

TC EXTENDER 6004 ETH-2S - Ethernet extenders



2702255

<https://www.phoenixcontact.com/gb/products/2702255>

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Managed Ethernet extender, point-to-point, line and ring structures, data rates up to 30 Mbps, distances of up to 20 km on in-house copper cables, replaceable surge protection, 2 SHDSL ports, 4-port switch, diagnostics via display and Ethernet

Your advantages

- Distances up to 20 km
- Up to 15.3 Mbps in 2-wire operation
- Up to 30 Mbps in 4-wire operation
- Robust modulation method (SHDSL)
- Automatic topology and data rate detection
- Transparent transmission of all standard Ethernet protocols, including EtherNet/IP™, Modbus/TCP, PROFINET, PROFIsafe, EtherCAT[®], KNX, BACnet/IP
- Network transparent (no IP configuration required)
- Automatic detection of network cable type (auto MDI(X))
- Easy startup, plug and play
- 2 digital outputs for alerting external controllers
- Remote diagnostics via IP and automatic event messages via SNMP
- Use in point-to-point, line, and ring topologies with managed and unmanaged Ethernet extenders
- Integrated surge protection of the SHDSL interface
- Virtually separate critical IP networks with VLAN
- Increase availability through RSTP redundancy

Commercial data

Item number	2702255
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DNC442
Product key	DNC442
Catalog page	Page 349 (C-6-2019)
GTIN	4055626055541
Weight per piece (including packing)	800 g
Weight per piece (excluding packing)	766 g
Customs tariff number	85176200
Country of origin	DE

Technical data

Notes

Utilization restriction

CCCex note	Use in potentially explosive areas is not permitted in China.
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Product properties

Product type	Ethernet extenders
MTTF	506 Years (SN 29500 standard, temperature 25°C, operating cycle 21%)
	260 Years (SN 29500 standard, temperature 40°C, operating cycle 34.25%)
	110 Years (SN 29500 standard, temperature 40°C, operating cycle 100%)

System properties

Functionality

Basic functions	Ethernet extenders in accordance with ITU-T G.991.2
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Electrical properties

Electrical isolation	VCC // Ethernet // DSL (A) // DSL (B) // FE
Maximum power dissipation for nominal condition	4.8 W
Mains type	Permanent line
Test voltage data interface/power supply	500 V AC (In accordance with EN/IEC 60079-7, observe the limitations in the specific conditions of use.)
	1.5 kV AC (50 Hz, 1 min.)

Supply

Supply voltage range	10 V DC ... 60 V DC
Nominal supply voltage	24 V DC \pm 5 %
Typical current consumption	200 mA (24 V DC)
	90 mA (60 V DC)
	450 mA (10 V DC)
Connection method	Push-in spring connection

Function

Status and diagnostic indicators	Display for warning, status and device information
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Output data

Signal

Output name	Digital output
Number of outputs	2
Voltage output signal	10 V DC ... 60 V DC (24 V DC, depending on the operating voltage)
Current output signal	\leq 500 mA (Short-circuit-proof)

Connection data

Supply

Connection method	Push-in spring connection
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Interfaces

Signal	Ethernet
Web server	yes
Basic functions	Ethernet extenders in accordance with ITU-T G.991.2

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

Serial transmission speed	10/100 Mbps, auto negotiation
Connection method	RJ45 jack, shielded
	4 ports 10/100BaseT(X), auto negotiation and autocrossing
No. of channels	4
Transmission length	< 100 m (shielded twisted pair)
Protocols supported	IPv4, IPv6, TCP/IP, HTTP, HTTPS
Auxiliary protocols	ARP, DHCP (Client), PING, SNMP

Data: SHDSL interface according to ITU-T G.991.2.bis

Serial transmission speed	4-wire operation: 64 kbps ... 30 Mbps 2-wire operation: 32 kbps ... 15.3 Mbps
Connection method	Push-in spring connection
No. of channels	2 (2-wire operation)
Transmission length	< 20 km (Depending on data rate and cable cross section)
Single-wire/terminal point, rigid AWG max.	16
Single-wire/terminal point, rigid AWG min.	24

Dimensions

Width	60 mm
Height	130 mm
Depth	160 mm

Material specifications

Material	Aluminum / steel sheet DC01
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Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-25 °C ... 60 °C -25 °C ... 0 °C (Display inactivity can occur, image changes may take several seconds) 55 °C ... 60 °C (Display contrast can deteriorate)
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Altitude	≤ 2500 m (For restrictions, see the manufacturer's declaration for

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	altitude operation)
Max. permissible relative humidity (operation)	< 60 % (At an ambient operating temperature >70 °C)
Permissible humidity (operation)	10 % ... 95 % (non-condensing)
Permissible humidity (storage/transport)	10 % ... 95 % (non-condensing)

Approvals

CE

Certificate	CE-compliant
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ATEX

Identification	⊕ II 3 G Ex ec IIC T4 Gc
Certificate	PxCIF16ATEX2702253X
Note	Please follow the special installation instructions in the documentation!

UKEX

Identification	⊕ II 3 G Ex ec IIC T4 Gc
Certificate	PxCIMA22UKEX2702253X

UL, USA/Canada

Identification	508 Listed
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Corrosive gas test

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

Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
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Electrostatic discharge

Standards/regulations	EN 61000-4-2
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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
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Electromagnetic HF field

Frequency range	80 MHz ... 3 GHz
Field intensity	10 V/m
Comments	Criterion A

Fast transients (burst)

Standards/regulations	EN 61000-4-4
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Fast transients (burst)

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Input	± 2 kV
Signal	± 2 kV
Comments	Criterion B

Surge current load (surge)

Standards/regulations	EN 61000-4-5
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Surge current load (surge)

Input	± 0.5 kV (Symmetrical, unshielded supply line)
	± 1 kV (Asymmetrical, unshielded supply line)
Output	± 1 kV (asymmetrical, unshielded)
Signal	± 1 kV (asymmetrical, shielded Ethernet cable)
	± 4 kV (asymmetrical: line to ground, unshielded SHDSL cable)
	± 2 kV (symmetrical: line to line, unshielded SHDSL cable)
Comments	Criterion B

Conducted interference

Standards/regulations	EN 61000-4-6
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Conducted interference

Frequency range	0.15 MHz ... 80 MHz
Comments	Criterion A
Voltage	10 V

Emitted interference

Standards/regulations	EN 55011
Comments	Class A, industrial applications

Criteria

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

Standards and regulations

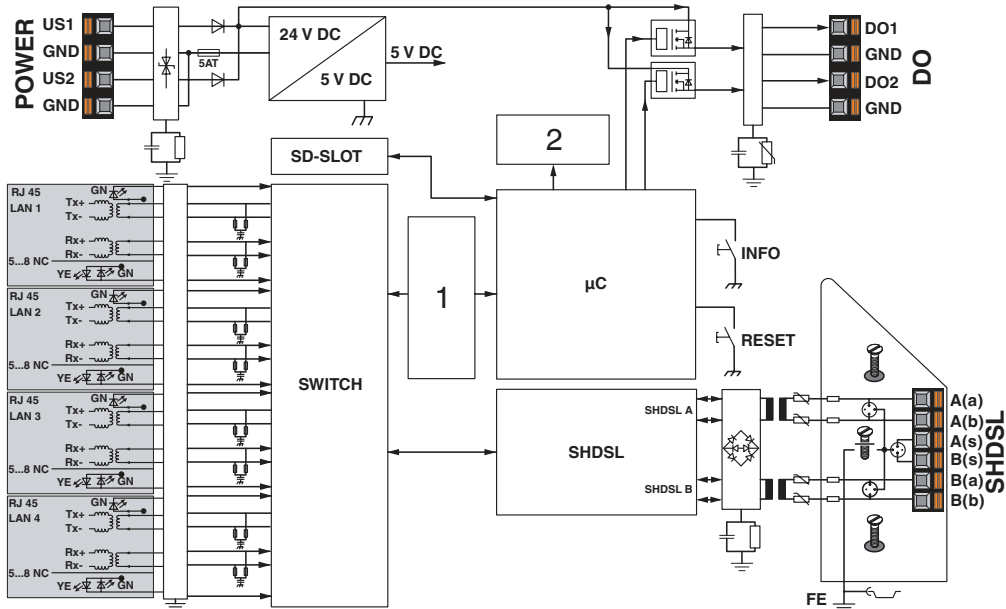
Standards/regulations	EN 50121-4
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Mounting

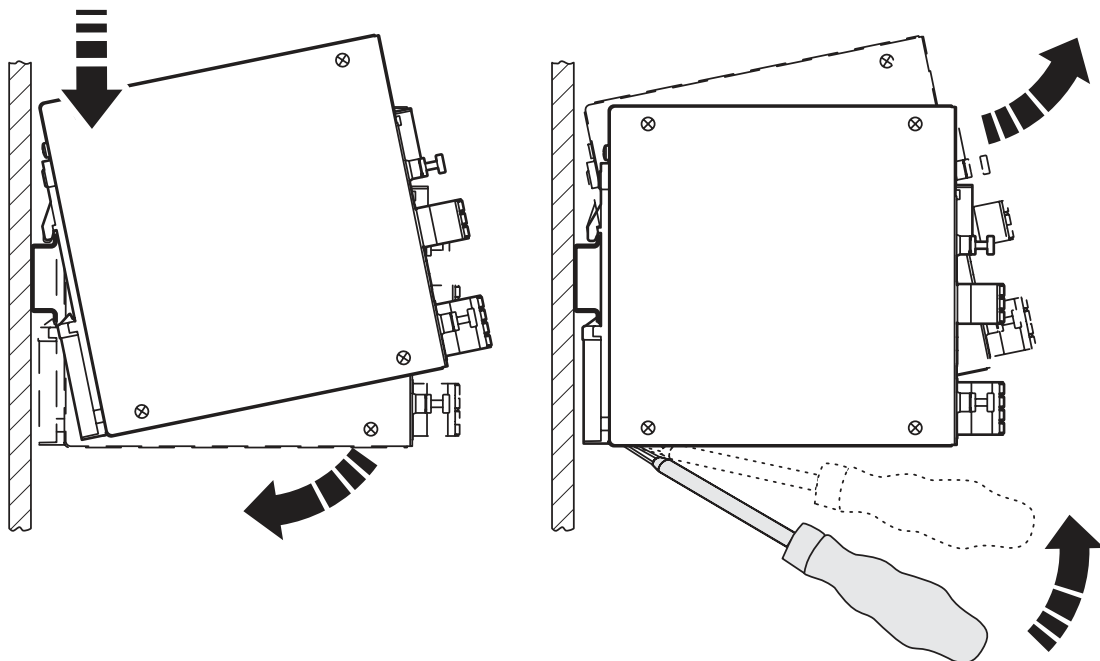
Mounting type	DIN rail: 35 mm
Assembly instructions	The product can be snapped onto all 35 mm DIN rails in accordance with EN 60715.

Drawings

Circuit diagram



Schematic diagram



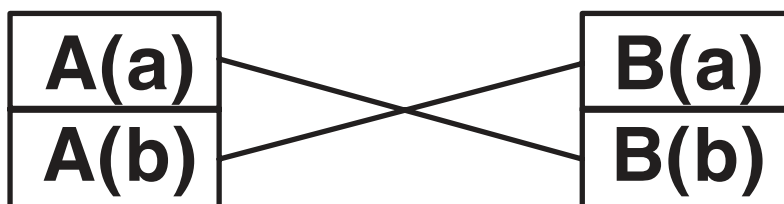
Mounting and removing

Connection diagram

DSL A / Client DSL B / Server

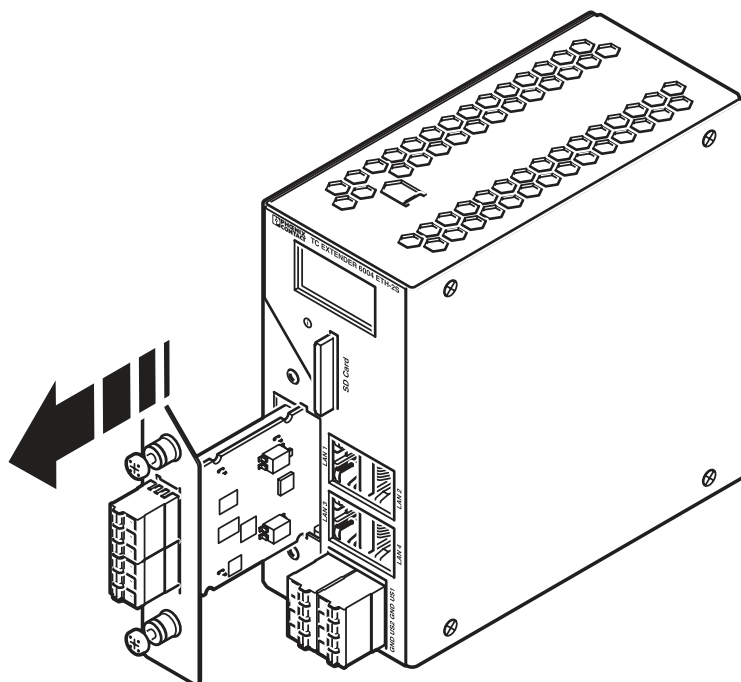


DSL A / Client DSL B / Server



DSL connection

Schematic diagram



Replacement of protection module

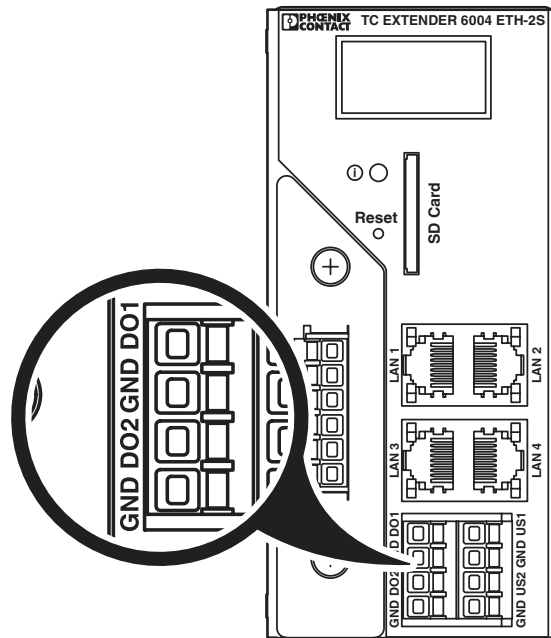
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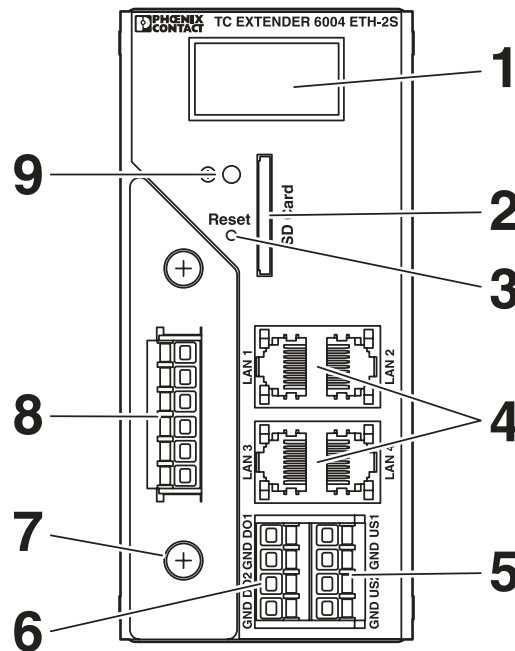
<https://www.phoenixcontact.com/gb/products/2702255>

Schematic diagram



Digital switching outputs

Schematic diagram



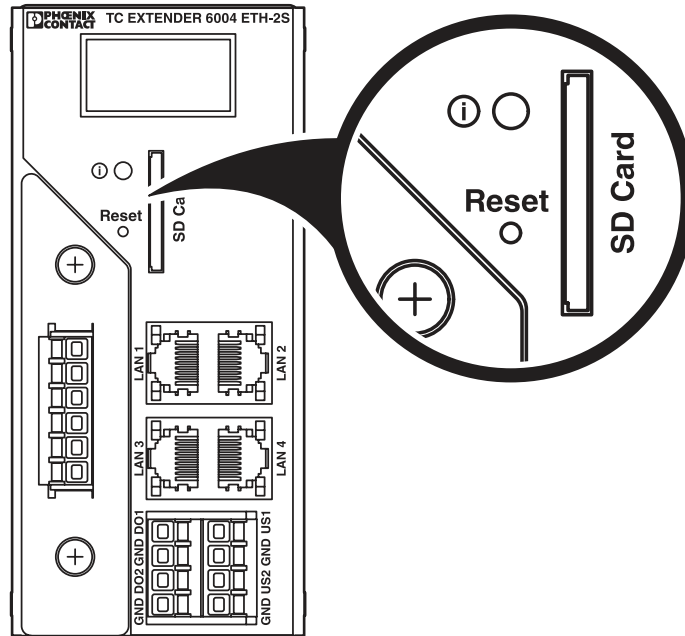
Front view

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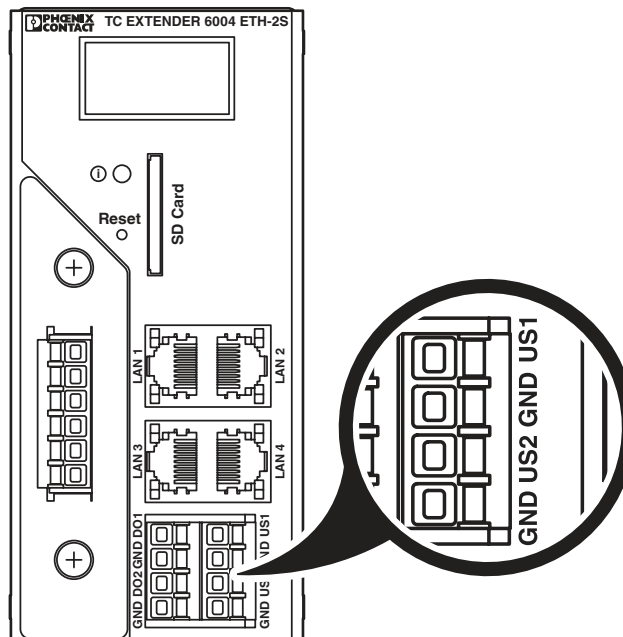
<https://www.phoenixcontact.com/gb/products/2702255>

Schematic diagram



Reset button

Schematic diagram



Power supply

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Approvals

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UL Listed

Approval ID: FILE E 238705



cUL Listed

Approval ID: FILE E 238705

cULus Listed

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Classifications

ECLASS

ECLASS-11.0	19170407
ECLASS-12.0	19170407
ECLASS-13.0	19170407

ETIM

ETIM 8.0	EC000309
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UNSPSC

UNSPSC 21.0	43223100
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Environmental product compliance

REACH SVHC	Lead 7439-92-1
	Dechlorane Plus
China RoHS	Environmentally Friendly Use Period = 50 years
	For information on hazardous substances, refer to the manufacturer's declaration available under "Downloads"

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Accessories

TC EXTENDER PT-IQ-2S - Surge protection plug

2702258

<https://www.phoenixcontact.com/gb/products/2702258>



Replaceable surge protection module, only for Ethernet extender TC EXTENDER 6004 ETH-2S (2702255), 2 SHDSL ports, two-wire protection for floating SHDSL cables, two-level protective circuit

DT-LAN-CAT.6+ - Surge protection device

2881007

<https://www.phoenixcontact.com/gb/products/2881007>



Surge protection in accordance with Class E_A (CAT6_A), for Gigabit Ethernet (up to 10 Gbps), token ring, FDDI/CDDI, ISDN, and DS1. Suitable for Power over Ethernet (PoE++ / 4PPoE) "Mode A" and "Mode B". RJ45 attachment plug with separate grounding cable and ground connection snap-on foot for NS 35 DIN rails.

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FL PATCH SAFE CLIP - Port Guard Security Element

2891246

<https://www.phoenixcontact.com/gb/products/2891246>



Security element for FL patch cable

FL CAT5 PATCH 0,5 - Patch cable

2832263

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Patch cable, CAT5, assembled, 0.5 m

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FL CAT5 PATCH 5,0 - Patch cable

2832580

<https://www.phoenixcontact.com/gb/products/2832580>



Patch cable, CAT5, assembled, 5 m

FL CAT5 HEAVY CONF/ - Network cable

2744827

<https://www.phoenixcontact.com/gb/products/2744827>



CAT5-SF/UTP cable (J-02YS(ST)C HP 2 x 2 x 24 AWG), heavy-duty installation cable, 2 x 2 x 0.22 mm², solid conductor, shielded, outer sheath: 7.8 mm diameter, inner sheath: 5.75 mm ± 0.15 mm diameter, preassembled on both sides with RJ45 plug, crossover or line

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QUINT4-SYS-PS/1AC/24DC/2.5/SC - Power supply unit

2904614

<https://www.phoenixcontact.com/gb/products/2904614>



Primary-switched power supply, QUINT POWER, screw connection, DIN rail mounting, supply of devices possible via the TBUS DIN rail connector, protective coating, input: single-phase, output: 24 V DC/2.5 A

SD FLASH 512MB - Program / configuration memory

2988146

<https://www.phoenixcontact.com/gb/products/2988146>



Program and configuration memory, plug-in, 512 Mbyte.

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TC EXTENDER 2001 ETH-2S - Ethernet extenders

2702409

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Second generation: Unmanaged Ethernet extender for point-to-point connections, line and ring structures, data rates up to 30 Mbps, distances of up to 20 km on in-house copper cables, diagnostics via USB and LEDs, 2 SHDSL ports, 1 LAN port

VS-08-RJ45-5-Q/IP20 - RJ45 connector

1656725

<https://www.phoenixcontact.com/gb/products/1656725>



RJ45 connector, design: RJ45, degree of protection: IP20, number of positions: 8, 1 Gbps, CAT5, material: Plastic, connection method: Insulation displacement connection, connection cross section: AWG 26- 23, cable outlet: straight, color: traffic grey A RAL 7042, Ethernet

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