

PV Fact Sheet

18 | PV DC Floating Combiner Box special features

How do I find the right variant of DC Floating combiner box?

This fact sheet focuses on photovoltaic installations in solar parks worldwide. One essential part of such an installation is the PV combiner box. These boxes are used to combine several strings and to protect against overvoltage and feature many more functions.

In Weidmüller photovoltaics, we focus on the combiner box, and we have developed a large product catalogue aimed at varied utility scale solutions. The following will focus on the special features that the DC floating combiner boxes have and give additional information so it will be easier to choose the correct PV family.

What are the special features of PV DC combiner boxes?

In today's market is more common to see floating solar plants, this type of plant has the same structure of a regular plant with the difference that is above the water. For this kind of plants, we have developed a catalogue of DC floating combiner boxes. These boxes have the same quality and adaptability that the main DC catalogue, with the added value that they are prepared to withstand saltwater splashes, climate changes and prolonged exposure to the sun without affecting their performance or their components. Among the special features we have the following:

- **Pole protection:** All our design has the single pole protection (positive or negative), but there is the option of the protection of both poles. Also, we have plenty of fuse's options from 15 A to 32 A (10x85mm), and from 30 A to 75 A (22x58mm).
- **Monitorization system:** The Solar String Monitoring System (or Solar SMS), is the last device developed by Weidmüller. Allows you to monitor each string and check the status of the enclosure, providing the temperature and the actual voltage of the combiner box. The Solar SMS has slaves' modules that allows to monitor from 8 to 32 strings. It has the option of wired connection with RS-485 or the wireless connection with Lora WAN technology.
- **Input cable type:** Another thing that is available in our combiner boxes is the possibility to choose the inlet cable type, the options that we have is cable glands or multivia cable glands.



Image 1. Example of fuses

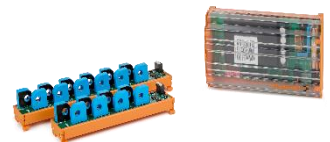


Image 2. Solar SMS Master and Slaves modules



Image 3. Floating box with multivia cable glands

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Additional features of the DC floating combiner box

- All DC floating combiner boxes standard have incorporated a Surge Protective Device (SPD) type II, that provide protection against electrical surges and spikes, including those caused directly and indirectly by lightning. However, it is possible to change it to an SPD type I+II.
- The basic designs of DC floating combiner boxes are equipped with a switch-disconnector for 1500 V. It is possible to change the internal handle with an external handle.
- All the enclosures of the DC floating combiner boxes are double insulated, which consists of supplementing the functional insulation with a second protective insulation so that, in the event of failure of the first insulation, no accessible metal parts can be exposed to voltage. This can be identified by the symbol of a square inside a square in every label of Weidmüller combiner boxes.
- The floating enclosures are equipped with a sun cover, this cover protect the combiner box from the direct sunlight and the rain. Also, this sun cover creates an air gap between the door of the enclosure and the cover to ensure enough air circulation to generate air convection, improving the cooling of the enclosure and therefore its components.
- In case you have not found an option in our catalog that fits your needs, we have a highly trained team that can offer you support and assistance in the development of a tailor-made solution.



Image 4. Weidmüller family of SPDs



Image 5. Switch-disconnectors used



Image 6. Example label of a DC combiner box



Image 7. Example of a DC floating combiner box