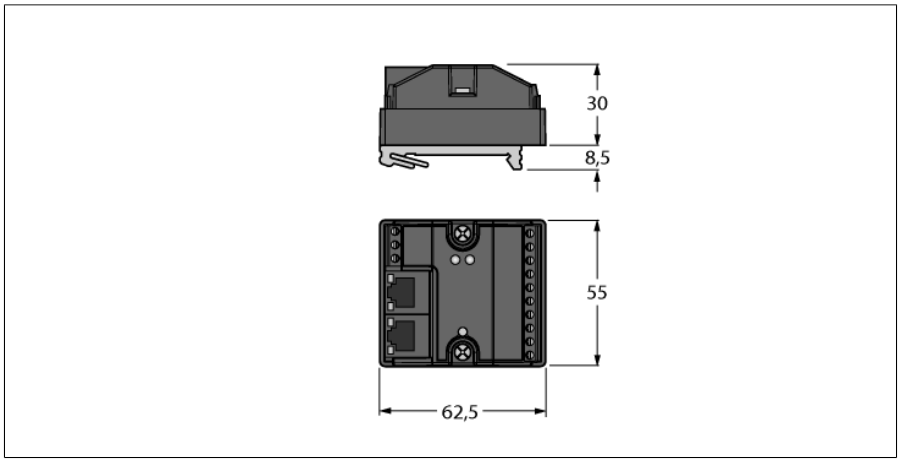
# Compact IP20 Multiprotocol Ethernet I/O Station
# 4 Digital PNP Inputs and 4 Configurable Digital PNP Channels
# FEN20-4DIP-4DXP-DIN




- FLC/ARGEE programmable
- 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
- Protection class IP20

| | |
|---|---|
| Type | FEN20-4DIP-4DXP-DIN |
| ID | 6931092 |

| | |
|---|---|
| Number of channels | 8 |
| Operating / load voltage | 12...30 |
| Operating current | 100 |
| Electrical isolation | 500V Galvanic Zone-Zone and Zone-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 | 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 |

| Outputs | |
|---|---|
| Number of channels | 4 |
| 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 |

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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 |

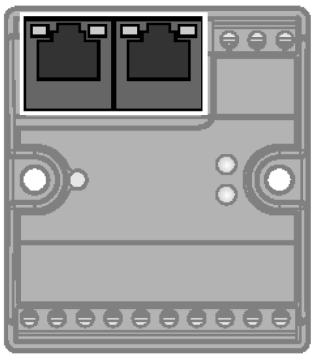
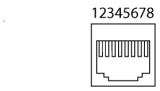
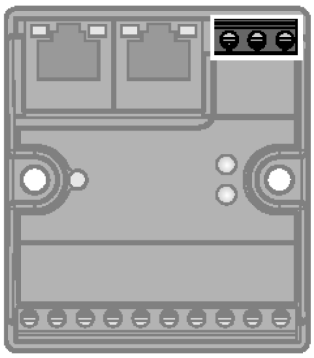
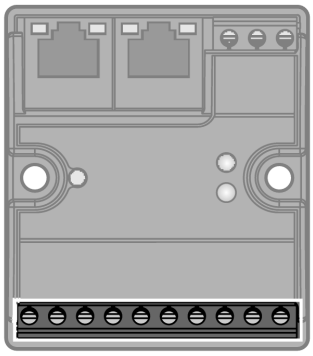
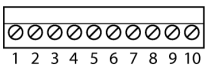
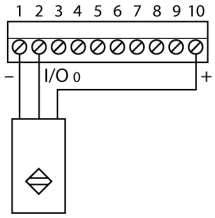
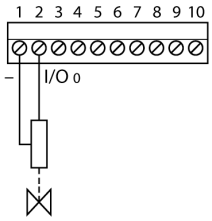
| Modbus TCP | |
|---|---|
| Addressing | Static IP, BOOTP, DHCP |
| Supported function codes | FC1, FC2, FC3, FC4, FC5, FC6, FC15, FC16, FC23 |
| Number of TCP connections | 6 |
| Input Data Size | max. 1 register |
| Input register start address | 0 (0x0000 hex) |
| Output Data Size | max. 1 register |
| 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 | Fiber-glass 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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| | | |
|---|---|---|
|  | **Ethernet**<br>Fieldbus cable (example): RJ45S RJ45S 441-2M (Ident no. U-06842) | RJ45 Ethernet<br><br><br>1 = TX +<br>2 = TX –<br>3 = RX +<br>4 = n.c.<br>5 = n.c.<br>6 = RX –<br>7 = n.c.<br>8 = n.c. |
|  | **Power Supply**<br>Recommended torque for screw terminals: 0.5 Nm (4.43 lb.in) | Power Supply<br><br><br>1 = ⏚<br>2 = V1 –<br>3 = V1 + |
|  | **I/O Channels**<br>Recommended torque for screw terminals: 0.5 Nm (4.43 lb.in) | Terminal Connection<br><br><br>1 = V1 –<br>2 = I/O 0<br>3 = I/O 1<br>4 = I/O 2<br>5 = I/O 3<br>6 = I 4<br>7 = I 5<br>8 = I 6<br>9 = I 7<br>10 = $V_{OUT}$1 +<br>3-wire<br><br><br>2-wire<br><br> |

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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 | 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 |
| | Red/Green | Flashing (1Hz) | Assign IP address |
| **ERR** | Green | ON | Diagnostics disabled |
| | Red | ON | Short-circuit |

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**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 | Bit3 | 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 | - | - |

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