PHŒNIX CONTACT

Bus coupler - IL S3 BK DI8 DO4 2TX-PAC - 2692380

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Inline, Bus coupler, Sercos, RJ45 socket, Digital inputs: 8, 24 V DC, 3-conductor, Digital outputs: 4, 24 V DC, 500 mA, 3-conductor, Transmission speed in the local bus 500 kBit/s / 2 MBit/s, Degree of protection IP20, including Inline connectors and marking fields

Product Description

The bus coupler for the Sercos III protocol has 4 digital outputs and 8 digital inputs. This package contains all the necessary Inline plugs for connecting the supply and the I/Os. The Inline terminals can be labeled using pull-out labeling fields. The fields have plug-in cards that can be labeled individually to suit the application. Additionally, there is the ZBFM-6... Zack marker strip for labeling the terminal points.

Product Features

- Up to 61 Inline terminals (16 PCP devices) can be connected
- 80 mm design width
- Sercos III specification V1.1.2
- Sercos III LED
- Automatic speed detection of the system bus
- 2 RJ45 connections
- 8 digital inputs, 4 digital outputs onboard
- Maximum of 6 realtime connections
- Minimum Sercos III cycle time of 250 µs

sercos
the automation bus

Key Commercial Data

Packing unit	1 pc
Weight per Piece (excluding packing)	360.0 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

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Technical data

Dimensions

Width	80 mm
Height	119.8 mm
Depth	71.5 mm
Note on dimensions	Specfications with connectors

Ambient conditions

Ambient temperature (operation)	-25 °C ... 60 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Permissible humidity (operation)	10 % ... 95 % (according to DIN EN 61131-2)
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
Net weight	298 g
Note on weight specifications	with connectors
Diagnostics messages	Short-circuit / overload of the digital outputs Yes
	Sensor supply failure Yes
	Failure of the actuator supply Yes

Interfaces

Fieldbus system	Sercos
Designation	Sercos
Connection method	RJ45 socket
Transmission speed	100 MBit/s
Transmission physics	Ethernet in RJ45 twisted pair
Permissible conductor cross section	0.14 mm² ... 0.22 mm² (twisted pair)
Fieldbus system	Lokalbus
Designation	Inline local bus
Connection method	Inline data jumper
Transmission speed	500 kBit/s / 2 MBit/s (Automatic detection, no combined system)

System limits of the bus coupler

Designation	System limits of the bus coupler
Amount of process data	max. 4096 Byte (per station)
Number of supported devices	max. 63 (per station)
Number of local bus devices that can be connected	max. 61

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Technical data

System limits of the bus coupler

Number of devices with parameter channel	max. 16
Number of supported branch terminals with remote bus branch	0

Power supply for module electronics

Connection method	Inline connector
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. 1.05 A (from U_{BK})
Power dissipation	typ. 3.2 W (entire device)
Communications power U_L	7.5 V DC
Current consumption	0.8 A
Power consumption	typ. 1.7 W

Inline potentials

Communications power U_L	7.5 V DC ±5 %
Power supply at U_L	max. 0.8 A DC
Main circuit supply U_M	24 V DC
Supply voltage range U_M	19.2 V DC ... 30 V DC (including all tolerances, including ripple)
Power supply at U_M	max. 8 A DC (Sum of $U_M + U_S$)
Current consumption from U_M	max. 8 A DC
Segment circuit supply U_S	24 V DC
Supply voltage range U_S	19.2 V DC ... 30 V DC (including all tolerances, including ripple)
Power supply at U_S	max. 8 A DC (Sum of $U_M + U_S$)
Current consumption from U_S	max. 8 A DC
I/O supply voltage U_{ANA}	24 V DC
Supply voltage range U_{ANA}	19.2 V DC ... 30 V DC (including all tolerances, including ripple)
Power supply at U_{ANA}	max. 0.5 A DC

Digital inputs

Input name	Digital inputs
Description of the input	IEC 61131-2 type 1
Connection method	Inline connector
	3-conductor
Number of inputs	8
Typical response time	approx. 500 µs
Protective circuit	Reverse polarity protection Suppressor diode

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Digital inputs

Input characteristic curve	IEC 61131-2 type 1
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 current at U_{IN}	typ. 3 mA
Typical input current per channel	typ. 3 mA

Digital outputs

Output name	Digital outputs
Connection method	Inline connector
	3-conductor
Number of outputs	4
Protective circuit	Short-circuit and overload protection Free running circuit
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

Standards and Regulations

Conformity with EMC directives	Noise immunity test in accordance with EN 61000-6-2 Electrostatic discharge (ESD) EN 61000-4-2/IEC 61000-4-2 Criterion B, 6 kV contact discharge, 8 kV air discharge
	Noise immunity test in accordance with EN 61000-6-2 Electromagnetic fields EN 61000-4-3/IEC 61000-4-3 Criterion A, Field intensity: 10 V/m
	Noise immunity test in accordance with EN 61000-6-2 Fast transients (burst) EN 61000-4-4/IEC 61000-4-4 Criterion A, all interfaces 1 kVCriterion B, all interfaces 2 kV
	Noise immunity test in accordance with EN 61000-6-2 Transient overvoltage (surge) EN 61000-4-5/IEC 61000-4-5 Criterion B, supply lines DC: 0.5 kV/0.5 kV (symmetrical/asymmetrical), fieldbus cable shield 1 kV
	Noise immunity test in accordance with EN 61000-6-2 Conducted interference EN 61000-4-6/IEC 61000-4-6 Criterion A; Test voltage 10 V
	Noise emission test as per EN 61000-6-4 EN 55011 Class A
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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Classifications

eCl@ss

eCl@ss 4.0	27250302
eCl@ss 4.1	27250302
eCl@ss 5.0	27250302
eCl@ss 5.1	27242604
eCl@ss 6.0	27242604
eCl@ss 7.0	27242604
eCl@ss 8.0	27242608

ETIM

ETIM 2.0	EC001430
ETIM 3.0	EC001599
ETIM 4.0	EC001599
ETIM 5.0	EC001599

UNSPSC

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

Approvals

Approvals

Approvals

UL Listed / cUL Listed / EAC / cULus Listed

Ex Approvals

Approvals submitted

Approval details

Bus coupler - IL S3 BK DI8 DO4 2TX-PAC - 2692380

Approvals

UL Listed

cUL Listed

EAC

cULus Listed

Accessories

Accessories

Connector set

Connector set - IL BKDIO-PLSET - 2878599

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

Data cable by the meter

Cable - FL CAT5 HEAVY - 2744814

CAT5-SF/UTP cable (J-02YS(ST)C HP 2 x 2 x 24 AWG), heavy-duty installation cable, 2 x 2 x 0.22 mm², solid conductor, shielded, outer sheath: 7.8 mm diameter, inner sheath: 5.75 mm ± 0.15 mm diameter

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Accessories

Network cable - FL CAT5 FLEX - 2744830

CAT5-SF/UTP cable (J-LI02YS(ST)C H 2 x 2 x 26 AWG), light-duty, flexible installation cable 2 x 2 x 0.14 mm², stranded, shielded, outer sheath: 5.75 mm ± 0.15 mm diameter

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 - E/UK - 1201442

End clamp, Width: 9.5 mm, Height: 35.3 mm, Length: 50.5 mm, Color: gray

Labeling panel

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

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Accessories

Plug

RJ45 connector - FL PLUG RJ45 GR/2 - 2744856

RJ45 connector, shielded, with bend protection sleeve, 2 pieces, gray for straight cables, for assembly on site. For connections that are not crossed, it is recommended that you use the connector set with gray bend protection sleeve.

RJ45 connector - FL PLUG RJ45 GN/2 - 2744571

RJ45 connector, shielded, with bend protection sleeve, 2 pieces, green for crossed cables, for assembly on site. For connections that are crossed, it is recommended that the connector set with green bend protection sleeves is used.

Terminal marking

Insert strip - ESL 62X46 - 0809502

Insert strip, Sheet, white, unlabeled, can be labeled with: Office printing systems, Plotter: Laser printer, Mounting type: Insert, Lettering field: 62 x 46 mm

Insert strip - ESL 62X10 - 0809492

Insert strip, Sheet, white, unlabeled, can be labeled with: Office printing systems, Plotter: Laser printer, Mounting type: Insert, Lettering field: 62 x 10 mm

Universal tools

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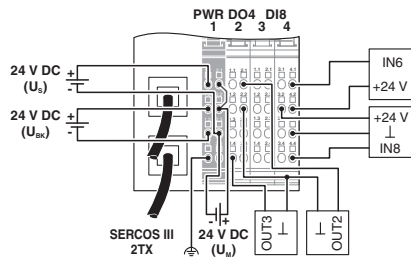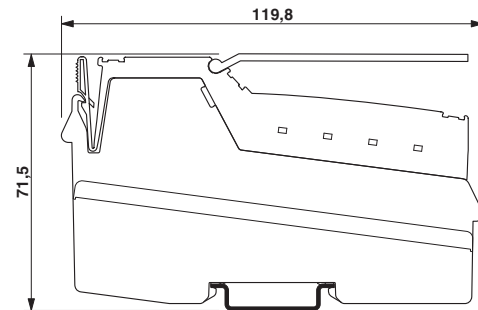
Accessories

Assembly tool - FL CRIMPTOOL - 2744869

Crimping pliers, for assembling the RJ45 plugs FL PLUG RJ45..., for assembly on site

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Drawings

Connection diagram

Dimensional drawing

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Block diagram