

SolarEdge Power Optimizer input connector compatibility - Technical note

Revision history

- Version 2.0, February 2024 – Updated Table 1
- Version 1.9 January 2022 - Added support for SolarEdge S-Series Commercial Power Optimizers
- Version 1.7 April 2021 – Added requirement for test report to be less than two years old.



NOTE

SolarEdge tests connectors periodically and retains the right to state at any time that a specific connector type is no longer approved for use with SolarEdge Power Optimizers.

Input connector compatibility options

PV modules use a variety of output connectors. To enable you to use the module of your choice, SolarEdge offers several options for supporting these connectors. This document lists these options and their respective warranty terms.



CAUTION

Installing a SolarEdge system without ensuring compatibility of the module connectors with the Power Optimizer connectors may be unsafe. This could cause functionality problems such as ground faults that result in inverter shutdown. To ensure mechanical compatibility of the Power Optimizer connectors with the PV module connectors to which they are connected, use one of the options described here.



NOTE

In case options 2 or 3 below deviate from local regulations requiring identical connectors, follow local regulations.

Option 1 – Identical input connectors - SolarEdge verified

To ensure compatibility of the SolarEdge Power Optimizers and the modules to which they are connected, SolarEdge strongly recommends using identical connectors from the same manufacturer and of the same type on both the Power Optimizers and the modules. Refer to the list below for connector types verified and available from SolarEdge.

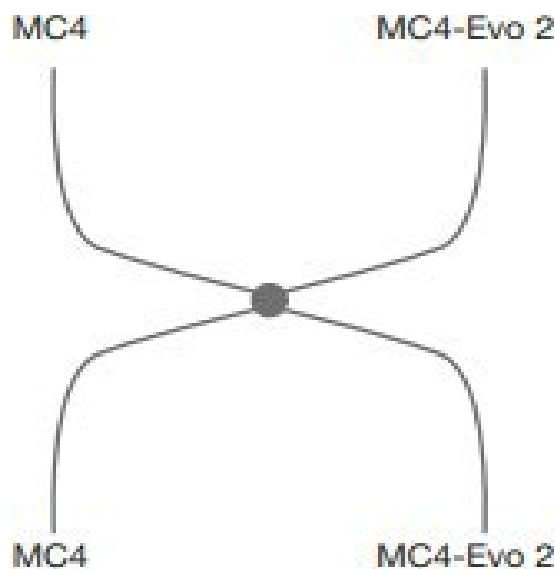
Table 1: Power Optimizer connector types

Connector type	Part number
Staubli MC4	Pxxx-xxMxxxx, Sxxx-xxMxxxx, Sxxxx-xxMxxxx
Canadian Solar T4 (Tlian)	Pxxx-xxPxxxx
Amphenol H4	Pxxx-xxHxxxx
Amphenol UTX	Pxxx-xxUxxxx
Trina TS4	Pxxx-xxTRxxx

Inter-mating between the following types of Staubli connectors is allowed:

Table 2:

Staubli - MC4	Staubli - MC4-EVO2
PV-KST4/2,5I-UR	PV-KST4-EVO2
PV-KBT4/2,5I-UR	PV-KBT4-EVO2



To add a connector type to the list, contact your SolarEdge Sales representative. Connector type approval requires SolarEdge reliability testing and may take up to three months.

Option 2 – Compatible Input Connectors

Before using a SolarEdge verified connector with a non-identical compatible connector, verify the connector compatibility in the following way:

- The module connector manufacturer should explicitly verify compatibility with the SolarEdge Power Optimizer connector; and
- A third-party test report by one of the listed external labs (TUV, VDE, Bureau Veritas, UL, CSA, InterTek) must be obtained, verifying the compatibility of the connectors. The test report must be no more than two years old and must include the following tests:
 - Mechanical operation
 - Contact resistance
 - Wet leakage current



NOTE

Using non-identical connectors without verifying compatibility as detailed above will result in voiding the warranty for issues relating to the connectors and any problems arising from the connectors. Warranty will not be voided for other issues relating to optimizer failures.

Option 3 – Identical Input Connectors - non-SolarEdge Verified

If a certain connector type does not appear in Table 1 above, and compatibility cannot be verified as mentioned above, Power Optimizers with the needed connectors can be ordered per request (minimum order quantity applies). They will be supplied with a part number ending in "C", for example: Pxxx-4xxxxxxC, Sxxx-1xxxxxxC or Sxxxx-1xxxxxxC. SolarEdge warranty will not apply to issues relating to the connectors and any problems arising from the connectors of these Power Optimizers. Warranty will not be voided for other issues relating to Power Optimizer failures.