

SIPROTEC 5 – V08.30

Strong in industrial application
Profinet IO

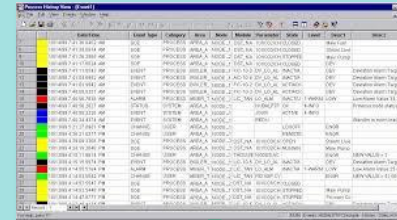
Designed to communicate Profinet IO with S2 Redundancy

SIEMENS
Ingenuity for life

- NEW:*** Profinet IO on **ETH-BD-2FO**
- NEW:*** High availability connection of SIPROTEC 5 as an IO device to two redundant Profinet IO Controllers
- NEW:*** Sequence of Events log from the SIPROTEC 5 IO device to enable monitoring of Process data from your factory

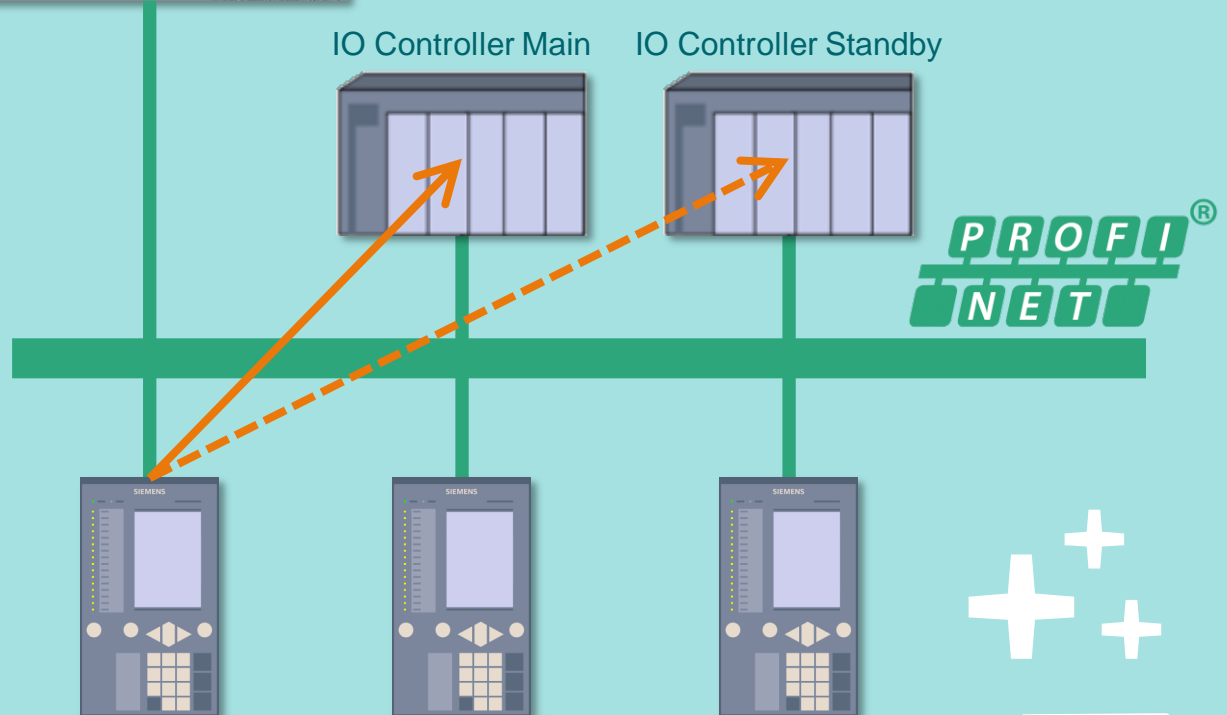
Effortless integration into existing Profinet IO networks with optional RJ-45 SFP

*ETH-BD-2FO plug-in module is required



| Time | Event Type | Description |
|-----------------|------------|-------------------|
| 10:00:00.000000 | DI | DI1 (I0.0) ON |
| 10:00:00.000000 | DO | DO1 (Q0.0) ON |
| 10:00:00.000000 | AI | AI1 (PIW1) 12345 |
| 10:00:00.000000 | AQ | AQ1 (PIW2) 67890 |
| 10:00:00.000000 | DI | DI2 (I0.1) ON |
| 10:00:00.000000 | DO | DO2 (Q0.1) ON |
| 10:00:00.000000 | AI | AI2 (PIW3) 54321 |
| 10:00:00.000000 | AQ | AQ2 (PIW4) 09876 |
| 10:00:00.000000 | DI | DI3 (I0.2) ON |
| 10:00:00.000000 | DO | DO3 (Q0.2) ON |
| 10:00:00.000000 | AI | AI3 (PIW5) 98765 |
| 10:00:00.000000 | AQ | AQ3 (PIW6) 43210 |
| 10:00:00.000000 | DI | DI4 (I0.3) ON |
| 10:00:00.000000 | DO | DO4 (Q0.3) ON |
| 10:00:00.000000 | AI | AI4 (PIW7) 87654 |
| 10:00:00.000000 | AQ | AQ4 (PIW8) 32109 |
| 10:00:00.000000 | DI | DI5 (I0.4) ON |
| 10:00:00.000000 | DO | DO5 (Q0.4) ON |
| 10:00:00.000000 | AI | AI5 (PIW9) 21098 |
| 10:00:00.000000 | AQ | AQ5 (PIW10) 10987 |

Sequential Event List (SOE)



SIPROTEC 5

Ethernet module – ETH-BD-2FO

Communication module for the transmission of Ethernet protocols via 2 optical interfaces

NEW: Additional protocols (Device DDD V8.30)

- HSR (no IEEE 1588v2/PTP support)
- IEEE C37.118 (PMU)
- Profinet IO incl. S2 redundancy
- IEEE 1588v2/PTP support C37.238:2017 profile

Available protocols (Device DDD V8.03)

- PRP, Line Mode, RSTP
- IEC 61850-8-1 GOOSE, MMS
- IEC 60870-5-104
- SNTP
- COMFEDE support via MMS file transfer
- IEEE 1588v2/PTP (1µs accuracy) ordinary slave clock for radial networks (PRP and Line Mode) – IEC 61850-9-3 profile
- DIGSI 5 protocol
- DCP
- DHCP
- Homepage
- WebUI
- SysLog
- RADIUS
- IEC 61850-9-2 Process Bus Client
- IEC 61850-9-2 Merging Unit

Technical Specification:

| | |
|------------------|--|
| Connector type | 2 x duplex LC |
| Wavelength | $\lambda = 1300 \text{ nm}$ |
| Baud rate | 100 Mbit/s |
| Max. line length | 2 km for 62.5 µm/125 µm optical fibers |



ETH-BD-2FO

| Transmit Power | Minimum | Typical | Maximum |
|-----------------------------|-----------|-----------|-----------|
| 50 µm/125 µm, NA1 = 0.2 | -24.0 dBm | -21.0 dBm | -17.0 dBm |
| 62.5 µm/125 µm, NA1 = 0.275 | -20.0 dBm | -17.0 dBm | -14.0 dBm |

| | |
|------------------------------------|---|
| Receiver sensitivity | Maximum -12.0 dBm Minimum -31.0 dBm |
| Optical budget | Minimum 7.0 dB for 50 µm/125 µm, NA1 = 0.2 Minimum 11.0 dB for 62.5 µm/125 µm, NA1 = 0.275 |
| Interface design | Corresponds to IEEE 802.3, 100Base-FX |
| Laser class 1 as per EN 60825-1/-2 | With the use of 62.5 µm/125 µm and 50 µm/125 µm optical fibers |

Comment: 1 Numerical Aperture (NA = sin θ (launch angle))



Optional SFP for the ETH-BD-2FO

as replacement of standard multimode SFP for 2 km

Optical SFP for up to 24 km

| | |
|------------------|---|
| Order Code | P1Z3210 (pack of 10 units) |
| Connector type | 2 x duplex LC |
| Wavelength | $\lambda = 1300 \text{ nm}$ |
| Baud rate | 100 Mbit/s |
| Protocol | See ETH-BD-2FO |
| Max. line length | 24 km for 9 μm /125 μm optical fibers |

Electrical SFP for up to 20 m (not for sample synchronization)

| | |
|------------------|--|
| Order Code | P1Z3201 (pack of 10 units) |
| Connector type | RJ45 |
| Baud rate | 100 Mbit/s |
| Protocol | See ETH-BD-2FO |
| Max. line length | 20 m with Ethernet patch cable CAT 6 S/FTP, F/FTP, or SF/FTP |
| Interface design | Corresponds to IEEE 802.3, 100Base-TX |

