

TC MGUARD RS4000 4G VPN - Router



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 |
| Sales key | DN25 |
| Product key | DNC424 |
| 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

Note on application

| | |
|---------------------|-------------------------|
| Note on application | Only for industrial use |
|---------------------|-------------------------|

Material specifications

| | |
|--------------------|-------|
| Material (Housing) | Metal |
|--------------------|-------|

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) |
| | 900 MHz (UMTS/HSPA B8) |

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| | |
|---------------------------|---------------------------------------------|
| | 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 |

System properties

Functionality

| | |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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 |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

System requirements

| | |
|--------------------|------------------------|
| Supported browsers | HTTPS support required |
|--------------------|------------------------|

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

Signal

| | |
|-----------------------|----------------------------------------------------------|
| 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%) |

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| | |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | 250 Years (SN 29500 standard, temperature 40°C, operating cycle 34.25%) |
| | 104 Years (SN 29500 standard, temperature 40°C, operating cycle 100%) |
| 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 |

Insulation characteristics

| | |
|---------------------|---|
| Degree of pollution | 2 |
|---------------------|---|

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 addresses |
| | 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) |

Functions

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| | |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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 |
| Supported browsers | HTTPS support required |

Security functions

| | |
|----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
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| Number of VPN tunnels | 10 (up to 250 tunnels with additional license as an option) |
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| Dynamic Host Configuration Protocol (DHCP) support | Server or Relay Agent |
| Filtering | MAC addresses |
| | 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 |
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Electrical properties

| | |
|-------------------------------------------------|------------------------|
| Electrical isolation | VCC // PE |
| Maximum power dissipation for nominal condition | 7.68 W |
| 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

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| | |
|-----------------------------|-------------------------------------------------------------------|
| 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 |
|------------|----------------------------|

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 |
| Single conductor/terminal point, rigid | 0.2 mm ² ... 2.5 mm ² |
| Single-wire/terminal point, flexible | 0.2 mm ² ... 2.5 mm ² |
| Conductor cross-section, flexible [AWG] | 24 ... 14 |
| Stripping length | 7.00 mm |
| Tightening torque | 0.56 Nm ... 0.79 Nm |

Environmental and real-life conditions

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 | VDMA 24364:2018-05 |
|-------------------------------------------------------------------|--------------------|

Approvals

CE

| | |
|-------------|--------------|
| Certificate | CE-compliant |
|-------------|--------------|

Corrosive gas test

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

Mounting

| | |
|---------------|-------------------|
| Mounting type | DIN rail mounting |
|---------------|-------------------|

EMC data

| | |
|-------------------------------|-------------------------------------------|
| Electromagnetic compatibility | Conformance with EMC Directive 2014/30/EU |
|-------------------------------|-------------------------------------------|

Electrostatic discharge

| | |
|-----------------------|--------------|
| Standards/regulations | EN 61000-4-2 |
|-----------------------|--------------|

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 |
|-----------------------|--------------|

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 |
|-----------------------|--------------|

Fast transients (burst)

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

Criteria

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

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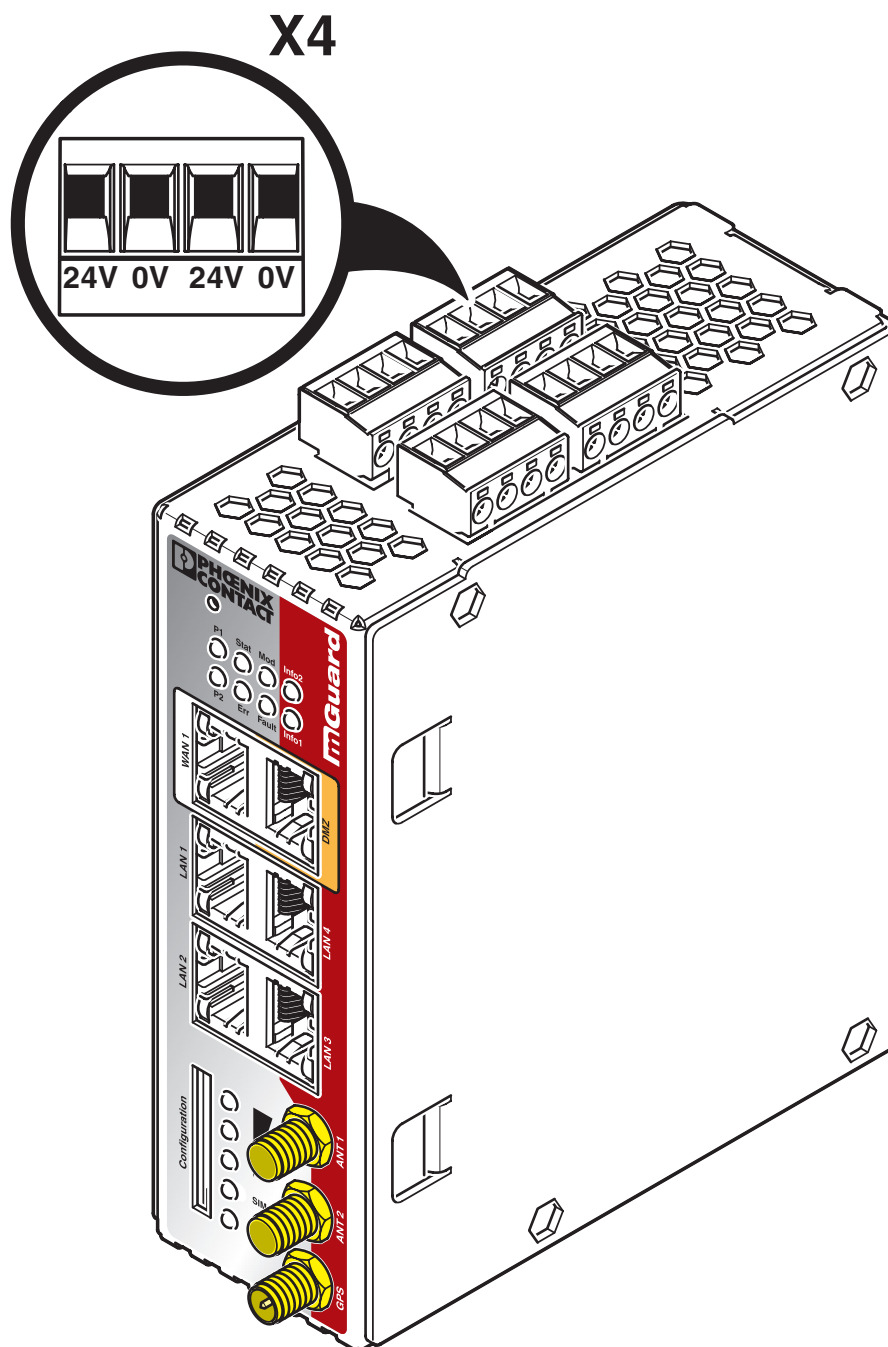
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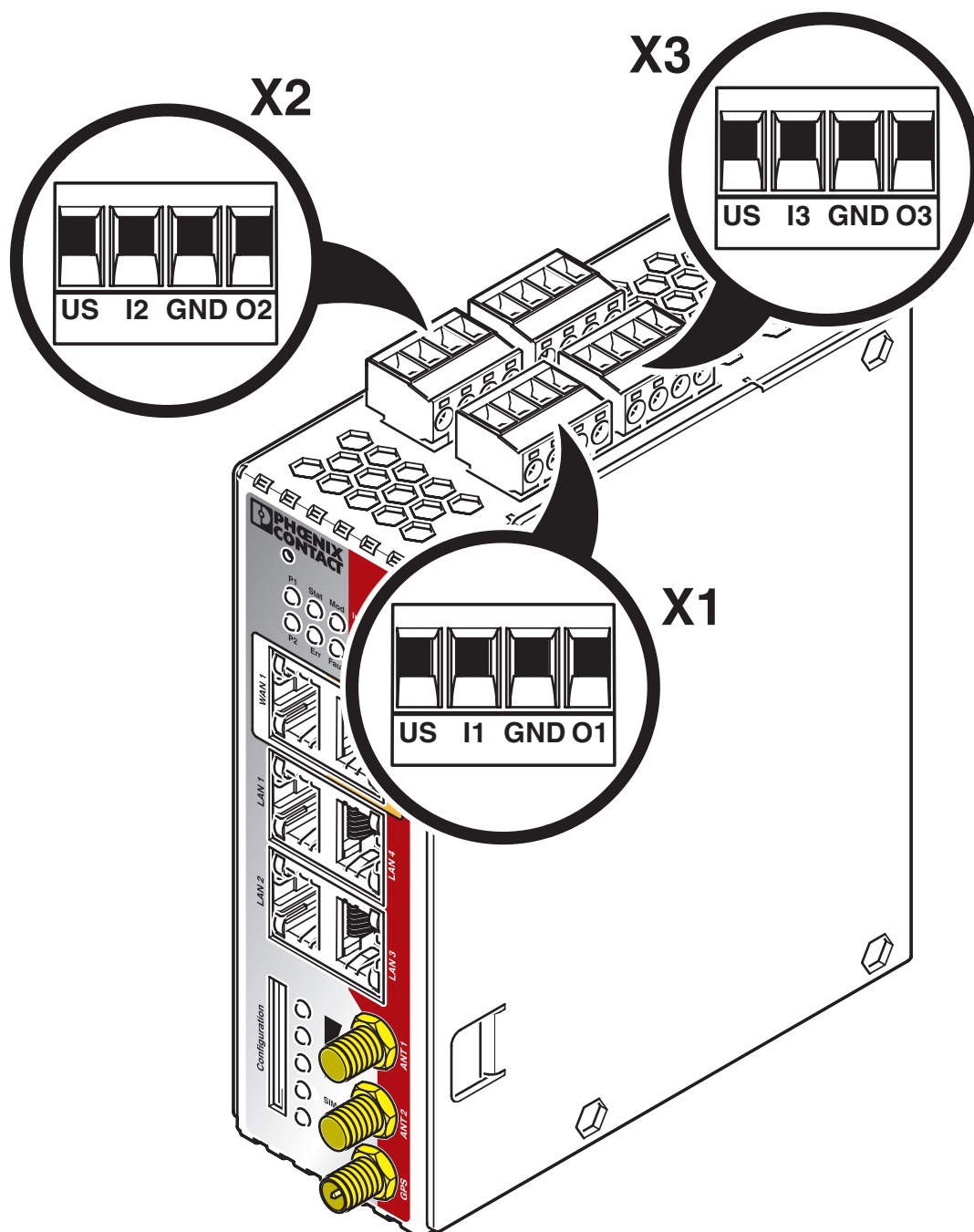
Drawings

Schematic diagram



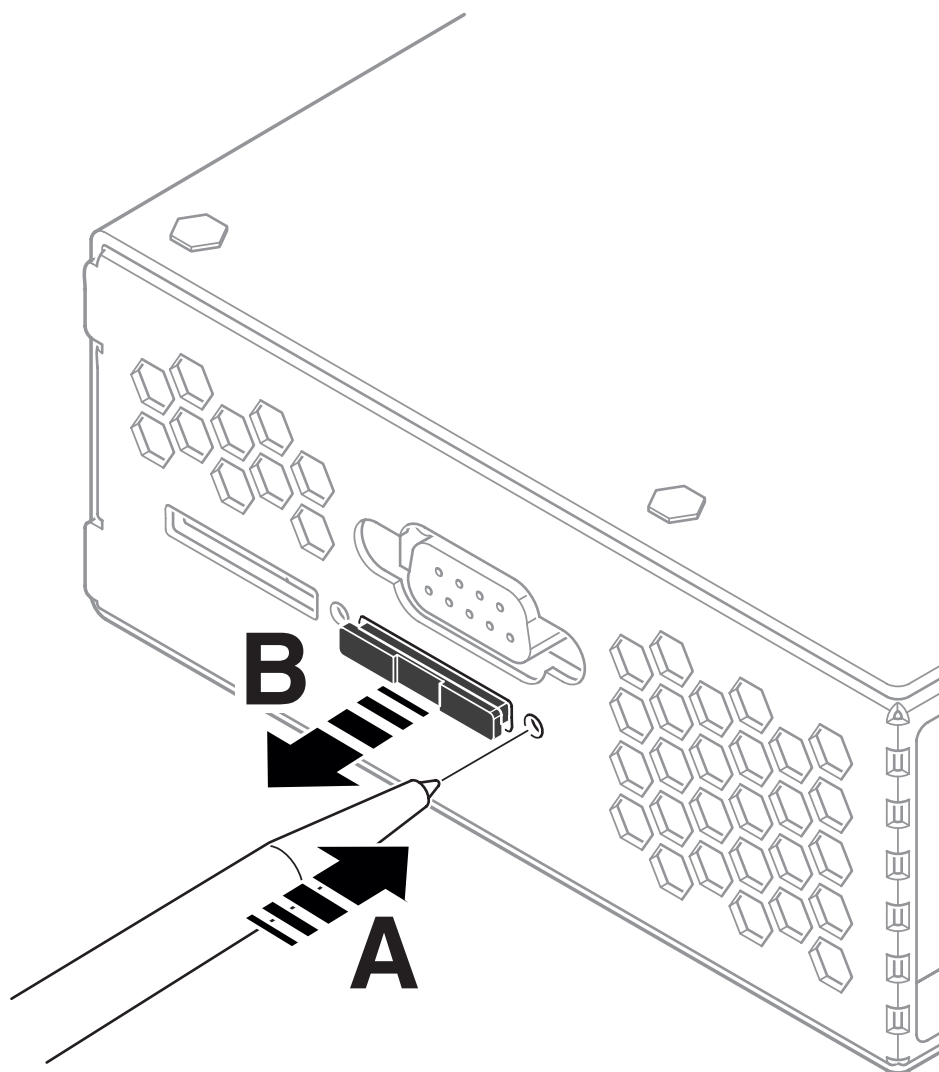
Connecting the supply voltage

Schematic diagram



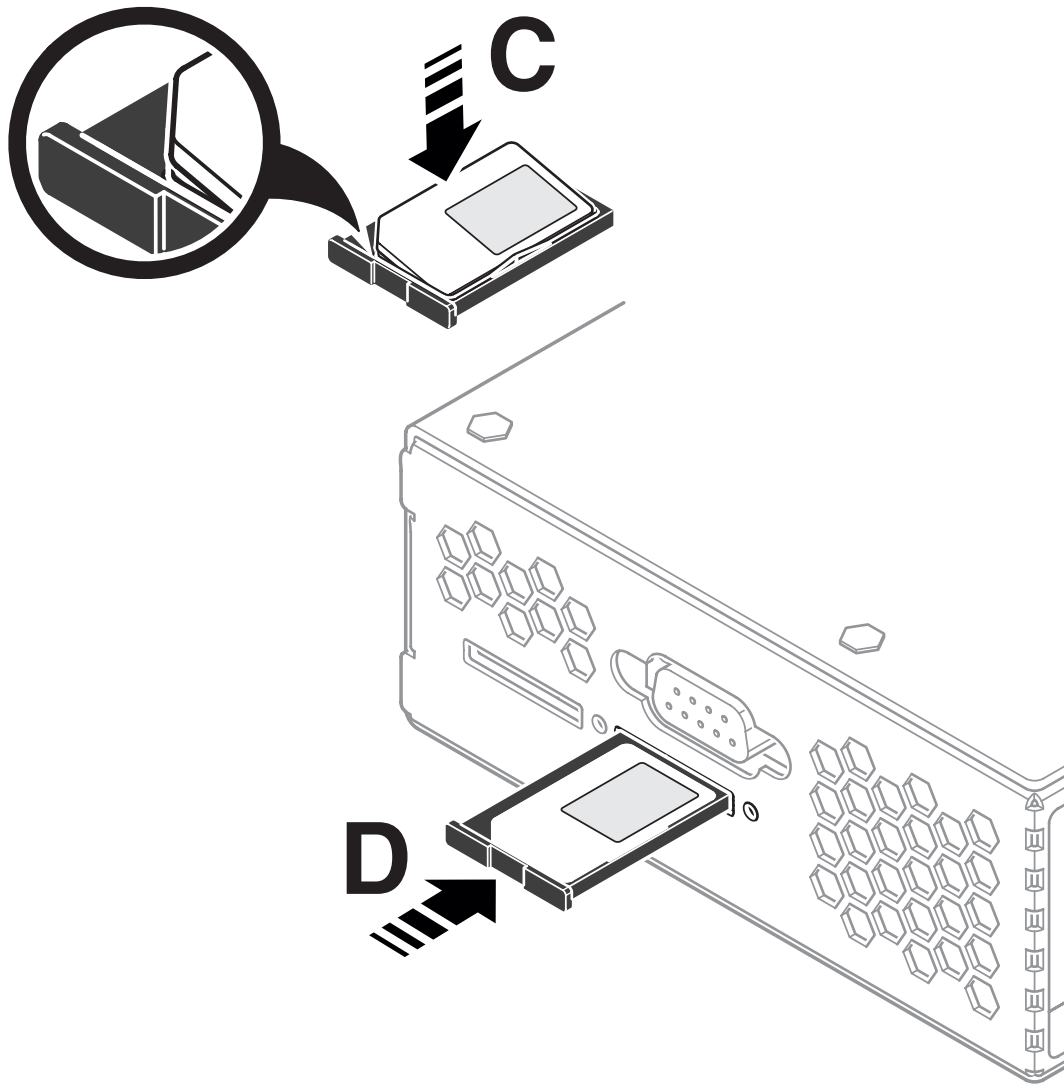
Connection of the cables

Schematic diagram



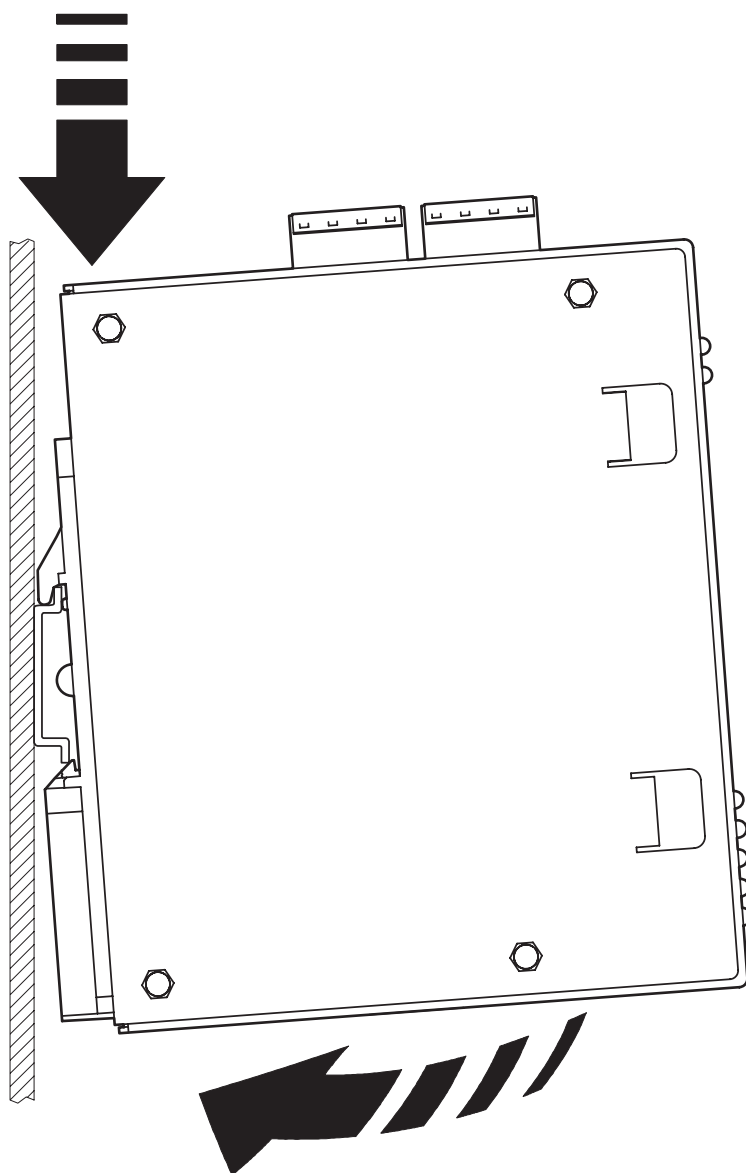
Remove SIM card holder

Schematic diagram



Insert the SIM card

Schematic diagram



Mounting

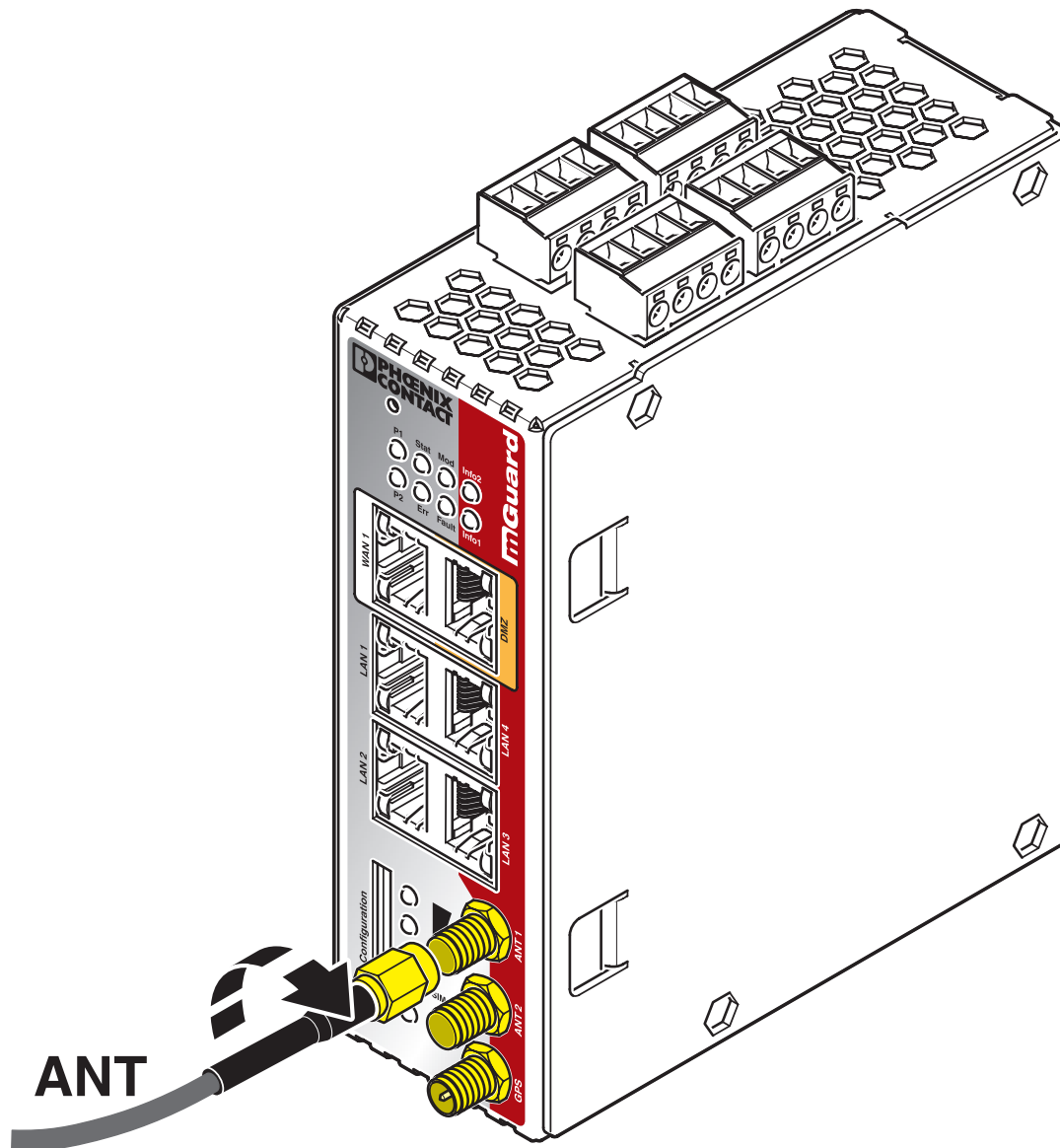
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Schematic diagram



Connect the antenna

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Classifications

ECLASS

| | |
|-------------|----------|
| ECLASS-13.0 | 19170406 |
|-------------|----------|

ETIM

| | |
|----------|----------|
| ETIM 9.0 | EC001478 |
|----------|----------|

UNSPSC

| | |
|-------------|----------|
| UNSPSC 21.0 | 43222600 |
|-------------|----------|

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Environmental product compliance

| | |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EU RoHS | |
| Fulfills EU RoHS substance requirements | Yes |
| Exemption | 6(c), 7(a), 7(c)-I |
| China RoHS | |
| Environment friendly use period (EFUP) | EFUP-50 |
| | An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required. |
| EU REACH SVHC | |
| REACH candidate substance (CAS No.) | Lead(CAS: 7439-92-1) |

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