Implement successful long-term photovoltaic systems

With connectivity solutions tailored to your requirements

Weidmüller

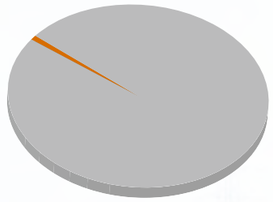
Long-term effectively running systems

Thanks to reliable solutions

Construct photovoltaic systems efficiently and operate them over the long-term economically and without downtime. We achieve this through reliable electrical connectivity and combiner boxes individually assembled for your application.

This combination enables your system to be quickly installed and cost-effectively maintained. Our monitoring systems give you maximum transparency of all system functions. We offer viable, complete solutions of the highest quality comprising connection technology, monitoring and communication, backed by years of experience in the project business.

1 %



Our solutions ensure that your systems run efficiently with consistent output – and for less than 1 percent of the total cost.

128 million panels with an output of over 25 GWp

Local support in nearly 100 countries

Since 2007 development, production and supply of combiner boxes for photovoltaic projects

More than 211.800 combiner boxes worldwide

Put your trust in a reliable partner

We impress with expertise and experience

You know Weidmüller to be a renowned supplier of products and solutions for electrical connectivity, electronics and automation. As a traditional family-owned company we develop and produce key components for the industry. Our designs, products and processes have proven themselves over decades and are used all over the world.

We can also support you in the planning and installation of your photovoltaic systems thanks to our many years of experience and strong commitment. We develop and manufacture tailor-made connection and monitoring solutions, characterised by superb reliability, cost-efficiency and quality, all of which is confirmed by international approvals and country-specific as well as application-specific certificates.

As a customer you benefit from our many years of experience in the photovoltaics industry, our expertise, comprehensive range of services and our global presence. Our photovoltaic specialists accompany your projects in a responsible manner – from initial planning right through to the operation of your system.

With Weidmüller you can put your trust in one of the world's most successful providers of communication and monitoring solutions for industrial photovoltaic systems.

Let's connect.

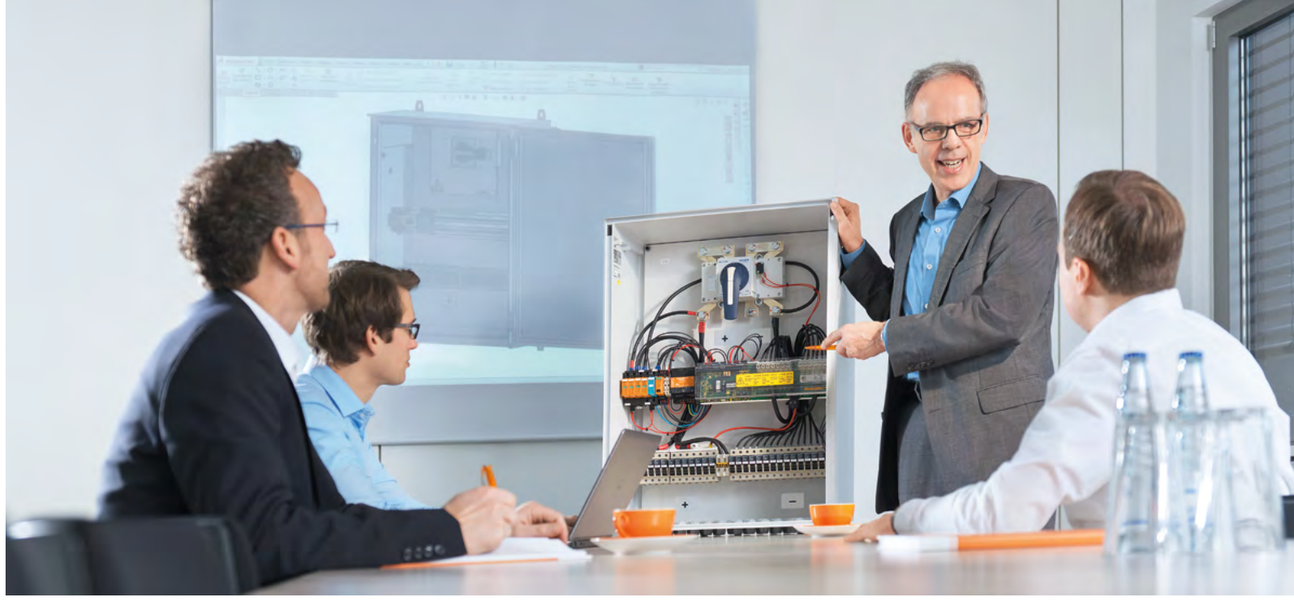
Intelligently bundled and perfectly matched

The best connections for your photovoltaic system

When you buy cheaply, you often end up with higher costs in the long run. This is especially true for the components used in photovoltaic systems. They need to withstand high loads day in, day out, which is why the reliability of even the smallest components are crucially important for the efficiency of the overall system. For example, the premature wear of individual contacts can quickly lead to malfunctions or failures of the entire system, resulting in significant additional costs.

With Weidmüller combiner boxes you significantly reduce the risk of disruptions and failures. We bundle high-quality components to provide innovative solutions which can be individually adapted to your needs. This begins at the system planning stage, because at Weidmüller you get all connection components from a single source.

Once your system is up and running, you benefit from a high level of reliability and access to important information about the status and functioning of your system. This enables you to achieve maximum availability for your systems and carry out maintenance tasks in a targeted and cost-effective manner.

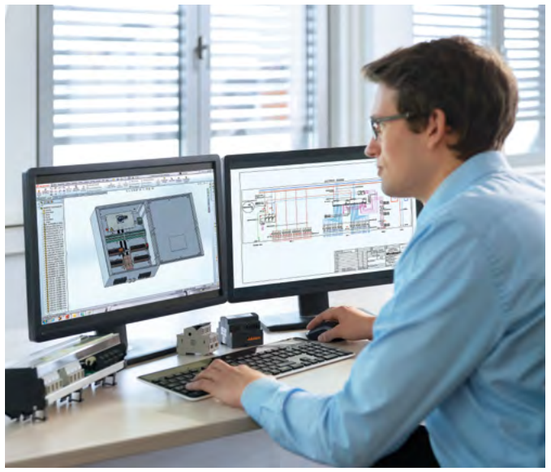


Customer-specific design according to your requirements

Our international project work has made us very familiar with the requirements of the global market. We are well versed in all the standards and guidelines and address each situation according to specific local requirements. From planning to delivery: you receive comprehensive advice and direct support around the globe.

National standards and requirements for photovoltaic systems can vary enormously. This is why our combiner boxes were designed from the outset by our application engineers to comply with country-specific standards.

Based on the requirements profile, a variety of components can be easily integrated into the design. We attach great importance to efficiency and precision. Everything is implemented with the aim of meeting the highest standards of quality.



Our specialists from the Global Application Center strive to ensure that components are perfectly matched

In line with your specific needs:
Smart solutions for all levels in the photovoltaic park

We develop and produce the appropriate combiner boxes for all levels of your photovoltaic system. All functional areas, from transmission and fuse protection to monitoring, are matched according to the specific application and covered with our quality products. This provides you with a consistently reliable infrastructure. Rapid and precise error detection and rectification are possible in the event of an emergency.

Communication level

Communication boxes are the link between the individual components of the network and ensure that all collected information is queried and collated. The boxes are usually placed in the vicinity of the inverter and are also able to pool and transmit signals from other devices, such as camera systems or weather stations.

Level 1
Combiner boxes

Combiner boxes bundle the output lines of individual strings and connect them to the inverter or, optionally, with the level-2 combiner box. Protection and monitoring functions can also be integrated. The individual strings can be monitored for performance and all components individually protected against surge damage.

Level 2
Combiner boxes

The combiner boxes on this level bundle the lines from the first level into a single outgoing line. This is connected to the inverter. Here again, protection against surge voltage and external influences is integrated and the operational status can be monitored.

You want to improve your photovoltaic systems' profitability

We provide solutions for system voltages up to 1,500 V

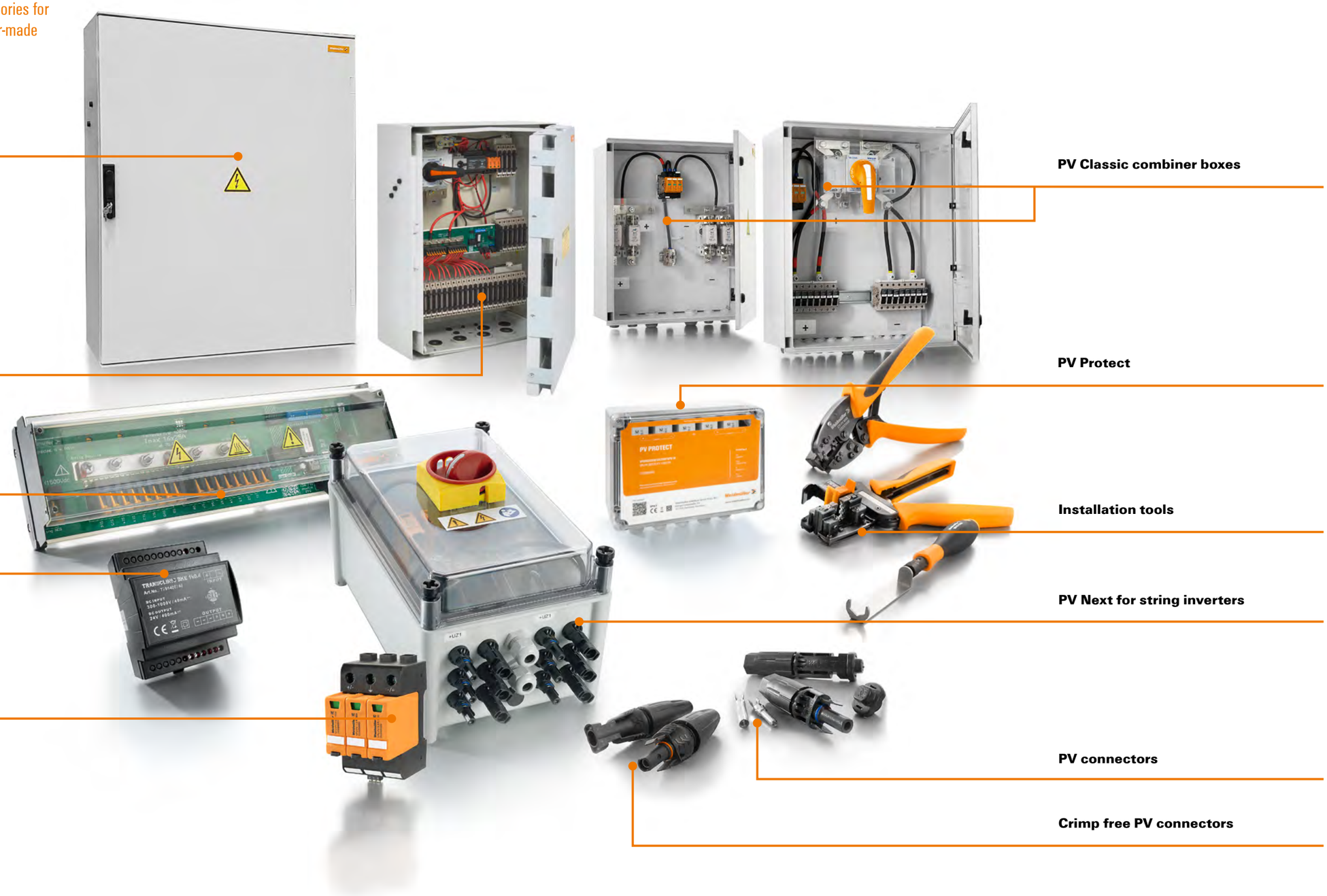
As a full-range supplier Weidmüller provides a holistic portfolio of specific components, combiner boxes and accessories for PV applications, from standard components to tailor-made solutions.

PV AC combiner boxes

PV Floating DC combiner box

Transclinic string monitoring devices and DC/DC power supplies

Surge procetcion devices



PV Classic combiner boxes

PV Protect

Installation tools

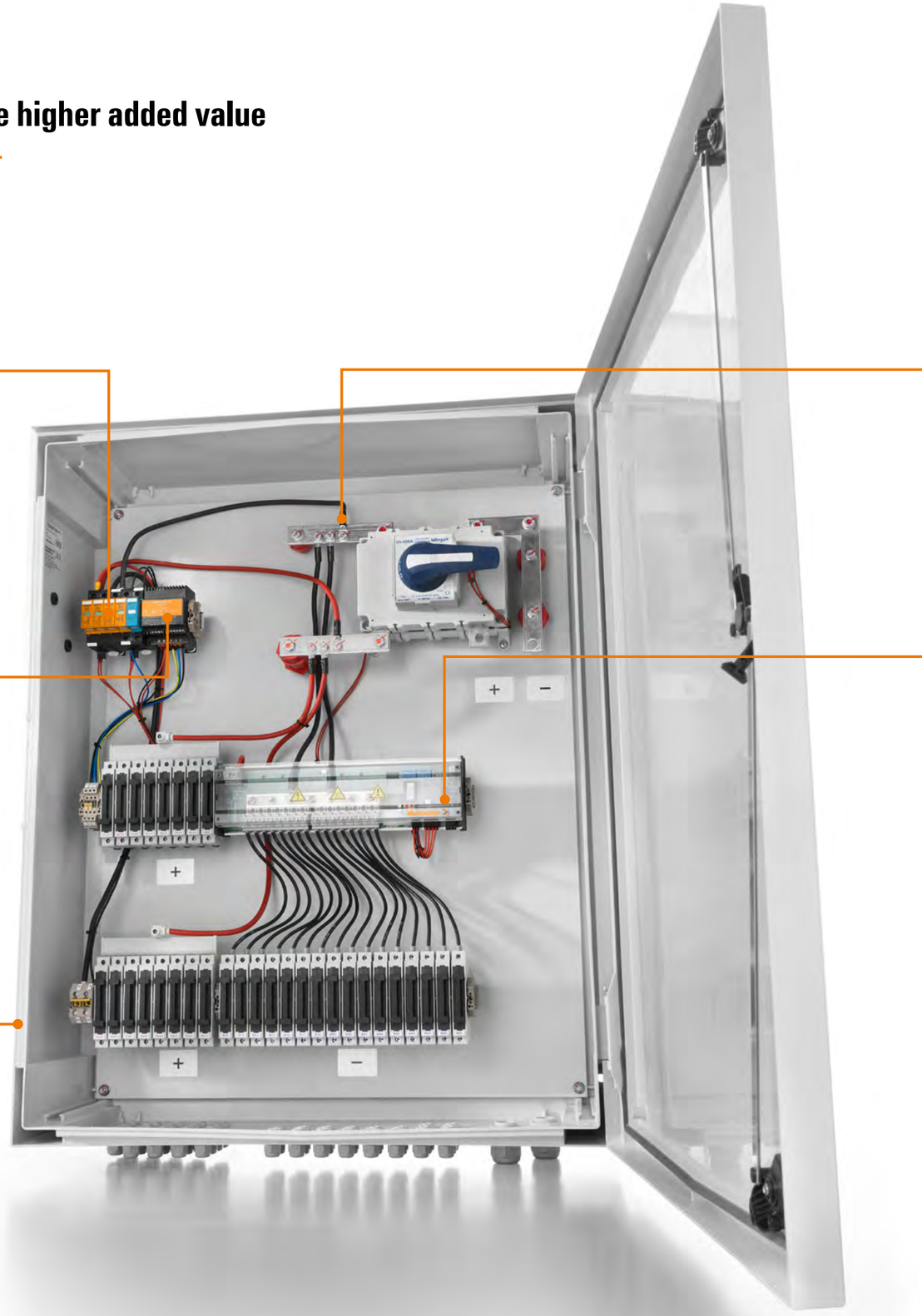
PV Next for string inverters

PV connectors

Crimp free PV connectors

System-specific solutions to generate higher added value

Our customised classic combiner boxes – also as standard boxes up to 1,500 V



5 years standard warranty

High degree of protection

Ultra-modern protection mechanisms are used to guarantee the best surge protection. The system meets the requirements of the current photovoltaic standard EN 50539-11.

Simplified field wiring

The combiner box is supplied as a ready-to-connect solution to simplify field installations and to save time and money. The integrated Transclinic 16i+ 1K5 monitoring module enables a direct supply from the DC string as an option. A separate feed line is not requred.

Long service life

All components are optimised to ensure a long service life. This is achieved through compliance with IP standards and certification according to DIN EN 61439-2. A housing made of glass fibre reinforced polyester provides additional safety and UV resistance.

Developed for easy maintenance

While developing the new combiner box designed for rated voltages of up to 1,500 V, we attached a great deal of importance to reliability and cost effectiveness. Maintenance work is easy to carry out, even after many years of use in the field.

Monitored and non-monitored solutions

We recommend monitoring each and every string to ensure that your photovoltaic system delivers optimum performance. However, we also provide non-monitored solutions upon request.

Why is string monitoring so important in a system?

The PID effect occurs more and more frequently in photovoltaic modules. In order to be able to quickly detect a drop in the system's performance, it is advisable to have each and every string reliably monitored. Appropriate countermeasures can be taken at an early stage as a result. Also, faulty switching problems can only be detected if continuous string voltage monitoring is ensured.

As many function-critical components are used in photovoltaic modules and solar inverters, a reliable monitoring system should be implemented from the first commissioning of these products. This helps to ensure preventative system maintenance and to avoid malfuncions during operation.

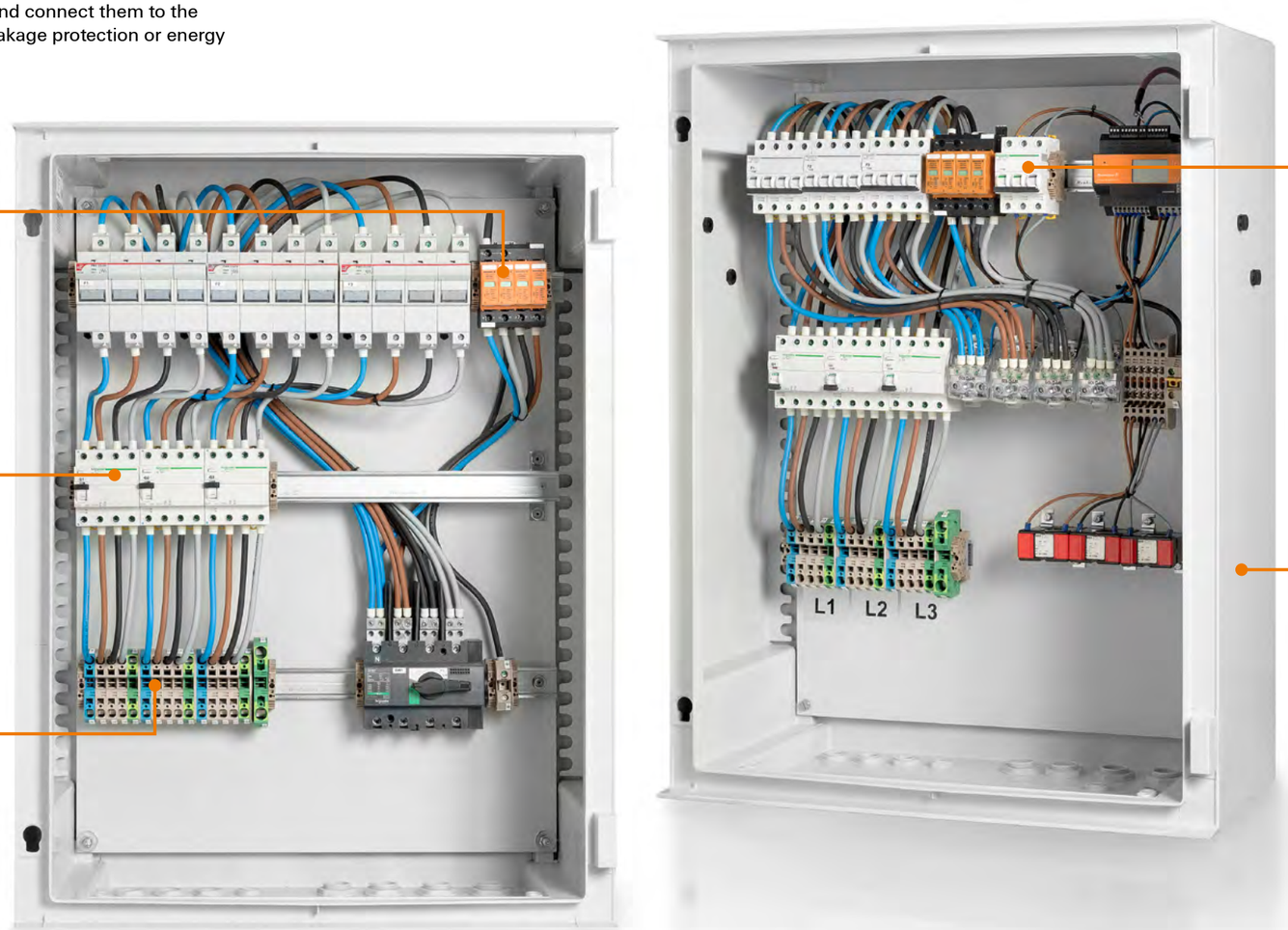
For photovoltaic large scale systems with string inverters

Our tailor made PV AC combiner boxes portfolio

5 years standard warranty

Weidmüller presents a new range of PV AC Combiner Boxes for large scale systems to fulfil new market trends. This new product portfolio based on tailor-made solutions covers the needs to join and protect from 2 up to 8 string inverters with individual output powers between 33 kW and 80 kW.

AC Combiner Boxes bundle the output lines of the inverter and connect them to the transformer station. Optionally configurations allow earth leakage protection or energy monitoring.



High protection class

Pluggable surge protection devices (SPD); type I or II depending on project needs. Optional for 3p or 4p protection.

Overcurrent protection

High performance of overcurrent protections.

Tailor made

Customer specific solutions to collect and protect the output power of 2 to 8 string inverters to ensure otpmal performance and long-term profitability.

Monitored and non-monitored solutions

Energy monitoring with communication interfaces for third-party certification of correct energy production of the system and to implement alarms.

Long service life

All components are optimised to ensure a long service life. This is achieved through compliance with IP standards and certification according to DIN EN 61439-2. A housing made of glass fibre reinforced polyester provides additional safety and UV resistance.

Collect, protect, and monitor DC strings in extreme environments

Innovative combiner boxes for floating PV systems

The lack of available land requires the development of new locations for PV systems. In this case, water surfaces are particularly suitable because of the low shading and the cooling effect of the water. However, the ambient conditions place high demands on the combiner boxes.

Our PV DC floating combiner boxes are designed for use in floating PV systems on freshwater surfaces more than 1 km from the sea and equipped with central inverters. They comply with IEC 61439 (ed. 2) and 60058-2-30 and withstand high humidity, corrosive atmosphere, and intensive exposure to sunlight. We offer a wide range of plug and play variants from 8 to 24 inputs – with comprehensive protection and suitable covering solutions.

More information
www.weidmueller.com/pvfloating

Your special advantages

- Suitable for high humidity environments according to IEC 61439 (ed. 2) and 60058-2-30
- Operation without additional sunshade – even in direct sunlight
- PMMA cover for better reflection of sunlight and increased thermal performance
- Plug-and-play solution for quick, easy, and flexible installation

Suitable for high humidity
PV-DC floating combiner boxes are specially designed for Severity Class B environments according to IEC 61439 (ed. 2) and 60058-2. Therefore, they are suitable for operation in extremely humid and corrosive environments.

Suitable for direct sunlight
PV-DC floating combiner boxes can be operated in direct sunlight without the need to install an additional sunshield. The pre-mounted PMMA cover also improves the performance of the system.

Suitable for PV systems in freshwater
The PV DC Floating Combiner Boxes can be operated in floating PV systems on freshwater surfaces. They have been extensively tested and are certified for long-term operation under these specific environmental conditions.

String Monitoring improves O&M activities reducing and the number of trips and site visits to pontoons. Identifying quickly failures at string level with the monitoring systems reduces the total cost of ownership and facilitates the entire operations of the plant throughout its entire lifetime.

The specially developed PMMA sunshade absorbs incident solar radiation and heat. Its glazed polymer surface increases the reflection index and efficiently deflects the incident radiation. This very effectively reduces the temperature inside the combiner box.

An air gap between the door housing and the PMMA cover ensures constant air convection. In this way, the combiner box and its components are reliably cooled.

Multivia cable glands ensure optimum watertightness. They reduce the number of mechanical parts and make the entire construction more robust.

The PMMA cover is fixed to the enclosure door with stainless steel blind rivets. The rivets are located outside the area of the door seal, so that the sealing function according to IP65 is reliably guaranteed at all times.

More efficient wiring of photovoltaic systems

PV Next combiner boxes: Easy. Fast. Safe.

A revolutionary design for the energy revolution

Economy and safety during installation and operation are central requirements in photovoltaics. PV Next is the new generation of standardised, highly scalable combiner boxes for private and commercial photovoltaic applications.

With PV Next, Weidmüller offers the world's first combiner box concept based on a standardised printed circuit board design. The advantages: simplicity, safety, time savings, and cost reduction. The innovative concept covers approximately 95 % of today's standard requirements, enabling PV installers to work faster and more cost-effectively. The integrated PUSH IN technology reduces assembly times and minimises the risk of errors and the resulting consequences.

Your special advantages

- Scalable and extensible design
- Easy installation without crimping and without special tools
- Avoidance of wrong connections and reduction of risks

Simplicity + time savings + security = reduction of the total costs of ownership

Easy

The unique PCB design allows quick and easy integration of additional functions. For example, a switch can be integrated or a second MPPT can be connected directly to the first Printed Circuit Board.

Excellent Easy Intelligent Circuit Board

Fast

With the PUSH IN connection technology, PV Next offers the most straightforward and safest connection concept for cabling. The installation can be carried out without crimping and without special tools.

Safe

The intuitive design and PUSH IN connection technology make installation safer and quality assurance easier. The risk of screw connections with incorrect torque is eliminated, which is one of the main risks for fires.

Easy
Simple operation with PUSH IN technology. Intuitive and maintenance free.

Fast
Plug & Play with the optional WM4C conenctions. The alternative are cable glands.

Safe
The remote signalling contact enables safe monitoring. Always inside.

Outstanding efficiency with a standardised, extendable design

The first combiner box with a unique PCB concept

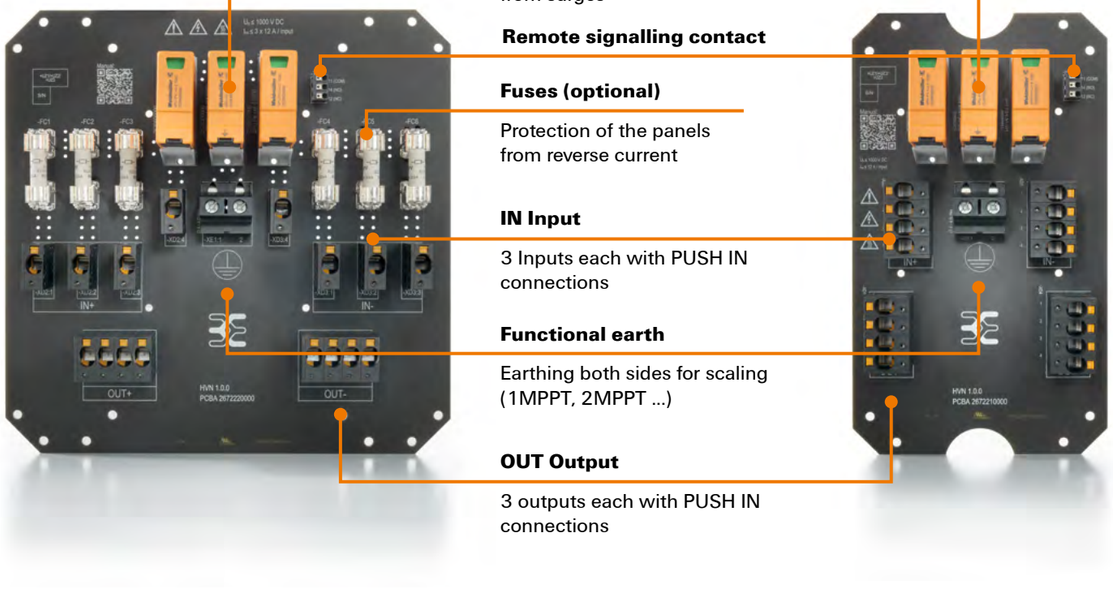
The revolutionary design of PV Next is the key to a fast and safe connection of the strings. The enclosures of our combiner boxes are available in a variety of designs to reduce your workload. All of our more than 50 designs are tested in a accreditated laboratory and are fully certified according to EN 51643-32.

More information
www.weidmueller.com/pvnext

Printed Circuit Boards (PCBs)

Each PCB has comprehensive standard equipment:

- State-of-the-art PUSH IN connection technology
- Overvoltage protection as standard – optionally with Type 1/2 or Type 2 arrester
- High EM compatibility due to functional earth
- Integrated remote signalling contact
- Distinct labelling – including QR code for further information



Overvoltage protection
Protection of the panels/inverters from surges

Remote signalling contact

Fuses (optional)
Protection of the panels from reverse current

IN Input
3 Inputs each with PUSH IN connections

Functional earth
Earthing both sides for scaling (1MPPT, 2MPPT ...)

OUT Output
3 outputs each with PUSH IN connections

Your special advantages

- Fast selection and easy installation due to the standardised concept
- Reduced workload and fewer errors due to PUSH IN connection technology
- Reduction of project duration by avoiding customising
- Immediate availability from stock through standardisation of products

Enclosures

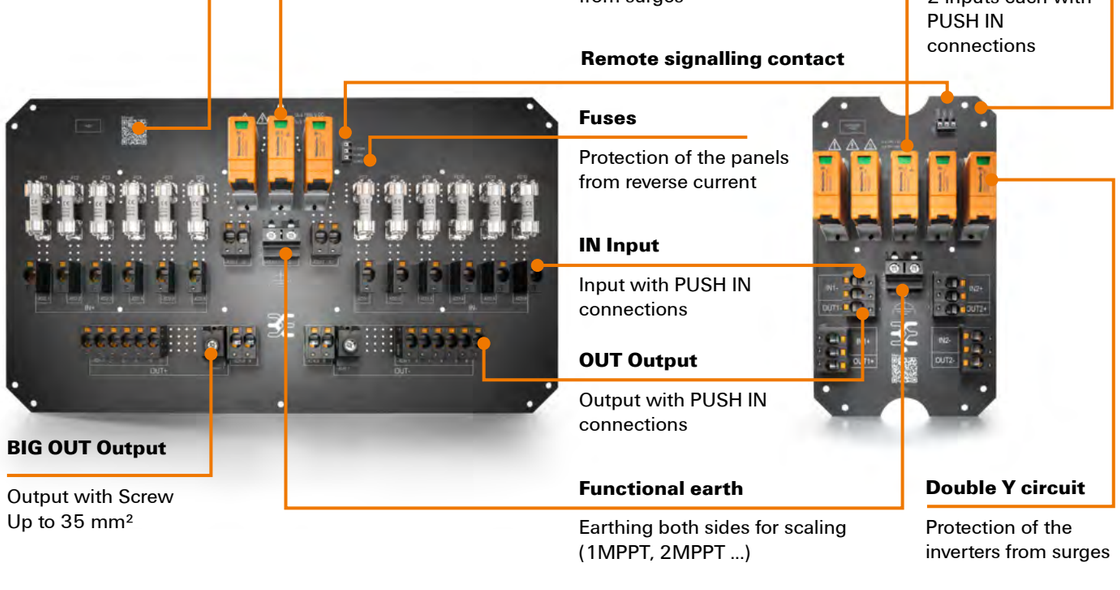
PV Next is available in five different enclosure sizes – each available in two versions suitable for different connection scenarios:

- Plug-and-play solution: Designed as a pre-wired box with WM4C plug connectors
- Self wiring solution: version with cable glands and PUSH IN connection technology for efficient wiring

The standardised concept of PV Next covers a large number of today's requirements for combiner boxes and sets new standards for safety and efficiency. Choose from more than 50 variants that are easy to handle and which can be flexibly scaled. If you require an extension, select the appropriate box from our standard range and add it to your configuration.

Easy. Fast. Safe.

Switch (optional)
Switch on/off



QR-Code
takes you to Manuel

Overvoltage protection
Protection of the panels/inverters from surges

2MPPT
one board 2 MPPT, 2 inputs each with PUSH IN connections

Remote signalling contact

Fuses
Protection of the panels from reverse current

IN Input
Input with PUSH IN connections

OUT Output
Output with PUSH IN connections

BIG OUT Output
Output with Screw
Up to 35 mm²

Functional earth
Earthing both sides for scaling (1MPPT, 2MPPT ...)

Double Y circuit
Protection of the inverters from surges

Protect PV systems optimally against overvoltages

PV Protect

Ready to connect all-in-one solution for your photovoltaic system

PV systems are directly affected by environmental influences because they are installed in exposed locations. This also increases the risk of lightning strikes. According to EN 51643-32, PV systems must be protected against overvoltages to avoid high repair costs and loss of revenue due to system failure.

PV Protect is the solution for optimum protection of the inverter against overvoltages. The ready-to-connect boxes are available for different system voltages and can be supplied with the various arrester types and MPP trackers. Depending on requirements, connection is made via cable glands or WM4C connectors with convenient and reliable PUSH IN connection technology.

More information
www.weidmueller.com/pvprotect

Your special advantages:

- **Wide range of product variants**
  PV Protect is available with different arrester classes (Type I/II and Type II) and rated voltages (1,000 V/ 1,500 V). The connection is made either via photovoltaic plug connectors or cable glands – for high flexibility.
- **Designed to meet various requirements**
  PV Protect is compact, robust, and extremely weatherproof. The housing complies with protection class IP67 and protects the sensitive electronics inside, even from harsh environmental influences.
- **Mount the box, connect the cable, ready**
  Thanks to the pre-assembled arresters, the product can be connected quickly and with little effort. The protection of the PV system is ensured immediately. The clear marking of the ports eliminates the possibility of incorrect wiring.

Compact, space-saving design

Cable Gland PG9

Reliable and maintenance-free PUSH IN connection technology

Available in product variants suitable for different applications

WM4 C Connector

Ready to connect solution in protection class IP67

Advanced surge protection for photovoltaic systems

Improved plant performance with VARITECTOR surge protection

Modern photovoltaic energy generation is streamlined to efficiency. Reliable surge protection with future-proof performance is a must to maximise system uptime and profitability. The VARITECTOR PU PV series is designed for use in PV string combiner boxes for generator voltages up to 1,500 V and complies with latest UL and EN standards for global application.

Type I and II protection

Type I and II protection is supported for 1,000 V and 1,500 V systems fully compliant to latest EN/IEC standards.

1.000 V
1.500 V

Maximum short-circuit capability

PV plants, which combine many panels in a string, are efficiently protected up to 11 kA of the prospective short-circuit current. Additional fuses for the SPD are not required.

I_{scpv}
11 kA

Slim and pluggable arresters

The surge protection devices are easily pluggable and enable a tool-free, fast and cost-effective replacement.

Steckbare Einsätze

Safe operation up to 4,000 m

PV plants, also such located in high altitude regions, are reliably protected. An additional risk analysis of deratings is not required for extraordinary locations.

bis zu
4.000 m

Performant string monitoring with a robust design

Weidmüller Transclinic – reliable even under extreme conditions

Integrated power monitoring provided by the Transclinic monitoring system enables errors to be diagnosed accurately. This means you can optimise specific parts of your system and reduce maintenance costs considerably.

Open data protocol

The open Modbus RTU-RS485 protocol makes it easier to integrate Transclinic into SCADA systems.

Two digital inputs

Permanent surveillance of other equipment such as Over-voltage protections or DC Switches.

Suitable for use in harsh conditions

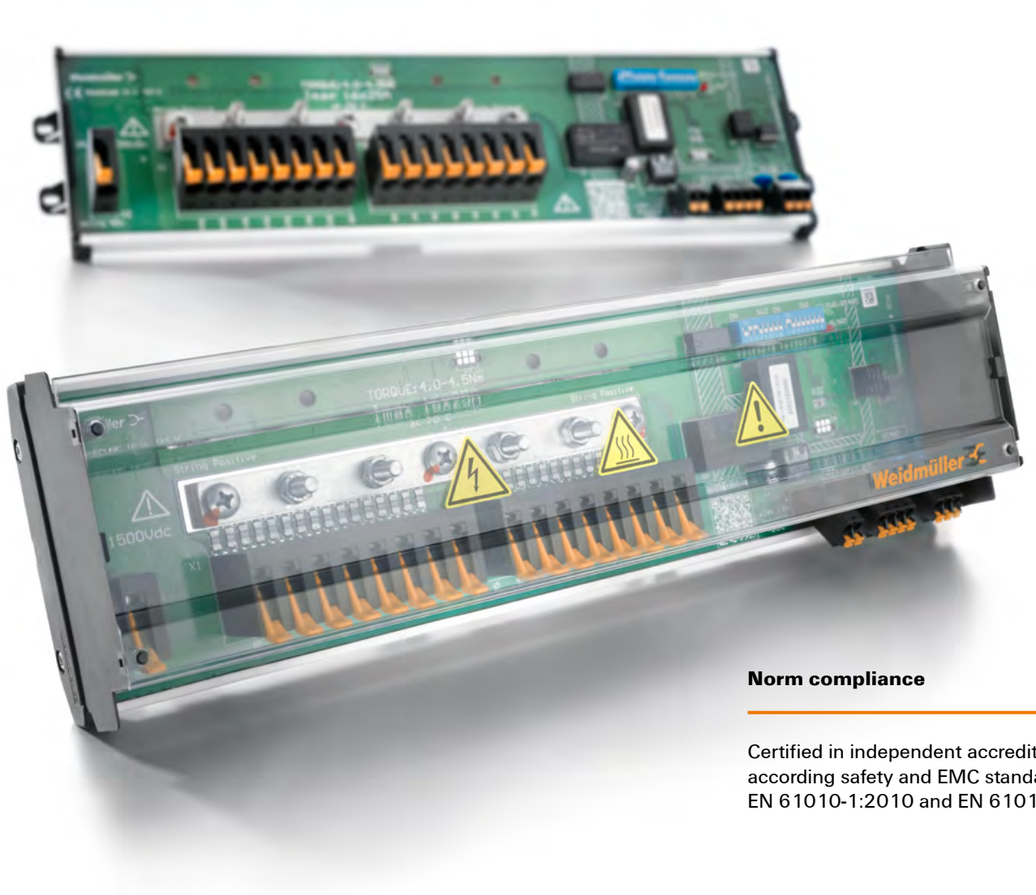
Designed to work under hard temperature conditions (-25ºC to +70ºC), high humidity level and at height altitudes above sea level.

Integrated RS-485 SPD protection

Onboard surge protection and field replaceable RS485 transceiver.

Quick error analysis

Status LEDs allow for the rapid checking of the system status. Time-consuming error analyses are things of the past.



User-friendly setup

No Computer or special tools are required to set up the devices in the field. Setup uses RS485-parameters.

Norm compliance

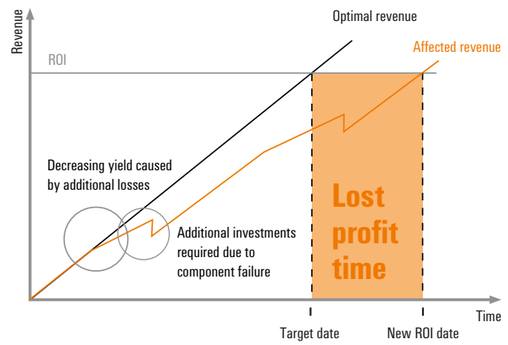
Certified in independent accredited laboratories according safety and EMC standards EN 61010-1:2010 and EN 61010-2-030:2010.

Does string monitoring pay off?

Secure your ROI

Financial and technical security play an important role on the long term evaluation of a Photovoltaic site. String monitoring helps to reach your financial targets giving detailed performance insights.

Every deviation on the planned yield may postpone your break-even date significantly due to long term performance losses caused by e.g. PID or cell breakage, but also necessary new investments to replace failing components. Measurement technology on string level will detect smallest deviations and enable you to take early countermeasures.



Crimp-free wiring

Connections made easy with the PV-Stick

Plug in, twist, power: the easiest way to wire up solar panels

Faster is better. Thanks to the unique PUSH IN technology, our easy-to-handle PV-Stick with its “Type 4” connector face can be installed extremely quickly and easily without the need for a crimping tool. The PV-Stick avoids potential assembly errors by beeing free of crimp contacts and the need for crimping tools. This cuts installation time by at least 50 % – without any loss of quality.

Award-winning design

The PV-Stick's impressive blend of form and function has been recognised by three international juries of experts.

Crimp-free connection

A click tells you the connection has been made. This audible feedback indicates a secure connection.

Simple insulation stripping

The notches in the screw cap indicate how much insulation to strip off.

Ergonomic

The easy-grip design makes assembly easy, even under difficult conditions.

Standards-conformant quality

The PV-Stick is manufactured with proven Weidmüller quality, certified by TÜV and complies with IEC 62852.

Classic connection system

WM4 C with conventional connector face and proven Weidmüller quality

Our classic system for rapid crimp connections: effective and standard-compliant

The WM4 C is our modern crimp connector. It combines outstanding quality with ease of handling and is available as a field or housing connector. The standard “Type 4” connector face allows it to be used with Weidmüller's entire range of connectors. As you would expect, the WM4 C is offered with accessories and suitable, high-quality tools to permit safe and reliable wiring.

One-stop shopping
Weidmüller offers a wide range of reliable components for installing photovoltaic plants.

Let’s connect.

Optimally positioned

The twist protection of the WM4 C housing connector prevents twisting of the plug during the installation in the enclosure.

Wide range of cross-section

4 mm² and 6 mm² cables are handled with one crimp contact.

High current rating

Loads with a rated current of up to 35 A are possible.

Standards-conformant quality

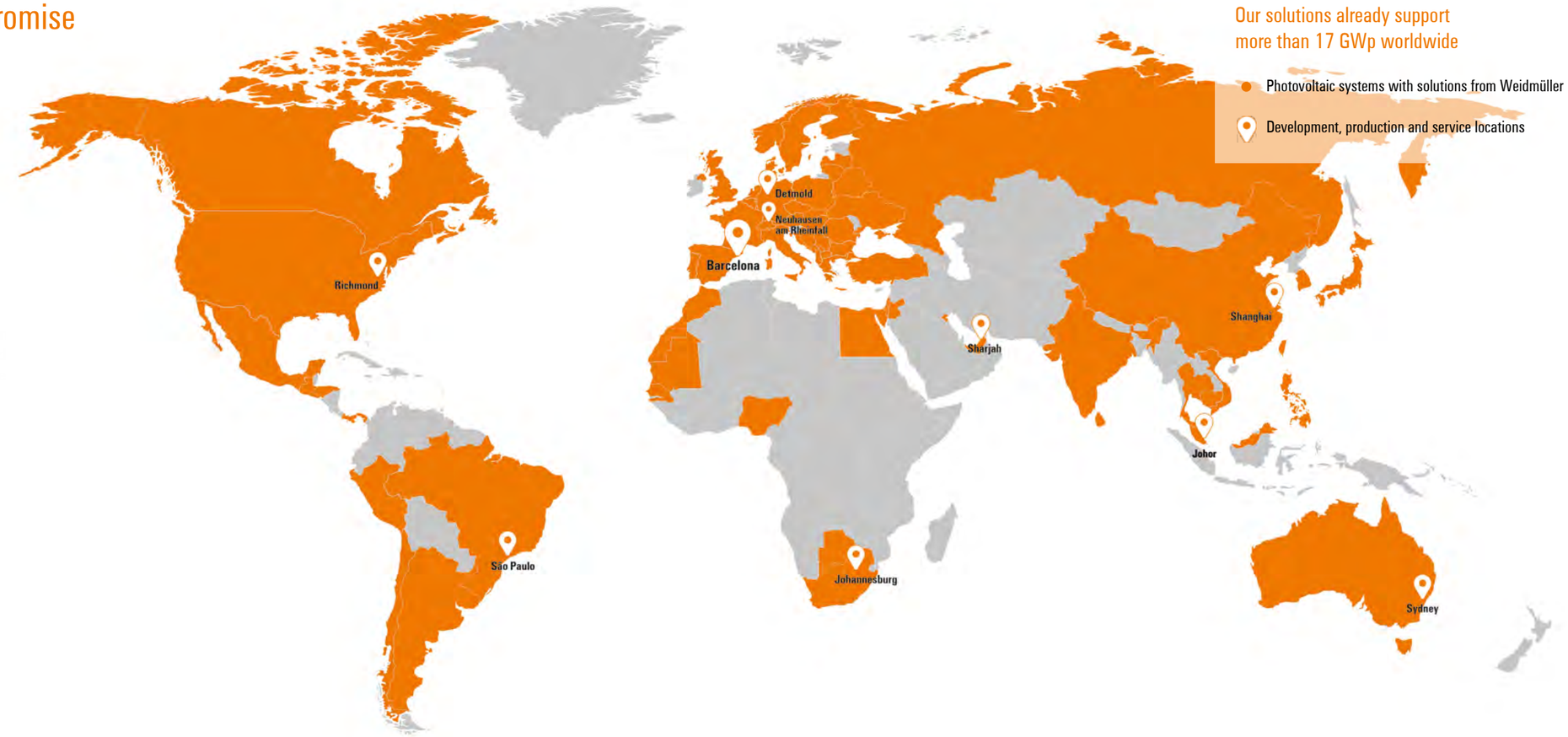
The PV-Stick is manufactured with proven Weidmüller quality, certified by TÜV and complies with DIN IEC 62852.

Know-how and flexibility

The guaranties of our global quality promise

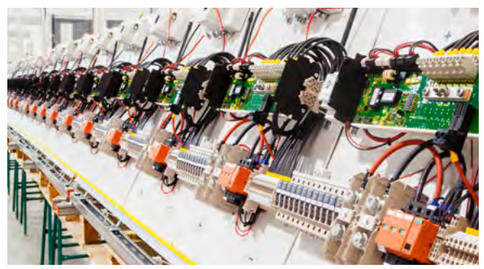
We have been supplying combiner boxes for photovoltaic systems since 2007. As an international company we have development and production sites around the world.

At our Global Application Center in Barcelona we coordinate and test the design of your combiner boxes. Our current des and manufacturing standards are guaranteed around the wo by the highest quality standards. Sophisticated logistics ensu maximum punctuality for deliveries. Throughout the project, local specialists provide you with professional and reliable support. This helps us to remain competitive and ensures tha your systems are a success.



Design

- Development of individual designs at the Global Application Center in Barcelona
- Detailed coordination of the components used
- Functional testing and design validation prior to mass production



Production

- Installation at a site in the global manufacturing network
- Optimum processes through automatic testing equipment
- Transparency and traceability provided by serial number on each housing

Quality

- Development and assembly process in accordance with the latest requirements of the IEC standard
- Highest standard of quality through 100% inspection of shipped goods
- Each combiner box is delivered with a certificate of quality

Customer benefits

- Just-in-time production and the option of individual delivery agreements
- Straightforward commissioning through comprehensive documentation
- Local service and support from our regional contacts

Your photovoltaic systems should be profitable in the long term

We help you throughout your system's entire lifecycle

Your photovoltaic systems should be built as efficiently as possible and be operated cost-effectively in the long term without any downtime. We achieve this with reliable connectivity, outstanding services and combiner boxes individually assembled for your application.

As a customer, you benefit from our expertise and many years of experience in the photovoltaics industry, the comprehensive range of services and our global presence. Our photovoltaic specialists responsibly support your project from the initial planning meeting to the end of the system lifetime.

Training sessions and consulting services

Our experts help you to plan, commission and maintain your photovoltaic system. Your employees are comprehensively trained by Weidmüller specialists in our online and local workshops. The knowledge shared about products, installation, commissioning and maintenance guarantees a smooth commissioning process.

A service that goes further

We want you to be – and remain – satisfied with your customised solution for a long time. That's why we continue to provide support long after the project is complete. If necessary, our aftersales service provides you with a wide package of measures that offers you the greatest possible benefits.

- Support with commissioning
- Provision of assembly instructions in several languages
- On-site system analyses
- Remote diagnostics and support during troubleshooting
- Warranty processing
- Spare parts service

Support during commissioning

Our engineers on site provide you with support in the form of valuable information and test procedures to ensure you get perfect performance and reliability out of your systems and to ensure the maximum combiner box lifetime. A valuable range of support services mean you can also rest assured that you'll benefit from an extended warranty.

Qualified error analyses

Our Transclinic Monitoring System ensures that the performance of your photovoltaic system is optimally monitored. Our system specialists also provide you with support in the form of remote diagnostics and on-site analyses to ensure that your system is ready to operate from a mechanical, electrical and electronic standpoint – and to effectively minimise potential downtimes.

International references

Weidmüller solutions – used around the world

Quality prevails

A high degree of reliability for challenging markets

The Japanese PV market is at the forefront of excellence in the design, construction and maintenance of installations and is an example for those seeking reliability, high quality and excellence in equipment.

Photovoltaic solutions from Weidmüller are already in use in all geographical regions of Japan. After more than 7 years as one of the top players in the market, we have exceeded 5GWp capacity with PV combiner boxes and string monitoring solutions.

Location: Japan
Installed Base: 5.0 GWp

The harshest environmental conditions

dryness and an extreme installation height

Let's connect.

Rijn Capital Chile operates a complex consisting of six photovoltaic systems that work reliably even under extreme conditions. The substantial level of dryness and extraordinary installation height at 2,600 metres above sea level turn what would otherwise be standard technological requirements into a real challenge.

We have further developed our Transclinic 16i+ monitoring system for use at heights of up to 3,000 metres to meet these requirements. So, together with its extended temperature range of –25 °C to +70 °C, our system solution withstands even the harshest environmental conditions.

Location: Chile, Antofagasta
Installed Base: 100 MWp

Powerful "sunroof"

Connected to the grid in no time at all

Let's connect.

Just under a year separated the initial idea and the grid connection of Switzerland's most powerful rooftop photovoltaic system. Weidmüller's expertise and experience helped achieve this record-breaking time.

To keep to the ambitious schedule, Weidmüller supplied the first ready-to-connect solutions – including an initial sample – within just two weeks.

Thanks to our knowledge of technical regulations in Switzerland, we were able to develop solutions for Helion Solar that are fully standard-compliant and carefully configured for the planned system architecture.

Location: Switzerland, Zuchwil
Installed Base: 5.6 MWp

You can rely on longevity and resilience

Our laboratory ensures the highest product quality

The components of a photovoltaic system must be able to withstand extreme climatic fluctuations. These include rapid temperature changes, severe weather conditions and constant heat and cold. In all cases, it comes down to guaranteeing availability without compromise over a long period of time and protecting sensitive components from external influences.

During product development, we begin by examining materials, components and systems in terms of their suitability for a specific application.

Special environmental conditions are simulated in our laboratory. These include prolonged UV radiation and weathering as well as reliability and functional tests that match real conditions. Tests include a comprehensive examination of insulation and dielectric strength in order to determine clearance and creepage distances, behaviour under high operating temperatures and much more.

All combiner boxes are constructed on the basis of the test results and assembled for the specific application. This ensures that each of the requirements of the target application is fully met.

Our laboratory is accredited according to international standards. This confirms its independence and recognition by institutions, registration services and other authorities. As a member of the CTDP program Weidmüller is regularly audited by UL with regard to its test methods, quality management and documentation.

IP testing procedures ensure that the housing is able to withstand external influences such as dust and physical contact and is protected against water jets.

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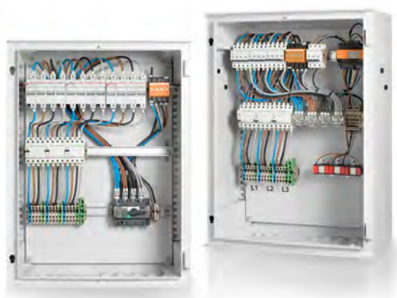
Customer-specific design

PV DC combiner box

Technical data

Main application features	
Inputs	From 8 to 32
Outputs	1-2
Operating temperature range	-50 °C up to +50 °C
DC earthing system	Floating, negative grounded or positive grounded
Installation location	Protected outdoors (< 1 km from the sea)
Altitude above sea level	up to 2000 m (standard) higher altitudes on-demand
Main electrical features	
Rated DC voltage	≤ 1000 V DC or ≤ 1500 V DC
Rated DC current per input	≤ 25 Amps (single or double string connection)
Maximum fuse size	≤ 30 Amps (for 10 x 85 mm) and ≤ 400 A (for NH type)
Protection against overcurrent	gPV fuse-links according IEC 60269-6
Fuses	Both poles or one pole fuses
Switch disconnector	Yes (optional)
Switch disconnector breaking & making capacity (acc. to IEC 60947-3)	≤ 500 A (other options under demand)
Enclosure	
Enclosure material	GFRP (Glass Fiber Reinforced Polyester)
Enclosure shape	Portrait or Landscape
Enclosure fixing system	Wall mounted or pedestal
Degree of protection (according IEC 60529)	IP65
Form factor	Cabinet with hinged door
Polycarbonate protection plate	Yes (optional)
Surge protections	
Surge protection device	Type I or Type II
Auxiliary contacts	Yes (optional)
Surge protection on EIA-RS485 ports	Yes (optional)
String monitoring	
String monitoring device	Yes (optional)
Main monitored parameters	Voltage, current, temperature, DI status and auxiliary alarms
Voltage measurement	≤ 1000 V DC or ≤ 1500 V DC
Communications port	RS-485
Protocol	Modbus/RTU
Power supply for string monitoring device	AC/DC or DC/DC (for self-powered string monitoring)
Others	
Input connectors	WM4 C connectors or Cable glands
Standards	
Standards	IEC 61439-2 ed 2.0 / EN 61439-2:2011

PV AC combiner box



Technical data

Application data	
Operating ambient temp.	-20 °C to +50 °C
Intended installation location	Protected outdoors (>1 km from sea)
Conformity with norms	IEC 61439-ed 2.0/EN 61439-2:2011
Altitude above sea level	Up to 3000 m
Electrical characteristics	
Rated voltage	400 V AC – 690 V AC – 800 V AC
Grid connection	TNC - TNS
Number of inputs (inverters)	2-6
Rated current per input (Inc)	85 A – 160 A
Rated frequency (Hz)	50 Hz
Short Circuit strength	120 kA
Fuse link factor form	NH-0 / NH-1
Fuse link rating	85 A – 160 A
Number of outputs	1
Protection Class	Class II
Overvoltage protection	Type I+ II or Type II (optional)
Earthing system	TN-S – TN-C
Enclosure	
Enclosure material	GFRP (Glass Fiber Reinforced Polyester)
Enclosure IP rating	IP65
Enclosure fixing system	Wall mounted or pedestal
Polycarbonate protection cover	Yes (optional)
Inputs	
Input cable	4x70 mm² or 4x95 mm²
Input cable gland	WM M50
Outputs	
Output cable	1 x 240 mm²
Output cable gland	WM M40
Others	
Main Switch disconnector	Yes (optional)

Order directly

PV Classic combiner boxes

Monitored 1500 V DC CB

Technical data and ordering data

Typ	Inputs	Enclosure type and size	Temperature range	Fuse protection	Qty	Order No.
PV 216S0F0V003T7P015PWW	16	Portrait 1035x835x300	-20 °C bis +50 °C	Both poles	10	**8000050555**
PV 216S0F0V003T7P015PJP	16	Portrait 835x635x300	-20 °C bis +45 °C	Both poles	10	**8000050566**
PV 224S0F0V003T7P015PWW	24	Portrait 1035x835x300	-20 °C bis +50 °C	Both poles	10	**8000050559**
PV 224S0F1V003T7P015LWW	24	Landscape 788x1250x320	-20 °C bis +50 °C	One pole	10	**8000050560**
PV 232S0F1V003T7P015LWW	32	Landscape 788x1250x320	-20 °C bis +50 °C	One pole	10	**8000050564**

Non Monitored 1500 V DC CB

Technical data and ordering data

Typ	Inputs	Enclosure type and size	Temperature range	Fuse protection	Qty	Order No.
PV 216S0F0V003TXPX15PWW	16	Portrait 835x635x300	-20 °C bis +50 °C	Both poles	10	**8000050556**
PV 216S0F0V003TXPX15LJP	16	Landscape 500x1000x320	-20 °C bis +45 °C	Both poles	10	**8000050568**
PV 218S0F0V003TXPX15PWW	18	Portrait 835x635x300	-20 °C bis +50 °C	Both poles	10	**8000050557**
PV 220S0F0V003TXPX15LWW	20	Landscape 788x1250x320	-20 °C bis +50 °C	Both poles	10	**8000050558**
PV 220S0F0V003TXPX15PJP	20	Portrait 835x635x300	-20 °C bis +45 °C	Both poles	10	**8000050569**
PV 220S0F0V003TXPX15LJP	20	Landscape 500x1000x320	-20 °C bis +45 °C	Both poles	10	**8000050570**
PV 224S0F1V003TXPX15PWW	24	Portrait 835x635x300	-20 °C bis +50 °C	One pole	10	**8000050561**
PV 224S0F0V003TXPX15PWW	24	Portrait 1035x835x300	-20 °C bis +50 °C	Both poles	10	**8000050562**
PV 224S0F0V003TXPX15LWW	24	Landscape 788x1250x320	-20 °C bis +50 °C	Both poles	10	**8000050563**
PV 224S0F0V003TXPX15PJP	24	Portrait 835x635x300	-20 °C bis +45 °C	Both poles	10	**8000050571**
PV 232S0F1V003TXPX15PWW	32	Portrait 1035x835x300	-20 °C bis +50 °C	One pole	10	**8000050565**

All designs contain

- Cable glands for input wires from 6 to 8 mm²
- Cable glands for output wires from 22 to 32 mm²
- Overvoltage protection Type II (Imax = 40 kA, Up <=5.0 kV, aux. contact)
- Conformity with norm IEC 61439-2 ed 2.0 / EN 61439-2:2011
- Rated DC current per input (Inc) 9,4 A
- Rated DC current per input (10h short-circuit at main output) 1.2 x Inc
- Switch disconnector breaking & making capacity (acc. to IEC 60947-3) 400 A (DC21B 1500 V)
- 15 A fuses (10 x 85 mm)
- Self Powered Monitoring device measuring currents per string, voltage and temperature

Options on request

- WM4C connector compatible with cable type TUV 2 Pfg1169/08.07 / EN 50618:2015
- Overvoltage protection Type I+II (Imax = 40 kA, Up <=5.0 kV, aux. contact)
- Fuse alternatives: 16 A, 20 A, 25 A, 32 A (10 x 85 mm)
- Document keeper

Technical data
Level 1 combiner box for potential-free applications

The new Level 1 PV combiner boxes are used to collect the output lines of individual strings and to connect them to an inverter or to a Level 2 combiner box (optional). The intelligent design has been specially adapted for use in floating solar installations. Advanced surge protectors, fuse links, and load break switches ensure reliable operation and optimum protection of the system. The PV combiner boxes meet the requirements of IEC 61439 (ed. 2) and ensure maximum reliability.

- 8 to 32 inputs
- Fuse holder in one or both poles (plus and minus)
- Surge protection device for DC system voltages
- String inputs with cable glands or WM4 C field connectors (or comparable box connectors)
- Wall mounting with metal lugs or for horizontal installation
- Single string monitoring for up to 16“, double string monitoring for more than 16“ available

Technical data

Application data	
Ambient temperature during operation	-20 °C to +50 °C
Intended installation location	Outdoors (< 1 km from the sea) and on freshwater surfaces
Conformity to standards	IEC 61439 (ed. 2)
Altitude above sea level Installation	Up to 3,000 m (higher altitudes on request)
Country of Installation	IEC-compliant countries higher altitudes on-demand
Electrical characteristics	
DC rated voltage (Un)	1,500 V DC
DC rated current per input (Inc)	10 A to 20 A per string input at 50 °C ambient temperature (depending on total number of strings per box)
DC earthing	Earth-free positive and negative, positive earthed, negative earthed
Switch-disconnector making and breaking capacity (acc. to IEC 60947-3)	400 A (DC21B 1,500 V)
Position of switch-disconnector, circuit-breaker or contactor handle	Direct access inside the enclosure
Overvoltage protection on DC connections	1,500 V DC, type I+II or type II
Enclosure	
Dimensions (H x W x D)	635 x 835 x 360 mm (laid horizontally)
Material	Glass-fibre reinforced polyester (GRP)
Protection class acc. to IEC 60529	IP65
Form factor	Enclosure with hinged door(s)
Mounting system	Horizontal installation on floating units (0-35° from horizontal)
Door cover material	PMMA – Methacrylate

Technical data
PV DC Floating combiner box

Feature	Description	Comments
Operating voltage	1,500 V	Max String Voc.
Max. Number of inputs	24	In principle 8 to 24 (most likely 16“ and 20“)
Input type	Single or double string	Fuse links up to 32 A rated current (fuses from 10 to 302 A)
Polarity protection	1 or 2 pole	Positively polarised protection (negatively earthed) or vice versa
Monitoring	yes	Single line monitoring up to 16“ (double from 17“ to 24“)
Self-powered monitoring	yes	BKE power supply
Switch-disconnector	1,500 V – 400 A	Reduces power dissipation in the enclosure
Enclosure IP protection class	IP65	(enclosure made of GRFP) – A ria 86
Standards to be observed	IEC 61439 (ed. 2)	Complies with existing IEC standard (not UL) including IP2X and finger safety requirements
Cable inputs and outputs	Cable glands	Cable glands – input up to 16 mm², output up to 300 mm²
Overvoltage protection level	Class II	Class I+II available

Range of products and combinations

Type	Features	Order No.
PV 216S0F0C15V001TXPX15PFWW	16 inputs, 15 A fuse, 2-pole fuse protection, 50 °C, Non Mon	**8000057078**
PV 216S0F3CXXV003T7P015PFJP	16 inputs, No fuses, 2-pole fuse protection, 45 °C, Mon	**8000057079**
PV 216S0F3CXXV003TXPX15PFJP	16 inputs, No fuses, 2-pole fuse protection, 45 °C, Non Mon	**8000057080**
PV 224S0F3CXXV003TXPX15PFJP	24 inputs, No fuses, 2-pole fuse protection, 45 °C, Non Mon	**8000057077**
PV 220S0F3CXXV003TXPX15PFJP	20 inputs, No fuses, 2-pole fuse protection, 45 °C, Non Mon	**8000057081**
PV 224S0F1C15V003TXPX15PFWW	24 inputs, 15 A fuse, 1-pole fuse protection, 50 °C, Non Mon	**8000057088**
PV 216S0F0C15V003TXPX15PFWW	16 inputs, 15 A fuse, 2-pole fuse protection, 50 °C, Non Mon	**8000057082**
PV 218S0F0C15V003TXPX15PFWW	18 inputs, 15 A fuse, 2-pole fuse protection, 50 °C, Non Mon	**8000057083**
PV 216S0F0C15V003T7P015PFWW	16 inputs, 15 A fuse, 2-pole fuse protection, 50 °C, Mon	**8000057084**
PV 224S0F1C15V003T7P015PFWW	24 inputs, 15 A fuse, 1-pole fuse protection, 50 °C, Mon	**8000057085**
PV 224S0F0C15V003TXPX15PFWW	24 inputs, 15 A fuse, 2-pole fuse protection, 50 °C, Non Mon	**8000057086**

PV Next combiner boxes

Approved quality

2IN / 1OUT non-fused Typ I/II

Description	Arresters (SPD)	Connection	Switch	empty fuse holder	MPPT	Dimension	Order No.
PVN1M2I4SXFXV101TXPX10	Typ I/II	WM4C	-	-	2	186x334x175 mm	**2737580000**
PVN1M2I4SXFXV100TXPX10	Typ I/II	Cable gland	-	-	2	186x330x175 mm	**2737590000**
PVN1M4I8SXFXV101TXPX10	Typ I/II	WM4C	-	-	4	372x334x175 mm	**2737600000**
PVN1M4I8SXFXV100TXPX10	Typ I/II	Cable gland	-	-	4	372x330x175 mm	**2737610000**
PVN1M6I12SXFXV101TXPX10	Typ I/II	WM4C	-	-	6	558x334x210 mm	**2737620000**
PVN1M6I12SXFXV100TXPX10	Typ I/II	Cable gland	-	-	6	558x330x210 mm	**2737630000**

3 IN / 3 OUT non-fused Typ I/II

Description	Arresters (SPD)	Connection	Switch	empty fuse holder	MPPT	Dimension	Order No.
PVN1M1I3SXFXV100TXPX10	Typ I/II	Cable gland	-	-	1	186x330x175 mm	**2683110000**
PVN1M2I6SXFXV100TXPX10	Typ I/II	Cable gland	-	-	2	372x330x175 mm	**2683120000**
PVN1M3I9SXFXV100TXPX10	Typ I/II	Cable gland	-	-	3	558x330x210 mm	**2683130000**
PVN1M1I3S0FXV100TXPX10	Typ I/II	Cable gland	Yes	-	1	186x330x214 mm	**2683140000**
PVN1M2I6S0FXV100TXPX10	Typ I/II	Cable gland	Yes	-	2	372x330x214 mm	**2683150000**
PVN1M3I9S0FXV100TXPX10	Typ I/II	Cable gland	Yes	-	3	558x330x249 mm	**2683160000**
PVN1M1I3SXFXV101TXPX10	Typ I/II	WM4C	-	-	1	186x334x175 mm	**2683170000**
PVN1M2I6SXFXV101TXPX10	Typ I/II	WM4C	-	-	2	372x334x175 mm	**2683180000**
PVN1M3I9SXFXV101TXPX10	Typ I/II	WM4C	-	-	3	558x334x210 mm	**2683190000**
PVN1M1I3S0FXV101TXPX10	Typ I/II	WM4C	Yes	-	1	186x334x214 mm	**2683200000**
PVN1M2I6S0FXV101TXPX10	Typ I/II	WM4C	Yes	-	2	372x334x214 mm	**2683210000**
PVN1M3I9S0FXV101TXPX10	Typ I/II	WM4C	Yes	-	3	558x334x249 mm	**2683220000**

Note: All items are available from stock.

3 IN / 3 OUT fused Typ I/II

Description	Arresters (SPD)	Connection	Switch	empty fuse holder	MPPT	Dimension	Order No.
PVN1M1I3SXF3V100TXPX10	Typ I/II	Cable gland	-	Yes	1	302x330x175 mm	**2683030000**
PVN1M2I6SXF3V100TXPX10	Typ I/II	Cable gland	-	Yes	2	558x330x210 mm	**2683040000**
PVN1M1I3S0F3V100TXPX10	Typ I/II	Cable gland	Yes	Yes	1	302x330x214 mm	**2683050000**
PVN1M2I6S0F3V100TXPX10	Typ I/II	Cable gland	Yes	Yes	2	558x330x249 mm	**2683060000**
PVN1M1I3SXF3V101TXPX10	Typ I/II	WM4C	-	Yes	1	302x334x175 mm	**2683070000**
PVN1M2I6SXF3V101TXPX10	Typ I/II	WM4C	-	Yes	2	558x334x210 mm	**2683080000**
PVN1M1I3S0F3V101TXPX10	Typ I/II	WM4C	Yes	Yes	1	302x334x214 mm	**2683090000**
PVN1M2I6S0F3V101TXPX10	Typ I/II	WM4C	Yes	Yes	2	558x334x249 mm	**2683100000**

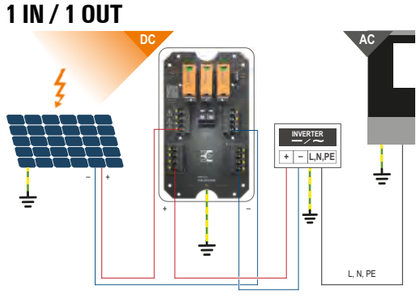
Note: All items are available from stock.

6 IN / 6 OUT fused Typ I/II

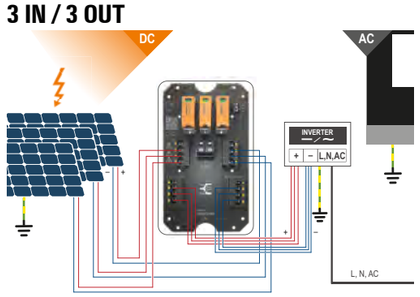
Description	Arresters (SPD)	Connection	Switch	empty fuse holder	MPPT	Dimension	Order No.
PVN1M1I6SXF3V101TXPX10	Typ I/II	WM4C	-	Yes	1	488x334x210 mm	**2737440000**
PVN1M1I6S0F3V101TXPX10	Typ I/II	WM4C	Yes	Yes	1	488x334x249 mm	**2737480000**
PVN1M1I6SXF3V100TXPX10	Typ I/II	Cable gland	-	Yes	1	488x330x210 mm	**2737520000**
PVN1M1I6S0F3V100TXPX10	Typ I/II	Cable gland	Yes	Yes	1	488x330x249 mm	**2737530000**

Connection examples

1 IN / 1 OUT



3 IN / 3 OUT



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3 IN / 3 OUT non-fused Type II

Description	Arresters (SPD)	Connection	Switch	empty fuse holder	MPPT	Dimension	Order No.
PVN1M1I3SXFXV200TXPX10	Typ II	Cable gland	-	-	1	186x330x175 mm	**2683310000**
PVN1M2I6SXFXV200TXPX10	Typ II	Cable gland	-	-	2	372x330x175 mm	**2683320000**
PVN1M3I9SXFXV200TXPX10	Typ II	Cable gland	-	-	3	558x330x210 mm	**2683330000**
PVN1M1I3S0FXV200TXPX10	Typ II	Cable gland	Yes	-	1	186x330x214 mm	**2683340000**
PVN1M2I6S0FXV200TXPX10	Typ II	Cable gland	Yes	-	2	372x330x214 mm	**2683350000**
PVN1M3I9S0FXV200TXPX10	Typ II	Cable gland	Yes	-	3	558x330x249 mm	**2683360000**
PVN1M1I3SXFXV201TXPX10	Typ II	WM4C	-	-	1	186x334x175 mm	**2683370000**
PVN1M2I6SXFXV201TXPX10	Typ II	WM4C	-	-	2	372x334x175 mm	**2683380000**
PVN1M3I9SXFXV201TXPX10	Typ II	WM4C	-	-	3	558x334x210 mm	**2683390000**
PVN1M1I3S0FXV201TXPX10	Typ II	WM4C	Yes	-	1	186x334x214 mm	**2683400000**
PVN1M2I6S0FXV201TXPX10	Typ II	WM4C	Yes	-	2	372x334x214 mm	**2683410000**
PVN1M3I9S0FXV201TXPX10	Typ II	WM4C	Yes	-	3	558x334x249 mm	**2683420000**

Note: All items are available from stock.

3 IN / 3 OUT fused Type II

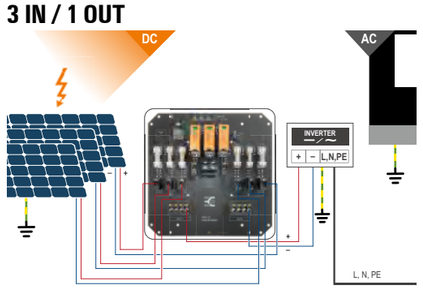
Description	Arresters (SPD)	Connection	Switch	empty fuse holder	MPPT	Dimension	Order No.
PVN1M1I3SXF3V200TXPX10	Typ II	Cable gland	-	Yes	1	302x330x175 mm	**2683230000**
PVN1M2I6SXF3V200TXPX10	Typ II	Cable gland	-	Yes	2	558x330x210 mm	**2683240000**
PVN1M1I3S0F3V200TXPX10	Typ II	Cable gland	Yes	Yes	1	302x330x214 mm	**2683250000**
PVN1M2I6S0F3V200TXPX10	Typ II	Cable gland	Yes	Yes	2	558x330x249 mm	**2683260000**
PVN1M1I3SXF3V201TXPX10	Typ II	WM4C	-	Yes	1	302x334x175 mm	**2683270000**
PVN1M2I6SXF3V201TXPX10	Typ II	WM4C	-	Yes	2	558x334x210 mm	**2683280000**
PVN1M1I3S0F3V201TXPX10	Typ II	WM4C	Yes	Yes	1	302x334x214 mm	**2683290000**
PVN1M2I6S0F3V201TXPX10	Typ II	WM4C	Yes	Yes	2	558x334x249 mm	**2683300000**

Note: All items are available from stock.

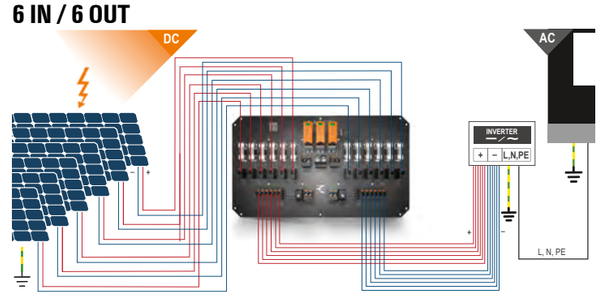
6 IN / 6 OUT fused Typ II

Description	Arresters (SPD)	Connection	Switch	empty fuse holder	MPPT	Dimension	Order No.
PVN1M1I6SXF3V201TXPX10	Typ II	WM4C	-	Yes	1	488x334x210 mm	**2737490000**
PVN1M1I6S0F3V201TXPX10	Typ II	WM4C	Yes	Yes	1	488x334x249 mm	**2737500000**
PVN1M1I6SXF3V200TXPX10	Typ II	Cable gland	-	Yes	1	488x330x210 mm	**2737540000**
PVN1M1I6S0F3V200TXPX10	Typ II	Cable gland	Yes	Yes	1	488x330x249 mm	**2737550000**

3 IN / 1 OUT



6 IN / 6 OUT



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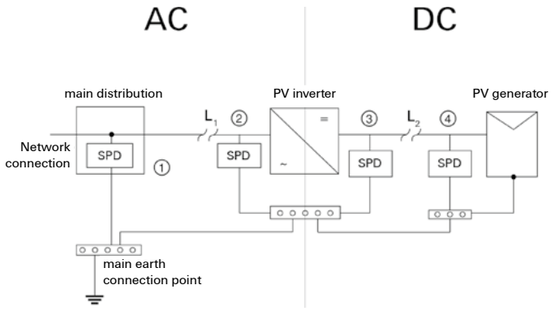


Several aspects need to be covered that are related to the type of system (e.g. rooftop systems or utility-scale open space systems). When selecting overvoltage protection measures, a set of regulations have to be observed.

PV systems with external lightning protection
Type II surge protection can be used, provided the separation distance is maintained (usually > 0.7 m to 1 m). If the separation distance is not maintained, a surge protection Type I for DC cabling is required.

PV systems without external lightning protection
This is a common design for which surge protection Type II must be provided for DC cabling.

The figure on the right shows the general architecture of a PV system. The table below is intended to help you select the correct surge protection products according to the specifications of applicable standards in a PV system.

L_1 describes the cable length between the main distribution board and PV inverter (AC side) and L_2 describes the line length between PV inverter and PV generator (DC side). With a line length > 10 m, an SPD is required on both sides by the standard.

Surge protection selection guide

External lightning protection system	Observe separation distance	Line length L_1 < 10 m	Line length L_2 < 10 m	Place of installation ①	Place of installation ②	Place of installation ③	Place of installation ④
no	–	no	no	Type II AC	Type II AC	Type II DC	Type II DC
no	–	no	yes	Type II AC	Type II AC	Type II DC	–
no	–	yes	no	Type II AC	–	Type II DC	Type II DC
no	–	yes	yes	Type II AC	–	Type II DC	–
yes	yes	no	no	Type I AC	Type II AC	Type II DC	Type II DC
yes	yes	no	yes	Type I AC	Type II AC	Type II DC	–
yes	yes	yes	no	Type I AC	–	Type II DC	Type II DC
yes	yes	yes	yes	Type I AC	–	Type II DC	–
yes	no	no	no	Type I AC	Type I AC*	Type I DC	Type I DC
yes	no	no	yes	Type I AC	Type I AC*	Type I DC	–
yes	no	yes	no	Type I AC	–	Type I DC	Type I DC
yes	no	yes	yes	Type I AC	–	Type I DC	–

*If the inverter and the main distribution board are connected to the same earthing bar by an earthing cable not longer than 0.5 m, no SPD is required at installation location "2".

VARITECTOR PU

DC protection in 1,000 V applications

Type	Classification	Order No.
VPU PV I+II 3 R 1000	Type I/II	2530620000
VPU PV I+II 3 1000	Type I/II	2530610000
VPU PV I+II 0 1000	Type I/II	2530600000
VPU PV I+II 0M 1000	Type I/II	2534300000
VPU PV II 3 R 1000	Type II	2530180000
VPU PV II 3 1000	Type II	2530550000
VPU PV II 0 1000	Type II	2530660000

DC protection in 1,500 V applications

Type	Classification	Order No.
VPU PV I+II 3 R 1500	Type I/II	2530590000
VPU PV I+II 3 1500	Type I/II	2530580000
VPU PV I+II 0 1500	Type I/II	2530570000
VPU PV I+II 0M 1500	Type I/II	2534330000
VPU PV II 3 R 1500	Type II	2530650000
VPU PV II 3 1500	Type II	2530640000
VPU PV II 0 1500	Type II	2530630000

AC protection for 230 V grids

Type	Classification	Order No.
VPU AC I 3+1 275V/25 LCF S 2PE	Typ I/II	2726760000
VPU AC I 3+1 R 275V/25 LCF S 2PE	Typ I/II	2726770000
VPU AC I 0 275V/25 LCF 2PE	Typ I/II	2730840000
VPU AC II 3+1 300/50	Typ II	2591080000
VPU AC II 3+1 R 300/50	Typ II	2591090000
VPU AC II 0 300/50	Typ II	2591010000

Recommendation

Since PV systems are usually installed in unprotected environments (danger from direct lightning strikes)

it is always advisable to install type I+II surge protection. This increases also the service life of the protective components used.

PV Protect

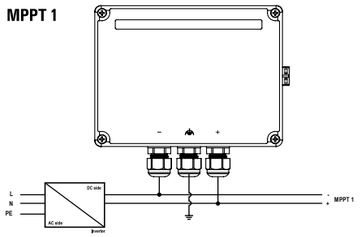
Cable Gland PG9

WM4 C Connector

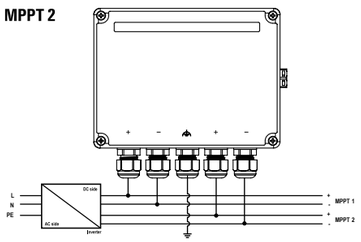
Ordering data

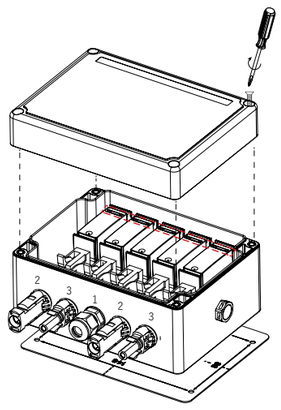
Description	Product description	Type	Voltage	MPPT	Connection	Order No.
VPUM1I1SXFXV100TXPX10	VPU PV BOX CG I+II 3 1000 1M	I+II	1000 V	1	Cable Glands	**2755970000**
VPUM2I2SXFXV100TXPX10	VPU PV BOX CG I+II 5 1000 2M	I+II	1000 V	2	Cable Glands	**2755980000**
VPUM1I1SXFXV101TXPX10	VPU PV BOX WM4 I+II 3 1000 1M	I+II	1000 V	1	WM4C	**2764140000**
VPUM2I2SXFXV101TXPX10	VPU PV BOX WM4 I+II 5 1000 2M	I+II	1000 V	2	WM4C	**2764150000**
VPUM1I1SXFXV200TXPX10	VPU PV BOX CG II 3 1000 1M	II	1000 V	1	Cable Glands	**2755950000**
VPUM2I2SXFXV200TXPX10	VPU PV BOX CG II 5 1000 2M	II	1000 V	2	Cable Glands	**2755960000**
VPUM1I1SXFXV201TXPX10	VPU PV BOX WM4 II 3 1000 1M	II	1000 V	1	WM4C	**2764110000**
VPUM2I2SXFXV201TXPX10	VPU PV BOX WM4 II 5 1000 2M	II	1000 V	2	WM4C	**2764130000**
VPUM1I1SXFXV200TXPX15	VPU PV BOX CG II 3 1500 1M	II	1500 V	1	Cable Glands	**2755990000**
VPUM2I2SXFXV200TXPX15	VPU PV BOX CG II 5 1500 2M	II	1500 V	2	Cable Glands	**2756000000**
VPUM1I1SXFXV201TXPX15	VPU PV BOX WM4 II 3 1500 1M	II	1500 V	1	WM4C	**2764160000**
VPUM2I2SXFXV201TXPX15	VPU PV BOX WM4 II 5 1500 2M	II	1500 V	2	WM4C	**2764180000**

MPPT 1



MPPT 2





Transclinic 16I+ 1K5 H

Technical data

Maximum number of strings	16
Rated Voltage	≤ 1500 V DC
Maximum current per string	25 A
Operating temperature	-25 °C...70 °C
Number of digital inputs	2
Communication	RS485 (Modbus/RTU)
Connection type	PUSH IN

Ordering data

	Type	Order No.
	TRANSCLINIC 16I+ 1K5 H	**2502520000**

PV-Stick

Technical data

Continuous operating temperature	-40 °C to +85 °C
Protection class (plugged/open)	IP 65 / IP 2x
Rated current	30 A
Rated voltage	1,500 V DC
Cable diameter	4 mm² / 6 mm²
Cable exterior diameter	5.5 mm to 7.5 mm
Cable as per standard	2PfG1169/08.07 & EN 50618:2014
Pollution degree	II
Approval	TÜV (IEC 62852)
Connection system	PUSH IN (Spring terminal connection)

Ordering data

	Type	Qty.	Order No.
Female			
	PV-STICK+ VPE10	10	**1303450000**
	PV-STICK+ VPE50	50	**1303460000**
	PV-STICK+ VPE200	200	**1303470000**
Male			
	PV-STICK- VPE10	10	**1303490000**
	PV-STICK- VPE50	50	**1303500000**
	PV-STICK- VPE200	200	**1303510000**
PV-Stick set			
	PV-STICK SET		
	Female connector	1	
	Male connector	1	**1422030000**

WM4 C

Technical data

	WM4 C field connector	BOX WM4 C housing connector
Continuous operating temperature	-40 °C to +85 °C	-40 °C to +85 °C
Protection class (plugged/open)	IP 65 & IP 67 / IP 2x	IP 65 & IP 67 / IP 2x
Rated current	35 A	35 A
Rated voltage	1.500 V DC	1.500 V DC
Cable diameter	4 mm² / 6 mm²	4 mm² / 6 mm²
Cable exterior diameter	5.5 ...7.0 mm	5.5 ...7.0 mm
Cable as per standard	2PfG1169/08.07 & EN 50618:2014	2PfG1169/08.07 & EN 50618:2014
Thread	M16	M12
Pollution degree	II	II
Approvals	TÜV (DIN IEC 62852)	TÜV (DIN IEC 62852)

Ordering data

WM4 C field connector

	Type	Qty.	Order No.
	BUGH WM4 C BT Female housing	100 (in bag)	**1530690000**

	Type	Qty.	Order No.
	SFGH WM4 C BT Male housing	100 (in bag)	**1530700000**

BOX WM4 C housing connector

	Type	Qty.	Order No.
	BUGH BOX WM4 C BT Female housing	100 (in bag)	**1530630000**

	Type	Qty.	Order No.
	SFGH BOX WM4 C BT Male housing	100 (in bag)	**1530640000**

Crimp contacts

	Type	Qty.	Order No.
	BUKO WM4 C BT Female contact	100 (in bag)	**1530670000**
	BUKO WM4 C RL Female contact	1,500 (on roll)	**1530770000**

	Type	Qty.	Order No.
	SFKO WM4 C BT Male contact	100 (in bag)	**1530680000**
	SFKO WM4 C RL Male contact	1,500 (on roll)	**1530780000**

PV Tools
Reliable installation tools

When installing a photovoltaic system, the installer is dependent on reliable and smooth-running tools. Weidmüller offers a range of professional tools for this purpose.

Your benefits:

- High quality for long-term usage
- Long service life
- Easy to use - even under difficult working conditions

SET MULTI-TOOL PV+
Multi-Tool for PV Stick and PV Next

Type	Qty.	Order No.
SET MULTI-TOOL PV+ Optional mounting tool	1	**1217280000**

KT12
For cutting PV cables

Type	Qty.	Order No.
KT 8 Cutting tool	1	**9002650000**

Multi-Stripax PV
For stripping PV cables

Type	Qty.	Order No.
multi-stripax® PV Wire stripping pliers for PV wires from 2.5 mm² to 6 mm²	1	**1190490000**

CTF PV WM4
For crimping PV crimp inserts (incl. MC4)

Type	Qty.	Order No.
CTF PV WM4 1 For Weidmüller WM4 photovoltaic connectors and similar plugs	1	**1222870000**

Weidmüller – Your partner in 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 Industrial Connectivity.

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