



The MV Station needs to be grounded on site. The following operations should also be conducted on site:

Measure the electrical conductivity between the device ground terminals and the total equipotential connection copper bar to ensure the effectiveness of the internal ground connection.

Perform the external grounding according to on-site situation and instructions of the plant staff.

The grounding resistance should be no more than 4Ω .



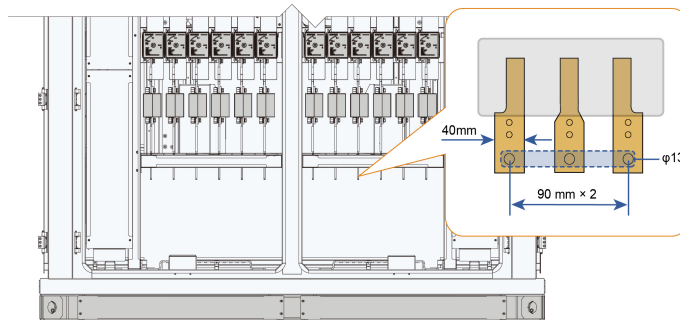
The grounding resistance should be determined according to local standards and regulations.

WARNING

The country-specific regulations and standards must be observed at all times!

6.5 LV Connection

LV wiring terminals are located at the lower part of the LV cabinet. There are wiring terminals distributed on the left and right sides of the low-voltage cabinet. The terminal structure is shown in the figure below.



6.5.1 Cable Layout

When the upstream inverter is SG320HX/SG350HX series, there are four ways to connect the LV side cables.

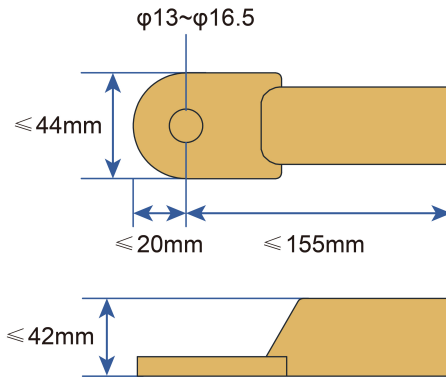


Abbildung 6-3 Single splicing cables

Tabelle 6-2 Requirements

Name	Cable specifications	Cable outer diameter
Single core cable	Maximum 400mm ²	$\leq 35\text{ mm}$
Three-core cable	Maximum 3×400mm ²	50 mm to 78.5 mm

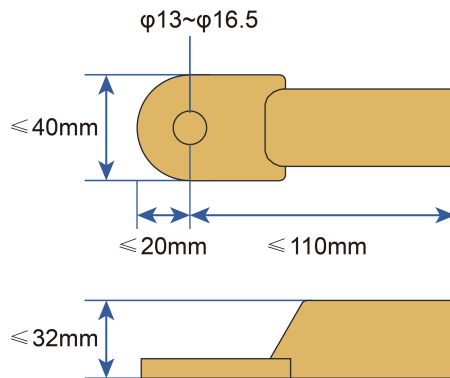


Abbildung 6-4 Double splicing cables

Tabelle 6-3 Requirements

Name	Cable specifications	Cable outer diameter
Single core double splicing cable	Maximum 185mm ²	$\leq 26\text{ mm}$
Three-core double splicing cable	Maximum 3×185mm ²	42 mm to 50 mm

Wiring Distance Requirements

The following figure (1) shows the distance between adjacent branches after connecting a single splicing cable, while figure (2) shows the requirement for three-phase distance.

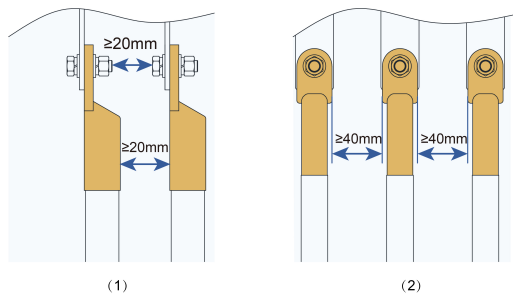


Abbildung 6-5 Single splicing cable wiring distance

The following figure (1) shows the spacing between adjacent branches after double splicing cable wiring, and the requirement for three-phase spacing is shown in figure (2).

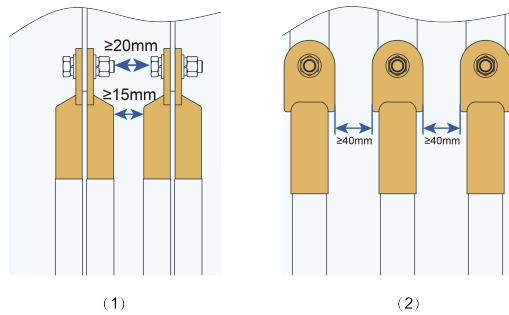


Abbildung 6-6 Double splicing cable wiring distance

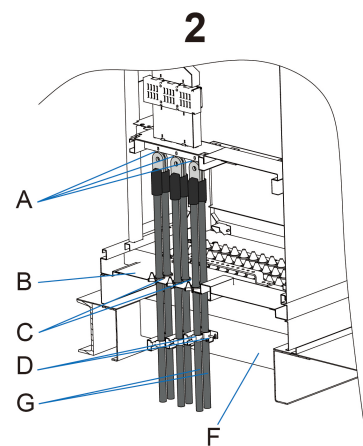
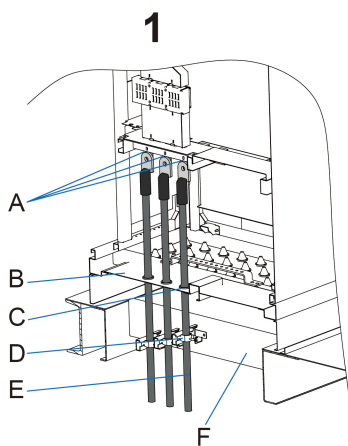
Wiring specifications

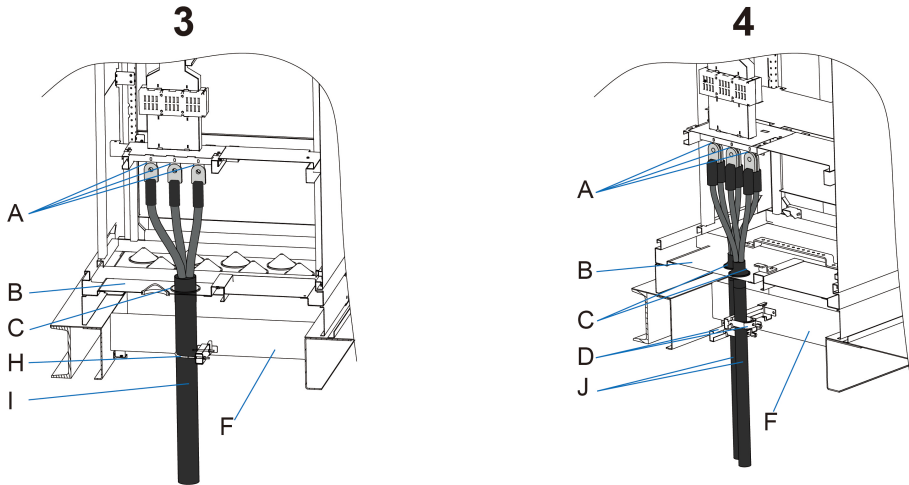
1– Single core cable

2– Single core double splicing cable

3– Three-core cable

4– Three-core double splicing cable





No.	Name
A	Wiring copper bar
B	Low voltage incoming line sealing plate
C	Tower type protective coil
D	Cable clamp
E	Single core cable
F	Container base
G	Single core double splicing cable
H	U-shaped cable clamp
I	Three core cable
J	Three core double splicing cable

WARNING

- Incorrect connection sequence may cause fire. Pay maximum attention to the connection sequence.
- Ensure the firmness of the cable connection. Poor connection or oxidation of the surface may cause over-heating or fire.
- During the wiring process, brute force operation is not allowed, and insulation protection should be taken to ensure that the safety regulations meet the requirements.
- Backfilling should be carried out after the low-voltage cable wiring is completed.

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- Long bolts may affect the insulation and may cause short circuit.
- Remove the heat-shrink tubing between the cable lug and the copper bar if necessary. Poor contact or over-heating may follow if otherwise.
- Low voltage incoming cables shall be Class A insulated cables with a temperature resistance of 90 °C.
- Low voltage incoming cables need to pass through cable clamps, tower type protective coils, and connect to wiring terminals from the bottom.
- Foundation design needs to consider sufficient space for low-voltage cable trenches. Ensure that operators can enter and secure cable clamps.

6.5.2 Wiring Step

Schritt 1 Make sure the upstream inverter is in the OFF position.

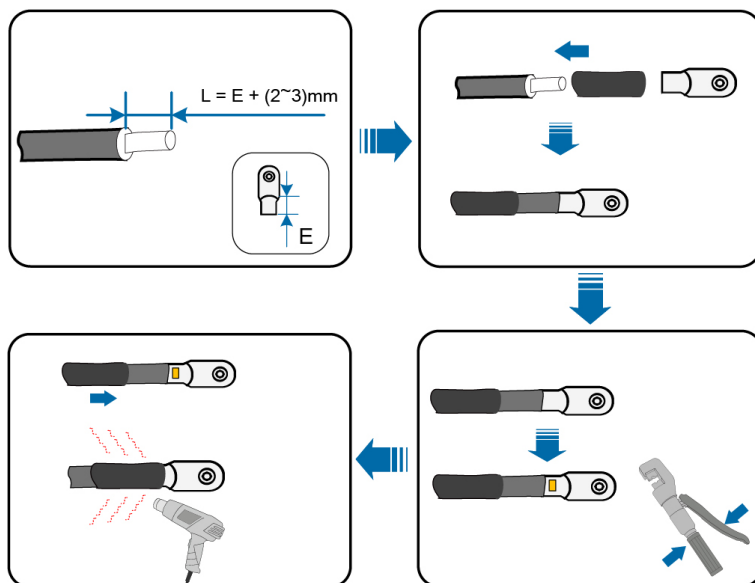
Schritt 2 Make sure the air circuit breaker and disconnecter are in the OFF position.

Schritt 3 Lead the cable into the wiring area through the inlet hole, and mark the cable phase sequence.

Schritt 4 Strip the protective layer of the cable to expose the copper core of the wire with strippers.

Schritt 5 Install the OT/DT terminal to the wire and crimp them with a crimping tool. Install a heat shrink tubing to the terminal and heat it with a heat gun.

- 1 Put the stripped cable inside the cable lug.
- 2 Tighten the cable lug with relevant tools. Crimp it at least twice.



Cable protectors are advisable in the cable crosses if the multi-core cables are used.

Schritt 6 Connect the cable.

- 1 Select bolts matching with the cable lug.
- 2 Attach the cable lug to the connection copper bar.
 - If copper wires are used, connect the spare parts as described below:

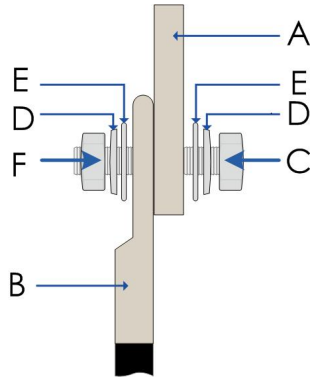


Abbildung 6-7 Single Side Copper Wire Connection

No.	Name	No.	Name
A	Copper bus	D	M12 Spring washer
B	Cable lug	E	M12 Flat washer
C	M12×40 Bolt	F	M12 Nut

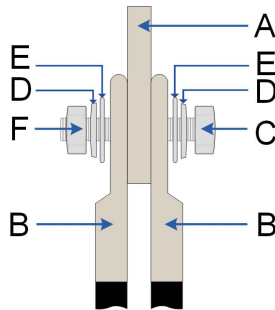


Abbildung 6-8 Double Side Copper Wire Connection

No.	Name	No.	Name
A	Copper bus	D	M12 Spring washer
B	Cable lug	E	M12 Flat washer
C	M12×45 Bolt	F	M12 Nut

- If aluminum wire is selected, a copper-aluminum adapter terminal is required, as shown below:

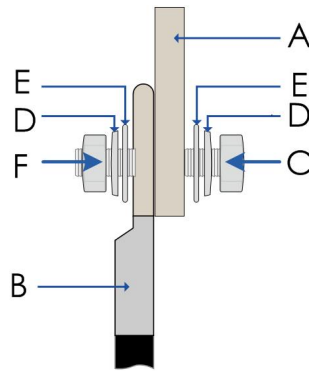


Abbildung 6-9 Single Side Aluminum Wire Connection

No.	Name	No.	Name
A	Copper bus	D	M12 Spring washer
B	Copper-aluminum adapter terminal	E	M12 Flat washer
C	M12×40 Bolt	F	M12 Nut

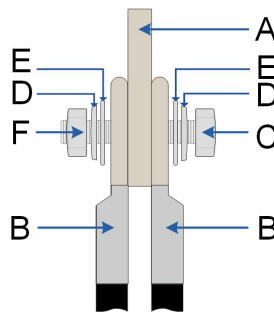


Abbildung 6-10 Double Side Aluminum Wire Connection

No.	Name	No.	Name
A	Copper bus	D	M12 Spring washer
B	Copper-aluminum adapter terminal	E	M12 Flat washer
C	M12×45 Bolt	F	M12 Nut

- 3 Fasten the bolts with screwdriver or spanner. For the M12 bolts, the fastening torque is 60~70N.m.

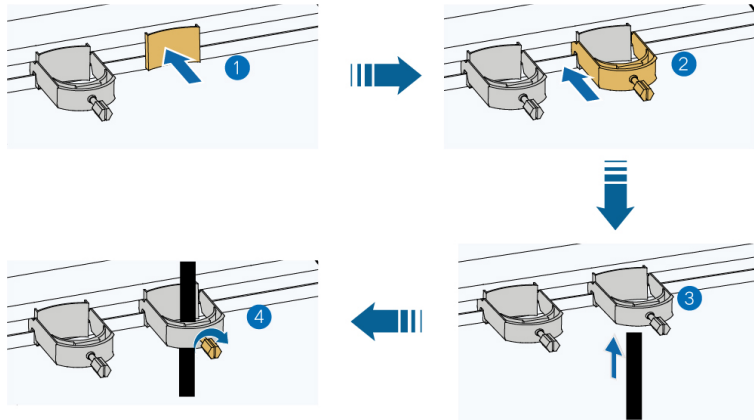
Schritt 7 Confirm that all cable connections are secure.

-- ENDE

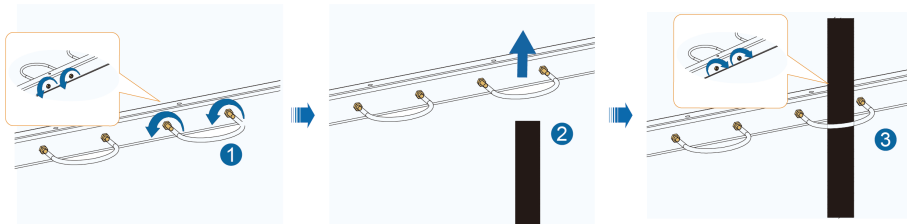
6.5.3 Secure Cables

After completing the LV cable connection, secure the cable properly, to avoid damages caused to the copper bar by stress.

- Secure the single-core cable



- Secure the multi-core cable



Using fireproof materials to seal the bottom cable entry hole, remove the debris inside the cabinet, and restore the cabinet cover.

6.6 MV Side Connection

6.6.1 Inspection Before Wiring

Terminals connecting the external devices on the MV side of the MV Station are located on the MV switchgear. Before wiring, check and confirm:

- The inverter side should be turned off.
- The low-voltage side frame circuit breaker should be disconnected.

6.6.2 Procedure

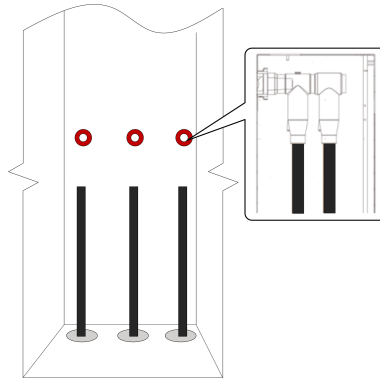
Schritt 1 Lead the cable from external device through the cable entry on the bottom of the cable compartment.

Schritt 2 Prepare the terminals and install them tightly, where reference can be made to the cable connector installation manual.

The wiring terminal can be connected with either copper cable or aluminium cable.

- In case of copper cable, use copper wiring terminals.
- In case of aluminium cable, use copper-to-aluminium adapter terminals.

The HV wiring terminal can be connected to a maximum of two cables. Select the terminal as needed.



- - ENDE

Further Operations

Seal the bottom cable entries with fire-proof mud, clear sundries inside the cabinet, and reassemble the sealing plate of the cabinet.

Should there be any unused wiring terminals, block them with insulating caps.

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On-site wiring should be performed based on the actual conditions, in compliance with the MV switchgear manual.

HINWEIS

Ensure correct phase sequence during cable connection.

6.6.3 Securing MV Cable

After completing the wiring on the MV side according to the relevant requirements, secure the cables to prevent them from slipping due to stress.

Single-core or three-core cables may be used in the switchgear. Secure them in different ways, as shown below.

Single-core cables

If single-core cables are used, secure the three phase cables using cable clips, as shown in the figure below.