APPLICATIONS

RAILWAY INDUSTRY

Weidmüller

INNOVATIVE TECHNOLOGY FROM WEIDMÜLLER

A QUALITY PORTFOLIO FOR TRAINS AND TRACKS

Running a modern and high-performance transport system is a great logistical challenge and demands fast, flexible, efficient and safe railway vehicles which requires short periods of immobilisation and servicing. These demands are reflected by technical concepts with innovative electrical connection technology.

Terminals, connectors, enclosures or marking systems – Weidmüller has been developing and fine-tuning components in order to fulfil the special requirements of the rail industry for 50 years. Our products are put to the test in railway day in, day out, proving their resilience to vibrations, impacts and climatic conditions.

MAKING SURE TRAINS ARRIVE SAFELY AND ON TIME

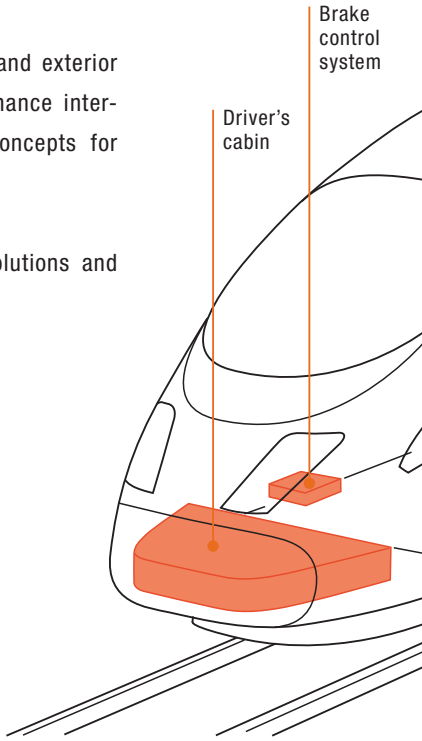
Weidmüller is the leading supplier of solutions for the electrical connection, transmission and conditioning of energy, signals and data in industrial environments. With a standard portfolio containing 35,000 products, and production plants and sales companies in more than 70 countries, Weidmüller is not only represented around the world; it is also your first port of call for innovative solutions when it comes to industrial connection technology.
We are your one-stop shop for all applications!

As a member of the VDB (German Rail Industry Association) and the ZVEI rail team (Central Association of the Electrotechnology and Electronics Industry), we are familiar with the demands placed on modern transport systems. As a partner of the rail industry, we have been consistently delivering top-quality goods and a range tailored to suit rail use for years. These credentials played no small part in the German rail company Deutsche Bahn AG's move to rate us as a L1 supplier – acknowledging our production engineering standards and quality, as well as commercial aspects.

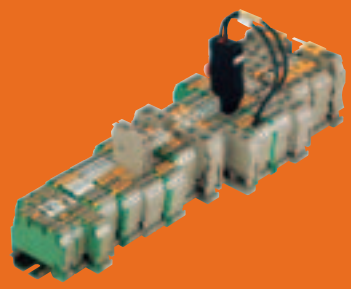
MODULARITY AND PLATFORM DESIGN

As the need for mobility grows, so do the demands placed on the various interior and exterior applications and components on railway. Increasingly individualised, higher-performance interfaces are particularly sought-after for the development of innovative platform concepts for different train types.

Weidmüller supports these innovative platform concepts with a whole range of solutions and a broad product portfolio.

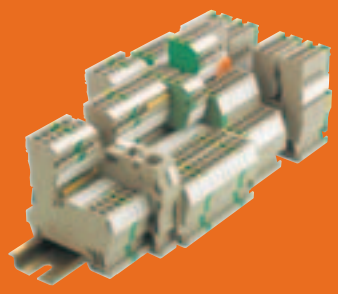


SAFE AND MODULAR



- Conductor cross-section 0.08–35 mm²
- Integrated test point
- Clear top-entry connection
- Pluggable cross-connections
- Mini terminals, 3.5 mm wide

Z series
Tension clamp terminals



- Wiring for prefabricated functional units
- Easy, faultless, pluggable connection
- Spring-powered pluggable contact
- Efficient, modular, flexible
- 500 V, 24 A

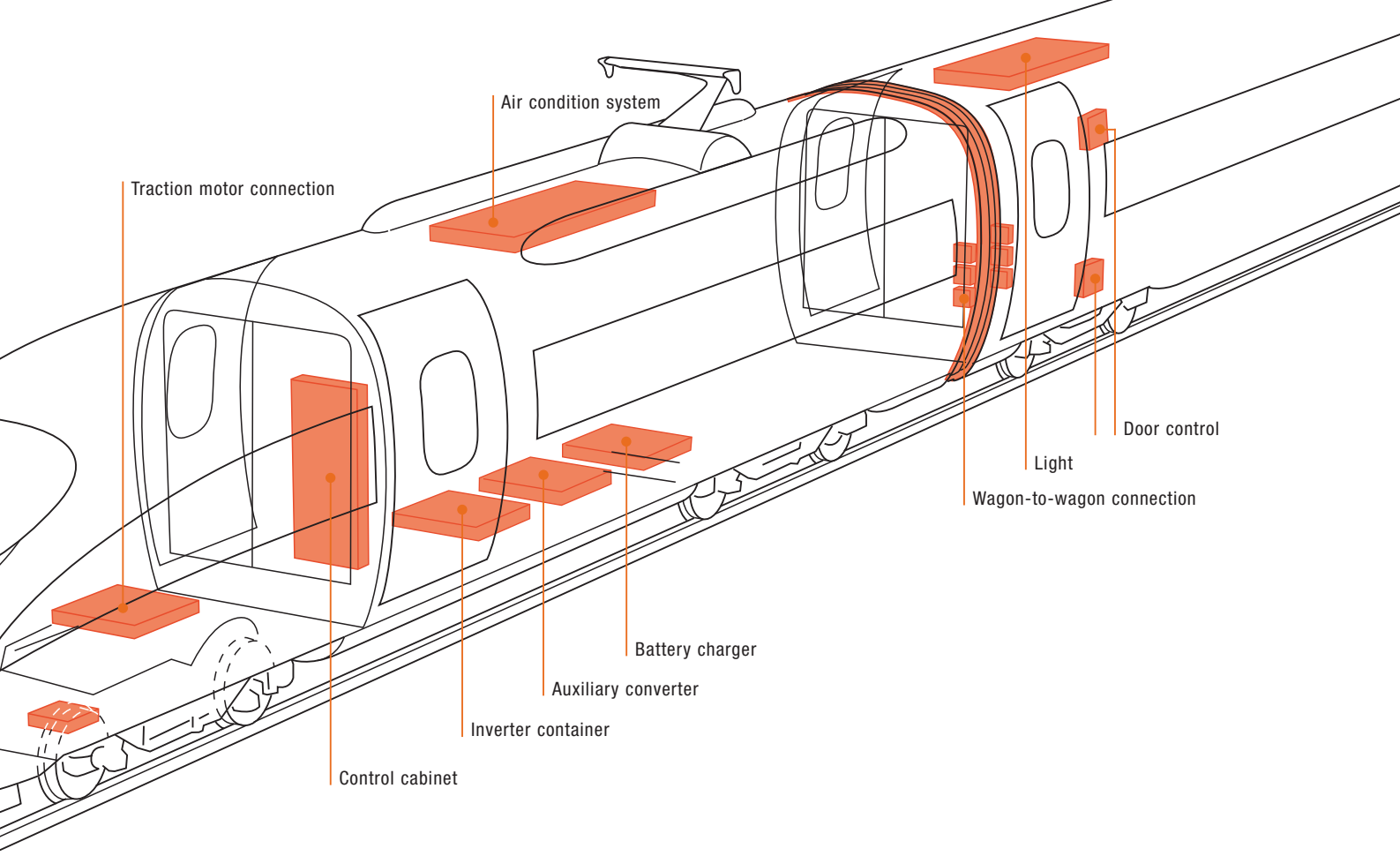
WeiCoS
Pluggable terminals

- Installation inside and outside of rail cars
- Robust Ethernet cable specially for railway applications
- Extruded cables customised IP67
- Connector with tension clamp connection

M12 D-coded
Ethernet connectors

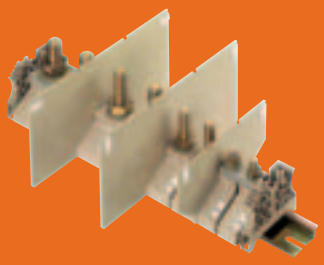
- Corrosion-resistant stainless steel enclosures
- Wide range
- Protection class IP67

NEXT range
Enclosures



- Efficient power distribution up to 4 kV
- Low voltage drop
- Self-extinguishing material, classified V0 according to UL 94
- Approved according to international railway standards such as EN 50343, EN 50155, NF F 61-017, NF F 16-101 and Ria 20

ST 4000
Stud terminals

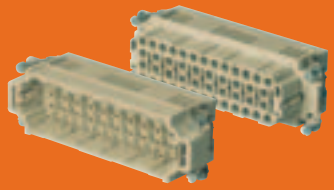


- Efficient power distribution on mounting rails up to 120 mm²
- Low voltage drop
- Self-extinguishing material, classified V0 according to UL 94
- 1,000 V (with epoxy resin partition up to 2,300 V)
- Approved according to international railway standards such as EN 50343, EN 50155, NF F 61-017, NF F 16-101 and Ria 20

WF series
Stud terminals

- Weight-optimised HDC housing
- EMC-protected
- Hardened surface
- Protection class IP68

RockStar®
Heavy-duty plug-in connector



- High power in a small space
- Up to 46 pins
- 500 V, 16 A
- Impact and vibration-tested accor ding to IEC 61373, category II

HEE
Inserts

WEIDMÜLLER AND THE RAILWAY INDUSTRY

High-speed trains, trams, metros or locomotives – they all run safely with electrical connection technology from Weidmüller. We have been cooperating with leading rail manufacturers around the world for years, in order to fulfil the demand for mobility by offering innovative, customer-specific solutions.

Our aim is to increase your competitiveness via simple, optimised connections and interfaces.

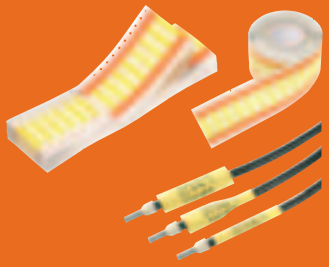
OPTIMUM SOLUTIONS

- 6 mm slim relay coupler
- Safe and quick tension clamp connection
- Self-extinguishing, insulating Wemid material, classified V0 according to UL 94
- Fulfils requirements according to EN 50155

MCZR TRAK
Relay coupler

- Safe shield connection
- Easy to use
- Quick assembly – no need for tools

KLBÜ 4-13
Shield connection



- Shrinkable sleeves that can be printed on both sides, for cable marking
- Halogen-free
- Complies with international traffic engineering standards

TwinMark
Shrinkable sleeves

- Ergonomic operation
- Self-adjustable stripping blades
- Integrated cutting function
- Long durability

stripax®
Stripping tool

CUSTOMER-SPECIFIC SERVICES

We have been offering our customers tailored services for over 35 years, with a focus on individually adapted enclosures and assembled mounting rails. And that means maximum flexibility and cost-effectiveness for you!

- Expert project consultancy
- Professional assembling, drilling, milling, coating, engraving and labelling
- More flexibility for your production

Customer-specific enclosures

SOLUTIONS FROM WEIDMÜLLER

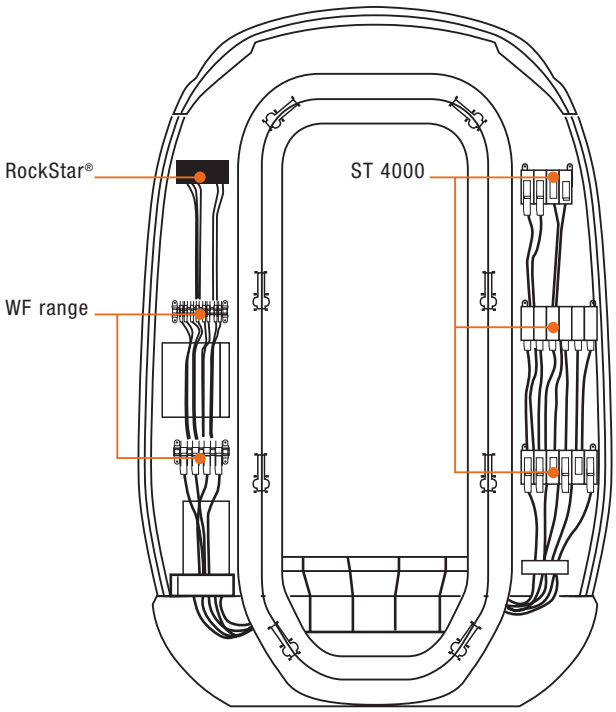
During the railway's life cycle, maintenance costs considerably outstrip acquisition costs. The time needed for servicing can be cut dramatically by using connections that are quickly disconnected, meaning that Weidmüller makes a significant contribution towards cutting life cycle costs (LCC).

We therefore fulfil our customers' demands for durability and cost-effectiveness – in all applications!

APPLICATIONS

Photos: DB AG (p. 1, 2, 6, 7, 8)

APPLICATION: WAGON-TO-WAGON CONNECTION



Robust products are essential in tough conditions, but they must also provide a cost-effective solution. Our stud terminals and heavy-duty plug-in connectors do just that: they are easily pluggable and easy to disconnect, making them perfect for quickly coupling wagons. The heavy-duty plug-in connectors with RockStar® housing guarantee fast signal transmission, e.g. of the WTB (wire train bus). Power is transmitted via ST 4000 stud terminals and the WF series.

- Reliable, high power transmission
- 4 kV, 415 A
- Vibration-tested according to IEC 61373, category II

ST 4000
Stud terminals

- Power transmission with optimised space
- Max. 2,300 V, 269 A
- Vibration-tested according to IEC 61373, category II

WF series
Stud terminals

- Quick-pluggable connection for control signals
- Weight-optimised HDC housing
- EMC-protected
- Hardened surface for extreme mechanical strain
- Protection class IP68

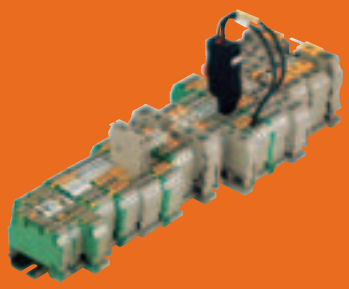
RockStar®
Heavy-duty plug-in connector

APPLICATION: CONTROL CABINET

All the train's control signals come together in one control cabinet. This is connected externally by means of heavy-duty plug-in connections. Our space-saving Z series terminals, MCZR TRAK-type relay couplers and diode holders maintain an electric connection and ensure that the signals in the control cabinet are analysed reliably.

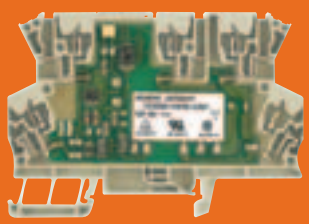
- Fulfil various requirements with just one plug-in connector
- Patented modular system
- Range of modules up to optical fibres and bus modules

HDC ConCept
Inserts



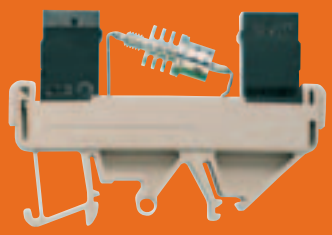
- Conductor cross-section 0.08–35 mm²
- Integrated test point
- Clear top-entry connection
- Pluggable cross-connections
- Mini terminals, 3.5 mm wide

Z series
Tension clamp terminals



- 6 mm slim relay coupler
- Safe and quick tension clamp connection
- Self-extinguishing, insulating Wemid material, classified V0 according to UL 94
- Fulfils requirements according to EN 50155

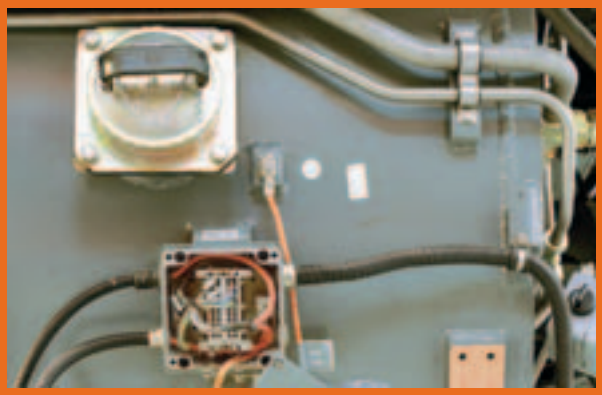
MCZR TRAK
Relay coupler



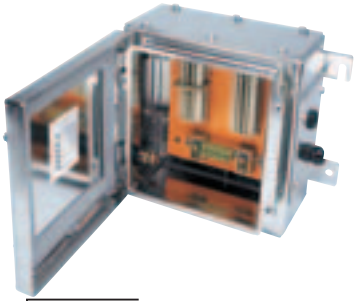
- Tried and tested tension clamp connection
- Protects from inverse current up to 3 A
- Vibration-resistant

Diode holder

APPLICATION: SANDING SYSTEM

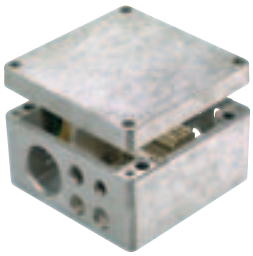


Signals control the opening of the sanding system slider via an electrical interface. The electrics are enclosed in K range aluminium enclosure with corrosion-resistant coating in order to protect them from extreme environmental conditions. Thanks to the use of ZDUB mini block terminals on a mounting rail measuring just 15 mm, the whole application takes up so little space that it fits next to the sand feeder.



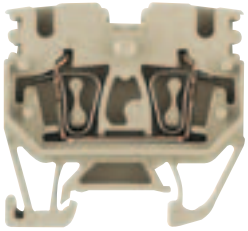
- Expert project consultancy
- Professional drilling, milling, coating, engraving and labelling
- More flexibility for your production
- “100 in 1” – we make one hundred single articles to one article

Customer-specific services



- Extremely light aluminium enclosures
- Chemical and weather-resistant
- Protection class IP67

K range
Enclosures



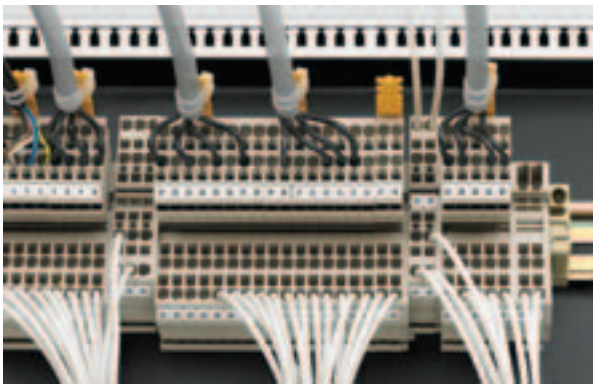
- Maximum power in minimum space
- Mounted on TS 15 rail
- Clear top-entry connection

ZDUB
Mini block terminals

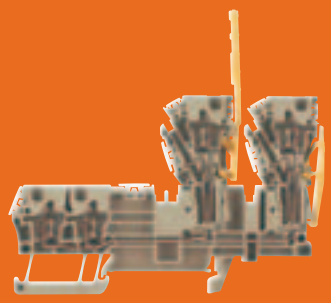
- Robust cable gland made of nickel-plated brass
- EMC cable gland
- High protection class IP68

Cable entries

APPLICATION: DOOR CONTROLS AND DRIVER'S CAB

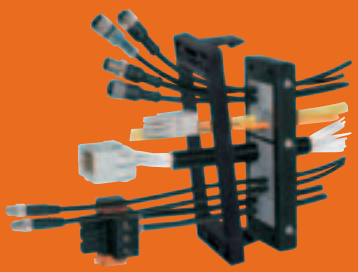


Flexible modular terminal concepts are needed wherever complete functional units are prefabricated or replaced. That's why terminals with WeiCoS-type plug-in connectors are used in the driver's cab and door controls. This combination makes it possible to connect prefabricated functional units with the existing installation quickly and faultlessly. Simply insert the plug-in connector into the terminal and you're done! A spring-powered contact and the locking elements guarantee that the contact withstands impacts, vibration and jolts.



WeiCoS
Pluggable terminals

- Easy final assembling with pluggable terminals
- Modular design for prefabricated functional units
- Easy, faultless, pluggable connection

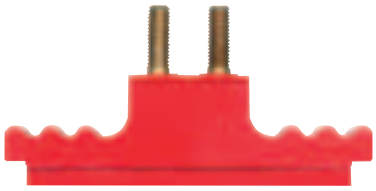


Cabtite
Cable entries

- For feeding in prefabricated cables
- Quick and easy assembly
- For standard HDC panel cut-outs
- Protection class IP54

APPLICATION: TRACTION MOTOR CONNECTION

In modern high-speed trains, high currents are supplied to the motors to enable the train to accelerate to its top speed. Our ST 4000 stud terminals have been specially developed to transfer such high currents for railway. The ST 4000 stud terminals are protected from external conditions such as splashes of water, dust and stones by corrosion-resistant stainless steel enclosure from our TB range.



ST 4000
Stud terminals

- Supply drive power up to 4 kV, 415 A
- Vibration-tested according to IEC 61373, category II
- Self-extinguishing material, classified V0 according to UL 94
- Low emissions, classified I2 F0 according to NF F16 101

TB range
Enclosures

- Robust stainless steel enclosures
- Lid with concealed hinges
- Fixing lugs
- Corrosion-resistant electropolished stainless steel
- Protection class IP66

TESTED AND CERTIFIED

UNCOMPROMISING QUALITY

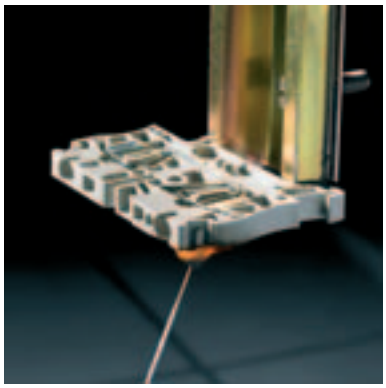
The components used for transport technology are constantly exposed to extreme conditions. That's why our products are tested in our own accredited laboratory for particularly relevant criteria such as resistance to vibration, impacts and extreme temperatures, as well as durability and electromagnetic compatibility.

To make sure you always receive top quality from Weidmüller, each of our products is subject to strict quality assurance and fulfils the following international railway norms and standards:

General: DIN EN 50155, DIN EN 50343, NF F 61-017
Behaviour in fire: NF F 16-101, BS 6853, ASTM E 162
Resistance to impacts and vibration: IEC 61373/Ria 20

Our railway industry CD-ROM contains everything you need to know about standards and approvals, tests passed according to railway norms, references, material tests and lots of further information.
You can order your free copy of the railway industry CD-ROM by e-mailing railway@weidmueller.com.

FOR EXTREME CONDITIONS



Left: Testing for impact and vibration-resistance simulates different mechanical strains in the vehicle or on the bogie.
Right: We use the needle flame test to investigate how the plastics used behave in fire.

FOR ABSOLUTE SAFETY

Left: Our products are exposed to different climates in modern climatic test chambers.
Right: One of the many stages of quality control: the EMC test.

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Tunisia
Turkey
UAE
Ukraine
United Kingdom
Uruguay
USA
Venezuela
Vietnam
Yemen

Weidmüller is the leading provider of solutions for electrical connectivity, transmission, conditioning and processing of power, signals and data in industrial environments. The company develops, produces and sells products in the field of electrical connectivity, functional electronics and communication electronics. Weidmüller's product and service portfolio is dedicated to add value to the products and thereby the business of our customers. The Weidmüller Group has a global focus with its own manufacturing plants, sales companies and representatives in over 70 countries.

Order number:
5662420000/04/2008/SMMW

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