



New Products

Industrial Managed Switch, MAC Security



Industrial Managed Switch with integrated encryption function

Your benefits:

- Real-time encryption (MACSec) with wire speed (Port 7 and 8)
→ Hardware-based "Media Access Control Security" encryption (IEEE 802.1 AE, MACsec)
- Easy integration/retrofit in existing applications
(protocol independent – Modbus TCP, BACnet, PROFINET RT, ...)
- Optional authentication of network participants
(IEEE 802.1X und RADIUS) → Access control into the network
- Space-saving → cabinet installation (45 x 90 x 110 mm)
→ retrofit in existing systems
- Simple configuration by automation engineer



Article number:

0852-1322

0852-1328

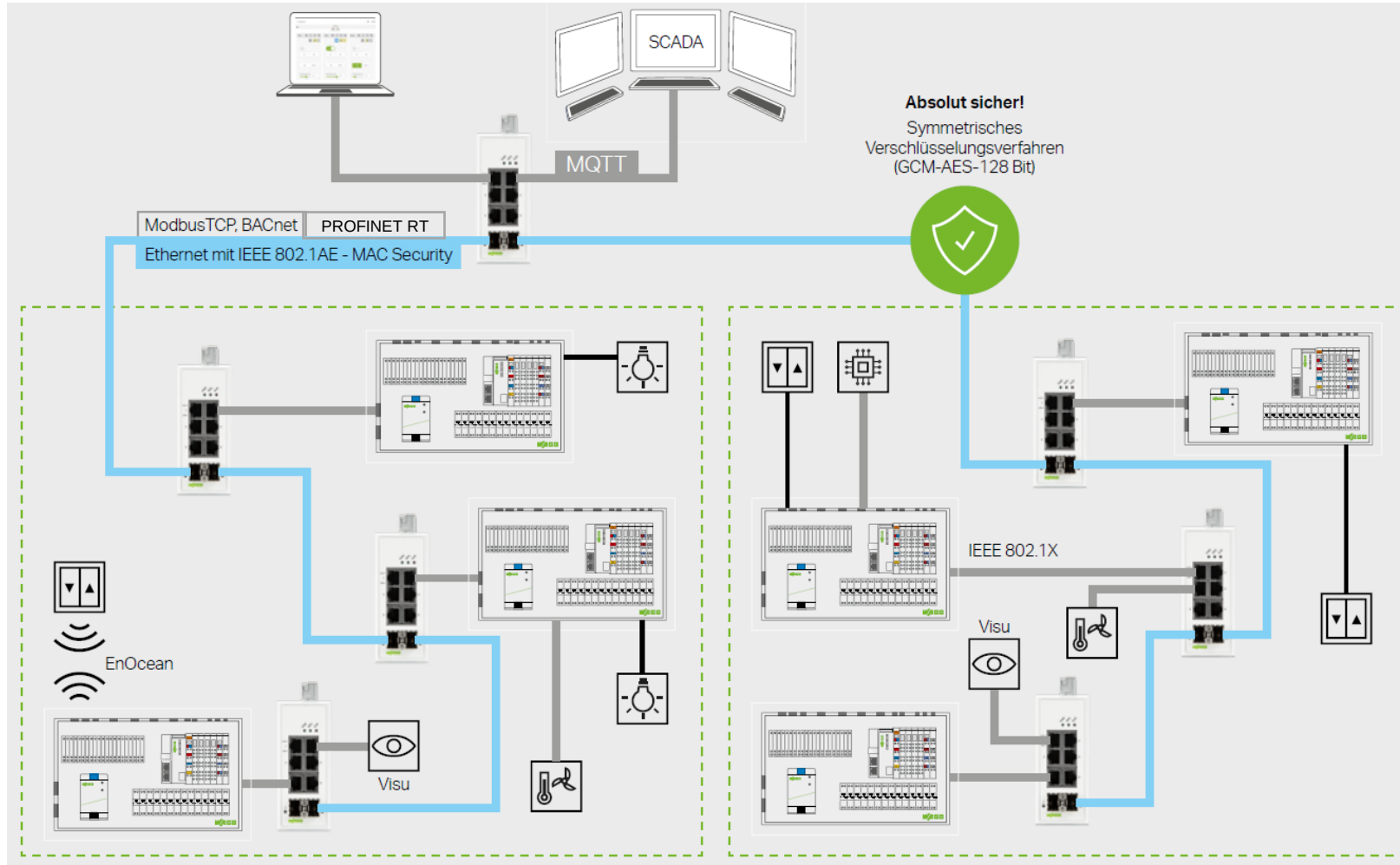


Availability:

From June 2020



Application Example



Key Features:

- Secure data link with wire speed
- Easy to retrofit in a network
- Space-saving control cabinet installation

Configuration – MAC-Security – Function

The screenshot shows the WAGO WBM configuration interface. The top navigation bar includes tabs for Information, Configuration, Diagnostics, Security, and Maintenance. The left sidebar has a menu with 'Static SAK', 'Secure Code', and '802.1X'. The main content area is titled 'Static SAK' and contains a blue information box with the following text: 'Secure Channel Identifier (SCI) is a 16-digit hexadecimal number. Note that if the user did not configure all digits of SCI, Secure Association Key (SAK) is a 32-digit hexadecimal number. Note that if the user did not configure all digits of SAK,'. Below this is a 'Static SAK Setting' form with the following fields: 'Ports' (a dropdown menu showing 'Port7'), 'Enabled' (a checkbox), 'SCI' (a text input field), and 'SAK' (a text input field). A green 'Submit' button is located at the bottom right of the form.

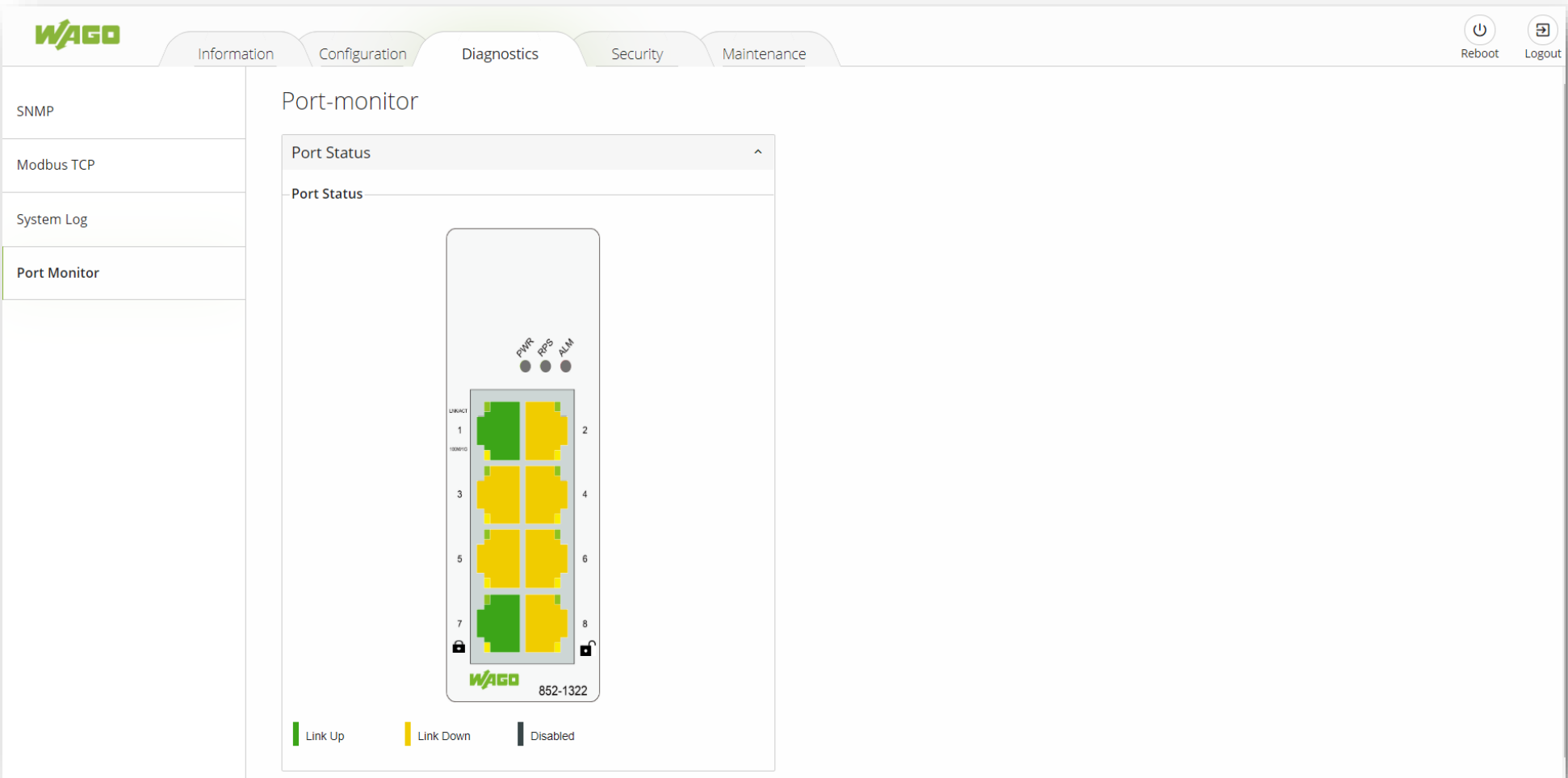
Simple Configuration:

- Open WBM
- Choose Security
- Fill in secret (SCI & SAK)
- Press „Submit“

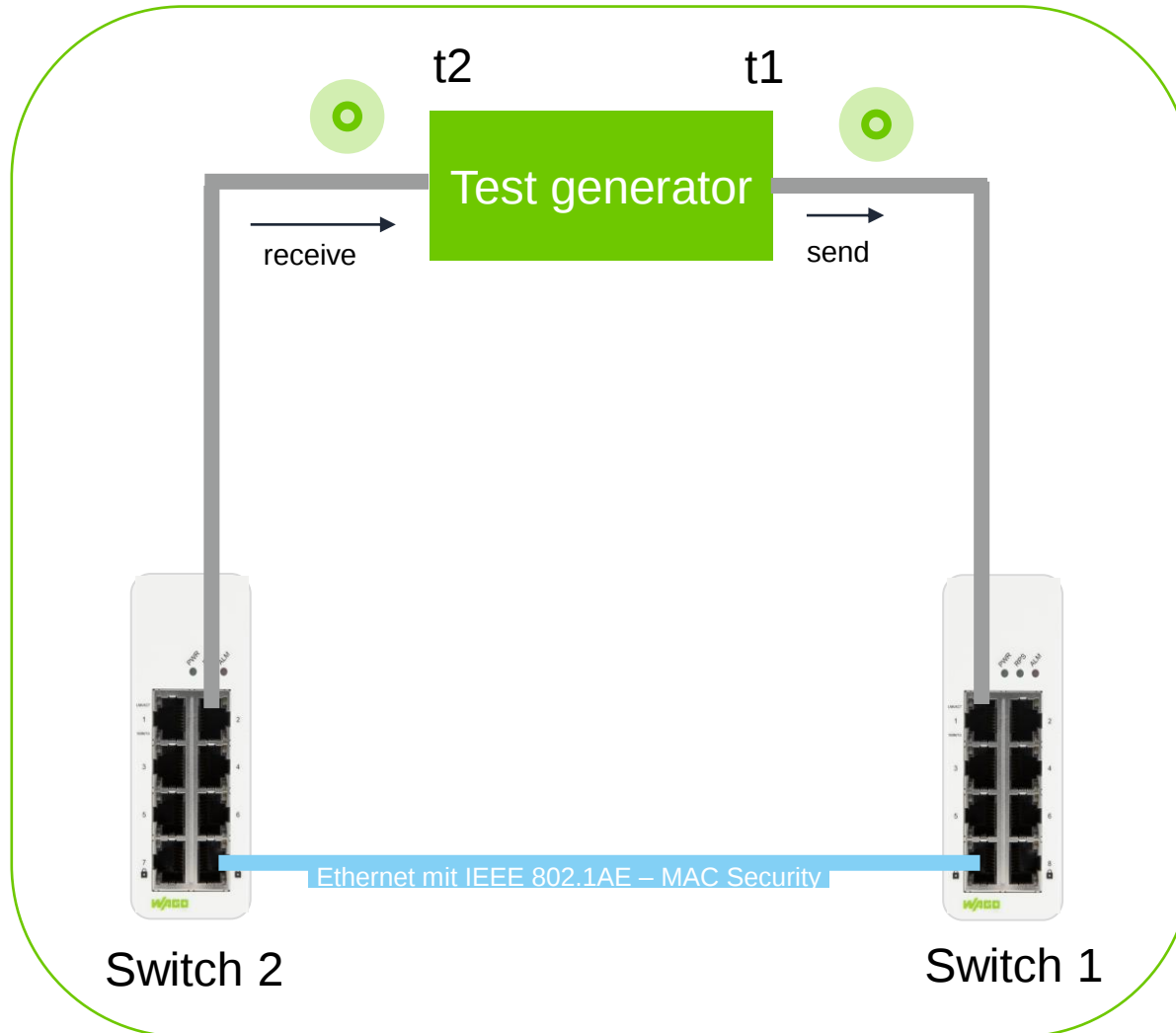
All Switches in the secure network will receive the same secret

Ready 😊

Diagnosis – Port-Monitor



Performance of the encryption function



Latency:

$$\Delta_{64} = t2 - t1 = 6,78 \mu s \quad (\text{Package size 64 Byte})$$

$$\Delta_{1518} = t2 - t1 = 41,71 \mu s \quad (\text{Package size 1518 Byte})$$

Data throughput - 1000 Mbit/s:

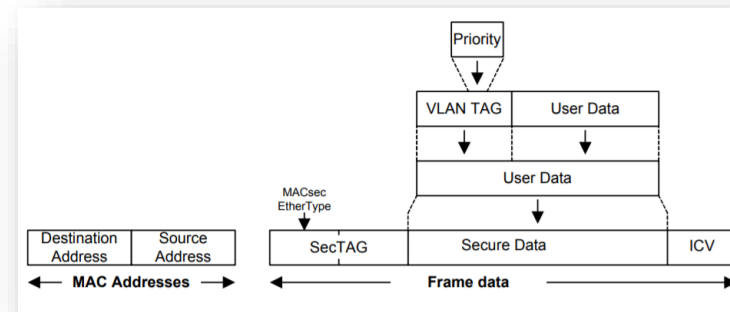
$$1.077.598 \text{ Package/s} \quad (\text{Package size 64 Byte}) \rightarrow 72 \%$$

$$79.618 \text{ Package/s} \quad (\text{Package size 1518 Byte}) \rightarrow 97 \%$$

Data throughput - 100 Mbit/s:

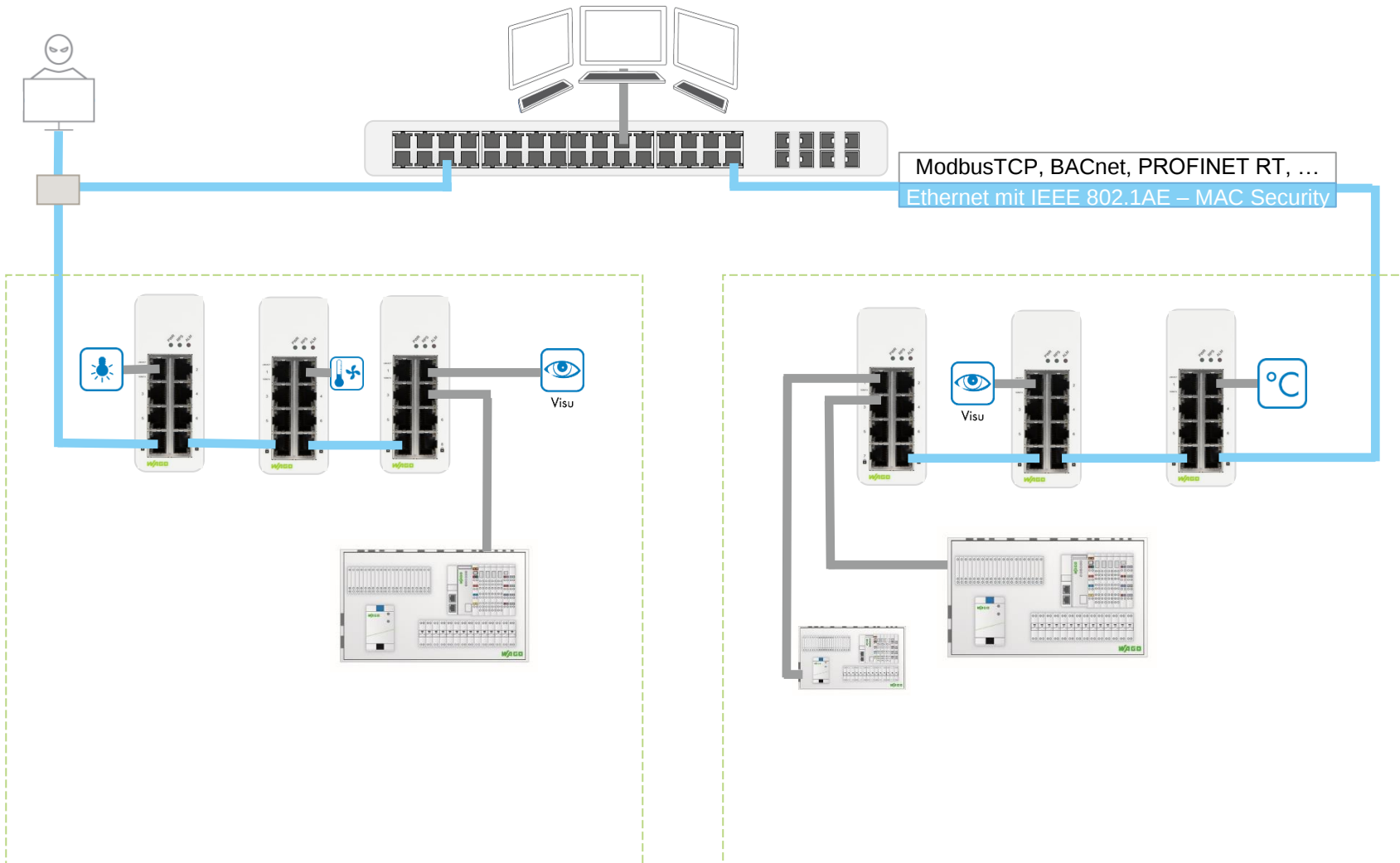
$$107.764 \text{ Package/s} \quad (\text{Package size 64 Byte}) \rightarrow 72 \%$$

$$7.962 \text{ Package/s} \quad (\text{Package size 1518 Byte}) \rightarrow 97 \%$$



Encapsulation:
SecTAG+ ICV
= 24-32 Byte

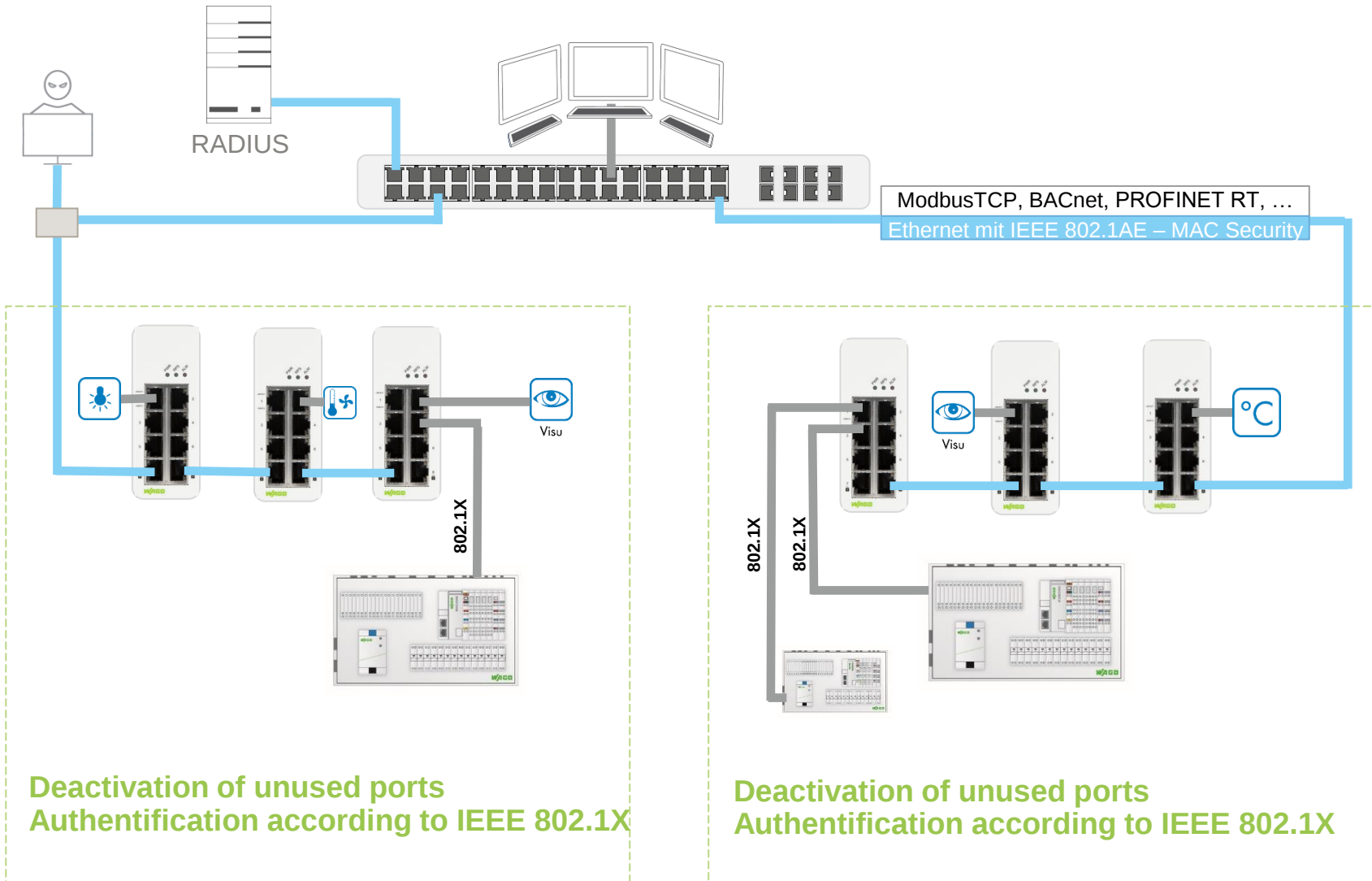
Openness based on IEEE 802.1AE



Key Features:

- Secure data link with wire speed
- Easy to retrofit in a network
- Space-saving control cabinet installation

Authentication of participants



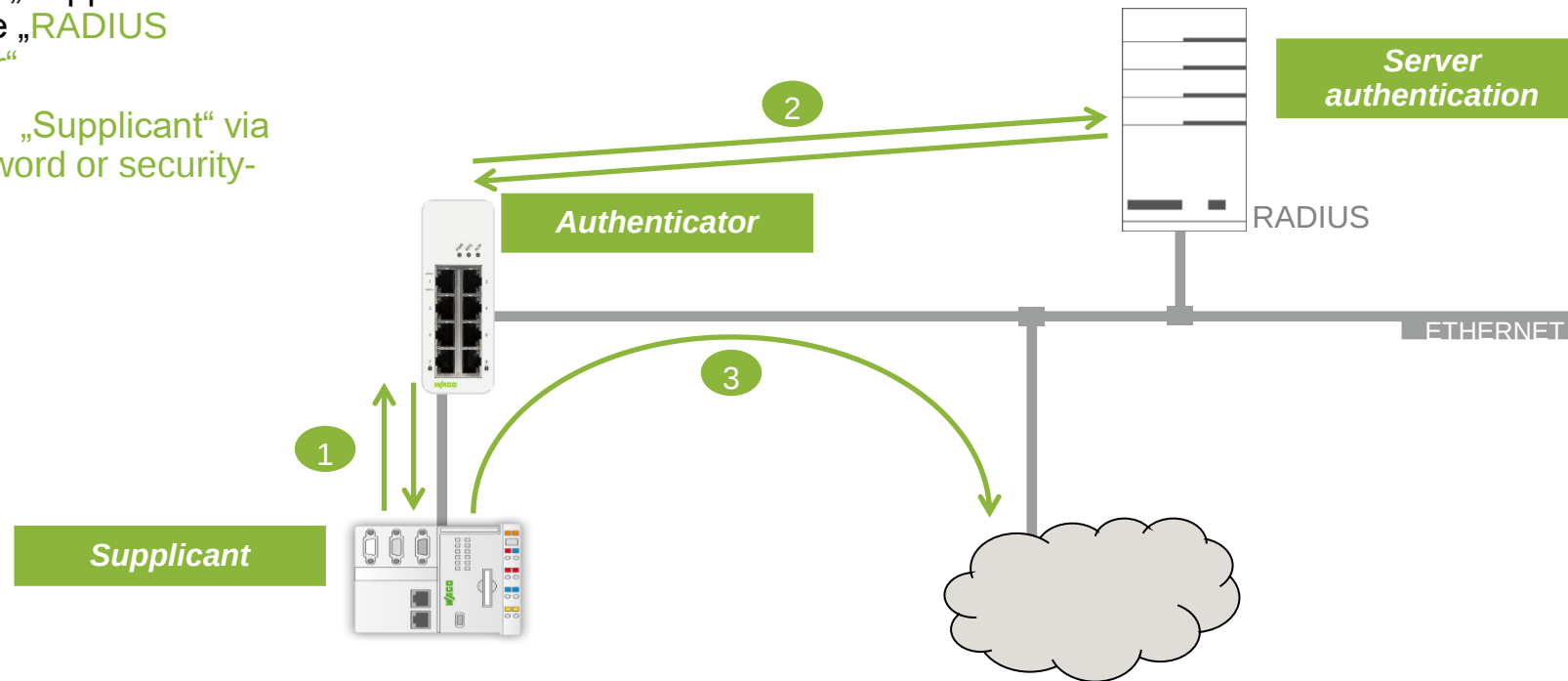
Key Features:

- Secure data link with wire speed
- Easy to retrofit in a network
- Space-saving control cabinet installation

Access control in the network

Authentication (IEEE 802.1X) in the network via RADIUS-Server

- Profile of the Switch „*Authenticator*“
- Authentication activatable per port
- Authentication of the „Supplicant“ via the „Authenticator“ at the „*RADIUS authentication server*“
- Authentication of the „Supplicant“ via username and password or security-certificate



Summary – MAC Security

Application Areas

- Encryption of e. g. ModbusTCP, BACnet- or PROFINET-Communication without adaption of the existing customer application
- Space-saving (45 x 90 x 110 mm) control cabinet installation enables retrofitting in the customer application

Technical Features / Data:

- Hardware-based encryption (Mac-Security; IEEE 802.1AE)
→ without additional time delay
- Encryption of data packages with 128 bit on two Gigabit ports (symmetric encryption)
- Optional authentication of participants in the network (IEEE 802.1X and RADIUS)
- Temperature range from **-20 °C to +70 °C**
- Potential free networking with SFP modules (up to 80 km)
- Secure configuration and diagnosis via web browser (https) or SNMPv3
- **UL-Certificate** at product availability

Summary – MAC Security

Application Areas

- Encryption of e. g. ModbusTCP, BACnet- or PROFINET-Communication without adaption of the existing customer application
- Space-saving (45 x 90 x 110 mm) control cabinet installation enables retrofitting in the customer application



852-1322: Net list price: 399 €

852-1328: Net list price: 409 €

WAGO