

# SIPROTEC 5 – V08.30

Strong in industrial application  
Profinet IO



# 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 $\mu\text{m}$ /125 $\mu\text{m}$ 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

