Fiber optic media converter Ethernet 10/100/1000Mbps

- Transparent connect two LANs using optical fiber
- Supports 1x RJ45 10/100/1000 Mbps to 1x SFP 1000 Mbps
- Optical interface built on removable SFP modules
- Possibility to work in point-to-point configuration
- Transparent transfer of VLAN frames
- Jumbo frames support (up to 10240 bytes)
- LED signaling for port and device status
- Optional additional alarm-relay output
- Mounted on DIN TH35 bus
- PoE technology support, can be powered through RJ45 port as power supply (PSE) or fed (PD) (optional)
- 12-60V DC or 5V DC (USB) power supply
- Optionally power 5V DC via USB

Description of the device

Functionality

NESO device transparently converts 10/100/1000 Base-T Ethernet electric signal to Ethernet optic signal. NESO is equipped with one 10/100/1000 Mbit/s electric Ethernet port and one SFP GigabitEthernet port. The pluggable fiber optics port allows for flexible network configurations using SFP. Set of LEDs located in the front panel allow user to monitor the real-time operation status.

NESO transmission (while working with 1000Mbit/s speed on electric interface) is fully compliant with IEEE 802.3 standard therefore it can be connected to any device that meets this standard and 1Gbit/s transmission speed.

Compatibility with a broad spectrum of supply voltages from 12 to 60 V DC allows the device to be powered directly from the mains. In the case of mains power supply, an external plug-in power unit is available and for the PoE compatible version, voltage above 24V DC must be supplied. **NESO-PoE** uses Power over Ethernet technology. The device is available in two versions, the power supply (PSE), which can power another device via twisted pair, and powered (PD), which can be powered either via the screw connector or via another device via the RJ45 connector.

The device is also available in a version with 5V DC power supply via USB. The USB slot is used solely for power supply and does not allow data transfer.

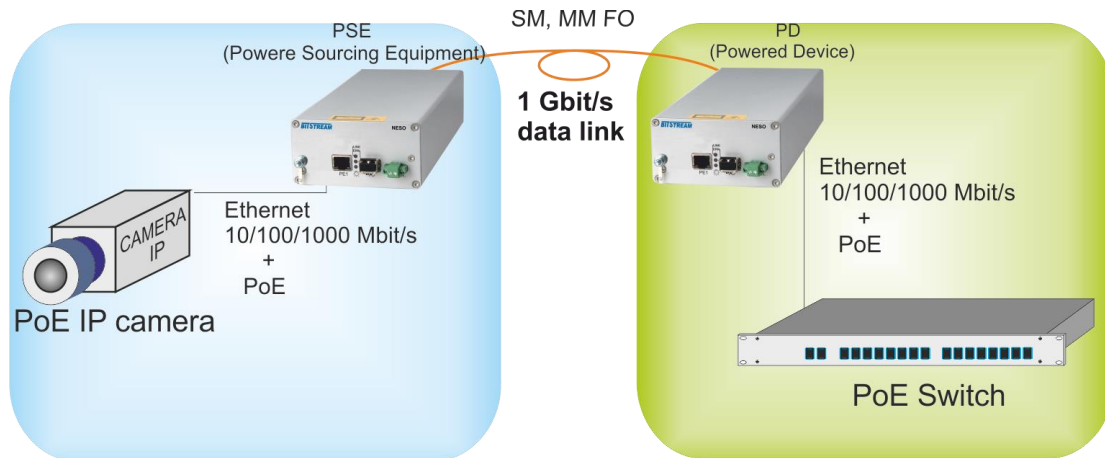A typical application is presented in the drawing below.

Fig. 1. Example application. Providing communication between the camera and the monitoring system using device with PoE (optional)

Technical specifications

Supported transmission standards

- IEEE 802.3 10Base-T Ethernet
- IEEE 802.3u 100Base-TX Fast Ethernet
- IEEE 802.3ab 1000Base-T
- IEEE 802.3z Gigabit Fiber

- IEEE 802.3af PoE – for versions with PoE

Supported protocols:

- MDI/MDIX

Supported standards, recommendations and directives EMC Security*:

- PN-EN 55011:2012 - Industrial, scientific and medical equipment - Radio-frequency disturbance characteristics - Limits and methods of measurement
- *PN-EN 55022:2010/AC:2011 - Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement*
- *PN-EN 55024:2011/A1:2015-08* – Electromagnetic compatibility (EMC) - Information technology equipment immunity characteristics - Limits and methods of measurement
- *PN-EN 60950-1:2007/A2:2014-05- Information technology equipment*–Safety– Part 1: General requirements
- *EMC 2004/108/WE* – Electromagnetic Compatibility Directive
- *LVD 2006/95/WE* – Low Voltage Directive
- *PN-EN 60825-1:2014-11* – Safety of laser products Part 1: Equipment classification and requirements
- IEC 61000-4-2 Electromagnetic compatibility (EMC)- Part 4-2: Testing and measurement techniques – Electrostatic discharge immunity test
- IEC 61000-4-3 Electromagnetic compatibility (EMC)- Part 4-3: Testing and measurement techniques – Radiated, radio-frequency, electromagnetic field immunity test
- IEC 61000-4-4 Electromagnetic compatibility (EMC) – Part 4-4: Testing and measurement techniques – Electrical fast transient/burst immunity test
- IEC 61000-4-5 Electromagnetic compatibility (EMC) – Part 4-5: Testing and measurement techniques – Surge immunity test
- IEC 61000-4-6 Electromagnetic compatibility (EMC) – Part 4-6: Testing and measurement techniques – Immunity to conducted disturbances, induced by radio-frequency fields
- IEC 61000-4-8 Electromagnetic compatibility (EMC) – Part 4-8: Testing and measurement techniques – Power frequency magnetic field immunity test

- IEC 61000-4-11 Electromagnetic compatibility (EMC) – Part 4-11: Testing and measurement techniques – Voltage dips, short interruptions and voltage variations immunity tests
- IEC 61000-4-12 Electromagnetic compatibility (EMC) – Part 4-12: Testing and measurement techniques – Ring wave immunity test
- IEC 61000-4-29 Electromagnetic compatibility (EMC) – Part 4-29: Testing and measurement techniques – Voltage dips, short interruptions and voltage variations on d.c. input power port immunity tests

* - list of supported standards may vary with the development of the device

Optical ports

- Bit rate 1.25Gbps
- Range depending on the SFP module used
- Signaling of connection correctness
- Error rate $\leq 10^{-11}$

Ethernet ports

- 1x 10/100/1000Mbps
- Auto-sense MDI/MDI-X
- 1x RJ-45 type connector
- Signaling correct connection

Power supply

- Supply voltage range 12 ÷ 60VDC
- Optionally power 5V DC via USB for version LV
- Power Consumption up to 3,5W
- Connector Type: Screw

Power supply PoE-PSE

- Voltage range: 24-57V DC
- Maximum power on RJ45 port up to 25W for mode "force"

Power Supply PoE-PD

- Power supply range the 37-57V DC via RJ45 port

Physical features:

- Dimensions 104x85x53mm
- Weight 0,6kg
- Mounting bracket for DIN rail TH 35

Environmental parameters:

- Working temperature: +5° ÷ +50°C
- Humidity: $\leq$ 80% at +20°C

Code

NESO-(U)-(Z)

Power supply:
Without symbol – 12 ÷ 60V DC
LV* – 5V DC, USB connector
* - option not available for PoE version

PoE:
Without symbol - version without PoE
PoE-PSE - version with 1x RJ45 PoE PSE
PoE-PD - version with 1x RJ45 PoE PD
NOTE - for PoE-PSE - power supply required in 24V-57V DC range,
        - for PoE-PD - power supply required in 37V-57V DC range
Maximum power at port up to 25W for mode "force"

Examples of code:

NESO-PoE-PSE   - NESO media converter with 1x (1000M) FO (SFP); 1x RJ45 (10/100/1000M), working temperature +5° to +50°C; power supply 24-57V DC, 1x RJ45 with PoE PSE

NESO-LV   - NESO media converter with 1x (1000M) FO (SFP); 1x RJ45 (10/100/1000M), working temperature +5 to +50°C, power supply 5V DC via USB

Additional accessories:

- **BTP-8524-S5CD** 1.25G, 850nm, MM, 550m, SFP, LC, 0~70°C
- **BTP-3124-L2CD** 1.25G, 1310nm, MM/SM, 2/20km, SFP, LC, 0~70°C
- **BTP-3124-L4CD** 1.25G, 1310nm, SM, 40km, SFP, LC, 0~70°C
- **BTP-5524-L4CD** 1.25G, 1550nm, SM, 40km, SFP, LC, 0~70°C
- **BTP-5524-L8CD** 1.25G, 1550nm, SM, 80km, SFP, LC, 0~70°C
- **BTP-5524-12CD** 1.25G, 1550nm, SM, 120km, SFP, LC, 0~70°C

- **BTPB-3524L-L2CD** 1.25G, 1310/1550nm, SM, 20km, SFP, WDM, LC, 0~70°C
- **BTPB-5324L-L2CD** 1.25G, 1550/1310nm, SM, 20km, SFP, WDM, LC, 0~70°C
- **BTPB-3524S-L2CD** 1.25G, 1310/1550nm, SM, 20km, SFP, WDM, SC, 0~70°C
- **BTPB-5324S-L2CD** 1.25G, 1550/1310nm, SM, 20km, SFP, WDM, SC, 0~70°C
- **BTPB-3524L-L4CD** 1.25G, 1310/1550nm, SM, 40km, SFP, WDM, LC, 0~70°C
- **BTPB-5324L-L4CD** 1.25G, 1550/1310nm, SM, 40km, SFP, WDM, LC, 0~70°C
- **BTPB-3524S-L4CD** 1.25G, 1310/1550nm, SM, 40km, SFP, WDM, SC, 0~70°C,
- **BTPB-5324S-L4CD** 1.25G, 1550/1310nm, SM, 40km, SFP, WDM, SC, 0~70°C

- **BTE-GB-P1RC** 10/100/1000M, 100m(UTP-5), Copper SFP, RJ-45, 0~70°C
- **BTE-GB-P3RC** 1000M, 100m(UTP-5), Copper SFP, RJ-45, 0~70°C

- **ZAS-ANYMUX-01** External Power supply 230V AC(DC) / 48V DC 0,5A, 0+50°C
- **ZAS-ANYMUX-03** External Power supply 230VAC, 220VDC / 48VDC, 30W, -20+70°C, 1x PoE, DIN rail mounting

- **LT-19-TS-35-01** DIN 19" rails for rack mounting, dimensions: 19" x 1U x 110mm (depth), weight: 0.6kg. Possibility of installation: up to 12 ERIS devices.

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