

Bus coupler - IL PB BK DI8 DO4/EF-PAC - 2692322

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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.

Your advantages

- ✓ PROFIBUS connection via 9-pos. D-SUB socket
- ✓ Electrical isolation between PROFIBUS interface and logic
- ✓ 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
- ✓ 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



Key Commercial Data

Packing unit	1 pc
GTIN	
GTIN	4046356315272

Technical data

Note

Utilization restriction	EMC: class A product, see manufacturer's declaration in the download area
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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 ... 60 °C
Ambient temperature (storage/transport)	-25 °C ... 85 °C
Permissible humidity (operation)	10 % ... 95 % (non-condensing)
Permissible humidity (storage/transport)	10 % ... 95 % (non-condensing)
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	343.2 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

Designation	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)
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)

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System limits of the bus coupler

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	80 mA (without connected I/O terminal blocks)
	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 $U_M + U_S$)
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 $U_M + U_S$)
Current consumption	max. 8 A DC
Power consumption	typ. 1.7 W (entire device)
Current consumption	6 mA (without connected peripherals)

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
Typical response time	approx. 500 μ s
Protective circuit	Reverse polarity protection Suppressor diode
Nominal input voltage U_{IN}	24 V DC
Nominal input current at U_{IN}	typ. 3 mA

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Technical data

Digital inputs

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	2.9 ms
Delay at signal change from 1 to 0	2.9 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
Connection in acc. with standard	CUL
Protection class	III (IEC 61140, EN 61140, VDE 0140-1)

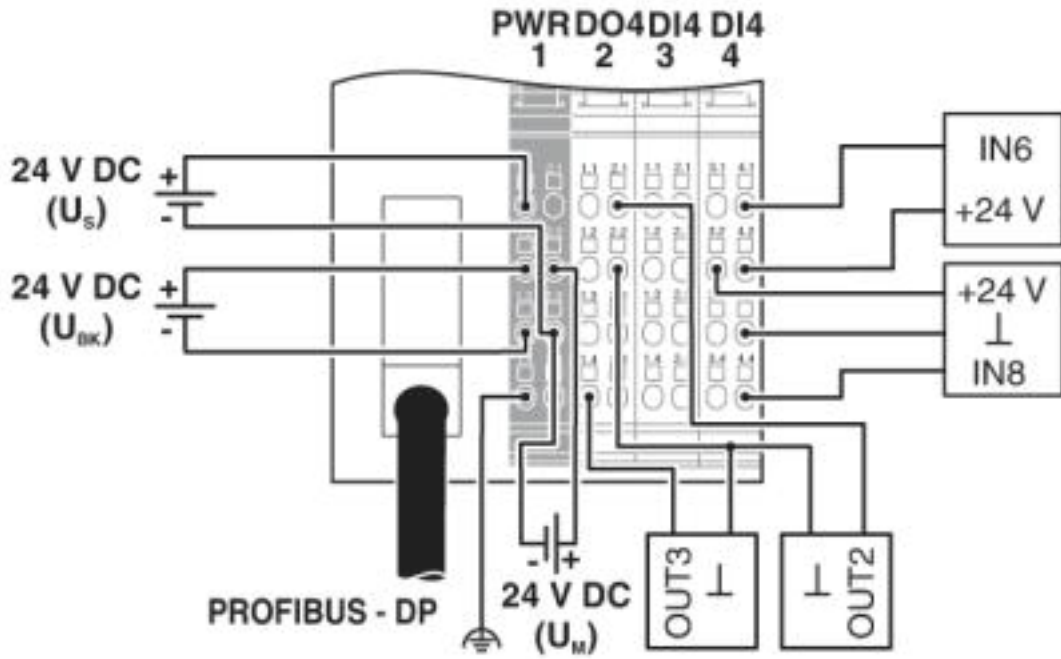
Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally friendly use period: unlimited = EFUP-e
	No hazardous substances above threshold values

Drawings

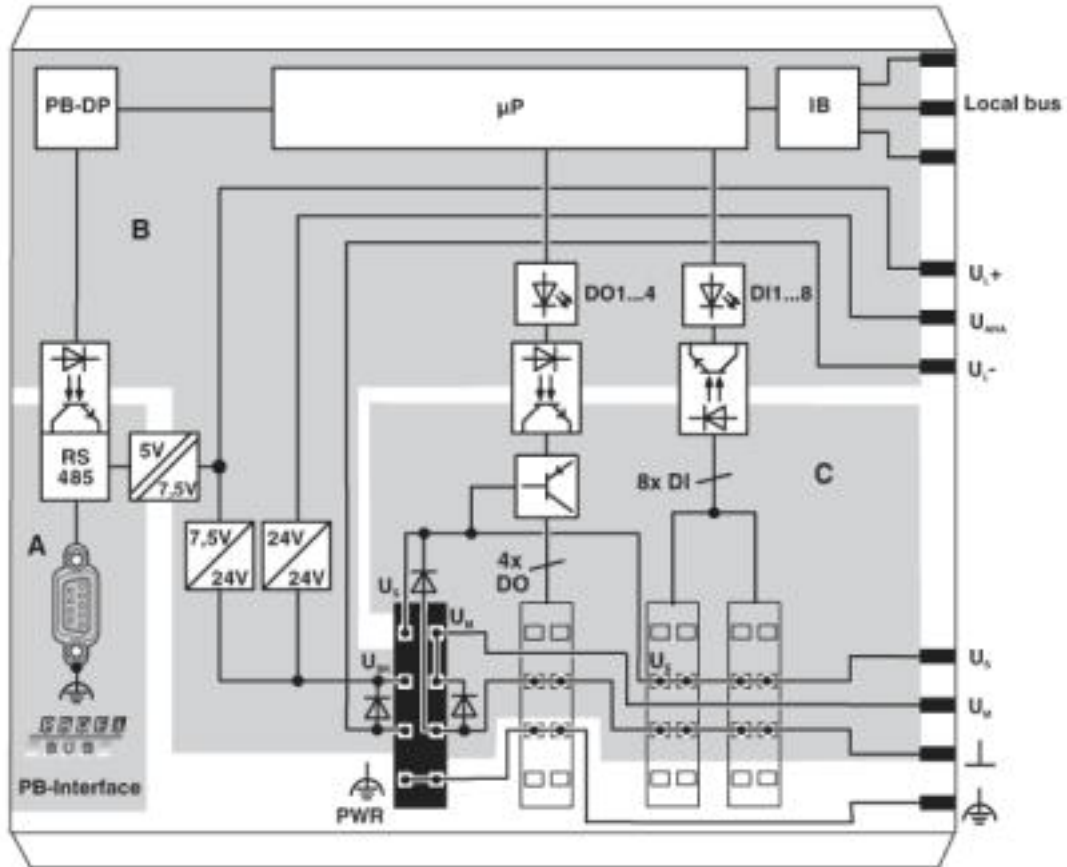
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Connection diagram



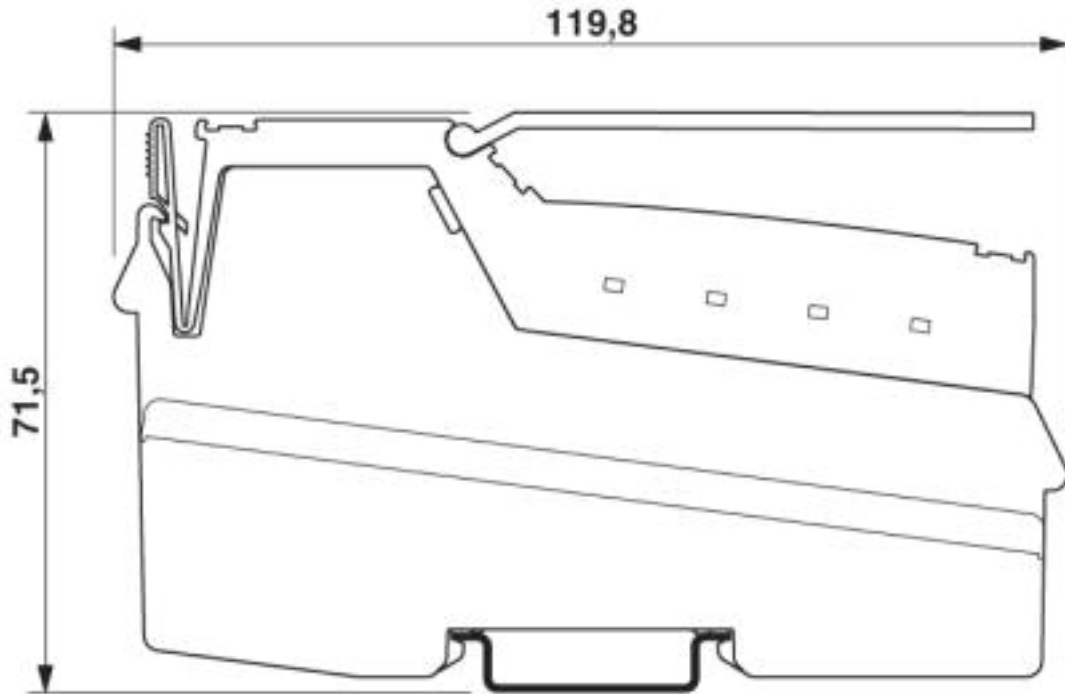
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Block diagram

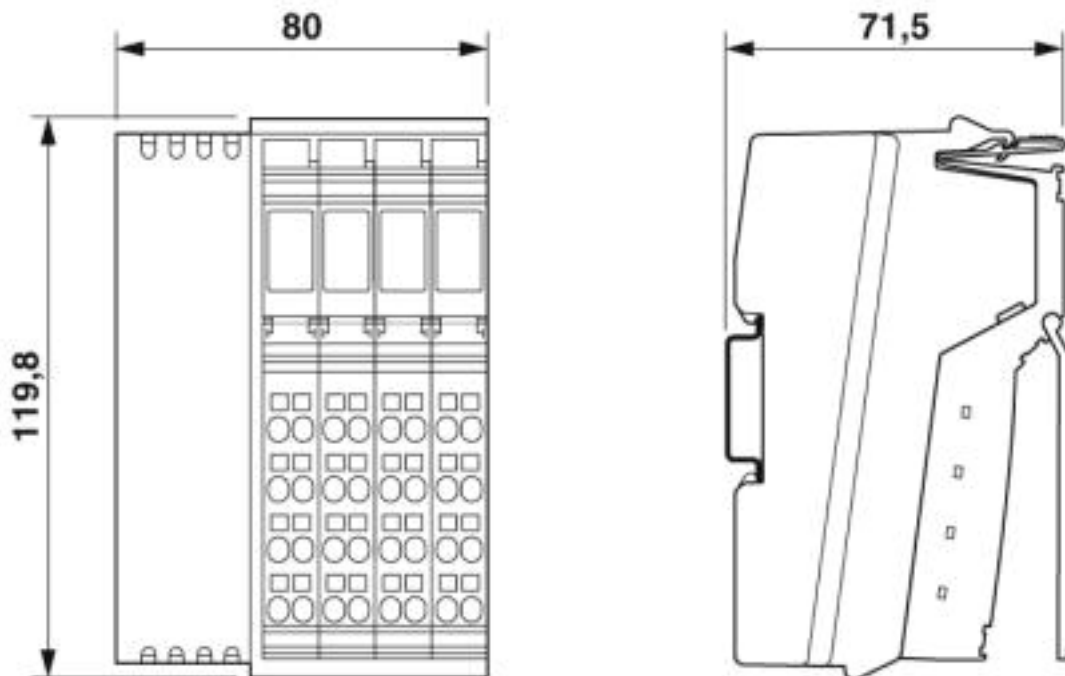


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Dimensional drawing



Dimensional drawing



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Classifications

eCl@ss

eCl@ss 10.0.1	27242608
eCl@ss 4.0	27250300
eCl@ss 4.1	27250300
eCl@ss 5.0	27250300
eCl@ss 5.1	27242600
eCl@ss 6.0	27242600
eCl@ss 7.0	27242608
eCl@ss 8.0	27242608
eCl@ss 9.0	27242608

ETIM

ETIM 2.0	EC001430
ETIM 3.0	EC001599
ETIM 4.0	EC001599
ETIM 5.0	EC001604
ETIM 6.0	EC001604
ETIM 7.0	EC001604

UNSPSC

UNSPSC 6.01	43172015
UNSPSC 7.0901	43201404
UNSPSC 11	43172015
UNSPSC 12.01	43201404
UNSPSC 13.2	32151602
UNSPSC 18.0	32151602
UNSPSC 19.0	32151602
UNSPSC 20.0	32151602
UNSPSC 21.0	32151602

Approvals

Approvals

Approvals

DNV GL / BV / GL / LR / GL-SW / RINA / UL Recognized / cUL Recognized / PROFIBUS / EAC / cULus Recognized / GL

Ex Approvals

ATEX

Approval details

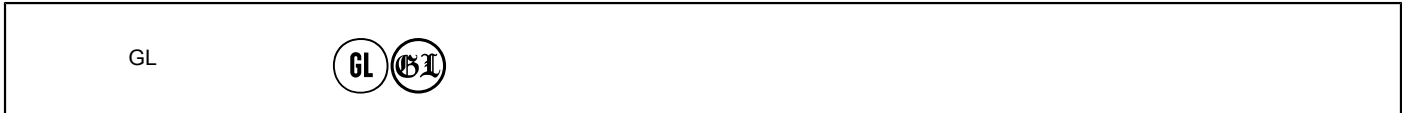
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Approvals

DNV GL		https://approvalfinder.dnvgl.com/	TAA00002CU
BV		http://www.veristar.com/portal/veristarinfo/generalinfo/approved/approvedProducts/equipmentAndMaterials	21725/B0 BV
GL		https://approvalfinder.dnvgl.com/	19910-11 HH
LR		http://www.lr.org/en	08/20033
GL-SW			19910-11 HH
RINA		http://www.rina.org/en	ELE096514XG
UL Recognized		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 140324
cUL Recognized		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 140324
PROFIBUS			Z01390
EAC			EAC-Zulassung
cULus Recognized			

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Approvals



Accessories

Accessories

Connector set

Connector set - IL BKDIO-PLSET - 2878599



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

Data plug

D-SUB bus connector - SUBCON-PLUS-PROFIB - 2744348



D-SUB plug, 9-pos., pin, axial version with two cable entries, below 35°, 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

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

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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Accessories

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

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

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

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

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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Accessories

D-SUB bus connector - SUBCON-PLUS-PROFIB/35/M12 - 2902320



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

D-SUB bus connector - SUBCON-PLUS-PROFIB/90/M12 - 2902318



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

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

End clamp - CLIPFIX 35-5 - 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

Labeling panel

Labeling field - IB IL FIELD 8 - 2727515

Labeling field, width: 48.8 mm



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Accessories

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

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

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

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