Industrial communication technology – Remote communication

Do you want to communicate with your machines and systems on a worldwide basis? From efficient remote maintenance and continuous data transmission for remote control technology through to automatic early warning messages: Phoenix Contact offers a comprehensive portfolio for industrial remote communication.

Alerts
- Reduced machine and system downtimes, thanks to automatic alerts via SMS and e-mail
- Decreased communication costs, thanks to event-driven alerts

Remote maintenance
- VPN infrastructure with IPsec (Internet Protocol Security) for operators, machine builders, and system manufacturers
- Secure and reliable, thanks to industry-proven mGuard security technology
- Compatible with all mGuard security appliances and certified VPN clients
- Cloud-based remote maintenance with the mGuard Secure Cloud

Remote control

Are you looking to connect remote stations to your control center over great distances? We offer the right transmission path for every remote control application – whether using mobile networks or copper-based solutions.
- Wide range of transmission solutions for industrial communication from a single source
- Flexible selection based on economic or technical aspects

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Alerts

Remote signaling and remote control system, 2G mobile network

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Remote signaling and remote control system, 4G mobile network

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COMPLETE line

The comprehensive solution for your control cabinet:
Easy planning, intuitive installation

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Remote maintenance

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Remote maintenance

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Remote signaling and remote control system

Alerts and remote control via the mobile network

Use the mobile network, monitor analog and digital values, and switch relays remotely using the TC Mobile I/O product range.

Depending on the product version, data is transmitted via SMS, e-mail or ODP protocol (GPRS).

Thanks to the large voltage range and the different inputs, the signaling system is suitable for use in a wide range of applications.

Features:

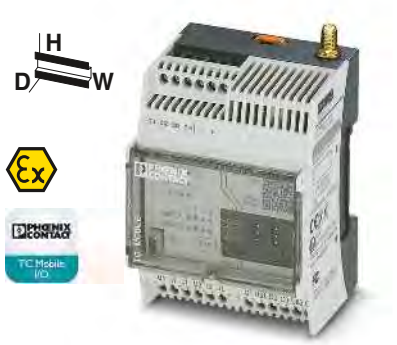
- Event-driven or continuous communication
- 4 digital inputs
- DC version: 2 analog inputs (current/voltage)
- 4 relay outputs, can be switched via mobile communication
- SMS alerts in the event of voltage failure
- Configuration via USB and web browser
- Standard SIM card
- Compact design also for domestic installations (4 HP, DIN 43880)
- Cover can be sealed
- Numerous helpful software functions

Applications:

- Machine, building, and system monitoring
- Pumps, sewage treatment plants, water supply
- Light controllers, remote switching systems
- Elevators, doors
- Alarm and domestic engineering
- Climate and ventilation engineering
- Battery monitoring up to 60 V
- Railway applications in accordance with EN 50121-4

TC Mobile I/O app

Switch your outputs conveniently using the app. This means you can check the status of your device at any time. The TC Mobile I/O app makes handling the SMS version even easier. The alerts are sent as usual via SMS and e-mail. This makes it easy to be contacted in the field.



Communication via SMS and e-mail, 2G mobile network (GSM/GPRS)

Ex: Ⓔx

Technical data

		TC MOBILE I/O X200	TC MOBILE I/O X200 AC
Supply			
Supply voltage range		10 V DC ... 60 V DC	93 V AC ... 250 V AC (47.5 Hz ... 63 Hz)
Nominal current consumption		50 mA (24 V DC)	15 mA (230 V AC)
Max. current consumption		80 mA	25 mA
USB interface		USB 2.0	
Connection method		Mini-USB type B, 5-pos.	
Transmission distance		≤ 3 m (only for configuration and diagnostics)	
Mobile communication			
Frequencies		850 MHz (2 W (EGSM)) 900 MHz (2 W (EGSM)) 1800 MHz (1 W (EGSM)) 1900 MHz (1 W (EGSM))	
Digital input			
Number of inputs		4	
Analog input			
Number of inputs		2	-
Signal range		0 V DC ... 60 V DC / 0 mA ... 20 mA / 4 mA ... 20 mA (configurable)	-
Resolution		15 bit	-
Accuracy		± 0.1%	-
Switching output			
Contact type		4 x N/O contact	
Max. switching voltage		250 V AC	
Limiting continuous current		6 A AC	5 A
General data			
Dimensions	W / H / D	72 mm / 90 mm / 62 mm	
Ambient temperature (operation)		-25°C ... 70°C (for derating, see technical documentation)	
Approvals for countries		EU, other countries in preparation	
Electromagnetic compatibility		Conformance with EMC Directive 2014/30/EU	
ATEX		Ⓔx II 3 G Ex nA nC IIC T4 Gc X	
EMC note		Class A product, see page 527	

Ordering data

Description	Type	Order No.	Pcs./Pkt.
Compact signaling system, for mobile networks, monitors inputs, switches relay outputs			
- Analog and digital inputs	**TC MOBILE I/O X200**	2903805	1
- Digital inputs	**TC MOBILE I/O X200 AC**	2903806	1

Accessories

Multiband mobile communication antenna, with mounting bracket for outdoor installation, 5 m antenna cable with SMA circular connector, dimensions: 82 mm x 48 mm	**TC ANT MOBILE WALL 5M**	2702273	1
Multiband antenna for UMTS and quad band GSM, with omnidirectional characteristic, 2 m antenna cable with SMA circular connector, degree of protection: IP65, dimensions: 76 x 20 mm	**PSI-GSM/UMTS-QB-ANT**	2313371	1
Mobile communication antenna, for direct assembly on the device, SMA circular connector with articulated joint	**PSI-GSM-STUB-ANT**	2313342	1
Power supply, primary-switched	**STEP-PS/ 1AC/24DC/0.75**	2868635	1
USB connecting cable (individual) for configuration	**CABLE-USB/MINI-USB-3,0M**	2986135	1
Surge protection for UMTS and quad-band GSM antenna, with SMA plug and SMA coupling	**CSMA-LAMBDA/4-2.0-BS-SET**	2800491	1
Antenna extension cable for UMTS and quad-band GSM, with SMA plug and SMA coupling			
5 m long	**PSI-CAB-GSM/UMTS- 5M**	2900980	1
10 m long	**PSI-CAB-GSM/UMTS-10M**	2900981	1

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Communication via ODP protocol, 2G mobile network (GSM/GPRS)

new

Communication via SMS and e-mail, 4G mobile network (LTE)

Ex:

Technical data

TC MOBILE I/O X300	TC MOBILE I/O X300 AC
10 V DC ... 60 V DC	93 V AC ... 250 V AC (47.5 Hz ... 63 Hz)
140 mA (24 V DC)	40 mA (230 V AC)
180 mA	60 mA
USB 2.0	
Mini-USB type B, 5-pos. ≤ 3 m (only for configuration and diagnostics)	
850 MHz (2 W (EGSM)) 900 MHz (2 W (EGSM)) 1800 MHz (1 W (EGSM)) 1900 MHz (1 W (EGSM))	
4	
2	-
0 V DC ... 60 V DC / 0 mA ... 20 mA / 4 mA ... 20 mA (configurable)	-
15 bit	-
± 0.1%	-
4 x N/O contact 250 V AC	
6 A AC	5 A
72 mm / 90 mm / 62 mm	
-25°C ... 70°C (for derating, see technical documentation)	
EU, other countries in preparation Conformance with EMC Directive 2014/30/EU Ex II 3 G Ex nA nC IIC T4 Gc X	

Class A product, see page 527

Technical data

TC MOBILE I/O X200-4G	TC MOBILE I/O X200-4G AC
10 V DC ... 60 V DC	93 V AC ... 250 V AC (47.5 Hz ... 63 Hz)
50 mA (24 V DC)	15 mA (230 V AC)
80 mA	25 mA
USB 2.0	
Mini-USB type B, 5-pos. ≤ 3 m (only for configuration and diagnostics)	
850 MHz (2 W (EGSM)) 900 MHz (2 W (EGSM)) 1800 MHz (1 W (EGSM)) 1900 MHz (1 W (EGSM)) 800 MHz (LTE B20) 1800 MHz (LTE B3) 2600 MHz (LTE B7)	
4	
2	-
0 V DC ... 60 V DC / 0 mA ... 20 mA / 4 mA ... 20 mA (configurable)	-
15 bit	-
± 0.1%	-
4 x N/O contact 250 V AC	
6 A	5 A
72 mm / 90 mm / 62 mm	
-25°C ... 70°C (for derating, see technical documentation)	
EU, other countries in preparation Conformance with RED Directive 2014/53/EU	

Ordering data

Type	Order No.	Pcs./Pkt.
TC MOBILE I/O X300	2903807	1
TC MOBILE I/O X300 AC	2903808	1

Accessories

TC ANT MOBILE WALL 5M	2702273	1
PSI-GSM/UMTS-QB-ANT	2313371	1
PSI-GSM-STUB-ANT	2313342	1
STEP-PS/ 1AC/24DC/0.75	2868635	1
CABLE-USB/MINI-USB-3,0M	2986135	1
CSMA-LAMBDA/4-2.0-BS-SET	2800491	1
PSI-CAB-GSM/UMTS- 5M	2900980	1
PSI-CAB-GSM/UMTS-10M	2900981	1

Ordering data

Type	Order No.	Pcs./Pkt.
TC MOBILE I/O X200-4G	1038567	1
TC MOBILE I/O X200-4G AC	1038568	1

Accessories

TC ANT MOBILE WALL 5M	2702273	1
STEP-PS/ 1AC/24DC/0.75	2868635	1
CABLE-USB/MINI-USB-3,0M	2986135	1
CSMA-LAMBDA/4-2.0-BS-SET	2800491	1
PSI-CAB-GSM/UMTS- 5M	2900980	1
PSI-CAB-GSM/UMTS-10M	2900981	1

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mGuard security routers

The **TC MGUARD...** security appliances are industrial mobile 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 real-time clock and Trusted Platform Module (TPM) for secure key generation and management.

The **TC MGUARD RS4000...** devices provide high-availability high-end security for industry. The integrated 4-port switch offers management features and supports EtherNet/IP™.

The **TC MGUARD RS2000...** devices are designed for applications with fewer complex requirements for secure remote maintenance. The integrated 4-port switch saves valuable space on the DIN rail.

Serial device server included

The integrated COMSERVER function is used to integrate serial RS-232 interfaces into Ethernet networks. This provides an easy way of implementing functions such as cable replacement or network integration.

Device Manager

The Device Manager simplifies the management of mGuard security appliances. The tool features a template mechanism that enables the user to configure and manage all mGuard devices centrally.

Notes:

Central device management software, the Device Manager for FL MGUARD devices, can be found on page 342

With firewall and VPN, managed 4-port switch, DMZ port, and 2nd WAN interface

Technical data

		TC MGUARD RS4000 4G VPN	TC MGUARD RS4000 3G VPN
Supply			
Supply voltage range		11 V DC ... 36 V DC (via COMBICON plug-in screw terminal block)	
Nominal current consumption		< 320 mA (24 V DC)	
Ethernet interface			
Connection method		RJ45	
Transmission speed		10/100 Mbps (auto negotiation)	
Transmission distance		100 m (shielded twisted pair)	
Functions			
Management		Web-based management, SNMP	
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	
Security functions			
Number of VPN tunnels		10 (up to 250 tunnels with additional license as an option)	
Encryption methods		DES, 3DES, AES-128, -192, -256	
Internet Protocol Security (IPsec) mode		ESP tunnel / ESP transport	
Authentication		X.509v3 certificates with RSA or PSK	
Firewall rules		Configurable stateful inspection firewall with full scope of functions	
Routing		Standard routing, NAT, 1:1-NAT, port forwarding	
Mobile communication			
Frequencies		850 MHz (2 W (EGSM)) 900 MHz (2 W (EGSM)) 1800 MHz (1 W (EGSM)) 1900 MHz (1 W (EGSM)) 850 MHz (UMTS/HSPA B5) 900 MHz (UMTS/HSPA B8) 1900 MHz (UMTS/HSPA B2) 2100 MHz (UMTS/HSPA B1) 800 MHz (LTE B20) 850 MHz (LTE B5) 900 MHz (LTE B8) 1700 MHz (LTE B4) 1800 MHz (LTE B3) 1900 MHz (LTE B2) 2100 MHz (LTE B1) 2600 MHz (LTE B7)	850 MHz (2 W (EGSM)) 900 MHz (2 W (EGSM)) 1800 MHz (1 W (EGSM)) 1900 MHz (1 W (EGSM)) 800 MHz (UMTS/HSPA B6) 850 MHz (UMTS/HSPA B5) 900 MHz (UMTS/HSPA B8) 1900 MHz (UMTS/HSPA B2) 2100 MHz (UMTS/HSPA B1) 800 MHz (CDMA2000 EV-DO) 1900 MHz (CDMA2000 EV-DO)
SIM interface		1.8 volt, 3 volt	
GPRS compatibility		Class 12, Class B	
Network check		LED bar graph to display receive quality	
Antenna connection		50 Ω impedance SMA antenna socket	
Digital input			
Number of inputs		3	
Signal range		10 V DC ... 30 V DC / 5 mA	
Digital output			
Number of outputs		3	
Signal range		10 V DC ... 30 V DC (depending on the operating voltage) ≤ 125 mA (short-circuit-proof)	
General data			
Dimensions	W / H / D	45 mm / 130 mm / 114 mm	
Ambient temperature (operation)		-40°C ... 60°C	
Electrical isolation		VCC // PE	
Test voltage		1 kV (50 Hz, 1 min.)	
EMC note		Class A product, see page 527	

Ordering data

Description	Type	Order No.	Pcs./Pkt.
Mobile router with mGuard technology - UMTS/HSPA - 4G LTE (European version) - 4G LTE (US version, AT&T) - 4G LTE (US version, Verizon)	**TC MGUARD RS4000 3G VPN** **TC MGUARD RS4000 4G VPN**	2903440 2903586	1 1

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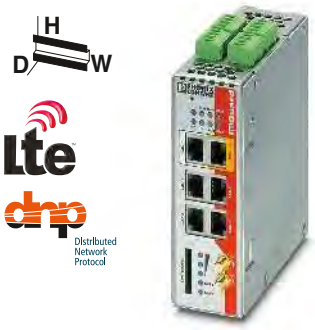
With firewall and VPN, integrated 4-port switch

new



With firewall and VPN, managed 4-port switch, DMZ port, and 2nd WAN interface (US version)

Ex:

new

With firewall and VPN, integrated 4-port switch (US version)

Ex:

Technical data

TC MGUARD RS2000 4G VPN	TC MGUARD RS2000 3G VPN
11 V DC ... 36 V DC (via COMBICON plug-in screw terminal block)	
< 320 mA (24 V DC)	
RJ45 10/100 Mbps (auto negotiation) 100 m (shielded twisted pair)	
Web-based management, SNMP Router with simplified 2-click firewall and VPN for 2 tunnels (fixed), metal housing, slot for any SD memory card	
2 (fixed, IPsec (IETF standard))	
DES, 3DES, AES-128, -192, -256 ESP tunnel / ESP transport X.509v3 certificates with RSA or PSK Simplified 2-click stateful inspection firewall	
Standard routing, NAT, 1:1-NAT, port forwarding	
850 MHz (2 W (EGSM)) 900 MHz (2 W (EGSM)) 1800 MHz (1 W (EGSM)) 1900 MHz (1 W (EGSM)) 850 MHz (UMTS/HSPA B5) 900 MHz (UMTS/HSPA B8) 1900 MHz (UMTS/HSPA B2) 2100 MHz (UMTS/HSPA B1) 800 MHz (LTE B20) 850 MHz (LTE B5) 900 MHz (LTE B8) 1700 MHz (LTE B4) 1800 MHz (LTE B3) 1900 MHz (LTE B2) 2100 MHz (LTE B1) 2600 MHz (LTE B7)	850 MHz (2 W (EGSM)) 900 MHz (2 W (EGSM)) 1800 MHz (1 W (EGSM)) 1900 MHz (1 W (EGSM)) 800 MHz (UMTS/HSPA B6) 850 MHz (UMTS/HSPA B5) 900 MHz (UMTS/HSPA B8) 1900 MHz (UMTS/HSPA B2) 2100 MHz (UMTS/HSPA B1) 800 MHz (CDMA2000 EV-DO) 1900 MHz (CDMA2000 EV-DO)
1.8 volt, 3 volt Class 12, Class B LED bar graph to display receive quality 50 Ω impedance SMA antenna socket	
3 10 V DC ... 30 V DC / 5 mA	
3 10 V DC ... 30 V DC (depending on the operating voltage) ≤ 125 mA (short-circuit-proof)	
45 mm / 130 mm / 114 mm -40°C ... 60°C VCC // PE 1 kV (50 Hz, 1 min.)	
Class A product, see page 527	

Ordering data

Type	Order No.	Pcs./Pkt.
TC MGUARD RS2000 3G VPN	**2903441**	1
TC MGUARD RS2000 4G VPN	**2903588**	1

Technical data

TC MGUARD RS4000 4G ATT VPN	TC MGUARD RS4000 4G VZW VPN
11 V DC ... 36 V DC (via COMBICON plug-in screw terminal block)	
< 320 mA (24 V DC)	
RJ45 10/100 Mbps (auto negotiation) 100 m (shielded twisted pair)	
Web-based management, SNMP 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	
10 (up to 250 tunnels with additional license as an option)	
DES, 3DES, AES-128, -192, -256 ESP tunnel / ESP transport X.509v3 certificates with RSA or PSK Configurable stateful inspection firewall with full scope of functions	
Standard routing, NAT, 1:1-NAT, port forwarding	
850 MHz (UMTS/HSPA B5) 1900 MHz (UMTS/HSPA B2) 700 MHz (LTE B13 / B17) 850 MHz (LTE B5) 1700 MHz (LTE B4) 1900 MHz (LTE B2)	700 MHz (LTE B13) 1700 MHz (LTE B4)
1.8 volt, 3 volt 50 Ω impedance SMA antenna socket	
3 10 V DC ... 30 V DC / 5 mA	
3 10 V DC ... 30 V DC (depending on the operating voltage) ≤ 125 mA (short-circuit-proof)	
45 mm / 130 mm / 114 mm -40°C ... 60°C VCC // PE 1 kV (50 Hz, 1 min., manufacturer's declaration)	
Class A product, see page 527	

Ordering data

Type	Order No.	Pcs./Pkt.
TC MGUARD RS4000 4G ATT VPN	**1010463**	1
TC MGUARD RS4000 4G VZW VPN	**1010461**	1

Technical data

TC MGUARD RS2000 4G ATT VPN	TC MGUARD RS2000 4G VZW VPN
11 V DC ... 36 V DC (via COMBICON plug-in screw terminal block)	
< 320 mA (24 V DC)	
RJ45 10/100 Mbps (auto negotiation) 100 m (shielded twisted pair)	
Web-based management, SNMP Router with simplified 2-click firewall and VPN for 2 tunnels (fixed), metal housing, slot for any SD memory card	
2 (fixed, IPsec (IETF standard))	
DES, 3DES, AES-128, -192, -256 ESP tunnel / ESP transport X.509v3 certificates with RSA or PSK Simplified 2-click stateful inspection firewall	
Standard routing, NAT, 1:1-NAT, port forwarding	
850 MHz (UMTS/HSPA B5) 1900 MHz (UMTS/HSPA B2) 700 MHz (LTE B13 / B17) 850 MHz (LTE B5) 1700 MHz (LTE B4) 1900 MHz (LTE B2)	700 MHz (LTE B13) 1700 MHz (LTE B4)
1.8 volt, 3 volt 50 Ω impedance SMA antenna socket	
3 10 V DC ... 30 V DC / 5 mA	
3 10 V DC ... 30 V DC (depending on the operating voltage) ≤ 125 mA (short-circuit-proof)	
45 mm / 130 mm / 114 mm -40°C ... 60°C VCC // PE 1 kV (50 Hz, 1 min., manufacturer's declaration)	
Class A product, see page 527	

Ordering data

Type	Order No.	Pcs./Pkt.
TC MGUARD RS2000 4G ATT VPN	**1010464**	1
TC MGUARD RS2000 4G VZW VPN	**1010462**	1

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TC CLOUD CLIENT via LAN and mobile network

The **TC CLOUD CLIENT** is positioned as a cost-effective field device for secure remote maintenance. The devices enable access to the mGuard Secure Cloud via the operator network or 4G mobile network.

The devices are optimized for use with the mGuard Secure Cloud. All **TC CLOUD CLIENT** devices therefore support Virtual Private Networks (VPNs) as standard. Even the scope of firmware functions is reduced to the essentials. This enables fast device startup in the field and error-free, autonomous operation.

mGuard Secure Cloud

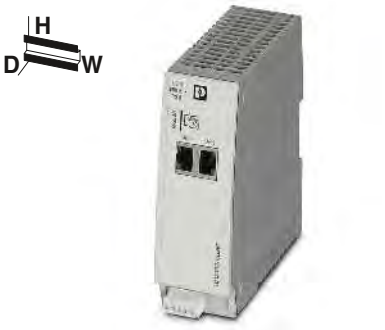
mGuard Secure Cloud constitutes a high-performance and scalable VPN infrastructure in the cloud, which connects service staff with machines and systems via the Internet.

The Basic Edition, available free of charge, enables one concurrent service connection.

The Premium Edition enables multiple concurrent service connections. Unlimited users and machines can be created and the cloud can be adapted to include extensions.

Features:

- Turnkey VPN infrastructure for operators, machine builders, and systems manufacturers
- Secure and reliable, thanks to industry-proven mGuard security technology
- Multiple access to various customers and systems possible
- Compatible with all mGuard security appliances and certified VPN clients
- Cloud-based VPN infrastructure from Phoenix Contact
- Support for mobile, iOS-based devices, such as Apple iPads and iPhones



Cloud client for access via operator networks

Ex:

Technical data

Supply		
Supply voltage range		10 V DC ... 30 V DC (SELV, via COMBICON plug-in screw terminal block)
Nominal current consumption		< 200 mA (24 V DC)
Stand-by current consumption		-
Ethernet interface		
Number of ports		2 (SELV)
Connection method		RJ45 socket, shielded
Transmission speed		10/100 Mbps, auto negotiation
Transmission distance		100 m (shielded twisted pair)
Supported protocols		TCP/IP, UDP/IP, FTP, HTTP
Auxiliary protocols		ARP, DHCP, PING (ICMP), SNMP V1, SMTP
Functions		
Management		Web-based management, SNMP
Security functions		
Number of VPN tunnels		1
Mobile communication		
Frequencies		-
SIM interface		-
Antenna connection		-
Digital input		
Number of inputs		1
Signal range		10 V DC ... 30 V DC
Digital output		
Number of outputs		1
Signal range		10 V DC ... 30 V DC (depending on the operating voltage) ≤ 50 mA (not short-circuit proof)
General data		
Dimensions	W / H / D	45 mm / 130 mm / 126 mm
Degree of protection		IP20
Ambient temperature (operation)		0°C ... 60°C
Electrical isolation		VCC // FE // Ethernet
EMC note		

Ordering data

Description	Type	Order No.	Pcs./Pkt.
Cloud client			
	TC CLOUD CLIENT 1002-TX/TX	2702885	1

Accessories

Multiband mobile communication antenna, with mounting bracket for outdoor installation, 5 m antenna cable with SMA circular connector, dimensions: 82 mm x 48 mm			
Power supply, primary-switched	**TRIO-PS-2G/1AC/24DC/3/C2LPS**	2903147	1

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Cloud client for access via 4G LTE mobile network (European version)

Ex:

Technical data	
Supply voltage	10 V DC ... 30 V DC (SELV, via COMBICON plug-in screw terminal block)
Current consumption	< 200 mA (24 V DC)
Power consumption	-
Number of interfaces	2
Interface	RJ45 socket, shielded 10/100 Mbps, auto negotiation 100 m (shielded twisted pair)
Protocol	TCP/IP, UDP/IP, FTP, HTTP ARP, DHCP, PING (ICMP), SNMP V1, SMTP
Configuration	Web-based management, SNMP
Number of antennas	1
Frequency range	850 MHz (2 W (EGSM)) 900 MHz (2 W (EGSM)) 1800 MHz (1 W (EGSM)) 1900 MHz (1 W (EGSM)) 850 MHz (UMTS/HSPA B5) 900 MHz (UMTS/HSPA B8) 1900 MHz (UMTS/HSPA B2) 2100 MHz (UMTS/HSPA B1) 800 MHz (LTE B20) 850 MHz (LTE B5) 900 MHz (LTE B8) 1700 MHz (LTE B4) 1800 MHz (LTE B3) 1900 MHz (LTE B2) 2100 MHz (LTE B1) 2600 MHz (LTE B7)
Antenna	1.8 volt, 3 volt 50 Ω impedance SMA antenna socket
Number of digital inputs	1 10 V DC ... 30 V DC
Number of digital outputs	1 10 V DC ... 30 V DC (depending on the operating voltage) ≤ 50 mA (not short-circuit proof)
Dimensions	45 mm / 130 mm / 126 mm
Degree of protection	IP20
Ambient temperature (operation)	0°C ... 60°C
Connection method	VCC // LTE // Ethernet // PE
Note	Class A product, see page 527

Ordering data		
Type	**Order No.**	Pcs./Pkt.
TC CLOUD CLIENT 1002-4G	**2702886**	1

Accessories		
TC ANT MOBILE WALL 5M	**2702273**	1
TRIO-PS-2G/1AC/24DC/3/C2LPS	**2903147**	1

Cloud client for access via 4G LTE mobile network (US version, Verizon)

Ex:

Technical data	
Supply voltage	10 V DC ... 30 V DC (SELV, via COMBICON plug-in screw terminal block)
Current consumption	< 200 mA (24 V DC)
Power consumption	65 mA (with activated energy-saving mode)
Number of interfaces	2 (SELV)
Interface	RJ45 socket, shielded 10/100 Mbps, auto negotiation 100 m (shielded twisted pair)
Protocol	TCP/IP, UDP/IP, FTP, HTTP ARP, DHCP, PING (ICMP), SNMP V1, SMTP
Configuration	Web-based management, SNMP
Number of antennas	1
Frequency range	700 MHz (LTE B13) 1700 MHz (LTE B4)
Antenna	1.8 volt, 3 volt 50 Ω impedance SMA antenna socket
Number of digital inputs	1 10 V DC ... 30 V DC
Number of digital outputs	1 10 V DC ... 30 V DC (depending on the operating voltage) ≤ 50 mA (not short-circuit proof)
Dimensions	45 mm / 130 mm / 126 mm
Degree of protection	IP20
Ambient temperature (operation)	0°C ... 60°C
Connection method	VCC // LTE // Ethernet // PE
Note	Class A product, see page 527

Ordering data		
Type	**Order No.**	Pcs./Pkt.
TC CLOUD CLIENT 1002-4G VZW	**2702887**	1

Accessories		
TC ANT MOBILE WALL 5M	**2702273**	1
TRIO-PS-2G/1AC/24DC/3/C2LPS	**2903147**	1

Cloud client for access via 4G LTE mobile network (US version, AT&T)

Ex:

Technical data	
Supply voltage	10 V DC ... 30 V DC (SELV, via COMBICON plug-in screw terminal block)
Current consumption	< 200 mA (24 V DC)
Power consumption	65 mA (with activated energy-saving mode)
Number of interfaces	2
Interface	RJ45 socket, shielded 10/100 Mbps, auto negotiation 100 m (shielded twisted pair)
Protocol	TCP/IP, UDP/IP, FTP, HTTP ARP, DHCP, PING (ICMP), SNMP V1, SMTP
Configuration	Web-based management, SNMP
Number of antennas	1
Frequency range	850 MHz (UMTS/HSPA B5) 1900 MHz (UMTS/HSPA B2) 700 MHz (LTE B13 / B17) 850 MHz (LTE B5) 1700 MHz (LTE B4) 1900 MHz (LTE B2)
Antenna	1.8 volt, 3 volt 50 Ω impedance SMA antenna socket
Number of digital inputs	1 10 V DC ... 30 V DC
Number of digital outputs	1 10 V DC ... 30 V DC (depending on the operating voltage) ≤ 50 mA (not short-circuit proof)
Dimensions	45 mm / 130 mm / 126 mm
Degree of protection	IP20
Ambient temperature (operation)	0°C ... 60°C
Connection method	VCC // LTE // Ethernet // PE
Note	Class A product, see page 527

Ordering data		
Type	**Order No.**	Pcs./Pkt.
TC CLOUD CLIENT 1002-4G ATT	**2702888**	1

Accessories		
TC ANT MOBILE WALL 5M	**2702273**	1
TRIO-PS-2G/1AC/24DC/3/C2LPS	**2903147**	1

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Remote maintenance via the cloud, encrypted and secure

Easy

mGuard Secure Cloud public offers a turnkey complete VPN solution for operators and companies that build machines and manufacture systems. Service personnel connect quickly and securely to machines, industrial PCs, and controllers via a simple web interface. In addition, secure remote maintenance can be performed at any location and any time without requiring specialist IT knowledge.

Secure

The cloud is based on the mGuard industry standard and connects service personnel and remote maintenance locations securely via the Internet. Virtual Private Networks (VPNs) are used here with the proven IPsec security protocol. This guarantees the confidentiality, authenticity, and integrity of all data transmitted between all devices connected via the mGuard Secure Cloud.

Furthermore, the mGuard Secure Cloud is operated in a high-availability computer center in Germany in accordance with the most stringent data protection standards.

Reliable

In order to stay competitive in the global market, companies must be able to handle increasing pressures in terms of innovation and cost. Particularly for small and medium-sized companies, it is practically impossible to run an efficient in-house operation with comparable infrastructure at a reasonable cost. The mGuard Secure Cloud therefore provides companies with a reliable VPN infrastructure via the Internet as a service that is tailored to their needs.

Your advantages

- Turnkey VPN infrastructure for operators, machine builders, and systems manufacturers
- Secure and reliable, thanks to industry-proven mGuard security technology
- Multiple access to various customers and systems possible
- Compatible with all mGuard security appliances and certified VPN clients
- Support for mobile, iOS-based devices, such as Apple iPads and iPhones

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MGUARD SECURE CLOUD
Basic Edition

mGuard Secure Cloud constitutes a high-performance and scalable VPN infrastructure in the cloud, which connects service staff with machines and systems via the Internet. The Basic Edition, available free of charge, enables one concurrent service connection. However, unlimited users and machines can be created.

The full scope of services can be found at de.cloud.mguard.com

MGUARD SECURE CLOUD
Premium Edition

mGuard Secure Cloud constitutes a high-performance and scalable VPN infrastructure in the cloud, which connects service staff with machines and systems via the Internet. The Premium Edition enables multiple concurrent service connections. Unlimited users and machines can be created and the cloud can be adapted to include extensions.

The full scope of services can be found at de.cloud.mguard.com

MGUARD SECURE VPN CLIENT

The mGuard Secure VPN Client for Windows operating systems 10, 8.x, and 7 is used to connect PCs to a virtual private network (VPN). The client provides resources from remote networks securely and transparently. This connects the service engineer to the mGuard Secure Cloud.

The mGuard Secure VPN Client is available free of charge as a 30-day trial version. The license for a full version can be ordered under MGUARD SECURE VPN CLIENT LIC - 2702579.

TC CLOUD CLIENT – LAN

The TC CLOUD CLIENT TX/TX is positioned as a cost-effective field device for secure remote maintenance scenarios via the operator network.

The devices are optimized for use with the mGuard Secure Cloud. For this reason, all TC CLOUD CLIENT devices support Virtual Private Networks (VPNs) as standard.

A scope of functions optimized for the mGuard Secure Cloud enables quick startup of the devices in the field.

TC CLOUD CLIENT – Mobile network

The TC CLOUD CLIENT 4G product range offers cost-effective field devices for secure remote maintenance scenarios via the 4G LTE mobile network.

The devices are optimized for use with the mGuard Secure Cloud. For this reason, all TC CLOUD CLIENT devices support Virtual Private Networks (VPNs) as standard.

A scope of functions optimized for the mGuard Secure Cloud enables quick startup of the devices in the field.

MGUARD

The mGuard devices are suitable for distributed protection of production cells or individual machines against manipulation. For software-independent remote maintenance scenarios, you can use an mGuard as a VPN gateway for IPsec-encrypted VPN tunnels for the mGuard Secure Cloud. It serves as a remote maintenance infrastructure for the secure connection of machines and systems.

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Remote maintenance via the public telephone network

Phoenix Contact offers analog modems for temporary remote access to your remote machines and systems. They facilitate remote maintenance in the most far-flung corners of the world by the simplest means possible, namely, dial-up connection technology.

Industrial ADSL broadband routers – Support for ADSL/ADSL2/ADSL2+ according to Annex A, B, and J

The analog telephone infrastructure enables the use of an ADSL broadband router. It connects industrial Ethernet or RS-232 devices to the Internet via a permanent DSL line. Via a high-speed Internet connection, you can access individual machines, systems or entire Ethernet networks anywhere in the world.

The DSL broadband routers are designed for worldwide and flexible use, there is no need for the application/provider requirements to be clarified in advance. This enables individual and fast startup on site.

One universal device type

– All common ADSL standards are supported (ADSL/ADSL2/ADSL2+)
– Integrated Annex A/B/J switchover

Note: the specifications for the standard and frequency range used (Annex) depend on the provider and are included in the access data sent by the provider.
– Annex A: DSL operation parallel to analog telephony (in most of the world)
– Annex B: DSL operation parallel to ISDN (in Germany and neighboring countries)
– Annex J: IP-based connections (ALL-IP connections of Deutsche Telekom)

Individual function selection between modem or router function

– DSL modem: converter from DSL to LAN – the router/firewall function is performed by a separate router, e.g., FL MGUARD
– DSL router: DSL modem plus integrated router functions, e.g., firewall, VPN, NAT, etc.

PSI-DATA/BASIC-MODEM/RS232

Dial-up line modem for remote maintenance of systems with an RS-232 interface
– Configurable, selective call acceptance
– High-quality electrical isolation
– Connection establishment with password protection
– Integrated surge protection
– Callback function

Supply	
Supply voltage range	
Nominal current consumption	
Stand-by current consumption	
RS-232 interface	
Connection method	
Transmission speed	
Ethernet interface	
Connection method	
Transmission speed	
Supported protocols	
Auxiliary protocols	
DSL interface	
Connection method	
Transmission speed	
Functions	
Management	
Security functions	
Number of VPN tunnels	
Firewall rules	
PSTN port (a/b line)	
Connection method	
Digital input	
Number of inputs	
Signal range	
Digital output	
Number of outputs	
Signal range	
General data	
Dimensions	W / H / D
Ambient temperature (operation)	
Electrical isolation	
Test voltage	
EMC note	

Description
Industrial ADSL broadband router, according to Annex A, B and J
Industrial analog modem, alarm input and output, scope of delivery: Modem, CD with configuration software, manual and RJ12/RJ12 cable
System power supply, primary-switched
DIN rail connector
DATATRAB, protective adapter for insertion in the data cable
DATATRAB adapter, protective adapter for insertion in the data cable

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DSL router/modem with firewall

DSL router/modem with firewall, VPN, serial device server, inputs/outputs

Modem for dial-up operation with RS-232 connection

Ex:

Technical data

10 V DC ... 30 V DC (via COMBICON plug-in screw terminal block)	
< 150 mA (24 V DC) < 135 mA (stand by)	
-	
-	
8P8C RJ45 socket, shielded 10/100 Mbps, auto negotiation TCP/IP, UDP/IP, FTP, HTTP ARP, DHCP, PING (ICMP), SNMP V1, SMTP	
6P2C RJ11 socket, shielded COMBICON plug-in screw terminal block ≤ 25 Mbps (Annex A/B, downstream from Internet) ≤ 1 Mbps (Annex A/B, upstream to Internet) ≤ 25 Mbps (Annex J, downstream from Internet) ≤ 2.4 Mbps (Annex J, upstream to Internet)	
Web-based management	
-	
Stateful inspection firewall	
-	
-	
-	
-	
45 mm / 99 mm / 112 mm -20°C ... 60°C VCC//ADSL//Ethernet//FE 1.5 kV_{rms} (50 Hz, 1 min.) Class A product, see page 527	

Technical data

10 V DC ... 30 V DC (via COMBICON plug-in screw terminal block)	
< 150 mA (24 V DC) < 135 mA (stand by)	
D-SUB 9 plug 0.3; 1.2; 2.4; 4.8; 9.6; 19.2; 38.4; 57.6; 115.2 kbps	
8P8C RJ45 socket, shielded 10/100 Mbps, auto negotiation TCP/IP, UDP/IP, FTP, HTTP ARP, DHCP, PING (ICMP), SNMP V1, SMTP	
6P2C RJ11 socket, shielded COMBICON plug-in screw terminal block ≤ 25 Mbps (Annex A/B, downstream from Internet) ≤ 1 Mbps (Annex A/B, upstream to Internet) ≤ 25 Mbps (Annex J, downstream from Internet) ≤ 2.4 Mbps (Annex J, upstream to Internet)	
Web-based management	
3 Stateful inspection firewall	
-	
6 10 V DC ... 30 V DC / 5 mA	
4 10 V DC ... 30 V DC (depending on the operating voltage) ≤ 50 mA (short-circuit-proof)	
45 mm / 99 mm / 112 mm -20°C ... 60°C VCC + IO + RS-232//ADSL//Ethernet//FE 1.5 kV_{rms} (50 Hz, 1 min.) Class A product, see page 527	

Technical data

10 V DC ... 30 V DC (via COMBICON plug-in screw terminal block)	
< 100 mA (24 V DC) < 40 mA	
D-SUB 9 plug 0.3; 1.2; 2.4; 4.8; 9.6; 19.2; 38.4; 57.6; 115.2 kbps	
-	
- -	
-	
-	
-	
-	
22.5 mm / 99 mm / 114.5 mm 0°C ... 55°C VCC // PSTN // RS-232 1.5 kV_{rms} (50 Hz, 1 min.) Class A product, see page 527	

Ordering data

Type	Order No.	Pcs./Pkt.
TC DSL ROUTER X400 A/B	2902709	1

Accessories

MINI-SYS-PS-100-240AC/24DC/1.5	2866983	1
DT-TELE-RJ45	2882925	1
DT-LAN-CAT.6+	2881007	1

Ordering data

Type	Order No.	Pcs./Pkt.
TC DSL ROUTER X500 A/B	2902710	1

Accessories

MINI-SYS-PS-100-240AC/24DC/1.5	2866983	1
DT-TELE-RJ45	2882925	1
DT-LAN-CAT.6+	2881007	1

Ordering data

Type	Order No.	Pcs./Pkt.
PSI-DATA/BASIC-MODEM/RS232	2313067	1

Accessories

MINI-SYS-PS-100-240AC/24DC/1.5	2866983	1
ME 22,5 TBUS 1,5/ 5-ST-3,81 GN	2707437	50

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The **TC ROUTER** for mobile communication implements high-performance, high-speed data links of up to 150 Mbps via mobile 4G LTE networks. This enables you to establish a mobile broadband connection for highly flexible site networking even in places where a wired Internet connection is not available. These connections can be used to transmit sensitive data securely over mobile networks.

Furthermore, the **TC ROUTER** offers a high level of security thanks to IPsec or OpenVPN tunnels, as well as an integrated stateful packet inspection firewall. This means that you can reliably protect your application against unauthorized access.

The **TC ROUTER** transmits data quickly and securely between the control room and networks in the field and is ideal for the following areas:
– Public utilities
– Energy and water suppliers
– Operators that network and remotely maintain oil and gas fields

A low-priced 3G version is available for mid-level bandwidth requirements.

Features:
– Virtual permanent line to connect networks via the mobile network
– Stateful inspection firewall for dynamic filtering
– IPsec and OpenVPN
– Up to three VPN tunnels simultaneously
– Authentication with X.509 certificates and via pre-shared key (PSK)
– VPN remote start via call or SMS
– 1:1 NAT in the VPN
– Two switching inputs and one switching output
– Alerts sent via SMS or e-mail directly via the integrated switching input
– Configuration via web-based management or microSD card
– Two local Ethernet connections
– Integrated logbook
– Extended temperature range (-40°C ... +70°C)
– MIMO antennas
– Downward compatible within the mobile communications standard

Inputs and outputs

Two configurable switching inputs for the following functions:
– Sending an SMS, including to multiple recipients
– Sending an e-mail, including to multiple recipients
– Controlling an output at a remote station via SMS
– Restarting the router
– Starting or stopping a mobile data connection
– Switching the IPsec or OpenVPN connection
– Automatically loading a configuration from a microSD card
– Activating energy-saving mode

One configurable switching output, activated by:
– Activation by the input at a remote station
– SMS
– Web-based management
– Incoming call
– Connection abort
– Status of the mobile network connection
– Status of the mobile data connection
– Status of a VPN connection

Additional functions:

Slot for microSD card

You can use a microSD card to load the configuration to the device or permanently store log files.

Energy-saving mode

In energy-saving mode, the power consumption of the mobile router is reduced for battery-powered applications. You can configure the mode via the web interface and activate it via a switching input. When energy-saving mode is activated, the communication interfaces switch to standby mode. Data transmission is limited.

XML interface

The XML interface enables operation and diagnostics of devices from the local LAN. You can therefore query the status of the mobile network connection via Ethernet, for example, or send SMS messages and e-mails.

Supply	
Supply voltage range	
Nominal current consumption	
Stand-by current consumption	
Ethernet interface	
Number of ports	
Connection method	
Transmission speed	
Transmission distance	
Supported protocols	
Auxiliary protocols	
Functions	
Management	
Security functions	
Number of VPN tunnels	
Firewall rules	
Mobile communication	
Frequencies	
Digital input	
Number of inputs	
Signal range	
Digital output	
Number of outputs	
Signal range	
General data	
Dimensions	W / H / D
Degree of protection	
Ambient temperature (operation)	
Electrical isolation	
EMC note	

Description
Industrial LTE 4G router
- European version
- US version, Verizon
- US version, AT&T
Industrial 3G router
- European version

Multiband mobile communication antenna, with mounting bracket for outdoor installation, 5 m antenna cable with SMA circular connector, dimensions: 82 mm x 48 mm
Power supply, primary-switched

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Ethernet

With firewall, NAT, and VPN, fallback to 3G (HMTS/HSPA), and 2G (GPRS/EDGE), European version

Ethernet

With firewall and NAT, fallback to 3G (HMTS/HSPA), and 2G (GPRS/EDGE), European version

Ethernet

With firewall, NAT, and VPN, US version

Ex:

Technical data

TC ROUTER 3002T-4G	TC ROUTER 3002T-3G
10 V DC ... 30 V DC (via COMBICON plug-in screw terminal block)	
< 200 mA (24 V DC) 65 mA (with activated energy-saving mode)	
2 RJ45 socket, shielded 10/100 Mbps, auto negotiation 100 m (shielded twisted pair) TCP/IP, UDP/IP, FTP, HTTP(S) ARP, DHCP, PING (ICMP), SNMP V1/V2, SMTP(S), NTP, SSL/TLS, STARTTLS	
Web-based management, SNMP	
3 Stateful inspection firewall	
850 MHz (2 W (EGSM)) 900 MHz (2 W (EGSM)) 1800 MHz (1 W (EGSM)) 1900 MHz (1 W (EGSM)) 850 MHz (UMTS/HSPA B5) 900 MHz (UMTS/HSPA B8) 1900 MHz (UMTS/HSPA B2) 2100 MHz (UMTS/HSPA B1) 800 MHz (LTE B20) 850 MHz (LTE B5) 900 MHz (LTE B8) 1700 MHz (LTE B4) 1800 MHz (LTE B3) 1900 MHz (LTE B2) 2100 MHz (LTE B1) 2600 MHz (LTE B7)	850 MHz (2 W (EGSM)) 900 MHz (2 W (EGSM)) 1800 MHz (1 W (EGSM)) 1900 MHz (1W (EGSM)) 900 MHz (UMTS/HSPA B8) 2100 MHz (UMTS/HSPA B1)
2 10 V DC ... 30 V DC	
1 10 V DC ... 30 V DC (depending on the operating voltage) ≤ 50 mA (not short-circuit proof)	
45 mm / 130 mm / 126 mm IP20	
-40°C ... 70°C (maximum transmission power 5 dBm) VCC // LTE // Ethernet // PE	-40°C ... 70°C (maximum transmission power 10 dBm) VCC // UMTS // Ethernet // PE
Class A product, see page 527	

Ordering data

Type	Order No.	Pcs./Pkt.
TC ROUTER 3002T-4G	2702528	1
TC ROUTER 3002T-3G	2702529	1

Accessories

TC ANT MOBILE WALL 5M	2702273	1
TRIO-PS-2G/1AC/24DC/3/C2LPS	2903147	1

Technical data

TC ROUTER 2002T-4G	TC ROUTER 2002T-3G
10 V DC ... 30 V DC (via COMBICON plug-in screw terminal block)	
< 200 mA (24 V DC) 65 mA (with activated energy-saving mode)	
2 RJ45 socket, shielded 10/100 Mbps, auto negotiation 100 m (shielded twisted pair) TCP/IP, UDP/IP, FTP, HTTP(S) ARP, DHCP, PING (ICMP), SNMP V1/V2, SMTP(S), NTP, SSL/TLS, STARTTLS	
Web-based management, SNMP	
- Stateful inspection firewall	
850 MHz (2 W (EGSM)) 900 MHz (2 W (EGSM)) 1800 MHz (1 W (EGSM)) 1900 MHz (1 W (EGSM)) 850 MHz (UMTS/HSPA B5) 900 MHz (UMTS/HSPA B8) 1900 MHz (UMTS/HSPA B2) 2100 MHz (UMTS/HSPA B1) 800 MHz (LTE B20) 850 MHz (LTE B5) 900 MHz (LTE B8) 1700 MHz (LTE B4) 1800 MHz (LTE B3) 1900 MHz (LTE B2) 2100 MHz (LTE B1) 2600 MHz (LTE B7)	850 MHz (2 W (EGSM)) 900 MHz (2 W (EGSM)) 1800 MHz (1 W (EGSM)) 1900 MHz (1W (EGSM)) 900 MHz (UMTS/HSPA B8) 2100 MHz (UMTS/HSPA B1)
2 10 V DC ... 30 V DC	
1 10 V DC ... 30 V DC (depending on the operating voltage) ≤ 50 mA (not short-circuit proof)	
45 mm / 130 mm / 126 mm IP20	
-40°C ... 70°C (maximum transmission power 5 dBm) VCC // LTE // Ethernet // PE	-40°C ... 70°C (maximum transmission power 10 dBm) VCC // UMTS // Ethernet // PE
Class A product, see page 527	

Ordering data

Type	Order No.	Pcs./Pkt.
TC ROUTER 2002T-4G	2702530	1
TC ROUTER 2002T-3G	2702531	1

Accessories

TC ANT MOBILE WALL 5M	2702273	1
TRIO-PS-2G/1AC/24DC/3/C2LPS	2903147	1

Technical data

TC ROUTER 3002T-4G VZW	TC ROUTER 3002T-4G ATT
10 V DC ... 30 V DC (SELV, via COMBICON plug-in screw terminal block)	
< 200 mA (24 V DC) 65 mA (with activated energy-saving mode)	
2 (SELV) RJ45 socket, shielded 10/100 Mbps, auto negotiation 100 m (shielded twisted pair) TCP/IP, UDP/IP, FTP, HTTP(S) ARP, DHCP, PING (ICMP), SNMP V1/V2, SMTP(S), NTP, SSL/TLS, STARTTLS	
Web-based management, SNMP	
3 Stateful inspection firewall	
700 MHz (LTE B13) 1700 MHz (LTE B4)	850 MHz (UMTS/HSPA B5) 1900 MHz (UMTS/HSPA B2) 700 MHz (LTE B13 / B17) 850 MHz (LTE B5) 1700 MHz (LTE B4) 1900 MHz (LTE B2)
2 10 V DC ... 30 V DC	
1 10 V DC ... 30 V DC (depending on the operating voltage) ≤ 50 mA (not short-circuit proof)	
45 mm / 130 mm / 126 mm IP20	
-40°C ... 70°C (maximum transmission power 5 dBm) VCC // LTE // Ethernet // PE	
Class A product, see page 527	

Ordering data

Type	Order No.	Pcs./Pkt.
TC ROUTER 3002T-4G VZW	2702532	1
TC ROUTER 3002T-4G ATT	2702533	1

Accessories

TC ANT MOBILE WALL 5M	2702273	1
TRIO-PS-2G/1AC/24DC/3/C2LPS	2903147	1

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Serial quad band modem for GPRS and GSM

Send RS-232 data all around the world via the mobile network

Mobile network:
– GSM mobile networks: 850, 900, 1800, and 1900 MHz
– For worldwide use

GPRS TCP/IP connection:
– Connection established via IP addresses
– Client/server functionality
– IPT compatible
– Integrated TCP/IP stack for TCP and UDP connections
– Data rates of up to 53.6 kbps
– Security:
- Firewall

GSM dial-up connection:
– Connection established via data phone number (CSD)
– Security:
- Connection established with password protection
- Selective call acceptance
- Callback function

RS-232 interface:
– Freely parameterizable (baud rate, data bits, parity, stop bit, flow control)

Digital I/Os:
– Two digital switching inputs: Sending of freely configurable text messages (SMS, FAX, e-mail)
– One switching output on the backplane

Additional features:
– Encryption of SIM card PINs
– Can be used regardless of controller manufacturer
– High electromagnetic compatibility
– Galvanically isolated
– Convenient configuration software
– Configuration via SMS

With RS-232 interface, integrated TCP/IP stack, and 2 alarm inputs

Ex:

Technical data

Supply		
Supply voltage range		10 V DC ... 30 V DC (via COMBICON plug-in screw terminal block)
Supply voltage		24 V DC ±5% (as an alternative or redundant, via backplane bus contact and system power supply)
Nominal current consumption		< 350 mA (24 V DC)
Stand-by current consumption		< 80 mA (stand by)
RS-232 interface		
Connection method		D-SUB 9 plug
Data format/encoding		Serial asynchronous UART/NRZ, 7/8 data, 1/2 stop, 1 parity, 10/11-bit character length
Data flow control/protocols		Software handshake, Xon/Xoff or hardware handshake RTS/CTS
Transmission speed		1.2/2.4/9.6/19.2/38.4/57.6/115.2 kbps (can be set manually and automatically)
Mobile communication		
Frequencies		850 MHz (2 W (EGSM)) 900 MHz (2 W (EGSM)) 1800 MHz (1 W (EGSM)) 1900 MHz (1 W (EGSM))
SIM interface		1.8 volt, 3 volt
GPRS compatibility		Class 10, Class B
Network function		4 time slots for receiving data, 2 time slots for transmitting data. The PIN is saved in the modem. After a voltage interruption, there is automatic redialing into the network Integrated TCP/IP Stack, independent connection establishment.
Network check		LED to show data signal quality
Antenna connection		50 Ω impedance SMA antenna socket
Digital input		
Number of inputs		2
Signal range		9 V DC ... 60 V DC / 5 mA
Digital output		
Number of outputs		1
Signal range		10 V DC ... 30 V DC ≤ 80 mA (24 V)
General data		
Dimensions	W / H / D	22.5 mm / 99 mm / 118.6 mm
Ambient temperature (operation)		-25°C ... 60°C
Electrical isolation		VCC // RS-232 // GSM
Test voltage		1.5 kV (50 Hz, 1 min.)
Approvals for countries		EU, USA, Canada, other countries in preparation
EMC note		Class A product, see page 527

Ordering data

Description	Type	Order No.	Pcs./Pkt.
Industrial GPRS/GSM modem with RS-232 interface, scope of supply: Modem, CD with configuration software and user manual	**PSI-GPRS/GSM-MODEM/RS232-QB**	2313106	1

Accessories

Multiband mobile communication antenna, with omnidirectional characteristics, antenna cable with SMA male connector - 10 m antenna cable	**TC ANT MOBILE CABINET 10M**	1046361	1
System power supply, primary-switched	**MINI-SYS-PS-100-240AC/24DC/1.5**	2866983	1
DIN rail connector	**ME 22,5 TBUS 1,5/ 5-ST-3,81 GN**	2707437	50

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Tested mobile communication antennas

Outdoor antenna
Wall or mast mounting

Control cabinet antenna

	Technical data		Technical data	
General data			TC ANT MOBILE CABINET 10M	PSI-GSM/UMTS-QB-ANT
Ambient temperature (operation)	-40°C ... 80°C		-40°C ... 85°C	-40°C ... 85°C
Gain	3 dBi (700 / 800 MHz) 4 dBi (900/1800 MHz) 5 dBi (1900 ... 2600 MHz)		typ. 2.2 dBi - -	5 dBi (800/900 MHz) 3 dBi (1800/1900 MHz) 1 dBi (2100 MHz)
Dimensions W / H	48 mm / 82 mm		77.4 mm / 15.9 mm	76 mm / 21 mm

	Ordering data			Ordering data		
Description	Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.
Multiband mobile communication antenna, with mounting bracket for outdoor installation, antenna cable with SMA connector - 5 m antenna cable	**TC ANT MOBILE WALL 5M**	2702273	1			
Multiband mobile communication antenna, with omnidirectional characteristics, antenna cable with SMA male connector - 10 m antenna cable - 2 m antenna cable				**TC ANT MOBILE CABINET 10M** **PSI-GSM/UMTS-QB-ANT**	1046361 2313371	1 1

Surge protection

Mobile communication surge protection

– For GSM networks with 850 MHz, 900 MHz, 1800 MHz, and 1900 MHz as well as UMTS networks

SHDSL surge protection

– For broadband communication devices

For GSM systems (0.8 GHz - 2.25 GHz), grounded shield, connection: SMA

Attachment plug for two VDSL interfaces (ports)

	Ordering data			Ordering data		
Description	Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.
Surge protection for UMTS and quad-band GSM antenna, with SMA plug and SMA coupling	**CSMA-LAMBDA/4-2.0-BS-SET**	2800491	1			
DATATRAB, protective adapter for insertion in the data cable				**DT-TELE-RJ45**	2882925	1

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Protocol converter

The **RESYGATE 3000** protocol converter enables the process connection of remote control stations with different protocols to an IEC 60870-5-101 or IEC 60870-5-104-based control system.

The IEC 60870-5-104, IEC 60870-5-101, Modbus/RTU, and Modbus/TCP protocols are supported for the connection of remote control stations.

The individual protocols are parameterized and set via user-friendly interfaces in the configuration tool.

Features:

– Connection of existing IEC 60870-5-101 and/or Modbus remote control stations when upgrading the control system to the IEC 60870-5-104 protocol
– High availability of the overall system, thanks to redundant connection
– Conversion of the IEC 60870-5-104, IEC 60870-5-101, Modbus/RTU, and Modbus/TCP protocols to the IEC 60870-5-104 or IEC 60870-5-101 protocol
– Up to 18 serial end devices can be used depending on the protocols used

Technical data

Computer data		
Processor		Intel® Celeron® N2930 1.83 GHz/2.16 GHz
RAM (configuration option)		2 GB DDR3 SODIMM
Mass storage (configuration option)		CFast®, 4 GB
Interfaces		1x COM (RS-232/422/485) 2x COM (RS-232) 3x USB 2.0 1x USB 3.0
Slots		without slots
Monitor output		2x DisplayPort
Network		2x Ethernet (10/100/1000 Mbps), RJ45
Power supply unit		24 V DC ±20%
Supported remote control protocols		IEC 60870–5–101 Balanced Mode IEC 60870–5–101 Unbalanced Mode IEC 60870–5–104 Client IEC 60870–5–104 Server, max. 4 Client Modbus RTU Master Modbus TCP Master
General data		
Dimensions	W / H / D	162 mm / 146.2 mm / 49 mm
Degree of protection		IP20
Ambient temperature (operation)		-20°C ... 50°C
Permissible humidity (operation)		5% ... 95% (non-condensing)
Mounting type		DIN rail mounting
Vibration (operation)		DIN EN 60068-2-6
Shock		15g, 11 ms in accordance with IEC 60068-2-27
EMC note		Class A product, see page 527

Ordering data

Description	Type	Order No.	Pcs./Pkt.
Protocol converter - for a maximum of 4000 data points	**RESYGATE 3000**	2400129	1

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