



Network Infrastructure

Industrial Switches and ETHERNET Components





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Compact footprint

Just 23.4 mm (9.21 inches) wide

5 ETHERNET ports

- Autonegotiation 10/100/1000
- Auto MDI/MDI-X: Auto-Crossing
- Status LEDs: PWR/Activity

Power supply (9 ... 48 V)

- Pluggable connector
- Maintenance-free, vibration-proof spring pressure connections

Robust design

- Adapter for DIN-35 rail and metal housing
- Excellent vibration and shock resistance
- Surrounding air temperature (operation): -40 ... +70°C

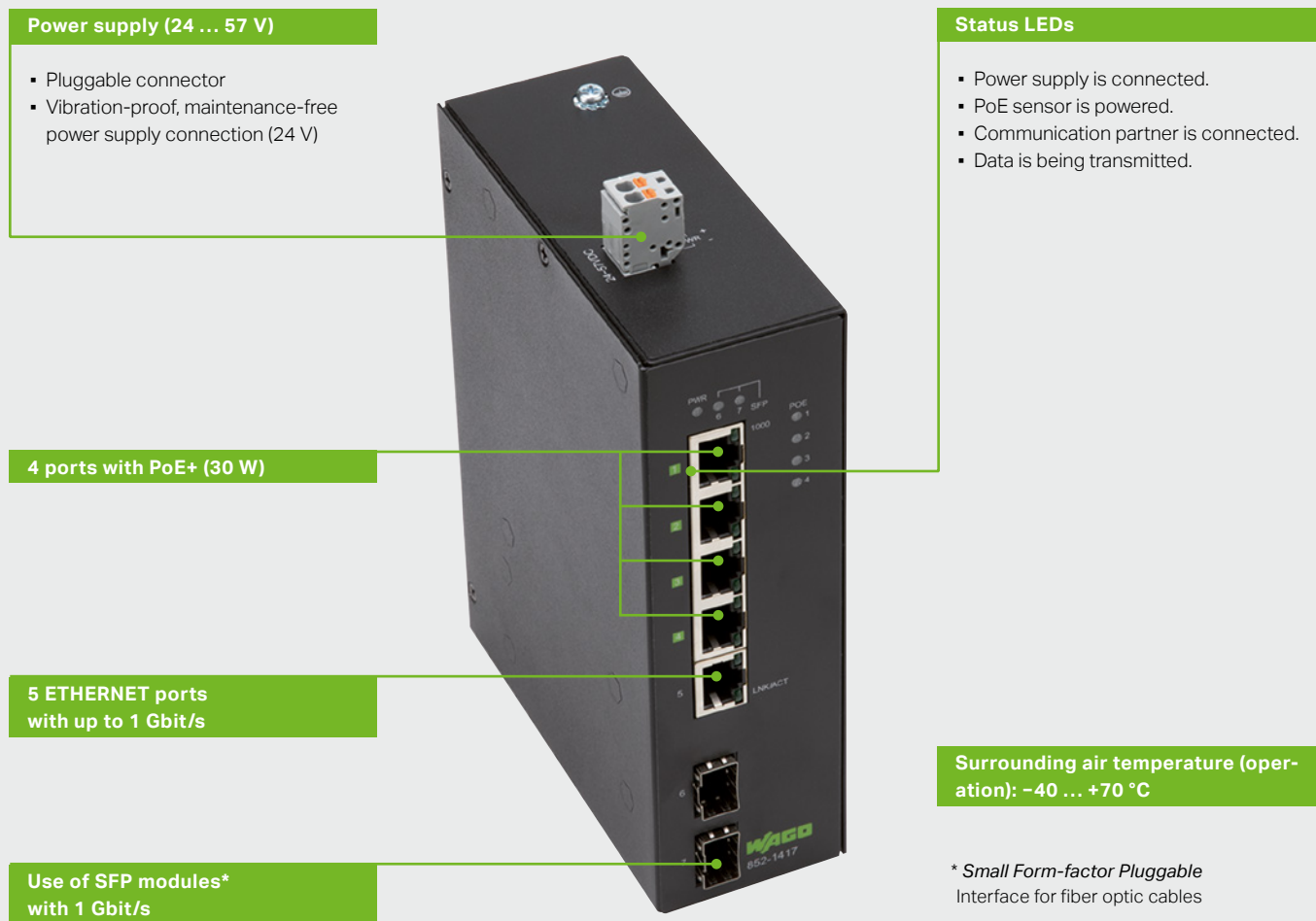


Industrial Unmanaged Switches

Eco – Economical and Compact

	Fast Ethernet		Gigabit	
				
Ports	5 x 10/100BASE-TX	8 x 10/100BASE-TX	5 x 10/100/1000BASE-T	8 x 10/100/1000BASE-T
Supply voltage	18 ... 30 VDC	18 ... 30 VDC	9 ... 48 VDC	9 ... 57 VDC
Dimensions (W x H x D)	23.4 x 73.8 x 109.2 mm	109.2 x 23.4 x 73.8 mm	23.4 x 73.8 x 109.2 mm	46 x 99.6 x 116 mm
Surrounding air temperature (operation)	-40 ... +70 °C	-40 ... +70 °C	-40 ... +70 °C	0 ... +60 °C
Approvals	UL, DNV GL ¹	UL	UL, DNV GL ¹	UL
Prioritization	-	-	IEEE 802.1 p	IEEE 802.1 p
PROFINET	-	-	CC-A ²	CC-A ²
Item number	852-111	852-112	852-1111	852-1112

¹ With DIN-rail adapter, Item No. 852-9101



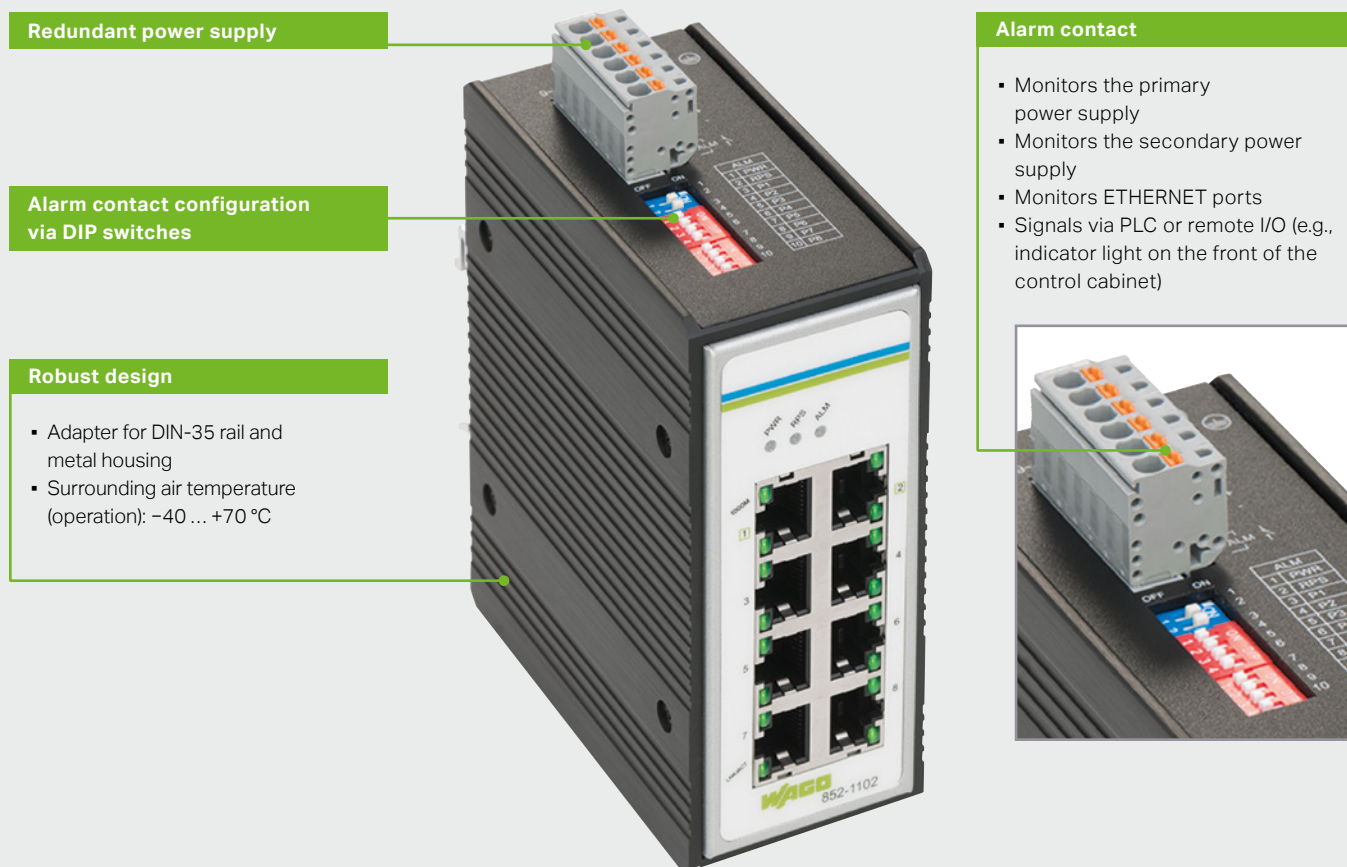
Eco with PoE – Power Supply via ETHERNET Cable

"Power over Ethernet" (PoE+) technology supplies PoE-capable devices via network cable using a switch. This allows, for example, PoE-capable IP cameras, IoT sensors or HMI systems to be economically integrated into the network – no need for separately installing power and data cables. Other advantages include diagnostics performed within the system.

Type	PoE+		
			
PoE+ ports	4 x PoE+ (30 W)	4 x PoE+ (30 W)	4 x PoE+ (30 W)
Copper ports	5 x 10/100/1000BASE-T	5 x 10/100/1000BASE-T	5 x 10/100/1000BASE-T
SFP ports	-	2 x SFP 1000BASE-SX/LX	-
Supply voltage	24 ... 57 VDC	24 ... 57 VDC	24 ... 57 VDC
Dimensions (W x H x D)	50 x 120 x 160 mm	50 x 120 x 160 mm	50 x 115 x 100
Surrounding air temperature (operation)	-40 ... +70 °C -10 ... +60 °C per UL 61010	-40 ... +70 °C -10 ... +60 °C per UL 61010	-40 ... +70 °C -10 ... +60 °C per UL 61010
Approvals	UL	UL	UL ³
Prioritization	IEEE 802.1 p	IEEE 802.1 p	IEEE 802.1 p
PROFINET	CC-A ²	CC-A ²	CC-A ²
Item number	852-1411	852-1417	852-1411/0000-0001

² No PROFINET configuration and diagnostics with conformity class A

³ For supply voltage < 48 VDC, the PoE budget is limited to 60 W.



Industrial Unmanaged Switches

STANDARD – Versatile Use

	Fast Ethernet			Gigabit	
					
Copper ports	5 x 10/ 100BASE-TX	8 x 10/100BASE-TX	8 x 10/100BASE-TX	8 x 10/100/1000BASE-T	16 x 10/100/1000BASE-T
SFP ports	-	-	2 x SFP 100BASE-FX	-	-
Supply voltage	9 ... 48 VDC	9 ... 48 VDC	9 ... 48 VDC	9 ... 57 VDC	12 ... 60 VDC
Redundant power supply	■	■	■	■	■
Alarm contact	■	■	■	■	■ ²
Dimensions (W x H x D)	50 x 120 x 105 mm	50 x 120 x 162 mm	50 x 120 x 162 mm	50 x 120 x 105 mm	50 x 120 x 162 mm
Surrounding air temperature (operation)	-40 ... +70 °C	-40 ... +70 °C	-40 ... +70 °C	-40 ... +70 °C	-40 ... +70 °C
Approvals	UL	UL	UL	UL	UL
Prioritization	-	-	-	IEEE 802.1 p	IEEE 802.1 p
PROFINET				CC-A ³	CC-A ³
Item number	852-101	852-102	852-103/040-000	852-1102	852-1106

Redundant power supply

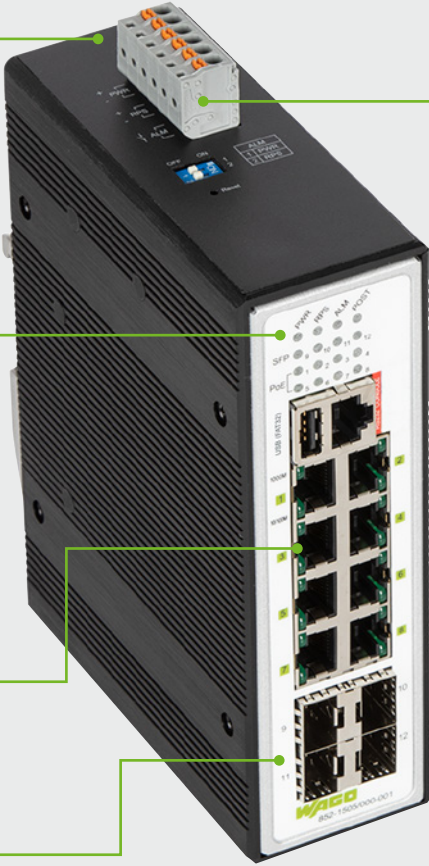
Status LEDs

- Primary power supply available
- Secondary power supply available
- Alarm message is displayed

RS-232 interface for command-based configuration

Integrated Web-Based Management for configuration or diagnostics

Use of SFP modules* with 1 Gbit/s



Alarm contact

- Jet ring diagnostics
- ERPS ring diagnostics
- Monitors the primary and secondary power supply
- Monitors ETHERNET ports
- Signals via PLC or remote I/O (e.g., indicator light on the front of the control cabinet)

USB interface

- Firmware update
- Saving the diagnostics (Syslog)
- Loading/saving the configuration

Configurable functions

- Network security
- Availability (redundancy and diagnostics)
- Performance
- Data transmission

* *Small Form-factor Pluggable*
Interface for fiber optic cables

Industrial Managed Switches

Powerful and Secure

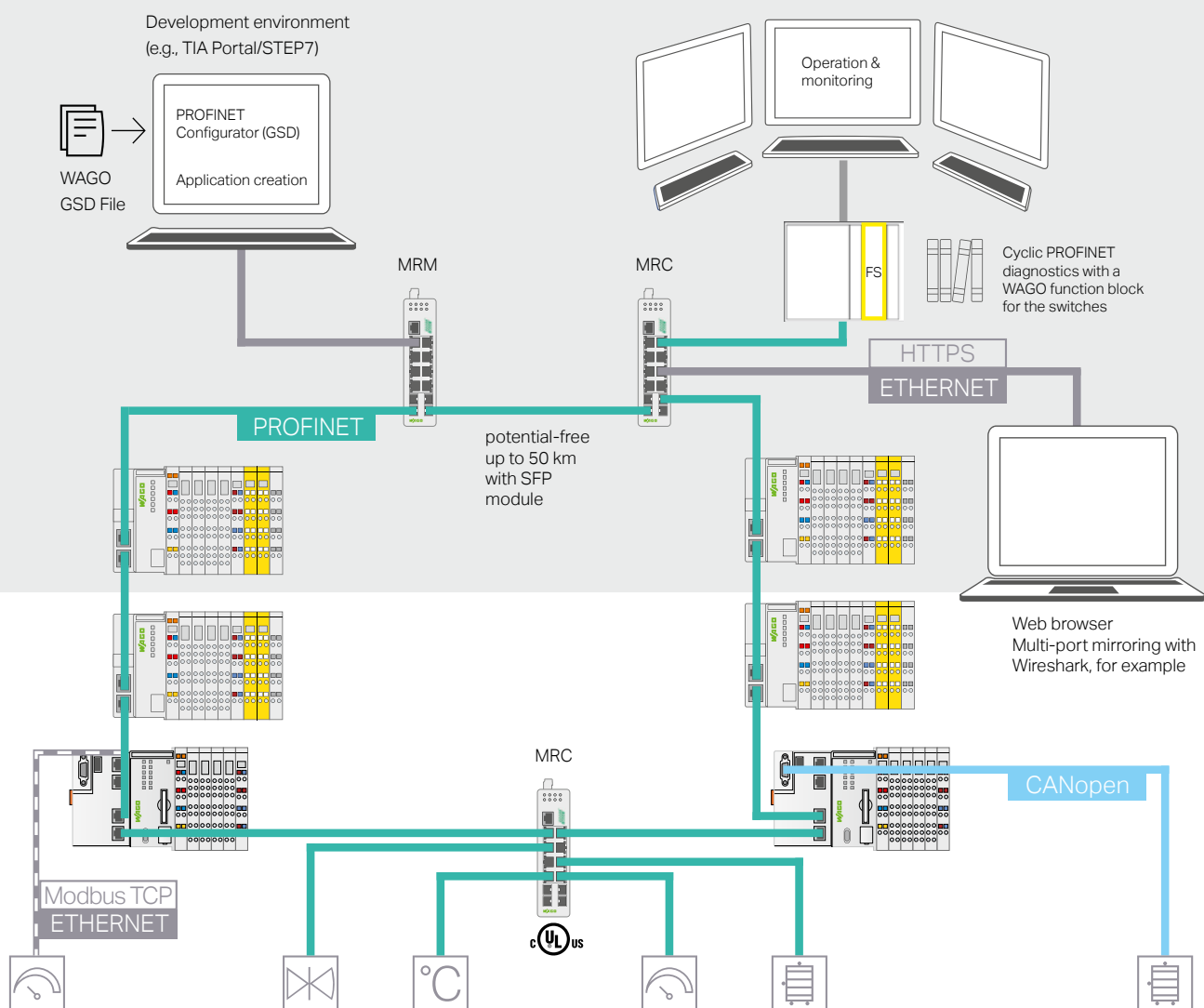
					PoE+
					
PoE+ ports					8 x PoE+ 30 W per port
Copper ports	8 x 10/100BASE-TX	8 x 10/100/1000BASE-T	8 x 10/100/1000BASE-T	8 x 10/100/1000BASE-T	8 x 10/100/1000BASE-T
SFP ports	2 x SFP 100/1000 ¹	4 x SFP 1000BASE-SX/LX	4 x SFP 1000BASE-SX/LX	4 x SFP 1000BASE-SX/LX	4 x SFP 1000BASE-SX/LX
Supply voltage	12 ... 60 VDC	12 ... 60 VDC	12 ... 48 VDC	24 ... 57 VDC	
Redundant power supply	■	■	■	■	■
Alarm contact	■	■	■	■	■
Dimensions (W x H x D)	50 x 120 x 162 mm	50 x 120 x 162 mm	50 x 120 x 162 mm	50 x 120 x 162 mm	50 x 120 x 162 mm
Surrounding air temperature (operation)	-40 ... +70 °C	-40 ... +70 °C	-40 ... +70 °C	-40 ... +70 °C	-40 ... +70 °C -10 ... +60 °C per UL 61010
Approvals	UL, DNV GL	UL, DNV GL	UL, IEC 61850-3	UL ² , IEC 61850-3	
Prioritization	IEEE 802.1Q	IEEE 802.1Q	IEEE 802.1Q	IEEE 802.1Q	IEEE 802.1Q
Item number	852-303	852-1305	852-1305/000-001	852-1505/000-001	

* Suitable SFP modules on page 16

² For supply voltage < 48 VDC, the PoE budget is limited to 120 W.

¹ Configurable via DIP switches (1000BASE-SX/LX or 100BASE-FX)

PROFINET-Specific Features



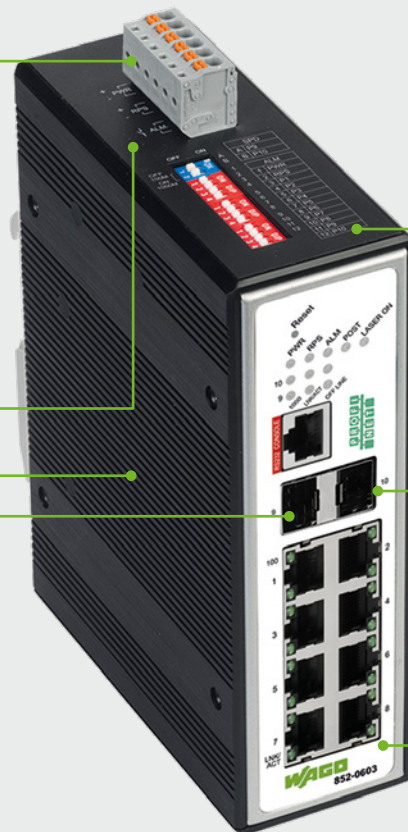
The following products meet the requirements of PROFINET conformity class A (CC-A):
852-1111, 852-1112, 852-1411,
852-1411/000-001 and 852-1417

Special Product Features:

- Prioritized PROFINET data packet forwarding
- Configuration via GSDML file not possible
- Neighborhood detection and PROFINET diagnostics not possible

Your Benefits:

- Use in industrial automation thanks to PROFINET certificate (conformity class B)
- Port-independent configuration of the media redundancy protocol as a manager (MRM) or client (MRC)
- Flexible multi-port mirroring configuration via device description file
- Switch configuration with device description file



Redundant power supply

Alarm contact

- Monitors the primary and secondary power supply
- Monitors ETHERNET ports
- Signals via PLC or remote I/Os

Switch configuration through the PROFINET Configurator (GSD)

PROFINET diagnostics from the application: cyclically readable process image

Flexible port mirroring configuration: via GSDML or Web-Based Management

Potential-free connection via SFP modules: cable lengths up to 80 km

Integrated Web-Based Management for configuration or diagnostics

* Small Form-factor Pluggable
Interface for fiber optic cables

Industrial Managed Switches

PROFINET – Use in Industrial Automation

			
Copper ports	8 x 10/100BASE-TX	8 x 10/100BASE-TX	8 x 10/100/1000BASE-T
SFP ports		2 x SFP 100/1000 ²	4 x SFP 1000BASE-SX/LX
Supply voltage	12 ... 60 VDC	12 ... 60 VDC	12 ... 60 VDC
Redundant power supply	■	■	■
Alarm contact	■	■	■
Dimensions (W x H x D)	50 x 162 x 122 mm	50 x 162 x 122 mm	50 x 162 x 122 mm
Surrounding air temperature (operation)	-40 ... +70 °C	-40 ... 70 °C	-40 ... 70 °C
Approvals	UL	UL	UL
Prioritization	IEEE 802.1Q	IEEE 802.1Q	IEEE 802.1Q
PROFINET	CC-B	CC-B	CC-B
Item number	852-602	852-603	852-1605

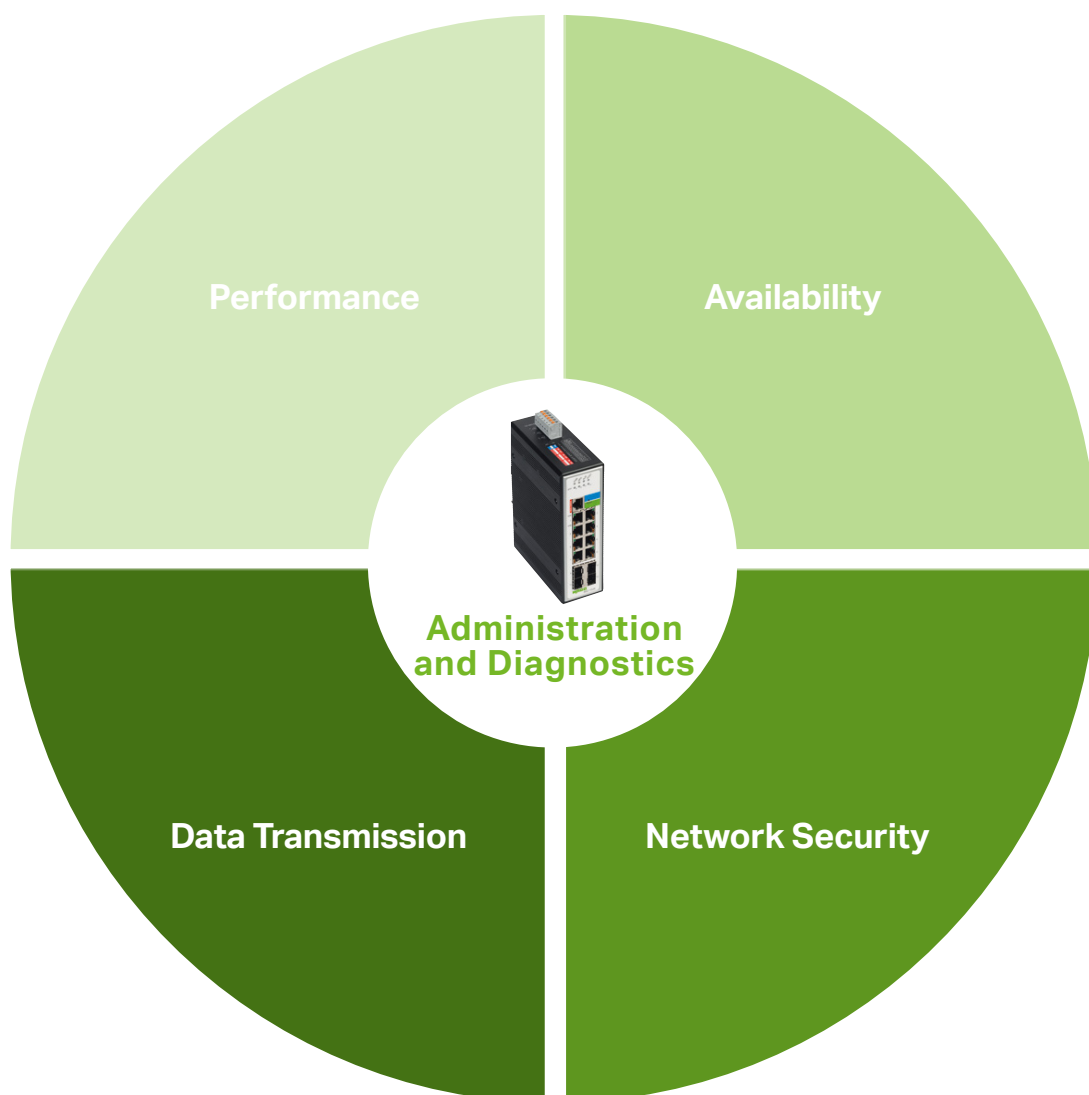
Suitable SFP modules on page 16

² Configurable via DIP switches (1000BASE-SX/LX or 100BASE-FX)

Function Overview of the Industrial Managed Switch

- Storm Control
- Bandwidth Control
- Auto-Provisioning
- Link Aggregation
- ...

- ERPS
- Dual Homing
- Xpress/Jet Ring
- Dual Ring
- STP/RSTP
- MRM/MRC ^{*1}
- ...

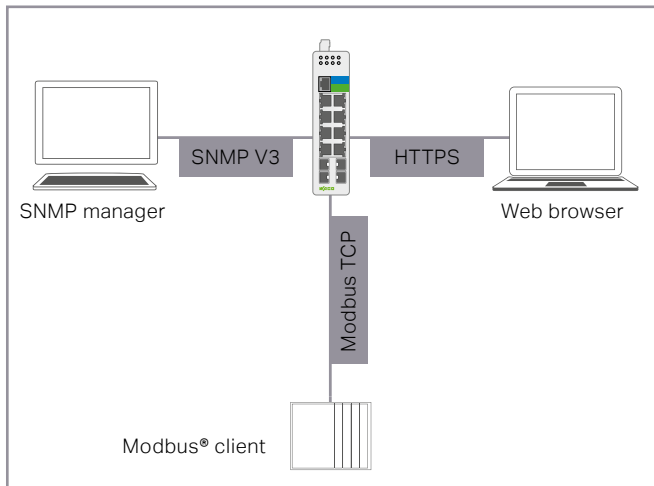


- VLAN
- IGMP Snooping
- IP-based VLAN
- MAC-based VLAN
- ...

- IEEE 802.1X Authentication
- Access Control List
- DHCP Snooping
- Port Security
- Service Control
- ...

Administration and Diagnostics

Simplified Commissioning and Maintenance



Configuration Interfaces

Configuration and Diagnostics

Several Options

- Configuration via Web-Based Management
- Configuration via command line (SSH, Telnet, RS-232)
- Network management via SNMP v1, v2c, v3
- Support for MIB standards (*Management Information Base*)
- Diagnostics via Modbus TCP
Comprehensive data available for easy diagnostics via Modbus®

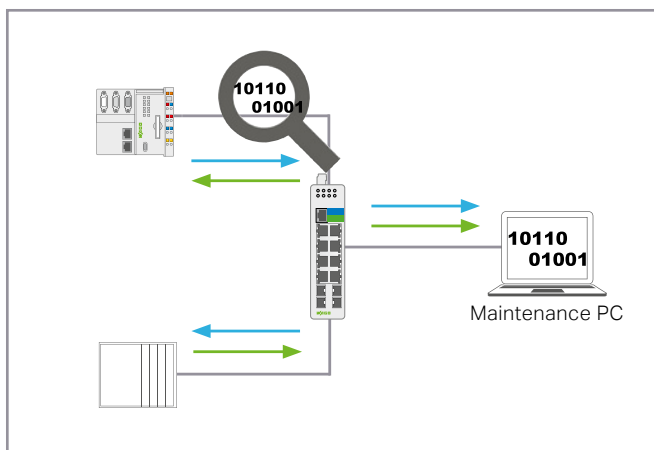
Informations SFP	
Câble fibre	Link Up
Connecteur	LC
Longueur d'ondes(nm)	850
Distance de transfert(nm)	550m(50um, OM2), Multi mode
DDM supporté(nm)	YES (Internally Calibrated)
Nom du fabricant(nm)	WAGO
Référence du fabricant(nm)	852-1200
Versión du fabricant(nm)	V2.0
Numéro de série du fabricant (nm)	AX16330002559
Code date(nm)	160809

Informations DDMI(nm)					
	Courant(nm)	Alarme haute (nm)	Alarme basse (nm)	Avert. haut (nm)	Avert. bas(nm)
Température(C)	36.148	90.000	-45.000	85.000	-40.000
Tension(V)	3.290	3.500	3.000	3.500	3.100
Tx Bias(mA)	6.754	25.000	1.000	20.000	2.000
Tx Power(mW)	0.210	0.501	0.089	0.398	0.112
Tx Power(dBm)	-6.788	-3.000	-10.505	-4.001	-9.506
Rx Power(mW)	0.252	0.631	0.016	0.501	0.020
Rx Power(dBm)	-5.986	-2.004	-18.016	-3.000	-17.012

DDM

DDM: Digital Diagnostic Monitoring

- Automatic detection of a connected SFP module
- Detailed module information
- Monitoring in real time
 - Temperature
 - Supply voltage
 - Transmission power
 - Reception power



Port Mirroring

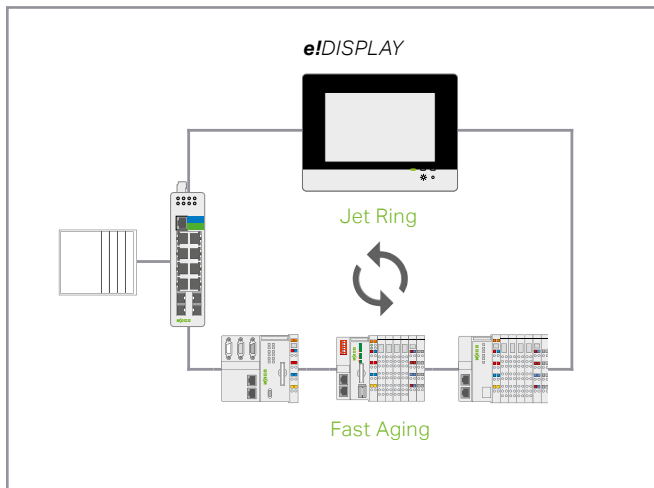
Monitoring and Diagnostics

Simplified Maintenance

- Port mirroring:
Mirrors the network traffic
- LLDP:
Automatically detects adjacent devices
- Email notifications

Availability

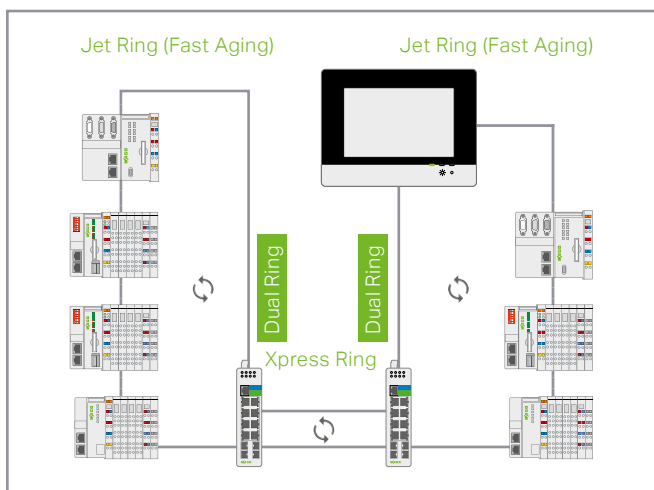
via Communication Redundancy



Jet Ring

Jet Ring

- Typical switching time of 400 ms (depends on the application)
- Extremely easy configuration (on or off)
- Up to 20 switches in a Jet Ring
- WAGO ETHERNET devices (Fast Aging) can be used in the Jet Ring



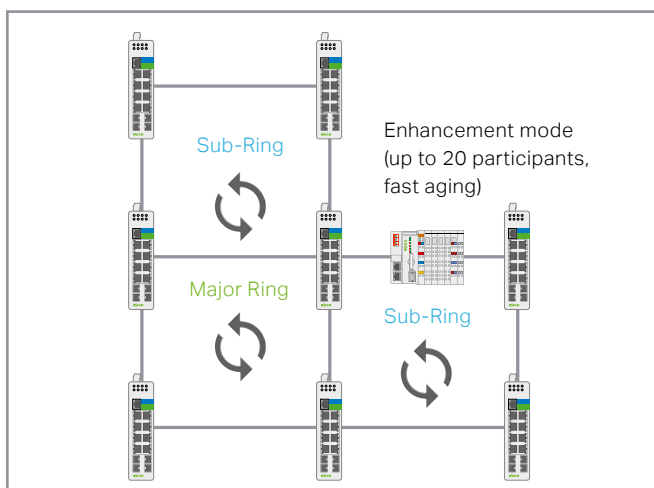
Xpress Ring and Dual Ring

Xpress Ring

- Switching time < 20 ms
- Easy configuration (three parameters per switch)
- Up to 200 switches in one Xpress Ring
- Two Xpress Rings per switch

Dual Ring

- Combination of both redundancy types
- 1 Jet Ring and 1 Xpress Ring per switch or 2 Xpress Rings per switch



ERPS V2

ERPS: ETHERNET Ring Protection Switching The Fast and Open Solution

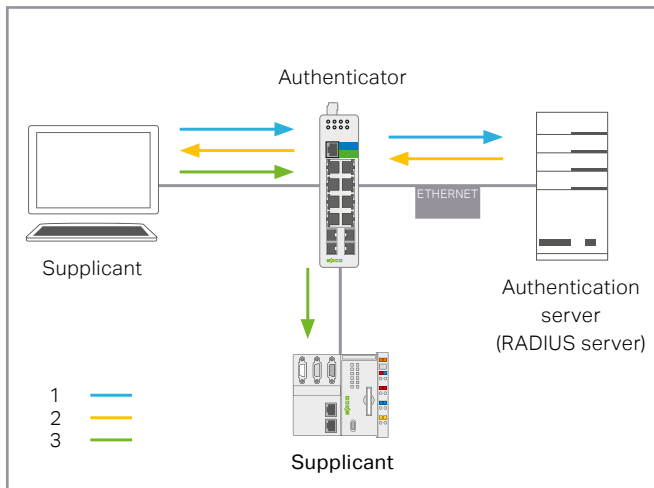
- Standardized and open technology
- Switching time < 50 ms
- Nested topologies with up to six rings per switch
- Realization of one-fault tolerance (SPOF – Single Point of Failure)

ERPS – Enhancement Mode

- WAGO devices with an integrated switch and Fast Aging configuration
- Typical switching time of 400 ms (depends on the application)

Network Security

Absolutely Secure Industrial Networks



IEEE 802.1X

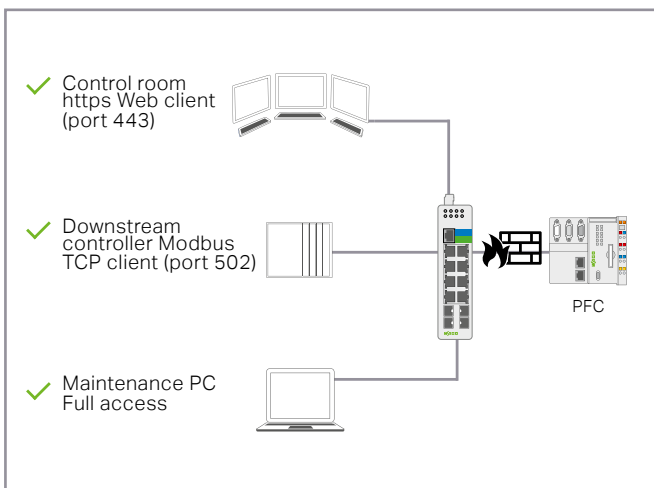
IEEE 802.1X Authentication

The Security Standard for IT Networks

Secure authentication and authorization in ETHERNET networks (locally on the switch or via RADIUS server)

Process:

- Authentication of a subscriber is performed by the authenticator.
- The authenticator checks the authentication information of the subscriber (supplicant) with an authentication server.



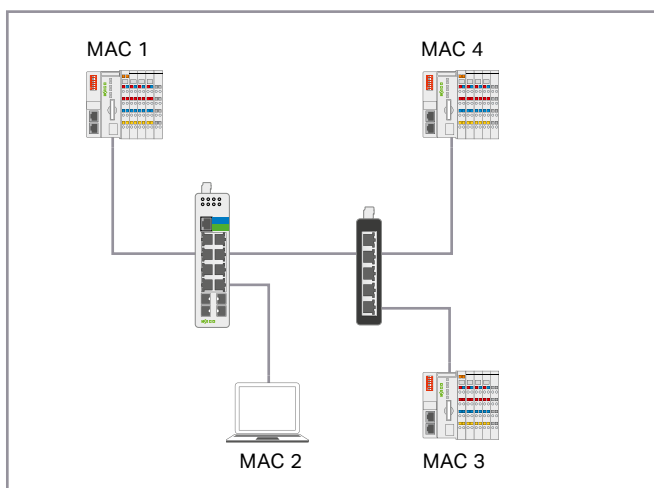
Firewall

Firewall – Access Control List

Authorization Only for the Required Services

Filtering data packets via:

- Source MAC or source IP address
- Destination MAC or destination IP address
- Range of MAC or IP addresses
- UDP/TCP source or destination ports



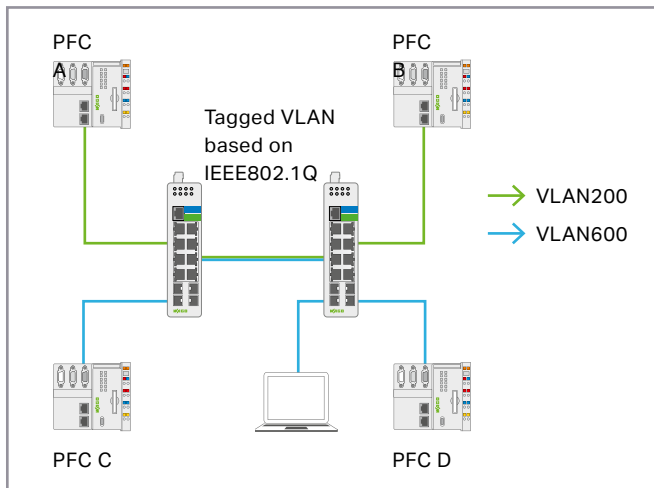
Ports

Port Security

- Dynamically learns MAC addresses for each port
- Limitation of MAC addresses for each port
- MAC-based white/blacklist for each port

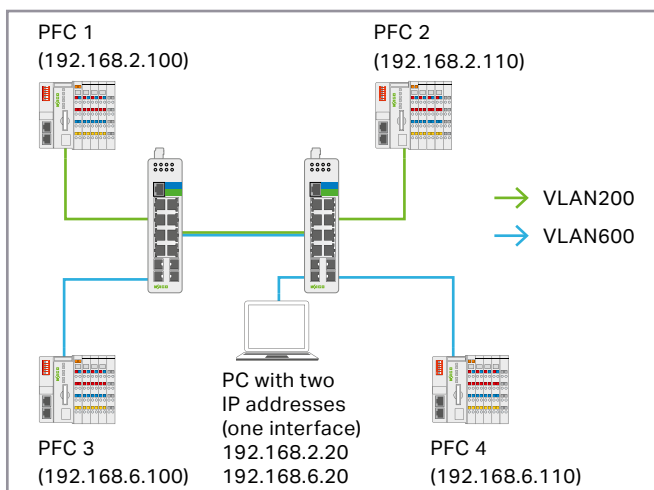
Data Transmission

Optimized ETHERNET Networks



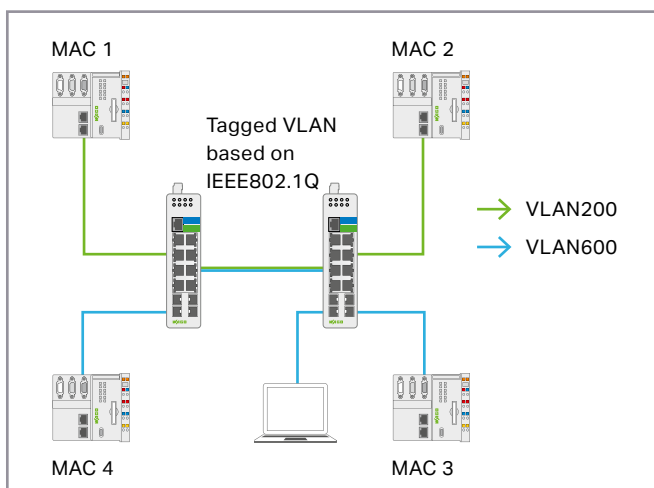
Logical Network Isolation

- VLAN (e.g., per IEEE 802.1Q)
Segmentation into logical, virtual networks:
 - Broadcast limitation
 - Network security improvement
 - Data flow prioritization
 - Subdivision of machines and office networks



IP-Based VLAN

- Routing of data packets between VLANs based on the IP address
- Communication from one participant in two or more VLANs
- Economical connection of networks to higher-level routers
- Prioritization of data packets based on the IP address

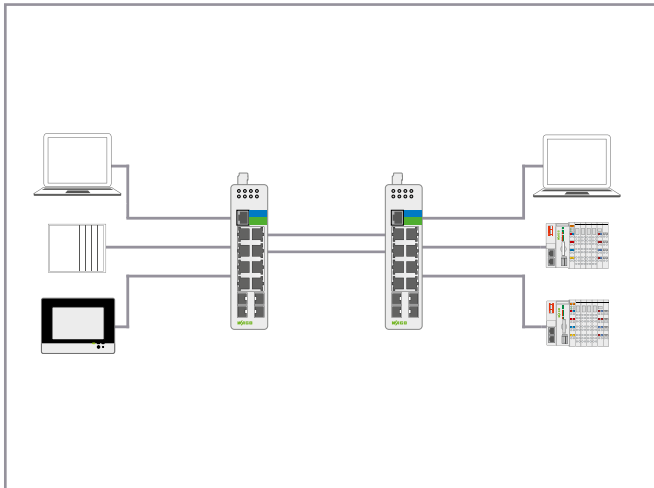


MAC-Based VLAN

- Assignment of data packets to a VLAN based on the MAC address
- Prioritization of data packets based on the MAC address

Performance

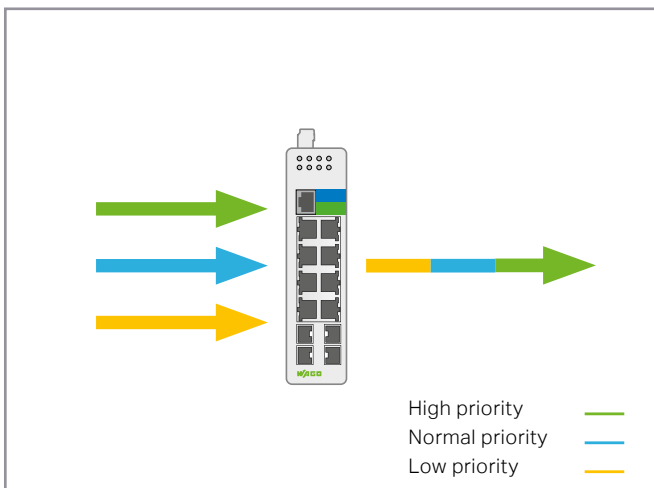
Optimized ETHERNET Networks



Link Aggregation

Network Optimization

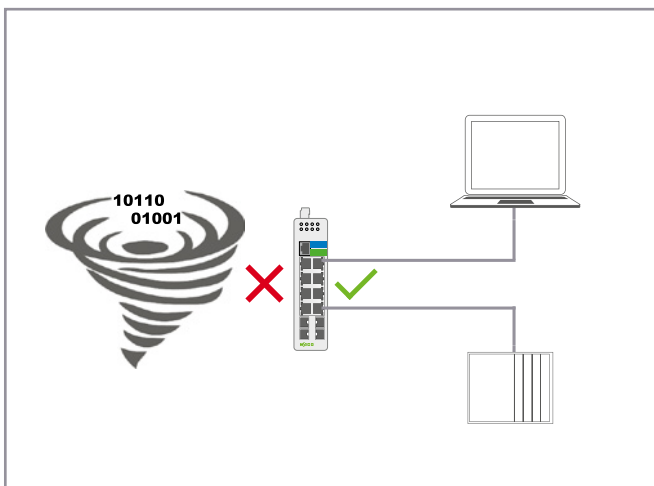
- LACP link aggregation
Merge multiple data connections into a single logical link:
 - Increased transmission rate
 - Link redundancy



QoS

Traffic Prioritization and Limitation

- Faster transfer of important data packets through the switch
- Prioritization of data packets per IEEE 802.1 Q
- Limitation of the bandwidth or number of packets per unit of time per port
- Increase in data transmission quality



Storm Control

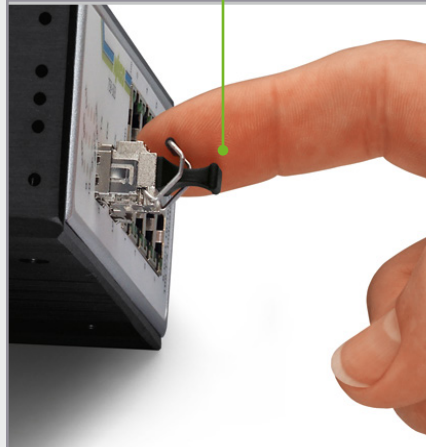
Mastering Data Traffic

- Stopping broadcast storms
- Ensuring network availability
- Limiting broadcast and multicast data flows (packets/time)

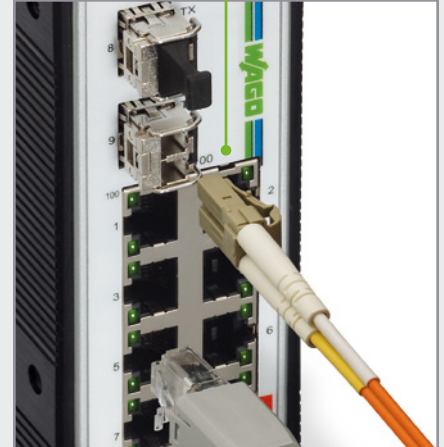
Insertion during operation



Mechanical locking

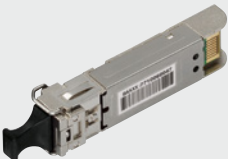
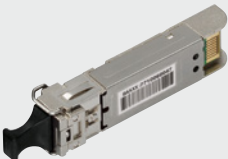


Adapts to the fiber type



SFP Modules

Interfaces for Fiber Optic Cables

	SFP Modules, 100BASE		SFP Modules, 1000BASE		
					
	100BASE-FX	100BASE-FX	1000BASE-SX	1000BASE-LX	1000BASE-ZX
Laser type	Multimode	Single-mode	Multimode	Single-mode	Single-mode
Wavelength	1310 nm	1310 nm	850 nm	1310 nm	1550 nm
Connector	LC duplex	LC duplex	LC duplex	LC duplex	LC duplex
Cable length (max.)	2 km	30 km	550 m, 300 m	10 km	80 km
Operating temperature	-40 ... +70 °C	-40 ... +70 °C	-40 ... +85 °C	-40 ... +85 °C	-40 ... +85 °C
DDM ¹	-	-	■	■	■
Item number	852-201/107-002	852-201/107-030	852-1200	852-1210	852-1280
Compatible with	852-103 852-303 852-603	852-103 852-303 852-603	852-303 852-603 852-1305 852-1505 852-1605 852-1417 852-1305/000-001 852-1505/000-001	852-303 852-603 852-1305 852-1505 852-1605 852-1417 852-1305/000-001 852-1505/000-001	852-303 852-603 852-1305 852-1505 852-1605 852-1417 852-1305/000-001 852-1505/000-001

WAGO Power Supply Pro 2

- Up to 96% efficiency
- Fit for digitalization thanks to communication module
- Versatile configuration options
- Fast and reliable tripping of miniature circuit breakers thanks to temporary output currents up to 600%
- Quick charging of capacitors and fast switching of contactors thanks to output currents up to 150% for five seconds
- Extended temperature range: -40 ... +70 °C



WAGO Power Supply Compact

- Compact, low-profile design
- Ideal for decentralized applications
- Surrounding air temperature (operation): -25 ... +60 °C



WAGO Power Supply Eco

- Budget-friendly for basic applications
- Flexible mounting of DIN-rail adapter
- Flexible installation via screw-mount clips



WAGO Power Supply Classic

- Integrated TopBoost (787-16xx with ≥ 120 W)
- DC OK signal/contact
- Up to 93% efficiency
- Surrounding air temperature (operation): -25 ... +70 °C

Power Supplies

WAGO Power Supply	Pro 2					Classic					Eco			Compact			
																	
Nominal output voltage [DC]	24 V	24 V	24 V	24 V	24 V	24 V	24 V	48 V	48 V	48 V	24 V	24 V	24 V	24 V	24 V	24 V	24 V
Nominal output current [DC]	5 A	10 A	1 A	2 A	5 A	10 A	2 A	5 A	10 A	1.25 A	2.5 A	5 A	1.3 A	2.5 A	4 A	6 A	
Industrial Eco Switches (852-111, 852-112)	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Industrial Eco Switches (852-1111, 852-1112)	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Industrial Eco Switches (PoE) (852-1411, 852-1417)	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Industrial Switches (852-101, 852-102, 852-103/040-000, 852-1102, 852-1106)	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Industrial Managed Switches (852-303, 852-1305, 852-1305/000-001)	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Industrial Managed Switches (PoE) (852-1505)	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Industrial Managed Switches (PoE) (852-1505/000-001)	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
PROFINET Managed Switches (852-602, 852-603, 852-1605)	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Item number	2787-2144	2787-2448	787-1602	787-1606	787-1622	787-1632	787-1623	787-1633	787-1635	787-1702	787-1712	787-1722	787-1102	787-1112	787-1122	787-1226	

■ ■ Recommendation

■ Useable – Limited usability or none at all

WLAN 802.11 a/b/g/d/e/i/h and Bluetooth® 4.0

- Robust communication with high data throughput

Access point functionality

- Build a network of up to 7 clients

Robust design

- IP65 protection type
- Temperature (operation): -30 ... +65 °C
- Direct mounting outside the housing

Version with external antenna

- Antenna gain of 3 dBi (max.)

A single solution for everything

- Wi-Fi and Bluetooth® in one device
- Client or access point
- Range: up to 400 m (open air)

Button

- Easy configuration
- Advanced configuration via Web server or Telnet

Diagnostic LEDs

- Supply voltage
- Network connections
- Wireless signal quality



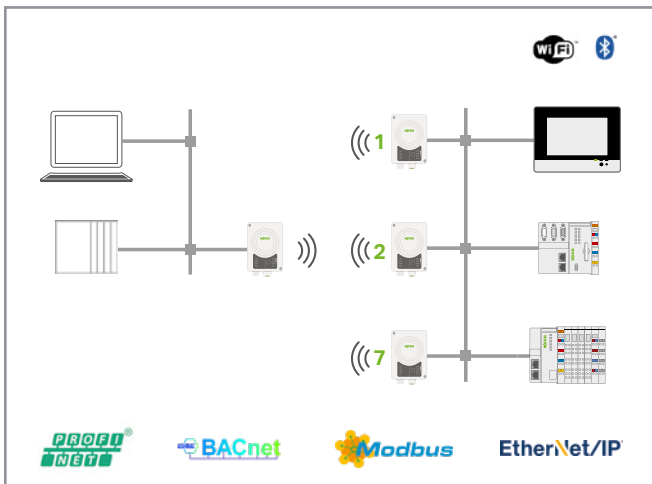
Wireless ETHERNET Gateway

Wireless ETHERNET Gateway

		
Antenna	Internal antenna	External ²
Data encryption	WEP64, WEP128, TKIP, AES/CCMP	
Range	400 m	
Frequency band	ISM band, 2.4 GHz (Bluetooth®, WLAN); ISM band, 5 GHz (WLAN)	
Authentication	WPA/WPA2 PSK, LEAP, PEAP	
Supply voltage	24 VDC (9 ... 30 V)	
Surrounding air temperature (operation)	-30 ... +65 °C	
Protection class	IP65	
Item number	758-918	758-918/000-0001

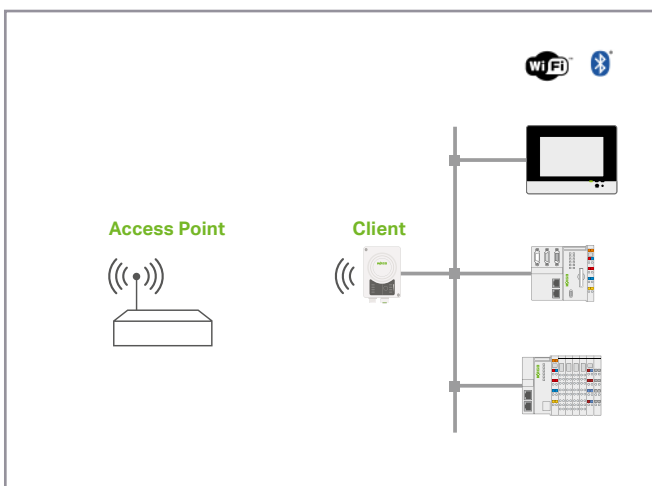
² Included in the scope of delivery

Application – Wireless ETHERNET Gateway



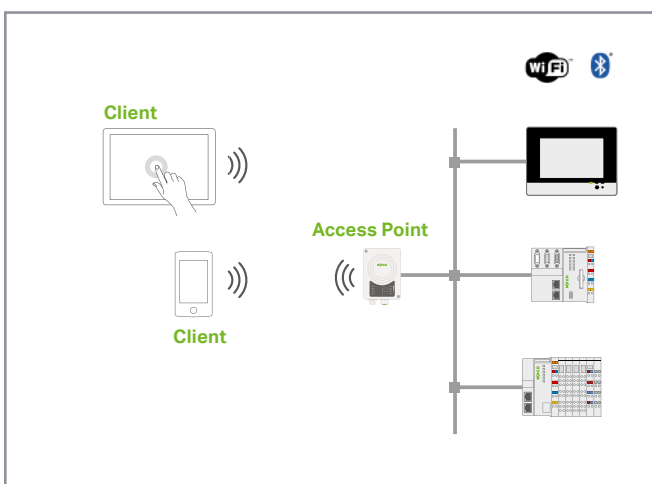
ETHERNET Bridge

- Transmission of each TCP/IP also of prioritized PROFINET RT and EtherNet/IP frames
- Pairing via device's push-button
- Up to seven clients
- Use of Wi-Fi or *Bluetooth®*



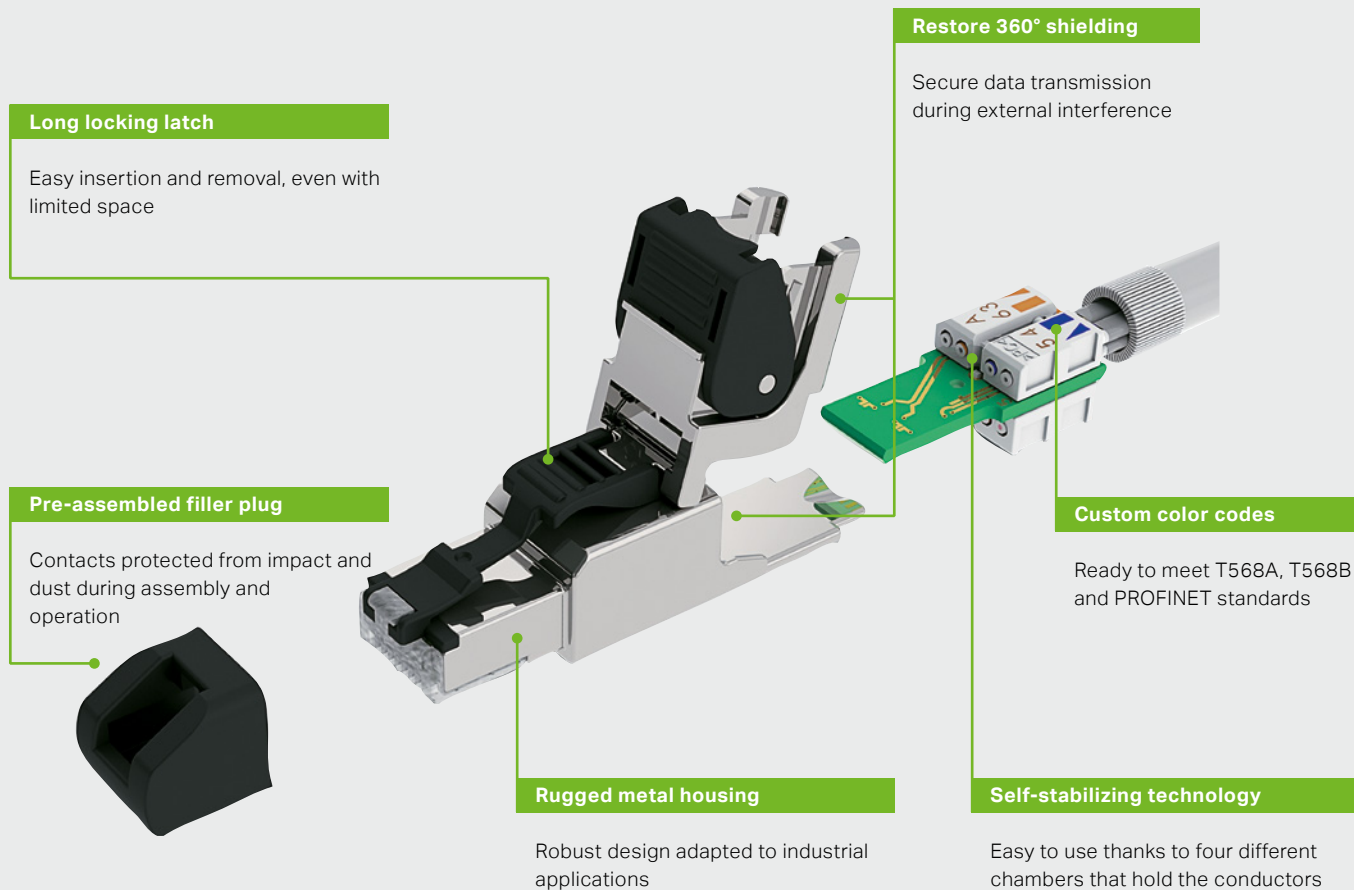
Client for Existing Access Point

- Connection to a network of type Wi-Fi 802.11 a/b/g/d/e/i/h
- Protocols like Modbus TCP, EtherNet/IP, BACnet/IP ...
- Possibility of connecting multiple devices after the client



Access Point

- Setup of a Wi-Fi 802.11 a/b/g/d/e/i/h or *Bluetooth®* network
- Connection of tablets, smartphones etc.
- Up to seven clients simultaneously



RJ-45 Connectors

Fast and Tool-Free Installation

RJ-45 Connectors			
			
Category	Cat. 6a	Cat. 6a	Cat. 6a
Max. rate	10 Gbit/s	10 Gbit/s	10 Gbit/s
Housing material	Metal	Metal	Metal
Surrounding air temperature (operation)	-40 ... +85 °C	-40 ... +85 °C	-40 ... +85 °C
Cable clamp	-	Straight output	Angled output
Conductor cross-section ¹	0.21 ... 0.32 mm ²	0.21 ... 0.32 mm ²	0.21 ... 0.32 mm ²
ETHERNET T568B ²	750-977/000-012	750-978/000-012	750-979/000-012
PROFINET ³	750-977/000-013	750-978/000-013	750-979/000-013

¹ Also available for conductors ranging from 0.13 to 0.21 mm², Item No. 750-97x/000-02x

² Also available for ETHERNET T568A, Item No. 750-97x/000-011

³ Max. rate for PROFINET: 100 Mbit/s

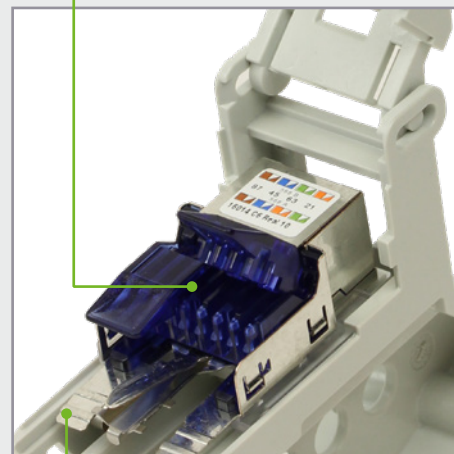


Features

- Cat. 6
- Compatible with PoE and PoE+

Easy and tool-free operation

- Self-stabilizing technology
- Double identification: T568A and T568B data is transferred



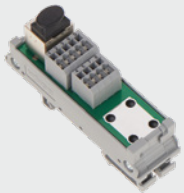
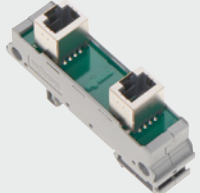
Shielding restart

Secure data transmission

Interface Modules

ETHERNET Cabling on DIN-Rail

RJ-45 Interface Modules

				
Category	Cat. 6	Cat. 5	Cat. 5	Cat. 5
Max. rate	10 Gbit/s	100 Mbit/s	100 Mbit/s	100 Mbit/s
Function	Cable on RJ-45	Passive PoE injector	Cable on RJ-45	RJ-45 to RJ-45
Dimensions (W x H x D)	26.8 x 64.4 x 81.4 mm	20.5 x 51 x 85 mm	24 x 40 x 85 mm	20.5 x 51 x 85 mm
Connection	IDC	CAGE CLAMP®	CAGE CLAMP®	-
Surrounding air temperature (operation)	-10 ... +60 °C	-40 ... +85 °C	-40 ... +85 °C	-40 ... +85 °C
Conductor cross-section	0.2 ... 0.32 mm²	-	0.08 ... 1.5 mm²	-
Item number	289-195	289-196	289-175	289-172

More devices at www.wago.com/interface-modules

Industrial Switches																				
		Unmanaged											Managed							
		Eco						Standard					Full					PROFINET		
		852-111	852-112	852-1111	852-1112	852-1411	852-1411/000-001	852-1417	852-101	852-102	852-103/040-000	852-1102	852-1106	852-303	852-1305	852-1305/000-001	852-1505	852-1505/000-001	852-602	852-603
Hardware	Number of copper ports	5	8	5	8	5	5	5	5	8	8	8	16	8	8	8	8	8	8	8
	100 Mbit/s	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	1 Gbit/s	-	-	■	■	■	■	■	-	-	-	■	■	-	■	■	■	■	-	-
	PoE+ ports among these (1 Gbit/s)	0	0	0	0	4	4	4	0	0	0	0	0	0	0	0	8	8	0	0
	Number of SFP ports	0	0	0	0	0	0	2	0	0	2	0	0	2	4	4	4	4	0	2
	100 Mbit/s	-	-	-	-	-	-	-	-	-	■	-	-	■	-	-	-	-	-	■
	1 Gbit/s	-	-	-	-	-	-	■	-	-	-	-	-	■	■	■	■	■	-	■
	Alarm relays	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1
Approvals, Standards, Certificates	CE	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	DNV GL	■	-	■	-	-	-	-	-	-	-	-	-	■	■	-	-	-	-	-
	UL 61010	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	-	■	■	■
	IEC 61850-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	■	-	■	-	-
	PROFINET CC-B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	■	■
Hardware Features	Status LEDs	-	-	-	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	Auto-negotiation	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	Auto-crossing	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	PROFINET CC-A	-	-	■	■	■	■	■	-	-	-	■	■	■	■	■	■	■	■	■
Configuration	DIP switch (diagnostics)	-	-	-	-	-	-	■	■	■	■	■	■	■	■	■	■	■	■	■
	Web-Based Management (http, https)	-	-	-	-	-	-	-	-	-	-	-	-	■	■	■	■	■	■	■
	SNMP (MIB)	-	-	-	-	-	-	-	-	-	-	-	-	■	■	■	■	■	■	■
	CLI (SSH, Telnet)	-	-	-	-	-	-	-	-	-	-	-	-	■	■	■	■	■	■	■
	PROFINET Configurator (GSDML file)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	■	■
	USB storage	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	■	-	■	-
Diagnostics	Status LED (LINK active)	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	Status LED (LINK down)	-	-	-	-	-	-	-	■	■	■	■	-	■	■	-	■	-	■	■
	Status LED (alarm)	-	-	-	-	-	-	-	■	■	■	■	■	■	■	■	■	■	■	■
	SNMP (MIB)	-	-	-	-	-	-	-	-	-	-	-	-	■	■	■	■	■	■	■
	SNMP traps	-	-	-	-	-	-	-	-	-	-	-	-	■	■	■	■	■	■	■
	Modbus® register	-	-	-	-	-	-	-	-	-	-	-	-	■	■	■	■	■	-	-
	Web-Based Management (http, https)	-	-	-	-	-	-	-	-	-	-	-	-	■	■	■	■	■	■	■
	PROFINET diagnostics	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	■	■
Redundancy	Neighborhood detection (LLDP)	-	-	-	-	-	-	-	-	-	-	-	-	■	■	■	■	■	■	■
	Redundant power supply	-	-	-	-	-	-	-	■	■	■	■	■	■	■	■	■	■	■	■
	Jet Ring	-	-	-	-	-	-	-	-	-	-	-	-	■	■	■	■	■	-	-
	Xpress Ring	-	-	-	-	-	-	-	-	-	-	-	-	■	■	■	■	■	-	-
	Ethernet Ring Protection Switching	-	-	-	-	-	-	-	-	-	-	-	-	■	■	■	■	■	-	-
	Media Redundancy Protocol (MRP) (client/manager)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	■	■
Network Security	RSTP/STP	-	-	-	-	-	-	-	-	-	-	-	-	■	■	■	■	■	■	■
	Segmentation (VLAN)	-	-	-	-	-	-	-	-	-	-	-	-	■	■	■	■	■	■	■
	Authentication (IEEE 802.1X)	-	-	-	-	-	-	-	-	-	-	-	-	■	■	■	■	■	-	-
	Access Control List (MAC, IP, Port)	-	-	-	-	-	-	-	-	-	-	-	-	■	■	■	■	■	■	■
Data Transmission and Performance	Port Security	-	-	-	-	-	-	-	-	-	-	-	-	■	■	■	■	■	-	-
	LACP link aggregation	-	-	-	-	-	-	-	-	-	-	-	-	■	■	■	■	■	-	-
	Prioritization (IEEE 802.1 p)	-	-	■	■	■	■	■	-	-	-	■	■	■	■	■	■	■	■	■
	Quality of service (IEEE 802.1 Q)	-	-	-	-	-	-	-	-	-	-	-	-	■	■	■	■	■	■	■
	Bandwidth limitation	-	-	-	-	-	-	-	-	-	-	-	-	■	■	■	■	■	■	■
	Storm detection	-	-	-	-	-	-	-	-	-	-	-	-	■	■	■	■	■	■	■
Routing within VLANs	-	-	-	-	-	-	-	-	-	-	-	-	■	■	■	■	■	■	■	

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