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# Technical Note

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## Hoymiles Microinverter DC Connection Instructions

Version: V1.0

Release date: 2022-09-30

## 0 Introduction

In this document, Hoymiles gives a brief introduction to the polarity of DC connectors and DC extension cables. Follow the instructions listed in this document to ensure correct polarity between the microinverter and the PV module.

## 1 Types and Gender of DC Connectors

DC connectors are distinguished as the male connector and the female connector. The male connector is typically marked with a plus or positive (+) sign, whereas the female connector is marked with a minus or negative (-). Hoymiles would like to emphasize that the plus (+) and minus (-) signs **only** represent the **gender** of connectors, not their **polarity**.

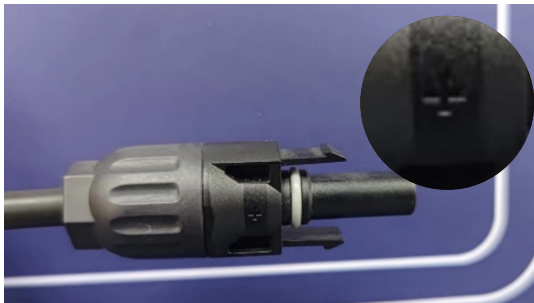


Figure 1 The male connector with "+" mark



Figure 2 The female connector with "-" mark

For DC connectors, there is no formal standard to serve as a benchmark that specifies which gender is positive and which is negative. In different positions, connector polarity varies. For instance,

- The PV module has male connectors (marked with "+") for positive DC outputs and female connectors for negative DC outputs (marked with "-").
- The microinverter has male connectors (marked with "+") for negative DC inputs, and female connectors (marked with "-") for positive DC inputs.

Hoymiles microinverters are compatible with Staubli MC4 connectors and Betteri BC03 connectors. Both Staubli MC4 connectors and Betteri BC03 connectors (MC4 compatible) share the same polarity and can be used in the same way.

### Note:

- *Polarity: Most connectors can only be connected in one direction. This characteristic is known as polarity. In this document, polarity refers to the positive and negative poles of DC.*

## 2 Electrical Connections of DC Connector

### 2.1 Direct Connection



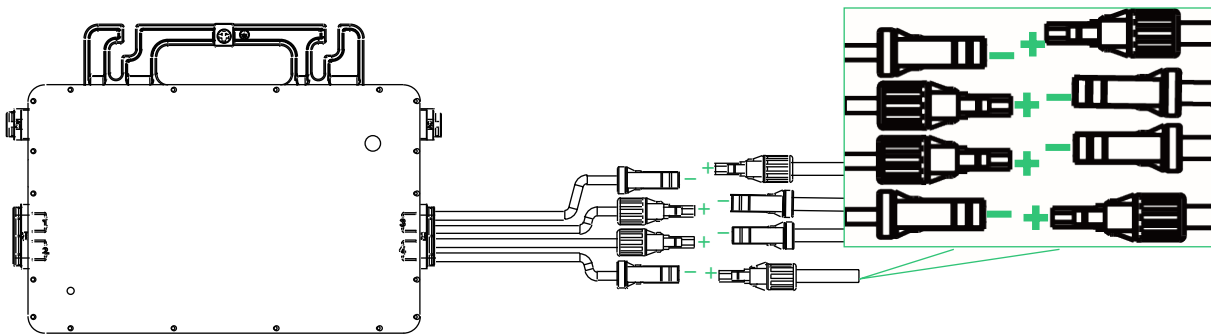
Important:

- If the polarity of the connectors on the microinverter or the PV modules has not been reversed, users can connect connectors directly by following the steps below.
- If users have reversed the polarity of connectors on the microinverter or the PV module or users can hardly identify which connector is positive, please look at the labels on the junction box to identify the polarity of the PV module.
- Be sure to the positive DC output of the PV module is always connected to the positive DC input of the microinverter.

A direct connection occurs when a PV module is directly connected to the microinverter without the use of an extension cable. In the case that both the PV module and the microinverter are equipped with MC4 connectors or MC4-Compatible connectors, the direct connection can be performed as follows:

1. Connect the **positive output male connector** (marked with "+") on the **PV module** to the **female connector** (marked with "-") on the **microinverter**.
2. Connect the **negative output female connector** (marked with "-") on the **PV module** to the **male connector** (marked with "+") on the **microinverter**.

Here is a simple diagram illustrating this:



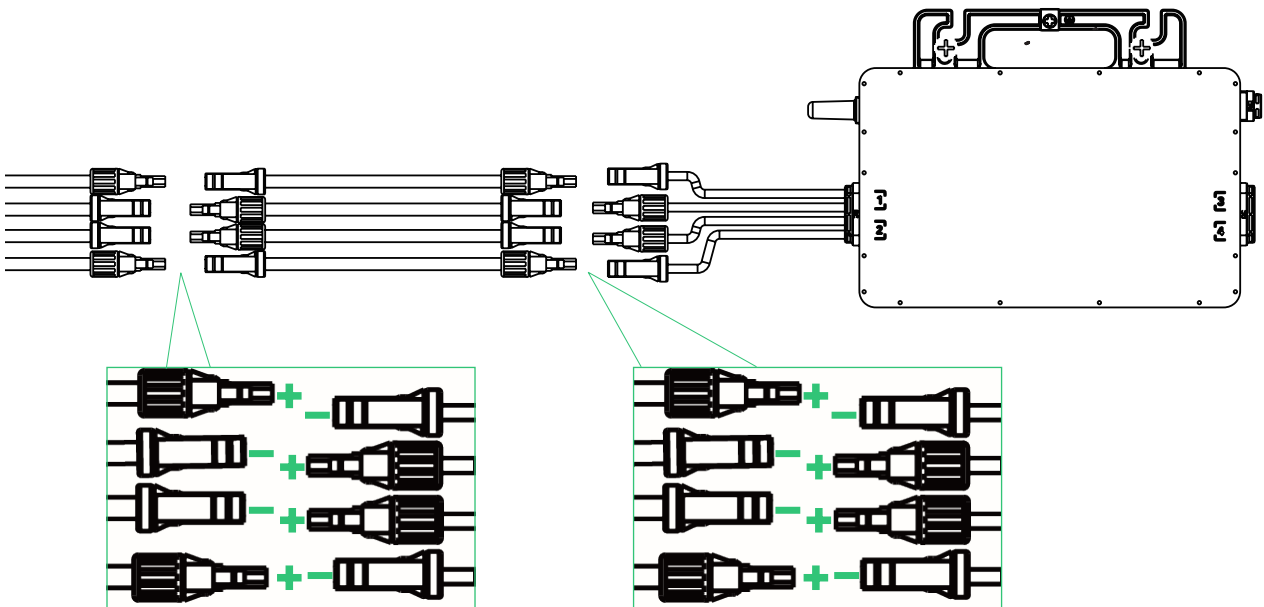
## 2.2 Wiring Via Extension Cables

If the DC cables on PV modules are too short to reach the location of the microinverters, extension cables can be used to extend the PV modules' electrical circuits.

*Note: The extension cable always has a male connector on one end and a female connector on the opposite end regardless of whether it has been connected with the positive end or negative end.*

Please follow the steps below for the correct installation process:

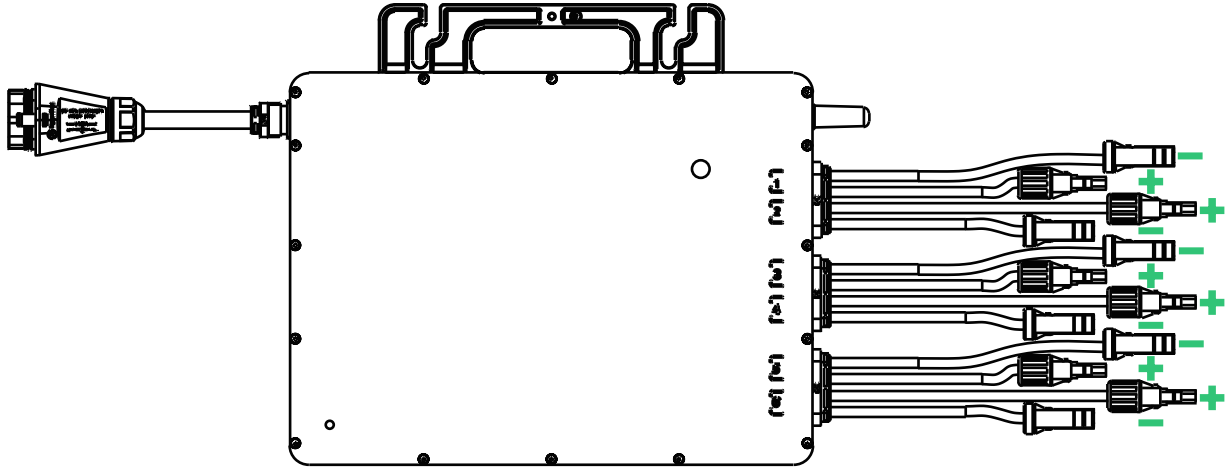
1. Connect the **positive output** (marked with "+") of the **PV module** to the **female** connector (marked with "-") of the **extension cable**, and connect the **positive input** (marked with "-") of the microinverter to the **male** connector (marked with "+") of the **extension cable**.
2. Connect the **negative output** (marked with "-") of the **PV module** to the **male** connector (marked with "+") of the **extension cable**, and connect the **negative input** (marked with "+") of the **microinverter** to the **female** connector (marked with "-") of the **extension cable**.



## Appendix: Diagrams of DC Input Connectors for Hoymiles Microinverters

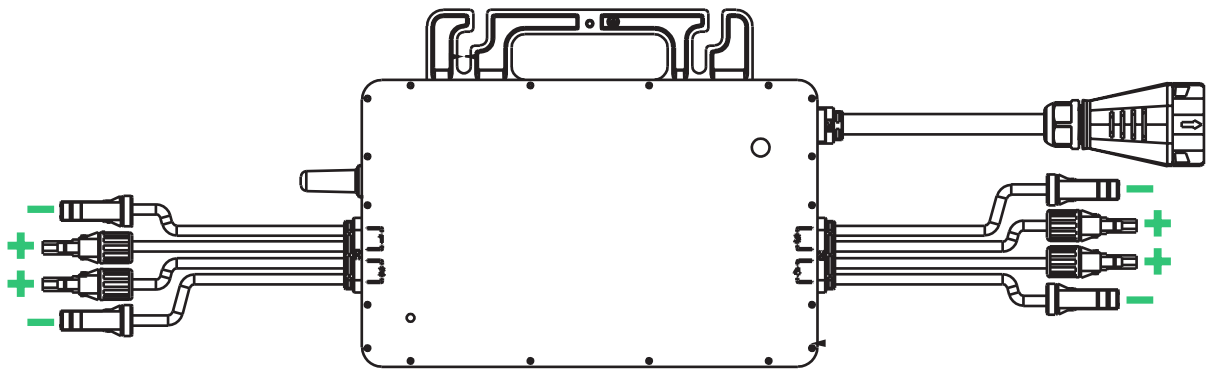
### 1 HMT Series

- HMT 6-in 1 Microinverter

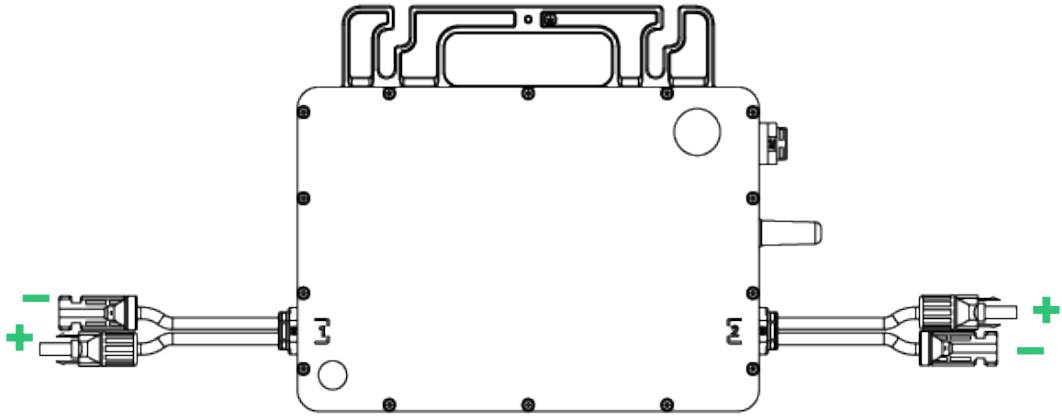


### 2 HMS Series

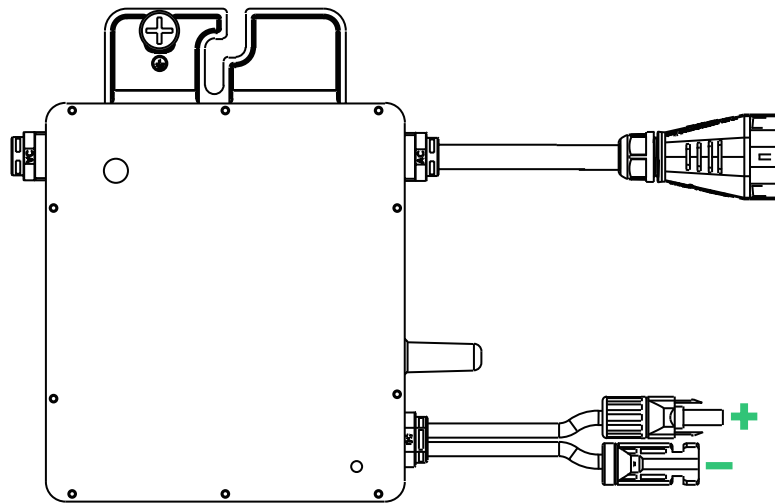
- HMS 4-in-1 Microinverter



- **HMS 2-in-1 Microinverter**

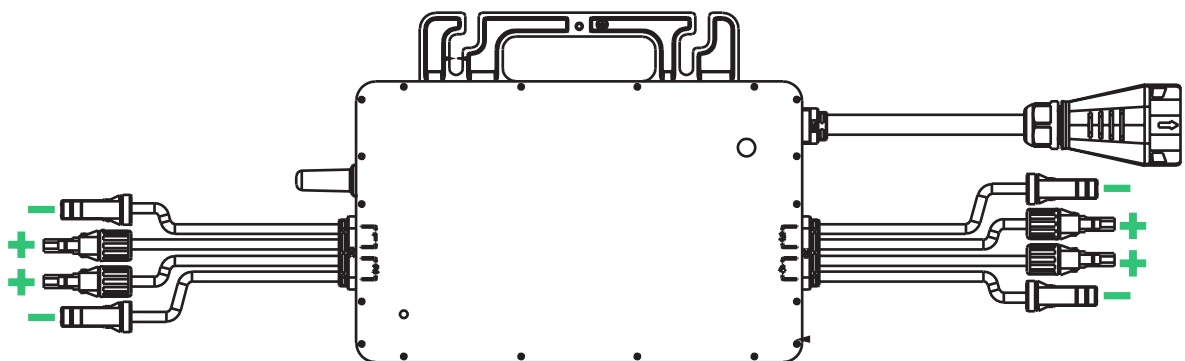


- **HMS 1-in-1 Microinverter**

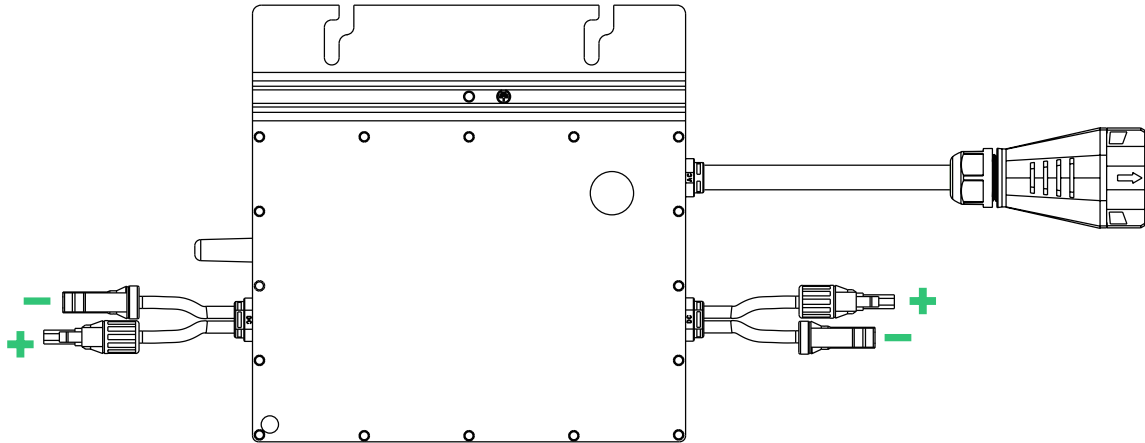


### 3 HM Series

- **HM 4-in-1 Microinverter**



- **HM 2-in-1 Microinverter**



- **HM 1-in-1 Microinverter**

