



Combiner Box Solutions for Utility-Scale Solar

In utility-scale solar installations, maintaining reliable power flow and robust system protection is essential for long-term energy production and operational efficiency. One of the most critical components supporting this reliability on the DC side of the system is the combiner box.

Combiner boxes aggregate the output from multiple photovoltaic (PV) strings and consolidate that power into a single DC output directed toward the inverter. This simplifies system architecture and also enhances manageability, streamlines installation, and ensures a more organized and efficient collection of solar-generated power.

Beyond consolidation, combiner boxes are engineered to provide essential circuit protection. Integrated overcurrent devices, such as fuses or breakers, quickly isolate any string experiencing a fault or short circuit. This containment reduces the risk of equipment damage, mitigates safety hazards, and helps maintain system uptime—all of which are crucial in high-capacity solar operations where any interruption can have significant impact.

As part of a resilient, high-performing solar infrastructure, AWG and Chemik offer utility-grade combiner boxes built to withstand demanding environmental conditions and deliver dependable performance. All products are available with UL approvals tailored for the U.S. market, ensuring compliance, safety, and ease of integration within large-scale renewable energy projects.

www.buyawg.com

Empowering a Better World with Chemik Solar Solutions

STANDARD COMBINER vs. SMART COMBINER: Let's Compare

STANDARD

Standard combiner boxes offer fuses for typical overcurrent protection and a DC disconnect device for the outgoing cable strings, but no additional monitoring functions or capabilities.



SMART

Smart combiner boxes offer all the components of a standard combiner box, but also includes additional monitoring functions and capabilities, as well as networking devices.

Combiner Box Construction

Certified UL 1741

1. Smart Monitoring Devices & Communications

Captures vital data from the string circuits and transmits to a centralized location

2. DC Disconnect Switch

Allows safe isolation of DC circuitry between strings and inverter

3. Fuses

Provides overcurrent protection for DC circuitry

4. Surge Arresters

Provides voltage surge and transient protection for DC system

5. Incoming Positive Cables

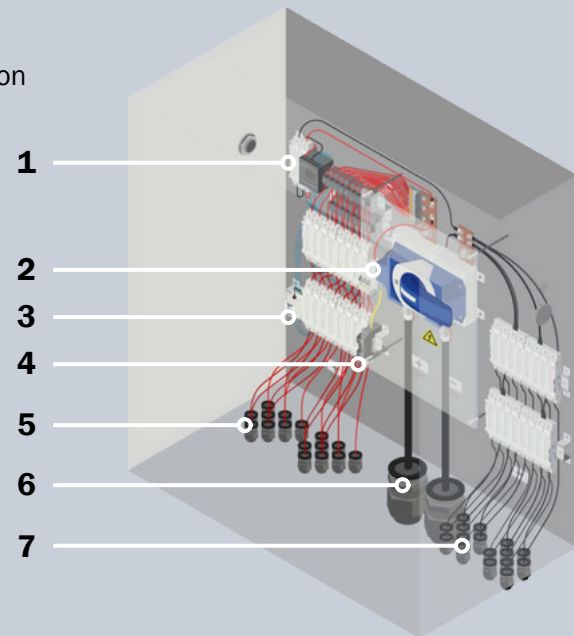
From PV Strings/Arrays

6. Outgoing DC Cables

To Recombiner Box/Inverter

7. Incoming Negative Cables

From PV Strings/Arrays



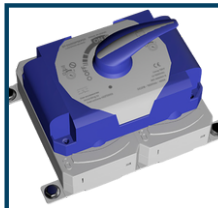
Accessories & Components



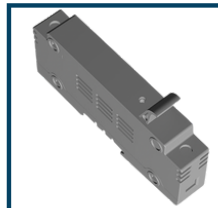
Monichek Smart Monitor



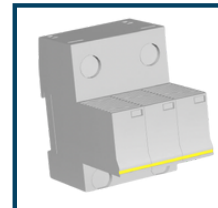
Lorachek Comm Device



DC Disconnect Switch



Fuses



Surge Arresters



Cable Glands



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