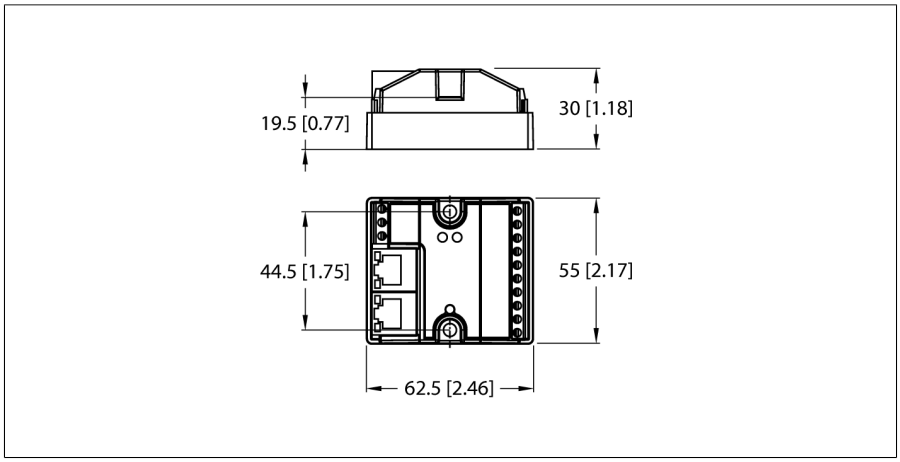
Compact IP20 multiprotocol Ethernet I/O module 4 digital inputs, 4 universal digital channels FEN20-4DIP-4DXP



Type	FEN20-4DIP-4DXP
ID	6931090

Number of channels	8
Operating / load voltage	12…30 VDC
Operating current	100 mA
Electrical isolation	500 V I/Os to Ethernet
Supply voltage	24 VDC
Power dissipation, typical	≤ 2.4 W
Voltage supply connection	Screw terminals

Inputs	
Number of channels	8
Input voltage	24 VDC
Supply current	700 mA
Switching threshold	7 V / 1.65 mA
Low-level signal voltage	< 7 VDC
High level signal voltage	7…30 VDC
Low level signal current	< 1.5 mA
High level signal current	> 2 mA
Input delay	2.5 ms
Max. input current	6 mA

Outputs	
Number of channels	4 eingestuft.
Output voltage	12…30 VDC
Output current per channel	1 A
Output total current	4 A
Load type	resistive, inductive, lamp load
Short-circuit protection	yes

- EtherNet/IP slave
- Modbus TCP Slave
- PROFINET slave
- 2 RJ45 ports for the Ethernet connection
- Integrated Ethernet switch
- 10/100 Mbps
- 4 digital inputs
- 4 universal digital channels, DI / DO
- 24 VDC, PNP
- Output current: 1.0 A
- Protection class IP20

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System data	
Transmission rate	10/100 Mbps; Full/Half Duplex; Auto Negotiation; Auto Crossing
Addressing modes Ethernet:	via software
Connection technology Ethernet	2 × RJ45 female connector
Protocol detection	automatic
Web server	192.168.1.254 (default)
Service interface	Ethernet
Device Reset	via Push-button

Modbus TCP	
Addressing	Static IP, BOOTP, DHCP
Supported function codes	FC1, FC2, FC3, FC4, FC5, FC6, FC15, FC16, FC23
Number of TCP connections	6
Input Data Size	max. 1 register
Input register start address	0 (0x0000 hex)
Output Data Size	max. 1 register
Output register start address	2048 (0x0800 hex)

Ethernet/IP	
Addressing	acc. to EtherNet/IP specification
Quick Connect (QC)	< 150 ms
Device Level Ring (DLR)	supported
Class 1 connections (CIP)	6

PROFINET	
Addressing	DCP
Conformance class	B (RT)
MinCycleTime	1 ms
Fast Start-Up (FSU)	< 150 ms
Diagnostics	acc. to PROFINET alarm handling
Topology detection	supported
Automatic addressing	supported
Media Redundancy Protocol (MRP)	supported

Dimensions (W x L x H)	55 x 62.5 x 30 mm
Housing material	glass fiber reinforced polyamide (PA6-GF30)
Ambient temperature	-40…+70 °C
Storage temperature	-40…+85 °C
Vibration test	Acc. to IEC 60068-2-6
Shock test	Acc. to IEC 60068-2-27
Protection class	IP20
MTTF	459 years acc. to SN 29500 (Ed. 99) 20 °C
Approvals	CE, cULus, Class I Div. 2

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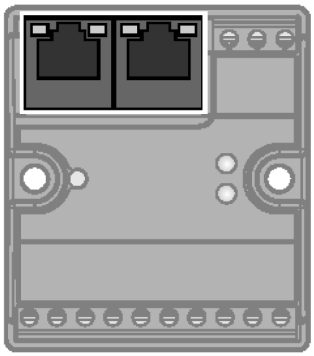
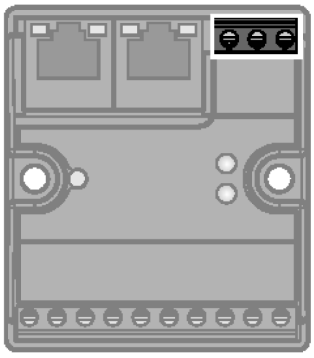
Terminal assignment



Ethernet
Fieldbus cable (example):
RJ45S-RJ45S-441-2M (ident no. 6932517) or
RJ45-FKSDD-441-0,5M/S2174 (ident no. 6914221)

RJ45 Ethernet

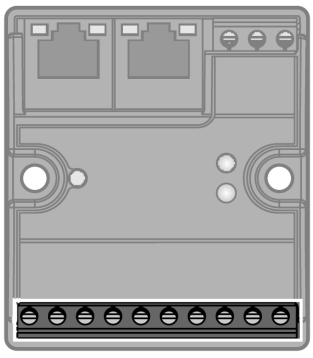
1 = TX +
2 = TX –
3 = RX +
4 = n.c.
5 = n.c.
6 = RX –
7 = n.c.
8 = n.c.



Power Supply
Recommended torque for screw terminals: 0.5 Nm (4.43 lb.in)

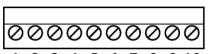
Power Supply

1 = ⏚
2 = V1 –
3 = V1 +



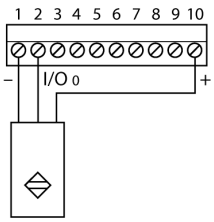
I/O Channels
Recommended torque for screw terminals: 0.5 Nm (4.43 lb.in)

Terminal Connection

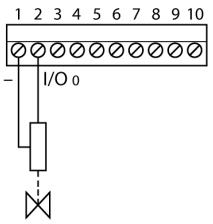


1 = V1 –
2 = I/O 0
3 = I/O 1
4 = I/O 2
5 = I/O 3
6 = I 4
7 = I 5
8 = I 6
9 = I 7
10 = V_{OUT}1 +

3-Wire



2-Wire



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Module LED Status

LED	Color	Status	Description
ETH1 / ETH2	Green	ON	Ethernet Link (100 Mbps)
		Flashing	Ethernet communication (100 Mbps)
	yellow	ON	Ethernet Link (10 Mbps)
		Flashing	Ethernet communication (10 Mbps)
		OFF	No Ethernet link
BUS	Green	ON	Active connection to a master
		Flashing	Ready
		flashes 3 × (1 Hz)	ARGEE program running
	Red	ON	IP address conflict or status word is active
		Flashing	Blink/Wink command active
		OFF	Power off
	red/green	Flashing (1Hz)	Assigning IP address
ERR	Green	ON	Diagnostics disabled
	Red	ON	Short-circuit

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Prozessdaten Mapping

Modbus TCP Register-Mapping

	Reg	Bit 15	Bit 14	Bit 13	Bit 12	Bit 11	Bit 10	Bit 9	Bit 8	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Eingänge (RO)	0x0000	-	-	-	-	-	-	-	-	DI7	DI6	DI5	DI4	DI3	DI2	DI1	DI0
Status (RO)	0x0001	-	FCE	-	-	CFG	COM	V1 low	-	-	-	-	-	-	-	-	Diag Warn
Diag (RO)	0x0002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	I/O Diag
Ausgänge (RW)	0x0800	-	-	-	-	-	-	-	-	-	-	-	-	DO3	DO2	DO1	DO0
I/O Diag (RO)	0xA000	-	-	-	-	SCO3	SCO2	SCO1	SCO0	-	-	-	-	-	-	-	IGS

EtherNet/IP™ Data Mapping

INPUT	**Word**	**Bit 15**	**Bit 14**	**Bit 13**	**Bit 12**	**Bit 11**	**Bit 10**	**Bit 9**	**Bit 8**	**Bit 7**	**Bit 6**	**Bit 5**	**Bit 4**	**Bit 3**	**Bit 2**	**Bit 1**	**Bit 0**
	0	-	FCE	-	-	CFG	COM	V1 low	-	-	-	-	-	-	-	-	Diag Warn
	1	-	-	-	-	-	-	-	-	DI7	DI6	DI5	DI4	DI3	DI2	DI1	DI0
	2	-	-	Sched Diag	-	-	-	-	-	-	-	-	-	-	-	-	I/O Diag
	3	-	-	-	-	SCO3	SCO2	SCO1	SCO0	-	-	-	-	-	-	-	IGS
OUTPUT	**Word**	**Bit 15**	**Bit 14**	**Bit 13**	**Bit 12**	**Bit 11**	**Bit 10**	**Bit 9**	**Bit 8**	**Bit 7**	**Bit 6**	**Bit 5**	**Bit 4**	**Bit 3**	**Bit 2**	**Bit 1**	**Bit 0**
	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1	-	-	-	-	-	-	-	-	-	-	-	-	DO3	DO2	DO1	DO0

PROFINET Prozessdaten

	Byte	Bit 7	Bit 6	Bit 5	Bit 4	Bit3	Bit 2	Bit 1	Bit 0
Eingänge	0	DI7	DI6	DI5	DI4	DI3	DI2	DI1	DI0
	1	-	-	-	-	-	-	-	-
Ausgänge	0	-	-	-	-	DO3	DO2	DO1	DO0
	1	-	-	-	-	-	-	-	-

Legende:

DIx	Digitaler Eingang x	COM	Kommunikation auf internem Modulbus gestört
DOx	Digitaler Ausgang x	CFG	I/O-Konfigurationsfehler
IGS	Eingangsgruppe - Kurzschluss	FCE	I/O-ASSISTANT Force Mode aktiv
SCOx	Kurzschluss Ausgang x	I/O Diag	I/O-Diagnose erkannt
Diag Warn	Diagnose an mind. 1 Kanal	Sched Diag	Herstellerspezifische Diagnose konfiguriert und aktiv
V1 low	Unterspannung V1	-	-

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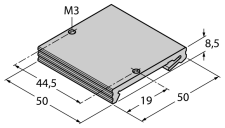
Accessories

Type code	Ident no.		Dimension drawing
FDN20-BKT-DIN	Z0076	Mounting adapter for mounting of 8-channel Fxx20 modules on DIN rail (TS 35)	

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