EXTENDER 2010 ETH TP-G - Ethernet extender

1319322

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Gigabit Ethernet extender, network extension via twisted pair cable up to 1 kilometer and bandwidth up to 1 Gbps, Power over Link (PoL) function for the power supply of additional devices via the twisted pair cable, Power over Ethernet (PoE) function

Your advantages

- Use of existing twisted pair cables or coaxial cables
- Flexible network configuration
- Easy startup, plug and play
- Network transparent (no IP configuration required)
- Protocol-transparent transmission of all standard Ethernet protocols

Commercial data

Item number	1319322
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DN24
Product key	DNC361
GTIN	4063151604905
Weight per piece (including packing)	202.5 g
Weight per piece (excluding packing)	147 g
Customs tariff number	85176200
Country of origin	DE

Technical data

Notes

Note on application

Note on application	Only for industrial use

Product properties

Product type	Ethernet extender
MTTF	268 Years (SN 29500 standard, temperature 25°C, operating cycle 21%)
	128 Years (SN 29500 standard, temperature 40°C, operating cycle 34.25%)
	54 Years (SN 29500 standard, temperature 40°C, operating cycle 100%)

Insulation characteristics

Pollution degree	2

Functions

Basic functions	Gigabit Ethernet extender in accordance with ITU G.9960
Management functions	Plug and Play, diagnostics via LEDs, PoL switch on the device
Redundancy functions	Ring segment redundancy (All devices at a ring segment)

Security functions

Basic functions	Gigabit Ethernet extender in accordance with ITU G.9960
Encryption methods	AES path encryption, Advanced Encryption Standard

System properties

System limits

Number of supported devices	≤ (Per G.hn segment, without PoL)

Functionality

Basic functions	Gigabit Ethernet extender in accordance with ITU G.9960

Electrical properties

Electrical isolation	VCC (US+GND) // Ethernet (PoE) // G.hn (without PoL) // FE
Mains type	Permanent line
Test voltage data interface/power supply	1.5 kV AC (50 Hz, 1 min.)

Supply

Supply voltage range	18 V DC ... 57 V DC
Nominal supply voltage	24 V DC (Without PoL, without PoE)
	48 V DC (With PoL or with PoE)
Power consumption	≤ 7.5 W (Without PoL, without PoE)
	≤ 37.5 W (Without PoL, with PoE)
	≤ 37.5 W (With PoL, without PoE)

	≤ 82.5 W (With PoL, with PoE)
Protective circuit	Overload protection, protection against polarity reversal; Internal device protection: 2x 5 AF, internal series diode

Connection data

Supply

Connection method	Push-in spring connection
Conductor cross-section, flexible, with ferrule, without plastic sleeve	0.2 mm² ... 2.5 mm²
Conductor cross-section, flexible, with ferrule, with plastic sleeve	0.2 mm² ... 2.5 mm²
2 conductors with the same cross section, flexible, with TWIN ferrule with plastic sleeve	0.5 mm² ... 1.5 mm²
Single conductor/terminal point, rigid	0.2 mm² ... 2.5 mm²
	≥ 0.5 mm² (PoL cables in accordance with DIN VDE 0100, part 523)
Single-wire/terminal point, flexible	0.2 mm² ... 2.5 mm²
	≥ 0.5 mm² (PoL cables in accordance with DIN VDE 0100, part 523)
Conductor cross-section, flexible [AWG]	24 ... 16
Stripping length	10.00 mm

Interfaces

Signal	Ethernet
Basic functions	Gigabit Ethernet extender in accordance with ITU G.9960

Data: Ethernet interface, 10/100/1000Base-T(X) in accordance with IEEE 802.3

Serial transmission speed	10/100/1000 Mbps
Connection method	RJ45 jack, shielded
Note on the connection method	CAT6
	Autonegotiation
	PoE port status: Always active Mode: Auto
No. of channels	1
Transmission length	< 100 m (shielded twisted pair)
Protocols supported	Protocol-transparent for TCP/IP, IPv4, and IPv6
Maximum output power	15 W (at ≤ 55°C)
	30 W (at ≤ 50 °C)

Data: G.hn interface in accordance with ITU G.9960

Transmission speed	≤ 1000 Mbps (Depending on the quality of the data line)
Connection method	Push-in spring connection
Note on the connection method	Short-circuit-proof
Transmission length	≤ 1000 m (Depending on the quality of the data line)
Single conductor/terminal point, rigid	0.2 mm² ... 2.5 mm²
Single-wire/terminal point, flexible	0.2 mm² ... 2.5 mm²
Conductor cross-section, flexible, with ferrule, with plastic sleeve	0.2 mm² ... 2.5 mm²

Conductor cross-section, flexible, with ferrule, without plastic sleeve	0.2 mm² ... 2.5 mm²
Max. AWG conductor cross-section, flexible	16
Min. AWG conductor cross-section, flexible	24
Stripping length	10 mm
Transmission method	QAM (quadrature amplitude modulation) carrier frequency method
Output power	≤ 74 W (With PoL)

Dimensions

Width	23 mm
Height	101 mm
Depth	115 mm

Material specifications

Color (Housing)	gray (RAL 7042)
Material (Housing)	PA 6.6-FR
Flammability rating according to UL 94	V0

Mechanical tests

Vibration resistance in accordance with EN 60068-2-6/IEC 60068-2-6	Operation: 1g
Shock in accordance with EN 60068-2-27/IEC 60068-2-27	Operation: 15g, 11 ms

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-40 °C ... 60 °C (Free standing, without PoE)
	-40 °C ... 55 °C (Free standing, PoE up to 15 W)
	-40 °C ... 50 °C (Free standing, PoE up to 30 W)
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Altitude	≤ 2000 m
Permissible humidity (operation)	10 % ... 95 % (non-condensing)
Permissible humidity (storage/transport)	10 % ... 95 % (non-condensing)

Approvals

CE

Certificate	CE-compliant

Corrosive gas test

Identification	ISA-S71.04-1985 G3 Harsh Group A

EMC data

Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
Noise immunity	EN 55035

Noise emission

Standards/regulations	EN 61000-6-4, Class A, industrial area of application

Electrostatic discharge

Standards/regulations	EN 61000-4-2

Electrostatic discharge

Contact discharge	± 6 kV
Discharge in air	± 8 kV
Indirect discharge	± 6 kV
Comments	Criterion B

Electromagnetic HF field

Standards/regulations	EN 61000-4-3

Electromagnetic HF field

Frequency range	80 MHz ... 3 GHz (80% amplitude modulation with 1 kHz)
Field intensity	10 V/m
Frequency range	3 GHz ... 6 GHz (80% amplitude modulation with 1 kHz)
Field intensity	3 V/m
Comments	Criterion A

Fast transients (burst)

Standards/regulations	EN 61000-4-4

Fast transients (burst)

Input	± 2.2 kV
Signal	± 2.2 kV (Ethernet, G.hn)

Surge current load (surge)

Standards/regulations	EN 61000-4-5

Surge current load (surge)

Input	± 0.5 kV (Symmetrical, unshielded supply line)
	± 1 kV (Asymmetrical, unshielded supply line)
Signal	± 1 kV (Ethernet signal / asymmetrical: shielded Ethernet cable)
	± 4 kV (Ethernet signal / asymmetrical: cable to ground, unshielded G.hn cable)
	± 2 kV (Ethernet signal / symmetrical: cable to cable, unshielded G.hn cable)
	± 4 kV (Telecommunication lines, symmetrical, unshielded, with primary protection)
	± 1 kV (Telecommunication lines, symmetrical, unshielded, without primary protection)
Comments	Criterion B

Conducted interference

Standards/regulations	EN 61000-4-6

Conducted interference

Frequency range	0.15 MHz ... 80 MHz (80% amplitude modulation with 1 kHz)
Comments	Criterion A
Voltage	10 V

Criteria

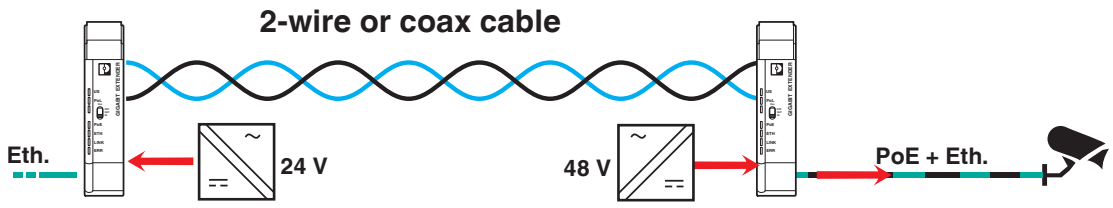
Criterion A	Normal operating behavior within the specified limits.
Criterion B	Temporary impairment to operational behavior that is corrected by the device itself.

Mounting

Mounting type	DIN rail mounting
Assembly note	To allow for air circulation, mount the device freestanding, with a clearance of at least one centimeter on all sides to other devices.
Mounting position	Vertical (horizontal DIN rail)

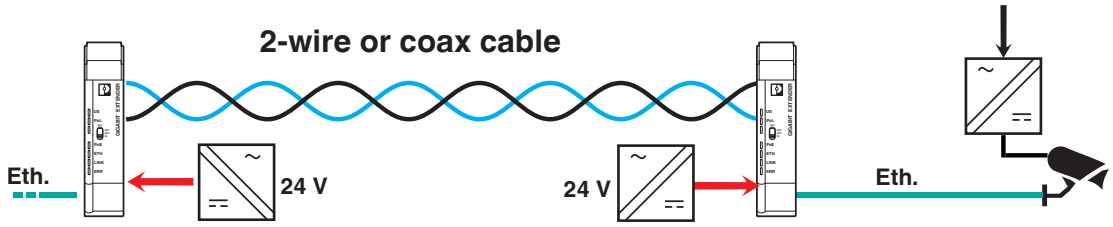
Drawings

Application drawing



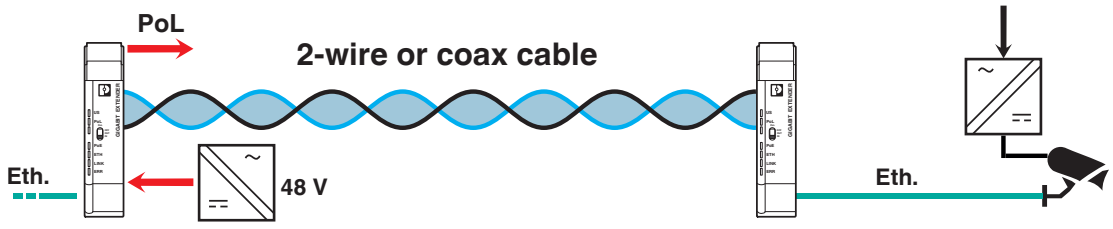
PoE supply of a PoE end device

Application drawing



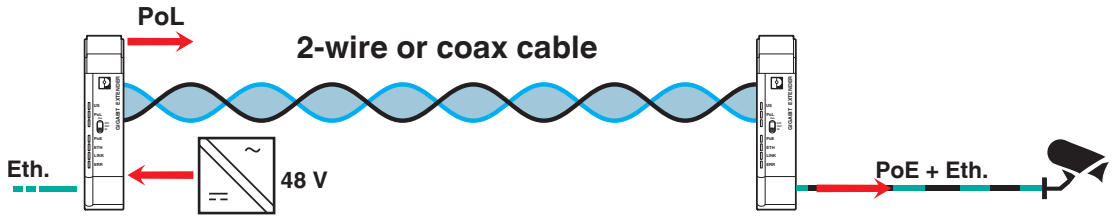
Separate supply with one power supply unit each

Application drawing



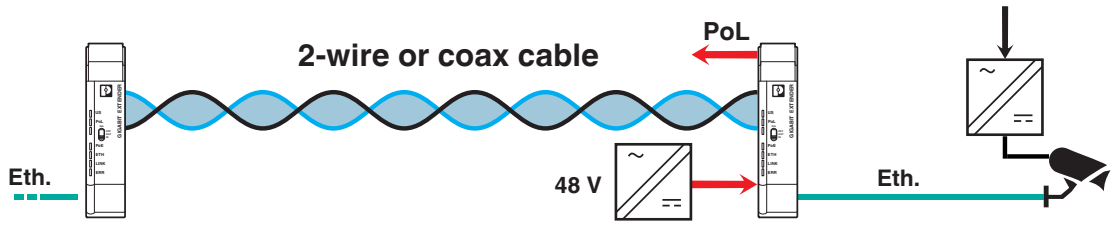
PoL supply of the remote extender

Application drawing



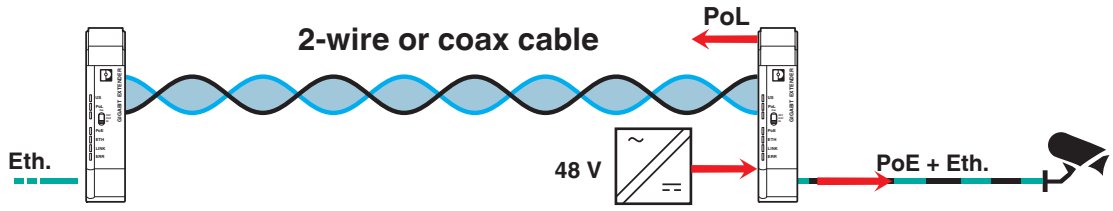
PoL supply of the remote extender and PoE supply of a PoE end device

Application drawing



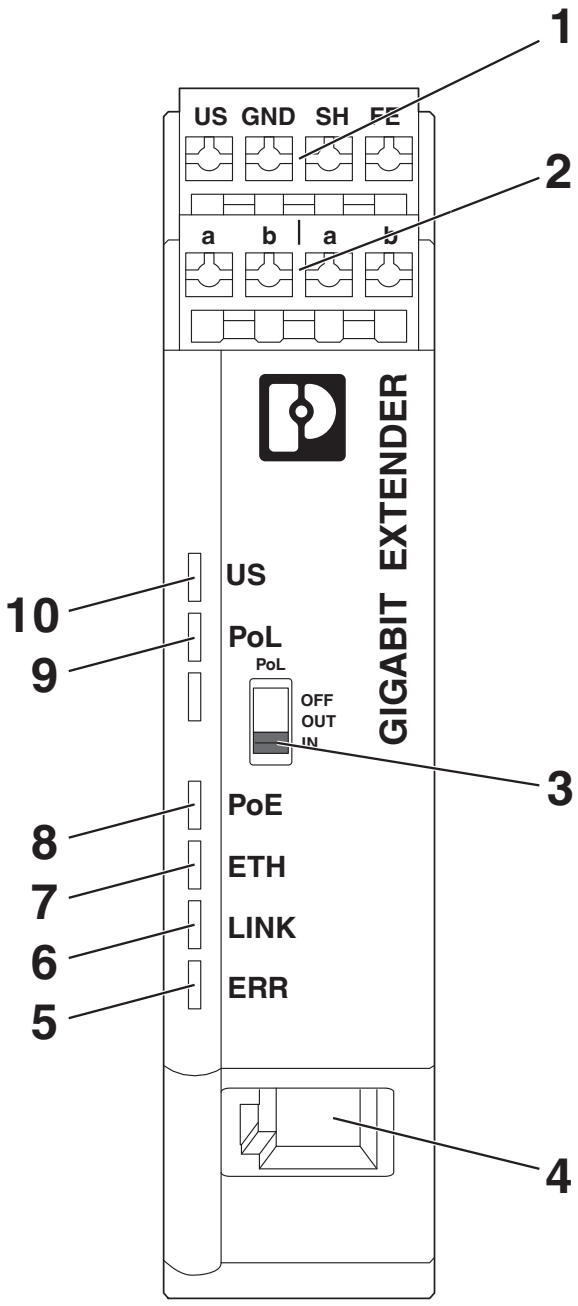
PoL supply of the local extender

Application drawing



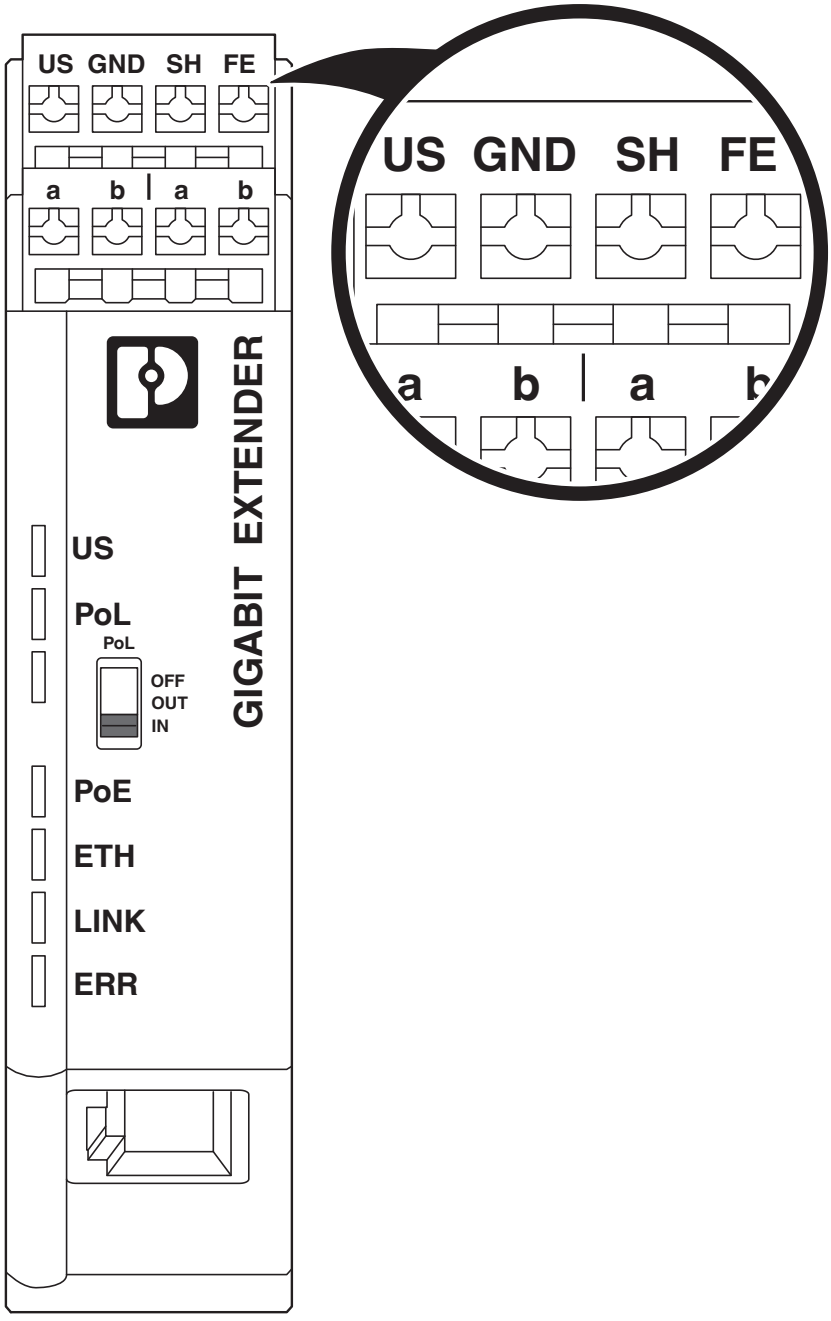
PoL supply of the local extender and PoE supply of a PoE end device

Schematic diagram



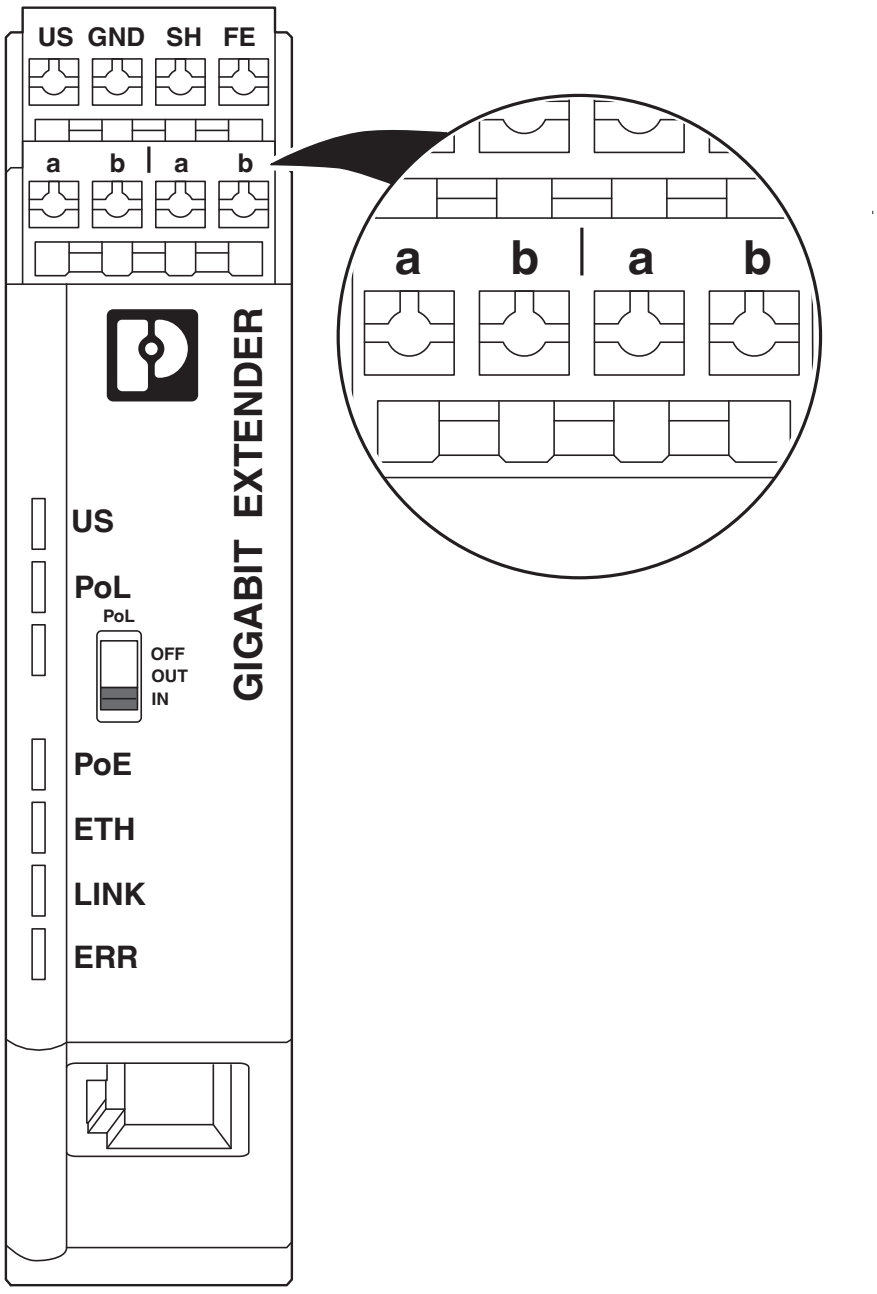
Front view

Schematic diagram



Connecting the supply voltage

Schematic diagram



Connection of the twisted pair cable

Classifications

ECLASS

ECLASS-13.0	19170407
ECLASS-15.0	19170407

ETIM

ETIM 10.0	EC000309

UNSPSC

UNSPSC 21.0	43223100

Environmental product compliance

EU RoHS

Fulfills EU RoHS substance requirements	Yes, No exemptions

China RoHS

Environment friendly use period (EFUP)	EFUP-E
	No hazardous substances above the limits

EU REACH SVHC

REACH candidate substance (CAS No.)	No substance above 0.1 wt%

EF3.1 Climate Change

CO2e kg	23.395 kg CO2e

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