

## Bus coupler - IL PB BK DI8 DO4-PAC - 2878926

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Inline, Bus coupler, PROFIBUS DP, D-SUB-9 female connector, Digital inputs: 8, 24 V DC, connection method: 3-wire, Digital outputs: 4, 24 V DC, 500 mA, connection method: 3-wire, 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 [phoenixcontact.net/products](http://phoenixcontact.net/products). The bus coupler does not support PROFIsafe modules. Use the IL PB BK DI8 DO4/EF-PAC bus coupler for this.

### Your advantages

- ✓ PROFIBUS connection via 9-pos. D-SUB socket
- ✓ Eight digital inputs, four 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
- ✓ I&M functions



### Key Commercial Data

|                                      |           |
|--------------------------------------|-----------|
| Packing unit                         | 1 pc      |
| Weight per Piece (excluding packing) | 343.200 g |
| Custom tariff number                 | 85389091  |
| Country of origin                    | Germany   |

### Technical data

#### Note

|                         |   |
|-------------------------|---|
| Utilization restriction | EMC: class A product, see manufacturer's declaration in the download area |
|-------------------------|---|

### Dimensions

# Bus coupler - IL PB BK DI8 DO4-PAC - 2878926

## Technical data

### Dimensions

|                    |                                |
|--------------------|--------------------------------|
| Width              | 80 mm                          |
| Height             | 119.8 mm                       |
| Depth              | 71.5 mm                        |
| Note on dimensions | Specifications with connectors |

### Ambient conditions

|  |   |
|--|---|
| Ambient temperature (operation)          | -25 °C ... 55 °C                                  |
| Ambient temperature (storage/transport)  | -40 °C ... 85 °C                                  |
| Permissible humidity (operation)         | 10 % ... 95 % (non-condensing)                    |
| Permissible humidity (storage/transport) | 10 % ... 95 % (according to DIN EN 61131-2)       |
| 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) |
| Degree of protection                     | IP20  |

### General

|                               |  |
|-------------------------------|--|
| Mounting type                 | DIN rail   |
| Color                         | green  |
| Net weight                    | 335.3 g  |
| Note on weight specifications | with connectors                                      |
| Diagnostics messages          | Short-circuit or overload of the digital outputs Yes |
|                               | Sensor supply failure Yes                            |
|                               | Failure of the actuator supply Yes                   |

### Interfaces

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

### System limits of the bus coupler

|                              |   |
|------------------------------|---|
| Amount of process data       | max. 488 Byte (per station)   |
|                              | max. 244 Byte (Input)   |
|                              | max. 244 Byte (Output)  |
| Number of parameter data     | max. 244 Byte (including 14 bytes for the bus coupler, DP/V1, and the local inputs and outputs) |
| Number of configuration data | max. 244 Byte (including 5 bytes for the local inputs and outputs)                              |

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### Technical data

#### System limits of the bus coupler

|   |   |
|---|---|
| Number of supported devices                                 | max. 63 (per station)   |
| Number of local bus devices that can be connected           | max. 62 (On board I/Os are one device)  |
| 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) |

#### Inline potentials

|                      |  |
|----------------------|--|
| Designation          | Bus coupler supply $U_{BC}$ ; 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 consumption  | max. 0.98 A  |
| Designation          | Communications power ( $U_L$ )   |
| Supply voltage       | 7.5 V DC   |
| Power supply unit    | max. 0.8 A DC  |
| Designation          | 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)   |
| Power supply unit    | max. 0.5 A DC  |
| Designation          | Main circuit supply ( $U_M$ )  |
| Supply voltage       | 24 V DC  |
| Supply voltage range | 19.2 V DC ... 30 V DC (including all tolerances, including ripple)   |
| Power supply unit    | max. 8 A DC (Sum of $U_M + U_S$ ; 4 A, maximum, when used in potentially explosive areas.)   |
| Current consumption  | max. 8 A DC  |
| Designation          | 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)   |
| Power supply unit    | max. 8 A DC (Sum of $U_M + U_S$ ; 4 A, maximum, when used in potentially explosive areas.)   |
| Current consumption  | max. 8 A DC  |

#### Digital inputs

|                          |                   |
|--------------------------|-------------------|
| Input name               | Digital inputs    |
| Description of the input | EN 61131-2 type 1 |
| Connection method        | Inline connector  |
| Connection technology    | 3-wire            |
| Number of inputs         | 8                 |

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### Technical data

#### Digital inputs

|                                    |  |
|------------------------------------|--|
| Typical response time              | approx. 500 µs                               |
| Protective circuit                 | Reverse polarity protection Suppressor diode |
| Nominal input voltage $U_{IN}$     | 24 V DC                                      |
| Nominal input current at $U_{IN}$  | typ. 3 mA                                    |
| 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                          |
| Typical input current per channel  | typ. 3 mA                                    |
| Delay at signal change from 0 to 1 | 1.2 ms                                       |
| Delay at signal change from 1 to 0 | 1.2 ms                                       |

#### Digital outputs

|   |  |
|---|--|
| Output name   | Digital outputs  |
| Connection method   | Inline connector   |
| Connection technology                                     | 3-wire   |
| 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)  |
| Nominal output voltage                                    | 24 V DC  |
| Maximum output current per channel                        | 500 mA   |
| Maximum output current per module / terminal block        | 2 A  |
| Maximum output current per module                         | 2 A  |
| Nominal load, inductive                                   | 12 VA (1.2 H, 48 Ω)  |
| Nominal load, lamp  | 12 W   |
| Nominal load, ohmic                                       | 12 W   |
| Limitation of the voltage induced on circuit interruption | approx. -30 V  |
| Output current when switched off                          | max. 10 µA (When not loaded, a voltage can be measured even at an output that is not set.) |
| Behavior with overload                                    | Auto restart   |
| Behavior with inductive overload                          | Output can be destroyed  |
| Reverse voltage resistance to short pulses                | Reverse voltage proof  |

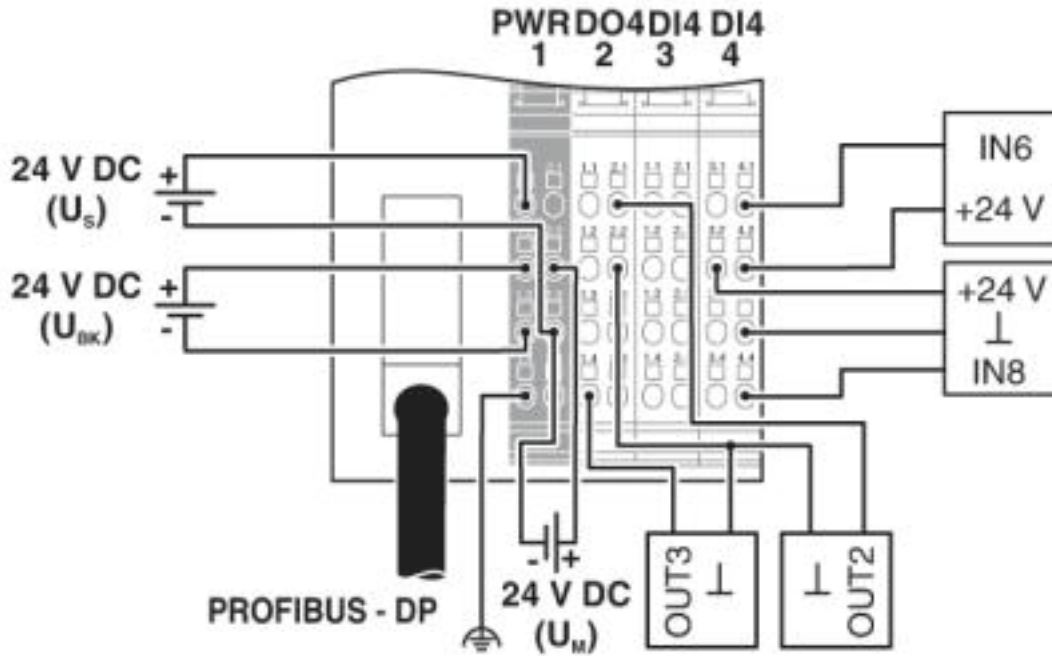
#### Standards and Regulations

|                  |   |
|------------------|---|
| Mechanical tests | Vibration resistance in acc. with EN 60068-2-6/IEC 60068-2-6 5g   |
|                  | Shock in acc. with EN 60068-2-27/IEC 60068-2-27 Operation: 25g, 11 ms duration, semi-sinusoidal shock impulse |
| Protection class | III (IEC 61140, EN 61140, VDE 0140-1)   |

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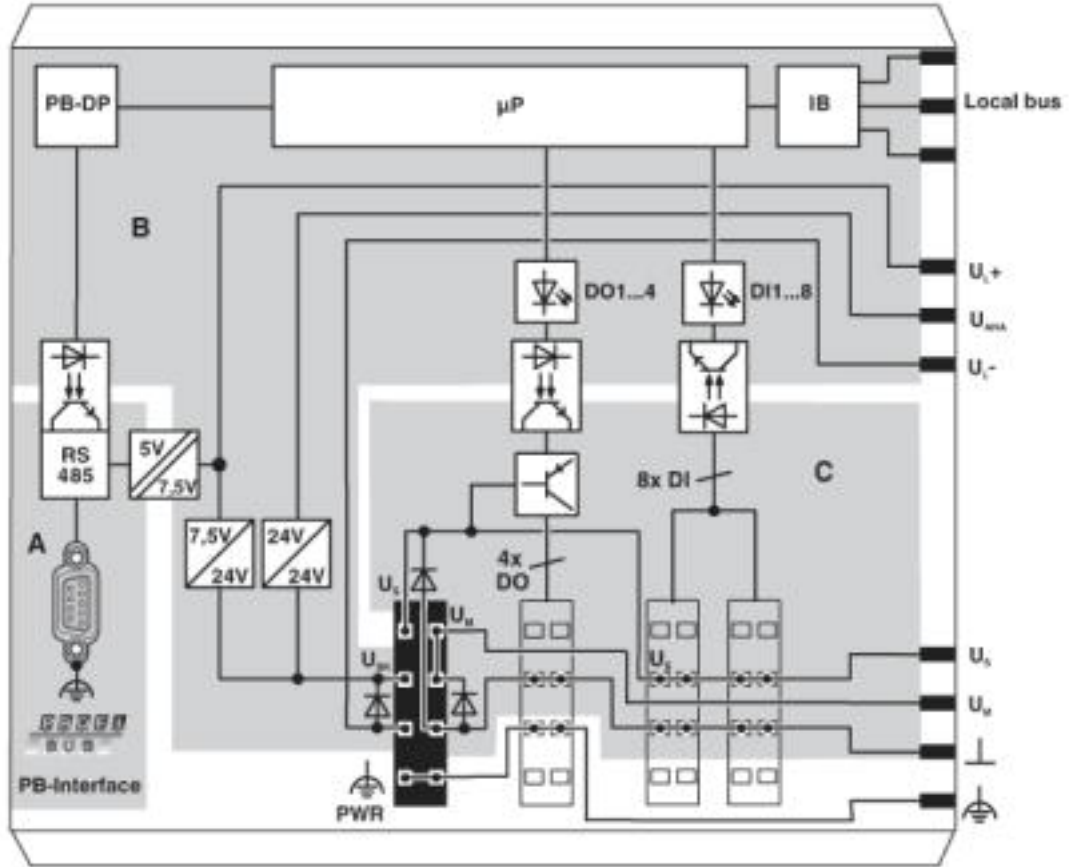
## Drawings

Connection diagram



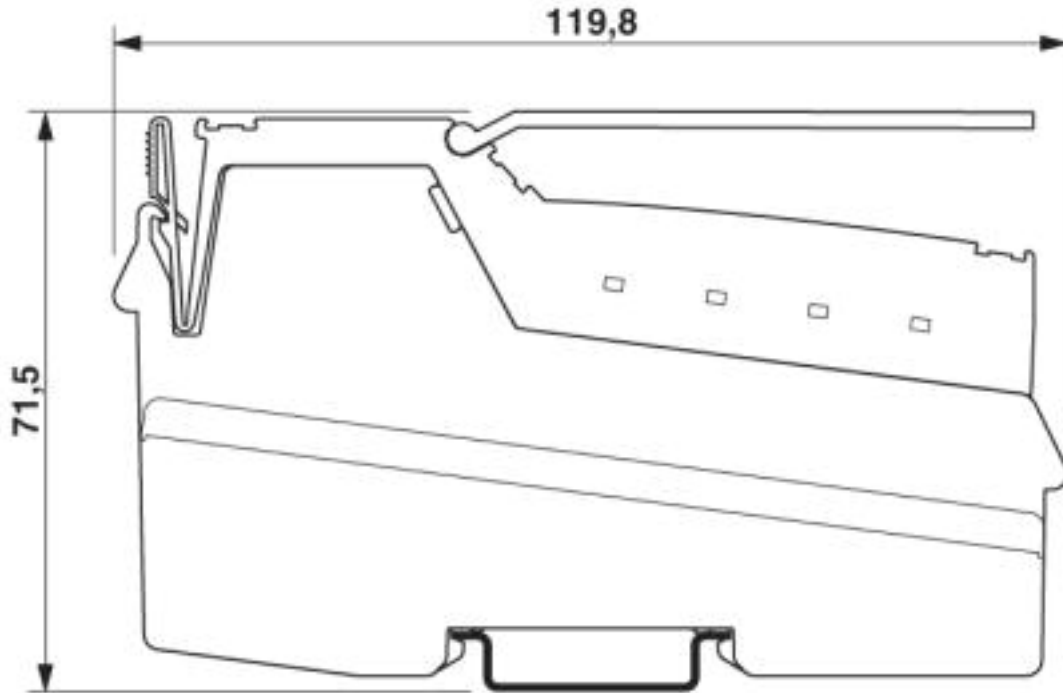
# Bus coupler - IL PB BK DI8 DO4-PAC - 2878926

Block diagram

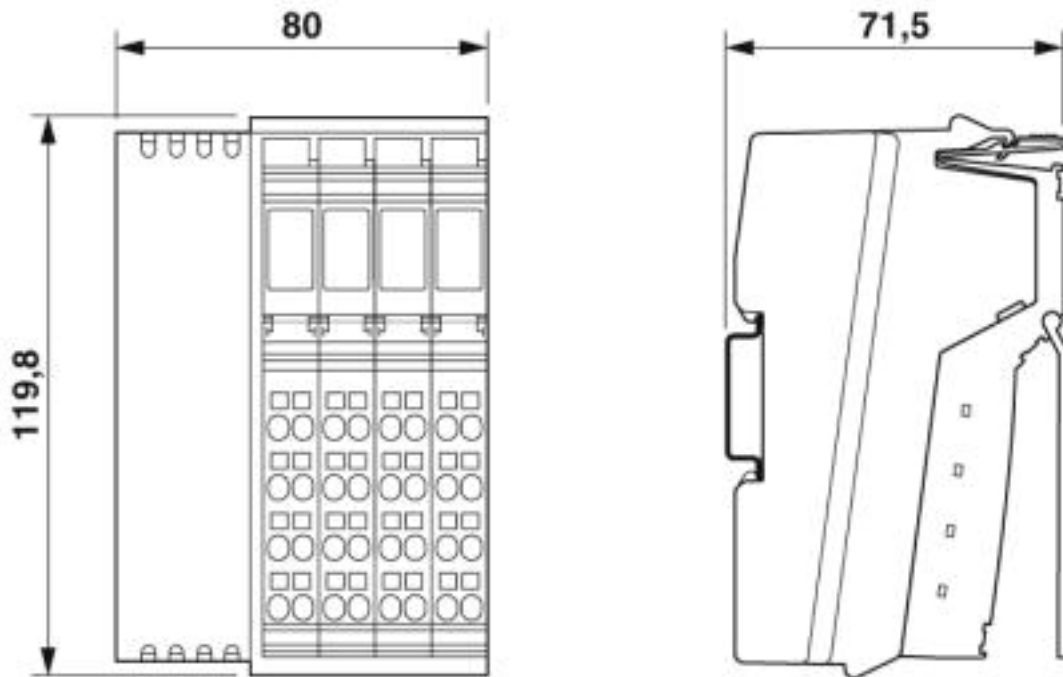


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Dimensional drawing



Dimensional drawing



## Bus coupler - IL PB BK DI8 DO4-PAC - 2878926

### Classifications

#### eCl@ss

|            |          |
|------------|----------|
| eCl@ss 4.0 | 27250203 |
| eCl@ss 4.1 | 27250203 |
| eCl@ss 5.0 | 27250203 |
| eCl@ss 5.1 | 27242608 |
| eCl@ss 6.0 | 27242608 |
| eCl@ss 7.0 | 27242608 |
| eCl@ss 8.0 | 27242608 |
| eCl@ss 9.0 | 27242608 |

#### ETIM

|          |          |
|----------|----------|
| ETIM 2.0 | EC001434 |
| ETIM 3.0 | EC001604 |
| ETIM 4.0 | EC001604 |
| ETIM 5.0 | EC001604 |
| ETIM 6.0 | EC001604 |

#### UNSPSC

|               |          |
|---------------|----------|
| UNSPSC 6.01   | 43172015 |
| UNSPSC 7.0901 | 43201404 |
| UNSPSC 11     | 43172015 |
| UNSPSC 12.01  | 43201404 |
| UNSPSC 13.2   | 43201404 |

### Accessories

#### Accessories

##### Connector set

Connector set - IL BKDIO-PLSET - 2878599



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

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#### Data plug



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### Accessories

#### D-SUB bus connector - SUBCON-PLUS-PROFIB/SC2 - 2708232



D-SUB connector, 9-pos., male connector, cable entry < 35°, 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

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#### D-SUB bus connector - SUBCON-PLUS-PROFIB/PG/SC2 - 2708245



D-SUB connector, 9-pos., male connector, cable entry < 35°, 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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#### D-SUB bus connector - SUBCON-PLUS-PROFIB/90/IDC - 2313672



D-SUB connector, 9-pos., male connector, cable entry < 90°, 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

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#### D-SUB bus connector - SUBCON-PLUS-PROFIB/90/PG/IDC - 2313685



D-SUB connector, 9-pos., male connector, cable entry < 90°, 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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#### D-SUB bus connector - SUBCON-PLUS-PROFIB/90/SC - 2313698



D-SUB connector, 9-pos., male connector, cable entry < 90°, 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

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## Bus coupler - IL PB BK DI8 DO4-PAC - 2878926

### Accessories

#### D-SUB bus connector - SUBCON-PLUS-PROFIB/90/P/SC - 2313708



D-SUB connector, 9-pos., male connector, cable entry < 90°, 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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#### D-SUB bus connector - SUBCON-PLUS-PROFIB/AX/SC - 2744380



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

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### Device parameterization

#### Software - AX+ BASIC - 2985068



Software CD for FDT container for integrating device DTMs (free download)

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### End block

#### End clamp - CLIPFIX 35 - 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

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### Labeling panel

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### Accessories

Labeling field - IB IL FIELD 8 - 2727515

Labeling field, width: 48.8 mm



Labeling field - IB IL FIELD 2 - 2727501

Labeling field, width: 12.2 mm



### Plug

Inline connector - IB IL SCN-12-ICP - 2727611

Connector, color coded, for digital 4, or 16-channel Inline input terminals



Inline connector - IB IL SCN-12-OCP - 2727624

Connector, colored identification, for digital 4, or 16-channel Inline output terminal blocks



### Programming

Software - AX DTM LIB - 2988065



DTM library

## Bus coupler - IL PB BK DI8 DO4-PAC - 2878926

### Accessories

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#### Terminal marking

Insert strip - ESL 62X46 - 0809502

Insert strip, Sheet, white, unlabeled, can be labeled with: Office printing systems: Laser printer, mounting type: insert, lettering field size: 62 x 46 mm, Number of individual labels: 120



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Insert strip - ESL 62X10 - 0809492

Insert strip, Sheet, white, unlabeled, can be labeled with: Office printing systems: Laser printer, mounting type: insert, lettering field size: 62 x 10 mm, Number of individual labels: 72

