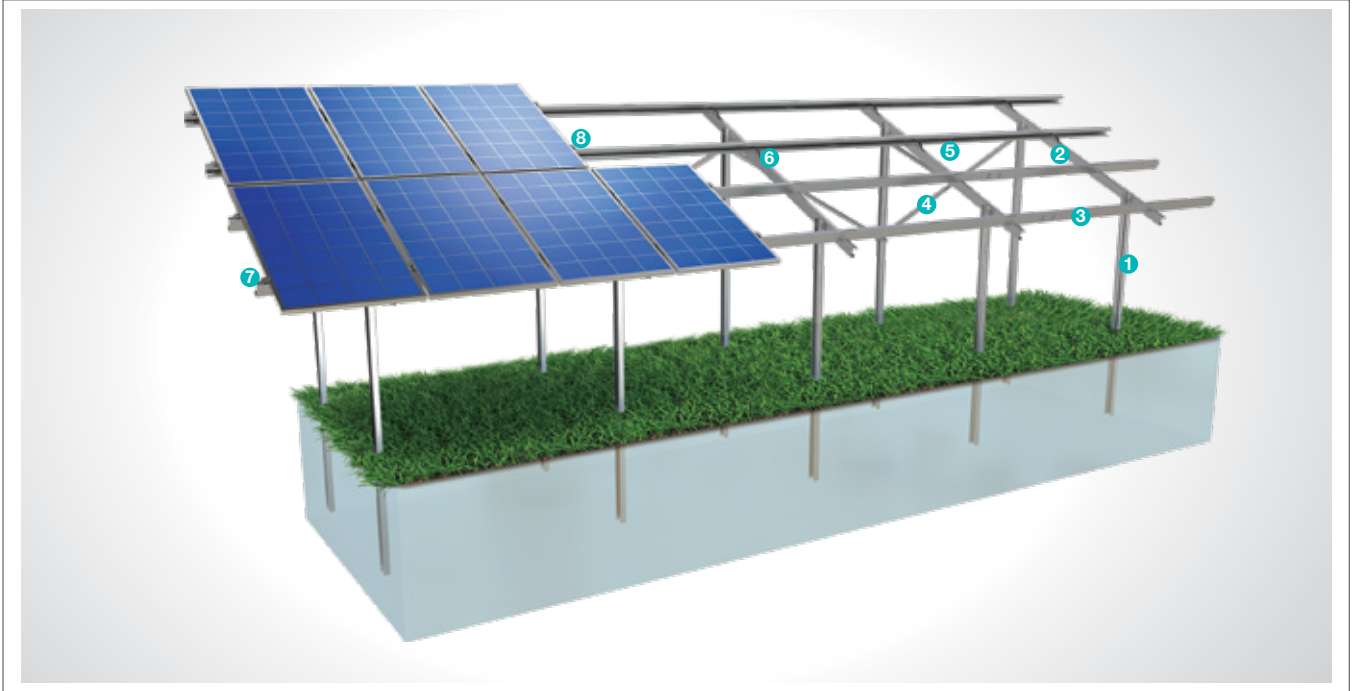
Pioneer Metal Company W.L.L is a Qatar based, Joint Venture company between Almana Group , Qatar and Kirac Metal, Turkey. Pioneer Metal Co. having its manufacturing plant at New Industrial Area, Doha, Qatar is the leading manufacturer and supplier of : Cable Management System, Solar Mounting System, Low Voltage Enclosures for indoor and outdoor application and other customized steel products; for the Oil & Gas, Commercial, Industrial and Telecommunication sectors. Established in 2009, the company has invested continuously in its core product ranges and is now able to offer a full solution made up of various specifications and accessories that meet the needs of almost any project and contract. Our production facility has ISO 9001:2015, ISO14001:2015, ISO45001:2018, BS EN EN61537 and our production is controlled by the quality management system established in accordance with the standards. Our extensive experience together with latest technology enables us to provide superior service and unrivalled support to our customers. "Pioneer Metal", "PMC" and "Cablelane" are the brand names used by the company to promote its products and services across the GCC Countries.

[www.pioneermetal.org](http://www.pioneermetal.org)

## (KPT1) Ground Driven Steel Mounting System with 2 Vertical Panels

### Overview

**KPT1**, is a ground driven steel support and mounting system with 2 vertical panels for open terrain solar panels. The system is an optimal application solution for installations of PV projects on large and medium-sized terrains . After manufacturing the system components with high-technology machines and equipment, an excellent corrosion resistance is then achieved through hot-dip galvanized coating. The system, incorporating a high-level engineering design, provides assembly and cost advantages.



#### STEEL COLUMN



- **CK-90 / CK-100 / CK-120**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### STEEL BEAM



- **CR-100 / CR-120**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8/M12 Washer

#### STEEL PURLIN



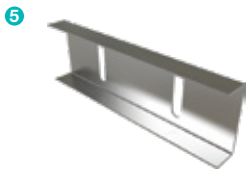
- **CA-90 / CA-100 / CA-110**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8/M12 Washer

#### STEEL L BRACKET



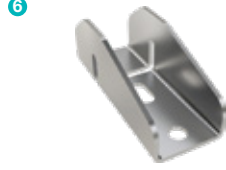
- **CL-40X40 / CL-50X50**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### PURLIN CONNECTOR JOINING PIECE



- **C90 / C100 / C110**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### PURLIN CONNECTOR



- **U40**  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8 Washer

#### PANEL SIDE RETAINER



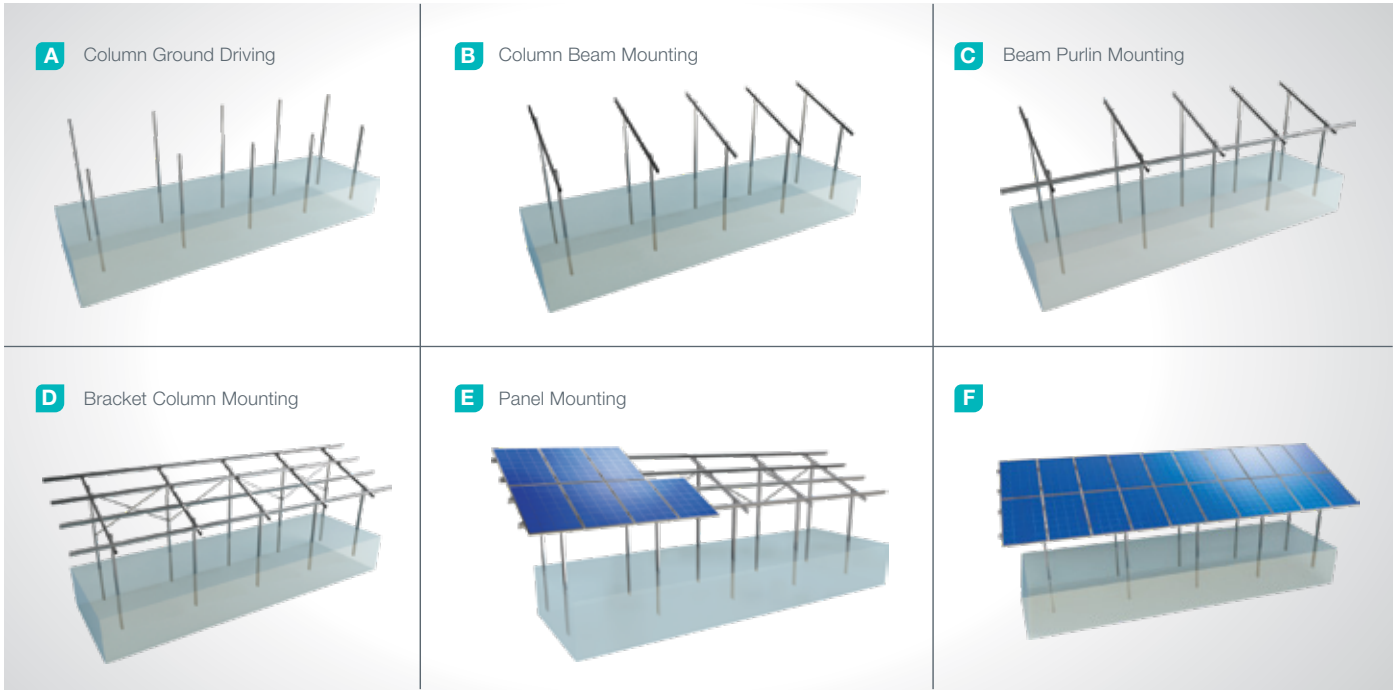
- **H30-H32-H40**  
M8X30 Hex Bolt  
M8 Flanged Nut

#### PANEL CENTER RETAINER



- **L70**  
M8X30 Hex Bolt  
M8 Flanged Nut

## Installation Phase



## Advantages

- Time saving for installation
- Cost saving for installation
- Flexible solutions for different types of terrains
- Suitable solutions for combiner box and inverter installation
- Tailored design solutions for customer
- Customer oriented engineering solutions

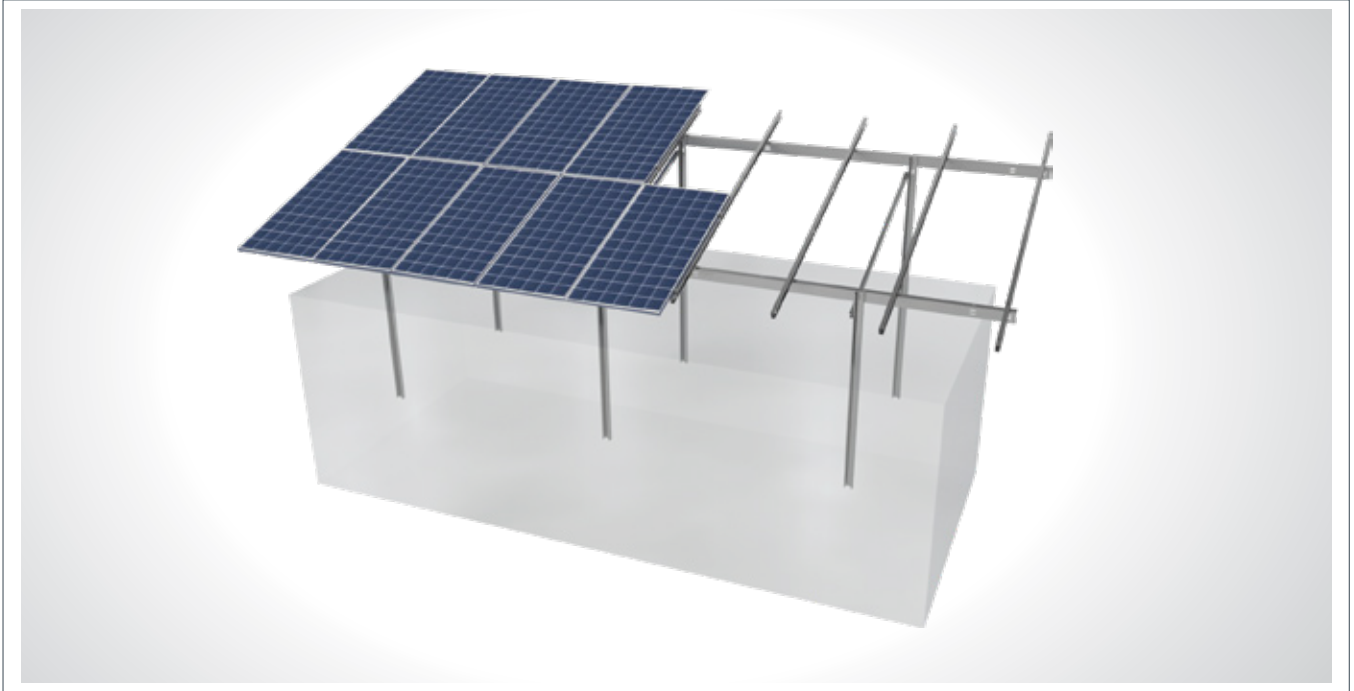
## Technical Specifications

Description:	(KPT1) Ground Driven Steel Mounting System with 2 Vertical Panels
Mounting Method:	Ground Driving
Tilt Angle:	0-60 degrees
Module Application:	Framed and Unframed
Panel Height From Ground:	60 cm
Column and Beam Coating:	EN ISO 1461
Column and Beam Material:	EN 10025 / EN 10029
Optional Beam Material:	EN 10346
Panel Retainer:	EN AW 6063
Connector Equipment:	DIN 934 / DIN933 / DIN 912, A2-70 DIN 50979

## (KPT1B) Ground Driven Steel Mounting System with 2 Vertical Panels

### Overview

KPT1B, is a ground driven steel support and mounting system with 2 vertical panels for open terrain solar panels. The system is an optimal application solution for installations of PV projects on large and medium-sized terrains . After manufacturing the system components with high-technology machines and equipment, an excellent corrosion resistance is then achieved through hot-dip galvanized coating. The system, incorporating a high-level engineering design, provides assembly and cost advantages.



#### Steel Column

1



- **CC-90 / CC-100 / CC-120**
- M12x30 Akb Bolt
- M12 Washer
- M12 Spring Washer
- M12 Flanged Nut

#### Steel Beam

2



- **CC-100 / CC-110 / CC-120**
- M12x30 Akb Bolt
- M12 Washer
- M12 Spring Washer
- M12 Flanged Nut
- M8x25 Akb Bolt
- M8 Washer
- M8 Spring Washer
- M8 Flanged Nut

#### Steel Purlin

3



- **CC-80 / CC-90 / CC-100 / CC-120**
- M12x30 Akb Bolt
- M12 Washer
- M12 Spring Washer
- M12 Flanged Nut

#### Steel Support

4



- **CL-40X40 / CL-50X50**
- M12x30 Akb Bolt
- M12 Washer
- M12 Spring Washer
- M12 Flanged Nut

#### Connector Joining Piec

5



- **C90 / C100 / C110**
- M12X30 Knurled Bolt
- M12 Flanged Nut
- M12 Washer

#### Panel Side Retainer

6



- **H30-H32-H40**
- M8X30 Imbus Bolt
- M8 Flanged Nut

#### Panel Middle Retainer

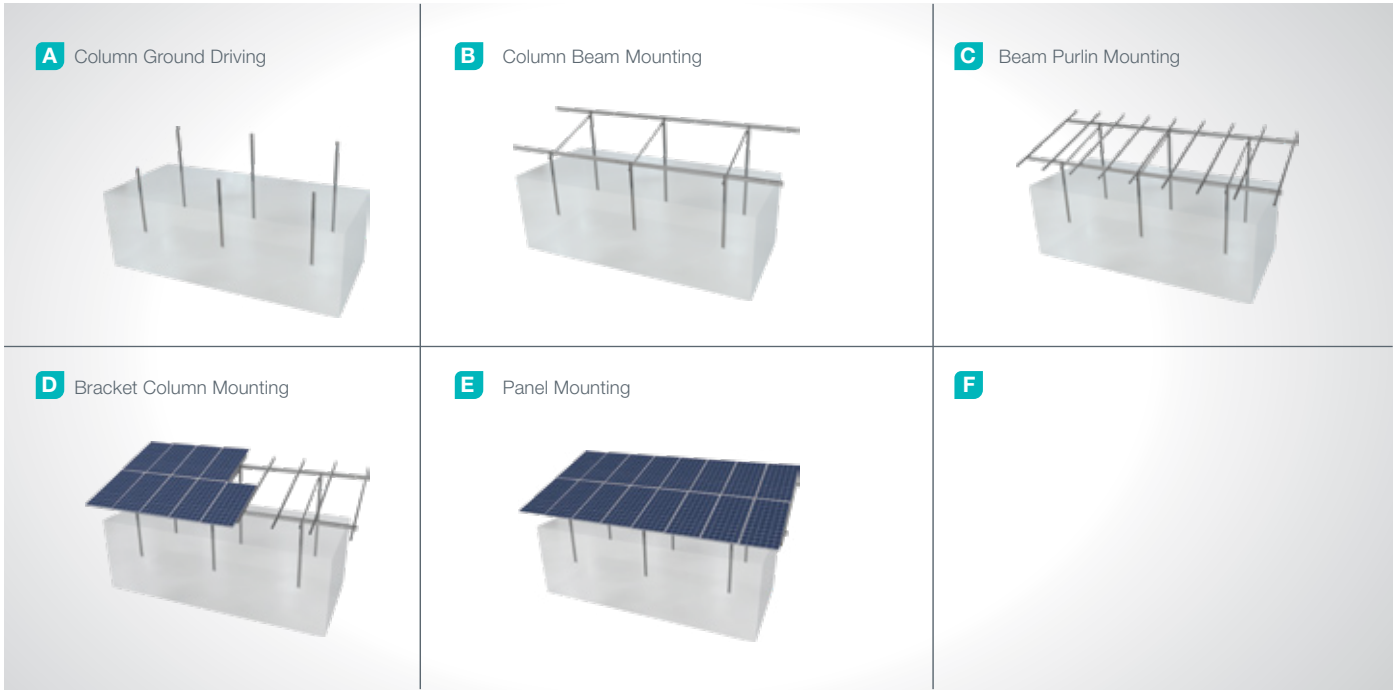
7



- **L70**
- M8X30 Imbus Bolt
- M8 Flanged Nut



## Installation Phase



## Advantages

- Time saving for installation
- Cost saving for installation
- Flexible solutions for different types of terrains
- Suitable solutions for combiner box and inverter installation
- Tailored design solutions for customer
- Customer oriented engineering solutions

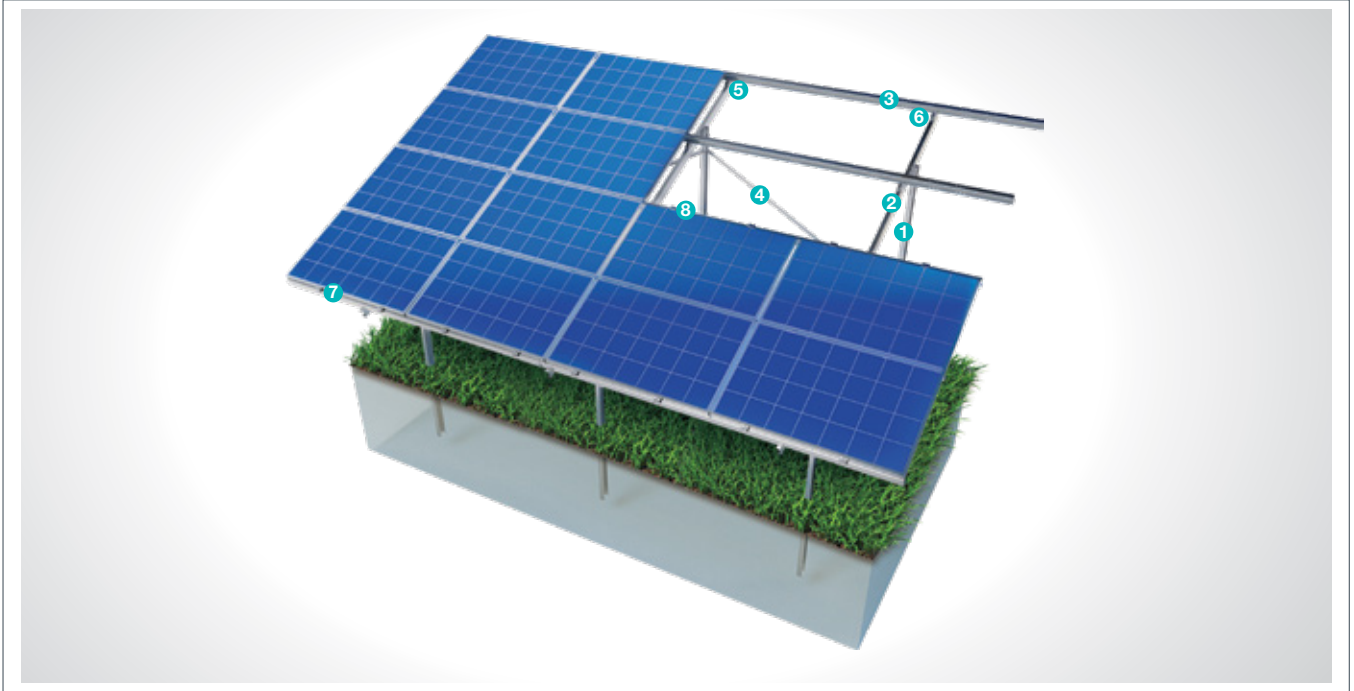
## Technical Specifications

Description:	(KPT1B) Ground Driven Steel Mounting System with 2 Vertical Panels
Mounting Method:	Ground Driving
Tilt Angle:	0-60 degrees
Module Application:	Framed and Unframed
Panel Height From Ground:	60 cm
Column and Beam Coating:	EN ISO 1461
Column and Beam Material:	EN 10025 / EN 10029
Optional Beam Material:	EN 10346
Panel Retainer:	EN AW 6063
Connector Equipment:	DIN 934 / DIN933 / DIN 912, A2-70 DIN 50979

## (KPT2) Ground Driven Steel Mounting System with 4 Horizontal Panels

### Overview

KPT2, is a ground driven steel support and mounting system with 4 horizontal panels for open terrain solar panels. The system is an optimal application solution for installations of PV projects on large and medium-sized terrains. After manufacturing the system components with high-technology machines and equipment, an excellent corrosion resistance is then achieved through hot-dip galvanized coating. The system, incorporating a high-level engineering design, provides assembly and cost advantages.



#### STEEL COLUMN



- **CK-90 / CK-100 / CK-120**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### STEEL BEAM



- **CR-100 / CR-120**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8/M12 Washer

#### STEEL PURLIN



- **CA-90 / CA-100 / CA-110**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8/M12 Washer

#### STEEL L BRACKET



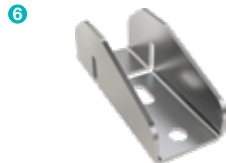
- **CL-40X40 / CL-50X50**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### PURLIN CONNECTOR JOINING PIECE



- **C-90 / C-100 / C-110**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### PURLIN CONNECTOR PIECE



- **U40**  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8 Washer

#### PANEL SIDE RETAINER



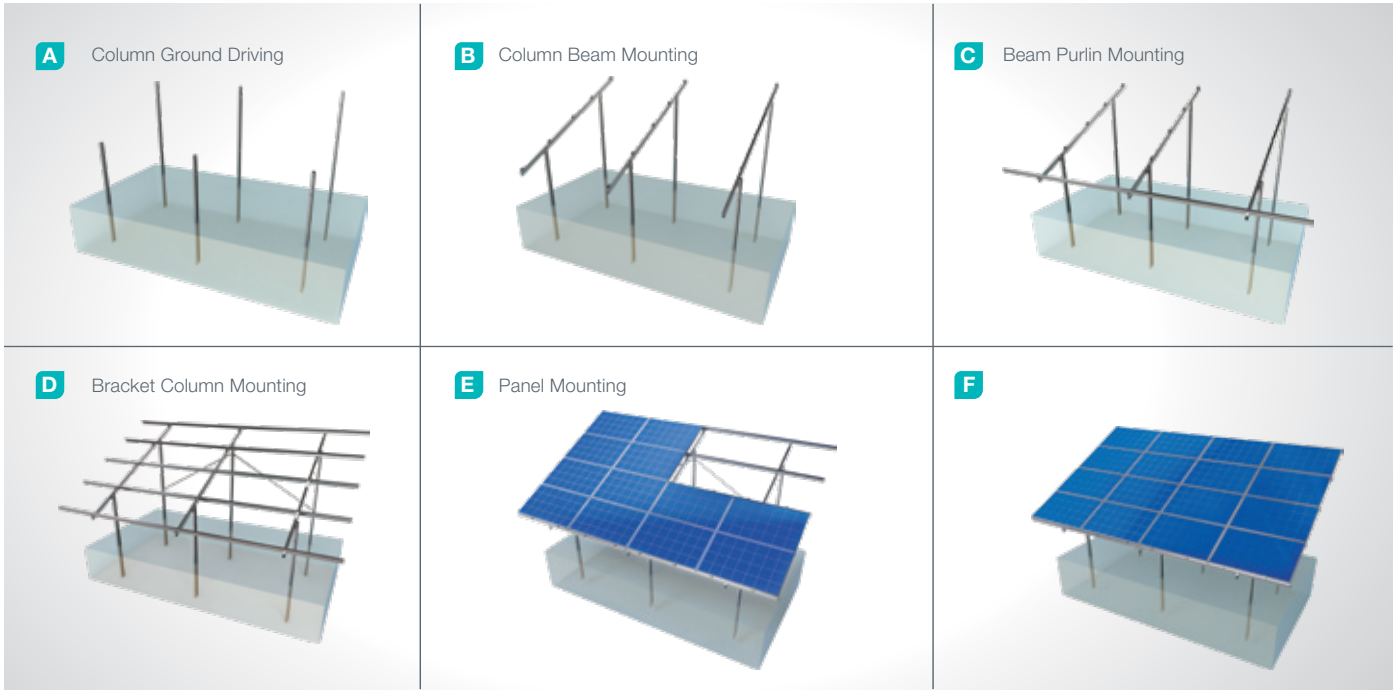
- **H30-H32-H40**  
M8X30 Hex Bolt  
M8 Flanged Nut

#### PANEL CENTER RETAINER



- **L70**  
M8X30 Hex Bolt  
M8 Flanged Nut

## Installation Phase



## Advantages

- Time saving for installation
- Cost saving for installation
- Flexible solutions for different types of terrains
- Suitable solutions for combiner box and inverter installation
- Tailored design solutions for customer
- Customer oriented engineering solutions

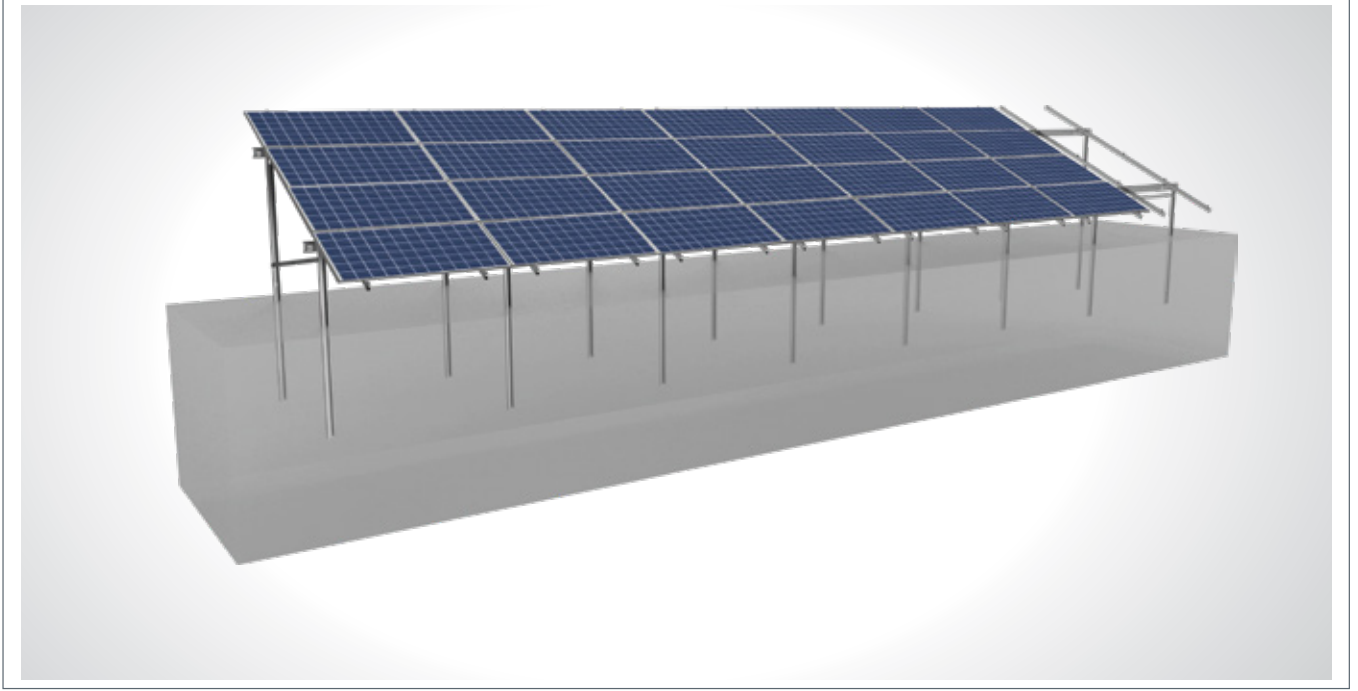
## Technical Specifications

Description:	(KPT2) Ground Driven Steel Mounting System with 4 Horizontal Panels
Mounting Method:	Ground Driving
Tilt angle:	0-60 degrees
Module Application:	Framed and Unframed
Panel Height From Ground:	60 cm
Column and Beam Coating:	EN ISO 1461
Column and Beam Material:	EN 10025 / EN 10029
Optional Beam Material:	EN 10346
Panel Retainer:	EN AW 6063
Connector Equipment:	DIN 934 / DIN933 / DIN 912, A2-70 DIN 50979

## (KPT2B) Ground Driven Steel Mounting System with 4 Horizontal Panels

### Overview

KPT2B, 4 is a ground driven steel support and mounting system with 4 horizontal panels for open terrain solar panels. The system is an optimal application solution for installations of PV projects on large and medium-sized terrains. After manufacturing the system components with high-technology machines and equipment, an excellent corrosion resistance is then achieved through hot-dip galvanized coating. The system, incorporating a high-level engineering design, provides assembly and cost advantages.



#### Steel Column

1



#### ■ CC-90 / CC-100 / CC-120

M12x30 Akb Cıvata  
M12 Rondela  
M12 Yaylı Rondela  
M12 Fanslı Somun

#### Steel Beam

2



#### ■ CC-100 / CC-110 / CC-120

M12x30 Akb Cıvata  
M12 Rondela  
M12 Yaylı Rondela  
M12 Fanslı Somun  
M8x25 Akb Cıvata  
M8 Rondela  
M8 Yaylı Rondela  
M8 Flanslı Somun

#### Steel Purlin

3



#### ■ CC-80 / CC-90 / CC-100 / CC-120

M12x30 Akb Cıvata  
M12 Rondela  
M12 Yaylı Rondela  
M12 Fanslı Somun

#### Steel L Bracket

4



#### ■ CL-40X40 / CL-50X50

M12x30 Akb Cıvata  
M12 Rondela  
M12 Yaylı Rondela  
M12 Fanslı Somun

#### Connector Joining Piece

5



#### ■ C90 / C100 / C110

M12X30 Anahtar Başlı Cıvata  
M12 Flanslı Somun  
M12 Rondela

#### Panel Side Retainer

7



#### ■ H30-H32-H40

M8X30 İmbus Cıvata  
M8 Flanslı Somun

#### Panel Middle Retainer

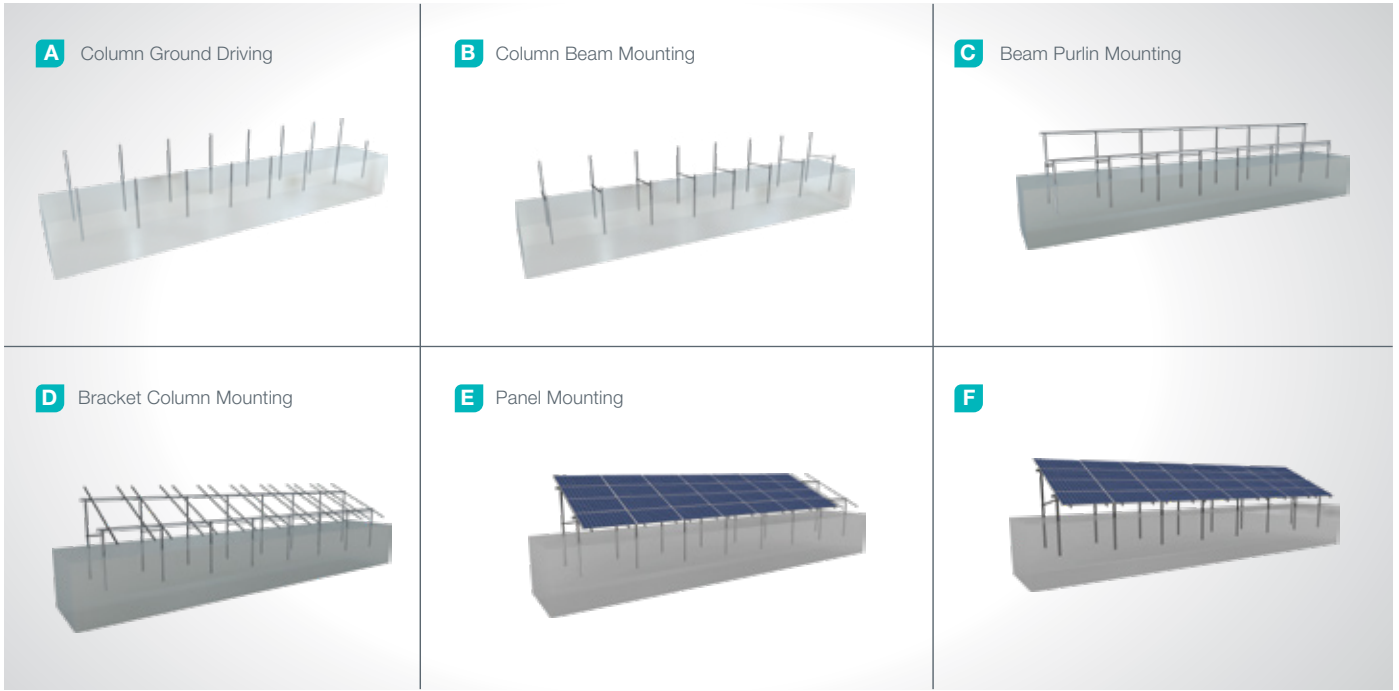
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#### ■ L70

M8X30 İmbus Cıvata  
M8 Flanslı Somun

## Installation Phase



## Advantages

- Time saving for installation
- Cost saving for installation
- Flexible solutions for different types of terrains
- Suitable solutions for combiner box and inverter installation
- Tailored design solutions for customer
- Customer oriented engineering solutions

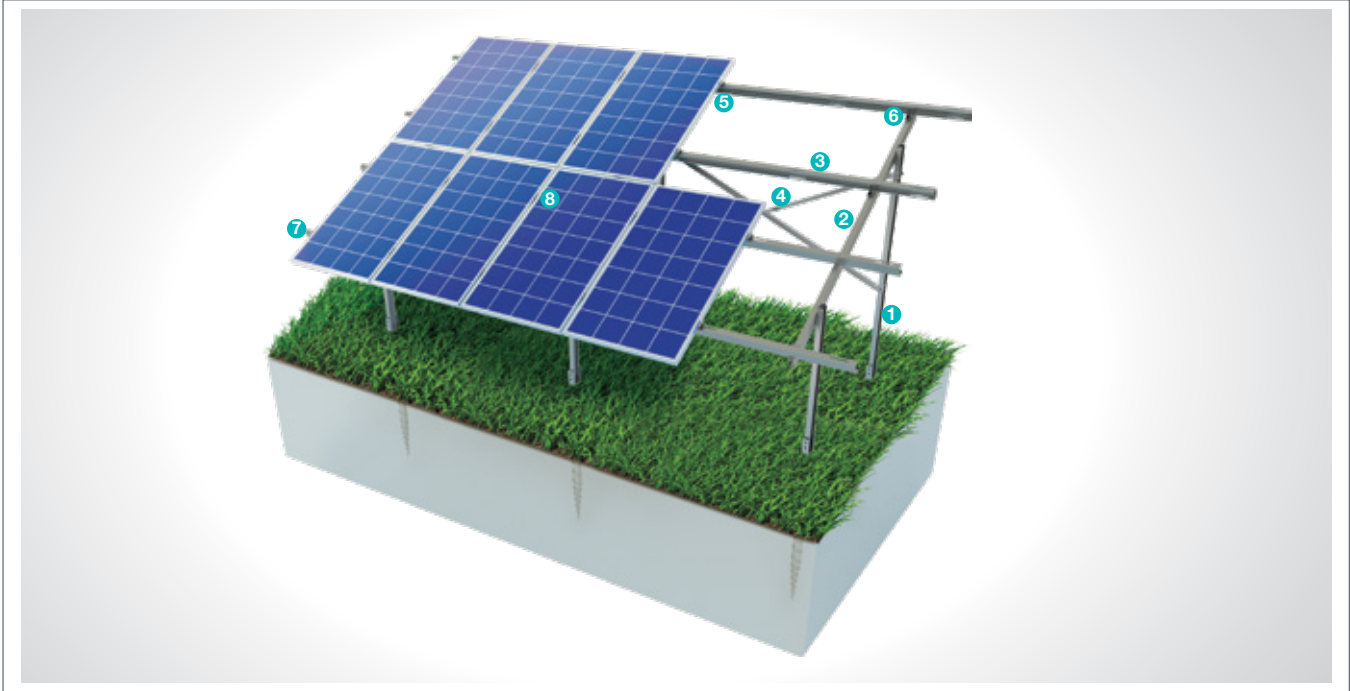
## Technical Specifications

Description:	(KPT2B) Ground Driven Steel Mounting System with 4 Horizontal Panels
Mounting Method:	Ground Driving
Tilt angle:	25 - 30- 35 Degrees
Module Application:	Framed and Unframed
Panel Height From Ground:	60 cm
Column and Beam Coating:	EN ISO 1461
Column and Beam Material:	EN 10025 / EN 10029
Optional Beam Material:	EN 10346
Panel Retainer:	EN AW 6063
Connector Equipment:	DIN 934 / DIN933 / DIN 912, A2-70 DIN 50979

## (KPT3) Ground Screwed Steel Mounting System with 2 Vertical Panels

### Overview

KPT3, is a steel support and mounting system for open terrain solar panels with 2 vertical panels installed to the ground with screw piles. The system is an optimal application solution for installations of PV projects on irregular terrains. The screw piles have high strength properties and can be used any time of the year for application purposes. They are not affected by vibrations generated by ambient conditions such as wind or storm due to their high load strength. After manufacturing the system components with high-technology machines and equipment, an excellent corrosion resistance is then achieved through hot-dip galvanized coating. The system, incorporating a high-level engineering design, provides assembly and cost advantages.



#### STEEL COLUMN



- **CK-90 / CK-100 / CK-120**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer  
M12X140 Knurled Bolt

#### STEEL BEAM



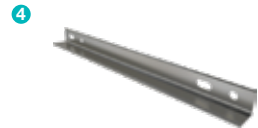
- **CR-100 / CR-120**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8/M12 Washer

#### STEEL PURLIN



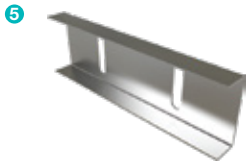
- **CA-90 / CA-100 / CA-110**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8/M12 Washer

#### STEEL L BRACKET



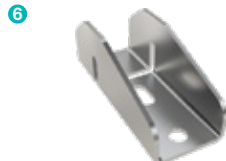
- **CL-40X40 / CL-50X50**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### PURLIN CONNECTOR JOINING PIECE



- **C-90 / C-100 / C-110**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### PURLIN CONNECTOR PIECE



- **U40**  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8 Washer

#### PANEL SIDE RETAINER



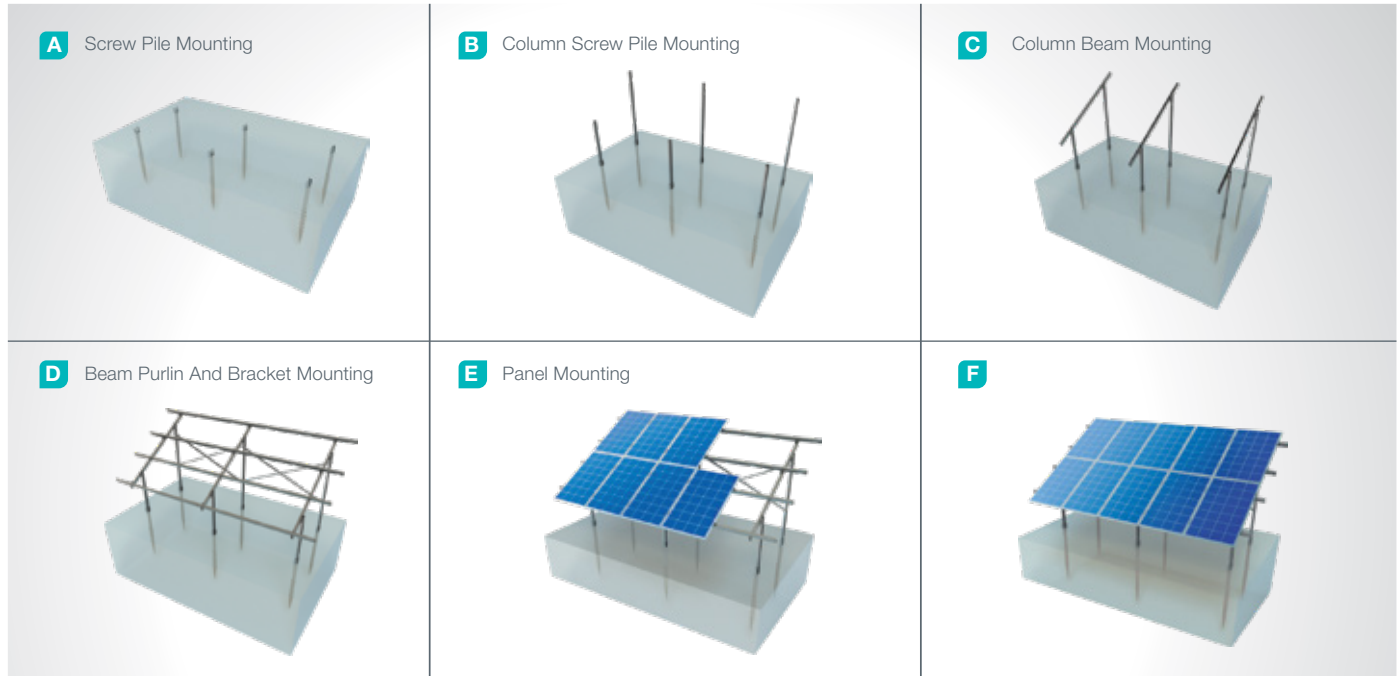
- **H30-H32-H40**  
M8X30 Hex Bolt  
M8 Flanged Nut

#### PANEL CENTER RETAINER



- **L70**  
M8X30 Hex Bolt  
M8 Flanged Nut

## Installation Phase



## Advantages

- Time saving for installation
- Cost saving for installation
- Flexible solutions for different types of terrains
- Screw Piles do not require preliminary drilling and concrete
- All year round mounting capability
- Assembly can be commenced immediately
- After screw pile mounting on ground
- Re-use opportunity in some cases
- Screw pile vibration damping
- Tailored design solutions for customer
- Customer oriented engineering solutions

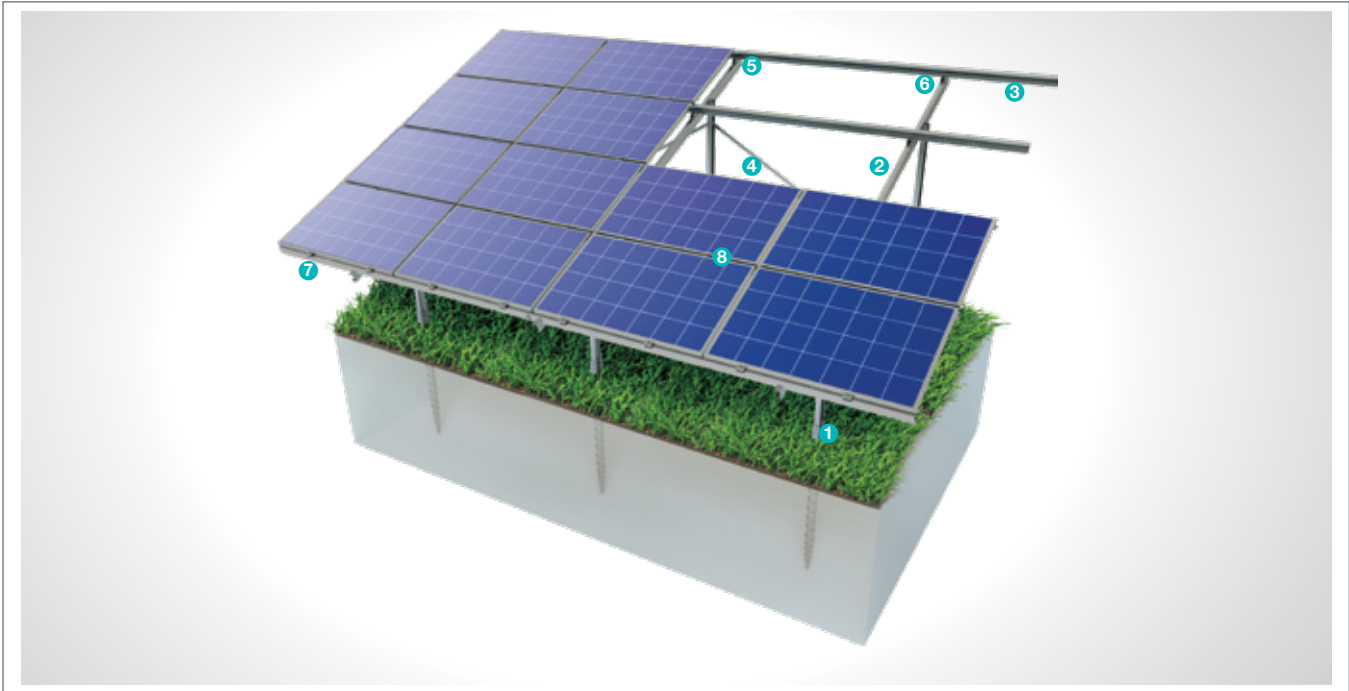
## Technical Specifications

Description:	(KPT3) Ground Screwed Steel Mounting System with 2 Vertical Panels
Mounting Method:	Ground Screwing
Tilt Angle:	0-60 degrees
Module Application:	Framed and Unframed
Panel Height From Ground:	60 cm
Column and Beam Coating:	EN ISO 1461
Column and Beam Material:	EN 10025 / EN 10029
Optional Beam Material:	EN 10346
Panel Retainer:	EN AW 6063
Connector Equipment:	DIN 934 / DIN933 / DIN 912, A2-70 DIN 50979

## (KPT4) Ground Screwed Steel Mounting System with 4 Horizontal Panels

### Overview

KPT4, is a ground driven steel support and mounting system with 4 horizontal panels for open terrain solar panels. The system is an optimal application solution for installations of PV projects on irregular terrains. The screw piles have high strength properties and can be used any time of the year for application purposes. They are not affected by vibrations generated by ambient conditions such as wind or storm due to their high load strength. After manufacturing the system components with high-technology machines and equipment, an excellent corrosion resistance is then achieved through hot-dip galvanized coating. The system, incorporating a high-level engineering design, provides assembly and cost advantages.



#### STEEL COLUMN

1



- **CK-90 / CK-100 / CK-120**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer  
M12X140 Knurled Bolt

#### STEEL BEAM

2



- **CR-100 / CR-120**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8/M12 Washer

#### STEEL PURLIN

3



- **CA-90 / CA-100 / CA-110**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8/M12 Washer

#### STEEL L BRACKET

4



- **CL-40X40 / CL-50X50**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### PURLIN CONNECTOR JOINING PIECE

5



- **C-90 / C-100 / C-110**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### PURLIN CONNECTOR PIECE

6



- **U40**  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8 Washer

#### PANEL SIDE RETAINER

7



- **H30-H32-H40**  
M8X30 Hex Bolt  
M8 Flanged Nut

#### PANEL CENTER RETAINER

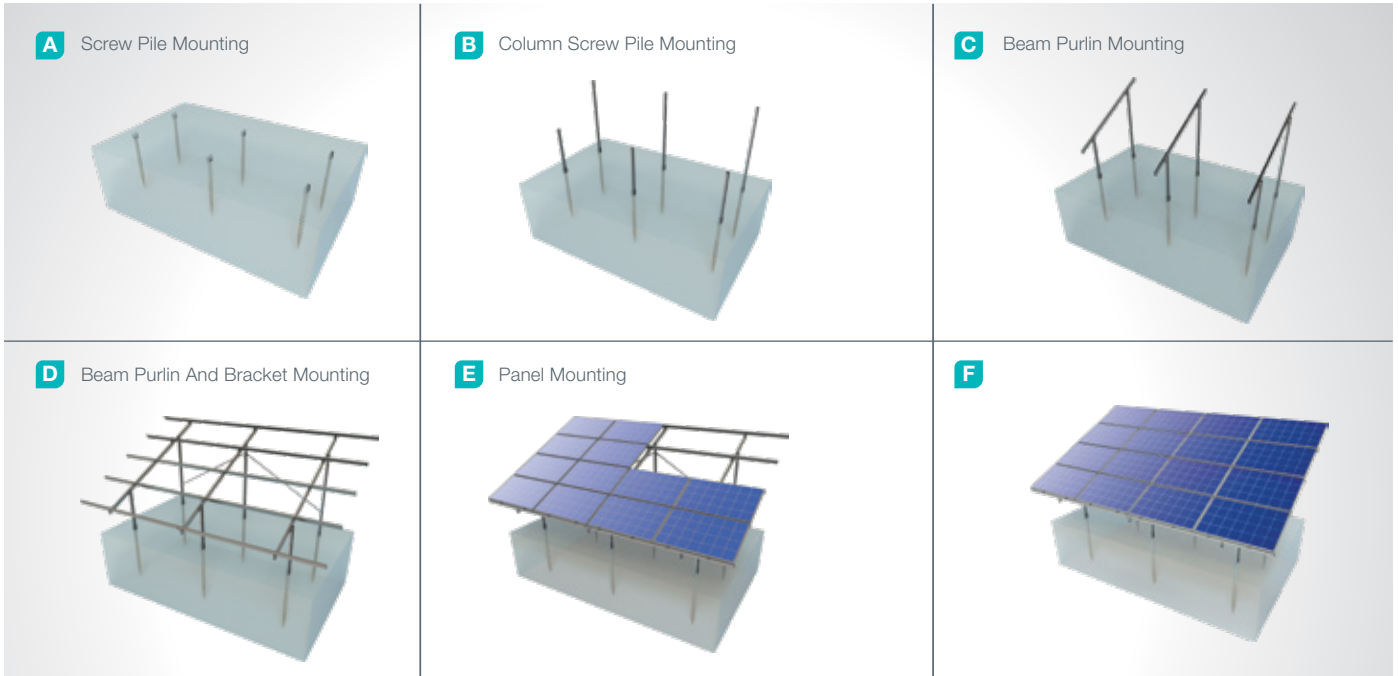
8



- **L70**  
M8X30 Hex Bolt  
M8 Flanged Nut



## Installation Phase



## Advantages

- Time saving for installation
- Cost saving for installation
- Flexible solutions for different types of terrains
- Screw Piles do not require preliminary drilling and concrete
- All year round mounting capability
- Assembly can be commenced immediately
- After screw pile mounting on ground
- Re-use opportunity in some cases
- Screw pile vibration damping
- Tailored design solutions for customer
- Customer oriented engineering solutions

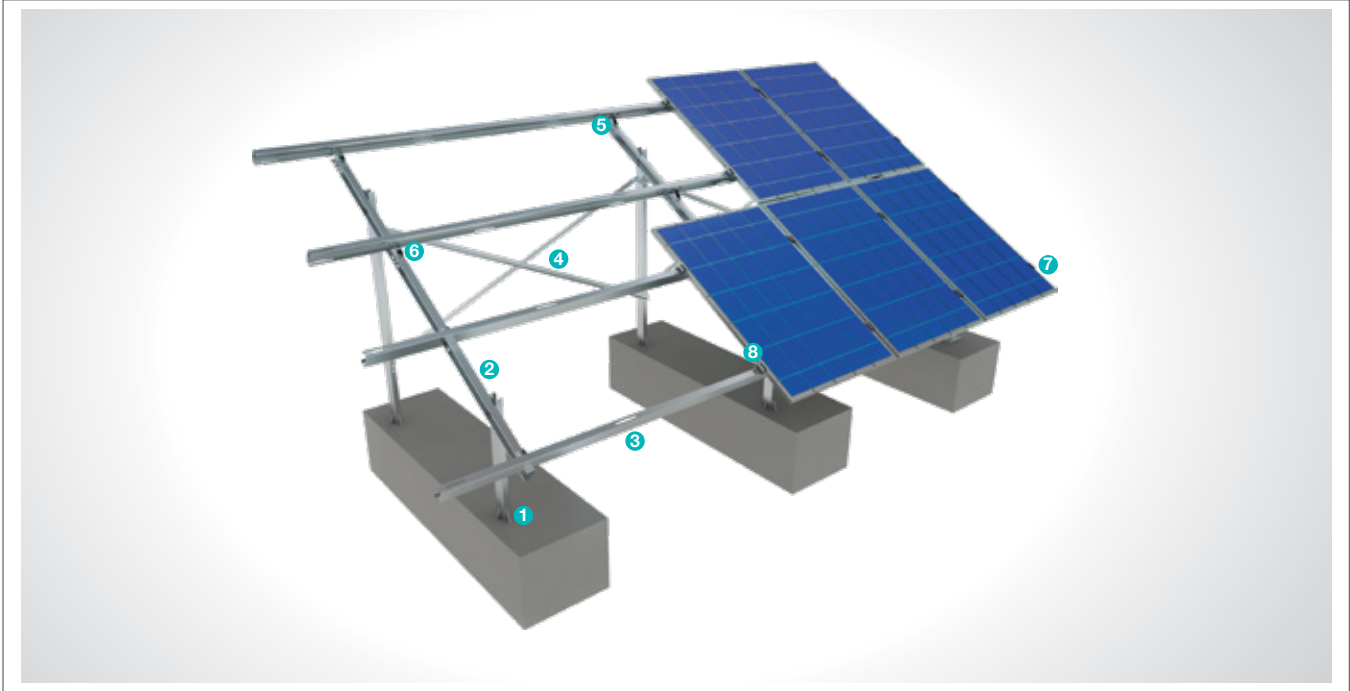
## Technical Specifications

Description:	KPT4) Ground Screwed Steel Mounting System with 4 Horizontal Panels
Mounting Method:	Ground Screwing
Tilt Angle:	0-60 degrees
Module Application:	Framed and Unframed
Panel Height From Ground:	60 cm
Column and Beam Coating:	EN ISO 1461
Column and Beam Material:	EN 10025 / EN 10029
Optional Beam Material:	EN 10346
Panel Retainer:	EN AW 6063
Connector Equipment:	DIN 934 / DIN933 / DIN 912, A2-70 DIN 50979

## (KPT5) Concrete Base Anchored Steel Mounting System with 2 Vertical Panels

### Overview

KPT5, is a concrete base anchored steel support and mounting system with 2 vertical panels for open terrain solar panels. The system is an ideal application solution for PV projects installations on sloped medium and large sized terrains. It provides the necessary strength and stability for application in loose ground. After manufacturing the system components with high-technology machines and equipment, an excellent corrosion resistance is then achieved through hot-dip galvanized coating. The system, incorporating a high-level engineering design, provides assembly and cost advantages.



#### STEEL COLUMN

1



■ **CK-90 / CK-100 / CK-120**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### STEEL BEAM

2



■ **CR-100 / CR-120**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8/M12 Washer

#### STEEL PURLIN

3



■ **CA-90 / CA-100 / CA-110**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8/M12 Washer

#### STEEL L BRACKET

4



■ **CL-40X40 / CL-50X50**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### PURLIN CONNECTOR JOINING PIECE

5



■ **C-90 / C-100 / C-110**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### PURLIN CONNECTOR PIECE

6



■ **U40**  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8 Washer

#### PANEL SIDE RETAINER

7



■ **H30-H32-H40**  
M8X30 Hex Bolt  
M8 Flanged Nut

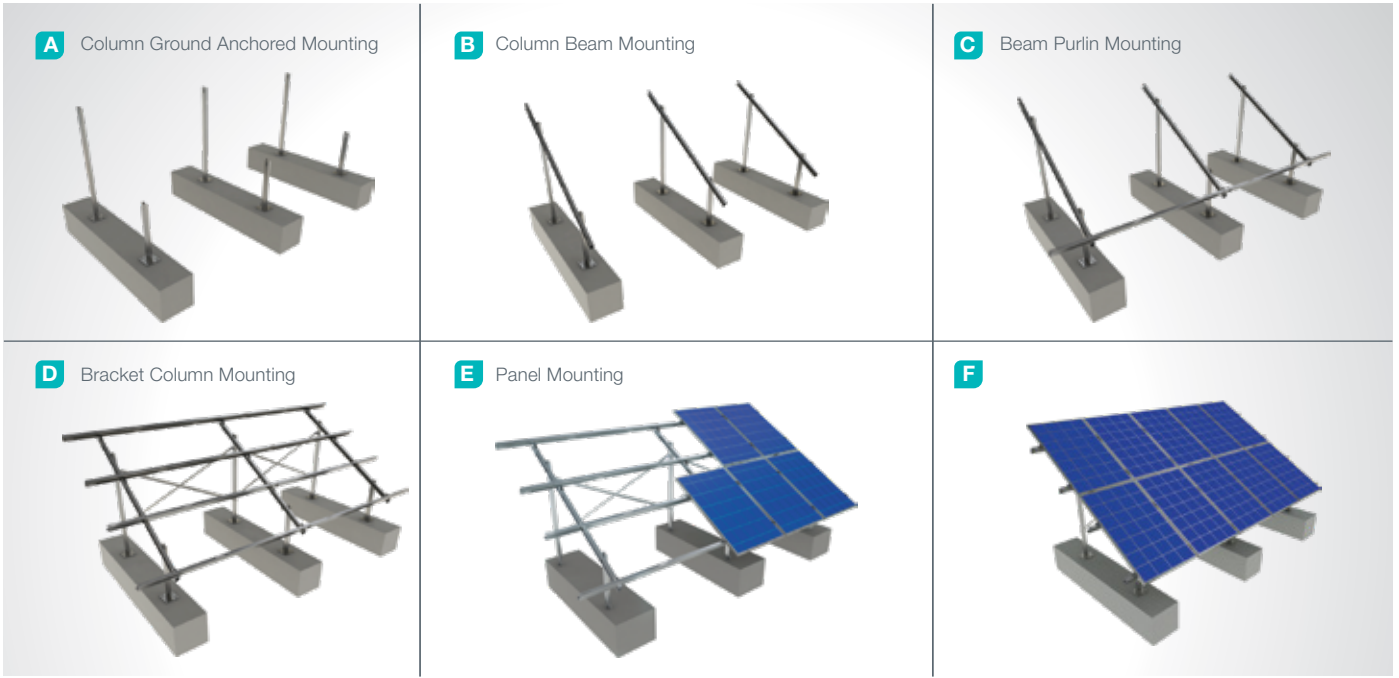
#### PANEL CENTER RETAINER

8



■ **L70**  
M8X30 Hex Bolt  
M8 Flanged Nut

## Installation Phase



## Advantages

- Time saving for installation
- Cost saving for installation
- Flexible solutions for different types of terrains
- Suitable for loose ground
- Suitable for slopped terrains
- Tailored design solutions for customer
- Customer oriented engineering solutions

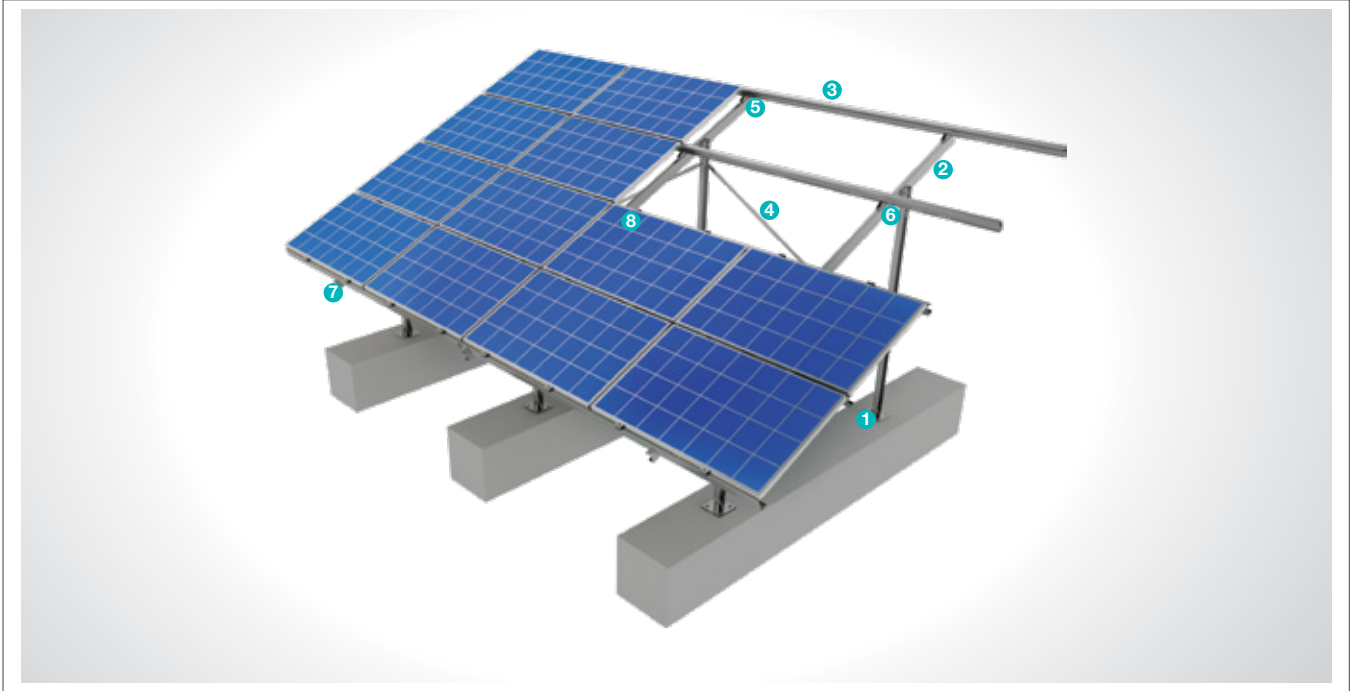
## Technical Specifications

Description:	(KPT5) Concrete Base Anchored Steel Mounting System with 2 Vertical Panels
Mounting Method:	Anchor on Concrete Base
Tilt Angle:	0-60 degrees
Module Application:	Framed and Unframed
Panel Height From Ground:	60 cm
Column and Beam Coating:	EN ISO 1461
Column and Beam Material:	EN 10025 / EN 10029
Optional Beam Material:	EN 10346
Panel Retainer:	EN AW 6063
Connector Equipment:	DIN 934 / DIN933 / DIN 912, A2-70 DIN 50979

## (KPT6) Concrete Base Anchored Steel Mounting System with 4 Horizontal Panels

### Overview

KPT6, is a concrete base anchored steel support and mounting system with 4 horizontal panels for open terrain solar panels. The system is an ideal application solution for PV projects installations on sloped medium and large sized terrains. It provides the necessary strength and stability for application in loose ground. After manufacturing the system components with high-technology machines and equipment, an excellent corrosion resistance is then achieved through hot-dip galvanized coating. The system, incorporating a high-level engineering design, provides assembly and cost advantages.



#### STEEL COLUMN

1



■ **CK-90 / CK-100 / CK-120**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### STEEL BEAM

2



■ **CR-100 / CR-120**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8/M12 Washer

#### STEEL PURLIN

3



■ **CA-90 / CA-100 / CA-110**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8/M12 Washer

#### STEEL L BRACKET

4



■ **CL-40X40 / CL-50X50**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### PURLIN CONNECTOR JOINING PIECE

5



■ **C-90 / C-100 / C-110**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### PURLIN CONNECTOR PIECE

6



■ **U40**  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8 Washer

#### PANEL SIDE RETAINER

7



■ **H30-H32-H40**  
M8X30 Hex Bolt  
M8 Flanged Nut

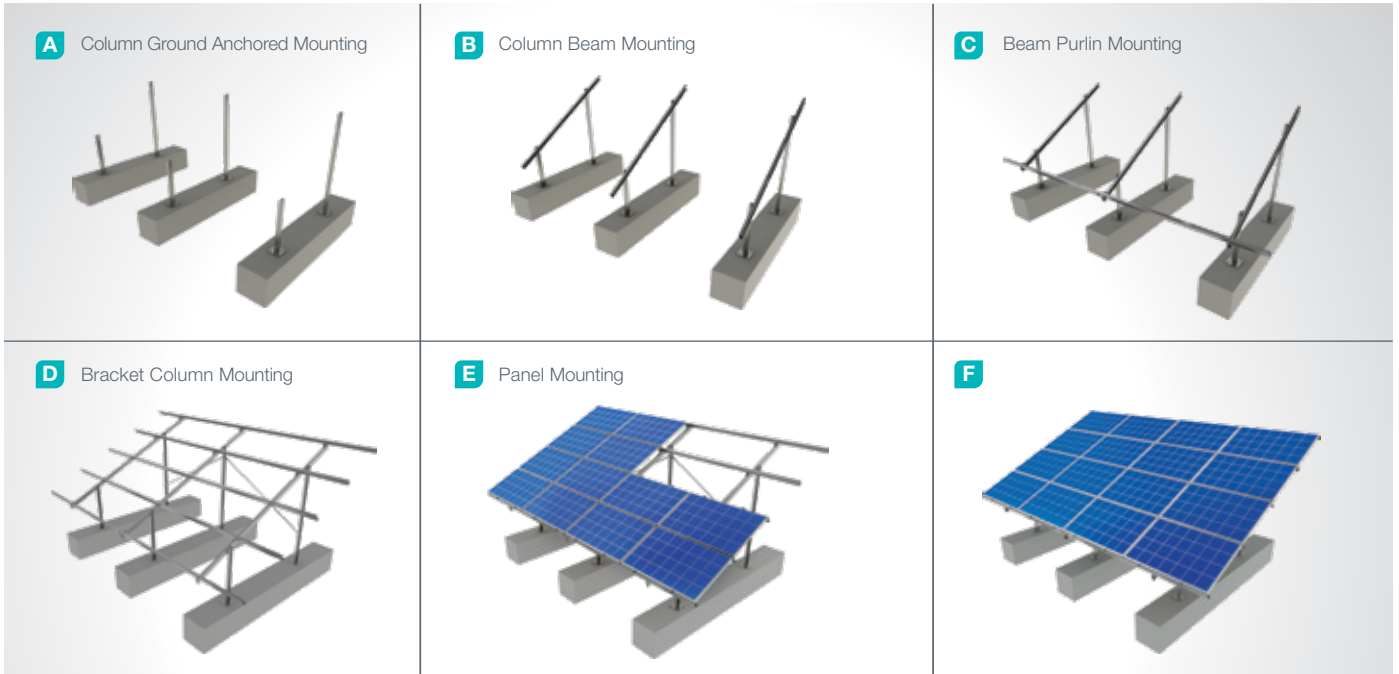
#### PANEL CENTER RETAINER

8



■ **L70**  
M8X30 Hex Bolt  
M8 Flanged Nut

## Installation Phase



## Advantages

- Time saving for installation
- Cost saving for installation
- Flexible solutions for different types of terrains
- Suitable for loose ground
- Suitable for slopped terrains
- Tailored design solutions for customer
- Customer oriented engineering solutions

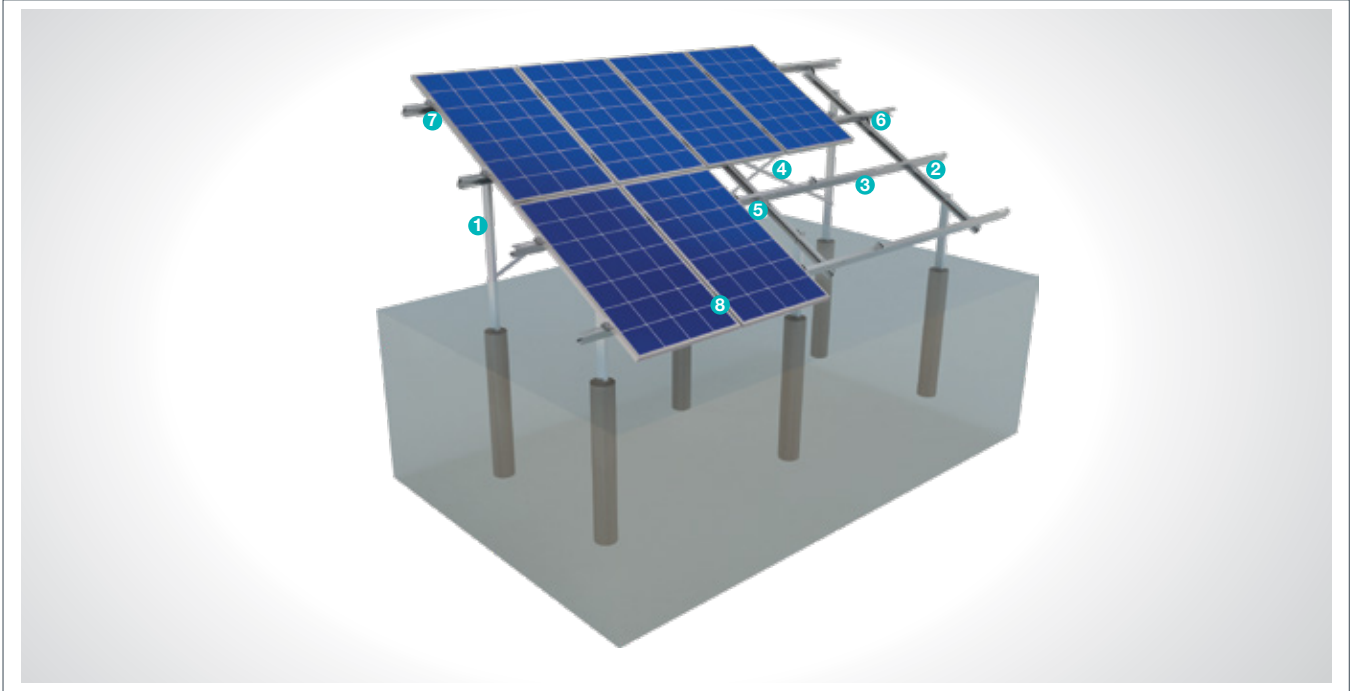
## Technical Specifications

Description:	(KPT6) Concrete Base Anchored Steel Mounting System with 4 Horizontal Panels
Mounting Method:	Anchor on Concrete Base
Tilt Angle:	0-60 degrees
Module Application:	Framed and Unframed
Panel Height From Ground:	60 cm
Column and Beam Coating:	EN ISO 1461
Column and Beam Material:	EN 10025 / EN 10029
Optional Beam Material:	EN 10346
Panel Retainer:	EN AW 6063
Connector Equipment:	DIN 934 / DIN933 / DIN 912, A2-70 DIN 50979

## (KPT7) Concrete Embedded Steel Mounting System with 2 Vertical Panels

### Overview

KPT7, is a concrete embedded steel support and mounting system with 2 vertical panels for open terrain solar panels. The system is an ideal application solution for PV projects installations on medium and large sized terrains with loose ground. Necessary strength is achieved by application in loose ground. After manufacturing the system components with high-technology machines and equipment, an excellent corrosion resistance is then achieved through hot-dip galvanized coating. The system, incorporating a high-level engineering design, provides assembly and cost advantages.



#### STEEL COLUMN

1



- **CK-90 / CK-100 / CK-120**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### STEEL BEAM

2



- **CR-100 / CR-120**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8/M12 Washer

#### STEEL PURLIN

3



- **CA-90 / CA-100 / CA-110**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8/M12 Washer

#### STEEL L BRACKET

4



- **CL-40X40 / CL-50X50**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### PURLIN CONNECTOR JOINING PIECE

5



- **C-90 / C-100 / C-110**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### PURLIN CONNECTOR PIECE

6



- **U40**  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8 Washer

#### PANEL SIDE RETAINER

7



- **H30-H32-H40**  
M8X30 Hex Bolt  
M8 Flanged Nut

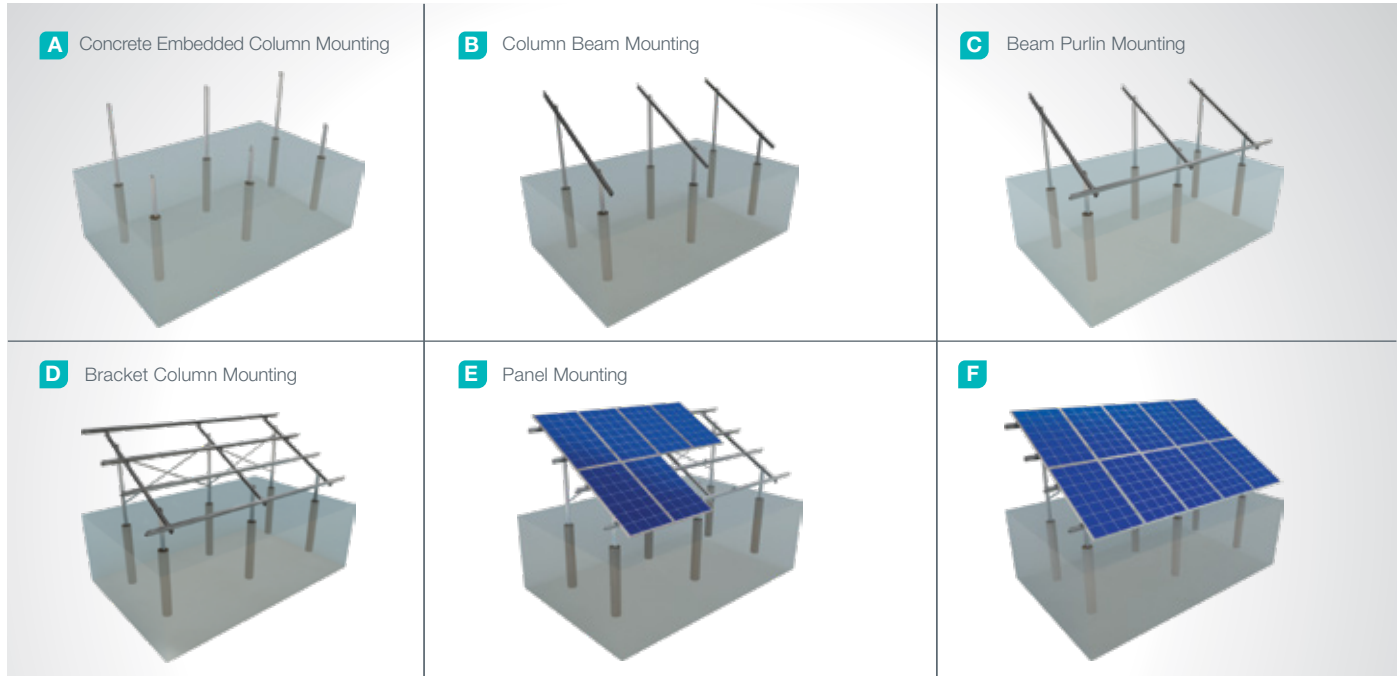
#### PANEL CENTER RETAINER

8



- **L70**  
M8X30 Hex Bolt  
M8 Flanged Nut

## Installation Phase



## Advantages

- Time saving for installation
- Cost saving for installation
- Suitable solutions for combiner box and inverter installation
- Suitable solutions for different terrains
- Suitable for loose ground
- Tailored design solutions for customer
- Customer oriented engineering solutions

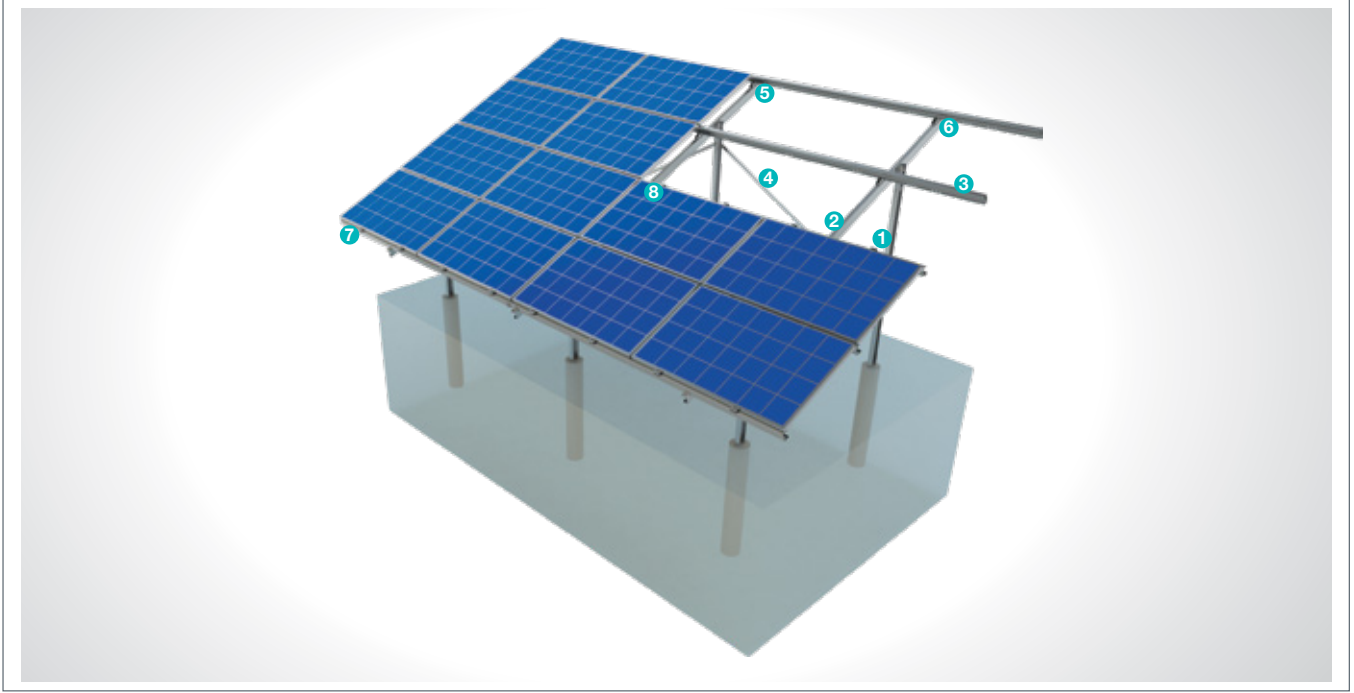
## Technical Specifications

Description:	(KPT7) Concrete Embedded Steel Mounting System with 2 Vertical Panels
Mounting Method:	Concrete Embedded Column
Tilt Angle:	0-60 degrees
Module Application:	Framed and Unframed
Panel Height From Ground:	60 cm
Column and Beam Coating:	EN ISO 1461
Column and Beam Material:	EN 10025 / EN 10029
Optional Beam Material:	EN 10346
Panel Retainer:	EN AW 6063
Connector Equipment:	DIN 934 / DIN933 / DIN 912, A2-70 DIN 50979

## (KPT8) Concrete Embedded Steel Mounting System with 4 Horizontal Panels

### Overview

KPT8, is a concrete embedded column steel support and mounting system with 4 horizontal panels for open terrain solar panels. The system is an ideal application solution for PV projects installations on medium and large sized terrains with loose ground. Necessary strength is achieved by application in loose ground. After manufacturing the system components with high-technology machines and equipment, an excellent corrosion resistance is then achieved through hot-dip galvanized coating. The system, incorporating a high-level engineering design, provides assembly and cost advantages.



#### STEEL COLUMN



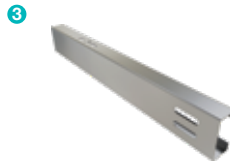
- **CK-90 / CK-100 / CK-120**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### STEEL BEAM



- **CR-100 / CR-120**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8/M12 Washer

#### STEEL PURLIN



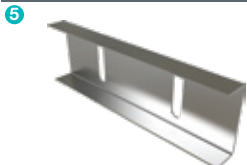
- **CA-90 / CA-100 / CA-110**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8/M12 Washer

#### STEEL L BRACKET



- **CL-40X40 / CL-50X50**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### PURLIN CONNECTOR JOINING PIECE



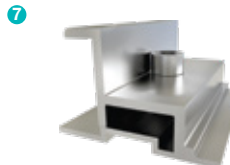
- **C-90 / C-100 / C-110**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### PURLIN CONNECTOR PIECE



- **U40**  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8 Washer

#### PANEL SIDE RETAINER



- **H30-H32-H40**  
M8X30 Hex Bolt  
M8 Flanged Nut

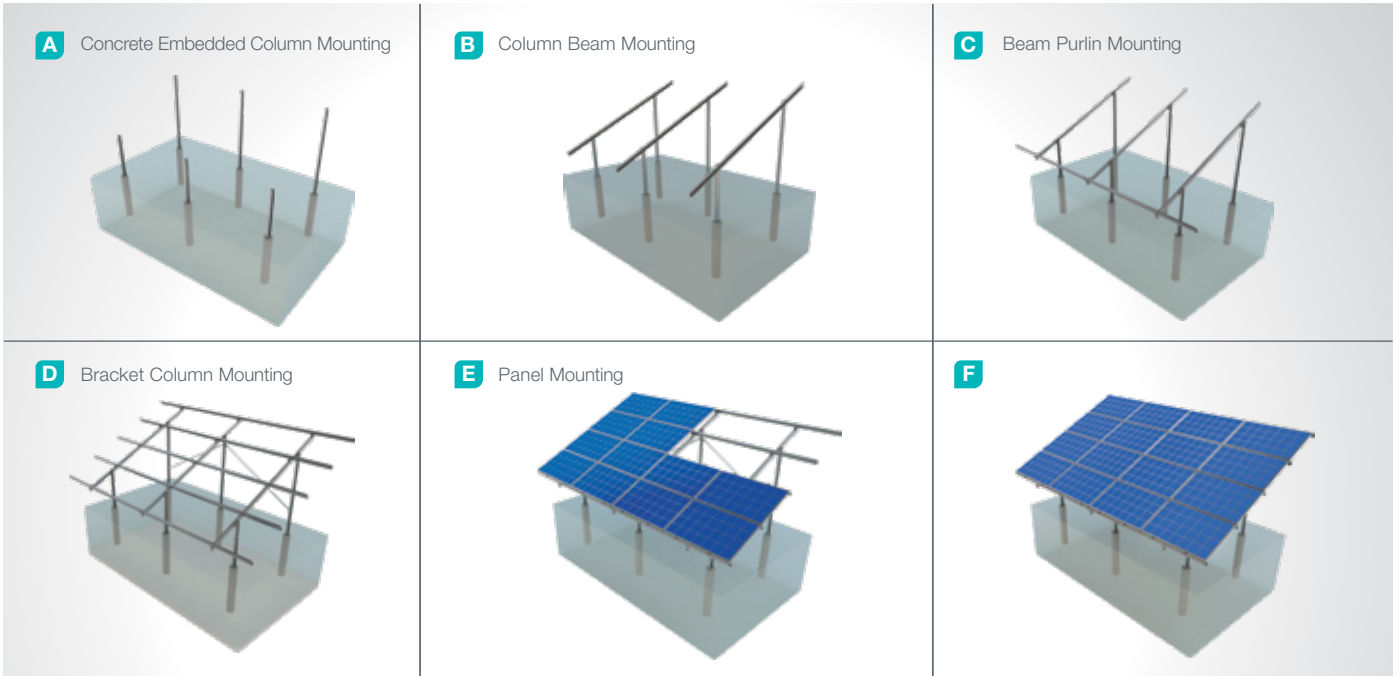
#### PANEL CENTER RETAINER



- **L70**  
M8X30 Hex Bolt  
M8 Flanged Nut



## Installation Phase



## Advantages

- Time saving for installation
- Cost saving for installation
- Suitable solutions for combiner box and inverter installation
- Suitable solutions for different terrains
- Suitable for loose ground
- Tailored design solutions for customer
- Customer oriented engineering solutions

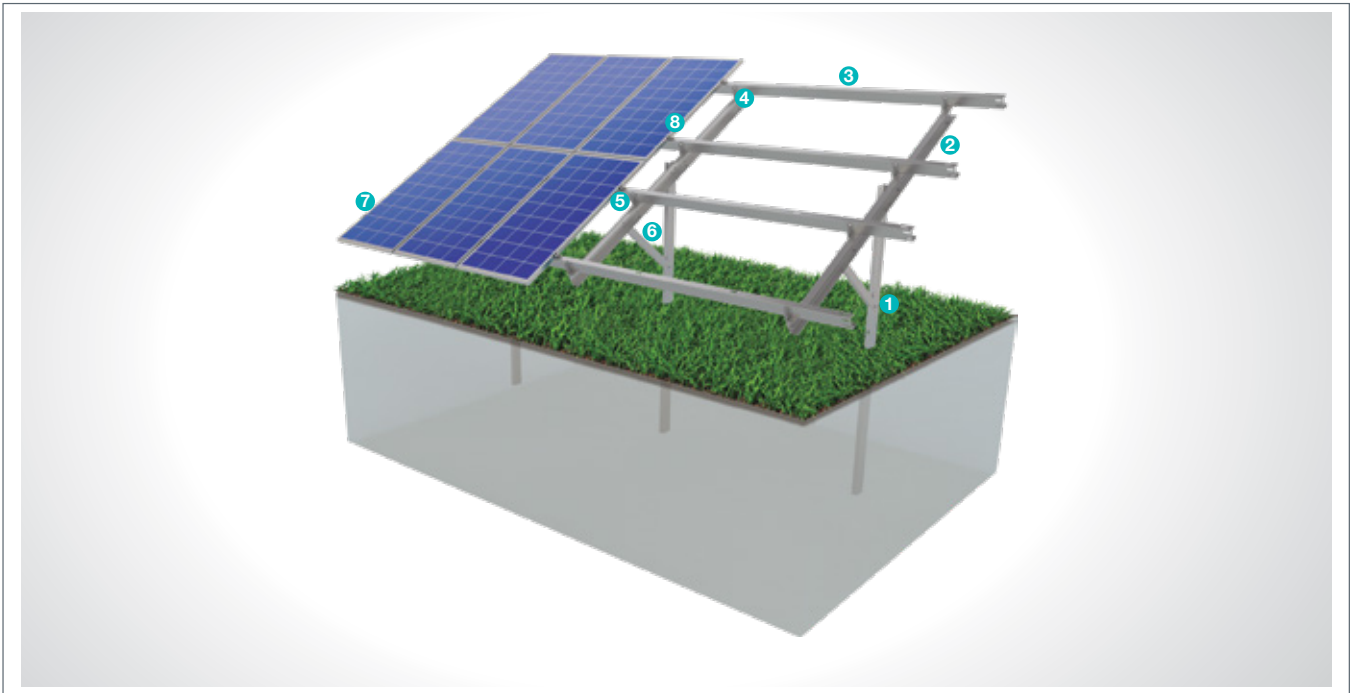
## Technical Specifications

Description:	(KPT8) Concrete Embedded Steel Mounting System with 4 Horizontal Panels
Mounting Method:	Concrete Embedded Column
Tilt Angle:	0-60 degrees
Module Application:	Framed and Unframed
Panel Height From Ground:	60 cm
Column and Beam Coating:	EN ISO 1461
Column and Beam Material:	EN 10025 / EN 10029
Optional Beam Material:	EN 10346
Panel Retainer:	EN AW 6063
Connector Equipment:	DIN 934 / DIN933 / DIN 912, A2-70 DIN 50979

## (KPT13) Ground Driven Single Column Steel Mounting System With 2 Vertical Panels

### Overview

KPT13, is a ground driven single column steel support and mounting system with 2 vertical panels for open terrain solar panels. The system is an optimal application solution for installations of PV projects on large and medium-sized terrains . It is used extensively on hard ground in order to decrease the number of legs and cost. After manufacturing the system components with high-technology machines and equipment, an excellent corrosion resistance is then achieved through hot-dip galvanized coating. The system, incorporating a high-level engineering design, provides assembly and cost advantages.



#### STEEL COLUMN

1



■ **CK-150 / CK-120**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### STEEL BEAM

2



■ **CR-100 / CR-110 / CR-120**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### STEEL PURLIN

3



■ **CA-110 / CA-120**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8/M12 Washer

#### STEEL L BRACKET

4



■ **CL-50X50**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### ALUMINUM PURLIN CONNECTOR

5



■ **C-110 / C-120**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### STEEL DIAGONAL

6



■ **C-80**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### PANEL SIDE RETAINER

7



■ **H30-H32-H40**  
M8X30 Hex Bolt  
M8 Flanged Nut

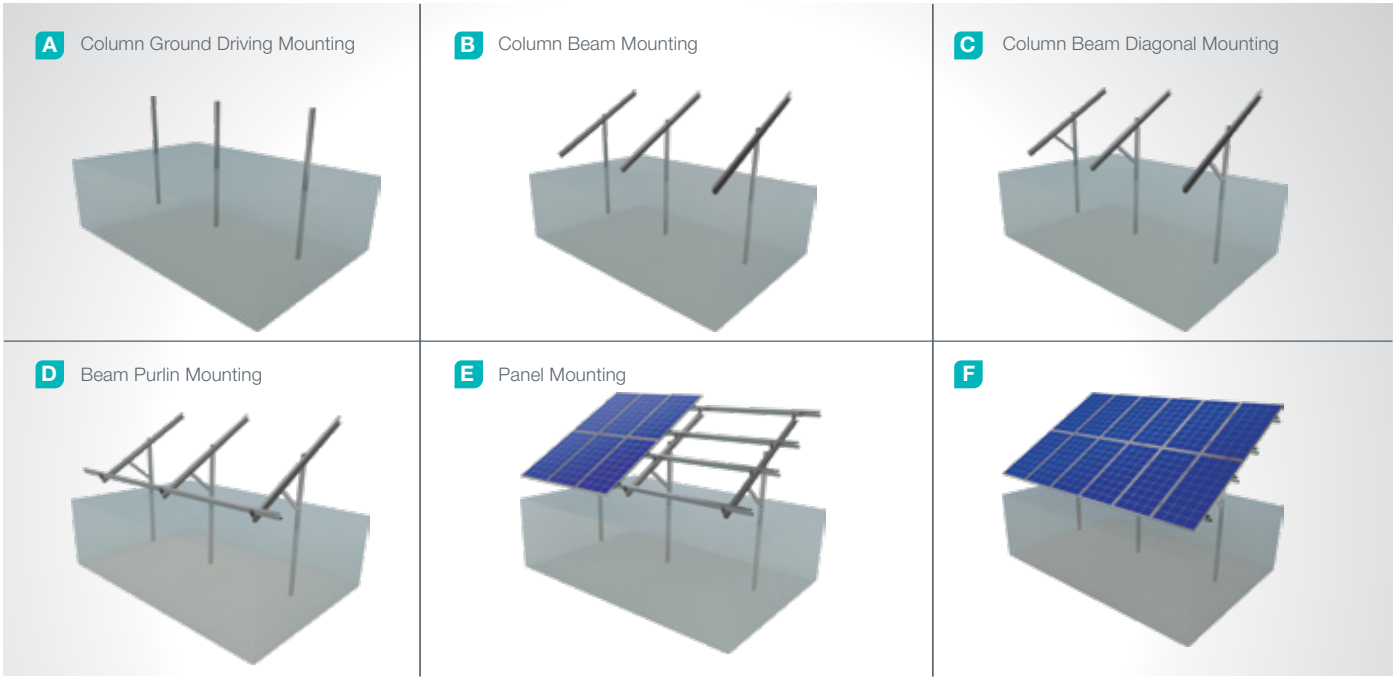
#### PANEL CENTER RETAINER

8



■ **L70**  
M8X30 Hex Bolt  
M8 Flanged Nut

## Installation Phase



## Advantages

- Time saving for installation
- Cost saving for installation
- High safety level
- High durability flexible use
- Suitable solutions for combiner box and inverter installation
- Suitable solutions for different terrains
- Suitable for loose ground
- Tailored design solutions for customer
- Customer oriented engineering solutions

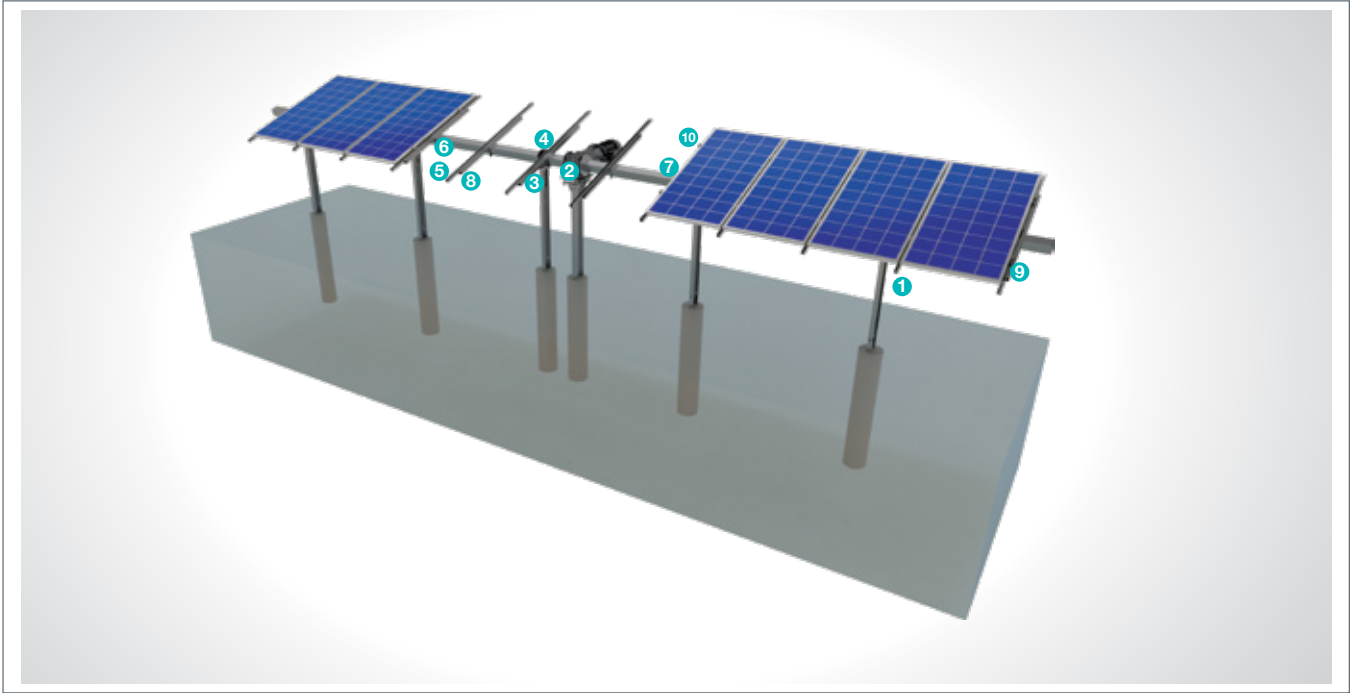
## Technical Specifications

Description:	(KPT13) Ground Driven Single Column Steel Mounting System with 2 Vertical Panels
Mounting Method:	Ground Driving
Tilt Angle:	0-60 degrees
Module Application:	Framed and Unframed
Panel Height From Ground:	60 cm
Column and Beam Coating:	EN ISO 1461
Column and Beam Material:	EN 10025 / EN 10029
Optional Beam Material:	EN 10346
Panel Retainer:	EN AW 6063
Connector Equipment:	DIN 934 / DIN933 / DIN 912, A2-70 DIN 50979

## (KPT19) Concrete Embedded Steel Single Axis Solar Tracking System with 1 Vertical Panel

### Overview

**KPT19**, is a concrete embedded steel support and mounting system which tracks the sun with 1 vertical panel for open terrain solar panels. The system is an optimal application solution for installations of PV projects on large and medium-sized terrains . After manufacturing the system components with high-technology machines and equipment, an excellent corrosion resistance is then achieved through hot-dip galvanized coating. The system, incorporating a high-level engineering design, provides assembly and cost advantages. It provides a more efficient use of solar panels.



#### STEEL COLUMN



- **CK-150**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### STEEL ENGINE SUPPORT



- **NPI 160x82x7,4**  
M12X150 Tij  
M12 Flanged Nut  
M12 Washer  
M12x30 Knurled Bolt

#### STEEL T/TP



- **CT**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M16X180 Knurled Bolt  
M16 Flanged Nut  
M16/M12 Washer

#### TP



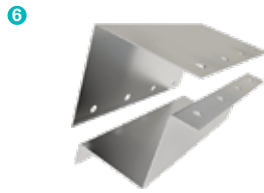
- **TP-100 / TP-110**  
M16X180 Knurled Bolt  
M16 Flanged Nut  
M16 Washer

#### STEEL PROFILE



- **CP41x41**  
M12X110 Square Bolt  
M12 Flanged Nut  
M12 Square Bolt Washer

#### PURLIN CONNECTOR JOINING PIECE



- **KPE**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### STEEL SQUARE PURLIN



- **KPA**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### STEEL RECTANGLE RAFTER



- **DPM-80x40**  
M12X110 Square Bolt  
M12 Flanged Nut  
M12 Square Bolt Washer

### PANEL CENTER RETAINER

9



- L70
- M8X30 Hex Bolt
- M8 Rectangular Nut

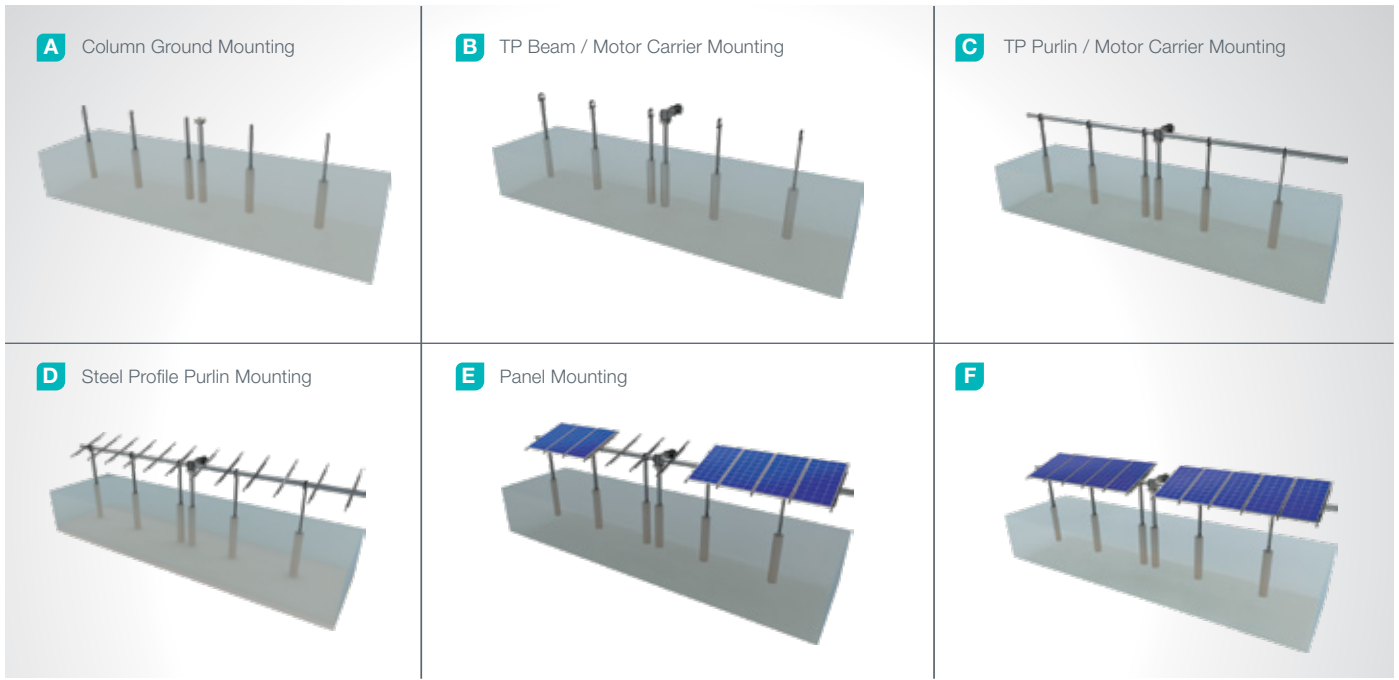
### PANEL SIDE RETAINER

10



- H30-H32-H40
- M8X30 Hex Bolt
- M8 Rectangular Nut

## Installation Phase



## Advantages

- Time saving for installation
- Cost saving for installation
- Flexible solutions for different types of terrains
- Up to 25% efficiency advantage
- Low maintenance cost
- Independent rack movements
- Aluminum based solutions
- Smart control system
- Real time tracking
- Tailored design solutions for customer
- Customer oriented engineering solutions

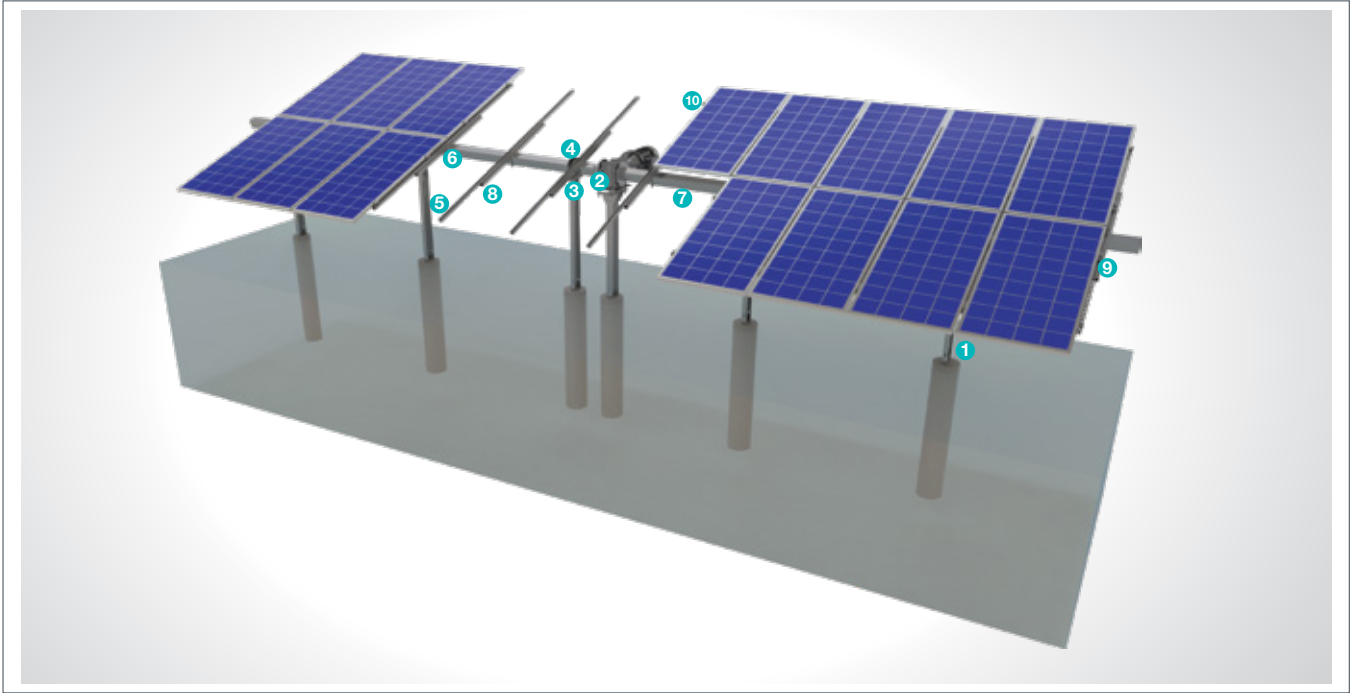
## Technical Specifications

Description:	(KPT19) Concrete Embedded Steel Single Axis Solar Tracking System with 1 Vertical Panel
Mounting Method:	Concrete Embedded
Tilt Angle:	0-60 degrees
Module Application:	Framed and Unframed
Panel Height From Ground:	60 cm
Column and Beam Coating:	EN ISO 1461
Column and Beam Material:	EN 10025 / EN 10029
Optional Beam Material:	EN 10346
Panel Retainer:	EN AW 6063
Connector Equipment:	DIN 934 / DIN933 / DIN 912, A2-70 DIN 50979

## (KPT20) Concrete Embedded Steel Single Axis Solar Tracking System with 2 Vertical Panels

### Overview

KPT20, is a concrete embedded steel support and mounting system which tracks the sun with 2 vertical panels for open terrain solar panels. The system is an optimal application solution for installations of PV projects on large and medium-sized terrains . After manufacturing the system components with high-technology machines and equipment, an excellent corrosion resistance is then achieved through hot-dip galvanized coating. The system, incorporating a high-level engineering design, provides assembly and cost advantages. It provides a more efficient use of solar panels.



#### STEEL COLUMN



- **CK-150**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### STEEL PROFILE



- **CP41x41**  
M12X110 Square Bolt  
M12 Flanged Nut  
M12 Square Bolt Washer

#### STEEL ENGINE SUPPORT



- **NPI 160x82x7,4**  
M12X150 Rod  
M12 Flanged Nut  
M12 Washer  
M12x30 Knurled Bolt

#### PURLIN CONNECTOR JOINING PIECE



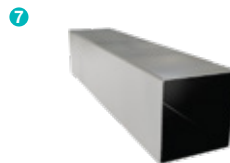
- **KPE**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### STEEL T/TP



- **CT**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M16X180 Knurled Bolt  
M16 Flanged Nut  
M16/M12 Washer

#### STEEL SQUARE PURLIN



- **KPA**  
M12X30 Knurled Head Bolt  
M12 Flanged Nut  
M12 Washer

#### TP



- **TP-100 / TP-110**  
M16X180 Knurled Bolt  
M16 Flanged Nut  
M16 Washer

#### STEEL RECTANGLE RAFTER



- **DPM-80x40**  
M12X110 Square Bolt  
M12 Flanged Nut  
M12 Square Bolt Washer

### PANEL CENTER RETAINER

9



- L70
- M8X30 Hex Bolt
- M8 Rectangular Nut

### PANEL SIDE RETAINER

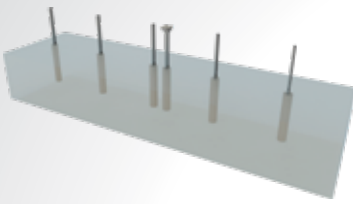
10



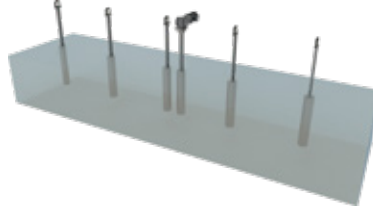
- H30-H32-H40
- M8X30 Hex Bolt
- M8 Rectangular Nut

## Installation Phase

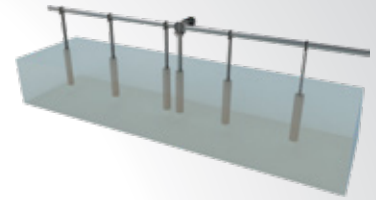
**A** Column Ground Mounting



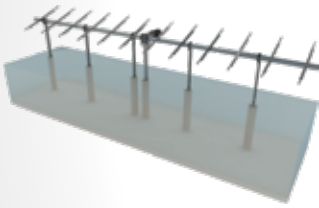
**B** TP Column / Engine Support Mounting



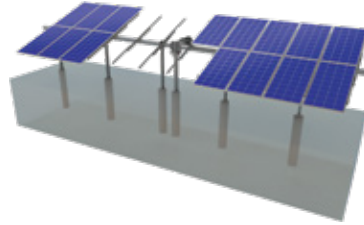
**C** TP Purlin / Engine Mounting



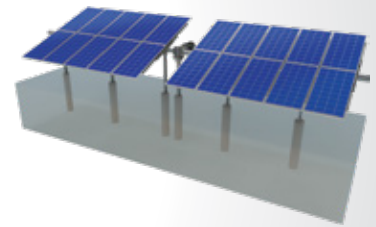
**D** Steel Profile Purlin Mounting



**E** Panel Mounting



**F**



## Advantages

- Time saving for installation
- Cost saving for installation
- Flexible solutions for different types of terrains
- Up to 25% efficiency advantage
- Low maintenance cost
- Independent rack movements
- Aluminum based solutions
- Smart control system
- Real time tracking
- Tailored design solutions for customer
- Customer oriented engineering solutions

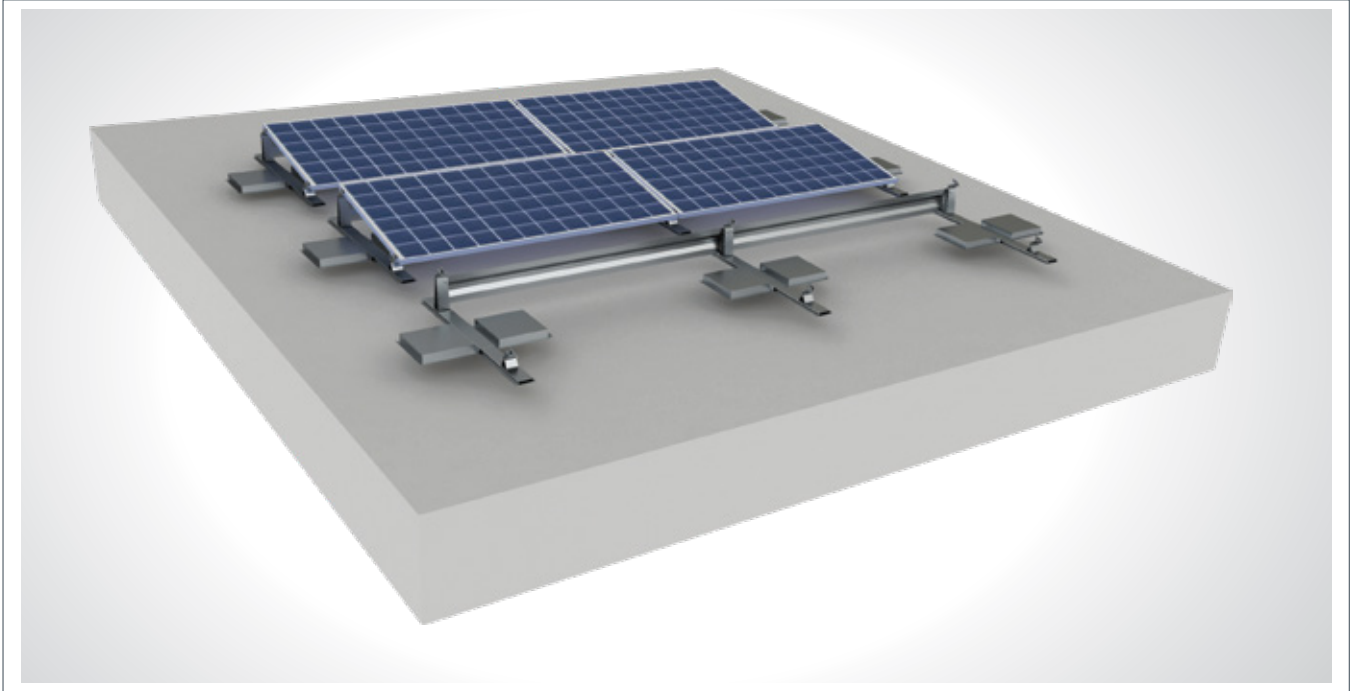
## Technical Specifications

Description:	(KPT20) Concrete Embedded Steel Single Axis Solar Tracking System with 2 Vertical Panels
Mounting Method:	Concrete Embedded
Tilt Angle:	0-60 degrees
Module Application:	Framed and Unframed
Panel Height from Ground:	60 cm
Column and Beam Coating:	EN ISO 1461
Column and Beam Material:	EN 10025 / EN 10029
Optional Beam Material:	EN 10346
Panel Retainer:	EN AW 6063
Connector Equipment:	DIN 934 / DIN933 / DIN 912, A2-70 DIN 50979

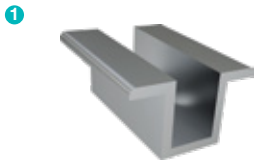
## (KPT21) Flat Roof Aluminium Mounting System

### Overview

**KPT21**, is a flat roof aluminium mounting system for 1 horizontal panel which is fixed by balast system. The system is an optimal application solution for installations of PV projects on large and small-sized roofs. It does not require any fastener for installation. The system, incorporating a high-level engineering design, provides assembly and cost advantages.



#### Aluminium Middle Clamp



- H35-Middle Panel Clamp
- M8X35 Imbus Bolt
- M8 Nut
- M8 Spring Washer DIN 128

#### Aluminium Side Clamp



- H35-Side Panel Clamp
- M8X35 Imbus Bolt
- M8 Bolt
- M8 Spring Washer DIN 128

#### Mounting Rail



- EN AW 6063 T6
- 3X20 EPDM Tape

#### Windshield



- DX51D+Z
- 5,5X25 Trapezoid Roof Screw

#### Panel Front Holder



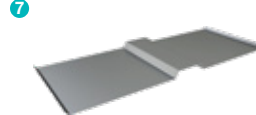
- Angle Adjustment Tool
- M8X35 Imbus Bolt
- M8 Washer
- M8 Nut

#### Panel Back Holder



- Angle Adjustment Tool
- M8X35 Imbus Bolt
- M8 Washer
- M8 Nut

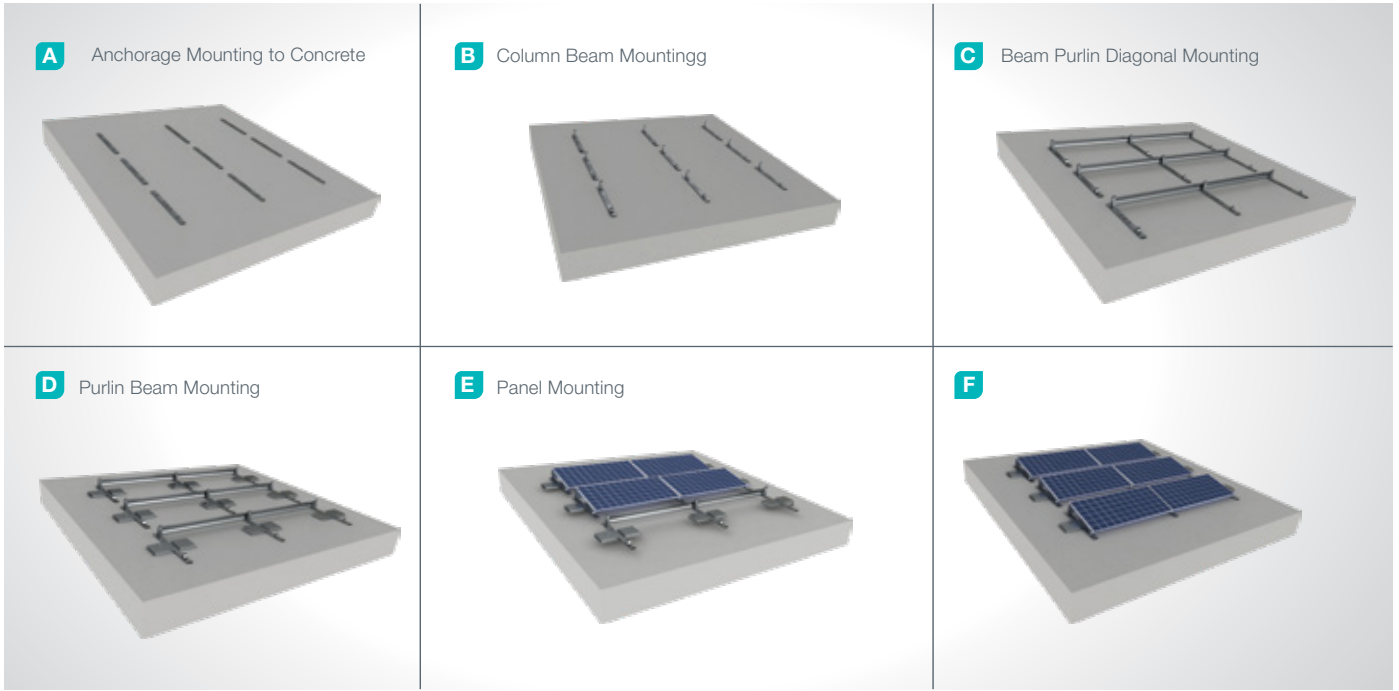
#### Balast Holder



- DX51D+Z



## Installation Phase



## Advantages

- Time saving for installation
- Cost saving for installation
- Suitable solutions for different roof types
- 3 different types of angular adjustment
- Ballasted mounting
- Tailored design solutions for customer
- Customer oriented engineering solutions

## Technical Specifications

Description:	(KPT21 Flat Roof Aluminium Mounting System)
Mounting Method:	Blast system
Module Application:	Framed and Unframed
Column and Beam Coating:	EN ISO 1461
Column and Beam Material:	EN 10025 / EN 10029
Optional Beam Material:	EN 10346
Panel Retainer:	EN AW 6063
Purlin Material:	EN AW 6063
Connector Equipment:	DIN 934 / DIN933 / DIN 912, A2-70 DIN 50979

## (KPT29) Trapezoid Roof Mounting System

### Overview

KPT29, Tis the aluminium mounting system for trapezoid roof. is a flat roof aluminium mounting system for 1 horizontal panel which is fixed by balast system. The system is an optimal application solution for installations of PV projects on large and small-sized roofs. It does not require any fastener for installation. The system, incorporating a high-level engineering design, provides assembly and cost advantages.



#### Mounted Set Middle Clamp

1



■ KS-Middle Retainer  
M6X40 Imbus Bolt  
Oring  
KLP 101

#### Mounted Set Side Clamp

2



■ KS-Side Retainer  
M6X40 Imbus Bolt  
Oring  
KLP 101

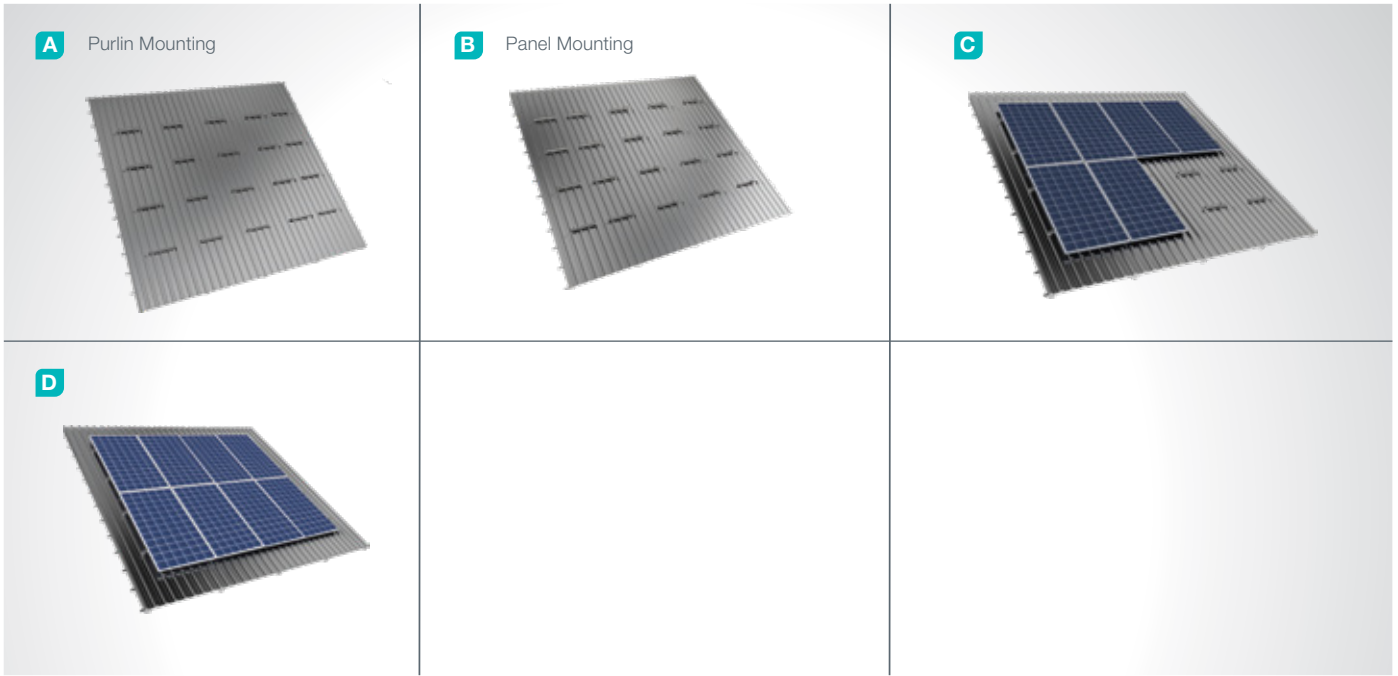
#### Roof Profile (TCAA)

3



■ EN AW 6063 T6  
JF3-2-5.5

## Installation Phase



## Advantages

- Time saving for installation
- Cost saving for installation
- Horizontal and Vertical positioning
- Suitable solutions for different roof types
- Tailored design solutions for customer
- Customer oriented engineering solutions

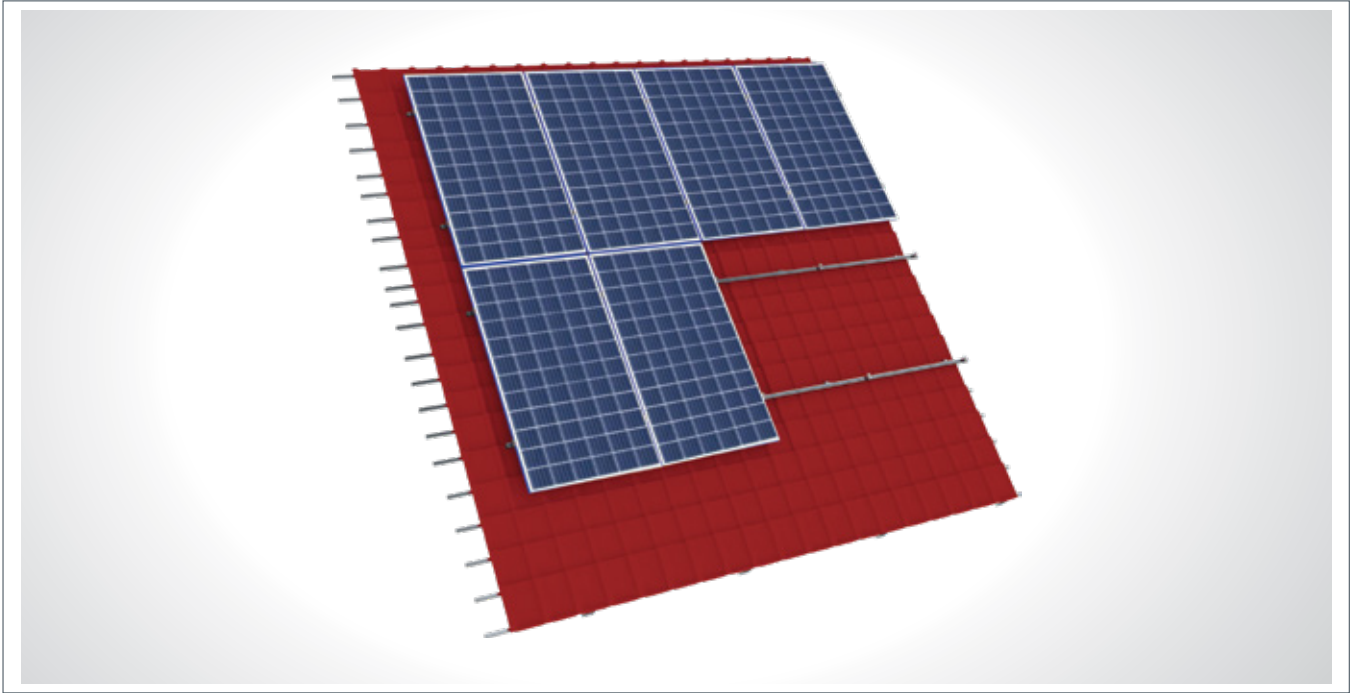
## Technical Specifications

Description:	(KPT29) Trapezoid Roof Mounting System
Mounting Method:	Pitched Roof Mounting
Module Application:	Framed and Unframed
Beam Material:	EN AW 6063
Panel Retainer:	ASTM A 304 / A 316
Purlin Material:	EN AW 6063
Connector Equipment:	DIN 934 / DIN933 / DIN 912, A2-70

## (KPT30) Tile Roof Steel And Aluminum Mounting System

### Overview

KPT30, is a steel and Aluminum structured mounting system and for tile type roofs. The system is an optimal application solution for installations of PV projects on large and small-sized roofs. The system, incorporating a high-level engineering design, provides assembly and cost advantages.



#### Mounted Set Middle Clamp

1



- KS-Middle Retainer  
M6X40 Imbus Bolt  
Oring  
KLP 101

#### Mounted Set Side Clamp

2



- KS-Middle Retainer  
M6X40 Imbus Bolt  
Oring  
KLP 101

#### Clamp Roof Hook

3



- EN AW 6082 T6 DIN 562  
A2 M10x20 Inox Screw DIN 6921  
A2 Tee-head Inox Screw M8x25 DIN 9097 A2  
M10 Inox Square Nut DIN 557  
A2 M8 Inox Flanged Hexagon Nut DIN 6923  
Lag Screw 8x100

#### Roof Profile (KCAA)

4



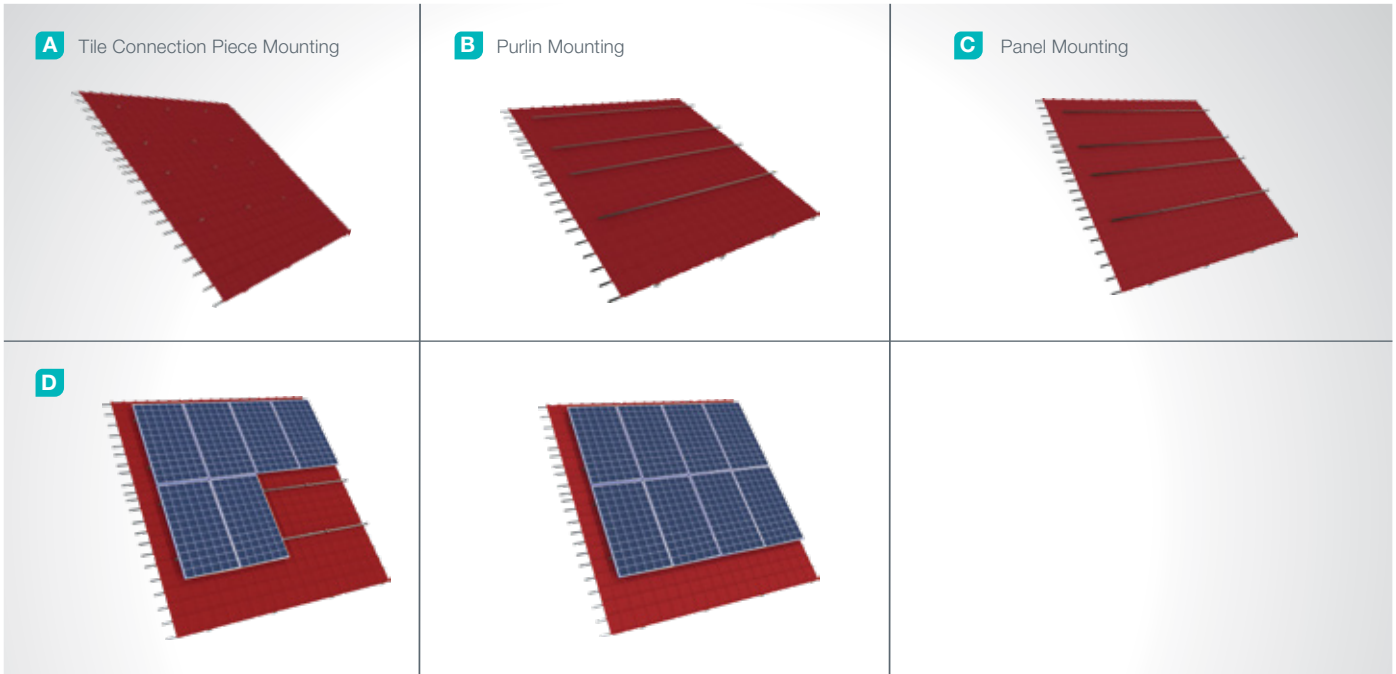
- EN AW 6063 T6

#### Connector



- EN AW 6063 T6  
5,5X25 Trapezoid Roof Screw

## Installation Phase



## Advantages

- Time saving for installation
- Cost saving for installation
- Horizontal and vertical positioning
- Suitable positioning according to roof tilt
- Suitable solutions for different roof types
- Tailored design solutions for customers
- Customer oriented engineering solutions

## Technical Specifications

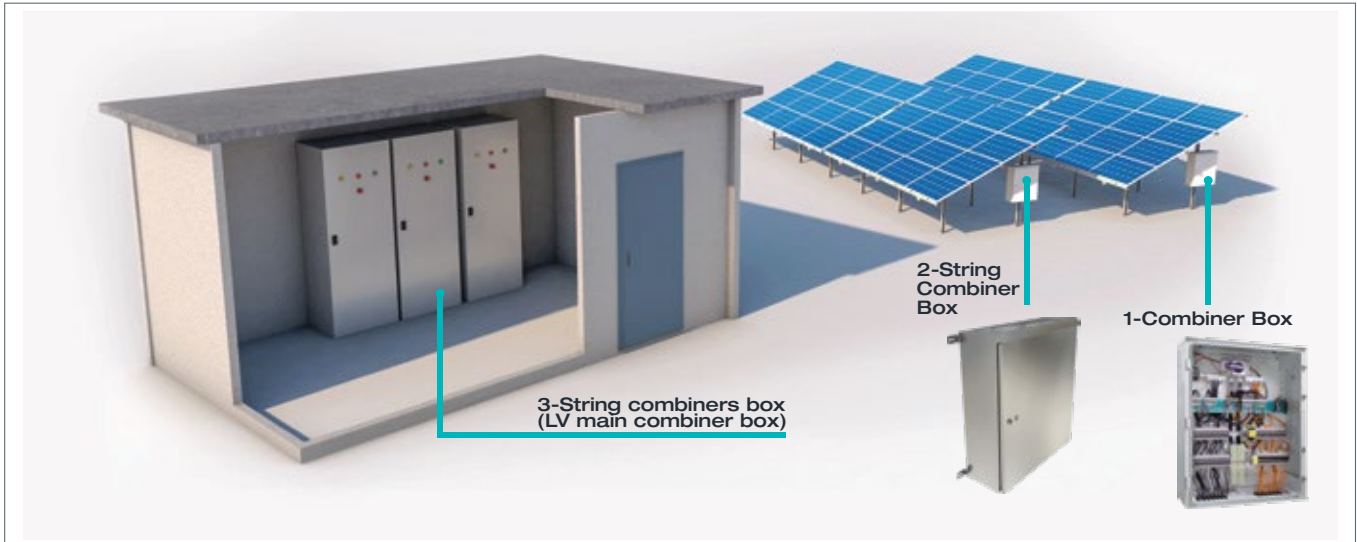
Description:	(KPT30) Tile Roof Steel And Aluminum Mounting System
Mounting Method:	Assembly to Tile Roof
Module Application:	Framed and Unframed
Beam Retainer:	EN AW 6063
Beam Retainer Coating:	EN ISO 1461
Beam Retainer Material:	EN 10025 / EN 10029
Panel Retainer:	EN AW 6063
Fitting Equipment:	DIN 934 / DIN933 / DIN 912, A2-70 DIN 50979

## 1-Combiner box (DC Combiner)

### Overview

In systems using a central inverter, it bundles cables and energy coming from panel groups in one combiner box. Stringing out solar cables, consisting of positive and negative lines, to the battery or inverter causes power loss and an increase in cable amount and costs. Therefore, a particular panel group shall be combined on a single positive/negative line.

SCADA monitoring equipment can be installed in Combiner Boxes at the same time which facilitates service, maintenance and remote maintenance operations on line enabling deenergizing when a problem occurs. Another important feature of Combiner Box is the option to add surge protective devices (SPDs) for protection against lightning and power surges and this feature is crucial for solar power plants.



### Advantages

- Protection for electrical equipment used as waterproof and dustproof
- Easy installation
- Simplified system cabling
- Decrease in the amount of cabling and cable costs advantage
- Easy service, maintenance and remote maintenance operations on line
- Protection against lightning and power surges
- Tailored design solutions for customers

### Technical Specifications

Protection:	IP54 IK10
Product Structure:	The product has a modular design, installation modules are available for all equipment.
Materials Used :	The product is manufactured with cold-rolled steel (EN 10130) in a totally rigid structure.
Coating / Paint :	Electrostatic Powder Polyester paint / Hot-dip galvanized coating (EN 10130)
Handling:	Lifting lugs for lifting and handling.

## 2- String Combiners box: (AC -- Field Combiner Box)

### Overview

In systems using series inverter, these type of combiner boxes bundle AC line cables and making connections thereof. The energy collected in these boxes are transferred to the Main Combiner Box via one line. It does not contain interconnection additional security and switching mechanisms. In string systems, AC power is collected with interconnection equipment before reaching the Main AC Combiner Box.

### Advantages

- Protection for electrical equipment used as waterproof and dustproof
- Easy installation
- Simplified system cabling Suitable cabling
- Decrease in the amount of cabling and cable costs advantage
- Tailored production according to customer demand

### Technical Specifications

Protection:	IP65 IK10
Material used:	Cold rolled steel
Coating / Paint :	Electrostatic Powder Polyester paint / Hot-dip galvanized coating (EN 10130).

## 3- AG Main Combiner Box

### Overview

Power collected from String Combiner Boxes or at the output of central inverter is transferred to Main Combiner Box with power cables for security and control. Main Combiner is equipped with equipment necessary for power quality measurement, system security and in-house demand. The power collected at the Main Combiner Box is directed to the AG switch and transformer operable at heavy current limits in order to increase voltage value.

### Advantages

- Modular form and easy installation
- Installation modules suitable for all electrical equipment.
- Protection for electrical equipment used as waterproof and dustproof
- Tailored design solutions for customers

### Technical Specifications

Protection:	IP54 IK10
Product Structure:	The product has a modular design, installation modules are available for all equipment.
Materials Used :	The product is manufactured with cold-rolled steel (EN 10130) in a totally rigid structure.
Coating / Paint :	Electrostatic Powder Polyester paint
Handling:	Lifting lugs for lifting and handling.









**Adres**

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