

Bus coupler - IL ETH BK DI8 DO4 2TX-XC-PAC - 2701388

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

Product Features

- Up to 61 terminals (16 PCP devices) can be connected
- Can be programmed with C, C++, C#, Visual Basic or other high-level languages
- 8 digital inputs, 4 digital outputs onboard
- Data exchange via OPC server supported
- 2 RJ45 connections
- Automatic speed detection of the system bus
- Software interfaces for access via TCP/IP: Device Driver Interface (DDI) and High-Level Language Fieldbus Interface (HFI)
- Diagnostic and status indicators
- Can be used under extreme ambient conditions
- Extended temperature range of -40°C ... +70°C (see "Tested successfully: use under extreme ambient conditions" in the data sheet)
- Coated PCBs



Modbus/TCP (UDP)

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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Dimensions

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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 ... 55 °C
	-40 °C ... 70 °C (Extended, see section "Tested successfully: use under extreme ambient conditions" in the data sheet.)
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	375 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	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)

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.

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Technical data

Power supply for module electronics

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 (from U_{BK})
Power dissipation	typ. 3 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 $\pm 5\%$
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 $U_M + U_S$)
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	EN 61131-2 type 1
Connection method	Inline connector
	3-conductor
Number of inputs	8
Typical response time	approx. 500 μ s
Protective circuit	Reverse polarity protection Suppressor diode
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
Delay at signal change from 0 to 1	1.2 ms

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Technical data

Digital inputs

Delay at signal change from 1 to 0	1.2 ms
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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 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

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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 3.0	EC001604
ETIM 4.0	EC002498
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

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Approvals

UL Recognized / cUL Recognized / EAC / cULus Recognized


Ex Approvals


Approvals submitted

Approval details


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Approvals

UL Recognized 

cUL Recognized 

EAC

cULus Recognized 

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

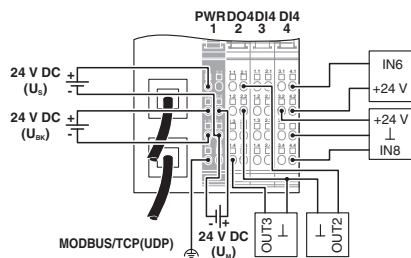
Assembly tool - FL CRIMPTOOL - 2744869



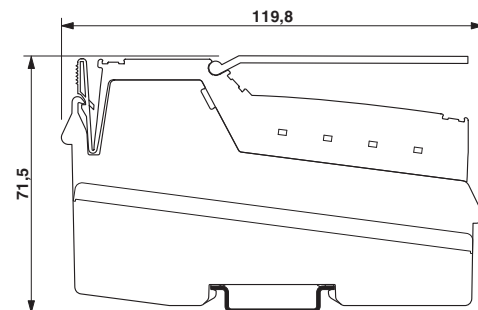
Crimping pliers, for assembling the RJ45 plugs FL PLUG RJ45..., for assembly on site

Drawings

Connection diagram



Dimensional drawing



Mouser Electronics

Authorized Distributor

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