

## Bus coupler - IL ETH BK DI8 DO4 2TX-PAC - 2703981

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Modbus/TCP(UDP) bus coupler, 8 inputs, 24 V DC, 4 outputs, 24 V DC, 500 mA, complete with I/O connectors

### Product Description

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

### Why buy this product

- Up to 61 terminals (16 PCP devices) can be connected
- 80 mm design width
- Can be programmed with C# or Visual Basic
- Data exchange via OPC server supported
- Automatic speed detection of the system bus
- Web-based management
- 8 digital inputs, 4 digital outputs onboard
- 2 RJ45 connections
- Software interfaces for access via TCP/IP: Device Driver Interface (DDI) and High-Level Language Fieldbus Interface (HFI)

### Modbus/TCP (UDP)

### Key Commercial Data

Packing unit	1 STK
GTIN	 4 046356 041157

### Technical data

#### Note

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

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

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## Technical data

### Ambient conditions

Ambient temperature (operation)	-25 °C ... 55 °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

Net weight	375 g
Note on weight specifications	with connectors
Mounting type	DIN rail
Diagnostics messages	Short-circuit / overload of the digital outputs Yes
	Sensor supply failure Yes
	Failure of the actuator supply Yes

### Interfaces

Fieldbus system	Modbus/TCP (UDP)
Designation	Modbus/TCP (UDP)
Connection method	RJ45 socket
Note on connection method	Autonegotiation
Transmission speed	10/100 MBit/s
Transmission physics	Ethernet in RJ45 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

Number of supported devices	max. 63 (per station)
Number of local bus devices that can be connected	max. 61 (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

### Power supply for module electronics

Connection method	Spring-cage connection
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)
Supply current	70 mA
Current consumption	max. 0.98 A (from $U_{BK}$ )
Power dissipation	typ. 3 W (entire device)

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## Technical data

### Power supply for module electronics

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 $\pm$ 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 $U_M + U_S$ ; 4 A, maximum, when used in potentially explosive areas.)
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 $U_M + U_S$ ; 4 A, maximum, when used in potentially explosive areas.)
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
Connection method	Inline connector
	3-conductor
Number of inputs	8 (EN 61131-2 type 1)
Typical response time	approx. 500 $\mu$ s
Protective circuit	Protection against polarity reversal Suppressor diode
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
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
	3-conductor
Number of outputs	4
Protective circuit	Short-circuit and overload protection Free running circuit

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## Technical data

### Digital outputs

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 kV Criterion 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
Connection in acc. with standard	CUL
Protection class	III, IEC 61140, EN 61140, VDE 0140-1

## 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	27242604
eCl@ss 9.0	27242604

### ETIM

ETIM 2.0	EC001434
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## Classifications

### ETIM

ETIM 3.0	EC001604
ETIM 4.0	EC001604
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

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#### Approvals

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

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#### Ex Approvals

ATEX / UL Listed / cUL Listed / cULus Listed

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#### Approvals submitted

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### Approval details

LR
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GL
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BV
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ABS
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RINA
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GL-SW
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## Approvals

UL Recognized

cUL Recognized

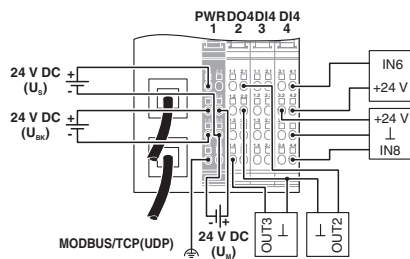
EAC

GL

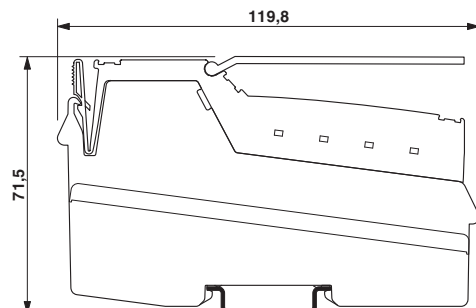
cULus Recognized

## Drawings

Connection diagram



Dimensional drawing



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