Looking for more detailed information?

Enter one of the search terms below into our online catalogue, at http://catalog.weidmueller.com

1. DC Power Connection

Device connectivity
OMNIMATE Power PCB terminals
LU 10.16
LUP 10.16 (12.7)
LX 15.00
LXXX 15.00

OMNIMATE Power PCB connectors
BLZ 7.62HP, BVZ 7.62HP, BUZ 10.16HP
BLZ 7.62IT, BVZ 7.62IT, BUZ 10.16IT
BLF 7.62HP, BVF 7.62HP
BUZ 10.16 HP
BUZ 10.16 IT

Field wiring
WM4-Plug-in connector
PV-Stick

2. AC Power Connection

Device connectivity
OMNIMATE Power PCB terminals
LU 10.16
LUP 10.16 (12.7)
LX 15.00
LXXX 15.00

OMNIMATE Power PCB connectors
BUZ 10.16 HP
BUZ 10.16 IT

OMNIMATE Power Through-Panel terminals
WGK (4 mm²–95 mm²), VWGK

Field wiring
RockStar® Heavy duty connector
HQ 4/2
HQ 8

3. Signal Connection

Device connectivity
OMNIMATE Signal PCB connectors
BL/O
BL 3.5 I/I, B2CF 3.50, BC2 3.81, BCF 3.81
BLZP 5.08, BLF 5.08, BLDF 5.08

OMNIMATE Signal PCB terminals
LSF-SMT 3.5 mm bis 7.62 mm
LM 3.5, LM 5.00, LM 5.08, LS 5.08

Field wiring
SAIL-M12, SAIS 5/9

4. Data Connection

RJ45 Plug-in connector
IE-BS-V04, IE-BSS-V14, IE-BSC-V14,
IE-PS-V04, IE-PS-V14
M5-, M8-, M12-, M16- und
M23-Circular connectors in IP 67

5. Lightning and Surge Protection

VARITECTOR PU
VPU I DC
VPU II DC

6. Photovoltaic junction box

PV-Box D6.0 ES
PVM

7. System monitoring for PV systems

TRANSCLINIC 4i+
TRANSCLINIC 7i+
TRANSCLINIC 8i+
TRANSCLINIC 14i+
MODBUS RS485 RTU
PV-Plant
SOFTCLINICS PV PLANT

OMNIMATE – device connectivity and electronics housings

OMNIMATE Signal includes PCB terminals and PCB plug-in connectors for automation and systems engineering equipment, as well as sensor-actuator interfaces and power supplies.

OMNIMATE Power includes PCB terminals, PCB plug-in connectors and feedthrough terminals for use in power electronics – particularly in inverters, frequency converters, servo drives, heavy-duty power supplies and motor starters.

OMNIMATE Housing – The perfect enclosures for industrial electronics, for mounting on 35 mm top-hat rails (DIN rails) in the electrical cabinet. Used for controller, signal conversion and machine safety applications.

OMNIMATE Services – Take advantage of our global 72-hour sample service free of charge in the online catalogue or at www.sample-service.com. For the best design-in-process – from specification stage to full component integration.

Weidmüller – 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.

Weidmüller Interface GmbH & Co. KG
Klingenbergstraße 16
32758 Detmold, Germany
Phone +49 5231 14-0
Fax +49 5231 14-292083
info@weidmueller.com
www.weidmueller.com

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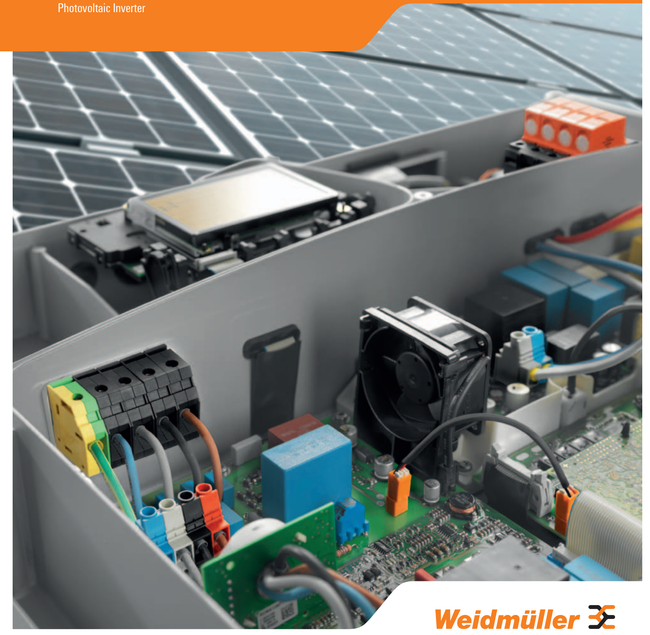
Your inverter is powered by the sun
Power needs future-proof connections
Let's connect.

Photovoltaic Inverter



Weidmüller

Secure connectivity for transmitting power, signals and data in photovoltaic inverters

Forms of generating renewable power are playing an ever increasing role in the energy sector. As a result, the systems that run them are being continually developed and the technology they use, for example inverters, continually optimised. These advances need powerful, flexible and robust connectivity systems to ensure secure and reliable operation.

As a specialist in device connectivity, field wiring and electronics, we have established practical knowledge regarding the secure transmission of power, signals and data in applications. In particular, your connector needs a protection class in IP 20 for the internal PCB connections and IP 6x for the external housing connections. We are familiar with the extreme demands of photovoltaic inverters, which include the use of high voltages as well as the resilience to the massive fluctuations in temperature and harsh climatic conditions.

We believe that you will be impressed by our wide range of OMNIMATE products. You will be able to find the right connection solution for your application in the OMNIMATE Signal & Power PCB terminals and plug-in connector product lines and the OMNIMATE Power feed-through terminal product group for internal connections of your device. The Weidmüller online configurator on our website provides free 3D CAD downloads and benefit from our unique 72-hour OMNIMATE sample service. This service is convenient and fast, and we guarantee to supply you with requested samples within 72 hours.

For field wiring of power, signals and data, we provide a large selection of Sensor Actuator Interface (SAI) connectors, heavy-duty connectors, solar connectors and photovoltaic junction boxes.

We aim to meet your needs for outstanding reliability with our convincing connectivity solutions.
Let's connect.

1. DC Power Connection

When using high currents and voltages in power electronic applications a safe connectivity is indispensable. We have designed the terminals and plug-in connectors of the OMNIMATE Power range for maximum safety. For example, our connectors have different kinds of locking features which can be designed as a lock and release lever, a locking clasp or as a screw flange.

The OMNIMATE Power plug-in connectors provide a pluggable connection system for power electronics in the power section of a photovoltaic inverter. You can choose between various solutions, ranging from the compact 4 mm² variant, to the heavy-duty 16 mm² model.

The OMNIMATE Power terminals are robust, direct power conenctions for your PCB, designed especially for photovoltaic inverters. They provide a wire cross-section up to 50 mm² with a rated current of 150 A.

Reliable plug-in connections for the quickly and safely connecting the field cables of solar modules and DC connections to the inverter are guaranteed by the WM4 photovoltaic plug-in connector from Weidmüller. The WM4 product line for string connections feature low contact resistance, high-quality workmanship and simple handling. Specially developed for direct cabling in the field, the new PV-stick provides fast and cost-effective installation without the need for special additional tools: plug, twist, done.

Device connectors: OMNIMATE Power terminals and connectors
Field wiring: Photovoltaic plug-in connectors

2.
AC Power Connection

The electrical connectivity inside the device between the individual function units is provided by our OMNIMATE Power connection components. The large range of PCB terminals and plug-in connectors provide numerous connection options, with a high clamping force and optimum use of space.

When guiding currents of different heights through the device or electrical cabinet wall, OMNIMATE Power feed-through terminals are the universal solution for wire cross-sections of between 4 mm² and 95 mm².

Our Heavy Duty Connectors (HDCs) from the RockStar® product family are used for the external AC mains connection, with IP 6x protection class.

Thanks to a special die cast alloy and multi-stage surface sealing, the HDC housings are perfectly protected for external power connections to the mains supply.
The interlock system is manufactured from stainless steel.
This guarantees a long lifespan with high resistance to corrosion and impact.

The RockStar® plug-in connectors are available with a straight on or side wire outlet direction.

Device connectors: OMNIMATE Power terminals, connectors and feed- through device terminals
Field wiring: RockStar® heavy duty, plug-in connectors

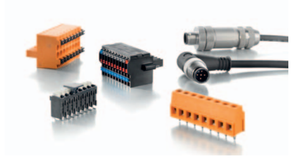
3.
Signal Connection

Customised signal interfaces which ensure a reliable IP 20 connection are needed for input interfaces for signals such as temperature, or positioning and output interfaces for controlling actuators.
The OMNIMATE Signal plug-in connectors are available with an extra screw flange, or lock and release lever for a reliable fastening. For PCBs with SMD components, the connection system is also available for the reflow soldering process.
The 3.5 mm to 5.08 mm pitch provides a number of solutions which can be combined with the SL-SMT male header suitable for reflow.

The LSF PCB terminals in pitch 3.5 mm to 7.62 mm with PUSH IN connection system from the OMNIMATE Signal product range can be soldered using the wave soldering process or the zero-compromise reflow-soldering process. For PCBs produced with the wave soldering process, there is an extensive range of screw and PUSH IN spring connection systems in pitch 3.5 mm to 5.08 mm.

The wide range of OMNIMATE Signal device connectivity products are optimised to suit the application, with simple processing, reliable application and space-saving installation.

The complete range of M8 and M12 round plug-in connectors with protection class IP 6x from Weidmüller are used in field wiring for sensors and actuators.



Device connectors: OMNIMATE Signal terminals and connectors
Field wiring: M8, M12, M16 and M23 connectors in IP 67

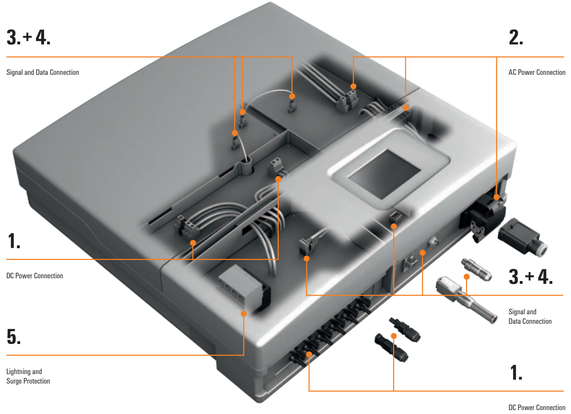
4.
Data Connection

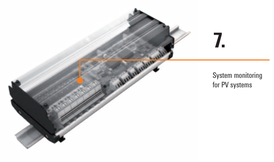
High reliability, protection against failure, and availability are the basic requirements of photovoltaic inverters.
When networking a range of components in a photovoltaic system, it´s very important that reliable and secure data transfer is guaranteed.
Suitability for industrial use and connectivity which is dependable are the essential criteria for efficient data cabling and data exchange in photovoltaic systems.

Our Industrial Ethernet components offer a higher level of quality and operational safety than needed for a desktop PC, for example. Weidmüller´s product range also includes solutions in IP 67 for connecting networks outside the inverter housing.
For this application, we recommend our M8, M12, M16 and M23 connectors in IP 67 protection, which are also available in an over moulded version with assembled cables. We supply a range of RJ45 connectors with crimp or IDC wire connections, according to Cat. 6A/Class EA and in protection classes ranging from IP 20 to IP 67 for connecting networks.

We supply network components for many applications, be it the STEADYTEC® plug which can be assembled without any tools, or the IP 67 classified plug with an impact-resistant, die-cast housing.

Device connectors: OMNIMATE Signal terminals and connectors
Field wiring: M8, M12, M16 and M23 connectors in IP 67 mechanically protected RJ45 connector





5.
Lightning and Surge Protection

Weidmüller´s product range includes surge protection that meets the very latest standards governing the specific requirements of photovoltaic systems on the roofs of industrial buildings – on request, they can be individually configured and integrated, ready-to-wire, in a housing.
With such equipment, system operators can count on their anticipated returns.
Lightning currents and surge voltages are often responsible for damage to inverters and photovoltaic modules. Not only does this damage represent huge repair costs for operators, it also has a major impact on the economic viability of the entire facility.
To enable our customers to set up their photovoltaic systems that are fit for the future, our solutions of product line VARITECTOR PU always satisfy the very latest application and product standards. Our entire range of surge protection devices already meets the current standard EN 50539-11:2012 which stipulates how surge protection in photovoltaic systems has to be designed on the DC voltage side.
Weidmüller also provides complete surge protection systems which fully complies with EN 50539-12 for the DC and EN 61643-12 for the AC sides.

The devices are designed especially for photovoltaic applications and effectively prevent the undesired activation of cut-off mechanisms. The worst-case scenario of a fire is therefore effectively prevented.

Lightning & surge protection on the PV generator side (DC) and power supply side (AC)

6.
Photovoltaic junction box

The innovative photovoltaic junction box for crystalline photovoltaic modules is flexible and can be easily fitted for optimised, secure production processes.
The box enables a fully-automatic process, which accelerates the production of photovoltaic modules and reduces the production costs. But also in the case of a manual assembly significant optimisations can be realised. The two-section housing design makes it easier to manufacture and to replace during repairs.
The photovoltaic junction box was developed with two different connection principles. It is available as a version for ribbons that are fed through the backsheet of the panel, as well as for ribbons that are initially laminated over, and then prepared for the fully-automatic production line using a simple milling process to expose the contacts.
A new, patented sealing and strain-relief system has significantly increased the wire withdrawal forces, in comparison with the force needed for a conventional cable gland connection.
With the automatic interlock it is impossible to unintentionally loosen the connection.

The PV junction box is certified by TÜV Rheinland in accordance also the with DIN V VDE V 0126-5:2008-05 and the new pr EN 50548 UL approval in accordance with UL 1703 is given.

Module connection for efficient installation WM JB PVM

7.
System monitoring for PV systems

The unlimited functionality of a photovoltaic plant is crucial for its efficiency. The Transclinic xi+ device series continuously calculates/determines the current coming from individual strings or string groups as well as the voltage in a photovoltaic plant thus allowing a very detailed monitoring.
Disturbances that might cause a decrease in profits are thus identified and can be eliminated without delay.
Depending on the model, the Transclinic xi+ has between 4 and 14 inputs for measuring currents of up to 30 A per string.
The current measuring is particularly reliable thanks to very linear and stable shunt resistances.
The current and voltage measuring data are transmitted via ModBus RTU over EIA RS-485. Evaluation and presentation of the data can be done using the PV Plant software.
In addition to current and voltage, it is possible to control optional analogue and digital signals and to operate signalling devices via a digital output. The information obtained about the operational status provides a reliable monitoring mechanism for the photovoltaic facility, which will help you to optimise your yield.

Continuous performance monitoring of PV systems with Transclinic Xi+ monitoring systems