

Economical installation and reliable protection of PV systems

Compact DC combiner boxes PV Next Mini

The combiner box is an important component of every photovoltaic system. Not only does it bring the strings from the different parts of the system together, it also protects the system against surge voltage. With the PV Next Mini, Weidmüller has added a uniquely space-saving variation to its portfolio of DC combiner boxes. The new PV Next Mini 2MPP variants enable systems with 2MPP (maximum power point) to now also be protected by the particularly compact boxes. PV Next offers solutions designed to work with all inverter types in Europe.

A significant growth in environmental awareness, an accelerating shift to electric mobility and a consumer desire for greater independence are all helping to increase demand for PV systems, including among private home owners. The acceptance of, and willingness to invest in, these technologies among private consumers and companies are fostering new innovative technical approaches. The PV Next series of combiner boxes from Weidmüller makes it easier for installers to build and install PV systems.

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Combiner boxes are often mounted directly under the roof in PV roof installations to save cable. This requires particularly compact boxes. When the individual PV modules are installed on the roof, the strings are combined into a few bundled strings in the combiner box. PV Next Mini combiner boxes can be installed in an extremely small space. With compact dimensions of just 200 x 200 x 132, they can fit in even the smallest corner under the roof. The simple plug&play design saves users cable and installation time. The new PV Next Mini variants now enable systems with 2MPP to also be protected and connected, for example to maximise the performance of systems on different roof surfaces.

Protected against surge voltage

Despite its compact dimensions, the PV Next Mini can compete with the “big boys” with respect to functionality. The DC combiner box contains key components for overvoltage and surge protection, which safeguard the system against surge voltage, e.g. following a lightning strike in the vicinity. The VARITECTOR surge protection of the VPU I PU (type I+II) and VPU II PV (type II) series used in the PV Next Mini effectively protects the photovoltaic systems and their components from interference coupling arising from lightning and surge voltage. The status of the surge voltage arrester can be recorded at all times using the integrated remote signalling contact. Installation of surge protection in PV systems has been mandatory in the European Union since 2019 in accordance with EN 51643-32:2020. This requirement applies both to new systems as well as conversions and expansions of solar systems.

On-trend design

The efficiency of a PV system depends on multiple factors. MPP trackers integrated into inverters ensure that the power of the solar module is coordinated optimally to the current radiation and temperature conditions in the surroundings. The MPP tracker detects the point with the best efficiency and optimal power output. The PV Next Mini is available in a version with two inputs and one output per MPP. Users can also choose from the ready-wired boxes with WM4C or MC4-EVO2 plug-in connectors as a simple plug&play solution or the combiner boxes with cable glands for self-wiring with PUSH IN wire connection. Installation is particularly easy and convenient thanks to the integrated PUSH IN connection system, as no special tools are required. This reduces the number of work steps, avoids connection errors and significantly cuts assembly time. PV Next Mini series combiner boxes have been specially designed for confined spaces. The standardised, highly compact design of the product series ensures the optimal thermal and mechanical function of all integrated components. The boxes are designed for ambient temperatures of -40 to +50 °C, and conform to the specifications of IEC 61439-2. They are suitable for the use of strings with up to 15 A and up to 1,100 V. PV Next Mini fits seamlessly into the overall portfolio of combiner boxes. It is based on the standardised design of PV Next and covers a wide range of current

requirements for combiner boxes. There are over 90 variants that are simple to use, easily scalable and that offer a whole new level of flexibility. Short transport routes thanks to two production sites in Europe, cost-optimised series production and the use of high-quality components guarantee not only the highest product quality, but also fast availability and quick transport.

4,635 characters (including space characters)



Image caption: The new PV Next Mini 2MPP variants from Weidmüller for a particularly space-saving installation.



Image caption: With compact dimensions of just 200 x 200 x 132 mm, they can fit into even the smallest corner under the roof. The variants with WM4C connectors can be installed particularly quickly and easily.

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