Solutions for energy storage

Connection technology and electronics housings

PHOENIX CONTACT

Energy storage as the link for sector coupling

Electrical energy storage devices play a crucial role in the implementation of sector coupling. They enable fluctuations in renewable energy to be compensated, thus guaranteeing a stable power supply. They are used to stabilize the grid in the event of strong load fluctuations and support restart in the event of total mains failure. In addition, they can be used to create autonomous island grids. For these and other applications, energy storage devices must operate safely, reliably, and efficiently. The electrical connection technology has a considerable influence here.

Residential storage

Coupled with a photovoltaic system, energy storage devices play a huge role in homes. The proportion of self-generated electrical energy used in the household's own electricity consumption is increased significantly and continuous autonomous supply is possible in the event of a malfunction in the public grid.

Industrial storage

Energy storage devices have long been used in commercial buildings and factories to provide uninterruptible power supply. New technologies extend the range of possible applications in energy management. For example, using energy storage devices to cap peak loads significantly reduces energy costs for companies.

Utility-scale storage

Utility-scale storage systems are used to support the grid. For example, they allow high peak loads at fast charging stations for electric vehicles despite inadequate grid infrastructure. Another use of utility-scale storage systems is in the energy trade, i.e., the storage and provision of energy depending on the price of electricity.

Contents

Energy storage system components

Energy storage systems are more than just batteries. In fact, they are made up of different components that all contribute to the function of the overall system. These include, for example, converters for converting the current, monitoring equipment, controllers, and storage components that can be connected to each other on various levels. Rely on connection technology from Phoenix Contact for your energy storage solution. With our new battery connectors, broad portfolio of industrial-grade network connectors, and comprehensive PCB connection technology, we have the right products to meet your requirements.

Your advantages

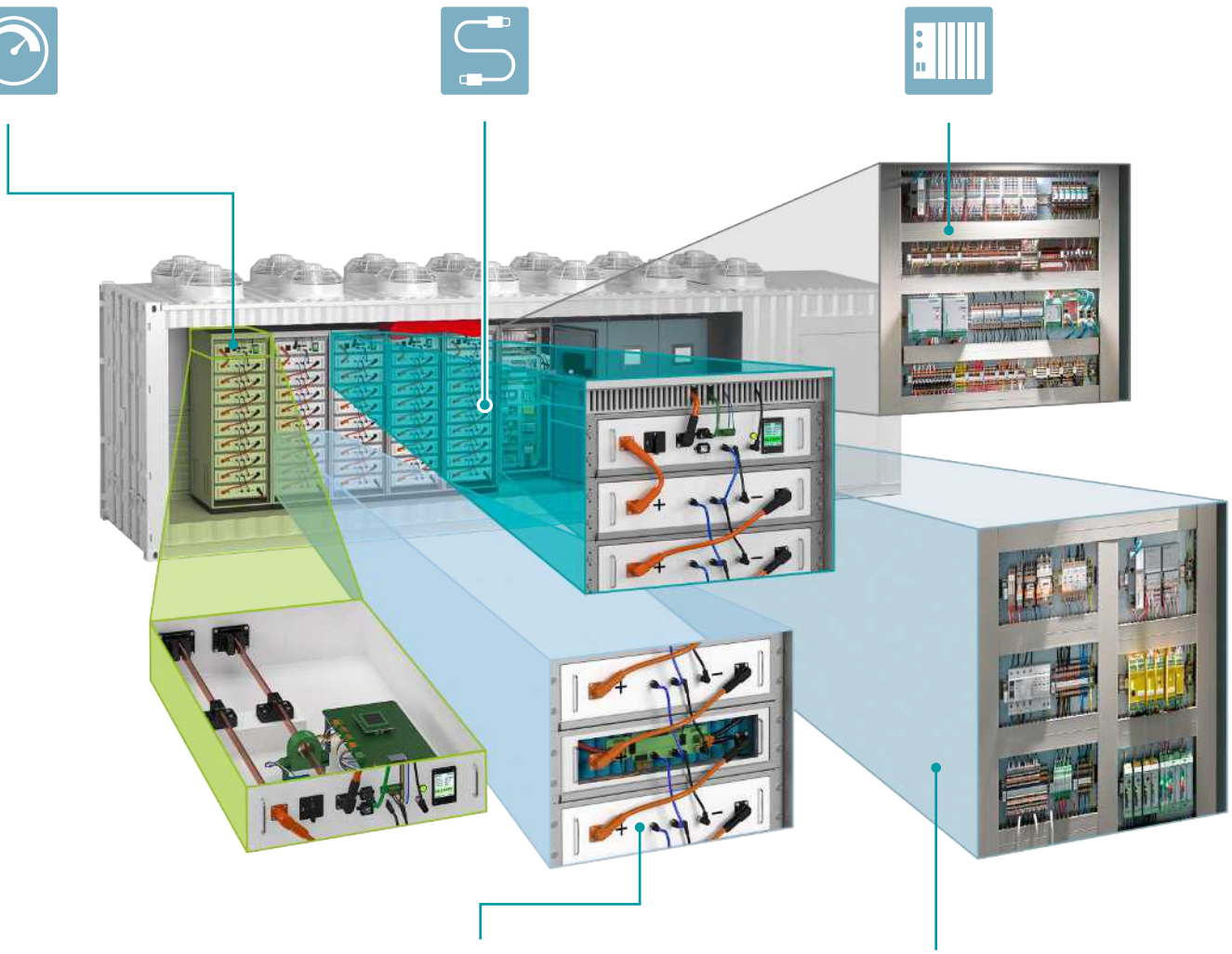
- ☑ Unrivalled portfolio of PCB connections, connectors, and electronics housings that demonstrate our strong innovation power
- ☑ Solutions for signal, data, and power transmission from a single source
- ☑ Comprehensive options for customization right through to developing new customer-specific products
- ☑ Specialists with know-how: our experts have extensive knowledge of technology and applications
- ☑ Reliable partner with almost 100 years of experience in delivering high product quality and professional services

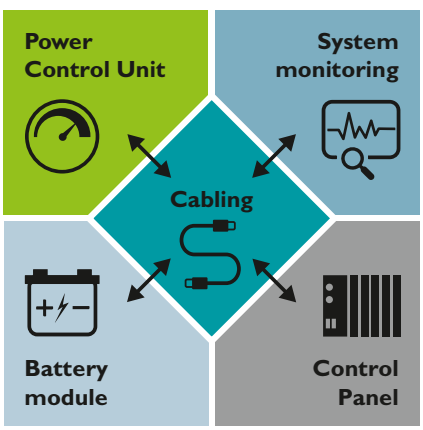
Structure of an energy storage system

Power Control Unit
At rack level, the Power Control Unit controls the individual battery modules. It is used to organize the charging and discharging processes of the battery modules and ensure their safe operating state. To do this, it monitors currents and voltages and the temperatures inside the modules.

Cabling
All components, modules, and organization levels within an energy storage system are electrically interconnected. This is either done directly or using pre-assembled cabling solutions for data, signals, and power as well as based on busbars.

System control
At the highest organizational level of an energy storage system, the system control coordinates all the processes within the system. This ensures that both the Power Control Units of the enclosed racks and the auxiliary units are addressed. In addition, the system control handles the external communication.





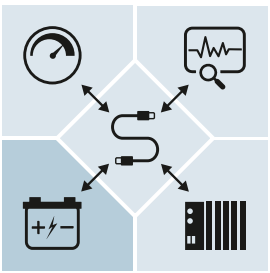
Battery module
Battery modules are the core element of the energy storage system. They contain battery cells in which the electrical charge is stored as chemical energy. Each battery module features cell balancing, which ensures that all the battery cells maintain an equal state of charge. Sensors monitor the temperature.

System monitoring
For reasons of safety and efficiency, processes and states are monitored with a high degree of accuracy on all levels of an energy storage system. This begins with measuring the temperatures inside the battery modules and continues all the way to monitoring external influencing factors.

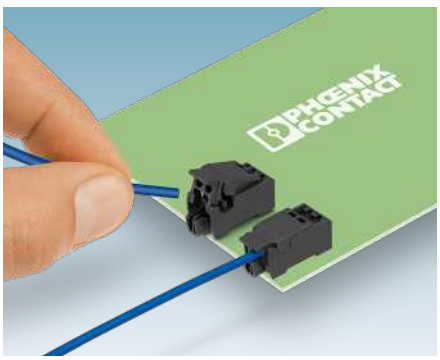
Connection technology for the battery module

The core element of the energy storage system is the battery module. It usually consists of a large number of battery cells connected in parallel or in series. A controller ensures the uniform state of charge of the individual battery packs. This is called balancing.

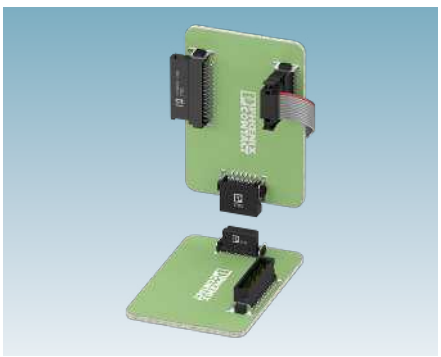
The battery modules can be regarded as devices with housing and external as well as internal interfaces for signals, data, and power. For quick and safe installation and convenient maintenance, the external connections ideally have a plug-in design. The requirements for the data interfaces are not that complex, which is why unshielded cables and two-wire communication are often permitted. As for the power connections, voltages up to 1,500 V and currents over 100 A are to be expected through the series connection.



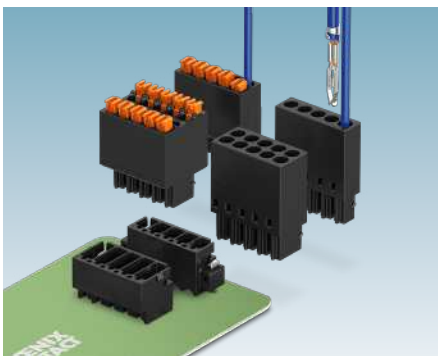
Examples of connection technology in the battery module



The IDC connection technology of the PTQ is user-friendly and produces reliable connections in no time.

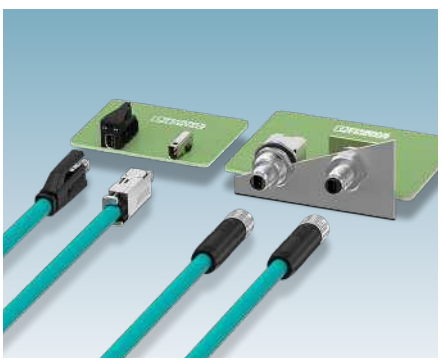


The board-to-board PCB connectors from the FINEPITCH series are available with different connection directions and numbers of positions. Versions in different heights provide a great deal of flexibility when it comes to design.

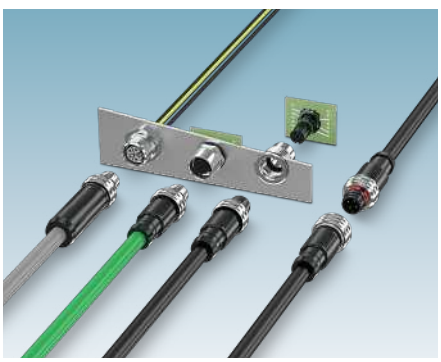


The DFMC/DMCC series enables crimp connections and Push-in connections to be used with the same header.

The battery-pole connectors from the ES-BPC series are designed for system voltages up to 1,500 V and a wide range of conductor cross-sections and currents.



Single Pair Ethernet (SPE) is the new generation of Ethernet technology, providing application-oriented reduced cabling from the sensor to the cloud.

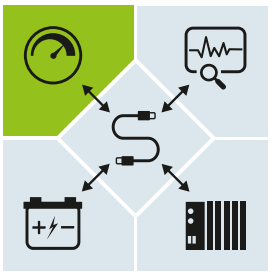


Circular connectors are particularly suitable for data and signal interfaces with high environmental requirements.

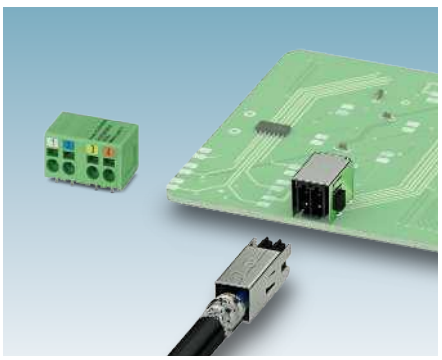
Connection technology for the Power Control Unit

The Power Control Unit integrates the battery modules of a rack to form a unit and controls their operating state. To do this, the enclosed electronic circuits are equipped with connections for sensor technology and data communication. The energy flow between the rack and higher-level system control is also bundled inside the PCU and the auxiliary units are controlled at rack level.

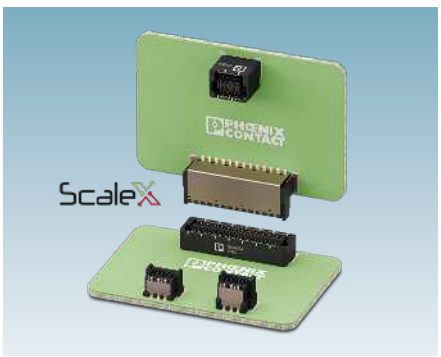
To perform these tasks, the PCU features interfaces to the battery modules and to the higher-level system management. Data communication with a higher instance requires data rates in the higher Mbit range and high data integrity. The interfaces need to be implemented accordingly. The power connections should be designed for high voltages up to 1,500 V and for currents of several hundred amps.



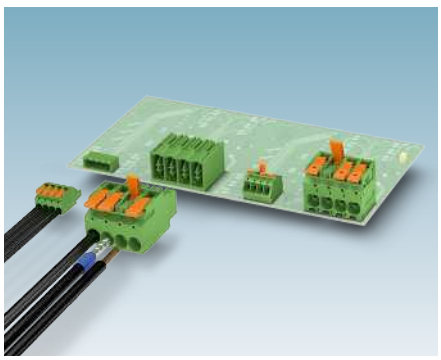
Examples of connection technology in the Power Control Unit



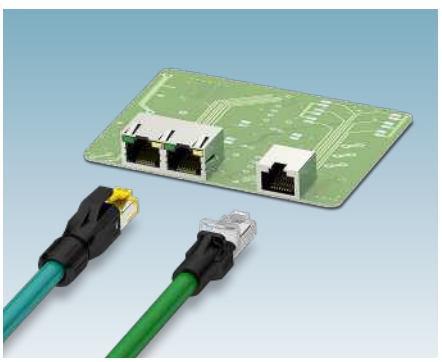
PROFINET connections can be implemented with the SPT PCB terminal block. The shielded PCB connectors from the DMCC series are suitable if interference signals are present.



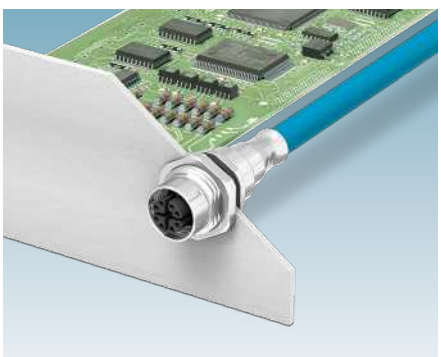
The shielded versions from the FINEPITCH series are optimized for a very high level of electromagnetic compatibility (EMC) and high data transmission rates up to 20 Gbps.



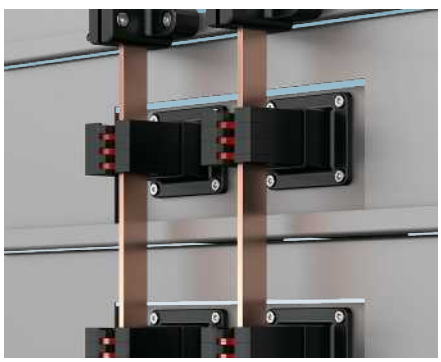
The LPT and LPC lever-actuated PCB terminal blocks and PCB connectors combine the reliability of Push-in spring connection with extremely user-friendly lever actuation.



The RJ45 interface stands for reliability and security when connecting your data lines and transmitting your data.



M8-M12 devices connectors are the connection solution for signal, data, and power supply in harsh industrial environments.

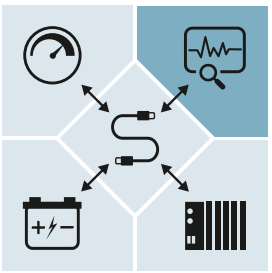


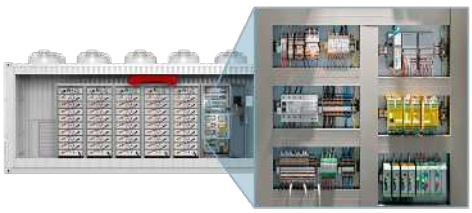
The BBC series busbar connection technology for slide-in systems can be easily scaled. This allows for very high currents.

Connection technology for the system monitoring

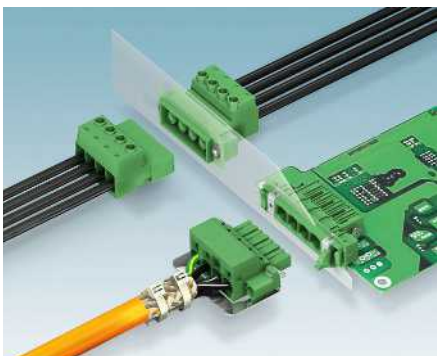
In the system monitoring, sensor signals and data relating to the operating state of the various units converge on different levels. This information is consolidated and the data is processed for the respective controllers. Safe and efficient operation of the energy storage is thus always ensured.

In particular, signal connections play a crucial role in the system monitoring – whether on the PCB for sensor connection or as a device interface. Panel feed-through terminal blocks and circular connectors are therefore also used here.

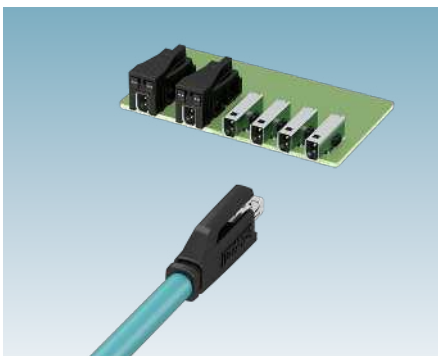




Examples of connection technology in the system monitoring

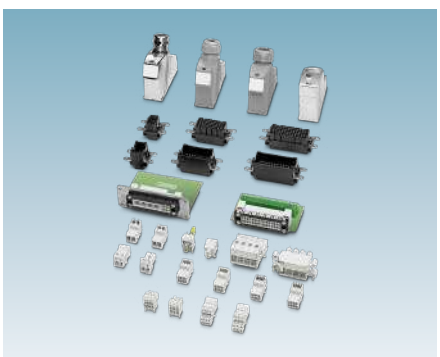


Signal connections can be implemented quickly and conveniently on the device using feed-through connectors for indoor use.

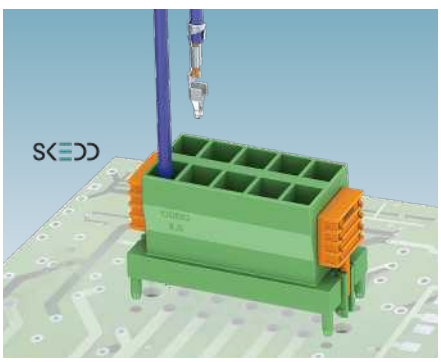


SPE technology was designed to address intelligent sensor technology digitally, without the inconvenience of AD converters.

Circular connectors ranging from M5 through M12 to M23 can be used to implement up to 19-pos. signal lines or hybrid interfaces for combined signal and data lines.



The rectangular connectors from the VARIOCON series feature a modular design. They allow a great deal of flexibility when it comes to the design of the signal interfaces.



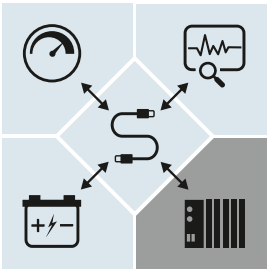
SKEDD is a tool-free direct-connection technology for signals with up to 24 positions. It reduces component and process costs.

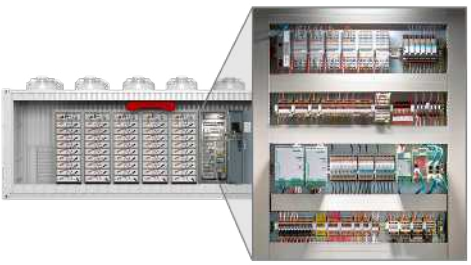
The D-SUB range represents a classic signal interface. A wide range of sizes and numbers of positions enable a high degree of flexibility.

Connection technology for the system control

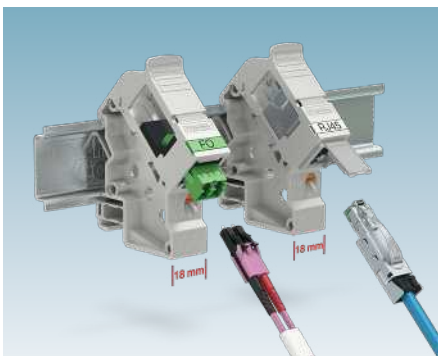
The system control combines the entire ensemble of storage elements and auxiliary units and controls them on a higher level. It also communicates with the outside world, receives requests for the provision or intake of energy, and manages the storage based on programmed strategies.
Power and communication are therefore the main focus of the system control. When it comes to data transmission, copper-based connections as well as fiber-optic systems are used.

The connection technologies are just as important when it comes to high power ratings. Often there is a connection to the AC grid. However, DC-coupled energy storage systems are also becoming more common. Electronics housings are used to integrate custom-designed control modules into the control cabinet. Individual adaptation options in terms of design and functionality are an important prerequisite.

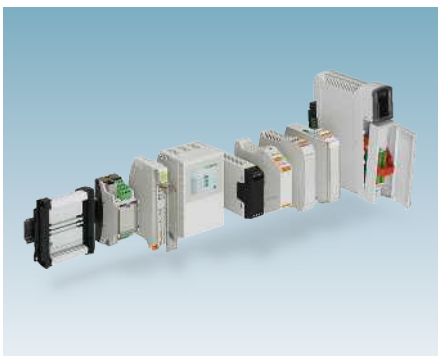




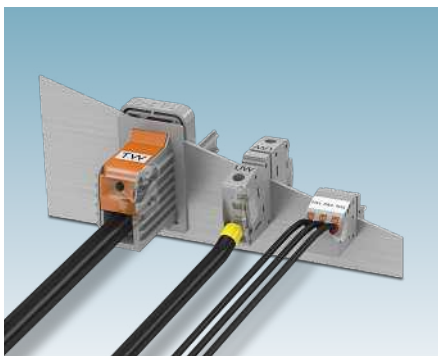
Examples of connection technology in the system control



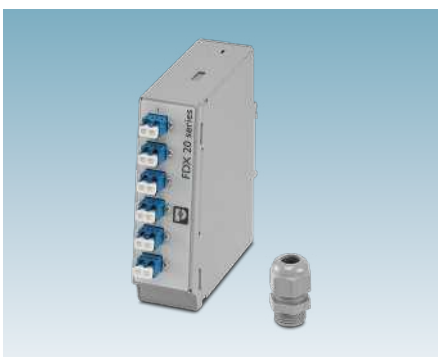
Robust RJ45 and FO modules for industrial applications are available in versions for DIN rail mounting.



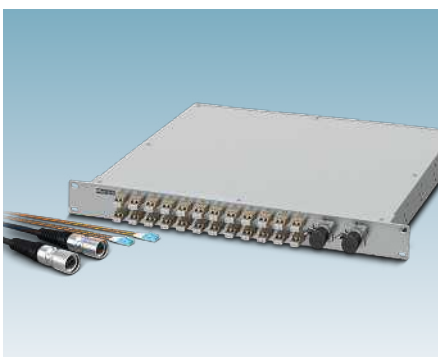
Electronics housings with a high degree of variability protect smaller hardware modules in the control cabinet.



The right connection for every application: high-current panel feed-throughs are available with Push-in, screw, or knee-lever connection.



The FDX20 splice box is designed for DIN rail mounting. It enables reliable real-time data transmission.



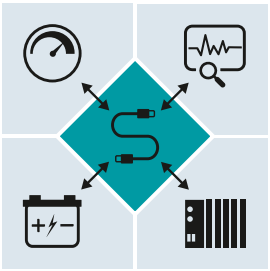
The 19 inch marshalling panel from the FDX20 series combines high packing density with a high degree of flexibility for fiber-optic data transmission.

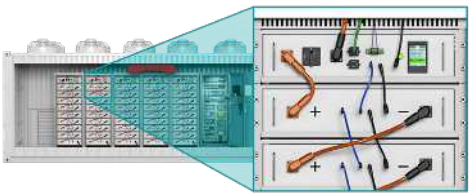
Reliable data connections are implemented in the device using FO transceivers.

Connection technology for the cabling

The entire energy storage system consists of components, modules, racks, and control cabinets as well as auxiliary units. The electrical connection of these various units is achieved using pre-assembled cable sets or during final installation at the installation location using cables assembled in the field. Cables for power, data, and signal transmission with corresponding connectors are used for this.

The requirements are determined by the application in question and the installation location. Insulation capability, resistance to mechanical, thermal, and chemical influences, bending radii of conductors, the number of wires, and approvals are just some of the requirements that need to be considered.

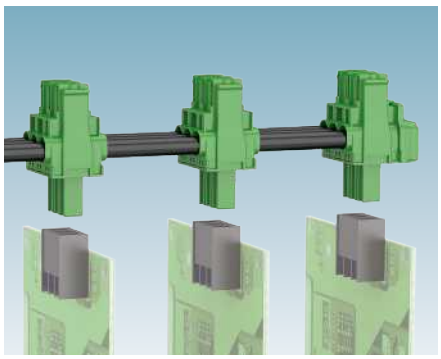




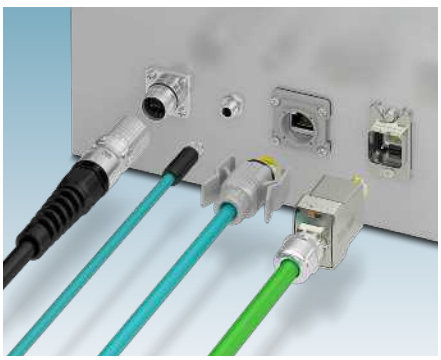
Examples of connection technology for the cabling

The battery-pole connectors from the BPC series allow flexible and reliable front cabling for currents up to 350 A and voltages up to 1,500 V.

The BBC busbar connection system provides a convenient system cabling solution – it is blind-mating, touch-proof, and scalable up to 200 A at 1,500 V.



The PC 6/...-ST-BUS series of PCB connectors was developed in order to establish energy bus systems with custom arrangements and without conductor pretreatment.



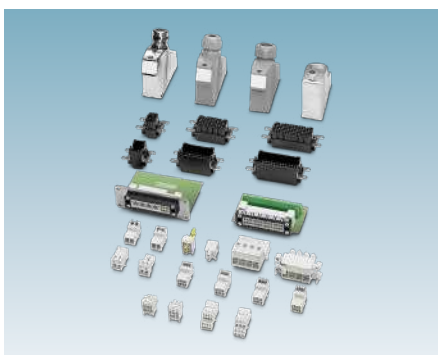
Even if IP-protected data interfaces are required, Phoenix Contact provides different solutions for the various pin connector patterns.

Our configurators allow you to choose pre-assembled cables in the desired length with freely selectable connector versions.

The fiber-optic patch cables enable data rates of up to 40 Gbps with connections for SC duplex, LC duplex, ST duplex, LC quad, and E-2000® as well as POF, PCF, and GOF fibers.

Coded DC connectors were developed for energy storage applications up to 1,500 V/40 A. With proven spring connection technology, tool-free field assembly is possible.

The RJ45 data connectors are available in various designs as connectors for field assembly. Along with versions for crimp connections, tool-free alternatives are also available.

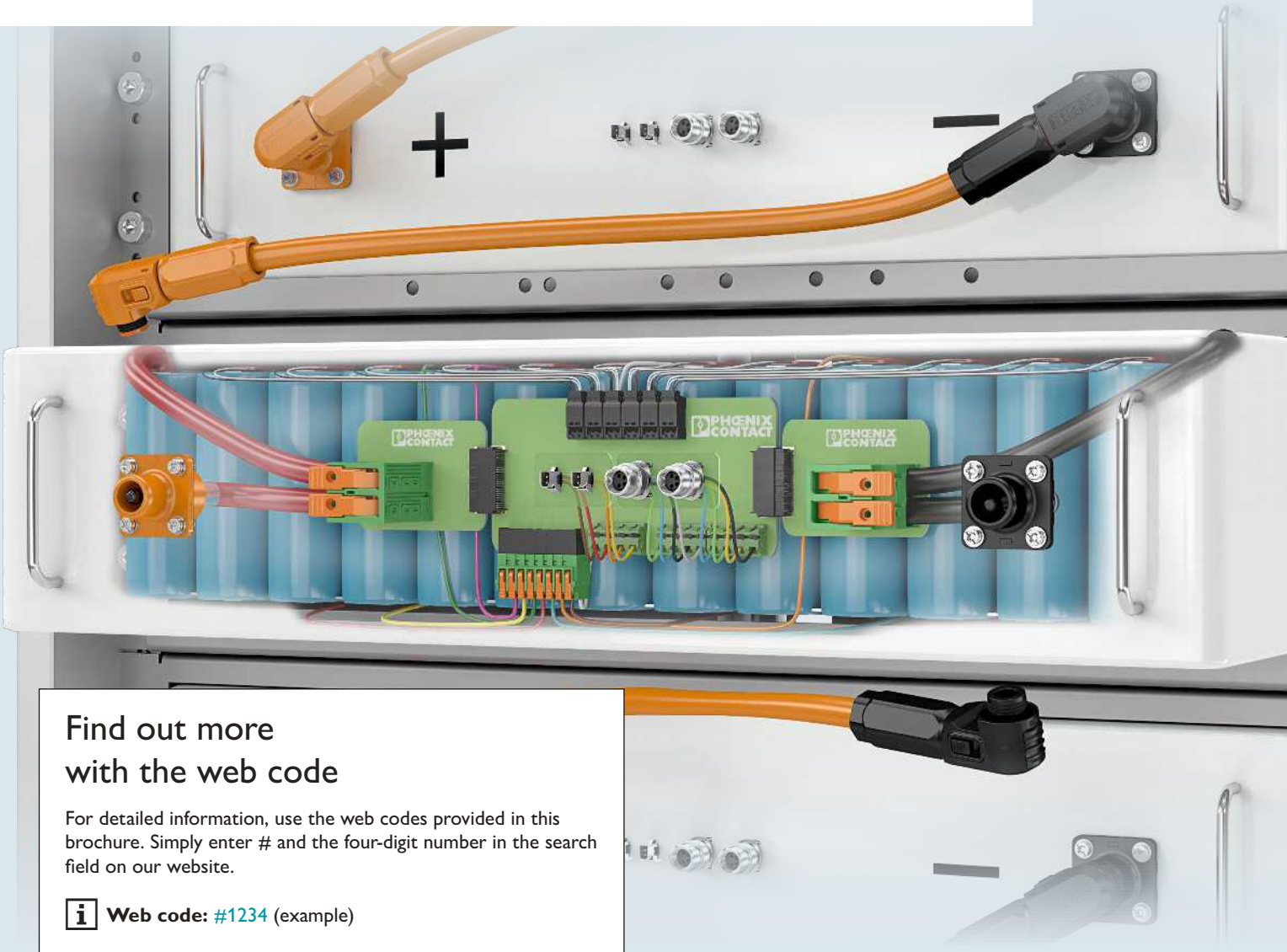


The VARIOCON modular rectangular connector enables the convenient field assembly of complex hybrid interfaces. Signals, data, and power can be easily combined.

Solutions for wiring your energy storage

Each level of an energy storage solution places different requirements on the electrical connection technology for signals, data, and power. A comprehensive portfolio for device and field wiring covers these requirements.

The following pages represent just a selection of our extensive range. Use the web codes to view the many different versions available in our product families on our website.



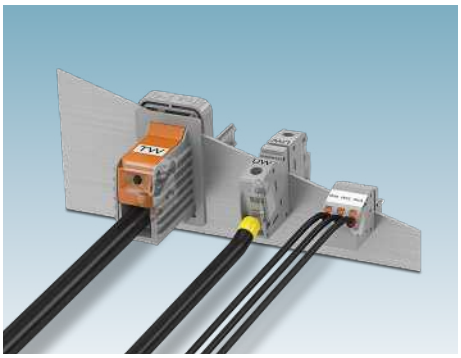
Find out more with the web code

For detailed information, use the web codes provided in this brochure. Simply enter # and the four-digit number in the search field on our website.

Web code: #1234 (example)

Or use the direct link:
phoenixcontact.net/webcode/#1234 (example)

Connection technology for signal, data, and power transmission

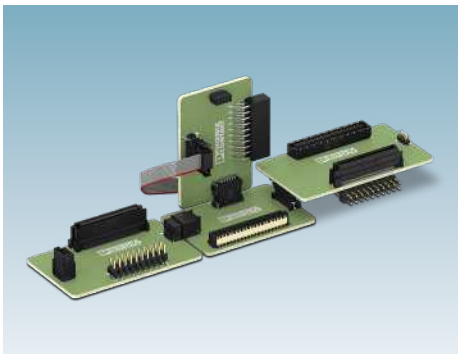


High-current feed-through terminal blocks

You can also route high currents reliably and permanently through panels. The choice of connection method is yours.

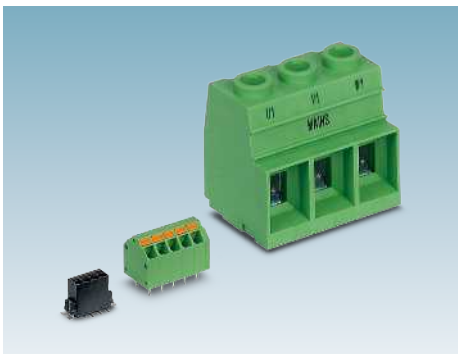
Power connectors

Pluggable solutions for energy storage devices for front or rear connection.



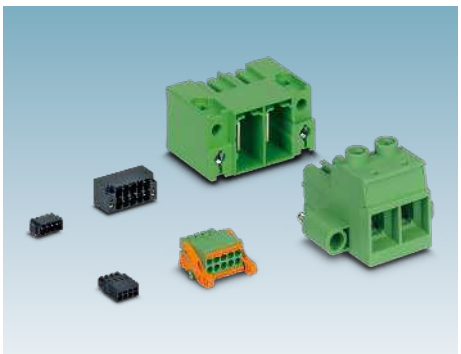
Board-to-board connectors

Robust FINEPITCH series board-to-board connectors.



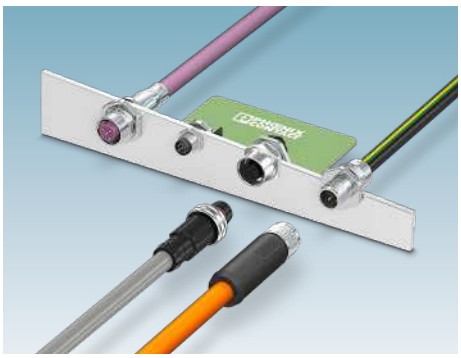
PCB terminal blocks

The product range features numerous versions to meet the highest demands.



PCB connectors

Flexible connection – quick connection and free choice of connection method.

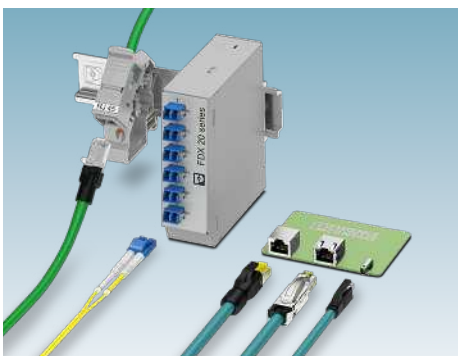


M8 and M12 circular connectors

Circular connectors for the reliable transmission of signals, data, and power.

M23 circular connectors

Hybrid connectors for the reliable and compact transmission of signals, data, and power in a single connector.



Data connectors

The data connector portfolio for all device interfaces.

Electronics housings

The wide range of electronics housings provides you with endless possibilities when designing your device.

High-current feed-through terminal blocks

High-current feed-through terminal blocks for conductor cross-sections up to 10 mm² (AWG 8)

Screw connection with tension sleeve

Web code: #1230	Type	Connection inside	Notes	Number of positions	Current [A]	Voltage [V]	Connection direction
	UW 10 UW 10-POT	Screw and solder connection	POT versions suitable for molding	1-pos. alignable	57 IEC 65 UL (B, C)	630 IEC 300 UL (B, C)	0°
	UWV 10 UWV 10-POT	Screw and solder connection	POT versions suitable for molding	1-pos. alignable	57 IEC 65 UL (B, C)	630 IEC 300 UL (B, C)	-90°

High-current feed-through terminal blocks for conductor cross-sections up to 16 mm² (AWG 6)

Screw connection with tension sleeve

Web code: #0833	Type	Connection inside	Notes	Number of positions	Current [A]	Voltage [V]	Connection direction
	UW 16 UW 16-POT	Screw and bolt connection	POT versions suitable for molding	1-pos. alignable	76 IEC 85 UL (B, C)	1000 IEC 600 UL (B, C)	0°
	UWV 16 UWV 16-POT	Screw and bolt connection	POT versions suitable for molding	1-pos. alignable	76 IEC 85 UL (B, C)	1000 IEC 600 UL (B, C)	-90°

Push-in spring connection

Web code: #0834	Type	Connection inside	Notes	Number of positions	Current [A]	Voltage [V]	Connection direction
	PWO 16-UW PWO 16-POT	Screw and bolt connection	POT versions suitable for molding	1-pos. alignable	76 IEC 66 UL (B, C)	1000 IEC 600 UL (B, C)	45°

High-current feed-through terminal blocks for conductor cross-sections up to 50 mm² (AWG 1/0)

T-LOX knee-lever connection

Web code: #0841	Type	Connection inside	Notes	Number of positions	Current [A]	Voltage [V]	Connection direction
	TW 50	Bolt connection	–	1 ... 6	150 IEC 150 UL (B, C)	1000 IEC 600 UL (B, C)	0°

Power connectors

Coded DC connectors and device connectors

Web code: #2711

Coded DC connectors				
Description	Spring-cage connector		Crimp connector	
Nominal voltage	1500 V			
Nominal current	35 A (TÜV) / 50 A (UL)			
Degree of protection	IP66/IP68			
Conductor cross-section	2.5 - 6 mm²			
Type	ES-C4M-S-CO2	ES-C4F-S-CO1	ES-C1M-C-CO2	ES-C1F-C-CO1
Item no.	1231075	1231076	1231073	1231074
Device plugs				
Item no.	1231072	1231071	1231072	1231071

Battery-pole connectors and device connectors

Web code: #2346

Sample box
Item no. 1265149

Battery-pole connectors								
Conductor cross-section	16 - 25 mm²		35 mm²		50 - 70 mm²		95 - 120 mm²	
Nominal current	Max. 120 A		Max. 160 A		Max. 250 A		Max. 350 A	
Nominal voltage	1500 V							
Degree of protection	IP65							
Color	Orange	Black	Orange	Black	Orange	Black	Orange	Black
Type	ES-BPC-C 16-25 OG	ES-BPC-C 16-25 BK	ES-BPC-C 35 OG	ES-BPC-C 35 BK	ES-BPC-C 50-70 OG	ES-BPC-C 50-70 BK	ES-BPC-C 95-120 OG	ES-BPC-C 95-120 BK
Item no.	1106306	1106307	1176276	1176270	1155594	1155595	1298070	1298071
Device plugs								
Crimp connection	1228824	1228823	1176284	1176282	1228827	1228826	1298078	1298077
Threaded bolt	1106303	1106304	1228821	1228819	1228821	1228819	1298080	1298079
Current bar with elongated hole	1130816	1130814	1155483	1155592	1155483	1155592	1298082	1298081
Current bar with threaded hole	1231638	1231639	1228829	1228828	1228829	1228828	1298076	1298075

Power connectors

Modules and panel-mount frames for busbar connectors					
Web code: #2674					
Modules					
Nominal current	40 A	80 A	120 A	160 A	200 A
Nominal voltage	1500 V				
Degree of protection	IP20				
Type	ES-BBC-5-1 BK	ES-BBC-5-2 BK	ES-BBC-5-3 BK	ES-BBC-5-4 BK	ES-BBC-5-5 BK
Item no.	1155597	1155598	1155599	1155600	1155601
Panel-mount frames					
Type	ES-BBC-MF1	ES-BBC-MF2	ES-BBC-MF3	ES-BBC-MF4	ES-BBC-MF5
Item no.	1155603	1155604	1155605	1155607	1155609

Board-to-board connectors

Shielded male and female connector strips with 0.8 mm pitch

Web code: #2050



Type	FP 0,8/…MV-SH	FP 0,8/…MH-S	FP 0,8/…FV-SH	FP 0,8/…FH-SH
Note	Male connector strip, shielded		Female connector strip, shielded	
Number of positions	12 - 80			
Pitch [mm]	0.8			
Current [A]	1.7			
Data transmission	Speed of up to 16 Gbps			
Connection direction	Vertical	Horizontal	Vertical	Horizontal

Unshielded male and female connector strips with 0.8 mm pitch

Web code: #2330


Type	FP 0,8/…MV	FP 0,8/…MH	FP 0,8/…FV	FP 0,8/…FH
Note	Male connector strip, unshielded		Female connector strip, unshielded	
Number of positions	12 - 80			
Pitch [mm]	0.8			
Current [A]	1.7			
Data transmission	Speed of up to 16 Gbps			
Connection direction	Vertical	Horizontal	Vertical	Horizontal

Unshielded male and female connector strips with 1.27 mm pitch

Web code: #1520






Type	FP 1,27/…MV	FP 1,27/…MH	FP 1,27/…FV	FP 1,27/…FH	FP 1,27/…FWL	FP 1,27/… FWL/…
Note	Male connector strip, unshielded		Female connector strip, unshielded		IDC female connector strip	Pre-assembled IDC female connector strip
Number of positions	12 - 80					
Pitch [mm]	1.27					
Current [A]	1.4					
Data transmission	–					
Connection direction	Vertical	Horizontal	Vertical	Horizontal	–	–

PCB terminal blocks

PCB terminal blocks for conductor cross-sections up to 0.5 mm² (AWG 20)

Screw connection with tension sleeve

Web code: #0705	Type	Notes	Number of positions	Pitch [mm]	Current [A]	Voltage [V]	Connection direction
	MPT 0,5	–	2 ... 12	2.54	6 IEC 6 UL (B)	160 IEC 125 UL (B)	0°

Push-in spring connection

Web code: #0706	Type	Notes	Number of positions	Pitch [mm]	Current [A]	Voltage [V]	Connection direction
	PTSM 0,5/...-H-SMD	Black, SMT soldering	2 ... 8	2.5	6 IEC 5 UL (B)	160 IEC 150 UL (B)	0°
	PTSM 0,5/...-V-SMD						90°

Insulation displacement connection (IDC)

Web code: #0707	Type	Notes	Number of positions	Pitch [mm]	Current [A]	Voltage [V]	Connection direction
	PTQ 0,3	–	2	2.5	4 IEC 2 UL (B)	160 IEC 150 UL (B)	0°

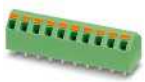
PCB terminal blocks for conductor cross-sections up to 1.5 mm² (AWG 16)

Screw connection with tension sleeve

Web code: #0709	Type	Notes	Number of positions	Pitch [mm]	Current [A]	Voltage [V]	Connection direction
	MKDS 1	–	2 ... 16	3.5/3.81	13.5 IEC 10 UL (B, D)	200 IEC 300 UL (B, D)	0°
	MKDS 1,5	Also available with internal bridging and test point	2-/3-pos. alignable	5.0/5.08	17.5 IEC 15 UL (B) 10 UL (D)	400 IEC 300 UL (B) 300 UL (D)	0°

Push-in spring connection

Web code: #0710	Type	Notes	Number of positions	Pitch [mm]	Current [A]	Voltage [V]	Connection direction
	SPT-THR 1,5/...H	THR soldering, various pin lengths available	2 ... 12	3.5/3.81	13.5 IEC 10 UL (B, D)	160 IEC 300 UL (B, D)	0°
	SPT-THR 1,5/...-V						90°
	SPTA-THR 1,5	THR soldering	2 ... 12	3.81	13.5 IEC 10 UL (B, D)	160 IEC 300 UL (B, D)	45°
	SPTA 1,5/	–	2 ... 12	3.81	9 IEC 10 UL (B)	160 IEC 300 UL (B)	45°
	SPT 1,5/...-H	–	2 ... 12	3.5	17.5 IEC 10 UL (B, D)	200 IEC 300 UL (B, D)	0°
	SPT 1,5/...-V						90°

Push-in spring connection							
Web code: #0710	Type	Notes	Number of positions	Pitch [mm]	Current [A]	Voltage [V]	Connection direction
	SPTAF 1/...-LL	Release button with latching function	2 ... 16	5.0	13.5 IEC 8 UL (B, D)	320 IEC 300 UL (B, D)	45°
	SPTA 1,5/	–	2 ... 12	5.08	9 IEC 10 UL (B, D)	320 IEC 300 UL (B, D)	45°

PCB terminal blocks for conductor cross-sections up to 2.5 mm² (AWG 14)

Screw connection with tension sleeve							
Web code: #0713	Type	Notes	Number of positions	Pitch [mm]	Current [A]	Voltage [V]	Connection direction
	MKDS 3	Also available with internal bridging and test point	2-/3-pos. alignable	5.0/5.08	24 IEC 15 UL (B) 10 UL (D)	400 IEC 300 UL (B) 300 UL (D)	0°
	SMKDS 3	–	2-/3-pos. alignable	5.0/5.08	24 IEC 15 UL (B) 10 UL (D)	400 IEC 300 UL (B) 300 UL (D)	55°
	TDPT 2,5/...-SC	PCB terminal block of the same shape also available with Push-in spring connection	2 ... 12	5.08	24 IEC 20 UL (B) 10 UL (D)	400 IEC 300 UL (B) 300 UL (D)	0°

Push-in spring connection							
Web code: #0715	Type	Notes	Number of positions	Pitch [mm]	Current [A]	Voltage [V]	Connection direction
	TDPT 2,5/...-SP	PCB terminal block of the same shape also available with screw connection	2 ... 12	5.08	24 IEC 20 UL (B) 10 UL (D)	400 IEC 300 UL (B) 300 UL (D)	0°
	PTDA 2,5/	TWIN connection	2 ... 16	5.0	24 IEC 20 UL (B) 10 UL (D)	400 IEC 300 UL (B) 300 UL (D)	45°
	SPT-THR 2,5/..-H	THR soldering	2 ... 12	5.0	24 IEC 20 UL (B) 10 (D)	400 IEC 300 UL (B) 300 (D)	0°
	SPT-THR 2,5/..-V						90°
	SPT 2,5/...-H	–	2 ... 12	5.0	24 IEC 20 UL (B) 10 UL (D)	400 IEC 300 UL (B) 300 UL (D)	0°
	SPT 2,5/...-V						90°

Lever Push-in connection							
Web code: #2660	Type	Notes	Number of positions	Pitch [mm]	Current [A]	Voltage [V]	Connection direction
	LPT 2,5	–	2 ... 12	5.0	24 IEC 20 UL (B) 10 UL (D)	400 IEC 20 UL (B) 10 UL(D)	0°
	LPTA 2,5						30°

PCB terminal blocks

PCB terminal blocks for conductor cross-sections up to 6 mm² (AWG 10)

Screw connection with tension sleeve

Web code: #0719	Type	Notes	Number of positions	Pitch [mm]	Current [A]	Voltage [V]	Connection direction
	MKDS(V) 5	Available with and without anti-rotation pins	2-/3-pos. alignable	7.62	31 IEC 30 UL (B) 10 UL (D)	630 IEC 300 UL (B, D)	0°
	MKDS(V) 5/...-9,5	Available with and without anti-rotation pins, also in zigzag pinning for 600 V UL	2-/3-pos. alignable	9.52	32 IEC 30 UL (B, C) 5 UL (D)	1000 IEC 300 UL (B, C) 600 UL (D)	0°
	SMKDS 5/...-9,5	–	2-/3-pos. alignable	9.52	32 IEC 30 UL (B, C)	1000 IEC 300 UL (B, C)	35°
	TDPT 4/...-SC	PCB terminal block of the same shape also available with Push-in spring connection	2 ... 6	6.35	41 IEC 30 UL (B, C) 10 UL (D)	1000 IEC 600 UL (B, C) 300 UL (D)	0°

Push-in spring connection

Web code: #0721	Type	Notes	Number of positions	Pitch [mm]	Current [A]	Voltage [V]	Connection direction
	TDPT 4/...-SP	PCB terminal block of the same shape also available with screw connection	2 ... 6	6.35	41 IEC 30 UL (B, C) 10 UL (D)	1000 IEC 600 UL (B, C) 300 UL (D)	0°
	SPT 5/...-H	–	1 ... 12	7.5	41 IEC 36 UL (B, C)	1000 IEC 600 UL (B, C)	0°
	SPT 5/...-V						90°
	SPTA 5	Bridgeable	1 ... 12	7.5	41 IEC 33 UL (B, C)	1000 IEC 600 UL (B, C)	60°

Lever Push-in connection

Web code: #2661	Type	Notes	Number of positions	Pitch [mm]	Current [A]	Voltage [V]	Connection direction
	LPT 6	–	2 ... 8	7.5	41 IEC 38 UL (B, C)	1000 IEC 600 UL (B, C)	0°
	LPTA 6						30°

SUNCLIX spring connection

Web code: #0724	Type	Notes	Number of positions	Pitch [mm]	Current [A]	Voltage [V]	Connection direction
	PTSPL 6	Without insulating housing	1	–	41 IEC 30 UL	–	0°

PCB terminal blocks for conductor cross-sections up to 16 mm² (AWG 6)

Screw connection with tension sleeve

Web code: #0725	Type	Notes	Number of positions	Pitch [mm]	Current [A]	Voltage [V]	Connection direction
	MKDS 10 HV	With zigzag pinning for 600 V UL	1 ... 12	10.16	76 IEC 60 UL (B, C)	1000 IEC 600 UL (B, C)	0°
	TDPT 16/...-SC	PCB terminal block of the same shape also available with Push-in spring connection	2 ... 6	10.16	76 IEC 58 UL (B, C) 10 UL (D)	1000 IEC 600 UL (B, C) 300 UL (D)	0°

Push-in spring connection

Web code: #0727	Type	Notes	Number of positions	Pitch [mm]	Current [A]	Voltage [V]	Connection direction
	TDPT 16/...-SP	PCB terminal block of the same shape also available with screw connection	2 ... 6	10.16	76 IEC 58 UL (B, C) 10 UL (D)	1000 IEC 600 UL (B, C) 300 UL (D)	0°
	SPT 16/...-H	–	1 ... 9	10	76 IEC 66 UL (B, C)	1000 IEC 600 UL (B, C)	0°
	SPT 16/...-V						90°
	SPTA 16	Bridgeable	2 ... 9	10	76 IEC 51 UL (B, C)	1000 IEC 600 UL (B, C)	60°

Lever Push-in connection

Web code: #2662	Type	Notes	Number of positions	Pitch [mm]	Current [A]	Voltage [V]	Connection direction
	LPT 16/...-10	–	2 ... 8	10	76 IEC 66 UL (B, C)	1000 IEC 600 UL (B, C)	0°
	LPT 16/...-15	–	2 ... 5	15	76 IEC 72 UL (C) 72 (E)	1000 IEC 600 UL (C) 1000 UL (E)	0°

PCB terminal blocks for conductor cross-sections up to 35 mm² (AWG 2)

Push-in spring connection

Web code: #0731	Type	Notes	Number of positions	Pitch [mm]	Current [A]	Voltage [V]	Connection direction
	SPT 35/...-V	–	1 ... 5	15	125 IEC 101 UL (B, C)	1000 IEC 600 UL (B, C)	90°

PCB terminal blocks

PCB terminal blocks for conductor cross-sections up to 70 mm² (AWG 2/0)

Screw connection with tension sleeve

Web code: #0732	Type	Notes	Number of positions	Pitch [mm]	Current [A]	Voltage [V]	Connection direction
	MKDSP 50 MKDSP 50/...-F	Available with and without flange	1 ... 5	17.5	192 IEC 160 UL (B, C)	1000 IEC 600 UL (B, C)	0°

PCB terminal blocks for conductor cross-sections up to 95 mm² (AWG 3/0)

Screw connection with tension sleeve

Web code: #0733	Type	Notes	Number of positions	Pitch [mm]	Current [A]	Voltage [V]	Connection direction
	MKDSP 95/...-F	–	1 ... 5	20	232 IEC 200 UL (B, C)	1000 IEC 600 UL (B, C)	0°

PCB terminal blocks for conductor cross-sections up to 1.5 mm² (AWG 16)

Screw connection with tension sleeve

Web code: #0709	Type	Notes	Number of positions	Pitch [mm]	Current [A]	Voltage [V]	Connection direction
	MKDS 1 PROFINET	–	4	3.5	13.5 IEC 10 UL (B, D)	200 IEC 300 UL (B, D)	0°

PCB terminal blocks for conductor cross-sections up to 2.5 mm² (AWG 14)

Push-in spring connection

Web code: #0715	Type	Notes	Number of positions	Pitch [mm]	Current [A]	Voltage [V]	Connection direction
	SPT 2,5/...H-EX PROFINET	Satisfies the requirements of the "Guideline for PROFINET"	4	5.0	23 IEC	176 IEC	0°
	SPT 2,5/...V-EX PROFINET	Satisfies the requirements of the "Guideline for PROFINET"	4	5.0	23 IEC	176 IEC	90°

PCB connectors for conductor cross-sections up to 0.5 mm² (AWG 20)

Connectors: Push-in spring connection, female

Web code: #0734	Type	Notes	Number of positions	Pitch [mm]	Current [A]	Voltage [V]	Connection direction
	FMC 0,5/...-ST	Gold-plated contact system	2 ... 16	2.54	6 IEC 6 UL (B)	160 IEC 150 UL (B)	0°

Headers: SMT soldering, male

Web code: #0736	Type	Notes	Number of positions	Pitch [mm]	Current [A]	Voltage [V]	Connection direction
	MC 0,5/...-G-SMD	Lateral THR armature, gold-plated contact system	2 ... 16	2.54	6 IEC 6 UL (B)	160 IEC 150 UL (B)	0°
	MCV 0,5/...-G-SMD	Lateral THR armature, gold-plated contact system	2 ... 16	2.54	6 IEC 6 UL (B)	160 IEC 150 UL (B)	90°

Double-row connectors: Push-in spring connection, female

Web code: #1171	Type	Notes	Number of positions	Pitch [mm]	Current [A]	Voltage [V]	Connection direction
	DFMC 0,5/...-ST DFMC 0,5/...-ST-RF	Double-row, gold-plated contact system, without flange or with latching flange	2 ... 16	2.54	6 IEC 6 UL (B)	160 IEC 150 UL (B)	0°

Double-row headers: THR soldering, male

Web code: #1172	Type	Notes	Number of positions	Pitch [mm]	Current [A]	Voltage [V]	Connection direction
	DMC 0,5/...-G1-THR	Double-row, gold-plated contact system, lateral THR armature, integrated THR armature	2 ... 3 4 ... 16	2.54	6 IEC 6 UL (B)	160 IEC 150 UL (B)	0°
	DMCV 0,5/...-G1-THR	Double-row, gold-plated contact system, lateral THR armature, integrated THR armature	2 ... 3 4 ... 16	2.54	6 IEC 6 UL (B)	160 IEC 150 UL (B)	90°

Double-row connectors: Crimp connection, female, shielded

Web code: #2332	Type	Notes	Number of positions	Pitch [mm]	Current [A]	Voltage [V]	Connection direction
	DMCC 0,5/... shielded	Double-row, gold-plated contact system, shielded, crimp contact: 0.14 ... 0.5 mm² and 0.34 ... 0.75 mm²	1, 2, 4	2.54	6 IEC 6 UL (B)	160 IEC 150 UL (B)	0° without locking 0° with locking

Double-row headers: THR soldering, male, shielded

Web code: #2332	Type	Notes	Number of positions	Pitch [mm]	Current [A]	Voltage [V]	Connection direction
	DMC 0,5/... shielded DMC 0,5/...	Double-row, gold-plated contact system, shielded	1, 2, 4	2.54	6 IEC 6 UL (B)	160 IEC 150 UL (B)	0° without/ with locking 90° without/ with locking

PCB connectors

PCB connectors for conductor cross-sections up to 1.5 mm² (AWG 16)

Double-row connectors: Push-in spring connection, female

Web code: #1175	Type	Notes	Number of positions	Pitch [mm]	Current [A]	Voltage [V]	Connection direction
	DFMC 1,5/...-ST	Without flange	2 ... 20	3.5	8 IEC 8 UL (B, D)	160 IEC 300 UL (B, D)	0°
	DFMC 1,5/...-STF	With screw flange					
	DFMC 1,5/...-ST-LR	With lock-and-release locking system					

Double-row headers: THR soldering, male

Web code: #1245	Type	Notes	Number of positions	Pitch [mm]	Current [A]	Voltage [V]	Connection direction
	DMC 1,5/...-G1-THR	Without flange	2 ... 20	3.5	8 IEC 8 UL (B, D)	160 IEC 150 UL (B) 300 UL (D)	0°
	DMC 1,5/...-G1F-LR-THR	With threaded flange and lock-and-release locking system					
	DMCV 1,5/...-G1-THR	Without flange	2 ... 20	3.5	8 IEC 8 UL (B, D)	160 IEC 300 UL (B, D)	90°
	DMCV 1,5/...-G1F-LR-THR	With threaded flange and lock-and-release locking system					

Connectors: Screw connection with tension sleeve, female

Web code: #0753	Type	Notes	Number of positions	Pitch [mm]	Current [A]	Voltage [V]	Connection direction
	MC 1,5/...-ST	Without flange	2...20 2...20	3.5/3.81	8 IEC 8 UL (B, D)	160 IEC 300 UL (B, D)	0°
	MC 1,5/...-STF	With screw flange					
	MC 1,5/...-ST-LR	With lock-and-release locking system	2...16				
	MCVR 1,5/...-ST	Conductor entry facing the coded side, without flange	2...16	3.5/3.81	8 IEC 8 UL (B, D)	160 IEC 300 UL (B, D)	90°
	MCVR 1,5/...-STF	Conductor entry facing the coded side, with screw flange					

Connectors: Push-in spring connection, female

Web code: #0756	Type	Notes	Number of positions	Pitch [mm]	Current [A]	Voltage [V]	Connection direction
	FK-MCP 1,5/...-ST	Without flange	2...20	3.5/3.81	8 IEC 8 UL (B, D)	160 IEC 300 UL (B, D)	0°
	FK-MCP 1,5/...-STF	With screw flange					
	FK-MCP 1,5/...-ST-LR	With lock-and-release locking system					
	FMC 1,5/...-ST	Without flange	2...20	3.5/3.81	8 IEC 8 UL (B)	160 IEC 150 UL (B)	0°
	FMC 1,5/...-STF	With screw flange					
	FMC 1,5/...-ST-RF	With latching flange					

Connectors: Lever Push-in connection, female							
Web code: #2663	Type	Notes	Number of positions	Pitch [mm]	Current [A]	Voltage [V]	Connection direction
	LPC 1,5/..-ST	Without flange	2 … 16	3.81	8 IEC 8 UL (B, C)	160 V IEC 150 V UL (B, C)	0°
	LPC 1,5/..-STF	With screw flange					
	LPC 1,5/..-ST-LR	With LR lever					
Headers: THR soldering, male							
Web code: #0760	Type	Notes	Number of positions	Pitch [mm]	Current [A]	Voltage [V]	Connection direction
	MC 1,5/...-G-THR	Without flange	2 … 20	3.5/3.81	8 IEC 8 UL (B, D)	160 IEC 300 UL (B, D)	0°
	MC 1,5/...-GF-THR	With threaded flange					
	MCV 1,5/...-G-THR	Without flange	2 … 20	3.5/3.81	8 IEC 8 UL (B, D)	160 IEC 300 UL (B, D)	90°
	MCV 1,5/...-GF-THR	With threaded flange					

PCB connectors for conductor cross-sections up to 2.5 mm² (AWG 14)

Connectors: Push-in spring connection, SKEDD direct-connection technology							
Web code: #0786	Type	Notes	Number of positions	Pitch [mm]	Current [A]	Voltage [V]	Connection direction
	SDC 2,5/...-PV-5,0-ZB	With body-bound rivets for locking on the PCB	1 … 16	5.0	12 IEC 12 UL (B, D)	320 IEC 300 UL (B, D)	90°
Double-row connectors: Crimp connection, SKEDD direct-connection technology							
Web code: #2630	Type	Notes	Number of positions	Pitch [mm]	Current [A]	Voltage [V]	Connection direction
	CDDC 2,5/..-PV-5,0	With body-bound rivets for locking on the PCB	2 … 16	5.0	12 IEC 12 UL (B, D)	320 IEC 300 UL (B, D)	90°
Connectors: Screw connection with tension sleeve, female							
Web code: #0776	Type	Notes	Number of positions	Pitch [mm]	Current [A]	Voltage [V]	Connection direction
	MSTB 2,5/...-ST	Without flange	2 … 24	5.0/5.08	12 IEC 15 UL (B) 10 UL (D)	320 IEC 300 UL (B) 300 UL (D)	0°
	MSTB 2,5/...-STF	With screw flange	2 … 20				
	MSTB 2,5/...-ST-LR	With lock-and-release locking system					
	MVSTBR 2,5/...-ST	Conductor entry facing the coded side, without flange	2 … 24	5.0/5.08	12 IEC 15 UL (B) 10 UL (D)	320 IEC 300 UL (B) 300 UL (D)	90°
	MVSTBR 2,5/...-STF	Conductor entry facing the coded side, with screw flange	2 … 20				

PCB connectors

PCB connectors for conductor cross-sections up to 2.5 mm² (AWG 14)

Connectors: Push-in spring connection, female

Web code: #0779	Type	Notes	Number of positions	Pitch [mm]	Current [A]	Voltage [V]	Connection direction
	FKCN 2,5/...-ST	Without flange	2 ... 18	5.0/5.08	12 IEC 10 UL (B, D)	320 IEC 300 UL (B, D)	0°
	FKCN 2,5/...-STF	With screw flange					
	FKCOR 2,5/…-ST	Conductor entry facing the coded side Without flange	2 ... 24	5.08	12 IEC 10 UL (B, C)	320 IEC 300 UL (B, C)	90°
	FKCOR 2,5/…-STF	Conductor entry facing the coded side With screw flange					
	FKCOR 2,5/…-ST-LR	Conductor entry facing the coded side With lock-and-release locking system					

Connectors: Lever Push-in connection, female

Web code: #2664	Type	Notes	Number of positions	Pitch [mm]	Current [A]	Voltage [V]	Connection direction
	LPC 2,5/..-ST	Without flange	2 ... 20	5.08	16 IEC 16 UL (B, C)	320 IEC 300 UL (B, C)	0°
	LPC 2,5/..-STF	With screw flange					
	LPC 2,5/..-ST-LR	With lock-and-release locking system					

Headers: THR soldering, male

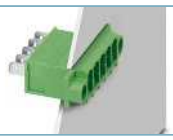
Web code: #0789	Type	Notes	Number of positions	Pitch [mm]	Current [A]	Voltage [V]	Connection direction
	CCA 2,5/...-G	Without flange	2 ... 24	5.0/5.08	12 IEC 16 UL (B) 10 UL (D)	320 IEC 300 UL (B) 300 UL (D)	0°
	CC 2,5/...-GF	With threaded flange	2 ... 12	5.08			
	CCA 2,5/...-G-RN	With snap-in latch	2 ... 12	5.08			
	CC 2,5/...-GF-LR	With lock-and-release locking system	2 ... 24	5.0/5.08			
	CCVA 2,5/...-G	Without flange	2 ... 24	5.0/5.08	12 IEC 16 UL (B) 10 UL (D)	320 IEC 300 UL (B) 300 UL (D)	90°
	CCV 2,5/...-GF	With threaded flange	2 ... 12	5.08			
	CCVA 2,5/...-G-RN	With snap-in latch	2 ... 12	5.08			
	CCV 2,5/...-GF-LR	With lock-and-release locking system	2 ... 24	5.0/5.08			
	CCDN 2,5/...-G1-THR	Without flange	2 ... 18	5.0/5.08	12 IEC 10 UL (B, D)	400 IEC 300 UL (B, D)	0°
	CCDN 2,5/...-G1F-THR	With threaded flange					

PCB connectors for conductor cross-sections up to 4 mm² (AWG 12)

Feed-through connectors: Screw connection with tension sleeve

Web code: #0803	Type	Notes	Number of positions	Pitch [mm]	Current [A]	Voltage [V]	Connection direction
	DFK-PC 4/...-GF	–	2 ... 12	7.62	20 IEC 35 UL (B, C)	630 IEC 300 UL (B, C)	0°

Feed-through connectors, male

Web code: #0804	Type	Notes	Number of positions	Pitch [mm]	Current [A]	Voltage [V]	Connection direction
	DFK-PC 4/...-G -FS4,8	–	2 ... 12	7.62	15 IEC 20 UL (B, C)	400 IEC 300 UL (B, C)	0°

PCB connectors for conductor cross-sections up to 6 mm² (AWG 10)

Connectors: Push-in spring connection, female

Web code: #0808	Type	Notes	Number of positions	Pitch [mm]	Current [A]	Voltage [V]	Connection direction
	SPC 5/..-ST	Without flange	2...12	7.62	41 IEC 35 UL (B, C)	1000 IEC 600 UL (B, C)	0°
	SPC 5/..-STF	With screw flange					
	SPC 5/..-STCL	With Click and Lock locking					

Headers: Wave soldering, male

Web code: #0810	Type	Notes	Number of positions	Pitch [mm]	Current [A]	Voltage [V]	Connection direction
	PC 5/...-G	Without flange (Click and Lock)	2...12	7.62	41 IEC 41 UL (B, C)	630 IEC 150 UL (C)	0°
	PC 5/...-GF	With threaded flange					
	PC 5/...-GSF	With threaded flange and additional solder pin					

Feed-through connectors: Screw connection, male

Web code: #0812	Type	Notes	Number of positions	Pitch [mm]	Current [A]	Voltage [V]	Connection direction
	DFK-PC 5/...-ST	Without flange (Click and Lock)	2...12	7.62	41 IEC 41 UL (B, C)	1000 IEC 600 UL (B, C)	0°
	DFK-PC 5/...-STF	With threaded flange and shield connection					
	DFK-PC 5/...-STF-SH	With threaded flange and shield feed-through					

Feed-through headers: Wave soldering, male

Web code: #0813	Type	Notes	Number of positions	Pitch [mm]	Current [A]	Voltage [V]	Connection direction
	DFK-PC 5/...-G	Without flange (Click and Lock)	2...12	7.62	41 IEC 41 UL (B, C)	1000 IEC 150 UL (B, C)	0°
	DFK-PC 5/...-GF	With threaded flange and shield connection					
	DFK-PC 5/...-GF-SH	With threaded flange and shield feed-through					

PCB connectors

PCB connectors for conductor cross-sections up to 10 mm² (AWG 8)

Connectors: Lever Push-in connection, female

Web code: #1677	Type	Notes	Number of positions	Pitch [mm]	Current [A]	Voltage [V]	Connection direction
	LPC 6/...-ST	Without flange	2 ... 6 (7 ... 9 on request)	7.62	41 IEC 35 UL (B, C, F)	1000 IEC 600 UL (B, C, F)	0°
	LPC 6/...-STL	With middle flange					

Connectors: Insulation displacement connection technology, female

Web code: #2051	Type	Notes	Number of positions	Pitch [mm]	Current [A]	Voltage [V]	Connection direction
	PC 6/...-ST-BUS	16 mm² conductor connection (H07V2-K)	2 ... 3	7.62	32 IEC 30 UL (B, C)	1000 IEC 600 UL (B, C, F)	90°/-90°

Headers: THR soldering, male

Web code: #2667	Type	Notes	Number of positions	Pitch [mm]	Current [A]	Voltage [V]	Connection direction
	PC 6 /...-G-THR PC 6/...-GL-THR	Without flange With middle flange	2 ... 6	7.62	41 IEC 35 UL (B, C) 35 UL (F)	630 IEC 300 UL (B, C) 600 UL (F)	0°
	PC 6 /...-GU-THR PC 6/...-GLU-THR						180°
	PCV 6 /..-G-THR PCV 6/..-GL-THR						90°

Connectors: Lever Push-in connection, female

Web code: #1679	Type	Notes	Number of positions	Pitch [mm]	Current [A]	Voltage [V]	Connection direction
	LPCH 6/...-ST LPCH 6/...-STL	Without flange With middle flange	3 ... 5 power (+4 or +6 signal)	7.62 (3.81)	41 (8) IEC 35 (6) UL (B) 35 (6) UL (F)	1000 (160) IEC 600 (300) UL (B) 600 (160) UL (F)	0°

Headers: THR soldering, male

Web code: #2667	Type	Notes	Number of positions	Pitch [mm]	Current [A]	Voltage [V]	Connection direction
	PCH 6 /...-G-THR PCH 6/...-GL-THR	Without flange With middle flange	3 ... 5 power (+4 or +6 signal)	7.62 (3.81)	41 (8) IEC 35 (6) UL (B, C) 35 (6) UL (F)	630 (160) IEC 300 (300) UL (B, C) 600 (160) UL (F)	0°

PCB connectors for conductor cross-sections up to 16 mm² (AWG 6)

Connectors: Lever Push-in connection, female

Web code: #2665	Type	Notes	Number of positions	Pitch [mm]	Current [A]	Voltage [V]	Connection direction
	LPC 16 HC/...-ST	Without flange	2 ... 6	10.16	76 IEC 76 UL (B, C)	1000 IEC 300 UL (B, C)	0°
	LPC 16 HC/...-STL	With middle flange					

Headers: Wave soldering, male

Web code: #2668	Type	Notes	Number of positions	Pitch [mm]	Current [A]	Voltage [V]	Connection direction
	PC 16 HC/...-G	Without flange	2 ... 6	10.16	76 IEC 76 UL (B, C) 76 UL (F)	1000 IEC 300 UL (B, C) 600 UL (F)	0°
	PC 16 HC/...-GL	With middle flange					

PCB connectors for conductor cross-sections up to 35 mm² (AWG 2)

Connectors: Screw connection with tension sleeve, female

Web code: #0825	Type	Notes	Number of positions	Pitch [mm]	Current [A]	Voltage [V]	Connection direction
	PC 35 HC/...-STF	With screw flange	2 ... 6	15	125 IEC 115 UL (B, C)	1000 IEC 600 UL (B, C)	0°

Headers: Wave soldering, male

Web code: #0827	Type	Notes	Number of positions	Pitch [mm]	Current [A]	Voltage [V]	Connection direction
	PC 35 HC/...-GF	With screw flange	2 ... 6	15	125 IEC 115 UL (B, C)	1000 IEC 600 UL (B, C)	0°

M8 and M12 circular connectors

M8 connectors for data transmission

	Description	Type	Item no.
PROFINET 	Device connector for wave soldering processes, rear mounting, shielded, 4-pos. D-coded, male, PROFINET	SACC-DSI-M8MSD-4P-M8-L180 SH	1253761
DeviceNet 	Sensor/actuator flush-type connector, female, 5-pos. DeviceNet™, M8, rear/screw mounting with M10 fastening thread, with angled solder connection	SACC-DSI-M8FS-5CON-M10-L90 DN	1424239
PROFINET 	SMD contact carrier, two-piece, shielded, 4-pos. D-coded, female, PROFINET, tape-on-reel	SACC-CIP-M8FSD-4P SMD SH R32	1068454
	Housing screw connection for SMD female contact carrier, press-in mounting, rear mounting	SACC-FP-F-M8/PRESS SMD	1412501

M12 connectors for data transmission

	Description	Type	Item no.
CAT6A 10 Gigabit/s 	Device connector for wave soldering processes, rear mounting, 8-pos. X-coded, female, CAT6$_A$	SACC-DSI-FSX-8CON-M16-L180 SCO	1424177
CAT6A 10 Gigabit/s 	THR contact carrier for wave and reflow soldering processes, CAT6$_A$	SACC-CI-M12FSX-8CON-L180 TOR32	1413446
	Housing screw connection, M12 push-pull, rear mounting	SACC-BP-F-M12-THR PP	1027662
Ethernet 	Bus sys. flush-type female, Ethernet, 4-pos., D-coded, with straight THR solder conn., contact insert only	SACC-CI-M12FSD-4CON-SH TOR 32	1457636
	Housing screw connection, male, M12 push-pull, front mounting, THR and wave solder contacts	SACC-FP-M-M12-THR PP	1027679
	Push-pull device connector for wave soldering processes, rear mounting, 4-pos. D-coded, male, 6 mm solder pins	SACC-DSI-MSD-4CON-M16-L180 PP	1027680
	Push-pull device connector for wave soldering processes, rear mounting, 4-pos. D-coded, female, 6 mm solder pins	SACC-DSI-FSD-4CON-M16-L180 PP	1027696
	Push-pull device connector with 0.34 mm² litz wires, rear mounting, 4-pos. D-coded, male	SACC-DSI-MSD-4CON-M16/0,5 PP	1027691
	Push-pull device connector with 0.34 mm² litz wires, rear mounting, 4-pos. D-coded, female	SACC-DSI-FSD-4CON-M16/0,5 PP	1027670
	Device connector with assembled 2 m cable, water blue, rear mounting, 4-pos. D-coded, female, CAT5	VS-M12FSBP-OE-93E-LI/2,0	1405866
CAT6A 10 Gigabit/s 	Device connector with assembled 0.5 m cable, water blue, rear mounting, 8-pos. X-coded, female, CAT6$_A$	VS-FSBPXS-OE-94F/0,5	1424135

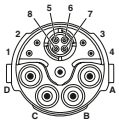
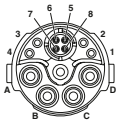
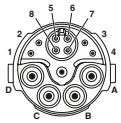
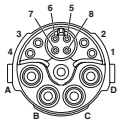
M12 connectors for signal transmission

	Description	Type	Item no.
	Push-pull device connector for wave soldering processes, rear mounting, 5-pos. A-coded, female, 6 mm solder pins	SACC-DSI-FS-5CON-M16-L180 PP	1027669
	Device connector for wave soldering processes, rear mounting, 12-pos. A-coded, male, with shield contact, 6 mm solder pins	SACC-DSI-MS-12CON-M12 SCO SH	1437106
	THR contact carrier for wave and reflow soldering processes, 4-pos. A-coded, male	SACC-CI-M12MS-4CON-L180 THR SH	1439939
	Housing screw connection, M12 push-pull, rear mounting	SACC-BP-M-M12-THR PP	1027661
	THR contact carrier for wave and reflow soldering processes, 12-pos. A-coded, female	SACC-CI-M12FS-12CON-L180 THRSH	1442052
	Housing screw connection, M12 push-pull, rear mounting	SACC-BP-F-M12-THR PP	1027662
	Device connector with 0.34 mm² litz wires, front mounting, 5-pos. A-coded, male	SACC-E-M12MS-5P-M16XL/0,5	1411579
	Device connector with 0.14 mm² litz wires, rear mounting, 12-pos. A-coded, female	SACC-DSI-M12FS-12P-M16XL/0,5	1411589

M12 connectors for power transmission

	Description	Type	Item no.
	Device connector for wave soldering processes, rear mounting, 5(4+FE)-pos. L-coded, female	SACC-DSI-M12FSL-4FE-M16XL-L180	1415338
PROFINET 	Device connector for wave soldering processes, rear mounting, 5(4+FE)-pos. L-coded, male, PROFINET-specified	SACC-DSI-M12MSL4FEM16XL-L180GR	1425590
PROFINET 	THR contact carrier for wave soldering processes, 5(4+FE)-pos. L-coded, female	SACC-CI-M12FSL-4FE-L180 THR GR T	1425595
	Housing screw connection, rear mounting	SACC-BP-F-M12/M15-6-THR PW	1420827
	THR contact carrier for wave soldering processes, 5(4+FE)-pos. L-coded, male	SACC-CI-M12MSL-4FE-L180 THR SH R	1421317
	Housing screw connection, M12 push-pull	SACC-FP-M-M12-THR PW PP	1108101
PROFINET 	Device connector with AWG 16 litz wires, rear mounting, 5(4+FE)-pos. L-coded, male, PROFINET-specified	SACC-DSI-M12MSL4FEM16/0,2GR-1,5	1425629
	Device connector with 2.5 mm² litz wires, front mounting, 5(4+FE)-pos. L-coded, female	SACC-E-M12FSL-4FE-M16XL/0,2	1415296

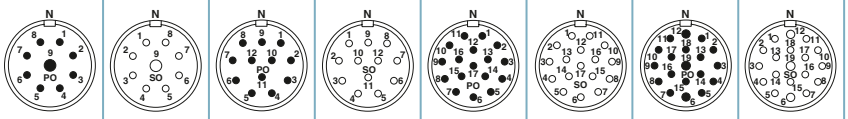
M23 circular connectors

M23 hybrid connectors			13(4+4+4+PE)-pos.		13(8+4+PE)-pos.	
Web code: #0264	Signal type		CAT5 (100 Mbps)		Signal	
	Connection method		Crimp		Crimp	
	Rated voltage	[V AC/DC]	50 / 50 / 630/850		50 / 630/850	
	Rated current [1]	[A]	3.6 / 8 / 30		8 / 30	
	Number of contacts/diameter	[mm]	4 x 0.8 / 4 x 1 / 5 x 2		8 x 1 / 5 x 2	
	Litz wire cross-sections	[mm²]	0.08 ... 0.5 / 0.06 ... 1.0 / 0.25 ... 4.0		0.06 ... 1.0 / 0.25 ... 4.0	
	Pin assignment		Male	Female	Male	Female
						
Device connectors, front mounting						
	**Flange dimensions: 26 mm x 26 mm** Mounting holes: 4 x Ø 3.2 mm		1621569	1621567	1621570	1621568
Device connectors, rear mounting						
	**Central fastening M26 x 1**		1627205	1624344	1627206	1627204

[1] Rated current for maximum connection cross-section

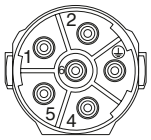
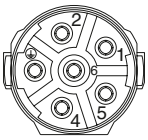
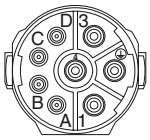
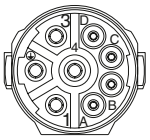
M23 hybrid connectors, assembled cables		M23 straight	M23 straight
		13(4+4+4+PE)-pos. (CAT5, 100 Mbps)	
Cable type		H00	H00
Cable design	[mm²]	(5 x 2.5 + 4 x AWG 22/C + 4 x 0.5) C	(5 x 2.5 + 4 x AWG 22/C + 4 x 0.5) C
Cable color		Orange	Orange
Rated voltage	[V AC/DC]	630 / 850	630 / 850
Rated current	[A]	26 / 8	26 / 8
Temperature range, flexible	[°C]	-30 ... +60	-30 ... +60
Temperature range, fixed	[°C]	-40 ... +80	-40 ... +80
Grip/sheath/wire insulation material		TPU/PUR/TPE, polyolefin	TPU/PUR/TPE, polyolefin
Web code: #0282			
		Female	Male
Free cable end	**Cable length**		
	2 m	1622224	1622227
	5 m	1622225	1622228
	10 m	1622226	1622229

Customer-specific versions and lengths are available on request.

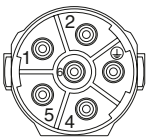
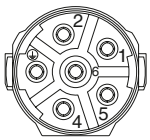
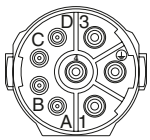
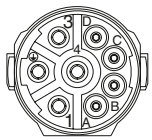
M23 PRO signal series			9(8+1)-pos.		12-pos.		17-pos.		19(16+2+PE)-pos.	
Connection method			Crimp		Crimp		Crimp		Crimp	
Rated voltage	[V AC/DC]		300		150		125		150	
Rated current [1]	[A]		8 / 20		8		8		8 / 10	
Number of contacts/diameter	[mm]		8 x 1.0 / 1 x 2.0		12 x 1.0		17 x 1.0		16 x 1.0 / 3 x 1.5	
Litz wire cross-sections	[mm²]		0.08 ... 1.0 / 0.5 ... 2.5		0.08 ... 1.0		0.08 ... 1.0		0.08 ... 1.0 / 0.5 ... 1.0	
Pin assignment			Male	Female	Male	Female	Male	Female	Male	Female
i Web code: #0268										
Cable connectors, ONECLICK fast-locking system										
	Cable clamping range [mm]	3 ... 15	1629168	1629172	1629160	1629164	1629152	1629156	1629144	1629148
		4 ... 8.5	1629171	1629175	1629163	1629167	1629155	1629159	1629147	1629151
		6 ... 10	1629170	1629174	1629162	1629166	1629154	1629158	1629146	1629150
	ONECLICK Technology Designed by Phoenix Contact	9 ... 15	1629169	1629173	1629161	1629165	1629153	1629157	1629145	1629149
Cable connectors, standard locking										
	Cable clamping range [mm]	3 ... 15	1629216	1629220	1629208	1629212	1629200	1629204	1629192	1629196
		4 ... 8.5	1629219	1629223	1629211	1629215	1629203	1629207	1629195	1629199
		6 ... 10	1629218	1629222	1629210	1629214	1629202	1629206	1629194	1629198
		9 ... 15	1629217	1629221	1629209	1629213	1629201	1629205	1629193	1629197
Device connectors, straight, front mounting										
	Flange dimensions: 26 mm x 26 mm Mounting holes: 4 x Ø 2.7 mm		1132741	1132740	1132744	1132742	1132747	1132745	–	–
	Flange dimensions: 26 mm x 26 mm Mounting holes: 4 x Ø 3.2 mm		1629090	1629091	1629088	1629089	1629086	1629087	1629084	1629085
	Flange dimensions: 28 mm x 28 mm Mounting holes: 4 x Ø 3.2 mm		–	–	1629082	1629083	1629080	1629081	–	–

[1] Rated current for maximum connection cross-section.
The cable clamping ranges specified may vary depending on the cable material and cable design. Selection and testing is the responsibility of the user.

M23 circular connectors

M23 PRO power series			6(5+PE)-pos.		8(4+3+PE)-pos.	
Web code: #2067	Connection method		Crimp		Crimp	
	Rated voltage	[V AC/DC]	630		250 / 630	
	Rated current [1]	[A]	30		9 / 30	
	Number of contacts/diameter	[mm]	6 x 2		4 x 1 / 4 x 2	
	Litz wire cross-sections	[mm²]	0.25 ... 4.0		0.06 ... 1.0 / 0.25 ... 4.0	
	Pin assignment		Male	Female	Male	Female
						
Cable connectors, ONECLICK fast-locking system						
	Cable clamping range [mm] Short version, cable Ø 5.5 mm ... 14.5 mm ONECLICK Technology Designed by Phoenix Contact	5.5 ... 15	1628871	1628815	1628867	1628811
		5.5 ... 8	1628874	1628818	1628869	1628813
		7.5 ... 12	1628873	1628817	1628870	1628814
		9.5 ... 14.5	1628872	1628816	1628868	1628812
	Cable clamping range [mm] Long version, cable Ø 5.5 mm ... 17 mm ONECLICK Technology Designed by Phoenix Contact	7.5 ... 17	1628852	1628796	1628847	1628791
		5.5 ... 8	1628856	1628800	1628850	1628795
		7.5 ... 12	1628855	1628799	1628851	1628794
		9.5 ... 14.5	1628854	1628798	1628849	1628793
		14 ... 17	1628853	1628797	1628848	1628792
Cable connectors, standard locking						
	Cable clamping range [mm] Short version, cable Ø 5.5 mm ... 14.5 mm	5.5 ... 15	1628879	1628823	1628875	1628819
		5.5 ... 8	1628882	1628826	1628878	1628822
		7.5 ... 12	1628881	1628825	1628877	1628821
		9.5 ... 14.5	1628880	1628824	1628876	1628820
	Cable clamping range [mm] Long version, cable Ø 5.5 mm ... 17 mm	7.5 ... 17	1628862	1628806	1628857	1628801
		5.5 ... 8	1628866	1628810	1628861	1628805
		7.5 ... 12	1628865	1628809	1628860	1628804
		9.5 ... 14.5	1628864	1628808	1628859	1628803
		14 ... 17	1628863	1628807	1628858	1628802

[1] Rated current for maximum connection cross-section.
The cable clamping ranges specified may vary depending on the cable material and cable design. Selection and testing is the responsibility of the user.

M23 PRO power series			6(5+PE)-pos.		8(4+3+PE)-pos.	
Web code: #2067	Connection method		Crimp		Crimp	
	Rated voltage	[V AC/DC]	630		250 / 630	
	Rated current [1]	[A]	30		9 / 30	
	Number of contacts/diameter	[mm]	6 x 2		4 x 1 / 4 x 2	
	Litz wire cross-sections	[mm²]	0.25 ... 4.0		0.06 ... 1.0 / 0.25 ... 4.0	
	Pin assignment		Male	Female	Male	Female
						
Device connectors, straight, front mounting						
	Flange dimensions: 26 mm x 26 mm Mounting holes: 4 x Ø 3.2 mm		1628778	1628834	1628777	1628833
	Flange dimensions: 28 mm x 28 mm Mounting holes: 4 x Ø 3.2 mm		1628776	1628832	1628775	1628831

[1] Rated current for maximum connection cross-section.

Data connectors

Single Pair Ethernet

SPE IP20 PCB connectors for industrial device connection

Web code: #2341	Soldering process	Orientation	Note	Item no.
	Wave / THR	180° vertical	Pin contact, without LED	1163798

SPE IDC connectors in accordance with IEC 63171-2 for IP20 cabling

Web code: #2671	Connection technology	Transmission, protocol	Note	Item no.
	IDC fast connection	1 Gbps, SPE	AWG 26/7 ... AWG 22/7, 360° shielding/zinc die-cast housing	1343953

SPE IP20 patch cables for IP20 cabling

Web code: #2240	Cable design	Transmission	Note	Item no.
	1 x 2 x AWG 22	1 Gbps (up to 600 MHz)	1.0 m, PVC, SFTP	1183807

SPE network cables in IP67 (M8) in accordance with IEC 63171-5 for industrial IP6X cabling

Web code: #2670	Cable design	Transmission	Note	Item no.
	1 x 2 x AWG 22/7	1 Gbps	2.0 m, female – female, PUR, SFTP	1217320

RJ45

RJ45 INDUSTRIAL PCB jacks for industrial device connection

Web code: #2059	Soldering process	Orientation	Note	Item no.
	Wave / THR	90° horizontal	Housing shield springs, LED	1099281
		180° vertical	Without LED, short solder contacts	1321106

RJ45 single-port PCB jacks for industrial device connection

Web code: #2341	Soldering process	Orientation	Note	Item no.
	SMD	90° horizontal	Locking clip at bottom, without LED	1149874

RJ45 multi-port PCB jacks for industrial device connection

Web code: #2341	Soldering process	Orientation	Note	Item no.
	Wave / THR	90° horizontal	2 RJ45 ports, housing shield springs, LED, short solder contacts	1337254

RJ45 INDUSTRIAL connectors for IP20 cabling				
Web code: #0330	Connection technology	Transmission/ protocol	Note	Item no.
	IDC terminal blocks	$CAT6_A$, PROFINET	AWG 23 ... AWG 22, straight cable outlet	1149847
		CAT5, Ethernet	AWG 26 ... AWG 24, cable outlet at top	1421876
			AWG 26 ... AWG 24, cable outlet at bottom	1421877

RJ45 connectors for IP20 cabling				
Web code: #0330	Connection technology	Transmission/ protocol	Note	Item no.
	IDC terminal blocks	CAT5, PROFINET	AWG 22, straight cable outlet	1658435

RJ45 INDUSTRIAL patch cables for IP20 cabling				
Web code: #2675	Cable design	Transmission/ protocol	Note	Item no.
	Configurable	Configurable	4/8 positions, CAT5, AWG 22/7 / AWG 22/19, SFTQ, PUR / PVC, 0.5 ... 400 m	1247656
				1247661
				1247629
				1247649

RJ45 office building patch cables for IP20 cabling				
Web code: #2676	Cable design	Transmission/ protocol	Note	Item no.
	2 x 4 x AWG 26/7	CAT5 (up to 1 Gbps)	LSZH, S/UTP	1227559 (0.5 m)
				1227563 (3.0 m)
		$CAT6_A$ (up to 10 Gbps)	LSZH, S/FTP	1227581 (3.0 m)
				1227588 (10.0 m)

Version 14 RJ45 connectors for industrial IP6X cabling				
Web code: #0325	Connection technology	Transmission/ protocol	Note	Item no.
	IDC terminal block	CAT5	AWG 26 ... AWG 24, push-pull connector, cable outlet at top	1422663

Version 14 panel-mount frames and inserts for industrial IP6X cabling			
Web code: #0325	Panel cutout	Note	Item no.
	Square	Unassembled panel-mount frame for PCB modules	1413963

Data connectors

RJ45

RJ45 modules and FO couplings for industrial IP6X cabling

Web code: #0325	Type	Note	Item no.
	RJ45 cable module for V14 panel-mount frames	AWG 24 ... AWG 22, IDC connection, CAT5	1652936

IP65/IP67 PROFINET cables up to 100 Mbps, variable cable length for industrial IP6X cabling

Web code: #0326	Cable design	Transmission/ protocol	Note	Item no.
	Configurable	CAT5 100 Mbps	Version 14 RJ45 connector, metal, PROFINET	1411866
			Version 14 RJ45 connector, plastic, PROFINET	1411867

IP65/IP67 Ethernet cables up to 1 Gbps, variable cable length for industrial IP6X cabling

Web code: #0327	Cable design	Transmission/ protocol	Note	Item no.
	Configurable	CAT5	Version 6 RJ45 connector, variable cable length	1411846

IP65/IP67 Ethernet cables up to 10 Gbps, variable cable length for industrial IP6X cabling

Web code: #0328	Cable design	Transmission/ protocol	Note	Item no.
	Configurable	$CAT6_A$	RJ45 connector / version 6 RJ45 connector, variable cable length	1414321

Version 6 RJ45 connectors for outdoor applications

Web code: #0329	Connection technology	Transmission/ protocol	Note	Item no.
	IDC	CAT5	AWG 26 ... AWG 23, gray, outside cable diameter: 5 mm ... 8.5 mm	1656990
	Crimp	$CAT6_A$	AWG 27 ... AWG 24, black, outside cable diameter: 5 mm ... 8.5 mm	1414410

Version 6 couplings for outdoor applications

Web code: #0329	Type	Note	Item no.
	1 x RJ45/RJ45	RJ45 coupling, IP67, CAT5e, with protective cover, gray	1689268
		RJ45 coupling, IP67, CAT5e, with protective cover, black	1658684

Version 6 panel-mount frames for outdoor applications

Web code: #0329	Type	Note	Item no.
	Round mounting cutout	RJ45 panel-mount frame, IP67, for modular socket inserts, gray	1689844
	Rectangular mounting cutout	RJ45 panel-mount frame, IP67, for modular socket inserts, black	1658642

Coaxial

Coaxial PCB connectors for industrial device connection

Web code: #2890	Soldering process	Orientation	Note	Item no.
	Wave	90° bulkhead	SMA	1340153

Assembled coaxial cables for IP20 cabling

Web code: #2890	Head 1	Head 2	Note	Item no.
	N (m)	N (m)	3.0 m	1340123

D-SUB

D-SUB contact inserts for industrial device connection

Web code: #0340	Type	Note	Item no.
	D-SUB connector	PCB connection with angled solder pins and solder plate, 2.5 mm hole, housing size: 1 (25 mm)	1654785
	D-SUB socket		1654798

USB

USB device connectors for industrial device connection

Web code: #2888	Soldering process	Orientation	Note	Item no.
	Wave	90° horizontal	USB 2.0, USB type A	1332630
	SMD	180° vertical	USB 3.2 Gen. 2, USB type C	1332645

USB patch cables for IP20 cabling

Web code: #2888	Head 1	Head 2	Note	Item no.
	USB type C	USB type C	2 m, USB 3.2 Gen. 2, PVC	1333213

HDMI

HDMI device connectors for industrial device connection

Web code: #2889	Soldering process	Orientation	Note	Item no.
	SMD	90° horizontal	HDMI 2.0, HDMI type A	1332071

HDMI patch cables for IP20 cabling

Web code: #2889	Head 1	Head 2	Note	Item no.
	HDMI type A	HDMI type A	1.5 m, HDMI high speed with Ethernet channel	1332081

Data connectors

FO

FO transceivers for industrial device connection

Web code: #2893	Type	Wavelength	Note	Item no.
	SFP+	850 nm	Temperature range: -40°C … +85°C	1334215
		1310 nm	Temperature range: -40°C … +85°C	1334219

Cages and PCB connectors for industrial device connection

Web code: #2893	Type	Module slots	Note	Item no.
	SFP/SFP+	2	Mounting: Press-in	1334221

FO connectors for IP20 cabling

Web code: #0332	Type	Fiber/category	Note	Item no.
	SC-RJ	POF	Duplex, for 980/1000 µm polymer fiber, single-core wire diameter: 2.2 mm	1654879
	SC-RJ	PCF	Duplex, for 200/230 µm, or 50/200/230 µm and 62.5/200/230 µm PCF fibers, single-core wire diameter: 2.2 mm	1411304
	SC duplex	GOF	Multimode, for wire or cable assembly, single-core wire diameter: 2 mm / 3 mm	1089518

GOF, PCF, and POF FO couplings for IP20 cabling

Web code: #2678	Type	Fiber/category	Note	Item no.
	SC duplex	OM4	Cable outlet: straight, color: violet	1208085

FO pigtails for IP20 cabling

Web code: #2678	Type	Fiber/category	Note	Item no.
	LC	OM2	Cable length: 2.5 m, number of positions: 12, cable outlet: straight, color: beige	1208101

FO patch cables for IP20 cabling

Web code: #0333	Type	Fiber/category	Note	Item no.
	LC-SC	OM2	Duplex plug-in bridge, multimode, UPC polishing, length: 1 m	1115607
	LC	OM4	Duplex jumper, multimode, UPC polishing, length: 1 m	1115625
		OS2 APC	Duplex jumper, singlemode, APC polishing, length: 1 m	1115630

Version 14 FO connectors for industrial IP6X cabling

Web code: #0334	Type	Fiber/category	Note	Item no.
	SC-RJ	POF	For cable diameter of 5.5 mm ... 10 mm, push-pull connector, die-cast zinc, cable outlet: bottom	1407902

Version 14 FO couplings for industrial IP6X cabling			
Web code: #0325	Type	Note	Item no.
	SC-RJ V14 coupling	Push-pull coupling, IP67, metal, with protective cover, color: nickel-plated	1405206

Version 6 FO connectors for outdoor applications				
Web code: #0329	Type	Fiber/category	Note	Item no.
	SC-RJ connector	POF	For 980/1000 µm polymer fiber, for single-core wire diameter of 2.2 mm, for cable diameter of 5.0 mm ... 8.5 mm, duplex, IP67	1657009

Version 6 couplings for outdoor applications			
Web code: #0329	Type	Note	Item no.
	SC-RJ coupling	IP65/IP67, duplex, can be used for GOF (multimode and singlemode), PCF, and polymer fiber types, color: gray	1410050

Solutions for the control cabinet

DIN rail adapters/marshalling panels			
Web code: #1643	Type	Note	Item no.
	DIN rail adapter set	Set item DIN rail adapter including RJ45 cable connection module, IP20, number of positions: 8, 10 Gbps, CAT6$_A$, material: PC-GF10, connection method: IDC connection, connection cross-section: AWG 26 ... AWG 22	1100077
	Marshalling panel, unassembled	Patch bay, 19" mounting, IP20, with 24 slots either for RJ45 cable connection modules, RJ45 coupler modules, LC duplex, SC simplex, and MPO, color: medium gray	1422978

RJ45 modules for the DIN rail adapter			
Web code: #1643	Type	Note	Item no.
	RJ45 coupling module	IP20, number of positions: 8, 10 Gbps, CAT6$_A$, material: die-cast zinc, connection method: 2x RJ45, adapter-free version	1041760

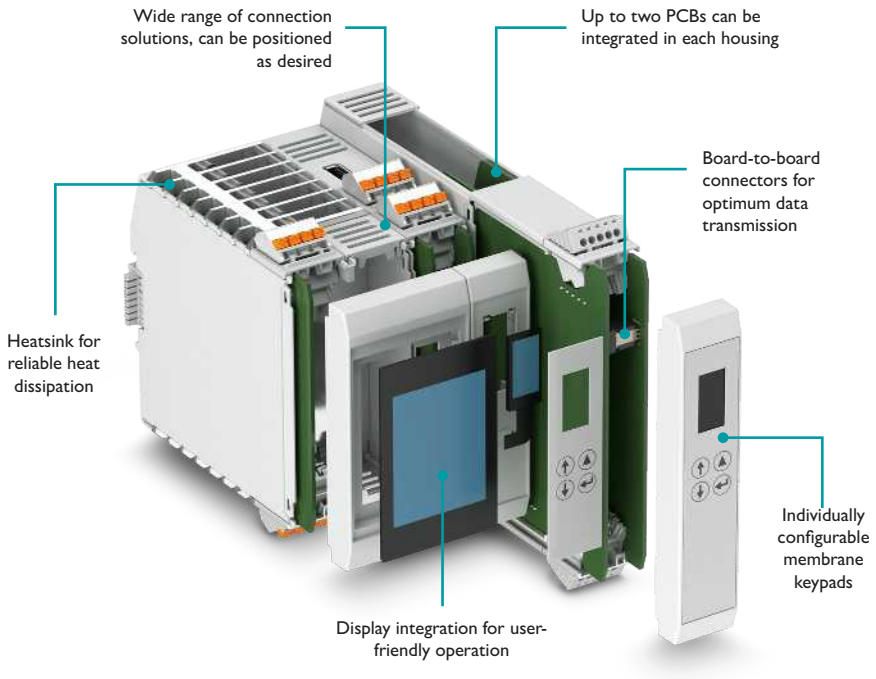
FO coupling modules for the DIN rail adapter			
Web code: #1643	Type	Note	Item no.
	FO coupling module	LC duplex, singlemode APC, IP20, cable outlet: straight	1041780

FO splice boxes, FDX 20 series, IP20			
Web code: #0336	Type	Note	Item no.
	6 x ST duplex 6 x SC duplex	Multimode, metal coupling distributor, without pigtails, DIN rail module, IP20, material: sheet steel, connection method: M20 cable gland, cable outlet: top and bottom, color: traffic gray A (RAL 7042)	1343388
	24 x SC duplex	OM2 (G50/125 µm), 19" splice box, gray, 1 RU, fully pre-assembled ready for splicing	1145407

Electronics housings

ICS as the ideal housing system for your device application

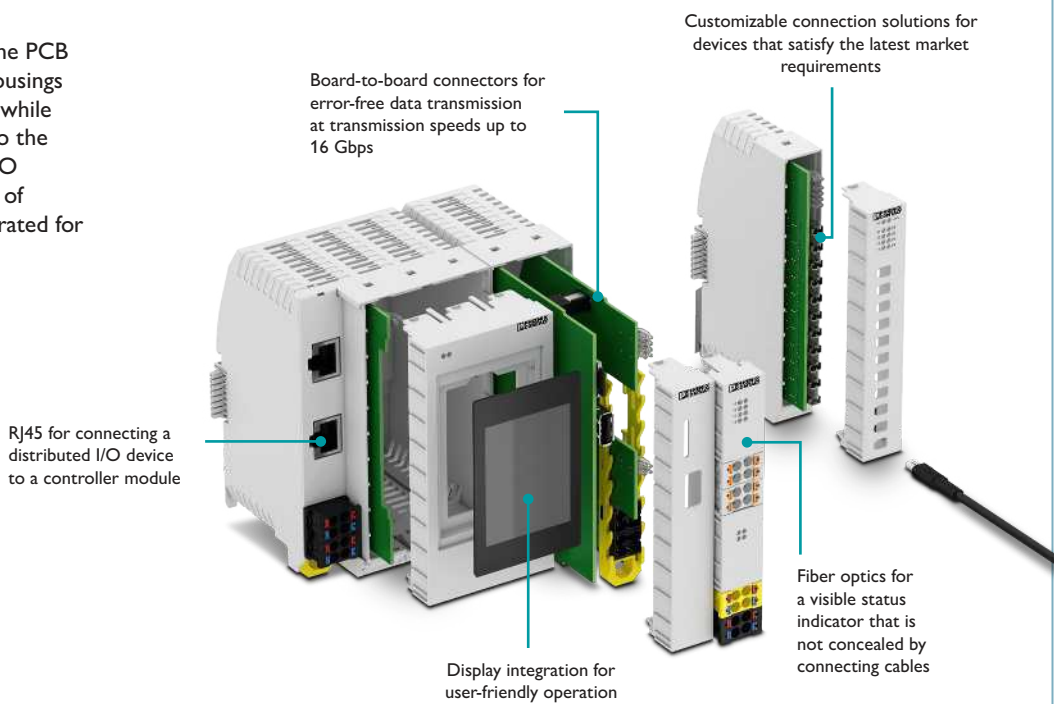
Benefit from the comprehensive selection of modules and high level of flexibility with regard to the connection technology. Take advantage of the unique possibilities afforded by the ICS housing series and create your own individual design. The ICS series housings also provide you with a broad portfolio of corresponding accessories, such as displays, membrane keypads, and board-to-board connectors. Using a heatsink allows you to benefit from the longer service life of electronic components.



Web code: #1635

ME-IO as the optimum system solution for your device development

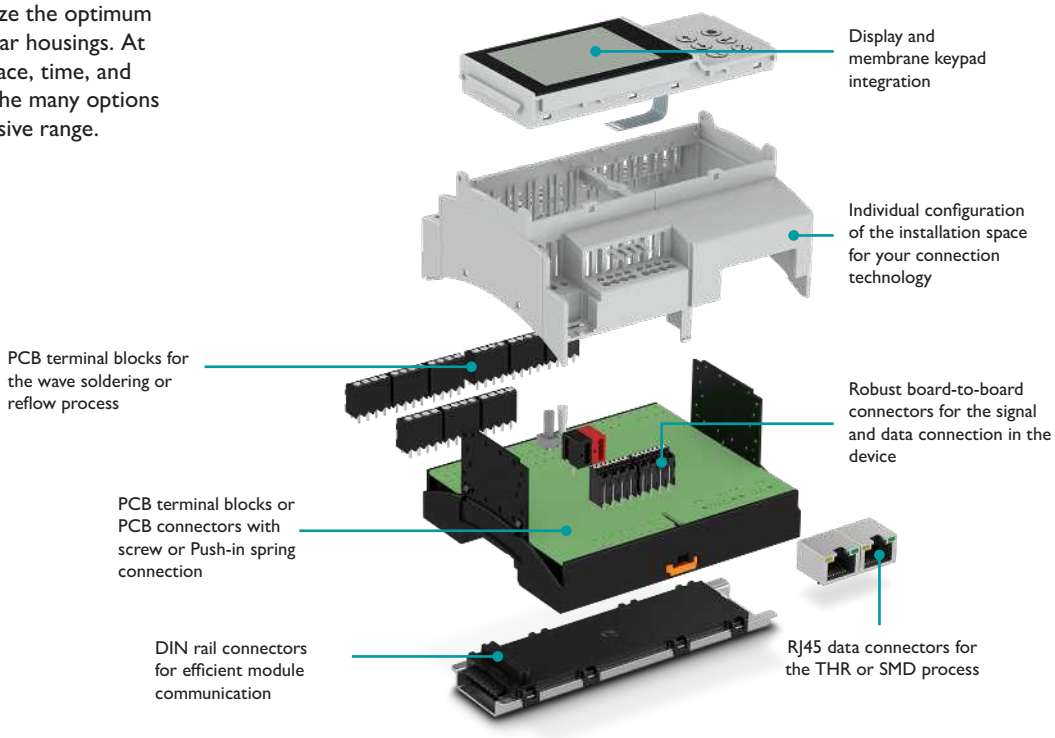
Empty electronics housings must accommodate far more than just the PCB with the electronics circuit. The housings need to be as compact as possible while still providing the ideal interfaces to the application environment. The ME-IO housing system provides a number of components that can be fully integrated for optimum device development.



Web code: #0904

BC modular electronics housings with different mounting options

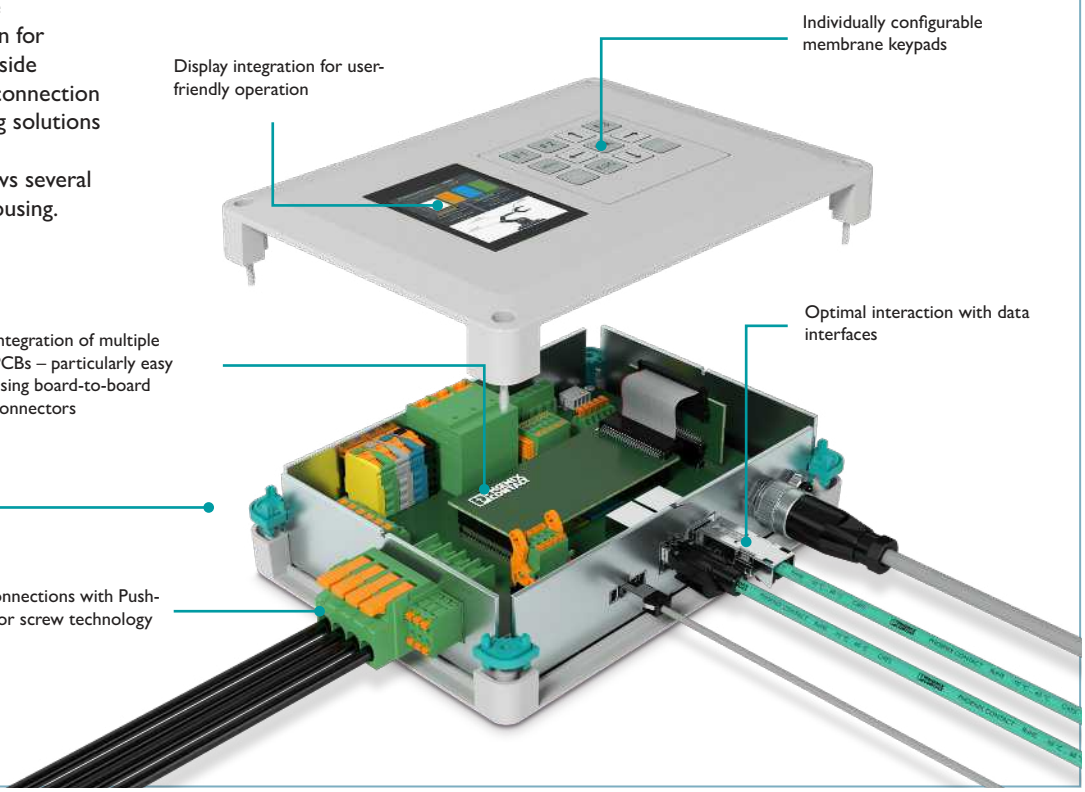
Protect your PCB and realize the optimum device solution with modular housings. At the same time, you save space, time, and money. Take advantage of the many options available in our comprehensive range.



Web code: #0310

Modular UCS universal housings for embedded systems

The universal housings from the UCS series are the ideal solution for embedded systems. Removable side panels allow integration of any connection technology and modular housing solutions in individual installed heights.
The flexible PCB mounting allows several PCBs to be integrated in one housing.



Web code: #0853

New customer-specific product developments

You have a challenge, we have the solution. We will support you throughout the product lifecycle, from the initial idea right through to the realization of your connection or housing solution. Our experience, built up over many years, guarantees that each new development will meet the most stringent market requirements.

Whether you are looking for special designs or complex electromechanical system solutions, Phoenix Contact will develop your tailored product using processes that have been proven many times over. Shape the innovations of tomorrow with us.

Your advantages

- ☑ Competent consultation on product requirements
- ☑ Detailed design of your desired concept
- ☑ Development of the ideal production concept
- ☑ Product qualification at our in-house laboratory
- ☑ Certification of the solution for your application
- ☑ Targeted project management right through to the start of series production

From the initial idea right through to series production

Preliminary clarification

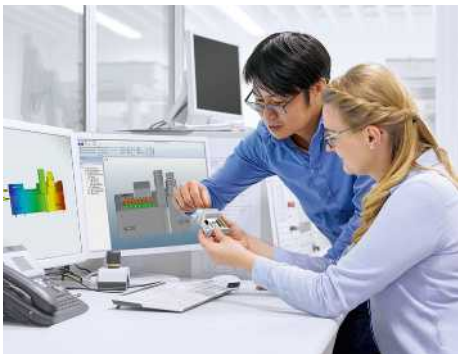
Talk to us as your partner who understands the requirements and speaks your language. In the shortest time, we will provide you with:

- Personal consultation with experienced development engineers
- Joint technology workshops
- A technical concept, with inspection samples as an option
- A non-binding quotation

Conceptual design

Together, we will develop the best solution for your product in accordance with your specific requirements. Take advantage of the benefits of our proven conceptual design sequences:

- Coordinated and approved technical specification
- Regulated test plan, including laboratory tests and approvals
- Comprehensive documentation



Production-ready

Decades of experience and locations throughout the world enable flexible and absolutely reliable development sequences. Benefit from working with Phoenix Contact through:

- High-level development and laboratory expertise
- Simultaneous engineering
- Standardized project management and quality assurance
- Application-specific standards and approvals

Production and logistics

We guarantee that your products will always arrive on time and in accordance with processes – regardless of batch quantity. Your advantages:

- High-level vertical integration and in-house tool shop and machine building facilities
- Flexible production planning, from manual assembly right through to mass production
- Customized identification and packaging
- Global production and logistics network

Product lifecycle

Whether you are developing your products further, changing technical details, or want to discontinue them, we will accompany you throughout the entire product lifecycle:

- Certified quality and environmental management
- Holistic approach to the entire value added chain
- One contact person throughout the entire product lifecycle

Contact

Contact us at:
Email: dcsolution@phoenixcontact.com

Web code: #2580

Excellent services

Along your development process, Phoenix Contact offers excellent services that make a difference. Discover how modern configurators, comprehensive technical data, and free product samples can make your daily work easier. As your partner, we will support you in the design-in process all the way to the development of customized connection and housing solutions.

The easy way to more choice
Choose online from 60,000 products and find the right solution quickly:
- Intuitive filter and search functions
- Comprehensive technical data and downloads such as drawings and 3D models
- Personal on-site consultation

The easy way to more individuality
Customize your products with colors, printing, and special designs:
- Customer-specific versions
- Customized new products
- Intuitive online configurators

The easy way to more flexibility
Use our different procurement channels and benefit from worldwide availability.
- All products can easily be ordered online
- Free online sample service
- Globally reliable logistics through direct shipping or distribution

The easy way to more expertise
Always stay up to date on technologies and trends with us as your reliable partner.
- Technology, industry, and design-in experts at your side
- We will provide you with custom training programs – either on site or digitally
- Free webinars, seminars, and video tutorials

Further information on Phoenix Contact services: simply enter the web code in the search field on our website.

Web code: #2594

Simple selection with filters and technical data

There is a separate detail page for every product

A data sheet is available to download for every item

Thanks to our global network, Phoenix Contact is always close to you

Device connection technology can be comprehensively configured

Housing parts and connection technology are easy to configure

Cable and assembly systems can be configured easily

Phoenix Contact supports you from the initial idea right through to series production

The online sample service is available in a large number of countries

Find the desired product quickly with intuitive filters

Product samples are available with free shipping

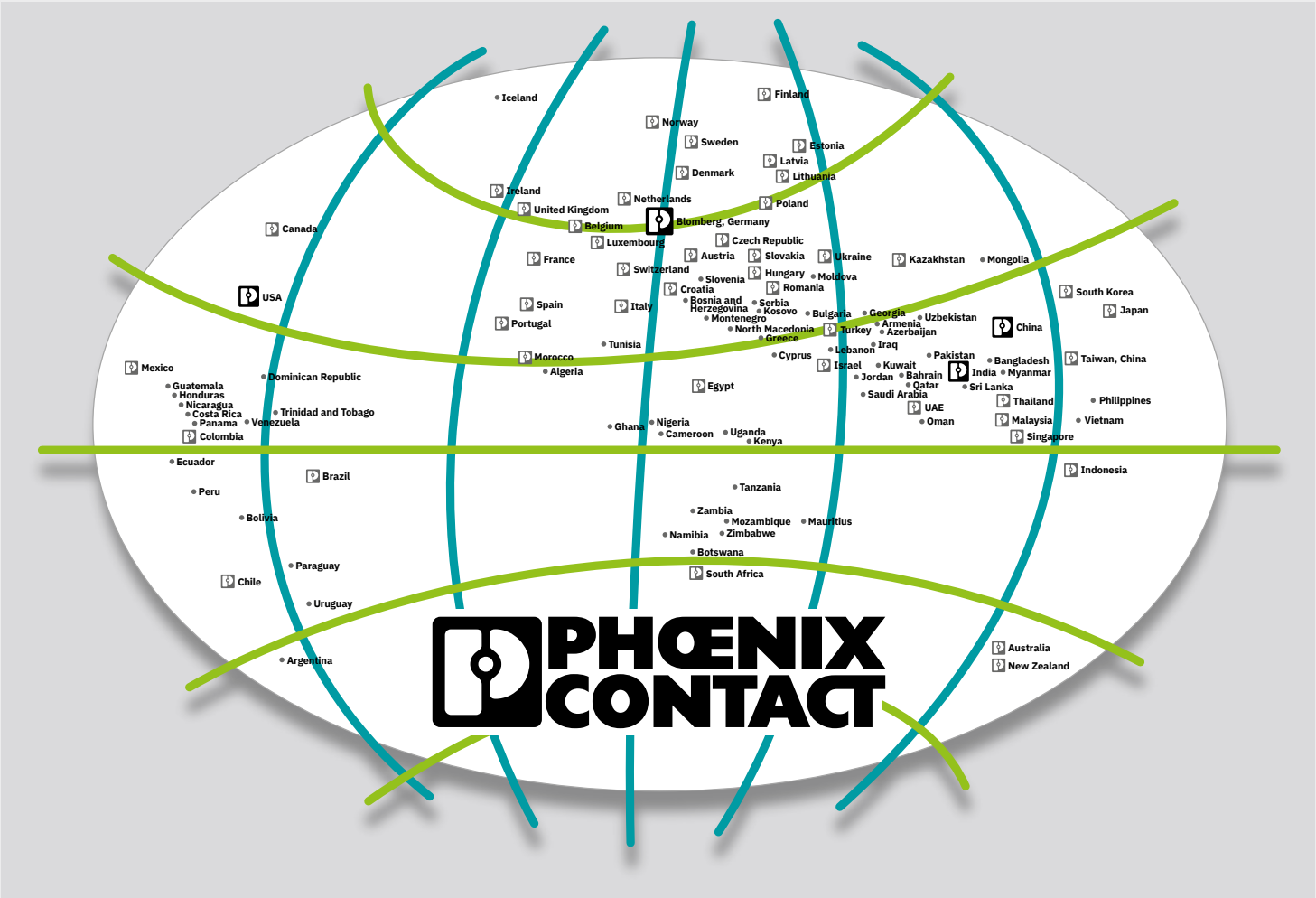
Reliable logistics worldwide

Keep up to date on new products, trends, and technologies

We will provide you with custom training programs – either on site or digitally

Stay up to date via YouTube, LinkedIn, Twitter, and Facebook

Remain reliably updated with the Phoenix Contact newsletter



Open communication with customers and partners worldwide

Phoenix Contact is a global market leader based in Germany. We are known for producing future-oriented products and solutions for the electrification, networking, and automation of all sectors of the economy and infrastructure. With a global network reaching across more than 100 countries with over 21,000 employees, we maintain close relationships with our customers, something we believe is essential for our common success.

Our wide range of innovative products makes it easy for our customers to implement the latest technology in a variety of applications and industries. This especially applies to the target markets of energy, infrastructure, industry, and mobility.

You can find your local partner at

phoenixcontact.com

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