

# TC MGUARD RS2000 4G VZW VPN - Router



1010462

<https://www.phoenixcontact.com/us/products/1010462>

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Security appliance, Version for Verizon Wireless (US), 4G mobile network interface, SD card slot, 2 VPN tunnels, firewall for easy configuration, router with NAT/1:1 NAT, 4 port switch

## 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

- Integrated 4-port switch
- Maximum security with IPsec protocol on Layer 3
- Web-based management
- Replaceable configuration memory
- RS-232 interface with COM server function for integrating serial devices
- Flexible routing
- 2 parallel VPN tunnels
- Supports current certificates such as x509.v3
- Stateful inspection firewall for dynamic filtering
- Extended temperature rating

## Commercial Data

Item number	1010462
Packing unit	1 pc
Minimum order quantity	1 pc
Sales Key	DN25
Product Key	DNC424
Catalog Page	Page 405 (C-6-2019)
GTIN	4055626484266
Weight per Piece (including packing)	630.7 g
Weight per Piece (excluding packing)	630.7 g
Customs tariff number	85176200
Country of origin	DE

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## Technical Data

### Dimensions

Width	45 mm
Height	130 mm
Depth	114 mm

### Notes

#### Utilization restriction

CCCex note	Use in potentially explosive areas is not permitted in China.
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### Material specifications

Material Housing	Metal
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### Interfaces

Signal	Ethernet
Web server	yes
Basic functions	Router with simplified 2-click firewall and VPN for 2 tunnels (fixed), metal housing, slot for any 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	4
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	LTE (FDD)
Frequency range	700 MHz (LTE B13) 1700 MHz (LTE B4)
Data rate	≤ 150 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	CAT4

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Country support	USA
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## System properties

### Functionality

Basic functions	Router with simplified 2-click firewall and VPN for 2 tunnels (fixed), metal housing, slot for any SD memory card
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### System requirements

Supported browsers	HTTPS support required
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## 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, resistive load
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	582 Years (SN 29500 standard, temperature 25°C, operating cycle 21%) 271 Years (SN 29500 standard, temperature 40°C, operating cycle 34.25%) 114 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	2 (Fixed, Ipsec (IETF standard))
Authentication	X.509v3 certificates with RSA or PSK
Data integrity	MD5, SHA-1
Dynamic Host Configuration Protocol (DHCP) support	Server or Relay Agent
Filtering	Incoming or outgoing traffic
Firewall data throughput	max. 124 Mbps (Router mode, default firewall rules, bidirectional)

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	throughput)
	max. 58 Mbps (Stealth mode, default firewall rules, bidirectional throughput)
Firewall rules	Simplified 2-click stateful inspection firewall
Basic functions	Router with simplified 2-click firewall and VPN for 2 tunnels (fixed), metal housing, slot for any 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
Encryption methods	DES, 3DES, AES-128, -192, -256
Virtual private network (VPN) throughput	max. 40 Mbps (Router mode, VPN bidirectional throughput)
	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., manufacturer's declaration)
Test voltage data interface/power supply	1 kV (50 Hz, 1 min., manufacturer's declaration)

## 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 <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section, flexible, with ferrule, with plastic sleeve	0.25 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section, flexible	0.20 mm <sup>2</sup> ... 2.50 mm <sup>2</sup>
Conductor cross section, rigid	0.20 mm <sup>2</sup> ... 2.50 mm <sup>2</sup>
Conductor cross section AWG	24 ... 14
Stripping length	7 mm
Tightening torque	0.56 Nm ... 0.79 Nm

## Environmental and real-life conditions

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## Ambient conditions

Degree of protection	IP20 (Manufacturer's declaration)
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	in accordance with VW-AUDI-Seat central standard P-VW 3.10.7 57 65 0
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## Approvals

### UL, USA/Canada

Identification	Class I, Zone 2, AEx nA IIC T4 / Ex nA IIC T4 Gc Class I, Div. 2, Groups A, B, C, D T4
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### Corrosive gas test

Identification	ISA-S71.04-1985 G3 Harsh Group A
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### Wireless approval USA, FCC

Certificate	N7NHL7518
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## Mounting

Mounting type	DIN rail mounting
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## EMC data

Electromagnetic compatibility	Conformance with RED Directive 2014/53/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)
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 (DC supply)
Signal	± 1 kV (Data line, asymmetrical)
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 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

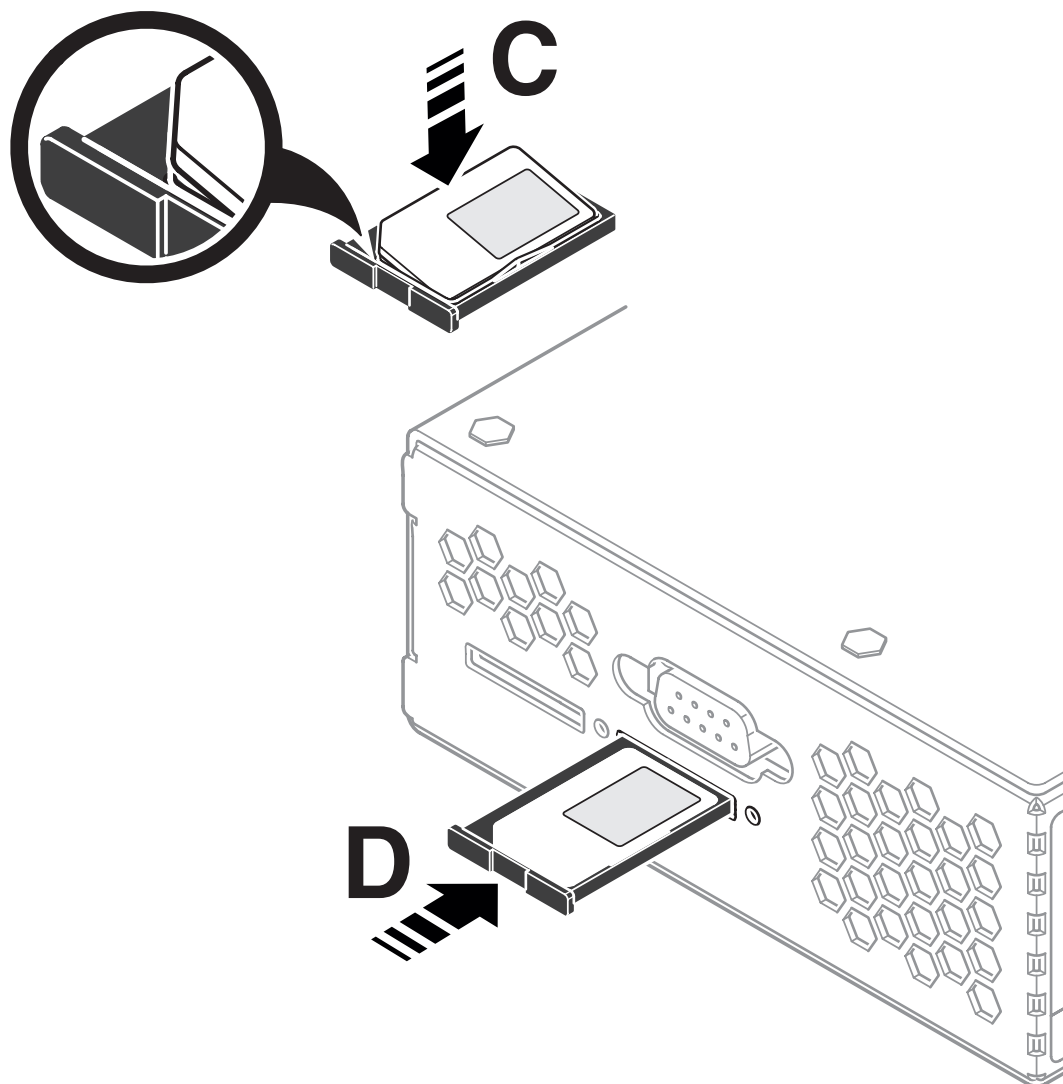
Criterion A	Normal operating behavior within the specified limits.
Criterion B	Temporary impairment to operational behavior that is corrected by the device itself.

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## Drawings

Schematic diagram



Insert the SIM card

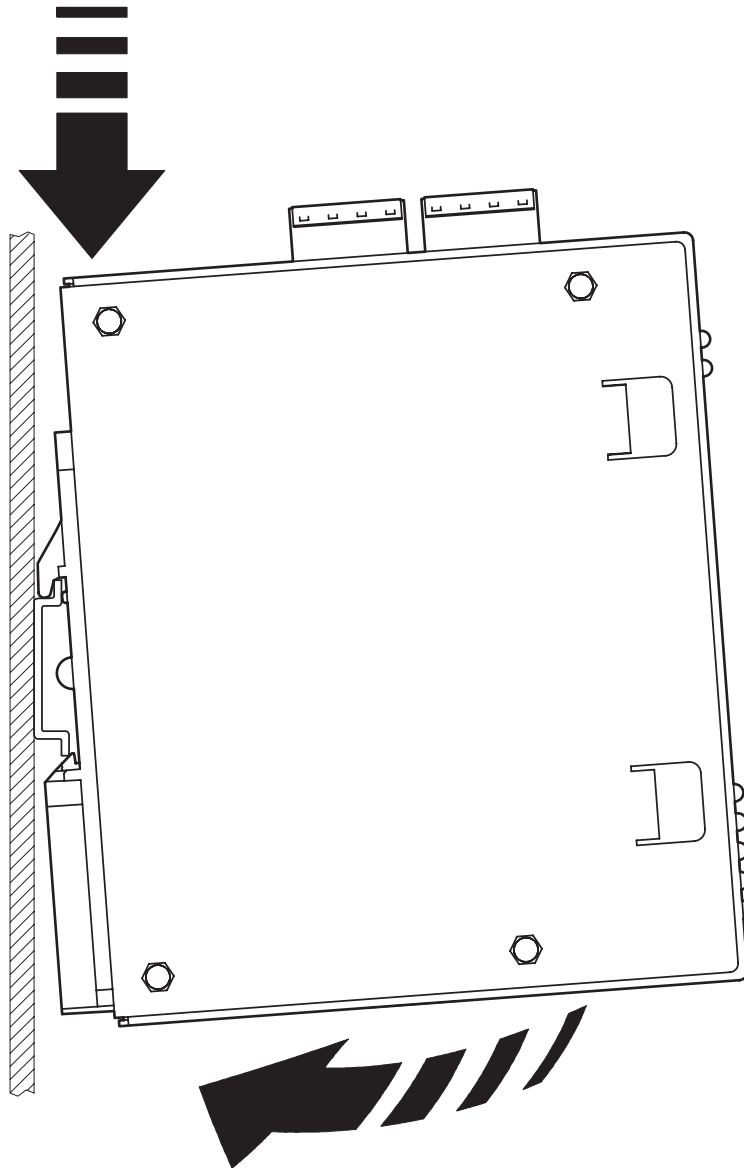
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Schematic diagram



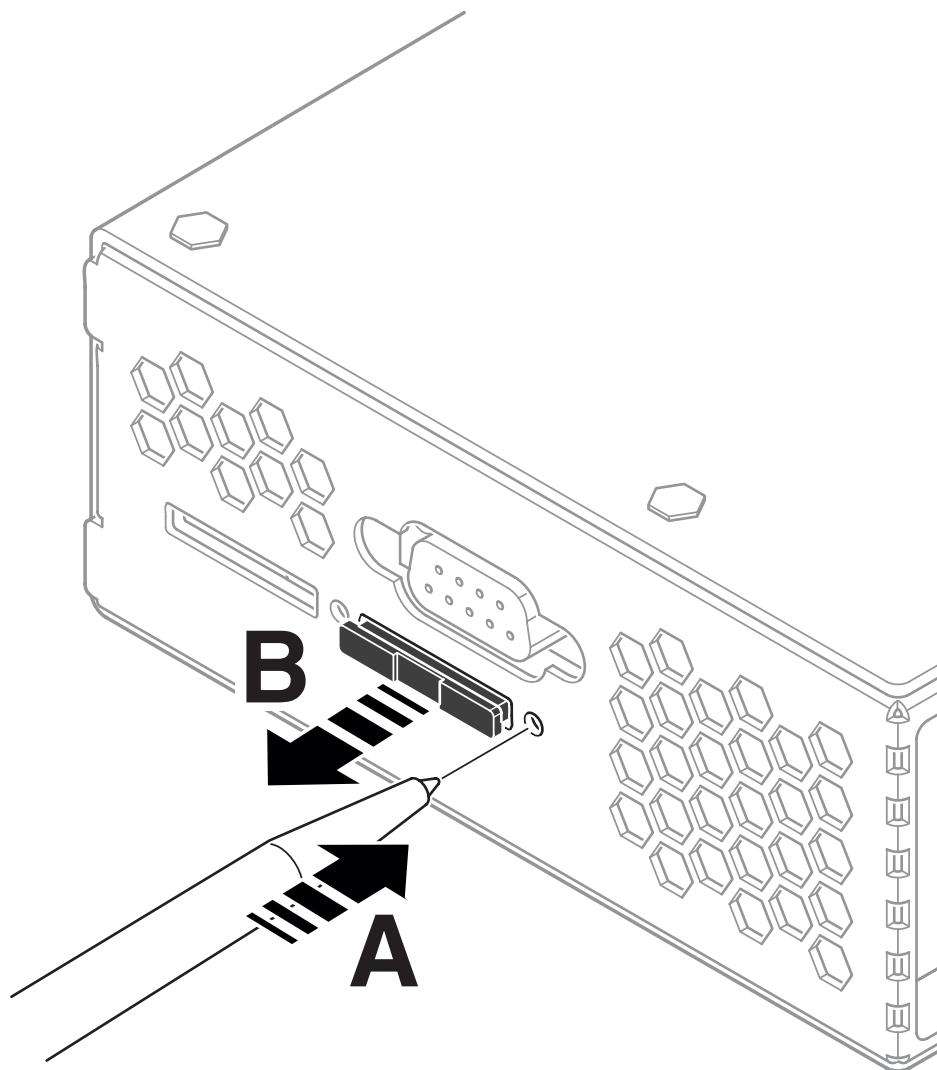
Mounting



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Schematic diagram



Remove SIM card holder


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## Approvals

 **UL Listed**  
Approval ID: FILE E 238705

 **cUL Listed**  
Approval ID: FILE E 238705

 **cUL Listed**  
Approval ID: FILE E 366272

 **UL Listed**  
Approval ID: FILE E 366272

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## Classifications

### ECLASS

ECLASS-11.0	19170406
ECLASS-12.0	19170406
ECLASS-13.0	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

### FL CAT5 PATCH 0,5 - Patch cable

2832263

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

Patch cable, CAT5, assembled, 0.5 m



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### FL CAT5 PATCH 2,0 - Patch cable

2832289

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

Patch cable, CAT5, assembled, 2 m



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## FL CAT5 PATCH 10,0 - Patch cable

2832629

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



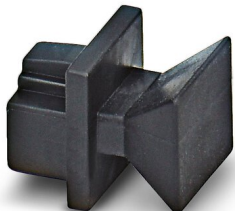
Patch cable, CAT5, assembled, 10 m

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## FL RJ45 PROTECT CAP - Dust protection

2832991

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



Dust protection caps for RJ45 socket

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## FL PLUG RJ45 GR/2 - RJ45 connector

2744856

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



RJ45 connector, design: RJ45, degree of protection: IP20, number of positions: 8, 1 Gbps, CAT5 (IEC 11801:2002), material: Plastic, connection method: Crimp connection, cable outlet: straight, color: green, Ethernet

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## FL PLUG RJ45 GN/2 - RJ45 connector

2744571

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



RJ45 connector, design: RJ45, degree of protection: IP20, number of positions: 8, 1 Gbps, CAT5 (IEC 11801:2002), material: Plastic, connection method: Crimp connection, cable outlet: straight, color: green, Ethernet

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## FL CRIMPTOOL - Assembly tool

2744869

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

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



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## FL MC EF 1300 MM SC - FO converters

2902853

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

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





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## SD FLASH 512MB - Program / configuration memory

2988146

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



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

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## FL MGUARD LIC VPN-10 - License

2700194

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



License for up to 10 additional VPN online connections

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## MGuard SECURE VPN CLIENT LIC - License

2702579

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



License for mGuard Secure VPN Client v11.x

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## FL TIMESERVER NTP - Wireless module

1107132

<https://www.phoenixcontact.com/us/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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## TC ANT MOBILE WALL 5M - Antenna

2702273

<https://www.phoenixcontact.com/us/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

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## ANT-OMNI-0671-02 - Antenna

1396318

<https://www.phoenixcontact.com/us/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)

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<https://www.phoenixcontact.com/us/products/1010462>

## ANT-OMNI-0671-01 - Antenna

1396316

<https://www.phoenixcontact.com/us/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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## NBC-COX-CNM/0.5-S/COX-CKM - Coaxial cable

1340139

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



Coaxial cable, 50  $\Omega$ , length: 0.5 m, N(m) - SMA(m), external cable diameter: 2.8 mm, transmission frequency:  $\leq 7.25$  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

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

1340143

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



Coaxial cable, 50  $\Omega$ , length: 1 m, N(m) - SMA(m), external cable diameter: 4.9 mm, transmission frequency:  $\leq 7.25$  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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## NBC-COX-CNM/3.0-M/COX-CKM - Coaxial cable

1340144

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



Coaxial cable, 50  $\Omega$ , length: 3 m, N(m) - SMA(m), external cable diameter: 4.9 mm, transmission frequency:  $\leq 7.25$  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

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

1340147

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



Coaxial cable, 50  $\Omega$ , length: 5 m, N(m) - SMA(m), external cable diameter: 4.9 mm, transmission frequency:  $\leq 7.25$  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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## RAD-CAB-EF393- 3M - Antenna cable

2867649

<https://www.phoenixcontact.com/us/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.)

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

2867652

<https://www.phoenixcontact.com/us/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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## RAD-CAB-EF393-10M - Antenna cable

2867665

<https://www.phoenixcontact.com/us/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.)

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

2885634

<https://www.phoenixcontact.com/us/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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## CN-UB-70DC-6-BB - Surge protection device

2803166

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

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





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## RAD-ADP-N/F-N/F - Adapter

2867843

<https://www.phoenixcontact.com/us/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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## RAD-TAPE-SV-19-3 - Weather protection tape

2903182

<https://www.phoenixcontact.com/us/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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