

Knowledge Base Article

How to Extend the CTs?

How to Splice or Extend CT Leads

1. Confirm Before Splicing
 - Do not extend more than 100 feet.
 - Use NeoVolta 200A CTs.
2. Materials Needed
 - Cat 6 is thicker than Cat5. Cat 6 is outdoor rated Cat 6, 8 pin 4 pair twisted.
 - Shielded if it will be run outside and at a long distance.



22–26 AWG, twisted pair, shielded if possible.

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3. Splicing Procedure

Cut & Strip

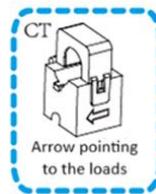
Strip ~½ inch of insulation from both CT and extension wires.

Match Polarity

White → White, Black → Black.

Keep track of CT direction (arrow on CT always points toward the load).

Point the arrows towards the loads.



Join Wires

Twist together, then solder for best conductivity.

Insulate

Slide heat-shrink tubing over the joint, shrink tightly with heat.

If no heat shrink, wrap with high-quality electrical tape.

Secure

Bundle and tie wires so no stress pulls on the splice.

Ground shield at one end only (inverter side).

Route away from AC lines to reduce interference.

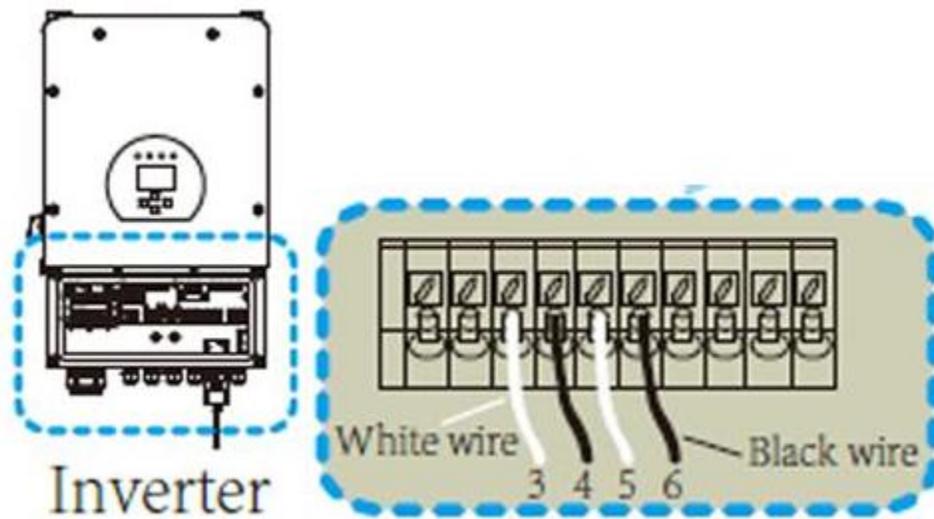
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Visual (diagram)



Can, also, use the Shielded CL3 18/4 security wire. This is more expensive than the Cat6 cable.

Can, also, use 18/4 Shielded Security. Per NEC this is better since it is CL3 rate what the NEC

wants to see, but typically the inspector does not review it.

Both cables will help reduce electromagnetic interference (EMI).

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For analog signal transmission such as CTs the 18/4 would be better, however, you have to keep in

mind the following:

- To use the 18/4 Shielded Security cable the installer would need to ground the shield properly.

Here is a guide on how to proper ground a the shielded Security cable :

Expose the Shield:

Carefully strip back the outer jacket of the cable to expose the foil or braided shield.

Avoid damaging the conductors or the shield itself.

Terminate the Shield:

Use a drain wire if present (a bare wire that runs along the shield). If not, you can twist the shield into a pigtail.

Connect the drain wire or shield pigtail to a ground lug, chassis ground, or shielded terminal block.

Single-Point Grounding (Recommended):

Ground the shield only at one end (typically the source end) to avoid ground loops.

This is especially important for analog signals like those from CTs.

Use Shielded Enclosures or Connectors (Optional but Ideal):

If the terminals are not shielded, consider using a metal enclosure or shielded connector housing to terminate the cable.

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Ground the enclosure to the same point as the shield.

Insulate the Shield End:

At the ungrounded end, cut back and insulate the shield to prevent accidental contact.

Do not connect the shield to ground at both ends unless you're using differential signaling or have a specific reason.
