



PROFIBUS Complete

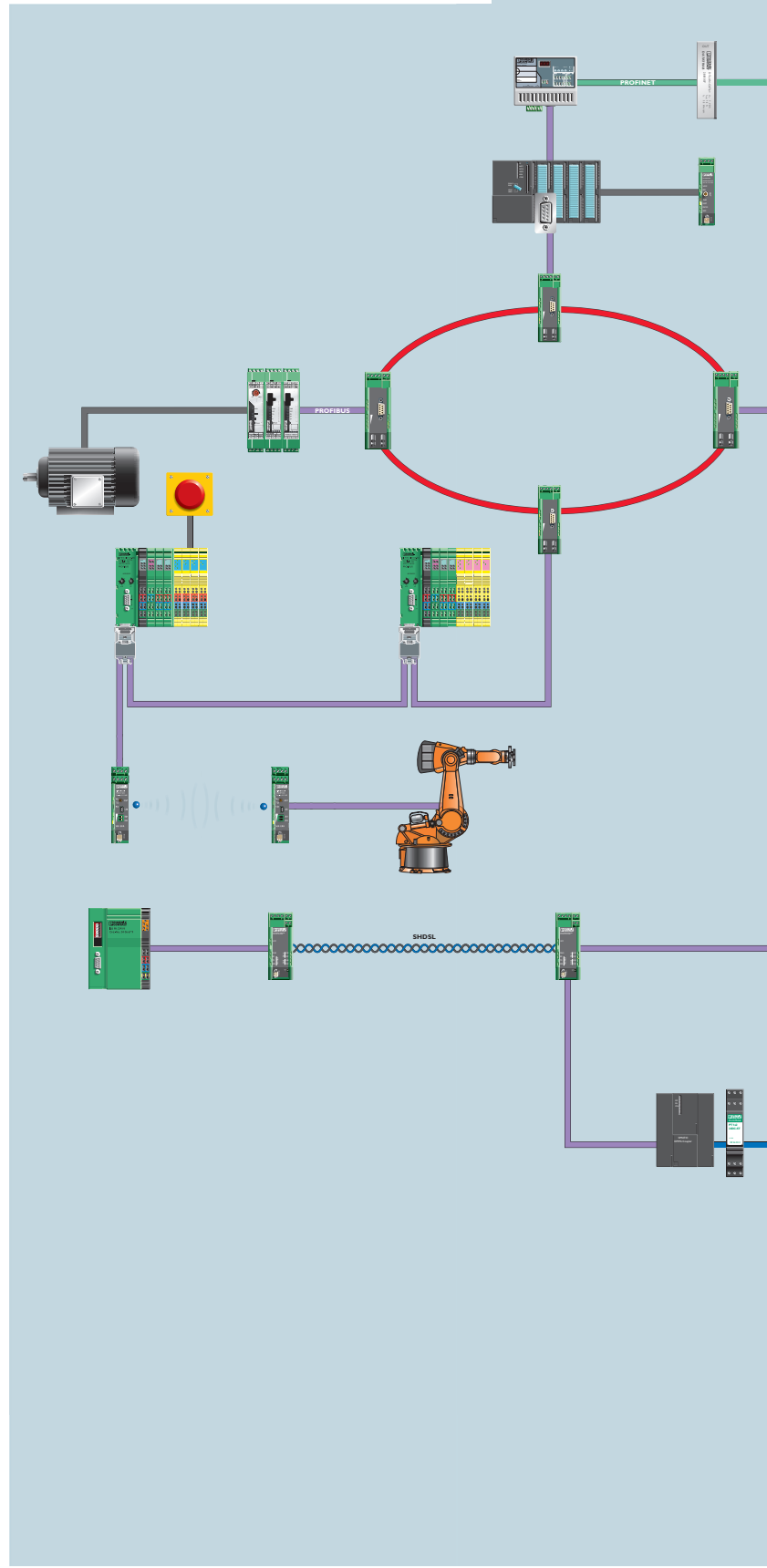
High-performance
automation infrastructure

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.



**PROFI
NET**

**PROFI
BUS**

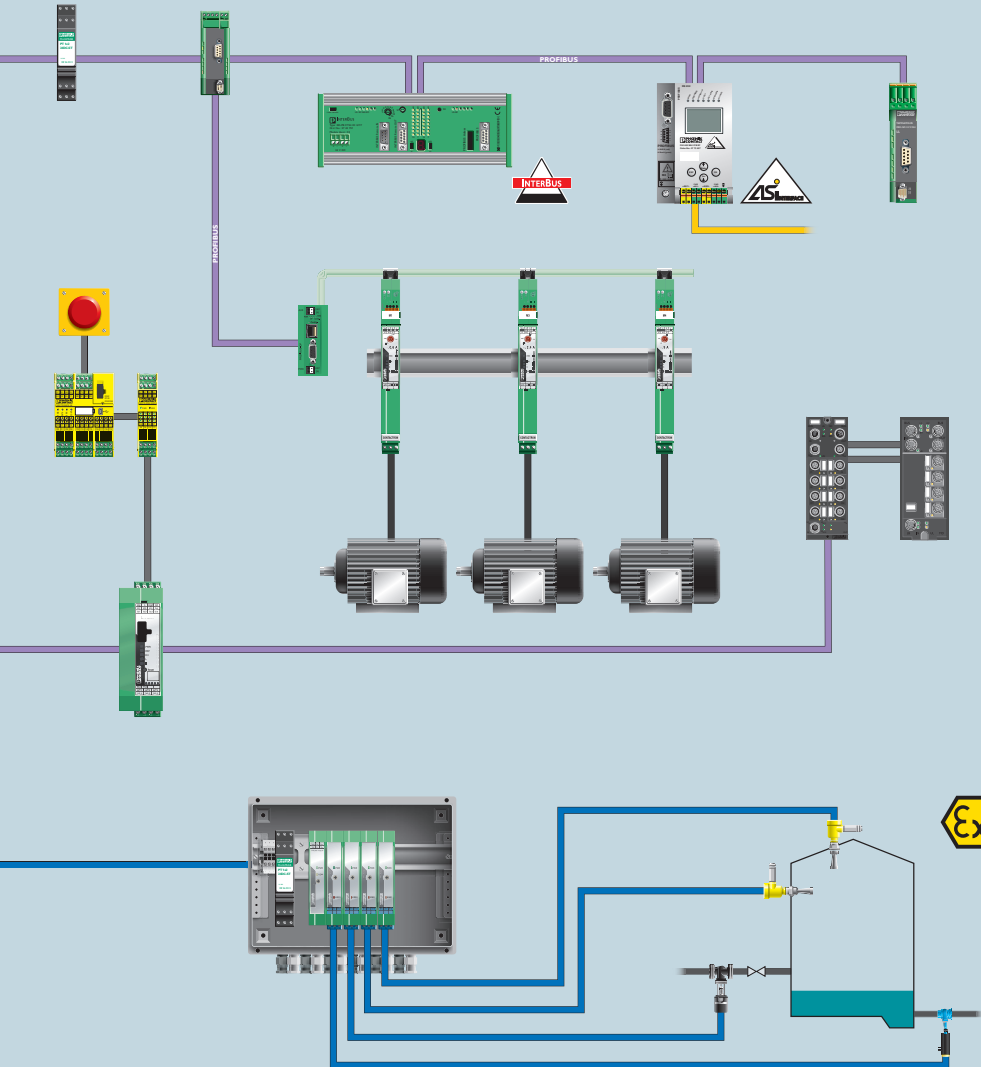


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I/O modules for the control cabinet – fast, flexible, compact

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 DI8 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 U_L
- D-SUB connection

Inline Modular

IL PB BK DP/V1-PAC
Order No. 2862246

- PROFIBUS DP and DP/V1
- 2 A at U_L
- D-SUB connection
- 85 mm design width

Inline Block I/O

ILB PB 24 DI8 DIO8
Order No. 2863562

- 8 inputs, 24 V DC
- 8 inputs/outputs, 24 V DC 500 mA (can be freely selected)
- D-SUB connection

Inline Block I/O

ILB PB AI4 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

AS-Interface

FLX ASI MA PB SF
Order No. 2773597

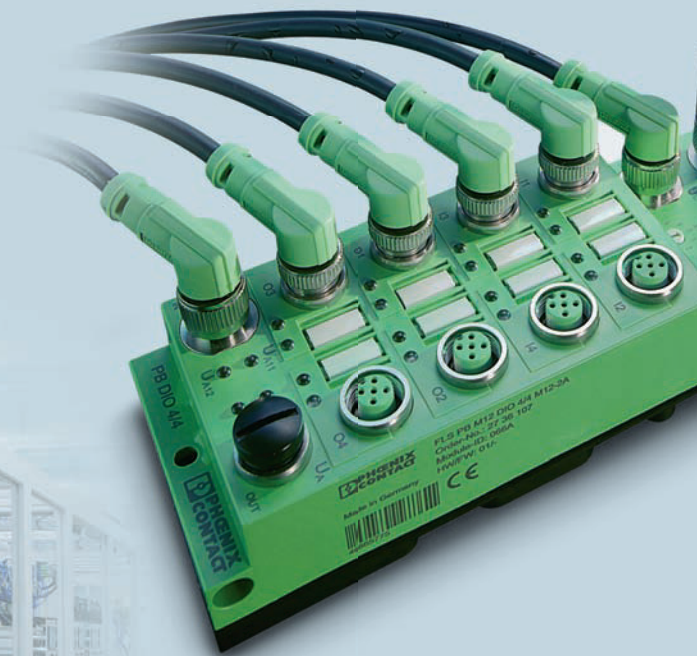
- Gateway for PROFIBUS DP with standard functions
- AS-i specification 3.0
- IP20

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



Fieldline Stand-Alone

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



IO-Link master

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



Fieldline Modular

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

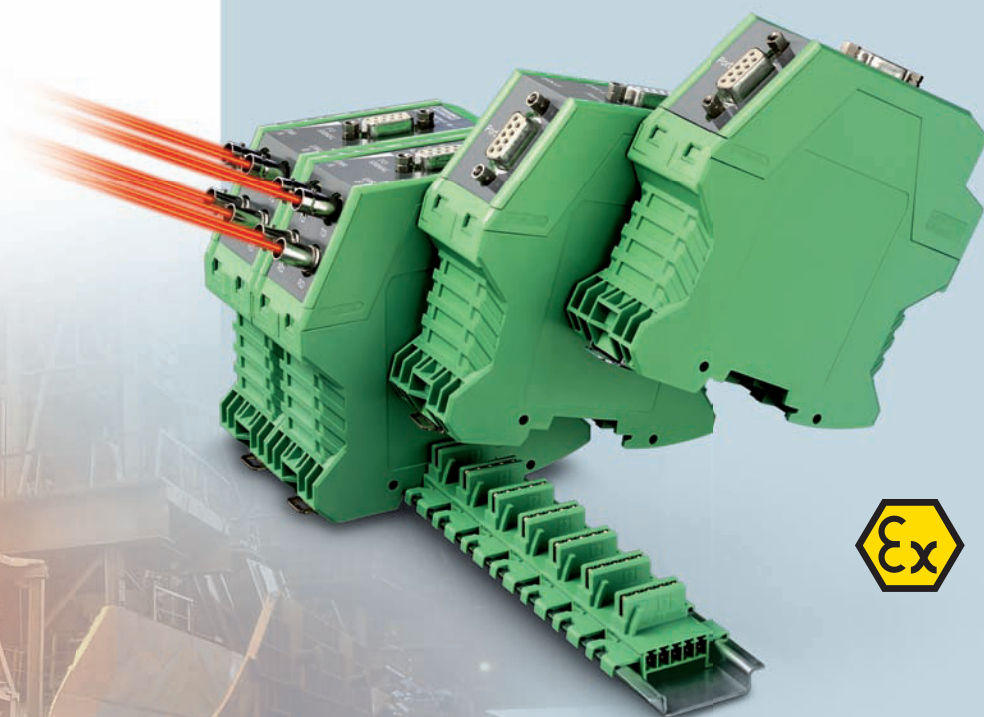
- Fieldline Modular IO-Link master
- 4 IO-Link ports
- 4 digital inputs

Fiber optic converters – interference-free over any distance

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





Polymer and HCS fibers

PSI-MOS-PROFIB/FO 660 E
Order No. 2708290

PSI-MOS-PROFIB/FO 660 T
Order No. 2708287



HCS and fiberglass (multi-mode)

PSI-MOS-PROFIB/FO 850 E
Order No. 2708274

PSI-MOS-PROFIB/FO 850 T
Order No. 2708261



Fiberglass (multi-mode and single-mode)

PSI-MOS-PROFIB/FO1300 E
Order No. 2708559

PSI-MOS-PROFIB/FO1300 T
Order No. 2708892

Termination device for conversion to a fiber optic cable

T-coupler for conversion to two fiber optic cables

Technical data

Connection/wavelength
Transmission length including 3 dB system reserve
Ambient temperature range

F-SMA/660 nm
70 m (with polymer fiber)
400 m (with HCS/PCF fiber)
-20°C ... 60°C

B-FOC (ST@)/850 nm
800 m (with HCS/PCF fiber)
up to 3300 m (with multi-mode fiberglass)
-20°C ... 60°C

SC duplex/1300 nm
Up to 25 km (with multi-mode fiberglass)
45 km (with single-mode fiberglass)
-20°C ... 60°C

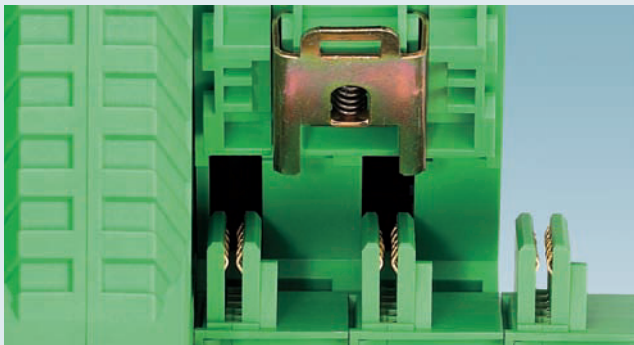
Conformance/approvals

ATEX
UL, USA/Canada

⊗ II 3 G Ex nA nC IIC T4 Gc X
⊗ II (2) G [Ex op is Gb] IIC
⊗ II (2) D [Ex op is Db] IIC (PTB 06 ATEX 2042 U)
Class I, Zone 2, AEx nc IIC

⊗ II 3 G Ex nA nC IIC T4 Gc X
⊗ II (2) G [Ex op is Gb] IIC
⊗ II (2) D [Ex op is Db] IIC (PTB 06 ATEX 2042 U)
Class I, Zone 2, AEx nc IIC

⊗ II 3 G Ex nA nC IIC T4 Gc X
cUL 508 listed



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.

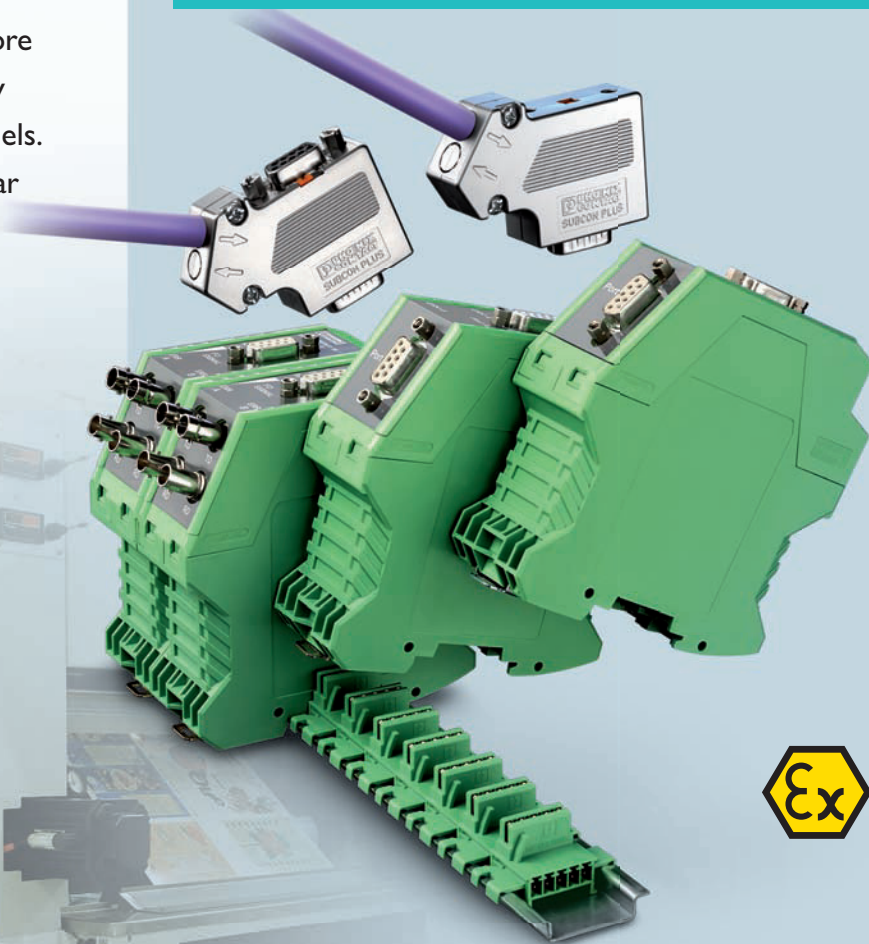
The high-quality electrical isolation between all four interfaces (Port A, Port B, power supply, and DIN rail connector) ensures maximum immunity to interference.

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





PROFIBUS repeater

Active termination

PSI-REP-PROFIBUS/12MB
 Order No. 2708863
 Repeater for electrical isolation and increasing the range

PSI-TERMINATOR-PB
 Order No. 2313944
 Active termination resistor for PROFIBUS and RS-485 with electrical isolation

Technical data

Interface
 Transmission speed
 Electrical isolation
 Connection method
 Ambient temperature range

RS-485
 ≤ 12 Mbps
 PortA/PortB/VCC/T connector
 D-SUB-9 socket per port
 -20°C ... 60°C

RS-485
 ≤ 12 Mbps
 RS-485/VCC
 D-SUB-9 socket, screw terminal block
 -20°C ... 65°C

Conformance/approvals

ATEX
 UL, USA/Canada

⊕ II 3 G Ex nAC IIC T4 X
 cUL 508 listed

⊕ II 3 G Ex nA IIC T4 Gc X
 –

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.

INNOVATIONSPREIS-IT

BEST OF 2012

initiative
mittelstand

HARDWARE

BEST OF 2012 – hardware

The medium-sized company initiative has made its debut with the company INNOVATIONSPREIS-IT, which offers innovative IT solutions and excellent user benefits to medium-sized companies. Phoenix Contact's PROFIBUS extender particularly impressed the panel of experts and was ranked in the top group from more than 2500 applications.

The PROFIBUS extender was awarded the title of "BEST OF 2012" in the hardware category.





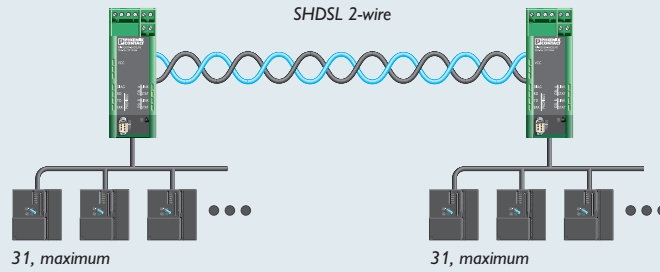
PROFIBUS extender

PSI-MODEM-SHDSL/PB
Order No. 2313656

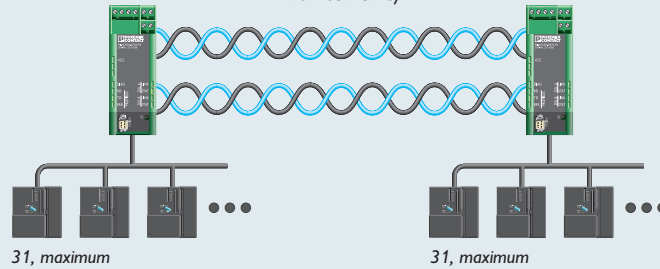
- SHDSL permanent line modem with PROFIBUS interface
- Transmission distance of up to 20 km
- Transmission speeds of up to 1.5 Mbps
- Any copper cables can be used
- Conformity/approval:
ATEX: Ex II 3 G Ex nA II T4 X
UL,USA/Canada: UL 508 listed
railway approval EN 50121-4

Establishing point-to-point connections, linear structures or a mixed operation of copper and fiber optics is supported with the PROFIBUS extender.

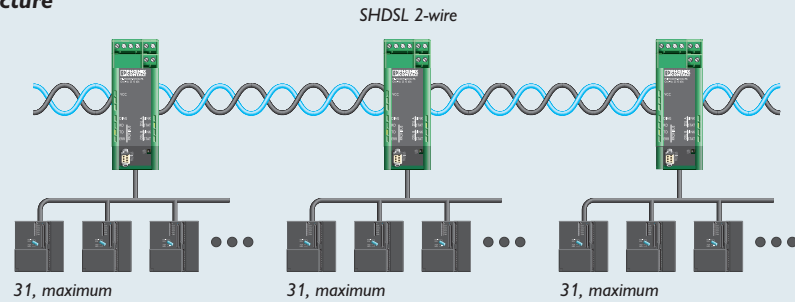
Point-to-point connection



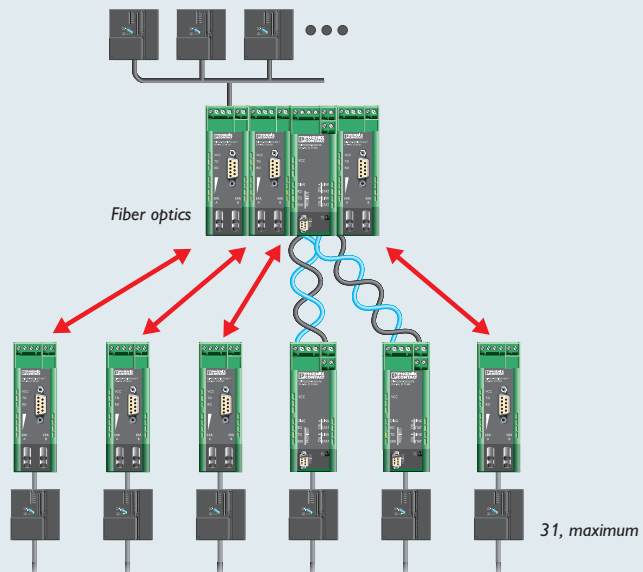
Path redundancy



Line structure



Mixed operation of copper cables and fiber optics



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

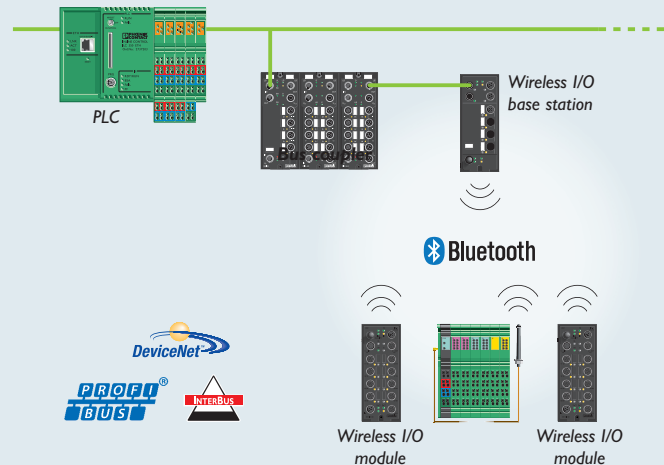
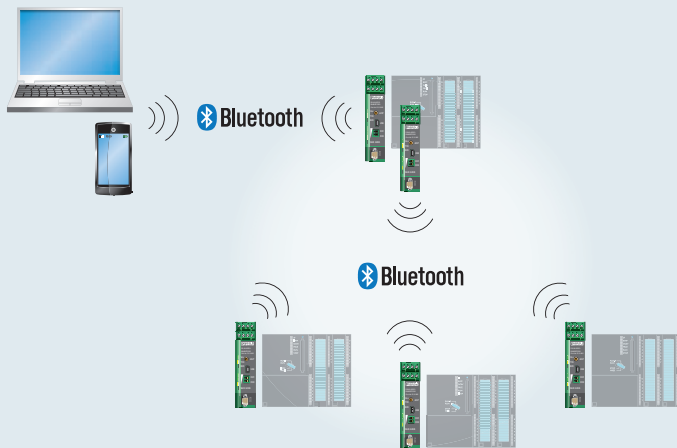
Bluetooth I/O system

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.





PROFIBUS gateway

RAD-ISM-TW-PB-GATEWAY
Order No. 2917366

- PROFIBUS data rate of up to 12 Mbps
- Data rate in wireless network: 56.7 kbps

RAD-ISM-TW-RS232
Order No. 2917159

- RS-232 connecting cable to master wireless module (accessories)



Wireless module

RAD-ISM-2400-DATA-BD-BUS
Order No. 2867872

- Can be configured with software as master, slave or repeater slave
- Transmission speed up to 250 kbps gross (57.6 kbps net)

RAD-ISM-2400-DATA-CONFIG-KIT
Order No. 2885838

- Quick start guide, user manual, software, RS-232 USB cable



I/O extension modules

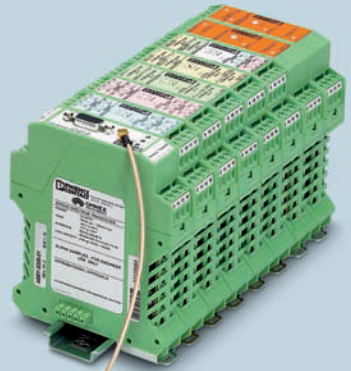
RAD-IN-8D
Order No. 2867144
8 digital inputs
RAD-OUT-8D-REL
Order No. 2867157
8 digital outputs

RAD-IN-4A-I
Order No. 2867128
4 analog inputs
RAD-OUT-4A-I
Order No. 2867128
4 analog outputs

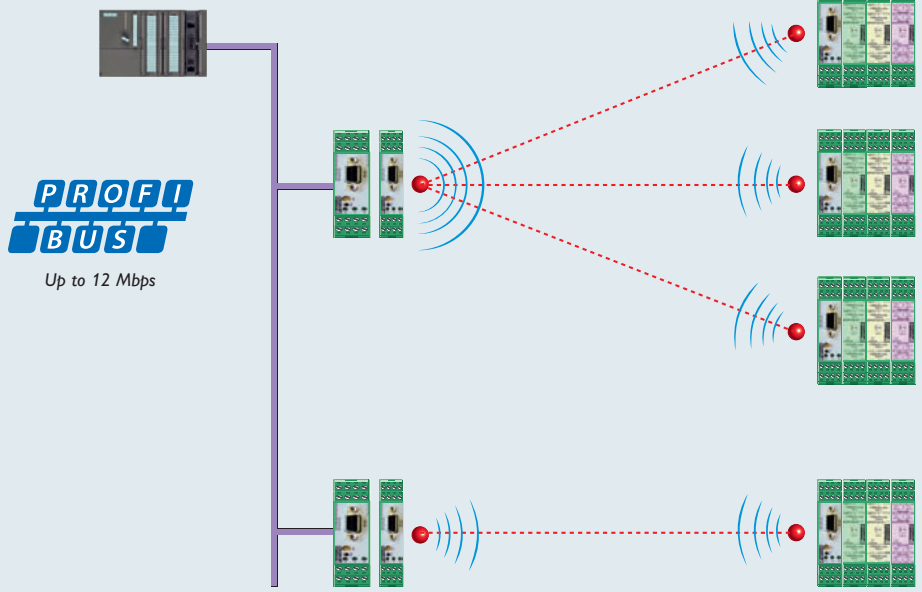
RAD-IN+OUT-2D-1A-I
Order No. 2867322
1 analog input and 2 digital outputs

RAD-IN-2D-CNT
Order No. 2885223
2 measuring inputs and counter inputs

RAD-OUT-2D-CNT
Order No. 2885236
2 measuring inputs and counter outputs



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

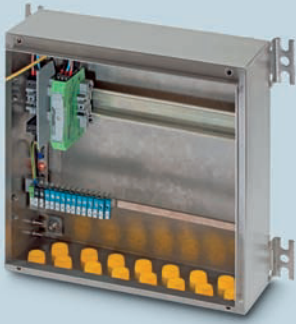


Technical data

Approvals

Housing material

Degree of protection



Field connection boxes and installation accessories

FB-15-SS¹⁾
Order No. 2316190
with 15 bore holes

FB-9-SS¹⁾
Order No. 2316213
with 9 bore holes

FB-15-AL²⁾
Order No. 2316187
with 15 bore holes

FB-8-AL²⁾
Order No. 2316200
with 8 bore holes

FB-M-KV-M20-EX¹⁾
Order No. 2900197

FB-M-BS-M20-EX¹⁾
Order No. 2900209

PT 2X2-FF-ST
Order No. 2800755

WMS 9,5 (30X16)R
Order No. 0800377

AI 1 - 8 RD
Order No. 3200030

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

¹⁾ V4A, 316L electropolished
²⁾ Al powder-coated

IP66/NEMA 4X



Surge protection for field devices

S-PT-EX-24DC
Order No. 2800034

S-PT-EX-24DC-1/2⁴⁾
Order No. 2800035

ATEX Ex II 1G Ex ia IIC T4
IECEX, UL-EX
ATEX Ex d IIC T4

V4A, 316L

IP67



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

UL-Ex, IECEx, ATEX
* Ex nA[nL Gc] IIC T4 Gc, FNICO
** Ex nA[ic Gc] IIC T4 Gc, FISCO
*** Ex nA [ia Ga Da] IIC T4 Gc

Plastic

IP20



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. 1433964

SAC-4P-2,0-961/MINFS VAL
Order No. 1433786

SAC-4P-MINMS/0,3-961/MINFSVAL
Order No. 1434141

SAC-4P-MINMR/0,3-961/MINFSVAL
Order No. 1434264

SAC-4P-MIN-T/2XMIN 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.

–

Plastic/stainless steel

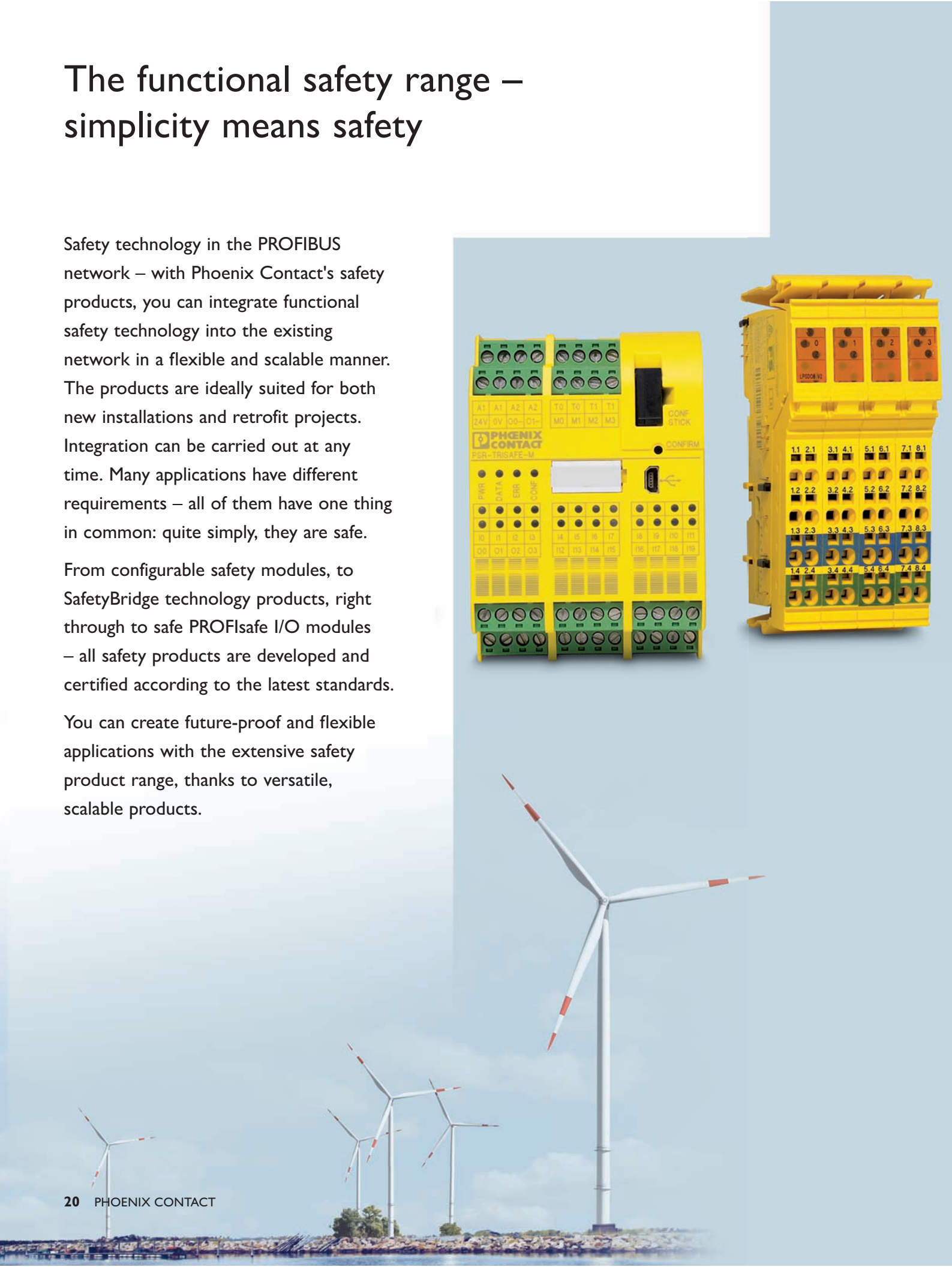
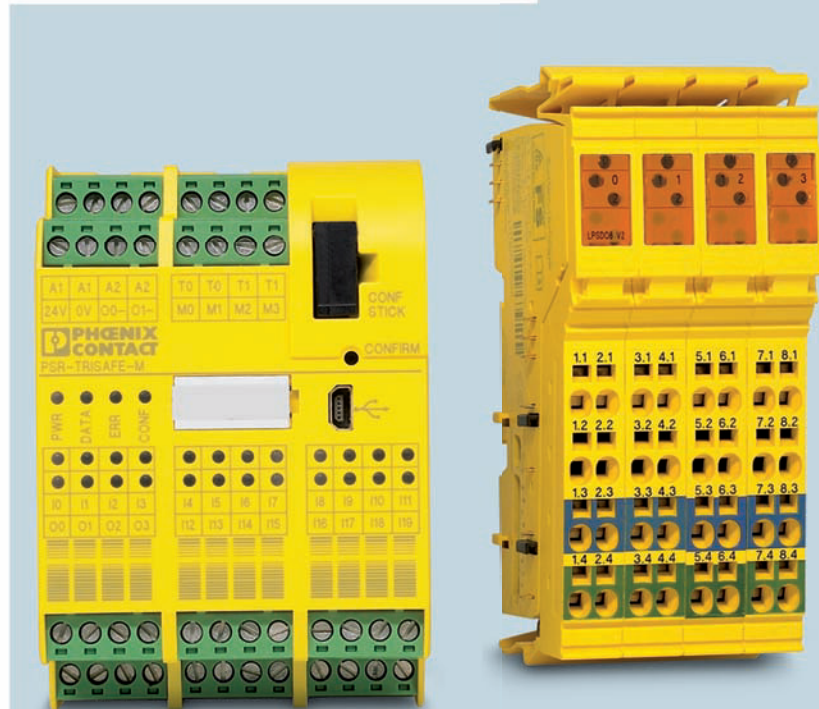
IP67

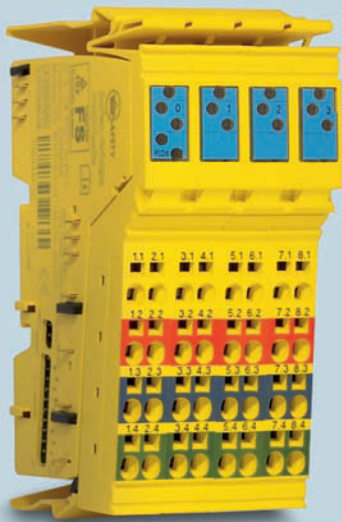
The functional safety range – simplicity means safety

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 PROFIsafe 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.





PROFIBUS gateway

EM-PB-GATEWAY-IFS
Order No. 2297620

- 8 digital inputs and 4 outputs can be freely parameterized
- Certified according to DPV1 specifications (EN 50170)
- Failsafe mode supported
- Digital switching outputs for direct control of EMM...IFS (forward/reverse running)
- Communication via T-BUS with up to 31 EMM...IFS modules

Inline Modular bus coupler

IL PB BK D18 DO4/EF-PAC
Order No. 2692322

- PROFIBUS DP and DP/V1
- PROFI-safe-compatible
- IO-Link calls
- 8 inputs, 24 V DC
- 4 outputs, 500 mA
- 0.8 A at U_L
- D-SUB connection



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.



PROFI-safe – 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.





PROFIBUS DP gateway for motor starters

EUSC-SWD-CAN PxC
Order No. 2903100

- SmartWire-DT™ gateway for connection to PROFIBUS DP as slave
- Automatic baud rate detection: 9.6 kbps to 1.2 Mbps
- Connects up to 58 SmartWire-DT™ devices
- Programming/parameterization software can be downloaded free of charge from the download area



PROFIBUS DP gateway for motor managers

EM-PB-Gateway-IFS
Order No. 2297620

- 8 digital inputs and 4 outputs can be freely parameterized
- Certified according to DPV1 specifications (EN 50170)
- Failsafe mode supported
- Digital switching outputs for direct control of EMM...IFS (forward/reverse running)
- Communication via T-BUS with up to 31 EMM...IFS modules
- Programming/parameterization software can be downloaded free of charge from the download area



Connection accessories

SWD4-8SF2-5
Order No. 2903107
8-pos. device connector

SWD4-8MF2
Order No. 2903108
8-pos. flat connector

100 m/SWD4-100LF-8-24
Order No. 2903111
3 m/SWD-3LF8-24-25
Order No. 2903112
8-pos. flat-ribbon cable

SCD4-RE8-10
Order No. 2903106
Network dummy plug

Pliers

Device connector
Order No. 2903110

Flat connector
Order No. 2903114

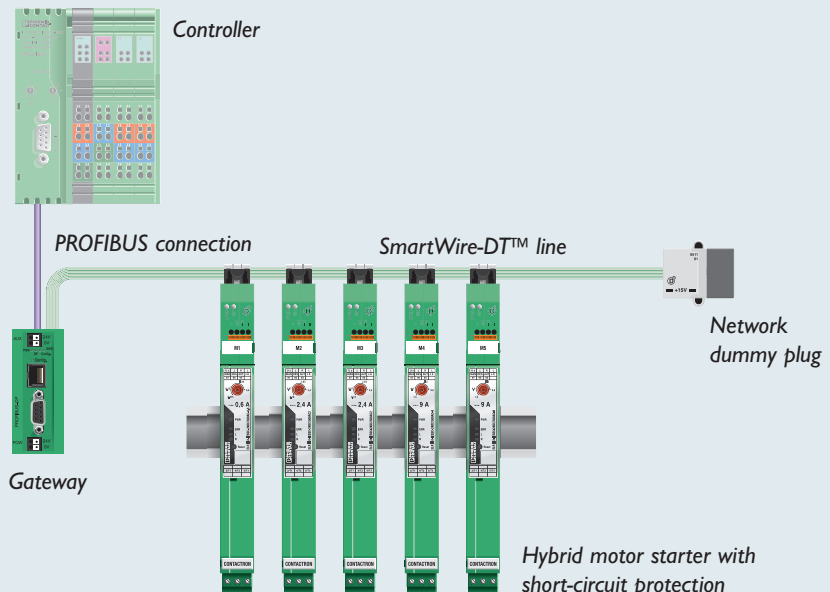


Mounting rail connector (T-BUS)

ME 22,5 TBUS 1,4/5-ST3.81
Order No. 2707437

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

Description

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

Technical data

| | |
|---|------------------------------|
| IEC category/EN type | C1/C3/B2 |
| Nominal voltage U_N | – |
| Maximum continuous voltage U_C | 5.2 V DC |
| Nominal current I_N | 250 mA (25°C) |
| Nom. arrester surge current I_N (8/20) μ s Core-Core/Core-Ground | 350 A/350 A |
| Total surge current (8/20) μ s | 350 A |
| Connection method | Screw connection and D-SUB-9 |
| Test standards | IEC 61643-21 |
| Remote indication contact | – |



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

| | |
|---|---|
| IEC category/EN type | C1/C2/C3/D1 |
| Nominal voltage U_N | – |
| Maximum continuous voltage U_C | 5.2 V DC/3.6 V AC |
| Nominal current I_N | 450 mA (45°C) |
| Nom. arrester surge current I_N (8/20) μ s Core-Core/Core-Ground | 10 kA/10 kA |
| Total surge current (8/20) μ s | 20 kA |
| Connection method | Screw connection (in connection with base element) |
| Test standards | IEC 61643-21 |
| Remote indication contact | – |



Protection for single-phase power supplies

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

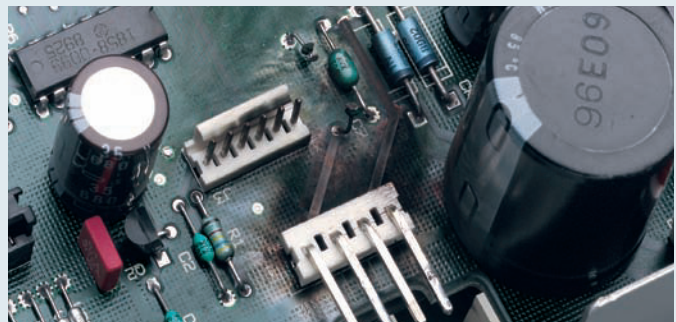
- Surge protection for single-phase power supplies
- Optical signaling via LED

| | |
|---|---|
| IEC category/EN type | III/T3 |
| Nominal voltage U_N | 24/230 V AC |
| Maximum continuous voltage U_C | 34/253 V AC |
| Nominal current I_N | 26 A (30°C) |
| Nom. arrester surge current I_N (8/20) μ s Core-Core/Core-Ground | 1/3 kA |
| Total surge current (8/20) μ s | – |
| Connection method | Screw connection |
| Test standards | IEC 61643-1/EN 61643-11/ A11/UL 1449 |
| Remote indication contact | N/C contact |

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

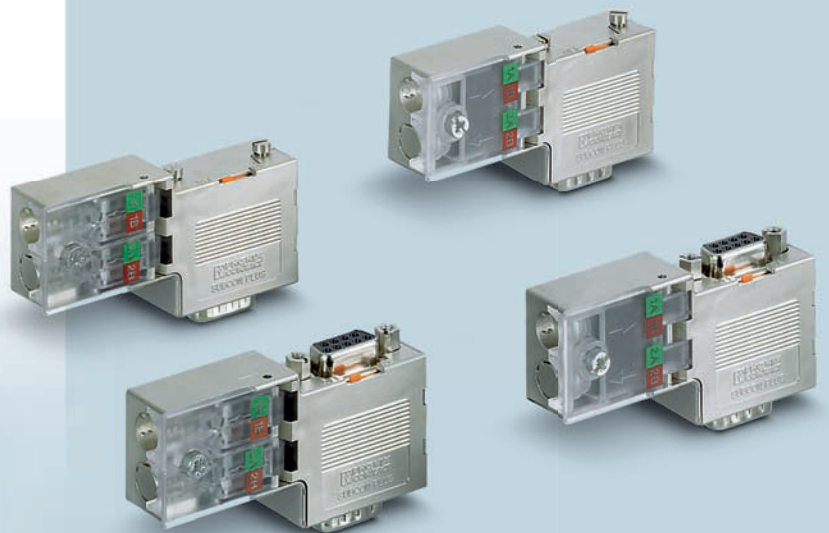
Sensitive electronic components are the most commonly affected by surge voltage damage.

SUBCON – the fast connection for PROFIBUS

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 terminal block 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





35° cable entry

SUBCON-PLUS-PROFIB/SC2
Order No. 2708232
SUBCON-PLUS-PROFIB/PG/SC2
Order No. 2708245
D-UFB-PB
Order No. 2880642



90° cable entry

SUBCON-PLUS-PROFIB/90/SC
Order No. 2313698
SUBCON-PLUS-PROFIB/90/IDC
Order No. 2313672
SUBCON-PLUS-PROFIB/90/PG/SC
Order No. 2313708
SUBCON-PLUS-PROFIB/90/PG/IDC
Order No. 2313685



Axial cable entry

SUBCON-PLUS-PROFIB/AX/SC
Order No. 2744380
SUBCON-PLUS-PROFIB/AX
Order No. 2744377

Technical data

| Technical data | 35° cable entry | 90° cable entry | Axial cable entry |
|----------------------------------|------------------------------------|------------------------------------|------------------------------------|
| Pin assignment | 3, 5, 6, 8 | 3, 5, 6, 8 | 3, 5, 6, 8 |
| Connection cross section: solid | 0.14 - 1.5 mm ² | 0.14 - 1.5 mm ² | 0.14 - 1.5 mm ² |
| flexible | 0.14 - 1 mm ² | 0.14 - 1 mm ² | 0.14 - 1 mm ² |
| AWG | 26 - 16 | 26 - 16 | 26 - 16 |
| Insertion/withdrawal cycles | > 200 | > 200 | > 200 |
| Cable diameter (maximum/minimum) | 8.4 mm/7.6 mm | 8.4 mm/7.6 mm | 8.4 mm/7.6 mm |
| Ambient temperature (operation) | -20°C ... 75°C | -20°C ... 75°C | -20°C ... 75°C |
| Degree of protection | IP40 | IP40 | IP40 |
| Housing material | ABS, metal-plated | ABS, metal-plated | ABS, metal-plated |
| Termination resistance | 390 Ω - 220 Ω - 390 Ω (switchable) | 390 Ω - 220 Ω - 390 Ω (switchable) | 390 Ω - 220 Ω - 390 Ω (switchable) |
| SUBCON fixing | 4 - 40 UNC 0.4 Nm | 4 - 40 UNC 0.4 Nm | 4 - 40 UNC 0.4 Nm |

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
VS-PPC-C1-SCRJ-MNNA-PG9-A3C-C
Order No. 1608045

- 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 fiberglass 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

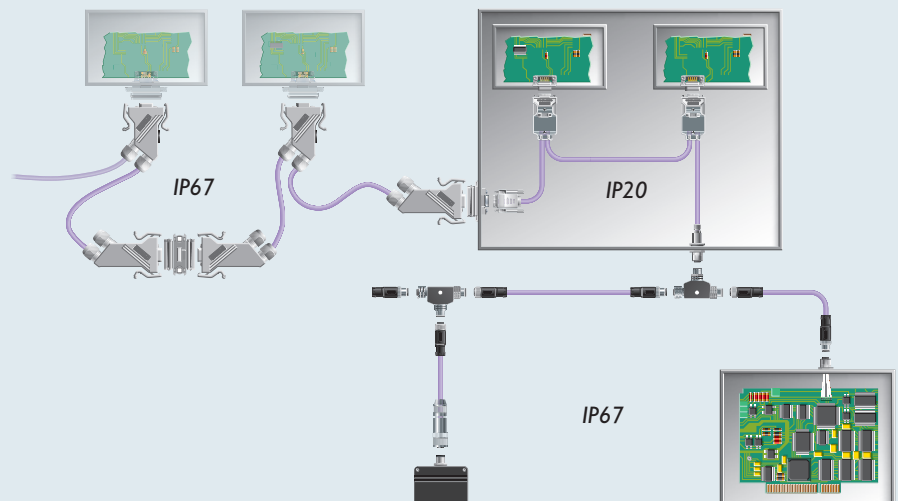
Screw connection
 Order No. 1654549

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.



Modular Terminal Blocks
CLIPLINE 1



Marking Systems, Tools, and Mounting Material
CLIPLINE 2



Connection Technology for Field Devices and Field Cabling
PLUSCON



Device Connection Technology and Electronic Housings
COMBICON



Power and Signal Quality
TRABTECH



Signal Converters, Switching Devices, Power Supply Units
INTERFACE



Automation Components and Systems
AUTOMATION

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