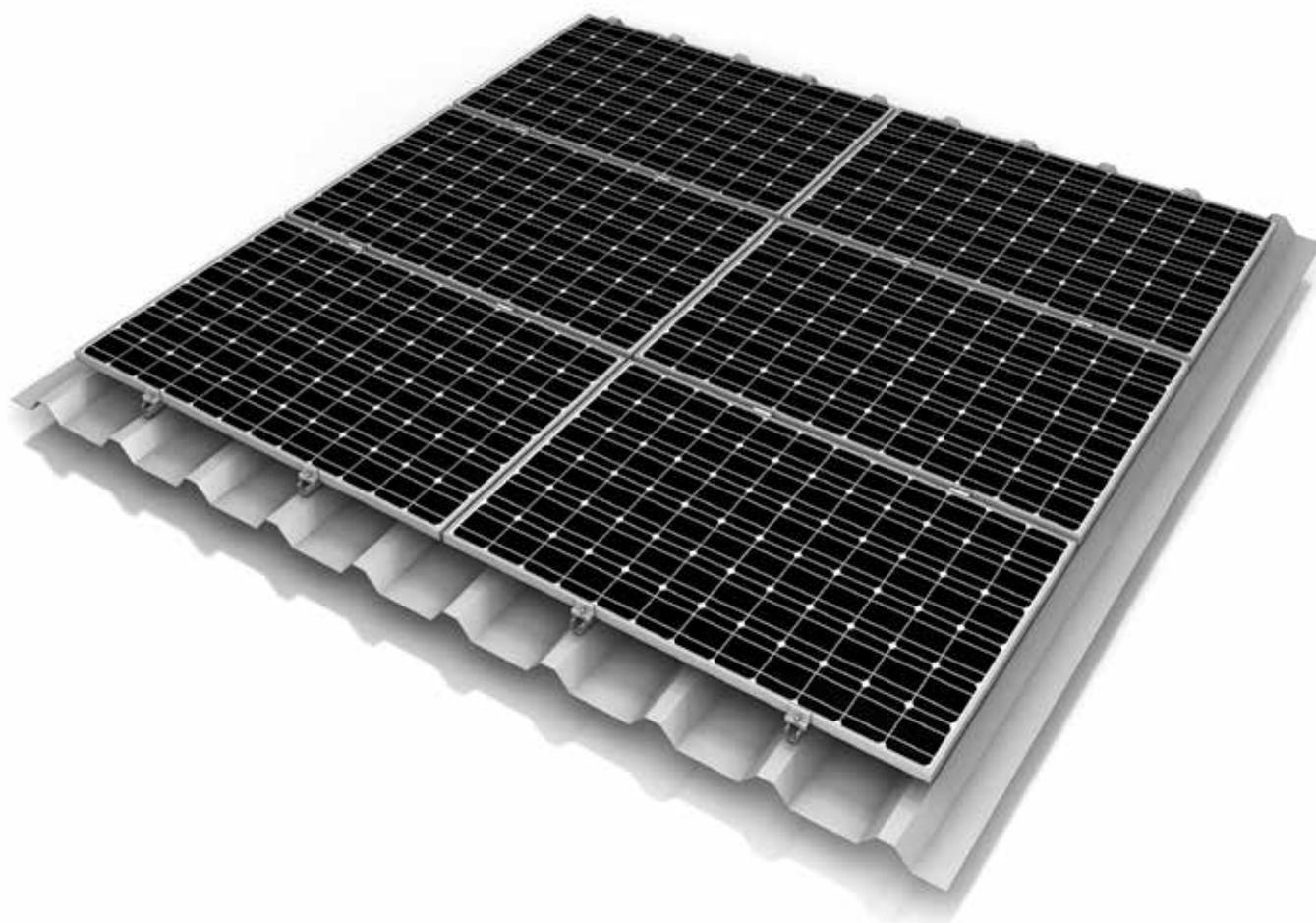


Mounting systems for solar technology



ASSEMBLY INSTRUCTIONS  
**MULTIRAIL 40**

GB

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## PARTNER WITH A SYSTEM

With sophisticated, fully developed product ideas and obvious customer-orientation, K2 Systems is your friendly partner in the field of mounting systems for solar technology. International customers appreciate the tried and tested designs for use on roofs and in outdoor and individual solutions.

Mounting systems from K2 Systems impress with their attractive design and many well thought-out details. High grade materials and quality workmanship guarantee outstanding functionality and durability.

Our products consist of few yet perfectly matching components - this reduces the amount of material used, simplifies assembly while saving time and money.

As an energetic, experienced company, and in keeping with the times, we benefit from cooperation as partners in order to ensure the dynamic development of our company. The experiences from the personal dialogue with our customers forms the basis for permanent optimisation of our range of products. The team of K2 Systems looks forward to a successful cooperation with you.

## TESTED QUALITY – FOUR CERTIFICATIONS

K2 Systems stands for secure connection, highest quality and precision. Our customers and business partners have already known that for a long time. And three independent institutes have tested, confirmed and certified our capabilities and components.



# GENERAL SAFETY INSTRUCTIONS

Please be aware that our General Assembly Regulations must be adhered to.

They can be viewed under [www.k2-systems.com/en/downloads/product-information.html](http://www.k2-systems.com/en/downloads/product-information.html)

In general, the following applies:

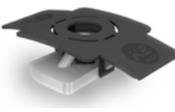
- Systems may only be installed and put into use by people who can ensure the proper carrying-out of the work due to their technical suitability (e.g. training or occupation) and/or experience.
- Before assembly, it must be checked that the product meets the local static requirements. For roof systems, the load-bearing capacity of the roof has to be checked in principle.
- National and local building regulations, standards and environmental regulations are always to be adhered to.
- Work safety and accident prevention regulations and corresponding standards and regulations of occupational associations are to be adhered to! In particular, it is to be ensured that:
  - Safety clothing is worn (especially safety helmets, work shoes and gloves).
  - For work on roofs, the regulations for working on roofs are to be adhered to (e.g. use of anti-fall guards, scaffolding with arrestor equipment from an eaves height of 3m etc.)
  - Presence of two people is vital for the entire course of the assembly, so that swift help can be ensured in the case of an accident.
- K2 mounting systems are constantly being developed further. Because of this, assembly procedures can change. Therefore, before assembly, always check that the assembly instructions are up-to-date under [www.k2-systems.com/en/downloads/product-information.html](http://www.k2-systems.com/en/downloads/product-information.html). We can also send you the latest version on request.
- The assembly instructions of the module manufacturer are to be adhered to.
- Earthing must be ensured, use lightning arrestor clamp if necessary.
- During the entire assembly time it is to be ensured that at least one copy of the assembly instructions is available on site.
- In the event of non-adherence to our General Safety Instructions and if competitor's parts are built in or attached, K2 Systems GmbH reserves the right to refuse liability.
- With disregarding our general installation and assembly instructions and not using all system components and assemblies according to these instructions as well when components are used, which were not obtained from us, K2 Systems is not liable for any resulting defects and damages. Warranty is excluded in such cases.
- If all safety instructions are adhered to and the system is correctly installed, there is a product warranty entitlement of 12 years! Please read out Terms and Conditions of Warranty which can be viewed under [www.k2-systems.com/en/downloads/product-information.html](http://www.k2-systems.com/en/downloads/product-information.html). We can also send them to you on request.
- The dismantling of the system takes place according to the assembly steps, in reverse order.
- K2 components made of stainless steels are available in different corrosion resistance classes. In every case, the expected corrosion exposure of each structure or component must be checked.

## ESSENTIAL: THE MATERIALS REQUIRED

In order to install the K2 Systems MultiRail 40 installation system, the following listed system components are essential. The item quantities are calculated on the basis of the respective requirements. The listed item numbers facilitate the comparison of items.

	<b>MultiRail 40; 400 mm</b>   2001277 Material: Aluminium EN AW-6063 T66
	<b>K2 Self-tapping screw 6 x 36</b>   1001622 Material: Stainless steel, Jointing Material: EPDM, WS 8 mm Alternative: Self-tapping moulded screw 6 x 38   1005193 Material: Stainless steel, EPDM, WS 8

## ADDITIONAL MATERIAL FOR LANDSCAPE INSTALLATION (WITH ADD-ON)

	<b>M K2 slot nut with clip</b>   1001643 Material: stainless steel, plastic Alternatively, a slot nut made of galvanised steel can be used for the MultiRail 40.
	<b>AddOn</b>   1005530 Material: glass fibre reinforced polyamid
	<b>Module End Clamp Standard</b>   Item number module-specific Material: Aluminium
	<b>Module Middle Clamp Standard</b>   1000076 Material: Aluminium
	<b>Allen Bolt M8 DIN EN ISO 4762</b>   Item number module-specific Material: stainless steel, wrench size 6
	<b>Lock Washer</b>   1000473 Material: stainless steel

## ADDITIONAL MATERIAL FOR PORTRAIT INSTALLATION

	<b>End Clamp Set Standard</b> Material: stainless steel, PA	Article number system-specific
	<b>Middle Clamp Set Standard</b> Material: stainless steel, PA	Article number system-specific

## ADDITIONAL MATERIAL FOR CROSS BRACING

	<b>Mounting rail CrossRail 36</b> Material: Aluminium	Article number system-specific
	<b>M K2 slot nut with clip</b> Material: Stainless steel, plastic Alternatively, also slot nut made of galvanized steel can be used.	1001643
	<b>Climber 36/48 (with long slot)</b> Material: Aluminium	1002286
	<b>Allen Bolt M8x25 DIN EN ISO 4762</b> Material: stainless steel	item number system-specific
	<b>Lock Washer</b> Material: stainless steel	1000473

## AT A GLANCE: OVERVIEW OF THE TOOLS

K2 Systems mounting systems are designed to ensure effortless assembly. The required tools are not included in the scope of supply. Here we have listed them together for ease of reference.



### Torque wrench

With attachment for WS 8

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### Measuring tape

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### Cordless screwdriver

With attachment for T-40

## IN GENERAL:

Please carefully read through all the steps first to ensure safe and correct assembly of the system. The required material is listed for each step. Should you have any problems during assembly or questions relating to the system please contact us on our

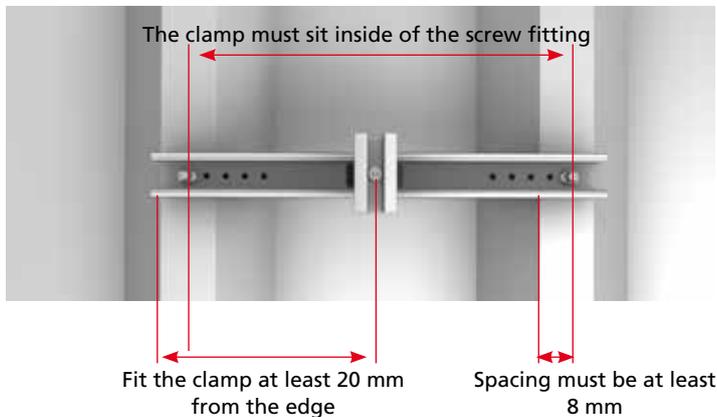
**SERVICE HOTLINE: +49 (0) 7152-3560-0**

## IMPORTANT:

- The grounding must be prepared on site and carried out in accordance to the respective national regulations.
- If the the trapezoidal sheet is fixed with calottes / storm washers, never fix the MultiRail directly on the storm washers.
- The General Installation Instructions must be adhered to.  
These can be found at: [www.k2-systems.com/en/downloads/product-information.html](http://www.k2-systems.com/en/downloads/product-information.html)
- This system can be installed on most trapezoidal sheet metal roofs (min. thickness for steel sheets 0.5mm (S235) and 0.8mm for Aluminium sheets (min. tensile strength 195N/mm<sup>2</sup>) mounted on a sloped roof with up to 65° inclination.
- The K2 Systems planning instructions in this document define the spacing you must leave between the module rows. Please adhere to this.
- You may use modules with a surface area of up to 2m<sup>2</sup> with the MultiRail 40 system.
- The K2 MultiRail System can be used on trapezoid sheet metal roofing with a crest height of at least 25 mm; in this case only the contact surface of the raised crest is measured (crest width up to 175 and 202-350 mm). For other dimensions, please clarify compatibility in advance. The rail is fitted using 2 screws perpendicular to the crest.
- We recommend a thermal gap after no more than 18 m. (See step 8a on page 17)
- Please check on-site that the roofing has a strong enough hold on the supporting structure and the substructure.
- Landscape mounting requires the use of AddOn's and is only suitable for frame heights from 35 to 50 mm.
- If you use AddOn's to mount, please use standard clamps only. The K2XS clamps and the K2 clamp sets do not work here.

## GENERAL INSTALLATION INSTRUCTIONS FOR PORTRAIT AND LANDSCAPE MOUNTING

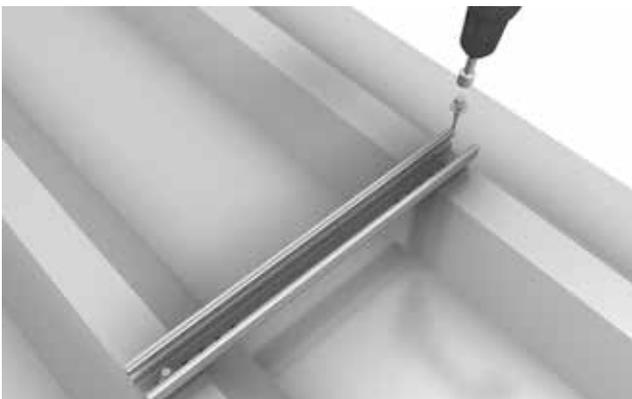
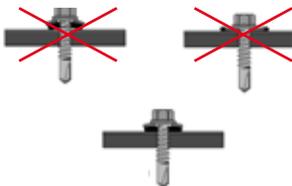
On no account should you fit the module clamp directly at rail ends. Leave a spacing of at least 20 mm from the module clamp to the edge of the rail. Additionally, always fit the module clamp between the two self-tapping sheet metal screws.



## GENERAL INSTRUCTIONS ON MOUNTING THE MULTIRAIL 40

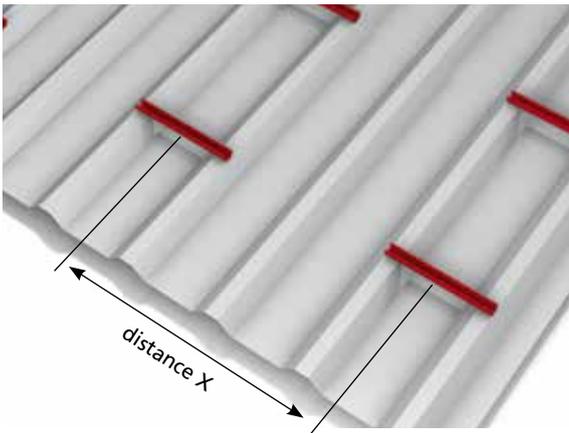
For each MultiRail 40, firmly tighten 2 self-tapping sheet metal screws to the trapezoid sheet metal profile until flush. Do not compress the EPDM seal beneath the rail by more than 50 %. To ensure a proper seal, the spacing between the centre point of the screw and the edge of the trapezoid sheet metal profile must be at least 8 mm.

Avoid excessive compression of the screw washer.



Materials required: K2 MultiRail 40, self-tapping sheet-metal screws

# INSTALLATION MULTIRAIL 40 SYSTEM PORTRAIT: STEP BY STEP



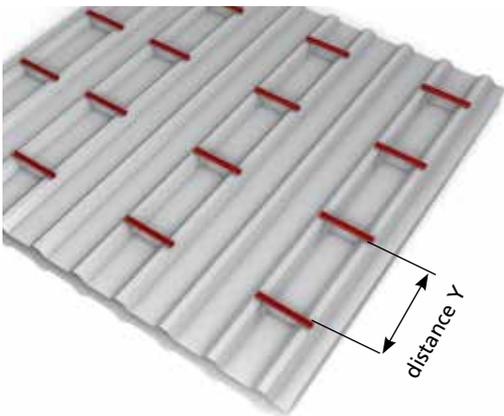
1a  
of 6

## MEASURING THE RAILS FOR PORTRAIT INSTALLATION

(proceed to step 1b on page 14 to mount modules in landscape format)

We recommend using a chalk line to ensure correct alignment and adjustment of the lowermost row of MultiRails. In portrait mounting, the width of the modules defines the horizontal spacing X required between the rail function ranges. This means that if a module has a width of 1,000 mm, the track function ranges must also cover this area. The track function range is located between the self-tapping screws. Once correctly adjusted, the MultiRails in the lowermost row are fastened as described in the general installation instructions.

Materials required: K2 MultiRail 40, self-tapping sheet-metal screws

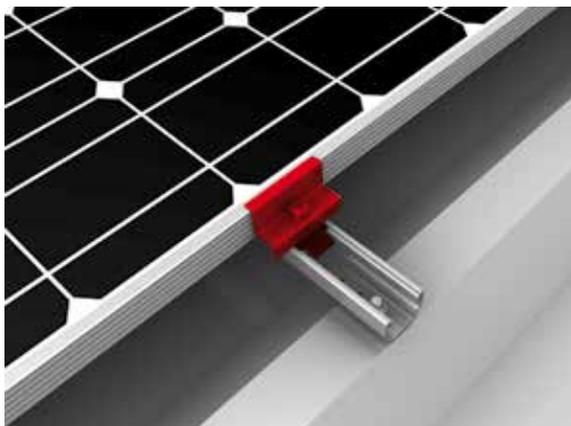


2a  
of 6

## MEASURING AND FASTENING THE OTHER RAILS

The clamping range of the modules define the vertical spacing Y between the rows of MultiRails. Please follow the manufacturer's assembly instructions. For instance, the vertical spacing (leading edge to leading edge) between the MultiRail must be 800 mm if the module clamping range is also 800 mm. Now repeat steps 1a and 2a to assemble the other rows.

Materials required: K2 MultiRail 40, self-tapping sheet-metal screws



3a  
of 6

## FASTEN MODULE

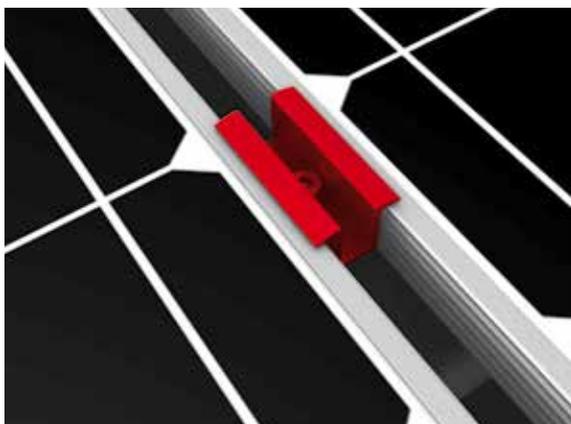
First of all, insert the slot nut M K2 in the MultiRail and turn 90° clockwise. If the end and middle clamps are supplied as a set, please fix the whole set in the rail. Fasten the solar modules onto the rails according to the manufacturer's information.

Each module at the end of a row is to be fastened with end clamps and Allen bolts ISO 4762 M8 and slot nuts. Never mount end clamps directly onto the rail joint or rail end! (Distance: min. 20 mm from rail end!)

Please also note the fastening guidelines of the module manufacturer!

Tightening torque moment 14 Nm.

Materials required: slot nut, module end clamp set



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of 6

## FASTEN MODULES WITH MIDDLE CLAMP SETS

Between two modules, each time use two module middle clamps standard, which are to be bolted with Allen bolts ISO 4762 M8 in the slot nuts.

Never mount middle clamps directly onto the rail joint or rail end! (Distance: min. 20 mm from end clamp)

Please also note the fastening guidelines of the module manufacturer!

Tightening torque moment 14 Nm.

Materials required: slot nut, module middle clamp set standard, Allen bolt M8, locking washer S8



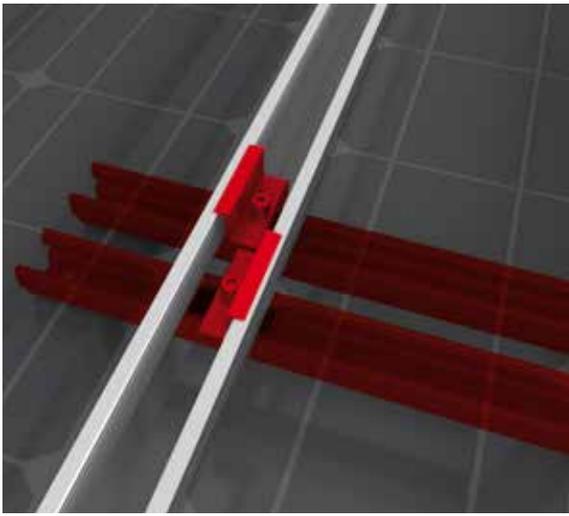
4b  
of 6

## FASTEN MODULES WITH XS MIDDLE CLAMP SETS

Between two modules, each time use two XS module middle clamps, which are also to be bolted in the slot nuts with bolts ISO 4762 M8. With the XS module middle clamp, longer bolts are required than for the module middle clamp Standard.

Tightening torque moment 14 Nm.

Materials required: module middle clamp set XS



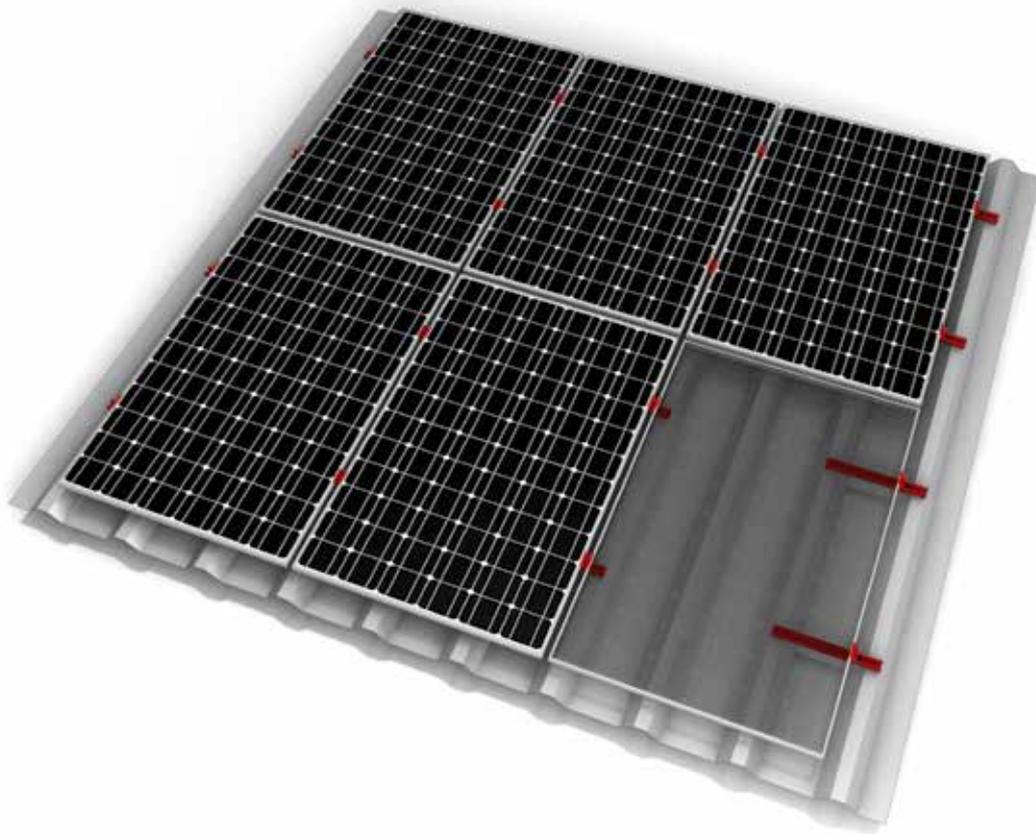
5a  
of 6

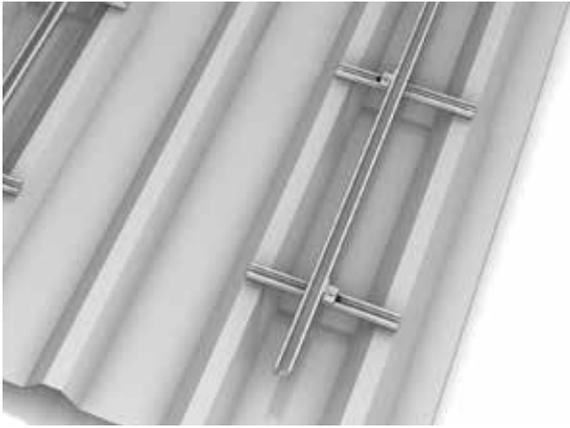
## THERMAL CUT - PORTRAIT MOUNTING

We strongly recommend a thermal cut in a module row after max. 18m of total row length. Always use two rails to make up a thermal cut as shown in the picture.

Materials required: MultiRail 40, module end clamp set

## FULLY MOUNTED





6a  
of 6

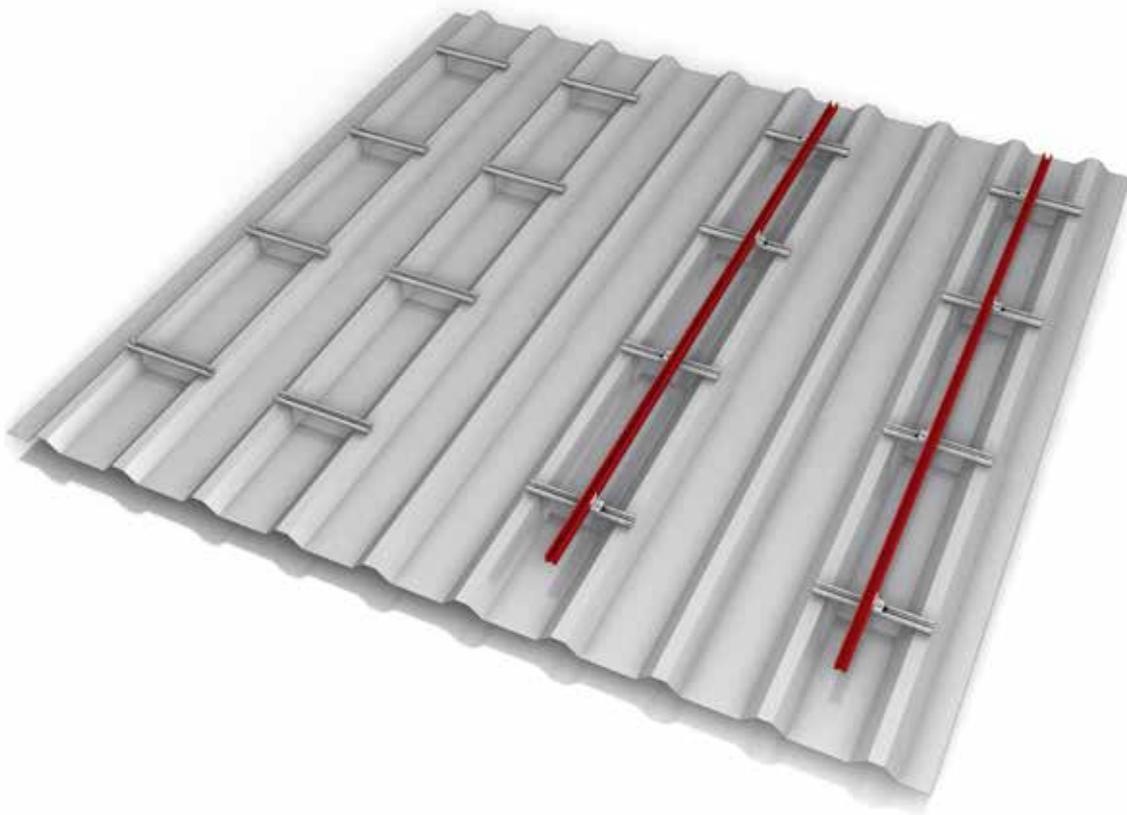
## MOUNT RAILS WITH CROSS BRACING

With using a second layer of rails (cross bracing), the upper rail position is fitted using the slot nut M K2 and the mounting bracket climber to the desired location, with appropriate spacing.

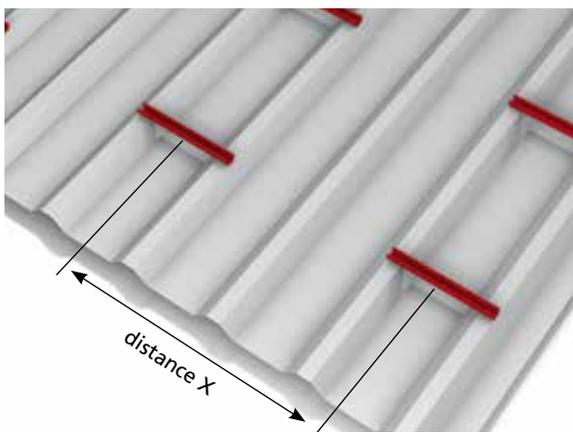
The slot nut M K2 must not protrude beyond the rail ends, also the CrossRail has to sit properly with its full profile width on the MultiRail.

Tightening torque 16 Nm.

Required materials: CrossRail, Climber, M K2, Hexagon socket head cap screw M8, Washer



## INSTALLATION MULTIRAIL 40 SYSTEM LANDSCAPE: STEP BY STEP

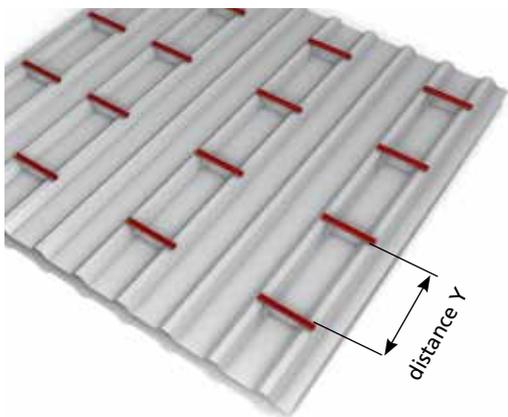


1b  
of 8

### MEASURING THE RAILS FOR LANDSCAPE INSTALLATIONS

- We recommend using a chalk line to ensure correct alignment and adjustment of the lowermost row of MultiRails.
- In landscape mounting, the clamping range of the modules defines the horizontal spacing X required between the MultiRail function ranges. Please follow the manufacturer's assembly instructions. For instance, the functional ranges of the MultiRail must be mounted with spacing of 800 mm if the module clamping range spacing is also 800 mm. The function range of the MultiRail is located between the self-tapping sheet metal screws.

Required materials: K2 MultiRail 40; self-tapping sheet-metal screws



2b  
of 8

### MEASURING AND FASTENING THE OTHER RAILS

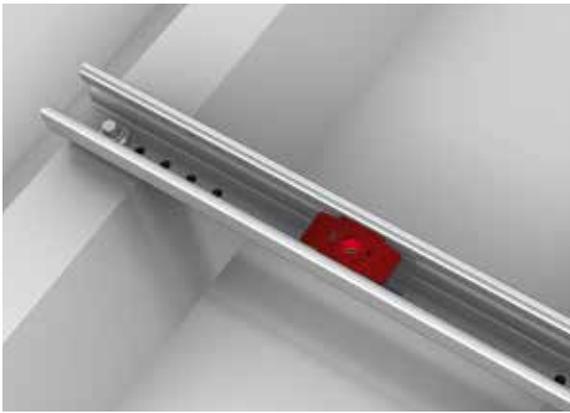
Use K2 AddOns to mount modules with rails lateral to the module gaps. Accurate roof measurements and precise work are imperative in this form of mounting.

First mount the bottom rail row correctly as described in step 1b. Then use the K2 Spacer or another suitable tool to measure the next horizontal track row.

Please note:

The distance Y between the rails depends on the module size and the module clamps. Please calculate as follows:  
 $Y = \text{module width} - 19 \text{ mm}$  if standard module clamps are used (end and middle clamps)

Required materials: K2 MultiRail 40; self-tapping sheet-metal screws

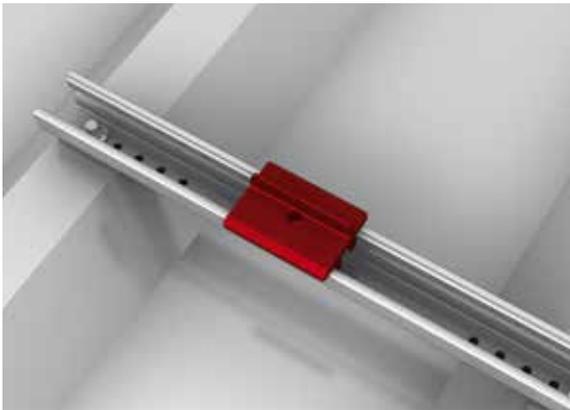


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of 8

## INSERT K2 SLOT NUT

First of all, insert the slot nut M K2 in the MultiRail and turn 90° clockwise.

Required materials: M K2

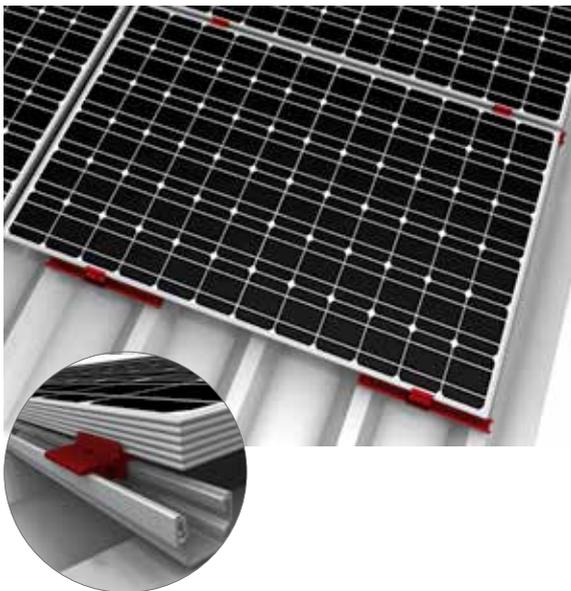


4b  
of 8

## INSERT THE ADDON

The AddOn is inserted into the rail slot covering the slot nut just inserted. This fastens the slot nut in place. Ensure when inserting the AddOn into the lower rail that the K2 logo on the AddOn is at the bottom right and **reads from left to right**. The AddOn is inserted the **opposite** way round into the upper rail, i.e. the logo is upside down at the top left. If you install several rows of modules above each other in a grid, only the AddOn in the uppermost row of rails should be the opposite way around. In all other rows of rails, the AddOn should be attached as for the bottom row as it forms the system edge for the modules.

Required materials: AddOn

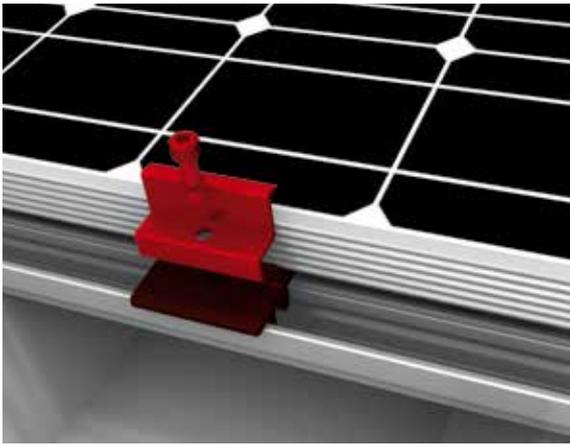


5b  
of 8

## FASTENING THE MODULES

The modules are positioned on the four AddOns. The ledge on the lowermost AddOn's form the edge of the system and hold the module in place.

Required materials: Modules



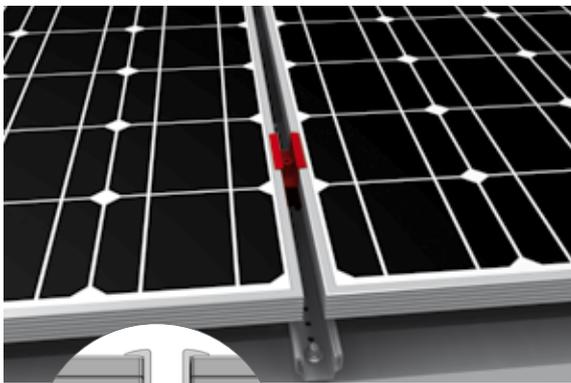
**6b**  
of 8

## FASTENING THE END CLAMPS

The modules must be fastened with end clamps at the designated points in accordance with the manufacturer's instructions. You can slide the AddOn together with the slot nut to any point on the rail for this purpose. 5mm must be added for the material thickness of the AddOn when calculating the length of bolt required with an AddOn.

**Extremely important: the AddOn should only be used with the K2 standard module clamps. The recommended tightening torque is 14 Nm.**

Required materials: M8 module Allen bolt, locking washer, K2 standard end clamp

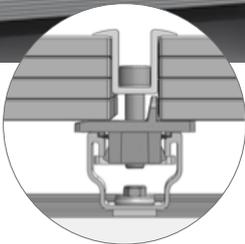


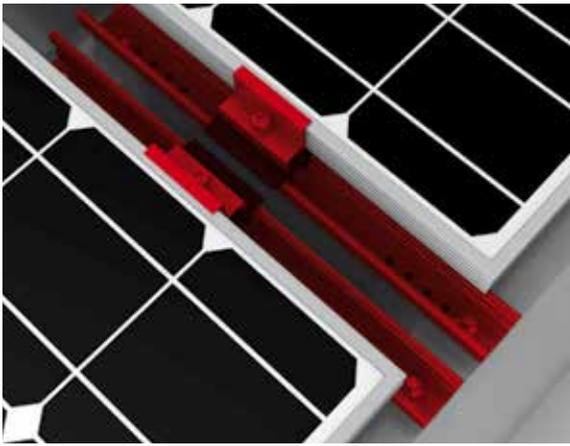
**7b**  
of 8

## POSITIONING THE MIDDLE CLAMPS

A K2 standard middle clamp is used between modules when several rows of modules are mounted above or next to each other.

Required materials: M8 module Allen bolt, locking washer, K2 standard middle clamp



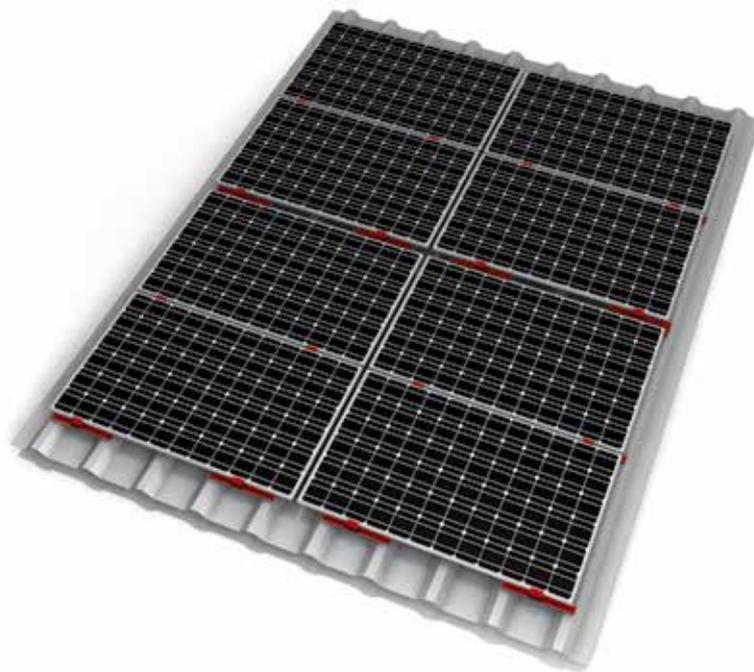


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of 8

## THERMAL GAP

We recommend to provide for a thermal gap between modules in a column after max. 18m of total column height - this can be achieved with a second MultiRail as per picture.

## FULLY MOUNTED



Ready!

## THANK YOU FOR CHOOSING A K2 MOUNTING SYSTEM.

Systems from K2 Systems are fast and simple to install. We hope these instructions have helped you in this. Please contact us if you have any questions or suggestions for improvements. We are looking forward to receive your call on our

**Service-Hotline +49 (0) 7152-3560-0**

Our General Terms of Business apply. Please refer to <http://www.k2-systems.com/en/gsc.html>. German Law shall apply excluding the UN Convention on CISG. Place of venue is Stuttgart.

# Mounting systems for solar technology



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Montageanleitung MultiRail 40 | GB1 | 1013 | Subject to change.  
Product illustrations are exemplary illustrations and may differ from the original.

