

Photovoltaics

High-performance products for solar cabinet building

Simplifying PV system installation and communication

Created with AI



Power Supplies

Industrial Ethernet

String Monitoring

Overvoltage Protections

Controllers

Terminal Blocks

Weidmüller 

Contents

Cabinets for PV systems need suitable products with the best performance for a long operating life. Our experience with the components used in PV system cabinets allows us to deliver a wide range of products. This lets you choose the right option for any project.

1 PV ELECTRICAL CABINETS

P. 4



String monitoring system (PV SMS)



Fuse holders and fuse links (WSFH & WSFL)



Overvoltage protections (Coms, DC & AC Power)



PV connectors (WM4 C and PV-stick)



Cable glands (CGs)



Pressure compensation elements



Terminal blocks (screw, PUSH IN and SNAP IN type)



Wire-end ferrules, crimping machines and tools



DIN rails

2 PV CONTROL CABINETS

P. 5



**Communication devices:
Ethernet switches, routers and
media converters**



Power supplies



Controllers and HMIs



Backup power (UPS & batteries)



Energy meters



**Terminal blocks
(screw, PUSH IN and SNAP IN type)**



**Overvoltage protections
(Coms, DC & AC Power)**



Cable glands (CGs)



Cabinet infrastructure



Patch panels

3 PV ASSEMBLY WORKPLACES

P. 9



Tools



Automatic machines



Industrial printers



Marking systems



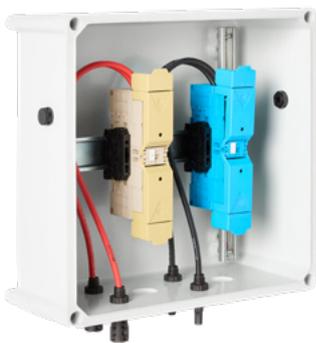
Cabinet infrastructure

1 Primary components for PV electrical cabinets

Time is money. That's why it's essential to handle installation work in electrical cabinet construction quickly, using familiar and easy-to-connect products. Weidmüller offers a wide range of products for designing diverse control cabinets for the photovoltaic industry. With many AC and DC products available, we offer the best option to suit your business.

Quality, reliability, proven technology and experience. These are the key factors that make Weidmüller the right partner for your business - no matter what kind of PV electrical cabinet you need to assemble. Let Weidmüller be your one-stop shop for the products you need. We have sales offices in more than 60 countries around the world ready to address your unique needs.

Having a variety of highly reliable products available from a single supplier makes it easy to deliver electrical cabinets your customers can trust - sized correctly, assembled efficiently, and through a cost-optimized supply chain.



Fuse / String combiner box

These cabinets are used in PV sites to join 2 or more strings in one cable (fused or not). Some terminals allow for a combination of copper and aluminum, for cost-effective solutions over long distances.



DC Combiner box

These cabinets are used in PV systems with Central inverters or String inverters (1 MPPT). These solutions can be used to protect the strings against overvoltages and overcurrents, to monitor performance, and to partially disconnect the DC power for better O&M.



DC Combiner boxes for MULTI-MPPT string inverters

Protecting each MPPT against overvoltages and potentially against overcurrents is required under some national laws, and is generally recommended from a technical perspective as string inverters are not typically designed to do so. Then, to reduce lack of availability it is highly recommendable to improve the protection on the string inverter side with these cabinets.

String monitoring devices

PV SMS



- Highly modular
- Modules of 8 or 12 channels with measurement up to 25 or 50 AMP
- Modular device with 2 versions of Power supply (self-powered or 24 VDC)
- RS485 and/or wireless LoRaWAN communication

Fuses & fuse holders

WSFL & WSFH



- Complete range of currents (from 15-75 AMPs) for 1500 VDC
- Different variants: 10x85 mm and 22x58 mm
- gPV class according IEC 60269-6 and UL248-19

Overvoltage protections

VPU



- Type I and II models
- Solutions up to 1500 VDC and 800 VAC
- Optionally with or without remote signalling contact
- Overvoltage protections for energy, communications and any kind of signal

PV connectors

WM4C & PV-Stick



- Available as a field or housing connector
- Designed for voltages up to 1500 VDC
- Proven SNAP IN technology

Cable glands

VG & SKMU



- Easy to install connection technologies
- Wide range of materials, sizes and clamping ranges
- Extremely high temperature resistance
- IP66 up to IP68 rating

Pressure compensation elements

DAEs



- Different sizes and IP degrees
- Standard conformity

Terminal blocks

W-Series, A-Series, S-Series



- Potential distribution blocks
- Up to 1500 VDC
- Distinct contact identification

Wire end ferrules



- Particularly safe
- Optimum crimp connections
- Internationally applicable

DIN mounting rails



- Aluminum, galvanized steel and passivated steel, copper, plastic
- Punched (hole and slotted versions) and non-perforated versions
- Terminal rail cutting and punching tool

2 Primary components for PV control cabinets

Controlling the wide range of applications used in a PV power plant requires to ensure data transfer in a secure plant network. Weidmüller's Industrial Ethernet switches can provide all these functions with a wide range of options that are easy to install and connect in your control cabinets. This range of Industrial Ethernet communication products includes managed and/or unmanaged switches based on copper or fibre optic cables. The extensive router portfolio provides secure connections to and from the SCADA and to and from the devices on the network. Many of the IE products meet the extreme requirements of the photovoltaic sector, and are able to handle high temperatures, climate changes, harsh climatic conditions and many other challenges.

Different cabinets are needed to build up the data infrastructure of the photovoltaic systems. Weidmüller can provide a full range of products for different types of assemblies and different customer requirements. From small to large cabinets, from small low complexity to very high end solutions for backup power systems or providing double rings of fibre optics. All of these options are available combined with a wide range of connector versions for different types of cables, as well as protection for different types of environments and weather conditions.



PV Weather stations

All PV Power plants need PV Weather stations to monitor climate variables. In our catalogue, you can find all the products you need to design your cabinet for your specific project (data loggers, Ethernet switches, media converters, UPS, batteries, overvoltage protection, terminals, cable glands, and all kinds of communication cables).



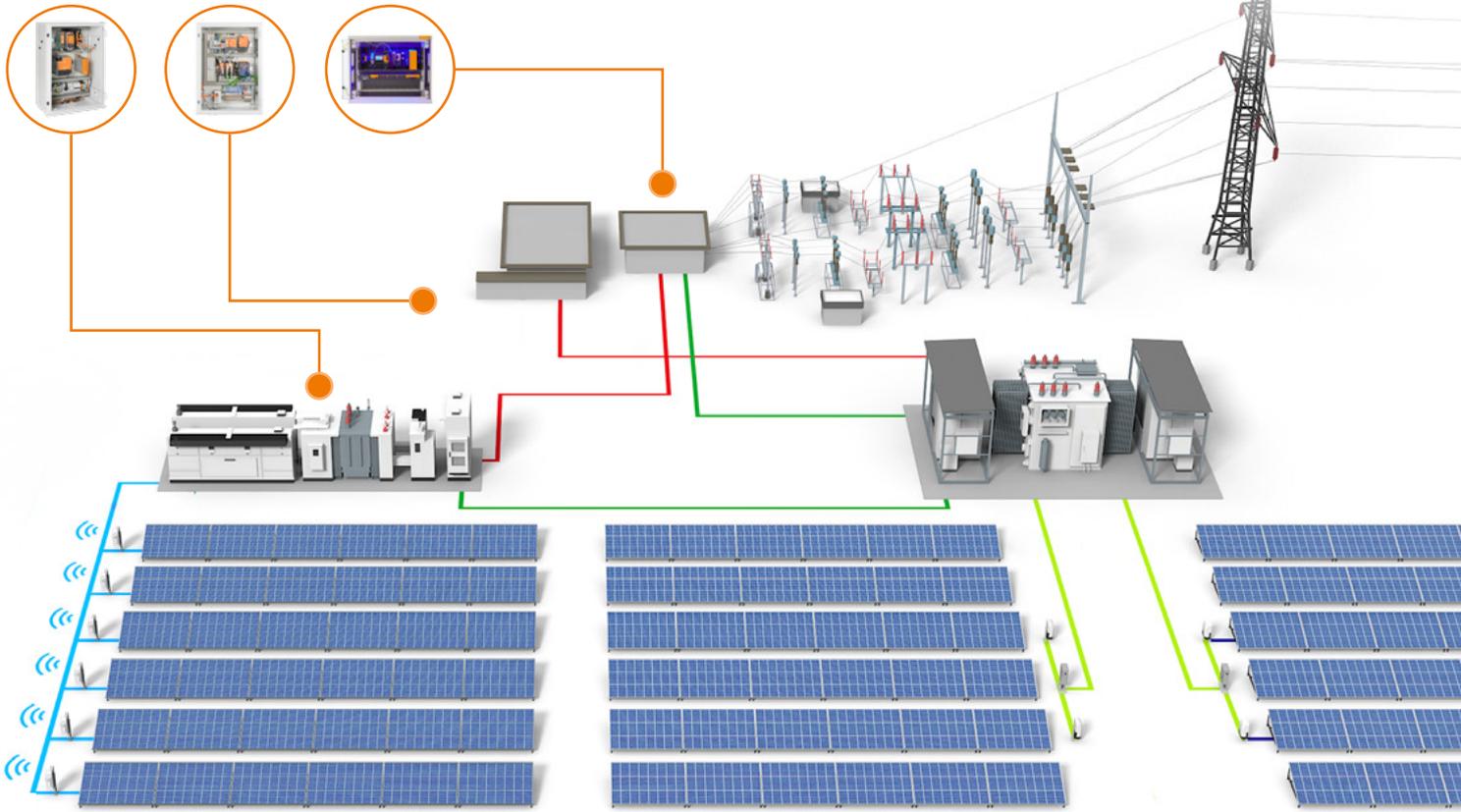
PV Communication cabinet

Data management and control are highly important at PV sites. Data from CCTV, digital/analogue signals, protocol data from inverters or string monitoring devices have to be managed in a secure and reliable way. Find a wide portfolio of products to build all of these cabinets.



PV Control room cabinets

Cabinets using a 19" rack format or similar are in high demand in control rooms. Our portfolio includes Ethernet switches with an IEC 61850-1 protocol, power supplies, overvoltage protections and many other products to build your cabinets.



Communication devices

Industrial Ethernet



- Extensive set of management features
- Huge variety of port counts
- Rapid fault diagnosis thanks to clearly visible LED display

Power supplies

Insta-Power Pro-Top/Max/Eco



- To boost power and add redundancy
- Wide range of options to cover all needs
- Designed to work in harsh industrial environments

Controllers and HMIs

u-Controls IoT Gateways UV66



- Modular controls
- Industrial design to operate in industrial environments
- Many expansion cards available

Backup power

UPS / SAI



- Full remote control
- MaxSHIELD DC Buffer
- Several battery modules

2 PV control cabinets

Energy meters

Basic/Value Line + Analysers



- Wide range of models with scalable features
- DIN rail or PANEL format
- Special models for substations and MV monitoring

Terminal blocks

W-Series, A-Series, S-Series



- Innovative PUSH IN-Power connection
- Pre-assembled blocks
- Standardised testing options

Overvoltage protections

VPU



- Type I and II versions
- Prepared for any kind of communication signal
- Optionally with or without remote signalling contact

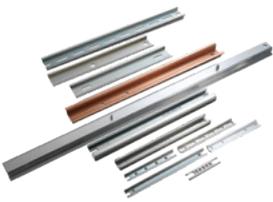
Cable glands

VG & SKMU



- Proven and easy to install connection technologies
- Wide range of materials, sizes and clamping ranges
- Extremely high temperature resistance

Cabinet infrastructure



- DIN rails and mounting rails made of aluminum, galvanized steel and passivated steel, copper and plastic (PVC)

Patch panels



- Comprehensive assortment
- Easy connection
- Certified for worldwide use

3 Primary components for PV assembly workplaces

In the photovoltaics sector, having a robust production process and a reliable supply chain are essential. For panel builders making cabinets in series production, it is essential to ensure the traceability of the production process and a high level of quality for the final cabinet delivered for a PV power plant project. In other words, adding the right products to your workplace ensures a high level of repeatability.

Progressive automation of individual work steps has become a key factor in long-term corporate success. Shortened installation times translate into minimised production costs, enhanced added value and thus greater corporate competitiveness.

At Weidmüller, we have been developing stripping, crimping and cutting machines for more than 40 years. We make sure our machines meet growing industrial requirements, with pioneering standards and innovative ideas. Our latest generation of machines are distinct in that they are particularly easy to use and feature robust designs.



80 %

Faster and safer processes

We are constantly developing innovations that streamline time-consuming work processes such as mechanical assembly and wiring and that increase your productivity, for example with tools, markers and printers optimally adapted to the application.



100 %

Premium quality

For over 40 years, Weidmüller has stood for automated systems, tools, markers and printers that meet the highest requirements. Our constantly updated certifications and approvals under all relevant standards speak for themselves – premium products made in Germany that you can rely on.



100 %

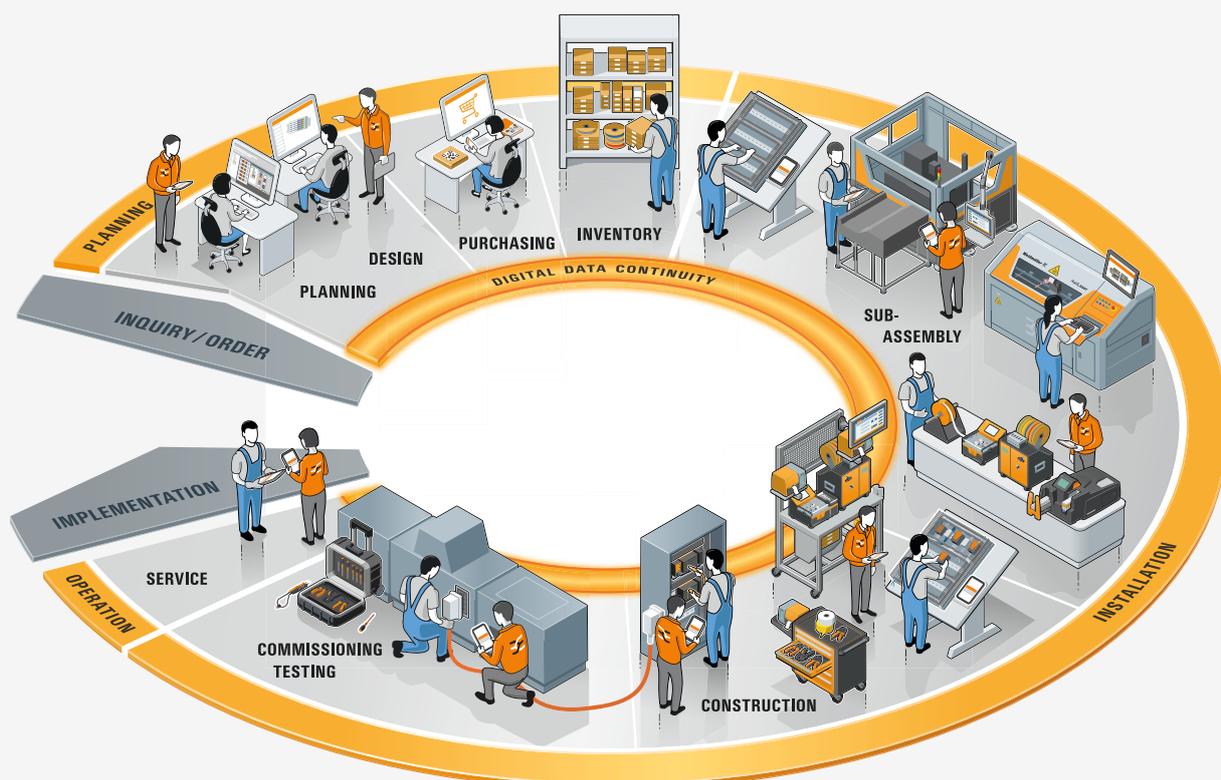
Planning safety

Maximum reliability for your projects. With Weidmüller you have a partner with many years of experience in cable processing and marking – and a partner that you can rely on. By reducing potential sources of error with continuous data consistency, we streamline time-consuming work processes and increase your productivity.



One Stop Shop

Guaranteed availability
Our complete solutions for your workshop are available to you everywhere and at any time thanks to our worldwide network. You can rely on this and on our proven logistical processes. Regardless of the location.



Tools

Cutters



- Cutting tools with proven ratchet mechanism
- Battery-operated cutting tools for small and large cross-sections
- Professional cutting tools for demanding tasks indoors and outdoors

Strippers



- **multi-stripax®** – PV conductor stripping tool
- For fast and precise removal of insulation
- For easy and reliable removal of even unruly sheaths, suitable for every application

Crimping Tools



- Our universal crimp dies adjust automatically
- Well thought-out mechanics and clever geometries
- Due to our high-quality standards, our crimping tools remain reliable for many years
- CTF PV WM4 Crimping tool for Weidmüller WM4 photovoltaic contacts, Multi-Contact MC4, and compatible plugs

Screwdrivers



- Particularly slim screwdrivers for working in confined spaces.
- Slimline technology combines Weidmüller quality and 1,000 V protection according to VDE
- The handle geometry supports the user's hand and ensures fatigue-free working

Testing Tools



- Mega versatile: Wide measuring ranges for safety-relevant voltages in the range from 1 to 1,000 VAC and 1500 VDC
- Super safe: Compatible with CAT III and CAT IV – for more safety and a wider range of applications
- Ultra comfortable: Contactless magnetic field and voltage testers for precise measurements – even at a distance

Pliers



- Super-safe: Most of our pliers are suitable for voltages up to 1,000 V and comply with IEC EN 60900
- Mega-adaptable: Our pliers fit a wide range of users' needs
- Ultra-versatile: Due to the different sizes and models, you always have a firm grip on everything

Tools

Sets and tool cases



- **Cleverly combined:** Our tool sets are your perfect companions in everyday life
- **Powerful and easy to grip:** The combination of perfect ergonomics and perfected mechanics ensures that you perform every action with optimum strength and precision
- **Robust and durable:** Tool sets from Weidmüller are a lifetime purchase. This is ensured by our high quality standards in development and production

Tool chest



- **Always fitting:** The three-part foam inserts have universally fitting tool recesses. That means there is room for every tool you need
- **Always complete:** The intelligent labelling fields with QR codes help to immediately identify which tool is missing.
- **Always at hand:** The toolbox can be individually assembled and equipped. Suitable for every new challenge

Automatic Machines

Cutting machines



- Excellent repetitive accuracy
- Controllable contact pressure on the drive rollers
- Removable hand-held operator device for entering the individual cutting orders

Stripping machines



- Fast and efficient automatic stripping of individual wires
- Designed for various wire cross-sections
- Infinitely variable adjustment of the wire cross-sections – no requirement to change tools

Stripping and crimping machines



- More efficient due to fewer work steps
- Stripping and crimping of conductors in a single step
- No need to change tools, ensuring time-saving and efficient processing

Wire Processing Center



- Multiple input options for CAE data
- Optimal integration into manufacturing processes
- Reliable replenishment with wire end ferrules and markers

Klippon® Automated RailAssembler



- Up to 60 % time savings in the assembly of terminal strips in regular production
- Additional time savings of up to 7 hours due to unmanned operation
- Avoidance of incorrect assembly by using eCAD data from the Weidmüller Configurator

Industrial Printers

PrintJet CONNECT



- Unique networking opportunities
- Personal monitoring
- Economical remote maintenance

Thermal transfer printer



- Compact and flexible
- Small and medium print volumes
- Diversity

Klippon® Automated RailLaser



- Integrated image processing system for safe handling
- Robust marking
- Efficiency increase of up to 90%

Marking Systems

Terminal markers



- Manufacturer-independent
- Durable
- Best results

Wire and cable markers



- UV resistant
- Standard conformity
- Designed for a long lifetime

Device markers



- Manufacturer-independent
- Easy installation with adhesive or clip-on technology
- Versatility

Cabinet Infrastructure

Klippon® RailSnapper



- Screw and rivet version
- For TS 35X7.5/LL 2M/ST/ZN slotted holes
- Mounting in 2 directions possible

Cable ties



- Heat stabilised cable ties
- UV stabilised cable ties Excellent for permanent outdoor use
- Fire protected cable ties for railway industry in accordance with EN45545

DIN rails and mounting rails



- Aluminum, galvanized steel and passivated steel, copper, plastic
- Punched (hole and slotted versions) and non-perforated versions
- Terminal rail cutting and punching tool

Weidmüller – Your partner in Smart Industrial Connectivity

As experienced experts we support our customers and partners around the world with products, solutions and services in the industrial environment of power, signal and data. We are at home in their industries and markets and know the technological challenges of tomorrow. We are therefore continuously developing innovative, sustainable and useful solutions for their individual needs. Together we set standards in Smart Industrial Connectivity.

Weidmüller Interface GmbH & Co. KG
Klingenbergstraße 26
32758 Detmold, Germany
T +49 5231 14-0
F +49 5231 14-292083
www.weidmueller.com

Personal support can
be found on our website:
www.weidmueller.com/contact

Made in Germany

06/2025/SMM