PROFIBUS Complete
High-performance automation infrastructure
Consistent and flexible automation solutions with PROFIBUS

With well over 40 million devices installed, PROFIBUS is the world’s most successful fieldbus system for automation. The particular advantage is its flexibility and adaptability to the most diverse of applications.

Whether it’s a controller or a sensor, Phoenix Contact offers an extensive product portfolio with an excellent range of automation infrastructure. Industry-specific components are available for all sectors, in which consistent PROFIBUS solutions can be implemented quickly and easily.

Alongside the easy installation and user-friendliness, our products stand out thanks to their high quality and performance. This means that they not only satisfy the most demanding requirements for the productivity and efficiency of modern automation systems, but they also help to permanently reduce costs and increase system availability and productivity.
I/O modules for the control cabinet – fast, flexible, compact

Whether modular or compact, in the control cabinet or terminal box – thanks to advanced I/O devices, communication is fast and cost-effective. Phoenix Contact’s automation range with IP20 protection guarantees data and signal traffic. Thanks to the extensive product range, systems can be tailored to any application. The transmission speed, functions, and structure can be set according to your requirements.

I/O systems for the control cabinet:
• The Axioline I/O system transmits data in realtime from the I/O level up to the controller. Sensors and actuators can be connected quickly and easily thanks to the push-in connection technology.
• Maximum flexibility: with the Inline Modular I/O automation kit, form follows function. I/Os for more space in the control cabinet, depending on demands. This also includes safety applications or in potentially explosive areas.
• Compact design for optimum communication: the Inline Block I/O devices offer a high number of channels in an extremely flat design. Furthermore, they also offer bus termination and preselected I/Os.
**Inline Modular**

**IL PB BK D18 DO4/EF-PAC**  
Order No. 2692322  
- PROFIBUS DP and DP/V1  
- PROFIsafe-compatible  
- IO-Link calls  
- 8 inputs, 24 V DC  
- 4 outputs, 500 mA  
- 0.8 A at UL  
- D-SUB connection

**IL PB BK DP/V1-PAC**  
Order No. 2862246  
- PROFIBUS DP and DP/V1  
- 2 A at UL  
- D-SUB connection  
- 85 mm design width

**Inline Block I/O**

**ILB PB 24 D18 DIO8**  
Order No. 2863562  
- 8 inputs, 24 V DC  
- 8 inputs/outputs, 24 V DC 500 mA (can be freely selected)  
- D-SUB connection

**ILB PB A14 AO2**  
Order No. 2878874  
- 4 inputs  
- 0 – 5 V, + - 5 V, 0 – 10 V, +10 V  
- 0 – 20 mA, +20 mA, 4 – 20 mA  
- Pt100, pt500, Pt 1000, etc.

**Axioline**

**AXL BK PB**  
Order No. 2688530  
- PROFIBUS DP and DP/V1  
- Up to 63 local bus devices  
- Typical cycle time of an Axioline system bus: approximately 10 µs  
- I&M functions  
- D-SUB connection

**AS-Interface**

**FLX ASI MA 2 PB EF**  
Order No. 2773607  
- Gateway for PROFIBUS DP with extended functions  
- Double master  
- AS-i specification 3.0  
- IP20

**FLX ASI MA PB SF**  
Order No. 2773597  
- Gateway for PROFIBUS DP with standard functions  
- AS-i specification 3.0  
- IP20
I/O modules for field installation –
resistant, intelligent, and inexpensive

I/O devices from Phoenix Contact with IP65/67 protection support consistent and distributed use in systems and machines for any type of requirement. Economical and cost-effective thanks to minimal installation times and conventional wiring. The extensive product range means that an appropriate system is available for any use.

I/O systems for the field:
- The I/O devices in the Fieldline Modular series are flexible in the field, functional, and customizable.
- Fieldline Stand-Alone I/O devices acquire digital signals directly in the field. They have a compact design and a versatile installation.
Fieldline Stand-Alone

**FLS PB M 12 DIO 4/4 M12-2A**
Order No. 2736107
- 4 digital inputs
- 4 digital outputs
- 2 A per output

**FLS PB M 12 DIO 8/8 M12**
Order No. 2736372
- 8 digital inputs
- 8 digital outputs
- 500 mA per output

Fieldline Stand-Alone

**FLS PB M12 DO 8 M12-2 A**
Order No. 2736110
- 8 digital outputs
- 2 A per output

**FLS PB M12 IOL 8 DI 4 M12-B**
Order No. 2773380
- IO-Link master
- 8 IO-Link ports
- 4 digital inputs

Fieldline Modular

**FLM BK PB M12 DI 8 M 12**
Order No. 2736330
- 8 digital inputs
- Up to 16 local bus devices can be connected
- 500 kbaud/2 Mbaud

**FLM BK PB M12 DI 8 M12-EF**
Order No. 2773377
- Up to 16 local bus devices can be connected
- 500 kbaud/2 Mbaud
- 8 digital inputs
- I&M functions
- IO-Link calls

Fieldline Modular

**FLM IOL 4 DI M12**
Order No. 2736990
- Fieldline Modular IO-Link master
- 4 IO-Link ports
- 4 digital inputs
The devices in the PSI-MOS-PROFIB/FO... series are perfectly suited for use in demanding industrial applications. Fiber optic data transmission has become essential for guaranteeing high availability in PROFIBUS networks. The advantages of this technology are indispensable, especially in systems requiring long transmission distances and high immunity to EMC. Combined with PSI-REP copper repeaters, complex star distributors can be assembled with any mixture of copper and fiber optic channels. Phoenix Contact's fiber optic converters offer the perfect solution for any transmission distance.

### Advantages of PSI-MOS fiber optic converters

- Optical diagnostics: continuous monitoring of fiber optic paths
- Any cascading depth: signal conditioning using bit retiming
- Minimal wiring effort required: supply voltage and data signals routed via DIN rail connectors
- Redundant power supply by means of an optional system power supply unit
**Termination device for conversion to a fiber optic cable**

**T-coupler for conversion to two fiber optic cables**

<table>
<thead>
<tr>
<th>Description</th>
<th>Code</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polymer and HCS fibers</td>
<td>PSI-MOS-PROFIB/FO 660 E</td>
<td>2708290</td>
</tr>
<tr>
<td></td>
<td>Order No. 270820</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PSI-MOS-PROFIB/FO 660 T</td>
<td>2708287</td>
</tr>
<tr>
<td></td>
<td>Order No. 2708287</td>
<td></td>
</tr>
<tr>
<td>HCS and fiberglass (multi-mode)</td>
<td>PSI-MOS-PROFIB/FO 850 E</td>
<td>2708274</td>
</tr>
<tr>
<td></td>
<td>Order No. 2708892</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PSI-MOS-PROFIB/FO 850 T</td>
<td>2708261</td>
</tr>
<tr>
<td></td>
<td>Order No. 2708261</td>
<td></td>
</tr>
<tr>
<td>Fiberglass (multi-mode and single-mode)</td>
<td>PSI-MOS-PROFIB/FO1300 E</td>
<td>2708559</td>
</tr>
<tr>
<td></td>
<td>Order No. 2708892</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PSI-MOS-PROFIB/FO1300 T</td>
<td>2708959</td>
</tr>
</tbody>
</table>

**Technical data**

<table>
<thead>
<tr>
<th>Connection/wavelength</th>
<th>F-SMA/660 nm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transmission length (including 3 dB system reserve)</td>
<td></td>
</tr>
<tr>
<td>70 m (with polymer fiber)</td>
<td>400 m (with HCS/PCF fiber)</td>
</tr>
<tr>
<td>Ambient temperature range</td>
<td>-20°C … 60°C</td>
</tr>
</tbody>
</table>

**Conformance/approvals**

<table>
<thead>
<tr>
<th>ATEX</th>
<th>Class I, Zone 2, AEx nc IIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>UL, USA/Canada</td>
<td>Class I, Zone 2, AEx nc IIC</td>
</tr>
</tbody>
</table>

**Simple connection**

Several fiber optic converters can be easily connected via DIN rail connectors. This means that supply voltages and data signals can be wired crossways without effort.

The unique modular concept not only enables devices to be connected quickly without errors, but also offers the option of implementing redundant systems. Through the use of redundant system power supplies, redundant fiber optic converters, and fiber optic cables, the system adapts easily and flexibly to the respective safety requirements.

**Permanent diagnostics**

The signal quality of the fiber optic path is continuously monitored and visualized using a four-stage LED bar graph. A floating switch contact issues a warning if the signal becomes weaker. This means that maintenance can be organized promptly so as to avoid system downtime.

The PSI-MOS devices automatically provide an assessment of the signal quality if the control system is not available during startup. As such, the function and quality of the fiber optic paths can be assessed during the installation phase without the need for special measuring instruments.
PROFIBUS repeaters – install copper networks flexibly

Using the PROFIBUS repeater from Phoenix Contact significantly increases the availability of PROFIBUS applications. Bus segmentation with repeaters enables the network to be extended multiple times over, and in so doing allows more devices to be added to the network.

The high-quality electrical isolation between all four interfaces (Port A, Port B, power supply, and DIN rail connector) ensures maximum immunity to interference.

The modular concept of the repeater perfectly complements the fiber optic converters. Star distributors can therefore be assembled quickly and easily with any mixture of copper and fiber optic channels. The redundancy concepts of the modular system simultaneously increase the availability of the entire system.

**Optimized for PROFIBUS**

The PSI-REP-PROFIBUS/12MB modular repeater has been specially developed for the requirements of the PROFIBUS system. Its unique properties offer many advantages:

- Bit oversampling for reliable detection of sporadic disturbances
- Bit retiming for unrestricted cascading of devices
- Start delimiter detection for filtering of faulty telegrams
- Modular structure thanks to DIN rail connectors
- Can be combined easily with all PSI-MOS fiber optic converters
Active termination for PROFIBUS networks

The PSI-TERMINATOR-PB not only ensures continuous termination of the bus system, it also offers a defined service and measuring connection.

This provides important advantages for you:

- Interference-free bus communication despite bus devices that change, thanks to permanent bus termination
- Fixed programming interface in the network with supply provided by the D-SUB connection
Use existing cables – with the PROFIBUS extender

The PROFIBUS extender can be used to easily network PROFIBUS devices which are located up to 20 km apart from each other.

PROFIBUS data rates of up to 1.5 Mbps are possible when using the rugged SHDSL modulation method, e.g., with in-house phone lines. PROFIBUS cables are not required for remote communication.

The configuration software is used to calculate the maximum possible PROFIBUS data rate as well as the slot time to be set in the PROFIBUS system.
Establishing point-to-point connections, linear structures or a mixed operation of copper and fiber optics is supported with the PROFIBUS extender.

### Point-to-point connection

**SHDSL 2-wire**

31, maximum

### Path redundancy

31, maximum

### Line structure

**SHDSL 2-wire**

31, maximum

31, maximum

31, maximum

### Mixed operation of copper cables and fiber optics

Fiber optics

31, maximum
Wireless solutions – PROFIBUS transmission with Bluetooth

A wireless data link enables remote devices to be integrated into a PROFIBUS network in a convenient and flexible manner.

The preconfigured Bluetooth PROFIBUS set is available as simple cable replacement for serial data transmission (e.g., slip rings, drag chains or field bus cables).

The Bluetooth I/O system uses Bluetooth to integrate I/O signals from up to three external stations to a PROFIBUS network.

---

High transmission security with Wireless Serial

- Secure and tamper-proof data transmission thanks to password protection, 128-bit encryption, plus fixed and invisible device pairing
- Coexistence with other wireless systems, thanks to adaptive frequency hopping (AFH) method
Rugged communication with wireless I/O
- Connection established automatically
- Extremely rugged and reliable
- Quick and easy startup
- Coexistence with other wireless systems through black channel listing, low emission mode, and AFH
- Protected against manipulation and tapping
- For ranges up to 150 m

PROFIBUS wireless set
PSI-WL-PROFIB/BT-SET/2DO
Order No. 2313876
- Bluetooth wireless set
- Two paired Bluetooth converters
- Two OMNI omnidirectional antennas
- Can be used for RS-232/422/485 2-wire interfaces
- Transmission speed: 187.5 kbps
- Adjustable transmission power (-28 ... 20 dBm)
- Transceiver for distances of up to 150 m

Bluetooth I/O system
FLM BT BS 3
Order No. 2736770
Bluetooth base station
FLM BT DIO 8/8M12
Order No. 2736767
8 digital inputs and outputs
FLM BT DI 16 M12
Order No. 2693208
16 digital inputs
FLM BK PB M12 DI 8 M12
Order No. 2736330
PROFIBUS bus coupler

Application examples for the PROFIBUS wireless set:
- Wireless programming access between a notebook and an industrial controller
- Data link between a third-party device with integrated Bluetooth interface and an industrial controller
- Networking of mobile devices
- Integration of a bus device into an existing bus system
- Simple point-to-point and multipoint connection

Machine-oriented installation with the Bluetooth I/O system:
Fieldline Modular Wireless I/O modules can be mounted directly in the machine or system. The "last meter" to the sensors and actuators is then wired conventionally in a star formation, e.g., using pre-assembled M12 plug-in connectors.
Wireless solutions – wireless integration of I/O signals into the PROFIBUS level

Together with the serial wireless module, the PROFIBUS gateway ensures direct connection for wirelessly networked I/O field stations to the PROFIBUS level.

As a modbus master, the PROFIBUS gateway automatically organizes the cyclical data exchange of up to 10 I/O stations in the field, and provides these to PROFIBUS. The full PROFIBUS speed of up to 12 Mbps is guaranteed for this function.

Configuration advantage:
The predefined software modules of the GSD file help you to reproduce the individual network of I/O stations quickly and easily. The GSD file (containing the communication characteristics of a PROFIBUS DP device) can be downloaded from the Internet at www.phoenixcontact.com.
RAD-ISM-TW-PB-GATEWAY with RAD-ISM-2400-DATA-BD-BUS
I/O connection to PROFIBUS

As a modbus master, the PROFIBUS gateway automatically organizes the cyclical data exchange of I/O stations in the field, and provides these to PROFIBUS. The full PROFIBUS speed of up to 12 Mbps is guaranteed for this function. Up to ten I/O stations can be operated at one master.
Process Fieldbus –
genuine modularity in a fieldbus

The modular fieldbus components for PROFIBUS PA applications allow communication from the process controller to the field devices. Specifically: the scalable approach enables efficient, tailored installation.

The device couplers in pre-assembled field junction boxes connect the devices to each other and ensure that segments are protected. Along with surge protection and appropriate connecting cables, an extensive product range is available.

Advantages of the modular field infrastructure
- Increased system availability thanks to single-point integrity
- Fault-tolerant module replacement and interruption-free extension during operation
- Save time and money with tailored installation

Technical data
- Approvals
- Housing material
- Degree of protection
### Field connection boxes and installation accessories

- **FB-15-SS**
  - Order No. 2316190
  - with 15 bore holes
- **FB-9-SS**
  - Order No. 2316213
  - with 9 bore holes
- **FB-15-AL**
  - Order No. 2316187
  - with 15 bore holes
- **FB-8-AL**
  - Order No. 2316200
  - with 8 bore holes
- **FB-M-KV-M20-EX**
  - Order No. 2900197
- **FB-M-BS-M20-EX**
  - Order No. 2900209
- **PT 2X2-FF-ST**
  - Order No. 2800735
- **WMS 9,5 (30X16)R**
  - Order No. 0800377
- **AI 1 - 8 RD**
  - Order No. 3200030

### Surge protection for field devices

- **S-PTEX-24DC**
  - Order No. 2800034
- **S-PTEX-24DC-1/2**
  - Order No. 2800035

### Device couplers and trunk line modules

- **FB-ET**
  - Order No. 2316048
  - trunk module
- **FB-2SP**
  - Order No. 2316051
  - coupler for 2 devices
- **FB-ISO**
  - Order No. 2316064
  - FISCO device coupler

### Open and pre-assembled connecting cables

- **SAC-4P-MINMS/2,0-960 VAL**
  - Order No. 1429350
- **SAC-4P-2,0-960/MINFS VAL**
  - Order No. 1429712
- **SAC-4P-MINMS/0,3-960/MINFSVAL**
  - Order No. 1429538
- **SAC-4P-MINMS/2,0-961 VAL**
  - Order No. 1433786
- **SAC-4P-MINMS/0,3-961/MINFSVAL**
  - Order No. 1434264
- **SAC-4P-MIN-T2XMIN FF VA**
  - Order No. 1430035
- **SAC-4P-MINMS FF-TR VA**
  - Order No. 1430023
- **SAC-2P-960/...**
  - Order No. 1432389
- **SAC-2P-961/...**
  - Order No. 1434620

Pre-assembled connecting cables, also available with M12 screw connection.

### UL-Ex, IECEx, ATEX II 3G Ex nA IIC T4

- V4A, 316L electropolished
- Al powder-coated
- IP66/NEMA 4X

### ATEX Ex II 1G Ex ia IIC T4

- IECEx, UL-EX
- ATEX Ex d IIC T4

### UL-Ex, IECEx, ATEX

- Ex nA[nL Gc] IIC T4 Gc, FISCO
- Ex nA[lc Gc] IIC T4 Gc, FISCO
- Ex nA [la Ga Da] IIC T4 Gc

### Plastic/stainless steel

- Plastic
- Stainless steel

PHOENIX CONTACT 19
The functional safety range – simplicity means safety

Safety technology in the PROFIBUS network – with Phoenix Contact's safety products, you can integrate functional safety technology into the existing network in a flexible and scalable manner. The products are ideally suited for both new installations and retrofit projects. Integration can be carried out at any time. Many applications have different requirements – all of them have one thing in common: quite simply, they are safe.

From configurable safety modules, to SafetyBridge technology products, right through to safe PROFlsafe I/O modules – all safety products are developed and certified according to the latest standards.

You can create future-proof and flexible applications with the extensive safety product range, thanks to versatile, scalable products.
PSR-TRISAFE – configurable safety modules

Straight from the relay to the configurable safety system: the PSR-TRISAFE safety modules can be flexibly and individually tailored to meet each and every demand. The independent compact controller can be easily extended using a fieldbus coupler, in order to also view diagnostics data in the machine controller.

SafetyBridge technology – the flexible safety system

The safe I/O modules are distributed across the PROFIBUS network according to requirements. The system functions completely independently and only uses the bus system and the standard control system as a means of transportation. Functional safety technology is integrated into the system or machine entirely without a safety controller.

Safety signals are acquired where they occur and are output as required.

PROFIsafe – safe I/O modules

The safe I/O modules can be operated decentrally in PROFIBUS networks in conjunction with a safety controller. The product range encompasses safe input modules, output modules, and relay modules.

The safe modules can be installed together with standard modules, the solution for applications with numerous safe signals.
CONTACTRON – control and monitor motors centrally

Thanks to the simple integration of the motor manager into the PROFIBUS network, numerous motors can be controlled and precisely monitored within one system. This ensures high system availability in complex production processes. Systems are easily extended with the flexible system and preventively maintained thanks to detailed monitoring and power measurement. CONTACTRON hybrid motor starters are optionally available in a short-circuit-proof design and combine up to four functions of a conventional reversing contactor circuit in one device.

Motor starter on PROFIBUS:
A gateway enables the hybrid motor starters to be connected to PROFIBUS with ease – up to 58 devices with a maximum length of 600 m per gateway.
**Smart wiring**

SmartWire-DT™ automatically assigns device addresses to the gateway at the touch of a button. The gateway enables fast and easy wiring and connection to PROFIBUS. Fast startup times and extensive diagnostics options round off this innovative product.
Effective surge protection in the PROFIBUS network

The secure and reliable transmission of all relevant data and signals in the PROFIBUS network ensures interruption-free production. This means that not only measures against unauthorized access and viruses, worms, and trojans must be taken, but that the risk of harm caused by surge voltages as a result of lightning strikes or switching operations must be excluded.

In addition to the expense involved in repairing damaged or replacing destroyed electrical and electronic equipment, surge voltages can also lead to the loss of software and data, and therefore system downtime. In particular where cabling extends beyond a building, it is primarily the devices that are connected to an Ethernet cable that are at risk.
**Protection for D-SUB-9 signal interfaces**

**D-UFB-PB**  
Order No. 2880642

- Surge protection integrated into PROFIBUS connector plug
- Use in PROFIBUS DP up to 12 Mbps

---

**Protection for two signal wires**

**PT 3-PB-ST**  
Order No. 2858030  
**PT 1X2-BE**  
Order No. 2856113

- Coarse and fine protection combination for PROFIBUS up to 12 Mbps
- Two-part structure with base element and plug-in protective element

---

**Protection for single-phase power supplies**

**PT 2-PE/S-24AC/FM**  
Order No. 2800457  
**PT 2-PE/S-230AC/FM**  
Order No. 2858357

- Surge protection for single-phase power supplies
- Optical signaling via LED

---

**Technical data**

<table>
<thead>
<tr>
<th>Description</th>
<th>D-UFB-PB</th>
<th>PT 3-PB-ST</th>
<th>PT 2-PE/S-24AC/FM</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>IEC category/EN type</strong></td>
<td>C1/C3/B2</td>
<td>C1/C2/C3/D1</td>
<td>III/T3</td>
</tr>
<tr>
<td><strong>Nominal voltage U_N</strong></td>
<td>–</td>
<td>–</td>
<td>24/230 V AC</td>
</tr>
<tr>
<td><strong>Maximum continuous voltage U_C</strong></td>
<td>5.2 V DC</td>
<td>5.2 V DC/3.6 V AC</td>
<td>34/253 V AC</td>
</tr>
<tr>
<td><strong>Nominal current I_N</strong></td>
<td>250 mA (25°C)</td>
<td>450 mA (45°C)</td>
<td>26 A (30°C)</td>
</tr>
<tr>
<td><strong>Nom. arrester surge current I_ar (8/20) µs</strong></td>
<td>350 A/350 A</td>
<td>10 kA/10 kA</td>
<td>1/3 kA</td>
</tr>
<tr>
<td><strong>Total surge current (8/20) µs</strong></td>
<td>350 A</td>
<td>20 kA</td>
<td>–</td>
</tr>
<tr>
<td><strong>Connection method</strong></td>
<td>Screw connection and D-SUB-9</td>
<td>Screw connection</td>
<td>Screw connection</td>
</tr>
<tr>
<td><strong>Test standards</strong></td>
<td>IEC 61643-21</td>
<td>IEC 61643-21</td>
<td>IEC 61643-1/EN 61643-11/ A11/UL 1449</td>
</tr>
<tr>
<td><strong>Remote indication contact</strong></td>
<td>–</td>
<td>–</td>
<td>N/C contact</td>
</tr>
</tbody>
</table>

---

**High risk potential**

Since each circuit works with its own specific voltage, a surge voltage occurs if the upper tolerance limit is exceeded. The type of damage caused depends on the dielectric strength of the components as well as the energy that can be converted in the affected circuit.

In a circuit in which a 230 V AC relay is operated, a coupled voltage of 500 V does not cause any significant damage. In a 5 V DC circuit, the same surge voltage reaches 100 times the nominal voltage of the affected component and will therefore definitely destroy it.

---

**Microelectronics are at particular risk**

Sensitive electronic components are the most commonly affected by surge voltage damage.
The SUBCON-PLUS-PROFIB/... connector range is specifically designed for use in PROFIBUS systems up to 12 Mbps. The user has a choice between screw or IDC connection technology for connecting the incoming and outgoing bus cable. This also ensures a particularly fast and safe connection under field conditions. The termination resistor is already integrated into all versions, and can be conveniently connected externally by means of a slide switch.

**Advantages of SUBCON connectors**
- Screw connection or IDC terminal block connection technology
- Suitable for solid and stranded copper conductors
- Metal housing for high level of immunity to interference at maximum transmission speed
- Choice of with or without connection to additional programming devices
- Compact design for use in narrow spaces
Assemble PROFIBUS cables quickly and easily

Minimal effort:
The Fast Connect cable (PSM-CABLE-PROFIB/FC 2744652) can be assembled quickly and conveniently using the stripping tool (PSM-STRIP-FC/PROFIB 2744623), even under field conditions. Two tasks are completed with a single tool:
1. Strip cable and single wires and insert into connector
2. Close connector housing cover – and you’re done!
Fiber optic installation technology – rugged and user-friendly

Increasing data quantities, transmission speeds, and electromagnetic compatibility loads and ever expansive installations quickly take conventional copper technology to its limits.

In light of this, fiber optic technology has become increasingly important. Optical data transmission is now the norm in critical systems with high requirements regarding availability.

Phoenix Contact’s fiber optic installation technology represents industrial solutions which are easy to install and can be maintained in no time at all.

Interference-free and high-performance with fiber optics
The main advantages of fiber optic technology are its practical application in locations where copper installations face obstacles.

• Networks can be extended up to several dozen kilometers without the data rate being compromised
• Immune to the EMC influences
• Complete electrical isolation of system parts
• Significantly reduced weight in comparison with copper cables
• Immunity to surge voltages (lightning strikes)
**Assembled cables**

**ST/ST/150**
Order No. 2901555

- Various polymer, HCS, and fiberglass cables produced according to customer requirements
- Lengths and fiber optic connectors (IP20 and IP67) can be freely combined
- All cables can also be ordered by the meter without connectors

**Patch cables**

**FL MM PATCH 2.0 ST-ST**
Order No. 2901816

- Pre-assembled patch cable for fast connection of fiber optic devices
- Highly rugged fiberglass cables for all conventional connector formats can be ordered in fixed lengths of 1, 2, and 5 m

**Connectors**

**PSM-SET-B-FOC/4-HCS**
Order No. 2708481

- Easy-to-install connectors for fast and easy self-assembly on-site
- Various connector formats can be ordered with IP20 and IP67

**Couplings**

**PSM-SET-BFOC-LINK/2**
Order No. 2799429

- For connecting fiber optic cables with the same pin arrangement
- As detachable panel feed-through
- For quickly repairing damaged cables

**POF tool set**

**PSM-POF-KONFTOOL**
Order No. 2744131

- Assembly case for polymer fiber cables with F-SMA and SCRJ quick mounting connectors

**GOF and POF tool sets**

For **POF field assemblies**
Order No. 1405246

**VS-GOF-FA-KONFTOOL-EU**
Order No. 1658228

**VS-GOF-FA-KONFTOOL-US**
Order No. 1658231

- Case with assembly tool for fiber-glass or polymer fiber cables
- GOF: SC and ST (IP20)
- POF: SCRJ (IP20/IP67)

**HCS tool set**

For **F-SMA connectors**
Order No. 2799526

For **B-FOC connectors**
Order No. 2708465

For **SCRJ connectors**
Order No. 2708876

- Assembly case for HCS fiber cables
- All tools ideal for simple and quick connector assembly

**Fiber optic measuring instrument**

**PSM-FO-POWERMETER**
Order No. 2799539

Supplementary set for devices with SCRJ interface
Order No. 2901560

- Fiber optic measuring kit for devices with F-SMA and B-FOC interface
- For wavelengths between 660 and 850 nm
Copper cabling for PROFIBUS and PROFIBUS PA

Plug-in connectors offer considerably greater flexibility for PROFIBUS cabling in contrast to drop cables. The bus connectors can be plugged into and removed from the bus at any time, without data traffic being interrupted. Both 9-pos. D-SUB plug-in connectors and M12 circular plug-in connectors compliant with IEC 60947-5-2 can be used with the transmission technology according to RS-485. Phoenix Contact offers D-SUB and M12 plug-in connectors and components for cabling PROFIBUS and PROFIBUS PA reliably and seamlessly.

Advantages of M12 plug-in connectors
The compact size of the M12 circular plug-in connectors means that you can save space on the device. The SPEEDCON rapid interlock system is suitable for particularly fast connection to the field. As such, a secure and reliable connection is established with just half a turn of the knurl.
### Assembled cables

**PROFIBUS:**
- M12-SPEEDCON plug to M12-SPEEDCON socket, 1 m
  - Order No. 1518122

**PROFIBUS PA:**
- M12 plug to M12 socket, 1 m
  - Order No. 1419104

• Molded cables with M12 plug-in connectors for PROFIBUS and PROFIBUS PA

### Plug-in connectors and flush-type plug-in connectors that can be assembled

- **Plug-in connector, screw connection, socket**
  - (can be assembled)
  - Order No. 1507777
  - Pin
  - Order No. 1507764

- **Flush-type plug-in connector with bus system cable, 1 m**
  - Socket
  - Order No. 1534397
  - Pin
  - Order No. 1534355

• M12 plug-in connector in various designs for cabling in the field
• Plug-in connector with SPEEDCON rapid interlock system and spring-cage or screw connection for quick, on-site assembly

### T distributors and termination resistors

- **T distributor M12 plug to M12 plug and M12 socket**
  - Order No. 1507780

- **Termination resistor M12 plug**
  - Order No. 1507803

• T distributors and termination resistors for cabling in the field

### D-SUB plug-in connectors and couplings

- **IP67 D-SUB plug-in connector set, pin, shielded**
- **Screw connection**
  - Order No. 1654549

- **Spring-cage connection**
  - Order No. 1654345

• 9-pos. D-SUB plug-in connectors with spring-cage or screw connection with IP20 and IP67 protection
• Couplings and gender changers with integrated panel mounting frame for panel feed-throughs

---

**Complete installation system**

The product range comprises plug-in connectors, panel feed-throughs, assembled cables, patch panels, terminal outlets, plus corresponding accessories and thus forms a complete installation system. PLUSCON data is suitable for use in field and industrial hall cabling inside the control cabinet and for integration in devices with a high degree of protection.
Further information on the products presented here and on the world of solutions from Phoenix Contact can be found at www.phoenixcontact.net/catalog

Or contact us directly.

PHOENIX CONTACT GmbH & Co. KG
32823 Blomberg, Germany
Phone: +49 (0) 52 35 3-00
Fax: +49 (0) 52 35 3-4 12 00
www.phoenixcontact.com