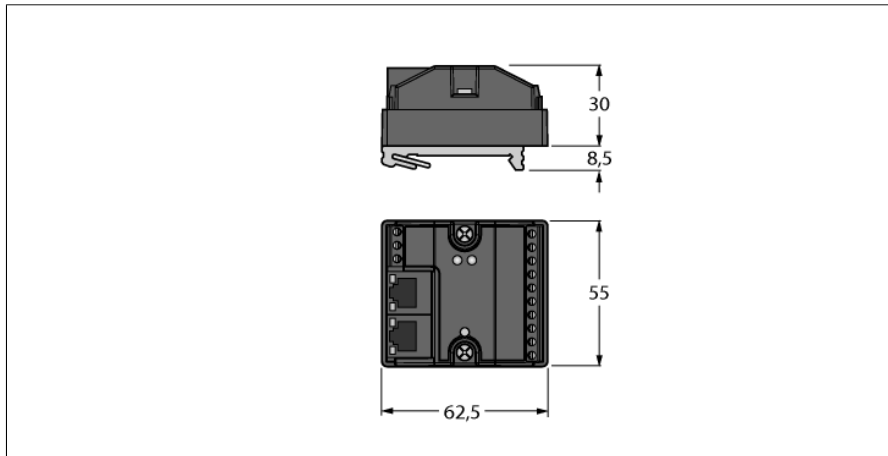


# Compact IP20 Multiprotocol Ethernet I/O Station

## 4 Digital PNP Inputs and 4 Configurable Digital PNP Channels

### FEN20-4DIP-4DXP-DIN



- EtherNet/IP™ Slave
- Modbus TCP Slave
- PROFINET Slave
- Integrated Ethernet Switch
- 10 Mbps / 100 Mbps supported
- 2 x RJ45 Sockets for Fieldbus Connection
- Can be mounted on DIN rail
- 4 digital PNP inputs
- 4 configurable PNP channels, DI or DO
- 24 VDC
- 1 A outputs
- Degree of protection IP20

<b>Type designation</b>	FEN20-4DIP-4DXP-DIN
Ident-No.	6931092
Ident-No (TUSA)	F6931092
<hr/>	
<b>Number of channels</b>	8
Operating / load voltage	12...30 VDC
Operating current	100 mA
Electrical isolation	500V Galvanic Zone-Zone and Zone-Ethernet
Supply voltage	24 VDC
Power dissipation, typical	≤ 2.4 W
Voltage supply connection	screw terminals
<hr/>	
<b>Inputs</b>	
Number of channels	8
Input voltage	24 VDC
Supply current	700 mA
Switching threshold	7V / 1.65mA
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
<hr/>	
<b>Outputs</b>	
Number of channels	4
Output voltage	12...30 VDC, short-circuit proof
Output current per channel	1 A
Output total current	4 A
Load type	Resistive, Inductive, Lamp Load
Short-circuit protection	yes
<hr/>	
<b>System data</b>	
Transmission rate	10/100 Mbps; Full/Half Duplex; Auto Negotiation; Auto Crossing
Addressing modes Ethernet:	via Software
Connection technology Ethernet	2 x RJ45 Sockets
Protocol detection	automatic
Web server	192.168.1.254 (Default)
Service Interface	Ethernet
Device Reset	via Push-button
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<b>Modbus TCP</b>	
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)

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#### EtherNet/IP™

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

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#### 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

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#### Dimensions (W x L x H)

Housing material	55 x 62.5 x 30mm
Operating temperature	Fiber-glass reinforced Polyamide (PA6-GF30)
Storage temperature	-40...70 °C
Protection class	-40...85 °C
Approvals	IP20
	CE, cULus, Class I Div. 2

**Compact IP20 Multiprotocol Ethernet I/O Station**  
**4 Digital PNP Inputs and 4 Configurable Digital PNP Channels**  
**FEN20-4DIP-4DXP-DIN**



Industrial  
Automation

	<p><b>Ethernet</b>          Fieldbus cable (example): RJ45S RJ45S 441-2M (Ident no. U-06842)</p>	<p>RJ45 Ethernet</p> <p>12345678</p> <ul style="list-style-type: none"> <li>1 = TX +</li> <li>2 = TX -</li> <li>3 = RX +</li> <li>4 = n.c.</li> <li>5 = n.c.</li> <li>6 = RX -</li> <li>7 = n.c.</li> <li>8 = n.c.</li> </ul>
	<p><b>Power Supply</b></p>	<p>Power Supply</p> <p>1 2 3</p> <ul style="list-style-type: none"> <li>1 = ⊕</li> <li>2 = V1 -</li> <li>3 = V1 +</li> </ul>
	<p><b>I/O Channels</b></p>	<p>Terminal Connection</p> <p>1 2 3 4 5 6 7 8 9 10</p> <ul style="list-style-type: none"> <li>1 = V1 -</li> <li>2 = I/O 1</li> <li>3 = I/O 2</li> <li>4 = I/O 3</li> <li>5 = I/O 4</li> <li>6 = I5</li> <li>7 = I6</li> <li>8 = I7</li> <li>9 = I8</li> <li>10 = V<sub>OUT1</sub> +</li> </ul>

**Compact IP20 Multiprotocol Ethernet I/O Station**  
**4 Digital PNP Inputs and 4 Configurable Digital PNP Channels**  
**FEN20-4DIP-4DXP-DIN**



**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	operational
		flashing 3 × (1Hz)	ARGEE program running
	red	ON	IP address conflict or status word active
		Flashing	Blink/Wink command active
		OFF	No power supply
ERR	Green	ON	Diagnostics disabled
	Red	ON	Short-circuit

**Compact IP20 Multiprotocol Ethernet I/O Station**  
**4 Digital PNP Inputs and 4 Configurable Digital PNP Channels**  
**FEN20-4DIP-4DXP-DIN**



Industrial  
Automation

**Process Data 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
Inputs (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
Outputs (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 Process Data**

	Byte	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Inputs	0	DI7	DI6	DI5	DI4	DI3	DI2	DI1	DI0
	1	-	-	-	-	-	-	-	-
Outputs	0	-	-	-	-	DO3	DO2	DO1	DO0
	1	-	-	-	-	-	-	-	-

**Key:**

DIx	Digital input x	COM	Communication error on internal module bus
DOx	Digital output x	CFG	I/O configuration error
IGS	Input group short-circuit	FCE	I/O-ASSISTANT Force Mode active
SCOx	Short-circuit output x	I/O Diag	I/O diagnostic detected
Diag Warn	Diagnostic at least on 1 channel	Sched Diag	Manufacturer-specific diagnostics configured and active
V1 low	Undervoltage V1	-	-