



**We make Ethernet easy  
and reliable!**

Security solutions for  
industrial automation

# Safe, safer, safest – Security solutions for Ethernet- based production networks

When Ethernet-based production systems are directly connected to a company network, they must be protected against unauthorized access and destructive programs. Security solutions that work in the office environment usually require the skills of an IT expert and do not meet the high automation requirements for data transfer and mechanical ruggedness posed by the industrial environment. Phoenix Contact has developed a three-stage security concept to meet the demands of industrial automation:

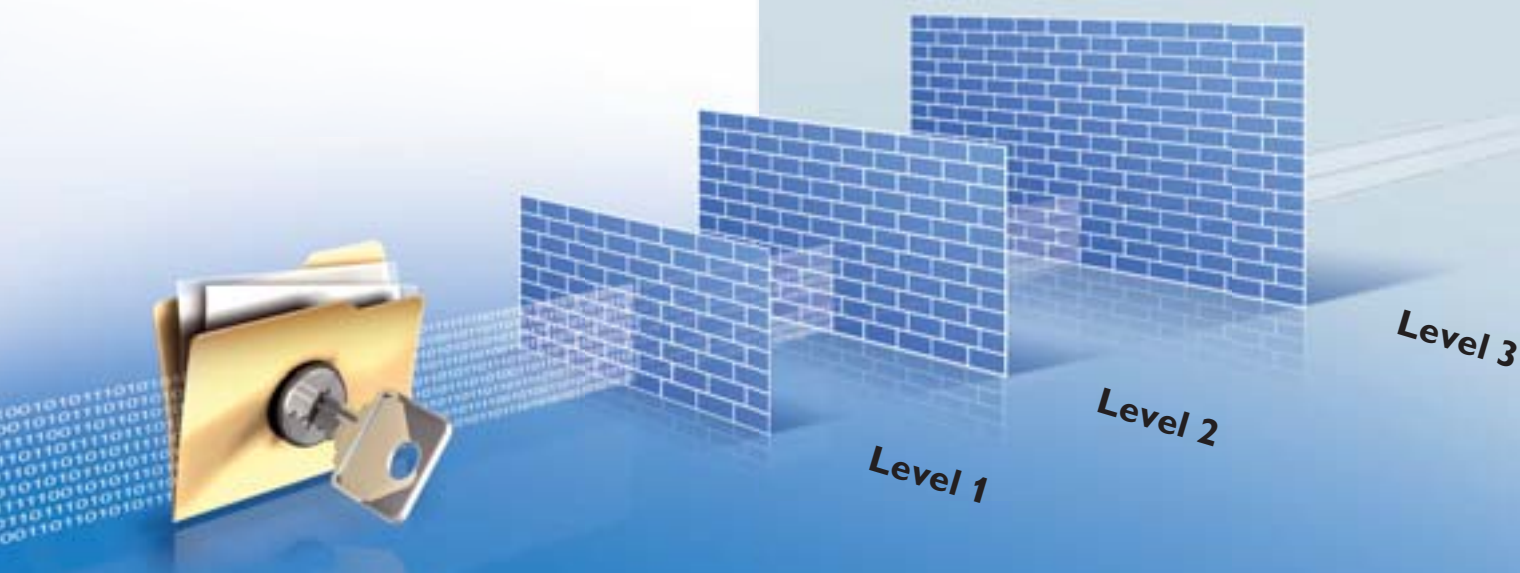
- Simple access locking devices for mechanical protection
- Managed switches with integrated IEEE security functions
- Security devices with firewall and router function suitable for industrial applications.

We provide you with the optimum security solution for every requirement.



## **Increased security through decentralized protection concepts**

A central firewall that secures the entire company network does not provide protection against destructive internal actions. Production cells can be protected using an effective decentralized concept that is based on a solution for termination device security. With FL MGuard, Phoenix Contact provides a product range to protect your entire automation system against unauthorized access.



# Level 1: Simple access locking for mechanical protection

Using mechanical locking devices is the easiest way to prevent unauthorized access to the production network. Open RJ45 ports are blocked using a plug that can only be removed with a special tool, similar to plugged in patch cables. Preventing misuse is that simple!

## Plug Guard



### FL PLUG GUARD

Security frame for SFN switch and patch fields

- Order No. 2891615, FL PLUG GUARD GN, green
- Order No. 2891712, FL PLUG GUARD RD, red
- Order No. 2891819, FL PLUG GUARD WH, white

With the FL-PLUG-GUARD concept, only authorized personnel can remove Ethernet lines. Access to unused ports is blocked using plugs.

## Safe Clip



### FL PATCH SAFE CLIP

Security element for FL CAT ... PATCH

- Order No. 2891246, FL PATCH SAFE CLIP

The FL PATCH SAFE CLIP security element can be mounted without tools and prevents unintentional disconnection of Ethernet connections. The simple and quick to install solution reliably prevents unintentional disconnection.

## Patch Guard



### FL PATCH GUARD

Lockable security element for FL PATCH

- Order No. 2891424, FL PATCH GUARD, security element
- Order No. 2891521, FL PATCH GUARD KEY, key

Network component Ethernet ports that are unable to accommodate a security frame are secured with the help of FL PATCH GUARD. The security element that is pulled onto the patch cable rules out any possibility of breaking the connection.

# Level 2: Managed switches with integrated IEEE security functions

The managed switches from the Factory Line product range offer a series of IEEE-compliant security functions which regulate access, prevent undesired data traffic and impede data tapping. These functions include setting up VLANs, controlling access with the help of MAC addresses and preventing access with the help of the port security.

The security functions are parameterized via the Factory Manager network management software, the SNMP or the web-based management. Violations of the security specifications can be forwarded via an alarm contact or as an SNMP trap. This enables timely identification of problems and implementation of corrective measures.

No.	IP Address	Description	Access
1	192.168.1.42	Network_Admin_2	<input type="radio"/> Read-Only <input checked="" type="radio"/> Read-Write
2	192.168.1.221	WEBM_Admin	<input type="radio"/> Read-Only <input checked="" type="radio"/> Read-Write
3	0.0.0.0	Allowed address r	<input checked="" type="radio"/> Read-Only <input type="radio"/> Read-Write

## Configurable security

The configuration options of a managed switch include functions that considerably increase the operational safety and availability of the system. Port Security, for example, prevents undesired devices from exchanging data with the network. Access Control uses passwords to prevent unauthorized switch configuration. Free ports can be switched off when unauthorized access to the network is registered and the user is alerted via the SNMP and the alarm contact. VLAN can be used to divide the common network into logical networks whose limits cannot be crossed without authorization.



## Managed Compact Switch



**FL SWITCH MCS 16TX**

Order No. 2832700

Managed switch with 16 twisted-pair ports

- Two priority classes, in accordance with IEEE 802.1 P
- Port Mirroring, Multicast Filtering, VLAN, Port Security
- Integrated Web server function
- IGMP Snooping, Rapid Spanning Tree, SNMP, DHCP Option 82 Relay Agent
- Profinet IO device, LLDP

## Managed Compact Switch



**FL SWITCH MCS 14TX/2FX**

Order No. 2832713

Managed switch with 14 twisted-pair and two glass fiber ports

- Two priority classes, in accordance with IEEE 802.1 P
- Port Mirroring, Multicast Filtering, VLAN, Port Security
- Integrated Web server function
- IGMP Snooping, Rapid Spanning Tree, SNMP, DHCP Option 82 Relay Agent
- Profinet IO device, LLDP

## Modular Managed Switch



**FL SWITCH MM HS**

Order no. 2832328

Head station of the Modular Managed Switch

- Two priority classes, in accordance with IEEE 802.1 P
- Port Mirroring, Multicast Filtering, VLAN, Port Security
- Integrated Web server function
- IGMP Snooping, Rapid Spanning Tree, SNMP, DHCP Option 82 Relay Agent
- Exchangeable configuration memory
- Profinet IO device, LLDP

## Smart Managed Compact Switch



**FL SWITCH SMCS 8GT**

Order No. 2891123

Smart Managed Compact Switch with eight twisted-pair ports

- Four priority classes, in accordance with IEEE 802.1 D
- Port mirroring
- Integrated Web server function
- IGMP Snooping, Rapid Spanning Tree, SNMP
- Replaceable configuration memory
- Profinet IO device, LLDP
- MRP in accordance with IEC 62439

## Smart Managed Compact Switch



**FL SWITCH SMCS 6TX/2SFP**

Order No. 2891479

Smart Managed Compact Switch with six twisted-pair ports and two SFP slots for FO plug-in modules

- Four priority classes, in accordance with IEEE 802.1 D
- Port mirroring
- Integrated Web server function
- IGMP Snooping, Rapid Spanning Tree, SNMP
- Replaceable configuration memory
- Profinet IO device, LLDP
- MRP in accordance with IEC 62439

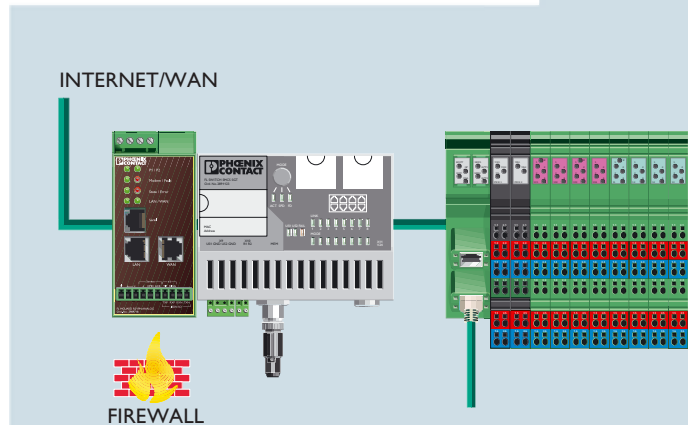
### The SMART concept

SMART stands for Switch with Management for Automation and Realtime. As the name suggests, intelligent functions facilitate commissioning of the device. Using the SMART mode button, the user can, for example, select whether to use the switch in a Profinet network or in an Ethernet/IP network.

The MEM plug provides a pluggable memory with M12 connection technology. All configuration data can be stored in this pluggable memory to speed up device replacement considerably.

# Level 3: Security devices with firewall and router function for industrial applications

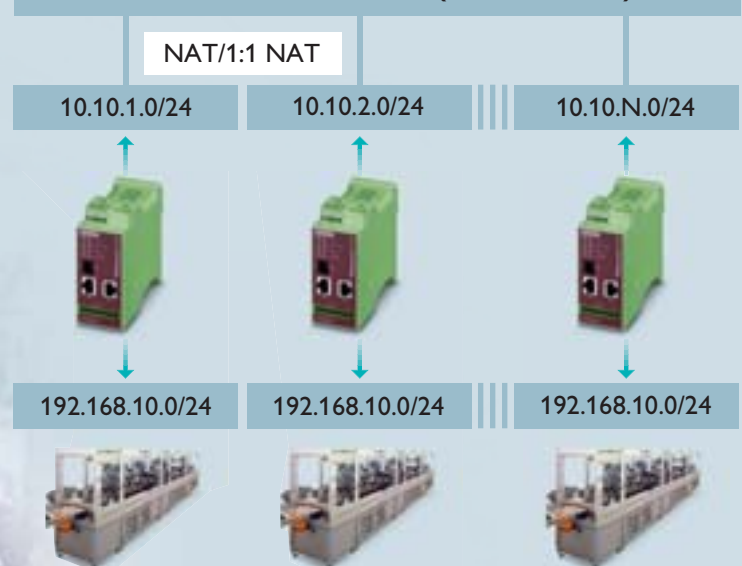
Reliable and problem-free operation of production systems is crucial to the success of a company. Accidents, sabotage and data loss can cause large-scale economic damage. Phoenix Contact offers FL MGUARD, an industrial firewall/router solution for the individual safeguarding of distributed automation systems in harsh industrial environments.



## Decentralized protection

The FL MGUARD devices are integrated into the network as stand-alone systems. There, they protect a part of the system network, a complete production cell or an individual automation component – all without having any effect on the system to be secured. All incoming and outgoing data packets are monitored in accordance with prescribed rules.

## Production Network (10.10.0.0/16)



## Firewall/router



### FL MGuard RS

Order No. 2989310

Configurable firewall/router for protection against unauthorized access

- Stateful Inspection Firewall
- IP-Spoofing, DoS and Syn-Flood Protection
- Routing, Port forwarding, NAT, 1:1 NAT
- SNMP v1, v2, v3
- Integrated serial interface

## Firewall/router with VPN



### FL MGuard RS VPN

Order No. 2989611

Configurable firewall/router for protection against unauthorized access

- Stateful Inspection Firewall
- IP-Spoofing, DoS and Syn-Flood Protection
- Routing, Port forwarding, NAT, 1:1 NAT
- SNMP v1, v2, v3
- Integrated serial interface
- VPN with maximum ten parallel tunnels
- High data throughput due to hardware-based encoding

## PCI firewall/router



### FL MGuard PCI/266

Order No. 2989019

Configurable firewall/router for protection against unauthorized access in PCI format

- Stateful Inspection Firewall
- IP-Spoofing, DoS and Syn-Flood Protection
- Routing, Port forwarding, NAT, 1:1 NAT
- SNMP v1, v2, v3
- 266 MHz processor clock frequency
- Driver not required

## PCI firewall/router



### FL MGuard PCI/533

Order No. 2989213

Configurable firewall/router for protection against unauthorized access in PCI format

- Stateful Inspection Firewall
- IP-Spoofing, DoS and Syn-Flood Protection
- Routing, Port forwarding, NAT, 1:1 NAT
- SNMP v1, v2, v3
- 533 MHz processor clock frequency
- Driver not required

## PCI firewall/router with VPN



### FL MGuard PCI/533 VPN

Order No. 2989417

Configurable firewall/router for protection against unauthorized access in PCI format

- Stateful Inspection Firewall
- IP-Spoofing, DoS and Syn-Flood Protection
- Routing, Port forwarding, NAT, 1:1 NAT
- SNMP v1, v2, v3
- VPN with maximum ten parallel tunnels
- 533 MHz processor clock frequency
- Driver not required

## Virtual addressing/NAT

When similarly structured machines are operated simultaneously in one network, each machine must be individually configurable so that it can be integrated into the higher-level communication system. Our FL MGuard components support the 1:1 NAT functions, so that production cells occupying identical IP addressing space can be used in a higher-level network. Individual configuration of serial machines is no longer required.

Further information on the products introduced here and on the world of solutions from Phoenix Contact can be found at [www.catalog.phoenixcontact.com](http://www.catalog.phoenixcontact.com)



Or contact us directly.



Industrial Connection Technology,  
Marking and Mounting Material  
**CLIPLINE**



Industrial Plug Connectors  
**PLUSCON**



PCB Connection Technology  
and Electronic Housings  
**COMBICON**



Surge Protection  
**TRABTECH**



Signal Converters, Switching Devices,  
Power Supply Units  
**INTERFACE**



Components and Systems  
**AUTOMATION**

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