

Router - TC MGUARD RS4000 4G VPN



2903586

<https://www.phoenixcontact.com/pc/products/2903586>

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Security appliance, WAN and 4G cellular interface, SD card slot, 10 VPN tunnels, intelligent firewall with full scope of functions, router with NAT/1:1 NAT, optional CIFS Integrity Monitoring, 4-port Managed Switch, 2 SIM card slots, GPS receiver

Product Description

The TC MGUARD... security appliances are industrial mobile network routers with mGuard technology. As such, the routers offer a remote maintenance infrastructure for the secure connection of machines and systems via the Internet. A high-speed mobile network interface and a 4-port switch are integrated into a compact metal housing. Secure remote communication on a global scale takes place via 4G LTE as well as UMTS and CDMA networks. With the help of an SD card as a configuration memory, the devices can be quickly and easily started up or replaced. The devices have a buffered realtime clock and Trusted Platform Module (TPM) for secure key generation and management.

Your advantages

- High-speed cellular interface with provider redundancy
- Integrated 4-port switch
- Maximum security with IPsec protocol on Layer 3
- Web-based management, SNMP
- Replaceable configuration memory
- RS-232 interface with COM server function for integrating serial devices
- Flexible routing
- Up to 10 parallel VPN tunnels (up to 250 possible with additional license as an option)
- Supports current certificates such as x509.v3
- Stateful inspection firewall for dynamic filtering
- Extended temperature rating

Commercial Data

Item number	2903586
Packing unit	1 pc
Minimum order quantity	1 pc
Product Key	DNC424
Catalog Page	Page 404 (C-6-2019)
GTIN	4046356758086
Weight per Piece (including packing)	657.4 g
Weight per Piece (excluding packing)	630 g
Customs tariff number	85176200
Country of origin	DE

Technical Data

Dimensions

Width	45 mm
Height	130 mm
Depth	114 mm

Notes

Utilization restriction

EMC note	EMC: class A product, see manufacturer's declaration in the download area
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Material specifications

Color	silver
Material	Metal (Housing)

Interfaces

Signal	Ethernet
Web server	yes
Basic functions	Router with intelligent firewall and VPN for 10 tunnels (up to 250 supported with optional additional license), CIFS Integrity Monitoring (as an option), metal housing, slot for SD memory card

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

Transmission speed	10/100 Mbps (auto negotiation)
Connection method	RJ45
No. of channels	6
Transmission length	100 m (shielded twisted pair)
Protocols supported	TCP/IP, UDP/IP, FTP, HTTP
Auxiliary protocols	ARP, DHCP, PING (ICMP), SNMP V1, SMTP

Data: V.24 (RS-232) interface in acc. with ITU-T V.28, EIA/TIA-232, DIN 66259-1

Serial transmission speed	9.6; 19.2; 38.4; 57.6; 115.2 kbps
Connection method	D-SUB 9 plug
Transmission length	15 m
File format/coding	UART/NRZ: 8 Data, 1/2 Stop, None/Even/Odd Parity
Data flow control/protocols	Software handshake, Xon/Xoff or hardware handshake RTS/CTS

Wireless

Interface description	GSM / GPRS / EDGE / UMTS / HSPA / LTE (FDD)
Frequency range	800 MHz (LTE B20)
	900 MHz (LTE B8)
	1800 MHz (LTE B3)
	2100 MHz (LTE B1)
	2600 MHz (LTE B7)

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	900 MHz (UMTS/HSPA B8)
	1800 MHz (UMTS/HSPA B3)
	2100 MHz (UMTS/HSPA B1)
	900 MHz (2 W (EGSM))
	1800 MHz (1 W (EGSM))
Data rate	≤ 100 Mbps (LTE (DL))
	≤ 50 Mbps (LTE (UL))
Antenna	50 Ω impedance SMA antenna socket
Antenna connection method	SMA (female)
SIM Interface	1.8 volt, 3 volt
LTE	CAT3
Network check	LED bar graph to display receive quality
Protocols supported	GPS (Global Positioning System), GLONASS
Country support	Europe

Input data

Digital

Description of the input	Digital input
Number of inputs	3
Voltage input signal	10 V DC ... 30 V DC
Current input signal	5 mA

Output data

Output name	Digital output
Number of outputs	3
Voltage output signal	10 V DC ... 30 V DC (depending on the operating voltage)
Current output signal	≤ 125 mA (Short-circuit-proof)

Product properties

Product type	Security router for the DIN rail
Application	Ethernet
	RS-232
MTTF	532 Years (SN 29500 standard, temperature 25°C, operating cycle 21%)
	250 Years (SN 29500 standard, temperature 40°C, operating cycle 34.25%)
	104 Years (SN 29500 standard, temperature 40°C, operating cycle 100%)

Insulation characteristics

Degree of pollution	2
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Security functions

1:1 Network Address Translation (NAT) in the VPN	Supported
Number of VPN tunnels	10 (up to 250 tunnels with additional license as an option)
Authentication	X.509v3 certificates with RSA or PSK

Data integrity	MD5, SHA-1
Dynamic Host Configuration Protocol (DHCP) support	Server or Relay Agent
Filtering	MAC and IP addresses, ports, protocols
Firewall data throughput	max. 124 Mbps (Router mode, default firewall rules, bidirectional throughput)
	max. 58 Mbps (Stealth mode, default firewall rules, bidirectional throughput)
Firewall rules	Configurable stateful inspection firewall with full scope of functions
Basic functions	Router with intelligent firewall and VPN for 10 tunnels (up to 250 supported with optional additional license), CIFS Integrity Monitoring (as an option), metal housing, slot for SD memory card
Internet Protocol Security (IPsec) mode	ESP tunnel / ESP transport
Link Layer Discovery Protocol (LLDP)	As per protocol 802.2
Network Time Protocol (NTP) client	Client
Remote Syslog Logging	On external server
Routing	Standard routing, NAT, 1:1-NAT, port forwarding
Protection against	IP spoofing, DoS and Syn Flood Protection
Encryption methods	DES, 3DES, AES-128, -192, -256
Virtual private network (VPN) throughput	max. 40 Mbps (Router)
	max. 26 Mbps (Stealth mode, VPN bidirectional throughput)

Electrical properties

Electrical isolation	VCC // PE
Mains type	Cellular communication
Test voltage data interface/data interface	1 kV (50 Hz, 1 min.)
Test voltage data interface/power supply	1 kV (50 Hz, 1 min.)

Supply

Supply voltage range	11 V DC ... 36 V DC (via pluggable COMBICON screw terminal block)
Typical current consumption	< 320 mA (24 V DC)
Max. current consumption	< 1.8 A (at 11 V DC (incl. 3 x 125 mA for the outputs))

Function

Management	Web-based management, SNMP
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Connection data

Supply

Conductor cross section flexible, with ferrule without plastic sleeve	0.25 mm ² ... 2.5 mm ²
Conductor cross section, flexible, with ferrule, with plastic sleeve	0.25 mm ² ... 2.5 mm ²
Conductor cross section, flexible	0.20 mm ² ... 2.50 mm ²
Conductor cross section, rigid	0.20 mm ² ... 2.50 mm ²
Stripping length	7 mm
Tightening torque	0.56 Nm ... 0.79 Nm

Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-40 °C ... 60 °C
Ambient temperature (storage/transport)	-40 °C ... 70 °C
Altitude	≤ 5000 m (For restrictions, see the manufacturer's declaration for altitude operation)
Permissible humidity (operation)	5 % ... 95 % (non-condensing)

Standards and regulations

Free from substances that could impair the application of coating	according to P-VW 3.10.7 57 65 0 VW-AUDI-Seat central standard
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Approval data

CE

Certificate	CE-compliant
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Corrosive gas test

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

Mounting type	DIN rail mounting
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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 (Test Level 3)
Discharge in air	± 8 kV (Test Level 3)
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 (Test Level 3)
Field intensity	10 V/m
Comments	Criterion A

Fast transients (burst)

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

Input	± 2.2 kV (Test Level 3)
Signal	± 2.2 kV (Test Level 3)

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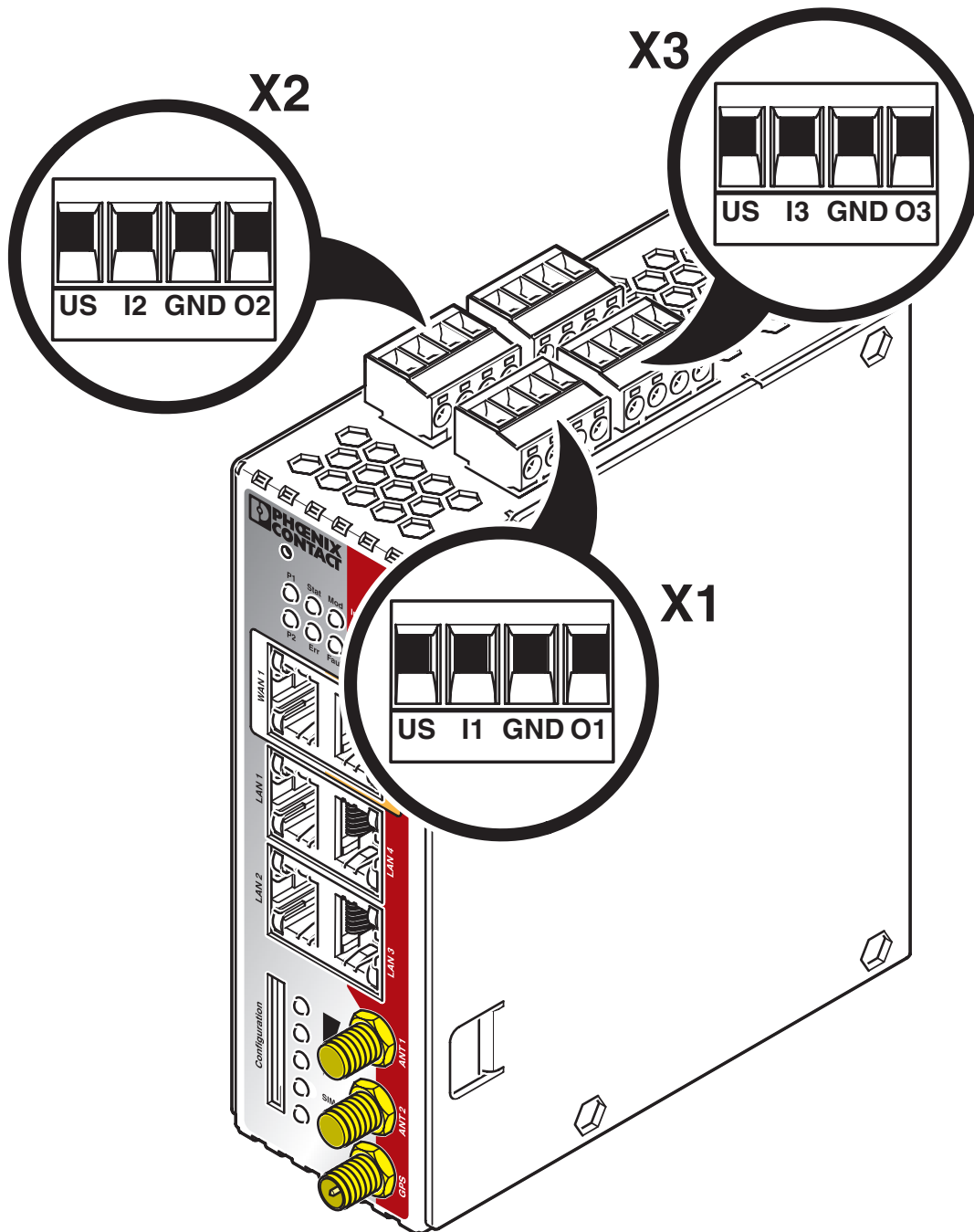
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Comments	Criterion B
Surge current load (surge)	
Standards/regulations	EN 61000-4-5
Surge current load (surge)	
Input	± 0.5 kV (DC supply)
Signal	± 1 kV (Data line, asymmetrical)
Comments	Criterion B
Conducted interference	
Standards/regulations	EN 61000-4-6
Conducted interference	
Frequency range	0.15 MHz ... 80 MHz
Comments	Criterion A
Voltage	10 V
Emitted interference	
Standards/regulations	EN 61000-6-4
Radio interference voltage in acc. with EN 55011	EN 55011 class A industrial area of application
Emitted radio interference in acc. with EN 55011	EN 55011 class A industrial area of application
Criterion A	Normal operating behavior within the specified limits.
Criterion B	Temporary impairment to operational behavior that is corrected by the device itself.

Drawings

Schematic diagram



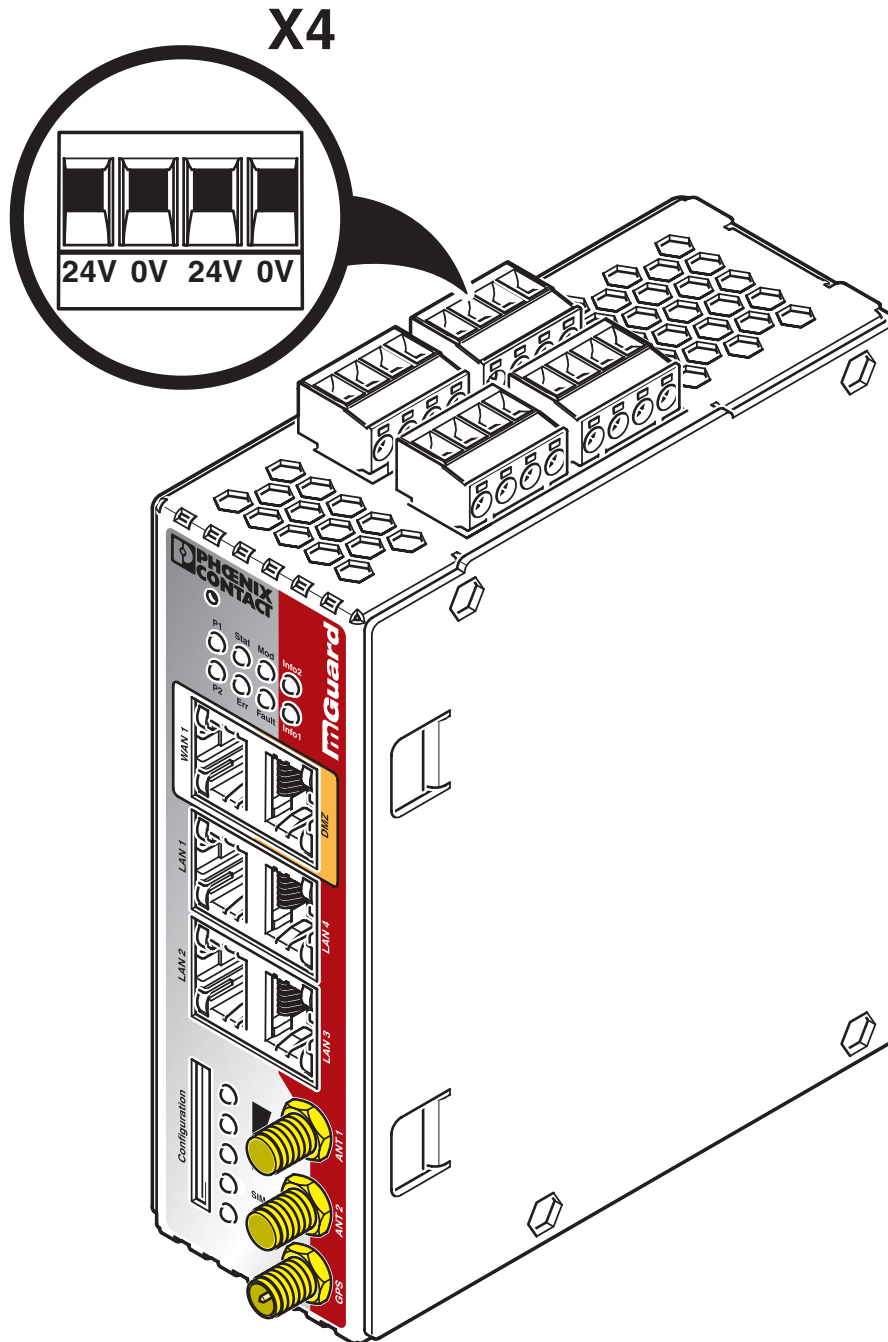
Connection of the cables

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Schematic diagram

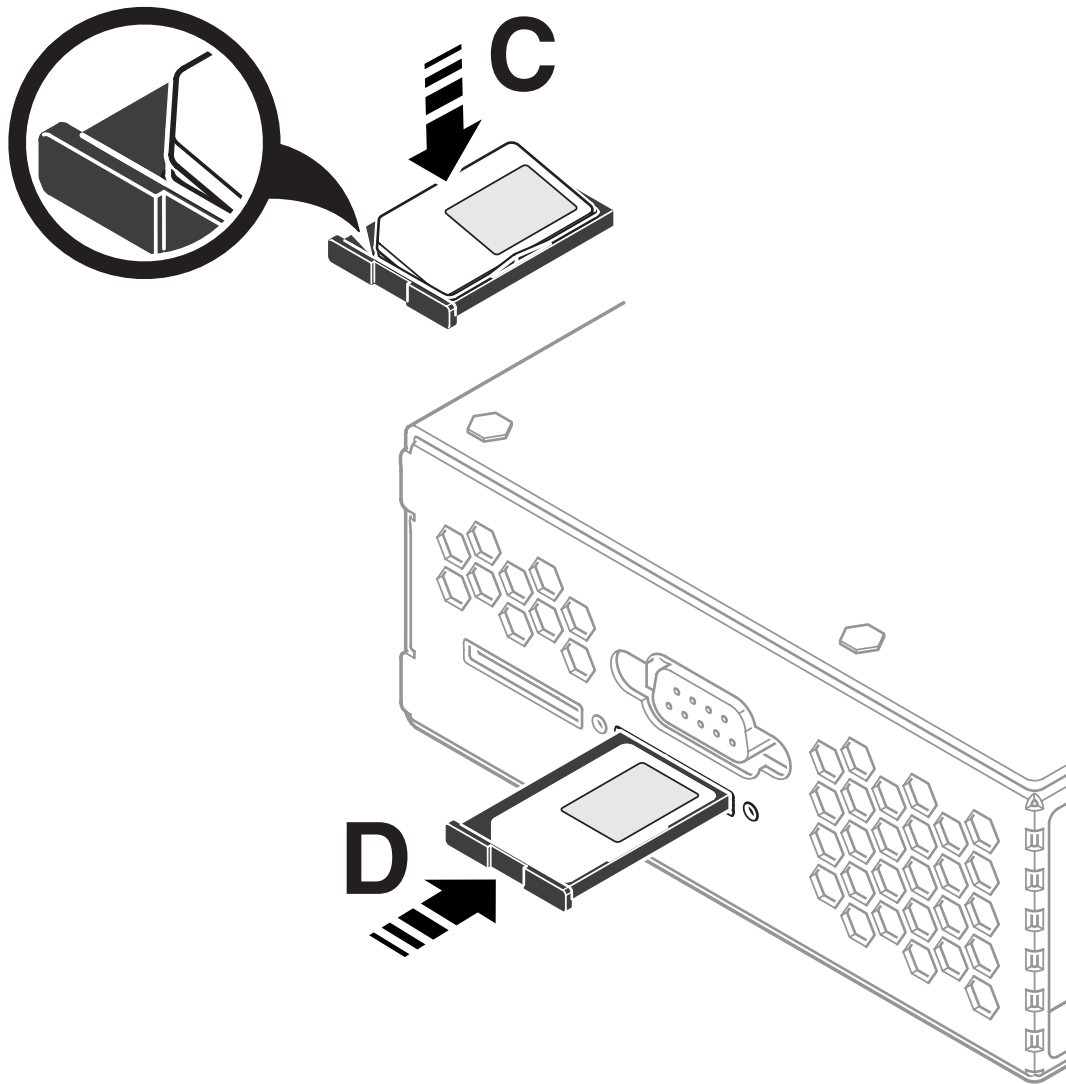


Connecting the supply voltage

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Schematic diagram



Insert the SIM card

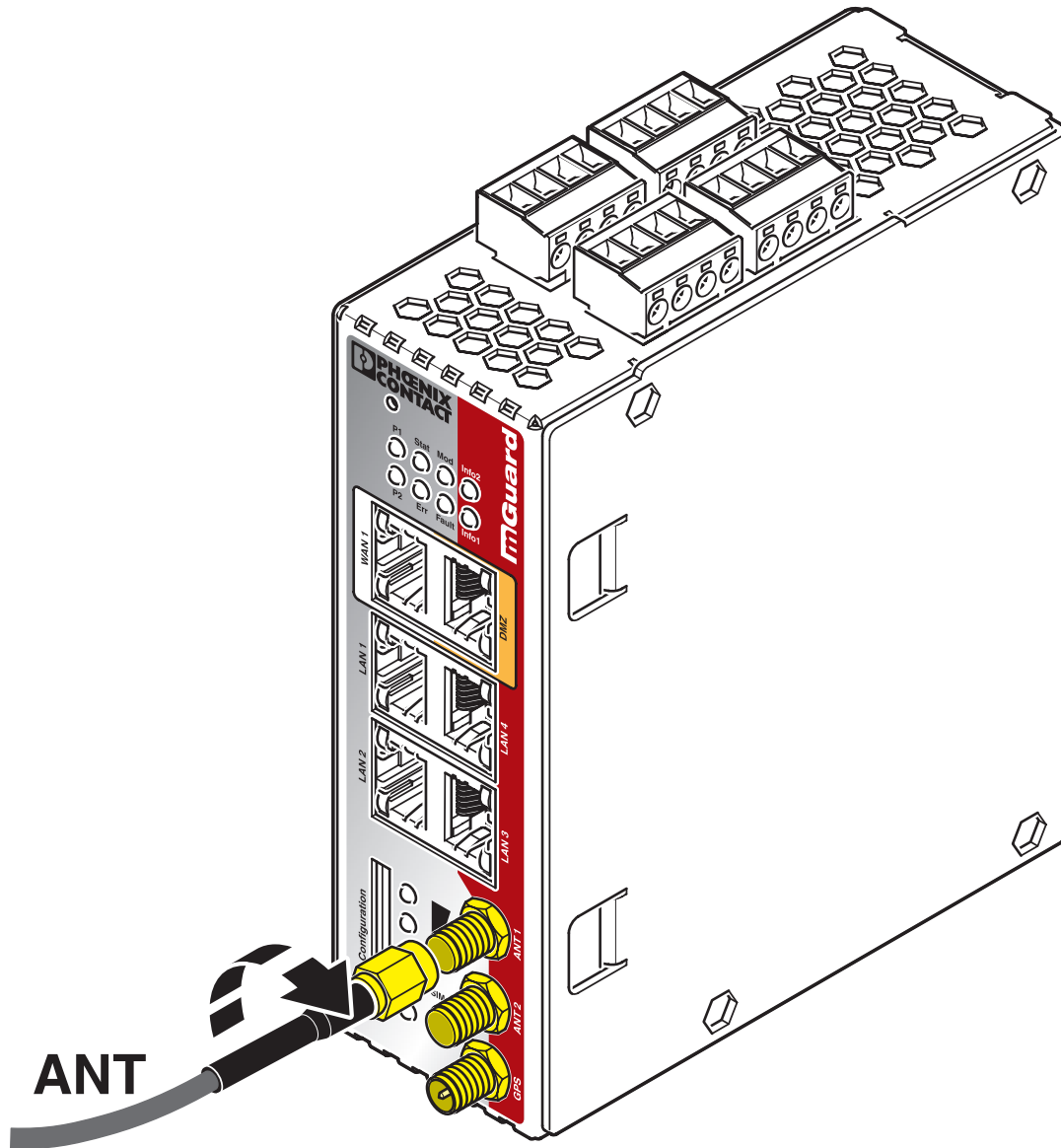
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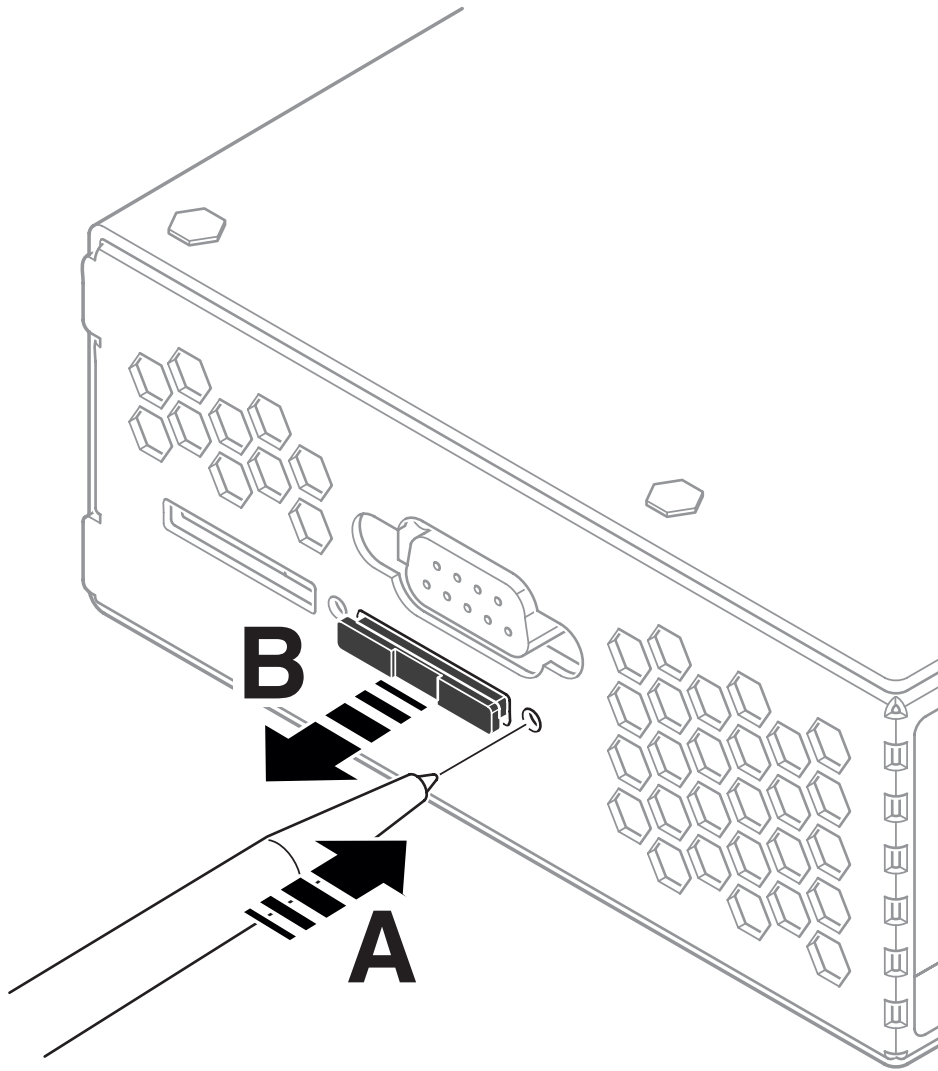
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Schematic diagram



Connect the antenna

Schematic diagram



Remove SIM card holder

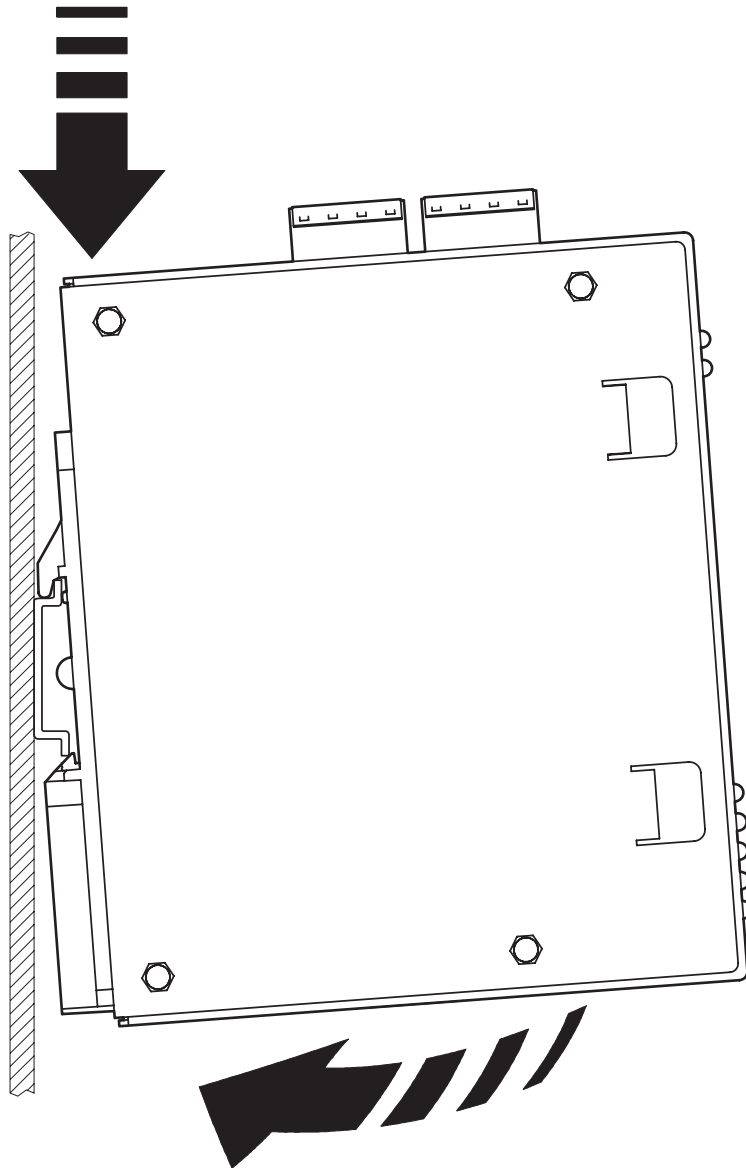
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Schematic diagram



Mounting

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Classifications

ECLASS

ECLASS-9.0	19170103
ECLASS-10.0.1	19170406
ECLASS-11.0	19170406

ETIM

ETIM 8.0	EC001478
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UNSPSC

UNSPSC 21.0	43222600
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Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
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

Patch cable

Patch cable - FL CAT5 PATCH 0,5 - 2832263

<https://www.phoenixcontact.com/pc/products/2832263>

Patch cable, CAT5, assembled, 0.5 m



Patch cable

Patch cable - FL CAT5 PATCH 2,0 - 2832289

<https://www.phoenixcontact.com/pc/products/2832289>

Patch cable, CAT5, assembled, 2 m



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Patch cable

Patch cable - FL CAT5 PATCH 10,0 - 2832629

<https://www.phoenixcontact.com/pc/products/2832629>

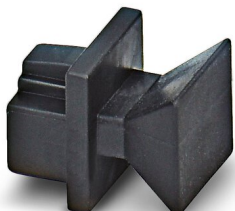


Patch cable, CAT5, assembled, 10 m

Dust protection

Dust protection - FL RJ45 PROTECT CAP - 2832991

<https://www.phoenixcontact.com/pc/products/2832991>



Dust protection caps for RJ45 socket

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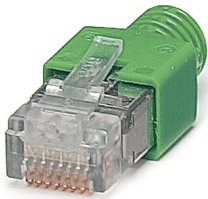
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RJ45 connector

RJ45 connector - FL PLUG RJ45 GR/2 - 2744856

<https://www.phoenixcontact.com/pc/products/2744856>



RJ45 connector, shielded, with bend protection sleeve, 2 pieces, gray for straight cables, for assembly on site. For connections that are not crossed, it is recommended that you use the connector set with gray bend protection sleeve.

RJ45 connector

RJ45 connector - FL PLUG RJ45 GN/2 - 2744571

<https://www.phoenixcontact.com/pc/products/2744571>



RJ45 connector, shielded, with bend protection sleeve, 2 pieces, green for crossed cables, for assembly on site. For connections that are crossed, it is recommended that the connector set with green bend protection sleeves is used.

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Assembly tool

Assembly tool - FL CRIMPTOOL - 2744869

<https://www.phoenixcontact.com/pc/products/2744869>

Crimping pliers, for assembling the RJ45 plugs FL PLUG RJ45..., for assembly on site



FO converters

FO converters - FL MC EF 1300 MM SC - 2902853

<https://www.phoenixcontact.com/pc/products/2902853>

FO converter with SC duplex fiber optic connection (1300 nm), for converting 10/100Base-T(X) to multi-mode fiberglass (50/125 µm). Auto negotiation and auto MDI(X) function. Comprehensive link diagnostics. DIN-rail mountable, 18 ... 30 V DC supply.



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Program / configuration memory

Program / configuration memory - SD FLASH 512MB - 2988146

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



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

License

License - FL MGUARD LIC VPN-10 - 2700194

<https://www.phoenixcontact.com/pc/products/2700194>



License for up to 10 additional VPN online connections

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License

License - MGUARD SECURE VPN CLIENT LIC - 2702579

<https://www.phoenixcontact.com/pc/products/2702579>



License for mGuard Secure VPN Client v11.x

Wireless module

Wireless module - FL TIMESERVER NTP - 1107132

<https://www.phoenixcontact.com/pc/products/1107132>



GNSS receiver and NTP (Network Time Protocol) for Ethernet networks, receives time, date, and location via GPS, GLONASS, or Galileo, web-based management, supply via PoE (af) or 24 V DC, integrated antenna, IP68 housing

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Antenna

Antenna - TC ANT MOBILE WALL 5M - 2702273

<https://www.phoenixcontact.com/pc/products/2702273>



Multiband omnidirectional antenna for wall or mast mounting, 0.6 GHz ... 6 GHz, gain: 3 dBi ... 7 dBi, degree of protection: IP66, connection: SMA (male), incl. 5 m connecting cable, mounting bracket, and mast clamps

Antenna

Antenna - TC ANT MOBILE WALL 0,5M - 2702274

<https://www.phoenixcontact.com/pc/products/2702274>



Multiband cellular antenna for wall mounting, 0.5 m antenna cable, with SMA circular connector, suitable for LTE/4G

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Antenna

Antenna - ANT-OMNI-0671-02 - 1396318

<https://www.phoenixcontact.com/pc/products/1396318>



Multiband omnidirectional antenna with protection against vandalism for control cabinet mounting, frequency band: 0.6 GHz ... 7.1 GHz, gain: 2 dBi ... 4 dBi, degree of protection: IP67, shockproof: IK10, seawater-resistant, connection: N (female)

Antenna

Antenna - ANT-OMNI-0671-01 - 1396316

<https://www.phoenixcontact.com/pc/products/1396316>



Multiband omnidirectional antenna for wall or mast mounting, 0.6 GHz ... 7.1 GHz, gain: 1 dBi ... 3 dBi, degree of protection: IP67, seawater-resistant, connection: N (female), incl. mounting bracket and mast clamps

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Coaxial cable

Coaxial cable - NBC-COX-CNM/0.5-S/COX-CKM - 1340139

<https://www.phoenixcontact.com/pc/products/1340139>



Coaxial cable, 50 Ω , length: 0.5 m, N(m) - SMA(m), external cable diameter: 2.8 mm, transmission frequency: ≤ 7.25 GHz, typical attenuation: 800 MHz 0.4 dB, 2.4 GHz 0.7 dB, 5.8 GHz 1.1 dB, 7.25 GHz 1.5 dB

Coaxial cable

Coaxial cable - NBC-COX-CNM/1.0-M/COX-CKM - 1340143

<https://www.phoenixcontact.com/pc/products/1340143>



Coaxial cable, 50 Ω , length: 1 m, N(m) - SMA(m), external cable diameter: 4.9 mm, transmission frequency: ≤ 7.25 GHz, typical attenuation: 800 MHz 0.5 dB, 2.4 GHz 0.8 dB, 5.8 GHz 1.2 dB, 7.25 GHz 1.4 dB

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Coaxial cable

Coaxial cable - NBC-COX-CNM/3.0-M/COX-CKM - 1340144

<https://www.phoenixcontact.com/pc/products/1340144>



Coaxial cable, 50 Ω , length: 3 m, N(m) - SMA(m), external cable diameter: 4.9 mm, transmission frequency: ≤ 7.25 GHz, typical attenuation: 800 MHz 1.4 dB, 2.4 GHz 2.3 dB, 5.8 GHz 3.6 dB, 7.25 GHz 4.2 dB

Coaxial cable

Coaxial cable - NBC-COX-CNM/5.0-M/COX-CKM - 1340147

<https://www.phoenixcontact.com/pc/products/1340147>



Coaxial cable, 50 Ω , length: 5 m, N(m) - SMA(m), external cable diameter: 4.9 mm, transmission frequency: ≤ 7.25 GHz, typical attenuation: 800 MHz 2.3 dB, 2.4 GHz 3.8 dB, 5.8 GHz 6 dB, 7.25 GHz 7.3 dB

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Antenna cable

Antenna cable - RAD-CAB-EF393- 3M - 2867649

<https://www.phoenixcontact.com/pc/products/2867649>



Antenna cable, outside diameter: 10 mm (0.4 in.), inner conductor: stranded, attenuation: 1.0 / 1.8 / 3.1 dB at 0.9 / 2.4 / 5.8 GHz, connection: 2 x N (male), cable length: 3 m (10 ft.)

Antenna cable

Antenna cable - RAD-CAB-EF393- 5M - 2867652

<https://www.phoenixcontact.com/pc/products/2867652>



Antenna cable, outside diameter: 10 mm (0.4 in.), inner conductor: stranded, attenuation: 1.6 / 2.9 / 5.0 dB at 0.9 / 2.4 / 5.8 GHz, connection: 2 x N (male), cable length: 5 m (16 ft.)

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Antenna cable

Antenna cable - RAD-CAB-EF393-10M - 2867665

<https://www.phoenixcontact.com/pc/products/2867665>



Antenna cable, outside diameter: 10 mm (0.4 in.), inner conductor: stranded, attenuation: 2.9 / 5.6 / 9.9 dB at 0.9 / 2.4 / 5.8 GHz, connection: 2 x N (male), cable length: 10 m (32 ft.)

Antenna cable

Antenna cable - RAD-CAB-EF393-15M - 2885634

<https://www.phoenixcontact.com/pc/products/2885634>



Antenna cable, outside diameter: 10 mm (0.4 in.), inner conductor: stranded, attenuation: 4.3 / 8.3 / 14.8 dB at 0.9 / 2.4 / 5.8 GHz, connection: 2 x N (male), cable length: 15 m (50 ft.)

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Surge protection device

Surge protection device - CN-UB-70DC-6-BB - 2803166

<https://www.phoenixcontact.com/pc/products/2803166>



Attachment plug with surge protection for coaxial signal interfaces. Connection: N connector, female/female

Adapter

Adapter - RAD-ADP-N/F-N/F - 2867843

<https://www.phoenixcontact.com/pc/products/2867843>



Antenna adapter for control cabinet feed-through, frequency range: 0.3 GHz ... 6 GHz, degree of protection: IP65, connection: 2 x N (female)

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Weather protection tape

Weather protection tape - RAD-TAPE-SV-19-3 - 2903182

<https://www.phoenixcontact.com/pc/products/2903182>

Vulcanizing sealing tape for external protection of adapters, cable connections, etc. against the effects of weather, roll length: 3 m



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