

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.

You ensure the safe operation of machines  
We provide reliable housing and connection technology  
Let's connect.

Machine safety devices



Reliable housing and connection technology  
for safety relays and safety PLCs

Renowned studies show that safety technology plays an increasingly important role in industry. The growing demand for safety systems also places extra demands on you. This is due to progressive automation with increasingly more complex technologies and equipment. The safety of man and machine has become a global focus issue in which constantly updated standards and guidelines need to be met.

Many machines have the potential to cause bumps, bruises, electrical shocks, burns and other injuries. You can minimise these risks effectively by implementing modern safety systems. Electronic monitoring modules, safety relays or programmable safety controllers can trigger countermeasures and switch off individual system components or entire plants in an emergency. As a manufacturer of such devices you need to comply with various standards, such as EN ISO 13849 and IEC 61508.

We can assist you in the deployment of safety-related signal processing. We achieve this with our electronic housings, PCB connectors and terminals, as well as our personal service. Through our extensive know-how and many years of experience in the development and manufacture of safety equipment, we know what requirements you have in terms of electronics housings and connection technology, and can satisfy them at the highest level. The uncompromising quality of our products is our top priority. Weidmüller is known around the world for the secure transmission of power, signals and data.

In our product groups OMNIMATE Signal, OMNIMATE Power and OMNIMATE Housing you are guaranteed to find the right connection solution for your application. We provide comprehensive support to help you to make your selection. With the Weidmüller online configurator on our website, for example, or the free 3D-CAD downloads, or even personal advice. And best of all: our unique OMNIMATE Sample service guarantees that the sample you order is with you within 72 hours.

Let's connect.

## 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](http://www.sample-service.com). For the best design-in-process – from specification stage to full component integration.

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Enter one of the search terms below in our online catalogue at: <http://catalog.weidmueller.com>

### 1. Housings

OMNIMATE Housing  
CH20M12, CH20M17, CH20M22, CH20M45,  
CH20M67

### 2. Power supply

OMNIMATE Housing connection system  
BHZ, SHL-SMT

OMNIMATE Housing rail bus  
SR-SMD, CH20M-BUS

OMNIMATE Signal PCB connectors  
BLF 5.0x, BLZP 5.0x

OMNIMATE Signal PCB terminals  
LSF-SMT, LSF-SMD, PS 3.5, LM 3.5, LM 5.00,  
LM 5.0x, LL 5.00, LS 5.08

### 3. Communications interface

OMNIMATE Housing rail bus  
SR-SMD, CH20M-BUS

OMNIMATE Signal PCB connectors  
BLDZ 5.08DN, BLDZ 5.08



Try out our online product wizard  
for an ideal custom fit configuration:  
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## 1. Housings

Modern electronics housings have to meet many requirements with regard to form, function and appearance. Safety relays and controllers also need to have a modular, scalable and integrated DIN rail housing concept. Large front panels should enable the users of your equipment to configure and monitor operations easily.

The modular OMNIMATE electronics housing system CH20M offers a reliable, innovative and future-proof platform for your applications – cost-effectively and with high process reliability in manufacturing:

- Customised design for high recognition value
- A variety of housing widths from 6.1 to 67.5 mm
- Wide range of housing colours, e.g. signal yellow
- Glass fibre reinforced material (VO) for optimal mechanical and thermal stability
- High reliability and interference resistance through ESD-proof design
- Larger net PCB layout surfaces up to 9,000 mm<sup>2</sup> (single sided)

Reliable operation and high serviceability are ensured through numerous innovative details. This includes, for example, finger safety on both sides and a leading pin contact. In addition, a lead-sealable hinged cover prevents unauthorized access

To ensure that your customers do not require additional documentation at the installation site, we can laser-print your circuit diagrams onto the housing. Our international approvals open the doors to global use of your safety equipment.



CH20M – the new housing standard – is the perfect platform for customised electronic applications

## 2. Power supply

For the current and voltage supply you need reliable and durable device connections. Plug-in connectors enable particularly fast and reliable commissioning, while classic PCB terminals are especially suited to price-sensitive markets.

An important part of the OMNIMATE CH20M system is the pluggable BHZ family with 5.00 mm pitch. This screw type connector is maintenance-free, vibration-resistant and unique on the market on account of its folded clamping yoke. The Wire-Ready technology also makes connections easier: prepare the conductor, connect, done. Locked-up terminal points following long-distance transport are a thing of the past.

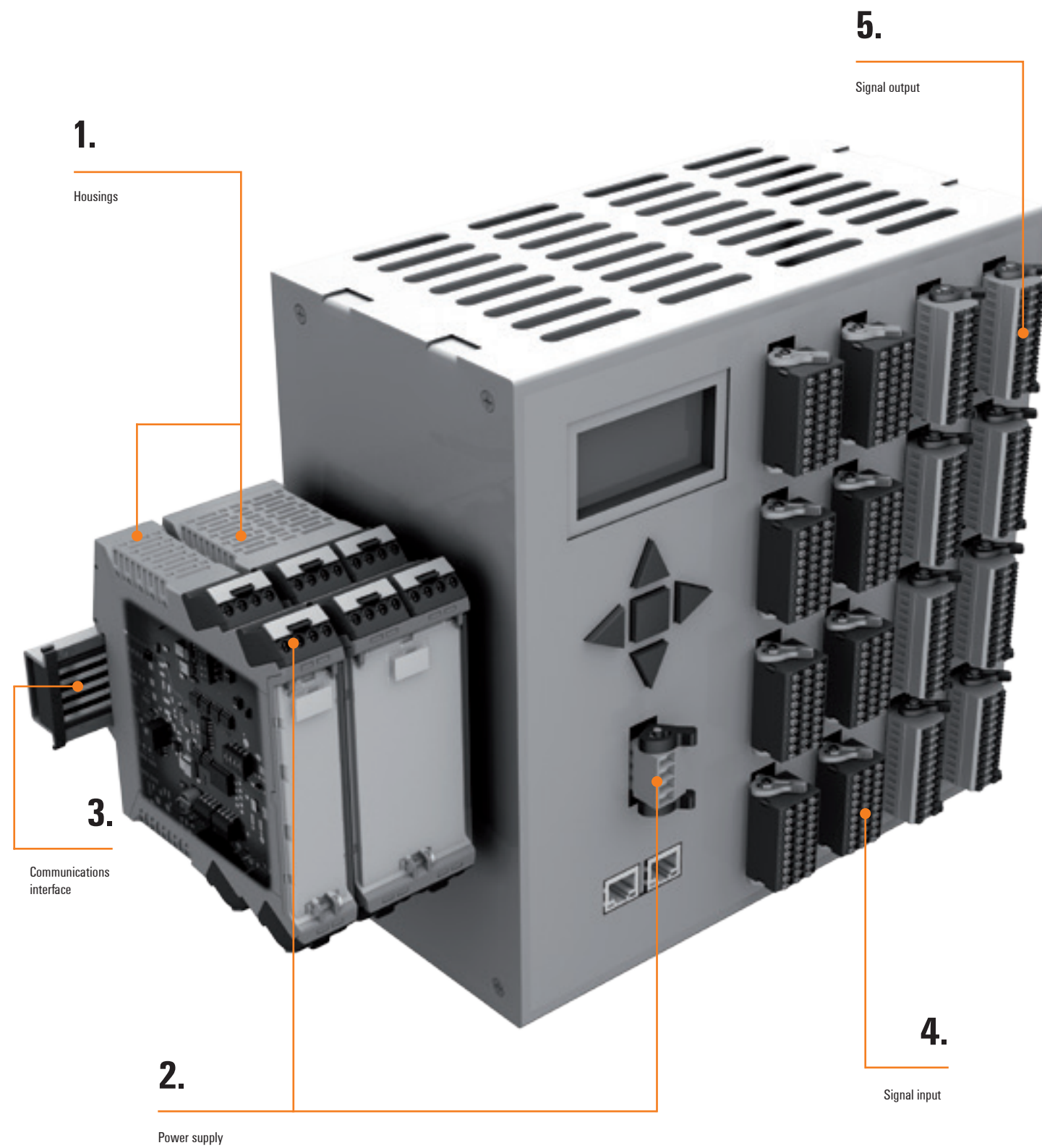
To go with the BHZ connector, we offer the SHL-SMT pin header. It can be automatically assembled and is suitable for reflow soldering, which means it reduces your processing costs during PCB assembly. The CH20M system also provides the option of using a 5-pole DIN rail bus for the power supply.

Our OMNIMATE Signal plug-in connectors BLZP and BLF with 5.08 mm pitch are suitable for use in other housings. They are equipped with specific solutions and increased safety features such as our protection against mismatching. Depending on the application, you can choose between spring ("PUSH IN") or screw connections.

The OMNIMATE Signal PCB terminals LSF with 3.50 to 7.62 mm pitches serve as a non-pluggable "PUSH IN" solution and are also compatible with both the wave and reflow soldering processes.



PCB terminals and plug-in connectors create reliable connections



## 3. Communications interface

Devices must be able to communicate with each other, to report errors, for example. Interfaces are also needed for programming and configuration purposes. You may even want to integrate decentralised units from the field or install a system for remote maintenance.

The CH20M system provides many options for rapid, secure data transfer. The 5-pole bus systems for the TS35 DIN rail offer practical advantages, for example:

- Two connections for the power supply
- Three connections for alarm, control or bus signals
- Gold contacts for maximum accuracy
- High serviceability

The housings can be snapped onto the terminal rails for direct assembly and are made for easy maintenance. To snap them in and out, there is no longer the need for any lateral displacement towards neighbouring housings.

The CH20M also comes in a standard RJ45 version. Customised cutouts for individual interfaces are possible even for small quantities – for example, for the integration of DIP switches and SUB-D connectors.

Plug-in connectors in the BLDZ 5.08DN and BLDF 5.08 series have an integrated cross-connection and establish the bus connections to the individual modules on the front panel.



Communication via industry-standard bus connectors for single-wire connections, RJ45 or fibre-optic

## 4. Signal input

Sensors in your process chains detect the respective environmental conditions. Sensor signals can be in both digital and analogue form. To operate your system safely over the long-term you require increasingly precise signal processing – which takes up as little space as possible.

Weidmüller has addressed this trend and offers a range of products for signal processing that is tailored to the requirements of sensor signals. The BL-I/O, for example. This is the smallest pluggable solution in the 3.50 mm pitch for 3-wire connections.

- The integrated signal display indicates the correct wiring of the sensors without the need for a control unit to be switched on
- The built-in potential distribution provides eight sensors with the necessary power
- Robust "PUSH IN" conductor connectors ensure the stable and secure functioning of sensors

Additional pluggable solutions in the 3.50, 3.81 and 5.00/5.08 mm pitches provide almost limitless possibilities for design at the connection level. The modules can be produced economically from a wide range of pin headers and are ready for the automated SMT process. Our PCB terminals with "PUSH IN" connections provide you with a cost-effective alternative to our pluggable solutions.



BL-I/O PCB plug-in connectors with "PUSH IN" connections for the highest packing density

## 5. Signal output

In a safety-related process, the actuators of your system not only require precise status information, they also need, above all, secure connections in order to drive relays, valves or motors. These should have a design as compact as possible, except in cases where the cross-section, conductor length or switching voltage necessitate a larger construction.

Our compact B2CF plug-in connectors are noted for their high connection density and good usability:

- With a 3.50 mm pitch, up to four levels can be installed on top of each other with a maximum connector cross-section up to 1.5 mm<sup>2</sup>
- Connecting the wires of the actuators is extremely time saving and safe thanks to the "PUSH IN" spring design
- For higher gauge cross-sections, the BLF 5.0x with "PUSH IN" connection is particularly well-suited

Because installation errors with such sensitive applications can have serious consequences for both man and machine, our BHZ connectors in the CH20M housing solution are protected against mismatching with captive coding and clearly identifiable markings.

And for error-free wiring on site you can also have your own connection designations printed on all OMNIMATE Signal products.



PCB Connectors B2CF with 3.5 mm pitch with double-row "PUSH IN" connection