You want to improve your photovoltaic systems' profitability
We provide solutions for system voltages up to 1,500 V
Let's connect.

Photovoltaic

Weidmüller

Increase your investments' added value

With our customised 1,500 V combiner boxes

When designing and setting up your photovoltaic system, what you're really trying to do is achieve the greatest possible level of cost effectiveness throughout the overall operating time. The best way to do this is not to compromise on quality and performance.

Even today, your investments' profitability is the driving factor for a successful photovoltaic system. The cost aspect will probably become even more important in the future due to growing competitive pressure.

1,500 V ready

Increasing the string voltage to up to 1,500 V is an effective way of increasing your systems' profitability and cost effectiveness in the long term. The complexity of the photovoltaic system as a whole is reduced, as fewer components and materials are needed. This also results in installation and maintenance-related cost benefits.

Reduced maintenance requirements
▶ lower operating costs

Reduced complexity
▶ fewer components

Smart design
▶ simple installation

High quality standards
▶ high level of reliability

Our combiner box with a rated voltage of up to 1,500 V is a high-quality and particularly reliable solution for increasing your photovoltaic systems' cost effectiveness. All of the components are certified in line with the IEC 61439-2 standard and meet the latest safety standards.

You are building on experience, quality and investment security

We are building your combiner box

High degree of protection

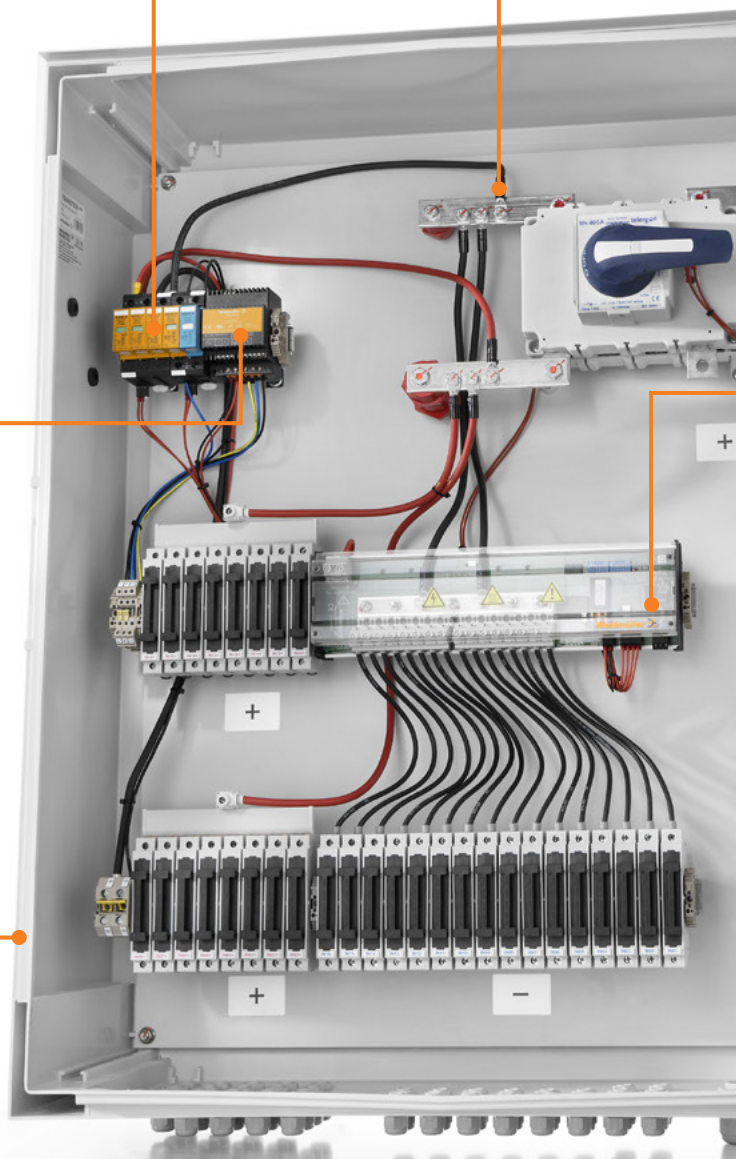
Ultra-modern protection mechanisms are used to guarantee the best surge protection. The system meets the requirements set down in EN 50539-11, the current photovoltaic standard.

Easy to wire in the field

The w V combiner box is supplied as a ready-to-connect solution to make installation in the field easier, thus helping to save both 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 rendered superfluous.

Long service life

All the components are optimised to guarantee that they will have a long service life. This is ensured through compliance with the IP standards and certification pursuant to DIN EN 61439-2.



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

Why is string monitoring so important in a 1,500 V 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 the first time that these products are used. This helps to ensure preventative system maintenance and to avoid operational problems.

A customised combination – for ideal synergies

The benefits of the 1,500 V combiner box components

Transclinic 16i+ 1K5 L

String monitoring and measurement up to 1,500 V

Let's connect.

Developed for extreme conditions
Offers a high degree of reliability and operational safety in a temperature range of –25 °C to +70 °C.

System voltage monitoring
The integrated system enables voltage measurements of up to 1,500 V.

Robust design
The open Modbus RTU RS485 protocol makes incorporation in SCADA systems easier and reinforces communication security.

Simple configuration
The system can be easily configured via DIP switches – without any need to use a computer.

WM4 C plug-in connector

The reliable component connection

High current-carrying capacity
The WM4 C withstands loads with a rated current of up to 35 A.

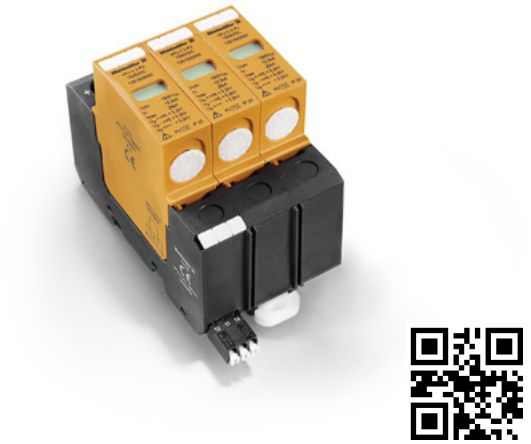
Secure positioning
The WM4 C's new anti-twist protection provides additional safety in the event of installation in enclosures.

Standard-compliant quality
WM4 C plug-in connectors have TÜV approval and comply with the DIN EN 50521 standard.

Let's connect.

VPU II 3 (R) PV

Surge protection for 1,500 V too



Let's connect.

Developed for extreme conditions
The VPU II 3 (R) PV module works reliably, even under challenging ambient temperatures of –40 °C to +70 °C.

See everything at a glance
The large status window, combined with the remote signalling contact's PUSH IN connection, guarantees that you will have a reliable overview of the protective functions' statuses.

Maximum safety
The nominal discharge surge current of 12.5 kA (8/20 µs) and the maximum discharge current of 25 kA (8/20 µs) ensure optimum surge protection.

Transclinic BKE

The power supply for the 1,500 V combiner box's self-supply feature

Cost effectiveness
Enables saving of an additional AC surge protection and reduces the amount of wiring required, as AC supply lines are not needed.

Simple
Problem-free power supply feed-in due to the DC string power gained – of up to 1,500 V.

Safe design
The Transclinic BKE's robust design provides reliable protection against surge damage and even works under extreme environmental conditions. All the IEC's relevant safety and EMC standards are met – without any need for additional components.

Technical Data

Components of the combiner box 1,500 V

Transclinic 16i+ 1K5 L

Maximum number of strings	16
Max. current per string	25 A DC
Rated voltage	1,500 V
String-current measurement error	± 300 mA from 3 A DC to 15 A DC
String-voltage measurement error	± 18 V from 150 V DC to 1,500 V
Communication	MODBUS RS485 RTU
Number of digital inputs	2
Elevation	≤ 2,000 m
Continuous operating temperature	min. –25 °C, max. 70 °C
Supply voltage	19.2 – 28.8 V DC
Dimensions	
Length x width x height	368.9 / 109.5 / 92.2 mm

WM4 C plug-in connector

	Field connector	Housing connector
Continuous operating temperature	min. –40 °C / max. +85 °C	min. –40 °C / max. +85 °C
Protection class	IP65 and IP67, IP2x open	IP65 and IP67, IP2x open
Rated current	35 A	35 A
Rated voltage	1,500 V	1,500 V
Cable diameter	min. 4 mm² / max. 6 mm²	min. 4 mm² / max. 6 mm²
Cable exterior diameter	min. 5.5 mm / max. 7.0 mm	min. 5.5 mm / max. 7.0 mm
Cable as per standard	2 Pfg1169/08.07 and EN 50618:2014	2 Pfg1169/08.07 and EN 50618:2014
Thread	M16	M12
Pollution degree	II	II
Approvals	TÜV (DIN EN 50521)	TÜV (DIN EN 50521)

VPU II 3 (R) PV 1,500 V

General data	
Design	Installation housing; 3 TE, Insta IP20
Optical function display	green = OK; red = arrester is defective - replace
Protection class	IP20
Operating temperature	–40 °C...70 °C
Rated data IEC / EN	
Maximum continuous operating voltage, Uc (DC)	1,500 V
Discharge current In (8/20 µs) wire-PE	12.5 kA
Discharge current Imax (8/20 µs) wire-PE	25 kA
Response time	≤ 25 ns
Signalling contact	optional
Product conditions and requirements	EN 50539-11
Application conditions and requirements	EN 50539-12
SPD type	T2
Photovoltaic technical data	
PV voltage, acc. to IEC 60364-7-712	< 1,500 V
Short-circuit resistance ISCPV	200 A
Protection level Up mode (+/–)	≤ 5.2 kV
Protection level Up mode(+/PE)	≤ 5.2 kV
Protection level Up mode(–/PE)	≤ 5.2 kV

42 million panels
with an output of over 8.4 GWp

Local support in nearly 100 countries

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

More than 112,000 combiner boxes worldwide

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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