



K2 Systems recommendation

Equipotential Bonding and Lightning Protection

for PV mounting systems



Connecting Strength

k2-systems.com

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The following guidelines apply



Important mounting instructions

- On-site general standards and regulations for lightning protection and equipotential bonding must be observed and consultation with a specialist to create a lightning protection concept is recommended (use lightning protection clamp if necessary). Country-specific regulations must be observed.

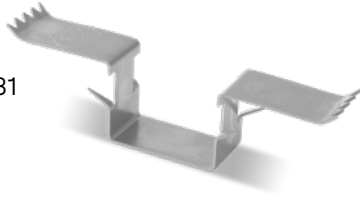
Components



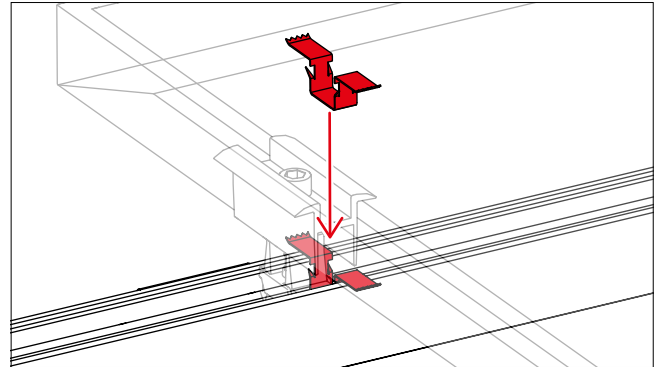
Equipotential bonding/earthing

TerraGrif K2SZ **TG**

Product number: 2001881



- TerraGrif earthing system:
 - Simple and fast module earthing solution for K2 mounting systems
 - Complies with the earthing provisions in the standards NF C 15-100 and the guide UTE C15-712-1
 - Tested and approved by LCIE Bureau Veritas
- Attention: For technical reasons, a TerraGrif cannot be used again after it has been used once and removed again.



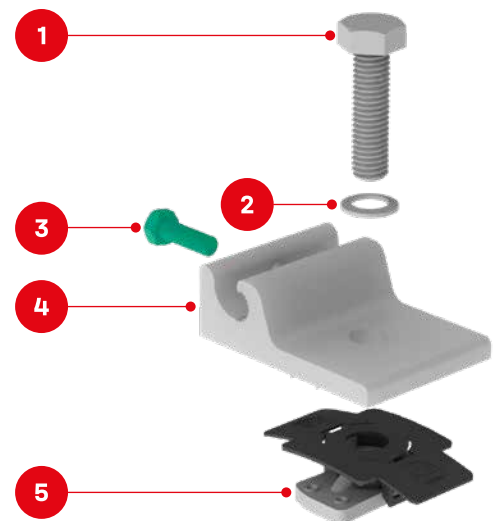
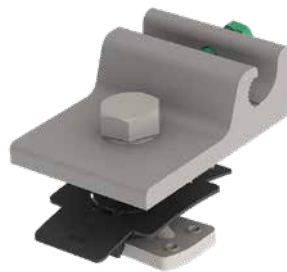
- Simple fixation to the K2 mounting rail
- Position in the lower edge area of the module frame
- Not compatible with BasicRail in landscape orientation

Earthing and lightning protection

K2 Ground Lug, 13 mm Hex Set

Product number: 4000006-H

- **Set consists of:**
 - 3 mm Hex Bolt, stainless steel (1)
 - Lock Washer (2)
 - Grounding Bolt, stainless steel (3)
 - Ground Lug, tin-plated aluminium (4)
 - MK3 Slot Nut (5)



General notes

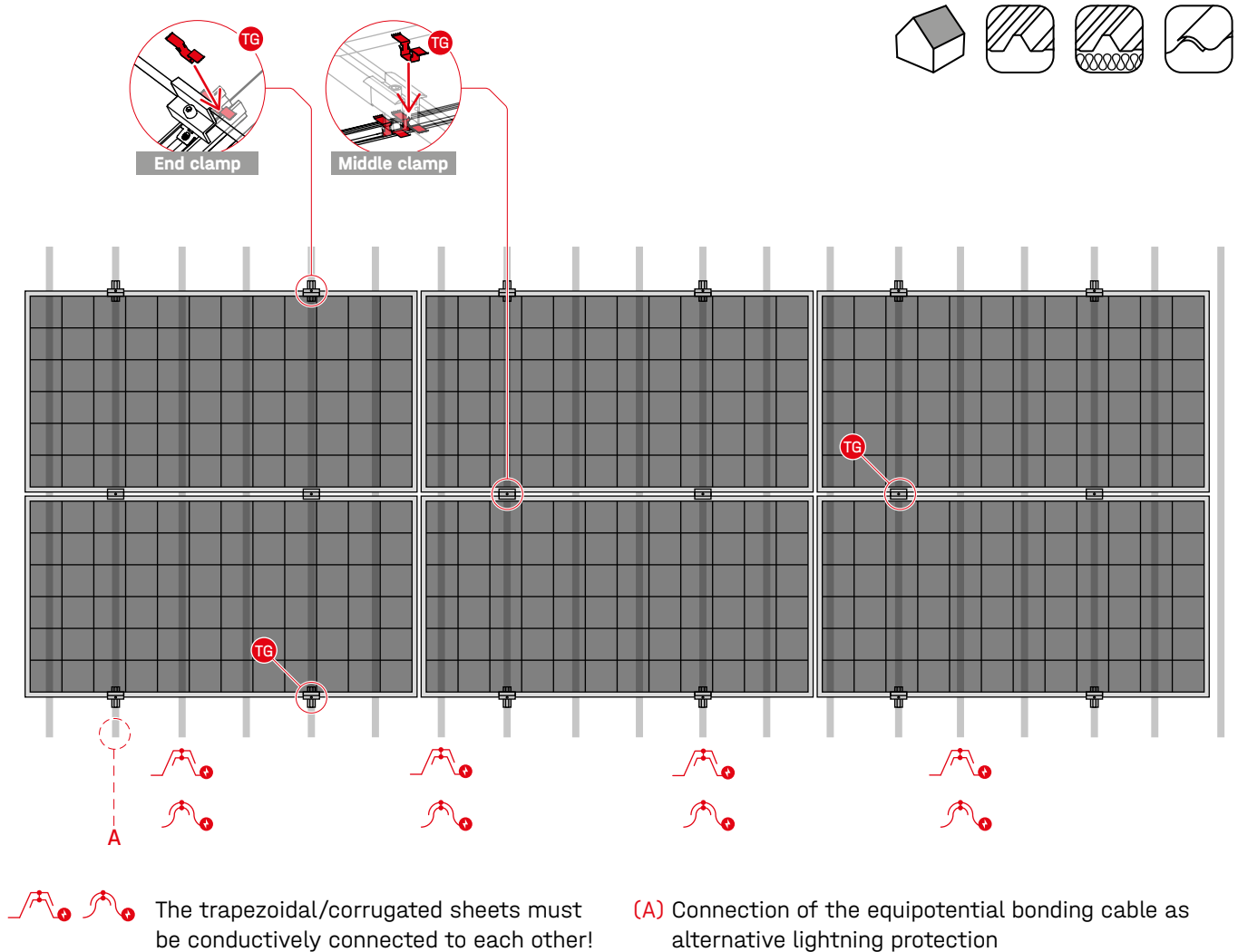
Different components are needed to connect the mounting system to existing lightning protection. We recommend using suitable components for the lightning protection as required.

The connections must be permanently suitable when connecting different materials, taking account of the electrochemical voltage series:

- Cross connections
- Parallel connections
- Connections

Pitched roofs

Trapezoidal metal sheet/Corrugated sheet metal roof covers MultiRail and MultiRail CSM



Lightning protection and equipotential bonding

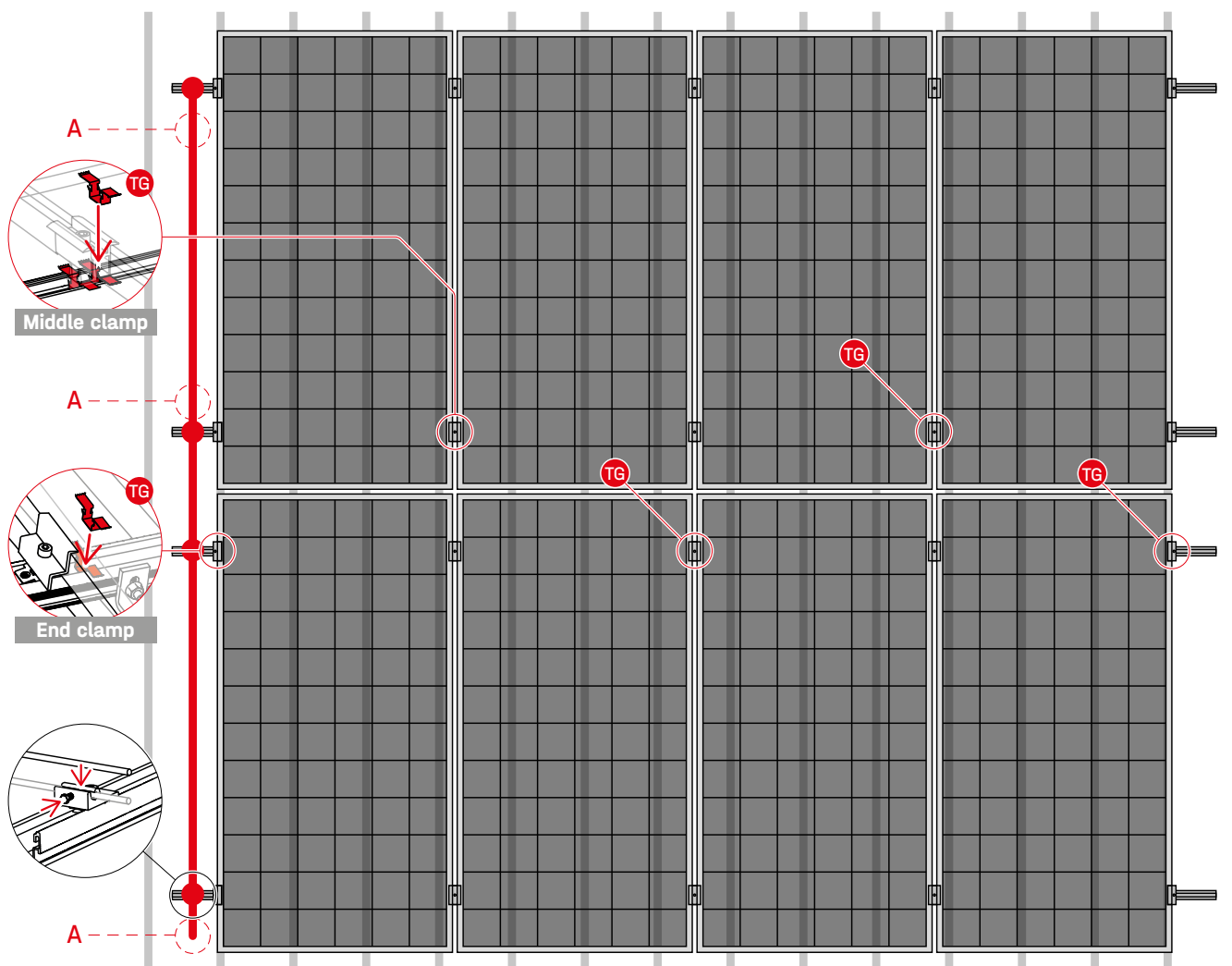
- The drill holes in the MultiRail have been chosen in such a way that the screws in the set will inevitably work their way into the aluminium to such an extent that an electrical connection is created between the sheet metal and the MultiRail.
- We therefore recommend providing the trapezoidal or corrugated sheet metal tracks with equipotential bonding. Make sure that the individual sheet metal profiles are also electrically connected to each other.
- In this way, equipotential bonding is guaranteed via the trapezoidal/corrugated sheet.
- This applies to all MultiRail systems, CSM, RailUp, elevated and cross-connected systems.
- For a connection to the lightning protection, all MultiRail sets may have to be connected so that they are capable of carrying lightning currents. In this case, we recommend maintaining the separation distance to the existing lightning protection!
- The use of TerraGrif according to the illustration is based on the need for module frame earthing.

Materials needed:

If necessary TerraGrif K2SZ

Trapezoidal metal sheet/Corrugated sheet metal roof covers

L-Foot



(A) Connection of the equipotential bonding cable as alternative lightning protection

Lightning protection and equipotential bonding

- We recommend connecting the rails with one aluminium round wire ($\geq 16 \text{ mm}^2$) per module block.
- If required, the connection with lightning protection clamps and aluminium round wire can be designed to withstand lightning currents ($\geq 25 \text{ mm}^2$ aluminium round wire).
- The individual module blocks can be connected to each other in the same way.
- TerraGrif is used when module frame earthing is required. For this, you need one TerraGrif per module.

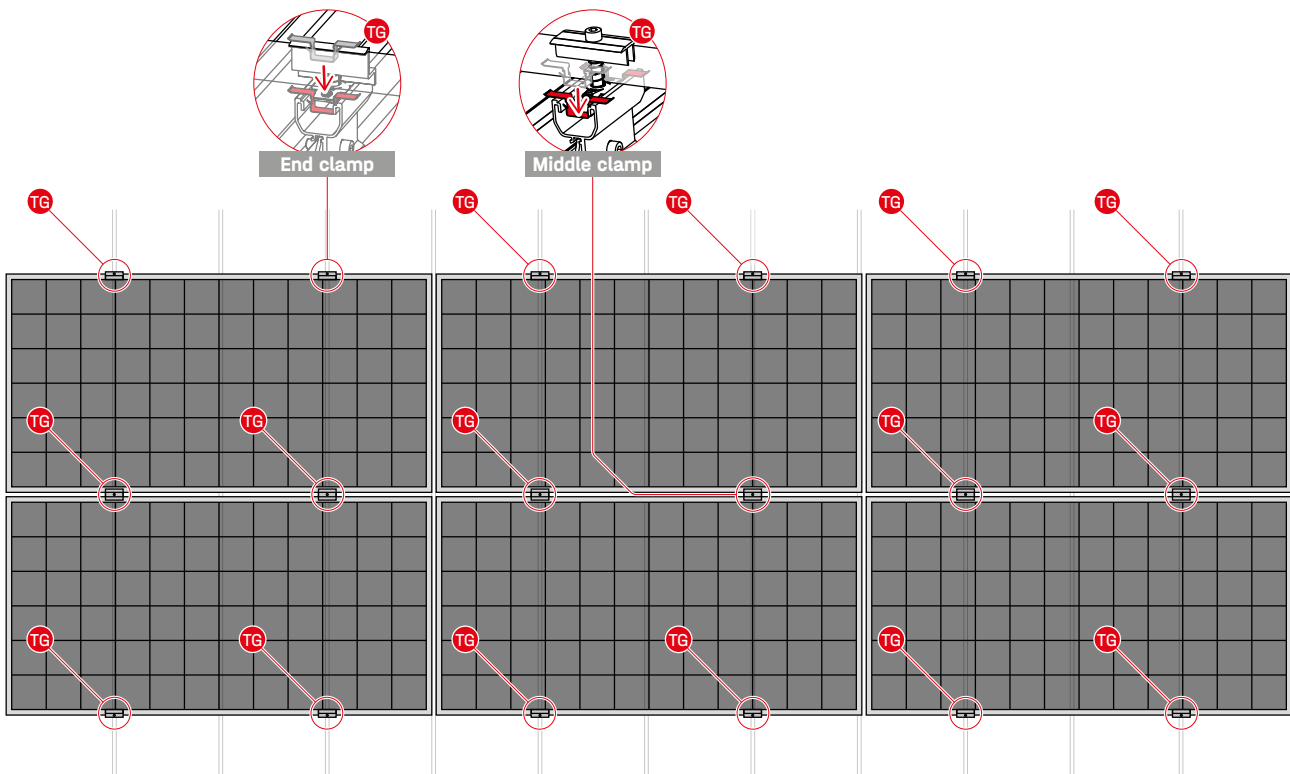
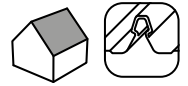
Materials needed:

- **K2 Ground Lug, 13 mm Hex Set** consists of:
 - 3 mm Hex Bolt
 - Lock Washer
 - Grounding Bolt
 - Ground Lug
 - MK3 Slot Nut
- **Round wire**
- **If necessary TerraGrif K2SZ**

Pitched roofs

Standing seam roof cover - 1 layer

Universal KL-Clamp



Lightning protection and equipotential bonding

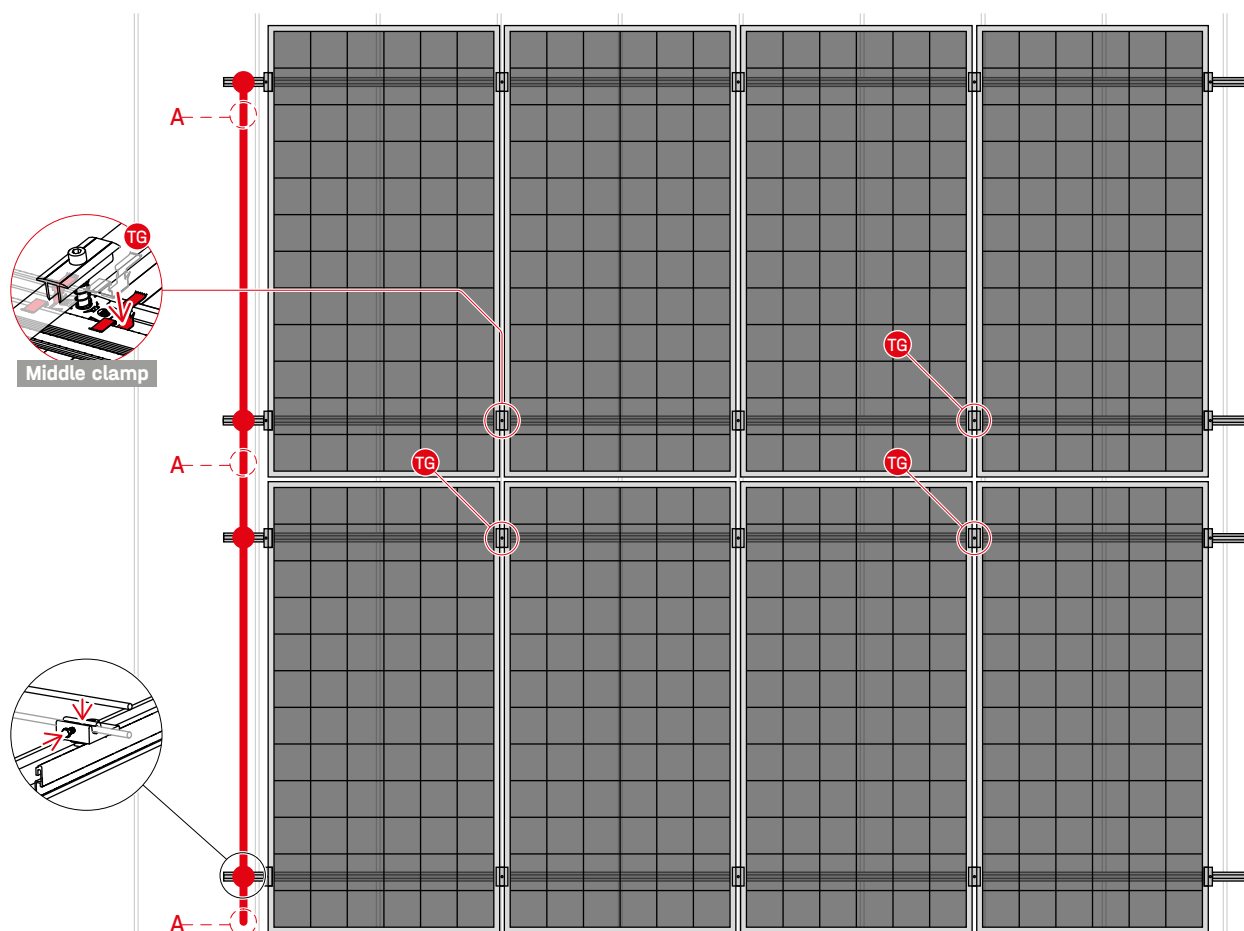
- For metal seam roofs, an electrical connection via the roof sheet cannot be guaranteed due to the different types and coatings.
- One TerraGrif per endclamp and two TerraGrifs per midclamp is needed for the equipotential bonding. This is only used for module frame earthing.
- The electrical connection for lightning protection must be made on site!

Materials needed:

- If necessary TerraGrif K2SZ

Standing seam roof cover - 2 layers (cross layers)

Universal KL-Clamp/SingleRail



Lightning protection and equipotential bonding

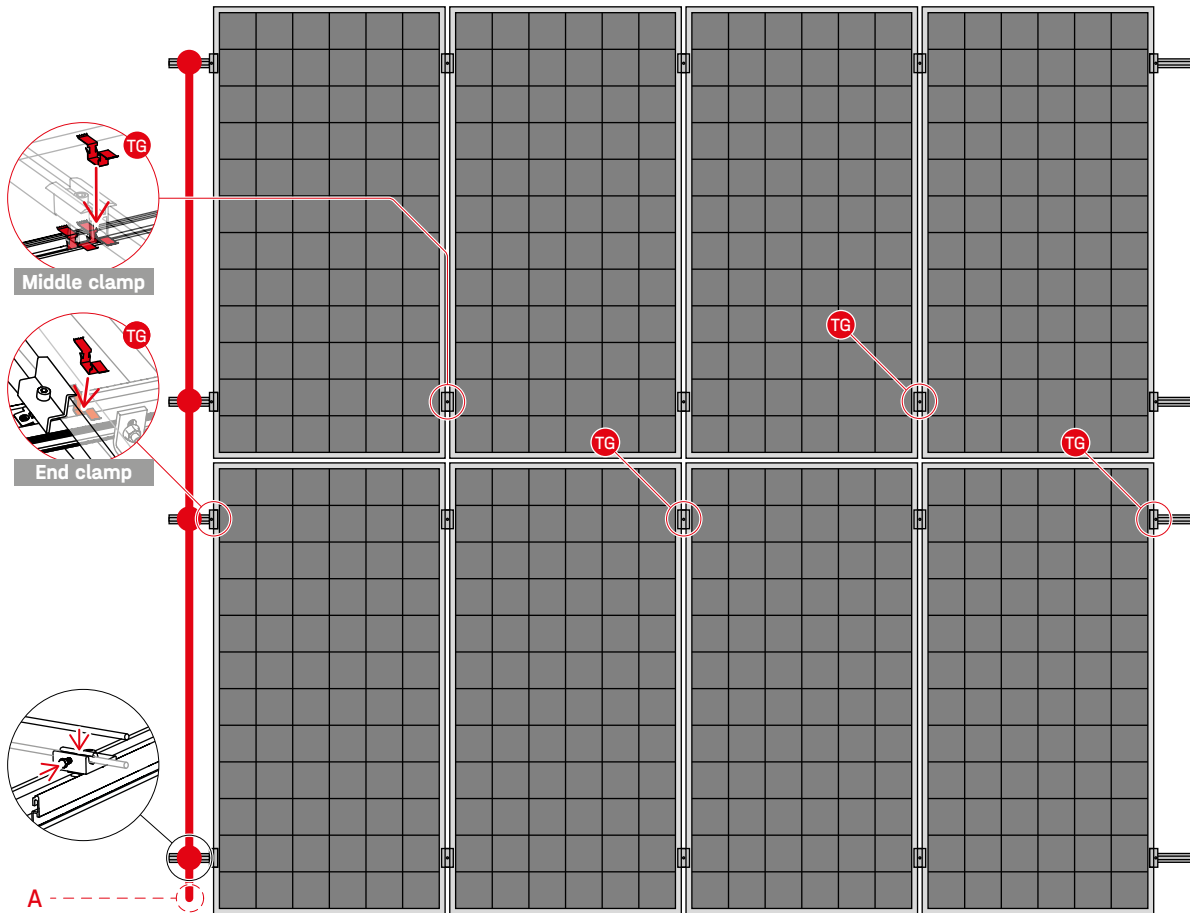
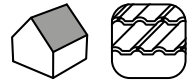
- With sheet metal seam roofs, an electrical connection via the roof sheet cannot be guaranteed. Too many sheet metal types are surface-coated.
- We recommend connecting the rails per module block with an aluminium round wire ($\geq 16 \text{ mm}^2$).
- The connection with lightning protection clamp and aluminium round wire can be made capable of carrying lightning current if required ($\geq 25 \text{ mm}^2$ aluminium round wire).
- The individual module blocks can be connected to each other in the same way.
- The use of TerraGrif according to the illustration is carried out according to the need for module frame earthing.
- If module frame earthing is mandatory, you need one TerraGrif per module.

Materials needed:

- **K2 Ground Lug, 13 mm Hex Set** consists of:
 - 3 mm Hex Bolt
 - Lock Washer
 - Grounding Bolt
 - Ground Lug
 - MK3 Slot Nut
- **Round wire**
- **If necessary TerraGrif K2SZ**

Pitched roofs

Tiled roof cover SingleHook Vario



(A) Connection of the equipotential bonding cable as alternative lightning protection

Lightning protection and equipotential bonding

- We recommend connecting the rails per module block with a round aluminium wire ($\geq 16 \text{ mm}^2$).
- The connection with lightning protection terminal and aluminium round wire can be made capable of carrying lightning current if required ($\geq 25 \text{ mm}^2$ aluminium round wire).
- The conductive connection must be checked; if necessary, the oxide layer of the aluminium must be ground.
- For the connection of the equipotential bonding line, only use cable lugs that are permanently suitable taking into account the electrochemical voltage series.
- If the module manufacturer specifies frame earthing, we recommend using the TerraGrifs.
- The TerraGrifs can be placed underneath the module clamp on the left or right.
- You need one TerraGrif per module.

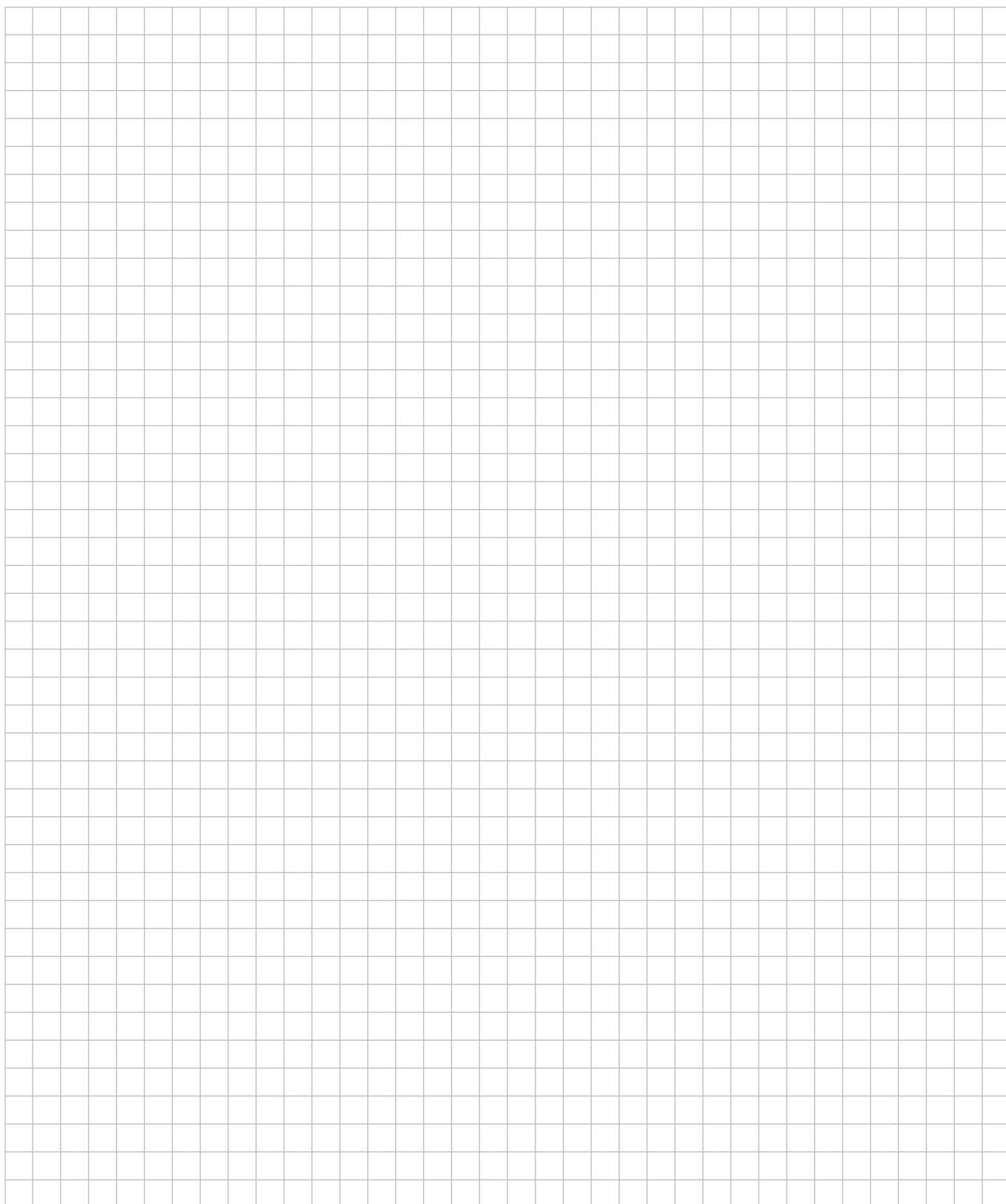
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- **K2 Ground Lug, 13 mm Hex Set** consists of:
 - 3 mm Hex Bolt
 - Lock Washer
 - Grounding Bolt
 - Ground Lug
 - MK3 Slot Nut
- **Round wire**
- **If necessary TerraGrif K2SZ**

Notes



Notes



Thank you for choosing a K2 mounting system.

Mounting systems from K2 Systems are quick and easy to install. We hope these instructions have helped. Please contact us with any questions or suggestions for improvement. Our contact data:

- k2-systems.com/en/contact
- **Service Hotline: +49 (0)7159 42059-0**

Our General Terms of Business apply. Please refer:
k2-systems.com

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Equipotential bonding and lightning protection manual en AU V7 | 0325 · Subject to change
· Product illustrations are exemplary and may differ from the original.



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