

IL PB BK DI8 DO4/EF-PAC - Bus coupler



2692322

<https://www.phoenixcontact.com/us/products/2692322>

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Inline, Bus coupler, PROFIBUS DP, D-SUB-9 female connector, Digital inputs: 8, 24 V DC, connection technology: 3-conductor, Digital outputs: 4, 24 V DC, 500 mA, connection technology: 3-conductor, transmission speed in the local bus: 500 kbps / 2 Mbps, degree of protection: IP20, including Inline connectors and marking fields

Product description

The bus coupler with integrated I/Os is intended for use within a PROFIBUS network and represents the link to the Inline I/O system. Up to 61 Inline devices can be connected to the bus coupler. A corresponding GSD file is available for integrating the Inline station into the programming system. This file can be downloaded via the product at www.phoenixcontact.com/products.

Your advantages

- PROFIBUS connection via 9-pos. D-SUB socket
- Electrical isolation between PROFIBUS interface and logic
- 8 digital inputs, 4 digital outputs (on-board)
- Connection of a maximum of 16 PCP devices
- DP/V1 for class 1 and class 2 masters
- PROFIBUS data transmission speed of 9.6 kbps to 12 Mbps
- Rotary coding switches for setting the PROFIBUS address
- Supported PROFIBUS addresses from 0 to 126
- I&M functions
- IO-Link call (firmware 2.0 or later)
- Operation of PROFIsafe devices

Commercial data

Item number	2692322
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DR01
Product key	DRI112
GTIN	4046356315272
Weight per piece (including packing)	325.3 g
Weight per piece (excluding packing)	343.2 g
Customs tariff number	85389091
Country of origin	DE

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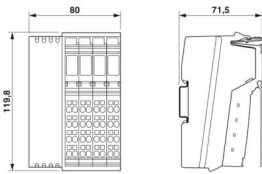


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Technical data

Dimensions

Dimensional drawing	
Width	80 mm
Height	119.8 mm
Depth	71.5 mm
Note on dimensions	Specifications with connectors

Notes

Note on application	
Note on application	Only for industrial use
Utilization restriction	
CCCex note	Use in potentially explosive areas is not permitted in China.

Interfaces

PROFIBUS DP	
Number of interfaces	1
Connection method	D-SUB-9 female connector
Transmission speed	9.6 kbps ... 12 Mbps
Inline local bus	
Connection method	Inline data jumper
Transmission speed	500 kbps / 2 Mbps (automatic detection, no combined system)

System properties

System limits	
Number of supported devices	max. 63 (per station)
Number of local bus devices that can be connected	max. 61 (The on-board I/Os are two devices)
Number of devices with parameter channel	max. 16
Number of supported branch terminals with remote bus branch	0
Response time of I/Os	typ. 4 ms (aligned I/Os; transmission speed: PROFIBUS 1.5 Mbps, local bus 500 kbps)
Module	
ID code (hex)	0B50
Input address area	8 bit (or 1 byte, selection in the GSD file)

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Output address area	4 bit (or 1 byte, selection in the GSD file)
Register length	16 bit

Input data

Digital:

Input name	Digital inputs
Description of the input	EN 61131-2 type 1
Number of inputs	8
Connection method	Inline connector
Connection technology	3-conductor
Input voltage	24 V DC
Input voltage range "0" signal	-30 V DC ... 5 V DC
Input voltage range "1" signal	15 V DC ... 30 V DC
Nominal input voltage U_{IN}	24 V DC
Nominal input current at U_{IN}	typ. 3 mA
Typical input current per channel	typ. 3 mA
Typical response time	approx. 500 μ s
Delay at signal change from 0 to 1	2.9 ms
Delay at signal change from 1 to 0	2.9 ms

Output data

Digital:

Output name	Digital outputs
Connection method	Inline connector
Connection technology	3-conductor
Number of outputs	4
Protective circuit	Short-circuit and overload protection; Freewheeling circuit in the output driver
Output voltage	24 V DC -1 V (At nominal current)
Maximum output current per module	max. 2 A
Nominal output voltage	24 V DC
Output current when switched off	max. 10 μ A (When not loaded, a voltage can be measured even at an output that is not set.)
Nominal load, inductive	12 VA (1.2 H, 48 Ω)
Nominal load, lamp	12 W
Nominal load, ohmic	12 W
Reverse voltage resistance to short pulses	Reverse voltage proof
Behavior with overload	Auto restart
Behavior with inductive overload	Output can be destroyed
Behavior at voltage switch-off	The output follows the power supply without delay
Signal delay	typ. 2.9 ms
Overcurrent shut-down	min. 0.7 A

Product properties

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Product type	I/O component
Product family	Inline
Type	modular
Scope of supply	including Inline connectors and marking fields
No. of channels	12
Diagnostics messages	Short-circuit or overload of the digital outputs yes
	Sensor supply failure yes
	Failure of the actuator supply yes

Insulation characteristics

Overvoltage category	II (IEC 60664-1, EN 60664-1)
Pollution degree	2 (IEC 60664-1, EN 60664-1)

Electrical properties

Maximum power dissipation for nominal condition	6.3 W
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Potentials: Bus coupler supply U_{BK} ; Communications power U_L (7.5 V) and the analog supply U_{ANA} (24 V) are generated from the bus coupler supply.

Supply voltage	24 V DC (via Inline connector)
Supply voltage range	19.2 V DC ... 30 V DC (including all tolerances, including ripple)
Current draw	max. 0.98 A (with max. number of connected I/O terminal blocks)
	min. 80 mA (without connected I/O terminal blocks)

Potentials: Communications power (U_L)

Supply voltage	7.5 V DC
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Potentials: Supply of analog modules (U_{ANA})

Supply voltage	24 V DC
Supply voltage range	19.2 V DC ... 30 V DC (including all tolerances, including ripple)

Potentials: Main circuit supply (U_M)

Supply voltage	24 V DC (via Inline connector)
Supply voltage range	19.2 V DC ... 30 V DC (including all tolerances, including ripple)
Current draw	max. 8 A DC
	min. 3 mA (without connected peripherals)

Potentials: Segment circuit supply (U_S)

Supply voltage	24 V DC (via Inline connector)
Supply voltage range	19.2 V DC ... 30 V DC (including all tolerances, including ripple)
Current draw	max. 8 A DC
	min. 3 mA (without connected peripherals)

Electrical isolation/isolation of the voltage ranges

Test voltage: PROFIBUS interface / communications power (U_{BK} , U_L , U_{ANA})	500 V AC, 50 Hz, 1 min
Test voltage: PROFIBUS interface / I/O (U_M , U_S)	500 V AC, 50 Hz, 1 min
Test voltage: PROFIBUS interface / functional ground	500 V AC, 50 Hz, 1 min

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Test voltage: Communications power (U_{BK} , U_L , U_{ANA}) / I/O (U_M , U_S)	500 V AC, 50 Hz, 1 min
Test voltage: Communications power (U_{BK} , U_L , U_{ANA}) / functional ground	500 V AC, 50 Hz, 1 min
Test voltage: I/O (U_M , U_S) / functional ground	500 V AC, 50 Hz, 1 min

Connection data

Connection technology

Connection name	Inline connector
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Conductor connection

Connection method	Spring-cage connection
Conductor cross-section rigid	0.08 mm ² ... 1.5 mm ²
Conductor cross-section flexible	0.08 mm ² ... 1.5 mm ²
Conductor cross-section AWG	28 ... 16
Stripping length	8 mm

Inline connector

Connection method	Spring-cage connection
Conductor cross-section, rigid	0.08 mm ² ... 1.5 mm ²
Conductor cross-section, flexible	0.08 mm ² ... 1.5 mm ²
Conductor cross-section AWG	28 ... 16
Stripping length	8 mm

Environmental and real-life conditions

Ambient conditions

Ambient temperature (operation)	-25 °C ... 60 °C
Degree of protection	IP20
Air pressure (operation)	70 kPa ... 106 kPa (up to 3000 m above sea level)
Air pressure (storage/transport)	70 kPa ... 106 kPa (up to 3000 m above sea level)
Ambient temperature (storage/transport)	-25 °C ... 85 °C
Permissible humidity (operation)	10 % ... 95 % (non-condensing)
Permissible humidity (storage/transport)	10 % ... 95 % (non-condensing)

Standards and regulations

Protection class	III (IEC 61140, EN 61140, VDE 0140-1)
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Mounting

Mounting type	DIN rail mounting
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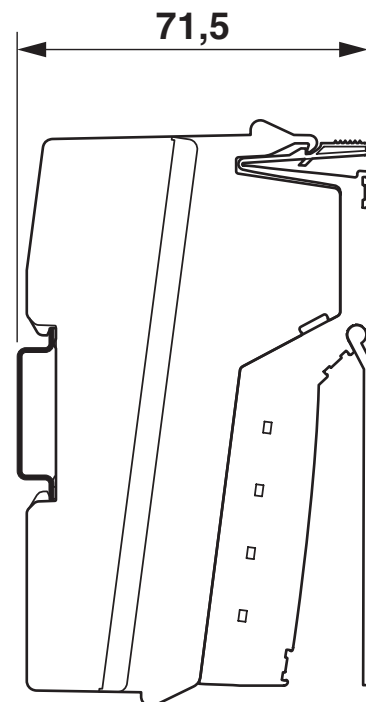
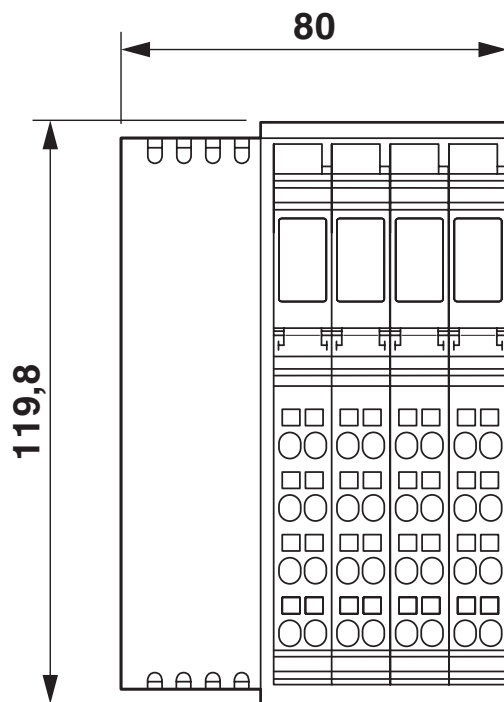
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Drawings

Dimensional drawing



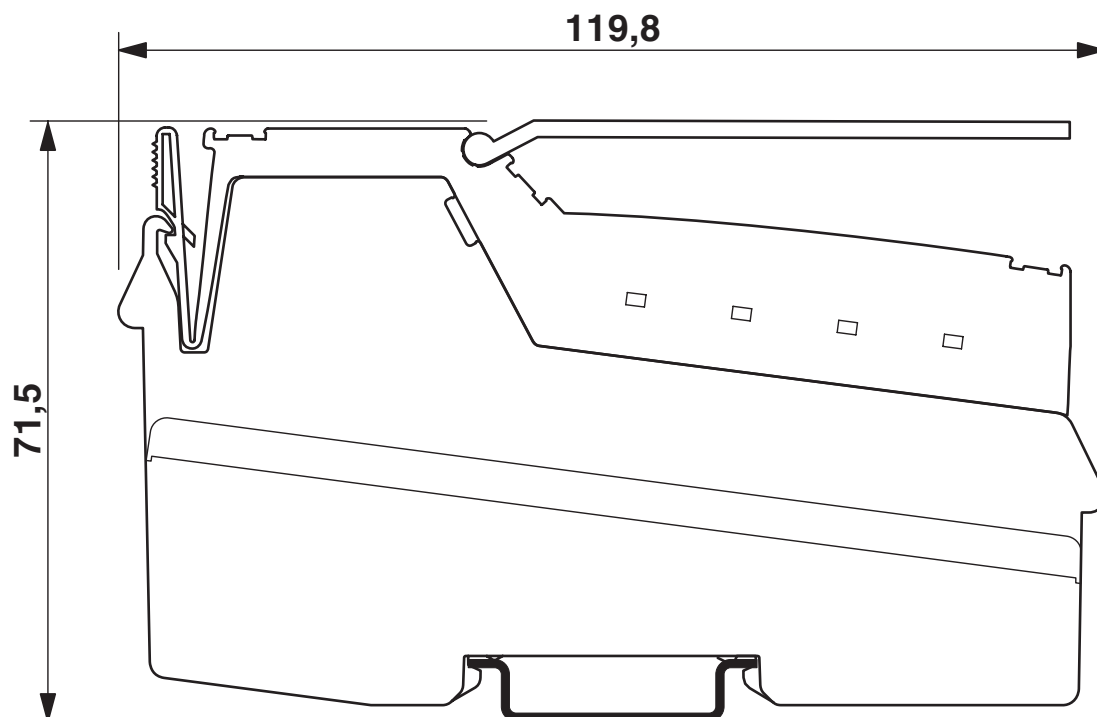
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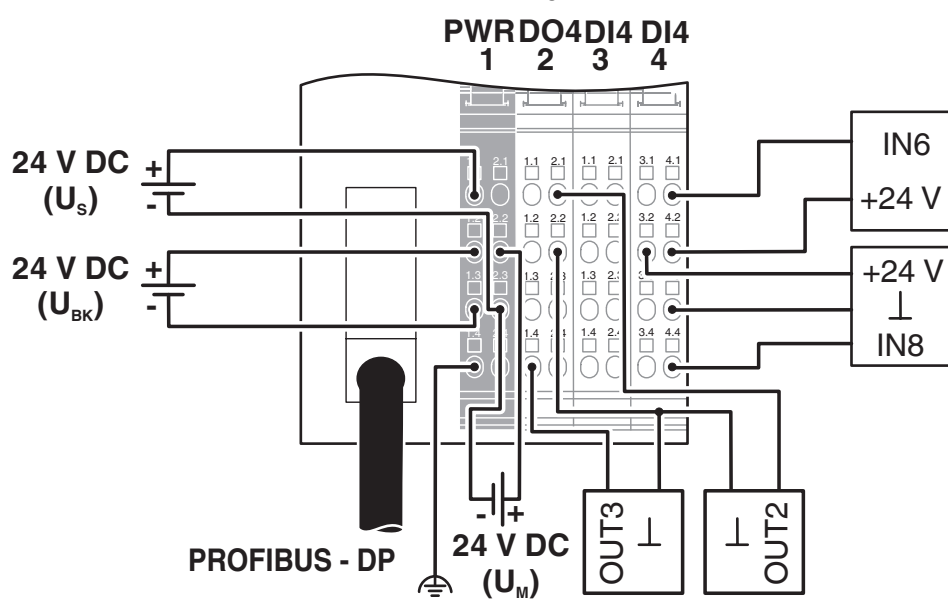
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Dimensional drawing



Connection diagram



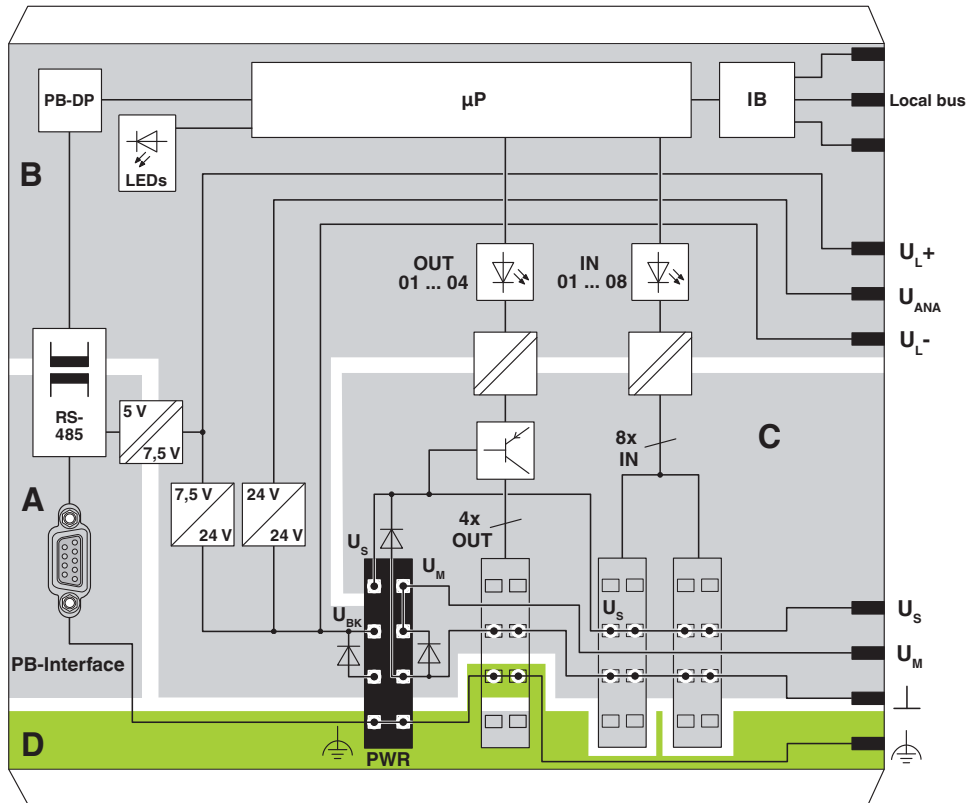
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Block diagram



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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2692322>



EAC

Approval ID: TR TS_S_03508-21



BV

Approval ID: 20977/C1 BV



RINA

Approval ID: ELE121121XG

DNV

Approval ID: TAA00002CU



cULus Recognized

Approval ID: E140324



BV

Approval ID: 21725/C1 BV

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Classifications

ECLASS

ECLASS-13.0	27242608
ECLASS-15.0	27242608

ETIM

ETIM 9.0	EC001604
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UNSPSC

UNSPSC 21.0	32151600
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Environmental product compliance

EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	6(a), 6(a)-I, 7(a), 7(c)-I

China RoHS

Environment friendly use period (EFUP)	EFUP-50
	An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required.

EU REACH SVHC

REACH candidate substance (CAS No.)	Lead(CAS: 7439-92-1)
SCIP	ec83c317-fef4-4cbe-9543-f03e0f4d2b4d

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Accessories

CLIPFIX 35 - End bracket

3022218

<https://www.phoenixcontact.com/us/products/3022218>



Quick mounting end clamp for NS 35/7,5 DIN rail or NS 35/15 DIN rail, with marking option, width: 9.5 mm, color: gray

CLIPFIX 35-5 - End bracket

3022276

<https://www.phoenixcontact.com/us/products/3022276>



Quick mounting end clamp for NS 35/7,5 DIN rail or NS 35/15 DIN rail, with marking option, with parking option for FBS...5, FBS...6, KSS 5, KSS 6, width: 5.15 mm, color: gray

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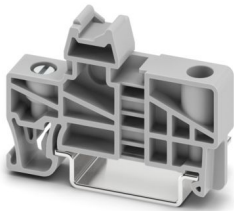
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E/UK - End bracket

1201442

<https://www.phoenixcontact.com/us/products/1201442>

End bracket, material: PA, mounting type: NS 35/7,5, NS 35/15, color: gray



E/AL-NS 35 - End bracket

1201662

<https://www.phoenixcontact.com/us/products/1201662>

End clamp, for end support of UKH 50 to UKH 240, is pushed onto DIN rail NS 35 and fixed with 2 screws, width: 10 mm, color: aluminum



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IL BKDIO-PLSET - Connector set

2878599

<https://www.phoenixcontact.com/us/products/2878599>

Connector set, for Inline bus coupler with I/Os mounted in rows



IB IL FIELD 8 - Marking field

2727515

<https://www.phoenixcontact.com/us/products/2727515>

Marking field, width: 48.8 mm



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EMT (62X46)R - Insert label

0800059

<https://www.phoenixcontact.com/us/products/0800059>



Insert label, for marking Inline modules from Phoenix Contact, Roll, white, unmarked, can be labeled with: THERMOMARK E.300 (D)/600 (D), THERMOMARK ROLL 2.0, THERMOMARK ROLL, THERMOMARK ROLL X1, THERMOMARK ROLLMaster 300/600, THERMOMARK X1.2, mounting type: insert, Number of individual labels: 250, text field height: 46 mm, text field width: 62 mm

IB IL FIELD 2 - Marking field

2727501

<https://www.phoenixcontact.com/us/products/2727501>

Marking field, width: 12.2 mm



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EMT (62X10)R - Insert label

0800057

<https://www.phoenixcontact.com/us/products/0800057>



Insert label, for marking Inline modules from Phoenix Contact, Roll, white, unmarked, can be labeled with: THERMOMARK E.300 (D)/600 (D), THERMOMARK ROLL 2.0, THERMOMARK ROLL, THERMOMARK ROLL X1, THERMOMARK ROLLMaster 300/600, THERMOMARK X1.2, mounting type: insert, Number of individual labels: 500, text field height: 10 mm, text field width: 62 mm

SUBCON-PLUS-PROFIB - D-SUB bus connector

2744348

<https://www.phoenixcontact.com/us/products/2744348>



D-SUB plug, 9-pos., pin, axial version with two 35° cable entries, bus system: PROFIBUS DP up to 12 Mbps, termination resistor can be switched on via slide switch, pin assignment: 3, 5, 6, 8; spring-cage connection terminal blocks

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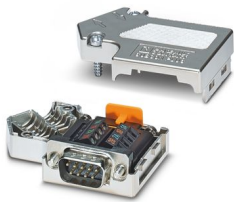
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SUBCON-PLUS-PROFIB/SC2 - D-SUB bus connector

2708232

<https://www.phoenixcontact.com/us/products/2708232>



D-SUB connector, 9-pos., pin, 35° cable outlet, bus system: PROFIBUS DP up to 12 Mbps, termination resistor can be switched on via slide switch, pin assignment: 3, 5, 6, 8; screw connection terminal blocks

SUBCON-PLUS-PROFIB/PG/SC2 - D-SUB bus connector

2708245

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D-SUB connector, 9-pos., pin, 35° cable outlet, bus system: PROFIBUS DP up to 12 Mbps with PG D-SUB socket for connecting a programming device, termination resistor can be switched on via slide switch, pin assignment: 3, 5, 6, 8; screw connection terminal blocks

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SUBCON-PLUS-PROFIB/90/IDC - D-SUB bus connector

2313672

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D-SUB connector, 9-pos., pin, 90° cable outlet, bus system: PROFIBUS DP up to 12 Mbps, termination resistor can be switched on via slide switch, pin assignment: 3, 5, 6, 8; IDC terminal block connection

SUBCON-PLUS-PROFIB/90/PG/IDC - D-SUB bus connector

2313685

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D-SUB connector, 9-pos., pin, 90° cable outlet, bus system: PROFIBUS DP up to 12 Mbps with PG D-SUB socket for connecting a programming device, termination resistor can be switched on via slide switch, pin assignment: 3, 5, 6, 8; IDC terminal block connection

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SUBCON-PLUS-PROFIB/90/SC - D-SUB bus connector

2313698

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D-SUB connector, 9-pos., pin, 90° cable outlet, bus system: PROFIBUS DP up to 12 Mbps, termination resistor can be switched on via slide switch, pin assignment: 3, 5, 6, 8; screw connection terminal blocks

SUBCON-PLUS-PROFIB/90/PG/SC - D-SUB bus connector

2313708

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D-SUB connector, 9-pos., pin, 90° cable outlet, bus system: PROFIBUS DP up to 12 Mbps with PG D-SUB socket for connecting a programming device, termination resistor can be switched on via slide switch, pin assignment: 3, 5, 6, 8; screw connection terminal blocks

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SUBCON-PLUS-PROFIB/AX/SC - D-SUB bus connector

2744380

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D-SUB connector, 9-pos., male connector, axial version with two cable entries, bus system: PROFIBUS DP up to 12 Mbps, termination resistor can be switched on via slide switch, pin assignment: 3, 5, 6, 8; screw connection terminal blocks

SUBCON-PLUS-PROFIB/35/M12 - D-SUB bus connector

2902320

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D-SUB plug, 9-pos., pin, assignment: 3, 5, 6, 8; two 35° cable entries M12 (B-coded). Bus system: PROFIBUS DP up to 12 Mbps. Termination resistor via separate M12 terminator.

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SUBCON-PLUS-PROFIB/90/M12 - D-SUB bus connector

2902318

<https://www.phoenixcontact.com/us/products/2902318>

D-SUB plug, 9-pos., pin, assignment: 3, 5, 6, 8; two 90° M12 cable glands (B-coded). Bus system: PROFIBUS DP up to 12 Mbps. Termination resistor via separate M12 terminator.



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