



FL mGuard

Get connected – Get protected

FL mGuard product family

Security and connectivity solutions for any industrial and machinery application

Companies are only successful when their production systems operate securely, without errors. Failure, sabotage or data loss can cause large-scale economic damage.

To avoid these problems, Phoenix Contact offers the FL mGuard: efficient and easy-to-integrate protection for networked industrial systems. The FL mGuard is a reliable solution for secure remote support or maintenance of industrial machinery and equipment.

Our FL mGuard family provides rugged and industrially rated security devices including firewall, routing and optional VPN functionality to industrial networks. These high-level “Layer 3” functions are essential for protecting your industrial network from both malicious attacks and accidental interruption. They are also ideal for connecting to office or enterprise networks.





VPN (Virtual Private Network)

Secure and easy remote maintenance enables you to save on travel costs and shorten downtime, as well as improve service quality and customer loyalty. FL mGuard devices are VPN-compatible: All data is encrypted according to the secure IPsec standard. Access to the remote maintenance VPN tunnel is monitored and controlled by firewall. In addition, machines and systems can be conveniently and easily networked using the extensive routing functions.

Cellular

When sites are located in areas where a physical connection is difficult to obtain, the mGuard can provide connectivity via cellular networks around the world.

The mGuard supports cellular carriers utilizing GSM and CDMA technology. GSM is the more globally accepted standard, supported by carriers such as AT&T and T-Mobile in the U.S., while CDMA is mainly used in the U.S. by Verizon. By utilizing these carrier networks, you can access your remote sites easily and securely.

Powerful firewall

FL mGuard devices are integrated into the network as a stand-alone system where they protect a part of the system network, a complete production cell or an individual automation component – with no adverse effect on the system being protected. All incoming and outgoing data packets are monitored using pre-defined rules. These mGuard devices have a built-in stateful firewall for local device protection and Deep Packet Inspection (DPI) firewalls for some popular industrial protocols.

Comserver

In the industrial space, un-networked legacy systems are still very common. The built-in comserver functionality allows access to serial devices using the RS232 interface, even over the mGuard Secure Cloud.

Router

FL mGuard can be used in router mode to isolate an office network from a control network, regulating the traffic that is passing through.

NAT (Network Address Translation) router

When identical machines are in a network in parallel, each machine must be configured individually so that it can be integrated in the higher-level communication system.

Our FL mGuard products support the 1:1 NAT function, which means that production cells occupying an identical IP address can be used in a higher-level network. The individual configuration of standard machines is not required, saving time and making support easier.

FL mGuard product family

FL mGuard RS



RS2000 TX/TX VPN	2700642
RS4000 TX/TX	2700634
RS4000 TX/TX VPN	2200515

The FL mGuard RS4000 is a security appliance with intelligent firewall and optional IPsec VPN (from 10 up to 250 tunnels). It has been designed for industrial use to accommodate strict distributed security and high availability requirements. It is approved for Class I, Division 2 hazardous locations.

The FL mGuard RS2000 is a security router with basic firewall and integrated IPsec VPN (maximum of two tunnels). Its scope of functions is reduced to the essentials and is suitable for secure remote maintenance applications in industry.

Both versions have high temperature specs (-20°C to +60°C), a replaceable configuration memory (SD card) and configurable hardware switch/button contact for the VPN, all within a fanless metal housing mounted on a DIN rail.

FL mGuard RS + Switch



RS2005 TX VPN	2701875
RS4004 TX/DTX	2701876
RS4004 TX/DTX VPN	2701877

The FL mGuard RS4004 and RS2005 appliances combine the powerful new mGuard hardware platform with our reliable mGuard 8.x firmware. Adding the integration of a five-port unmanaged switch (the RS2005) or a four-port managed switch (the RS4004), respectively, the new mGuard provides cost savings by integrating the switch hardware and simplifies connecting to a number of end devices, as well as expanding the use cases with a DMZ port.

The RS2005 integrates a five-port unmanaged Ethernet switch, with automatic detection of data transmission speed of 10 or 100 Mbps (RJ45) and auto-crossing function. This is the equivalent of adding an FL SFNB 5TX unmanaged switch right into the mGuard.

The RS4004 integrates a four-port managed switch, enabling a flexible and cost-effective option for multipoint security applications in Ethernet networks. Its four-port switch also includes management capability with features such as port mirroring, VLAN segregation, and IGMP snoop and query. *(Note: The mGuard RS4004 does not support STP, RSTP, or fast ring layer-two redundancy.)*

TC mGuard RS + Cellular



RS2000 3G VPN	2903441
RS4000 3G VPN	2903440

The TC mGuard family provides all the benefits and features of the FL mGuard family, while adding the ability to connect to cellular networks. It is ideal for tough environments, including Class I Division 2 for hazardous locations, as well as a wide temperature range (-40°C to +60°C). Both versions support connectivity to serial devices, a four-port switch, and GPS capabilities.

SMS support is one of this product's strongest features, allowing you to monitor certain digital alarms and obtain text messages based on input changes. It provides SMS functionality based on other alarms, such as loss of network connection via wired interface (only TC 4000), VPN status, and other alarm notifications.

The TC mGuard RS4000 focuses on the highest level of availability for the system. It allows for a physical wired connection with failsafe over to cellular networks in case of loss of connectivity.

FL mGuard GT/GT



GT/GT	2700197
GT/GT VPN	2700198

The FL mGuard GT/GT is a router with a stateful inspection firewall and 10 VPN tunnels, with an upgrade option up to 250 tunnels. It comes with 10/100/1000 transmission speeds, RJ45 and SFP ports that are used to connect to both single and multi-mode fiber. It offers maximum security and extremely easy configuration, using replaceable configuration memory.

It is Gigabit-capable and uses copper or SFP fiber modules for better performance and speed. If a specific port is being used, the second one will be disabled.

The GT/GT firmware and functionality are the same as RS and PCI and include marine standard approvals (GL, DNV, LR and ABS).



FL mGuard PCI



The mGuard PCI is currently the only PCI-compliant security device that unites all required security functions (router, firewall and VPN) in a single component. It can be integrated quickly and easily, without modifications to the system settings or driver installation, regardless of the processor technology and operating system used.

Phoenix Contact's Valueline is a family of configurable, rugged and fanless industrial PCs with optional PCI slots. Implementing the mGuard PCI4000 variant with the Valueline creates a synergistic solution that reduces power needs and saves space on the DIN rail, while providing cost-effective security and connectivity at the same time.

PCI4000	2701274
PCI4000 VPN	2701275
PCIE4000 VPN	2701278

In power-over-PCI mode, an existing network card in the computer or another computer/network can be connected. Temperature specs range from 0°C to +70°C.

FL mGuard Smart2



The FL mGuard Smart2 is the smallest device version. It can be easily inserted between the computer or a local network and an available Internet connection without making configuration changes or performing driver installations on the existing system. It is designed for instant use in the office or when traveling. Temperature specs range from 0°C to 40°C.

With its sturdy housing and uncomplicated power supply via any USB port, the mGuard Smart2 is perfectly suited for the portable protection of company-critical resources. Changes to the location and the infrastructure can be performed quickly and at low cost.

Smart2	2700640
Smart2 VPN	2700639

FL mGuard Delta



The FL mGuard Delta combines exceptional security and performance in a stable and compact desktop metal housing. Mission-critical computers, machines and entire networks are reliably protected and safe from attack.

The Delta is perfectly positioned:

- As an intelligent firewall between office and product networks
- As a VPN receiver in an OEM office
- As a security router for small and medium-sized workgroup

Delta TX/TX	2700967
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The mGuard Delta is well suited for protecting workplaces and environments close to production, with low requirements for industrial hardening. The device can be upgraded to add 10 VPN tunnels, up to 250 through a license. Temperature specs range from 0°C to +40°C, powered by 120 V AC.

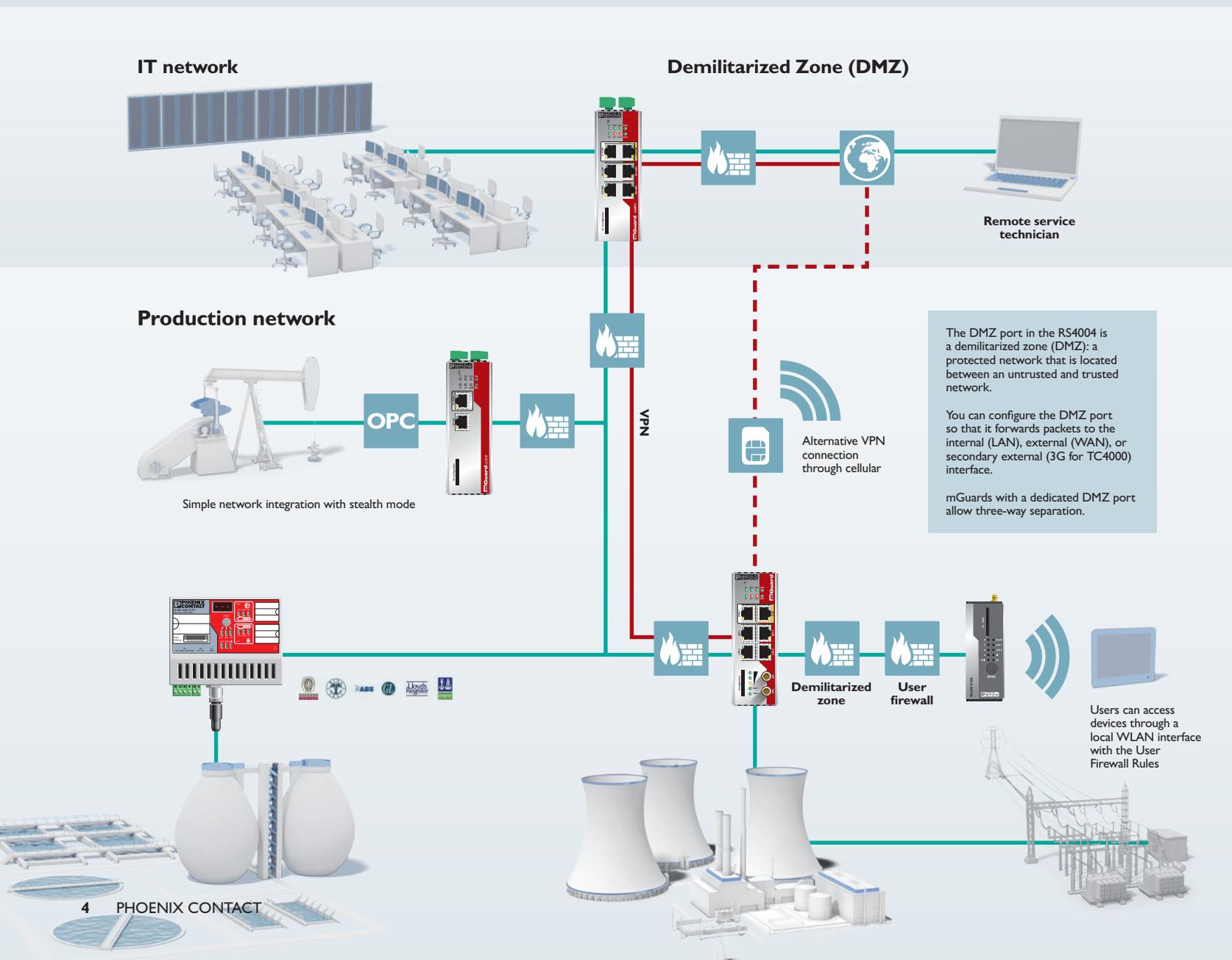
FL mGuard application scenarios

Protect your industrial networks

The mGuard can be used to protect individual components or an entire production cell. In stealth mode, the mGuard can be installed in the network with no changes necessary to the end devices. It can also be used as a router to protect and segment the industrial network away from the office network.

With the RS4000, additional granularity in firewall rules, as well as user-firewall function, allows you to control access to your network, regardless of the IP address from which the traffic is coming.

The mGuard OPC Inspector Deep Packet Inspection (DPI) firewall keeps track of all OPC Classic connections and ports being used. It dynamically creates firewall rules matching the ports and directions used. Also, it identifies and blocks all non-OPC-related traffic.



Connect your industrial networks

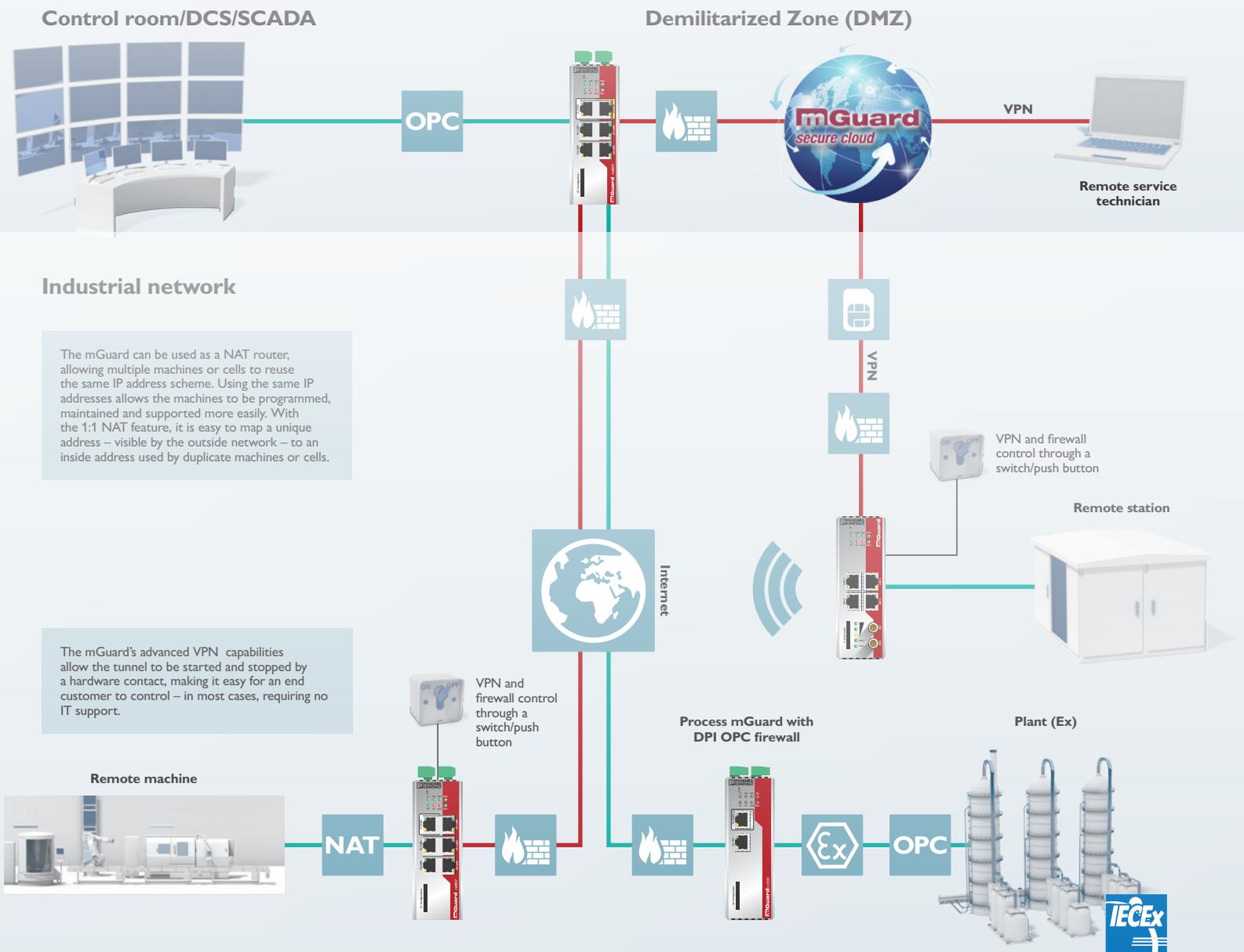
The mGuard can be used to establish Virtual Private Network (VPN) tunnels between different locations over the Internet, securing all data according to the secure IPsec standard.

The VPN allows OEM technicians, for example, to talk to their machines from the end customer's location: uploading program changes, pulling data, and performing troubleshooting and diagnostics. This allows for better support, reduces travel costs and downtime, as well as improves service quality and customer satisfaction.

The mGuard can be used either as a point-to-point solution or in our free mGuard Secure Cloud infrastructure for easy support to end customers.

To learn more, visit: www.phoenixcontact.com/msc

To register, visit: us.cloud.mguard.com



mGuard Secure Cloud

Your passport to support

Phoenix Contact's mGuard Secure Cloud offers operators and machine builders a highly secure, web-based method for instant remote services to any machine and remote location.

The mGuard Secure Cloud is a professionally hosted, turnkey remote services ecosystem for both the machine builder and the production plant operator.

Using a standard web browser, service personnel can log in to the mGuard Secure Cloud website and, after successfully authenticating, access all relevant client information: locations, operators, machines, users, as well as their access rights. A quick overview of all machines currently online is also made available with the click of a button; remote access to a site is established, allowing you to provide support, modify programs, etc.

Features and benefits

- Free industrial VPN service for OEM and machine builders in the Americas
- The only requirements is to have an mGuard device at the remote machine and approved software or hardware at the technician side
- Access total control of remote locations and customer machines in just a few clicks
- Immediate configurations upon request
- IPsec VPN (Virtual Private Network) is an accepted and highly secure IT standard
- Save on the cost of travel while providing superior 24/7 support and service
- Identify and solve complex problems remotely, provide program updates, ease commissioning of new equipment
- Easy configuration via provided SD card
- Maintain regular contact with machinery in the field

Software supported:

- **mGuard Secure VPN Client:** The new mGSVC is a Phoenix Contact IPsec client compatible with all mGuard firmware and developed for use with the mSC. The mGSVC supports advanced network capabilities, such as proxy settings and TCP encapsulation.
- **Shrewsoft VPN Client:** Shrewsoft software is a free, open-source software that can interoperate with the mSC. It supports basic network capabilities.



End user



Is it simple?

Implementing and operating an industry-standard remote services solution can be a complex task.

The cloud-based mGuard Secure Cloud remedies this situation, with a turnkey system for industrial remote services for utility operators, machine builders and plant technicians.

Setup takes place in a few easy steps with hardware configuration provided.

Easy-to-use mGuard Secure Cloud allows fast and highly secure access to all machines in the connection.

Is it secure?

The mGuard Secure Cloud forms a powerful infrastructure in the cloud, securely interconnecting service staff with machines and plants via the Internet.

The mGuard VPN technology uses the IPsec security protocol with AES-256 encryption.

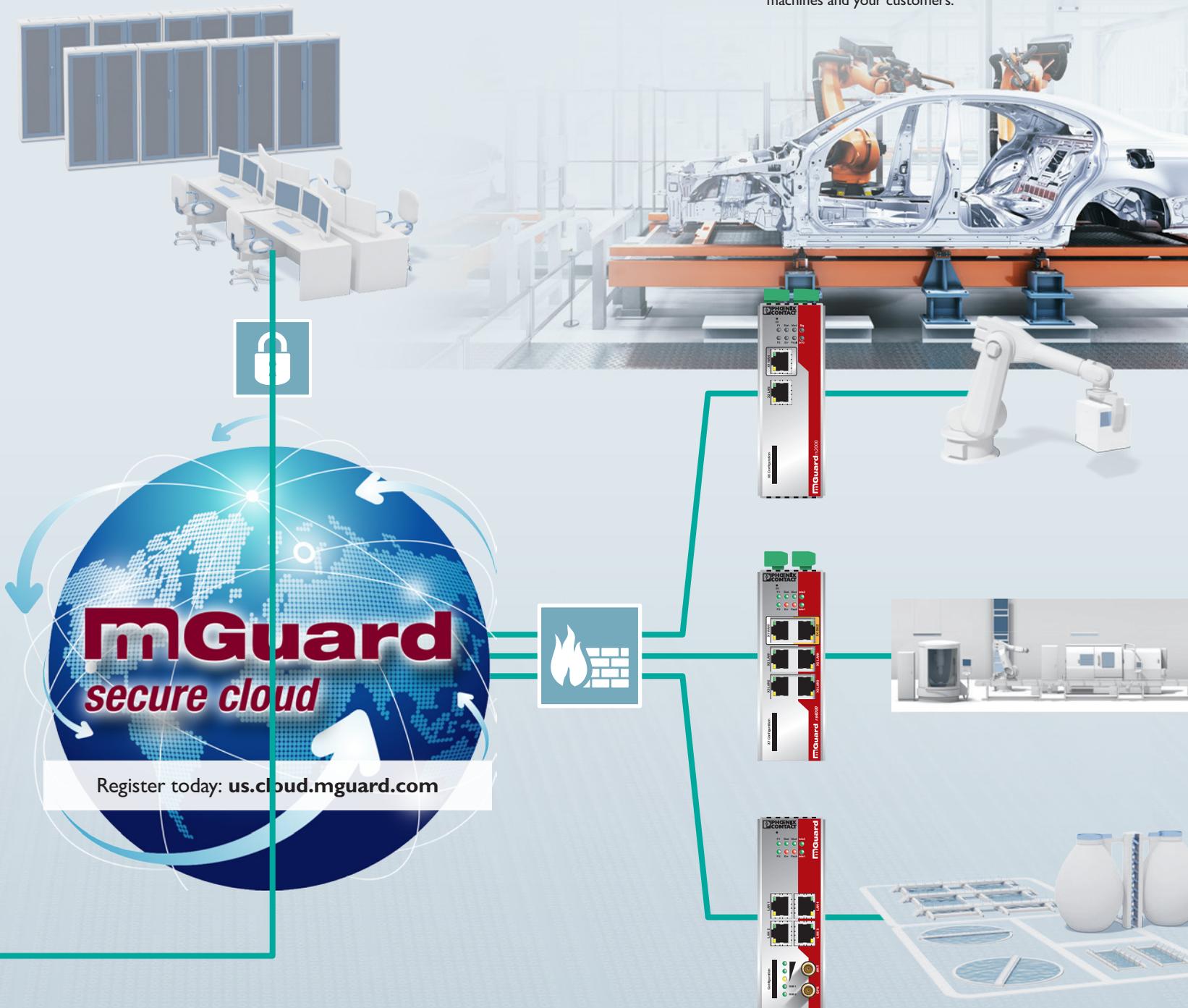
The mGuard guarantees the confidentiality, authenticity and integrity of all information and data transmitted between the service staff and the machines.

Is it reliable?

To ensure success in today's competitive global environment, companies are subject to ever stronger innovation and cost pressures.

For smaller, medium-sized or highly specialized companies with smaller machine volumes, it is almost impossible to run an efficient in-house remote service solution at a reasonable cost and with high reliability, but their success requires it.

The mGuard Secure Cloud servers are housed in a state-of-the-art data center with 24/7/365 monitoring. This ensures maximum reliability to support your machines and your customers.



FL mGuard in vertical industries

Anyone searching for industrial protection and remote support can utilize the FL mGuard from Phoenix Contact. Whether the industry has compliance requirements or simply needs to be secure, the mGuard's capabilities and features will allow you and your industry to achieve those standardized goals.

The mGuard serves OEMs, especially industrial machine builders and general manufacturers, with a large variety of end-users.

It's also ideal for critical infrastructure sectors like:

- **Water/wastewater** – providing security for remote pump and lift stations, allowing integrators secure monitored access to supported equipment
- **Power generation/transmission** – providing drop-in protection for legacy equipment with wide temperature ratings for rugged environments, as well as logging/auditing capabilities to monitor the network, which are essential to NERC-CIP compliances
- **Oil and gas** – with UL CID2 approval, the mGuard provides network security for the pipeline and custody transfer points

Any FL mGuard version can be implemented in all critical infrastructure markets. Attached are some success stories.

For more information, please visit:

www.phoenixcontact.com/mguard





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