wienet

wieland

HMI ECO

wienet
Industrial Communication

Industrial network technology for various applications

Well equipped for increasing digitisation of your systems

Modern machines and systems are placing increasing demands on the performance capability of the communication networks used. More and more data belonging to devices within a network are stored on a server for analysis. This server tends to be located in the cloud. With the *wienet* product family you can organise data traffic within your Ethernet network and also check the data allowed to leave the network. Prioritization of the data packets and a fail-safe hardware platform play a key role in this. All the devices within the *wienet* product family have a robust design and are ideal for use in an industrial environment. With the new *wienet* HMI panels you never lose sight of your process and can intervene to control it via the touch user interface.

Advantages and features of the *wienet* products

- Almost every device has a redundant power supply for maximum availability
- Power over Ethernet (PoE) – full power for your devices with just one Ethernet cable
- Copper, LWL, WLAN or mobile communication as a transmission medium
- VPN router for secure data transmission from the network
- VPN service solutions

- Access point for wireless access to your devices
- Support for industrial automation protocols, such as PROFINET, Ethernet IP, and Modbus TCP
- Wide operating temperature range
- HMI panels for human-machine communication

WIELAND ELECTRIC GMBH

Founded in 1910, this family business was a pioneer in electrical connection technology. These days, with its headquarters in Bamberg and an international outlook, it is a market leader in pluggable installation technology. International agencies in more than 70 countries offer local product expertise, service, and advice all over the world.
Innovative product and industry solutions and a high level of service underpin our global success. Our unwavering attention to quality ensures maximum reliability and longevity for our products in the field. Over 2,200 dedicated people worldwide make this success possible.

wienet

Overview

Wieland products for industrial communication

Unmanaged Ethernet Switches (Fast Ethernet)

wienet UMS 5-W

- Slim 5-port Fast Ethernet switch
- Redundant 24 V/48 V DC voltage supply
- With signal relay
- Extensive operating temperature range from -40 °C to 75 °C

Type	Art. No.
wienet UMS 5-W	83.040.1001.0
Technical data	
Ethernet	
Number of ports	5 x 10/100Base-T(X)
Ethernet transfer rates	10/100 Mbps
Store and forward switching mode	Yes
Autocrossing	Yes
Autonegotiation	Yes
Autosensing	Yes
Autopolarity	Yes
Full IEEE 802.3 compatibility	Yes
Topology	Line, star, mesh
Power supply	
Operating voltage	12…48 V DC
Redundant power supply	2 power inputs P1, P2
Diagnostic LEDs	P1, P2, P-Fail, 10/100T (X): Link/Activity, Duplex/Collision
Power requirement	4.5 W max.
Ambient conditions	
Operating temperature	-40 °C … +75 °C
Storage temperature	-40 °C … +85 °C
Rel. air humidity during operation	10 ... 95% (non-condensing)
Other technical data	
Dimensions (mm) W x H x D	30 x 120 x 95
Housing	Metal
Mounting	Top-hat rail, wall (mounting set)
Weight	approx. 255 g
Protection rating	IP30
Approvals	
	FCC Part 15 Subpart B Class A
	EN 55022 Class A, UL/cUL 60950
	EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8
	IEC 60068-2-27, IEC 60068-2-32, IEC 60068-2-6

wienet UMS 6

Type	Art. No.
wienet UMS 6	83.040.0000.0
Technical data	
Number of ports	6 RJ45 ports
Port types	6 x Ethernet and Fast Ethernet (10/100 Mbit/s)
Store and forward switching mode	Yes
Autocrossing	Yes
Autonegotiation	Yes
Autosensing	Yes
Autopolarity	Yes
Full IEEE 802.3 compatibility	Yes
Line, star, and mesh topology possible	Yes
Operating voltage	9 … 30 V DC
Redundant power supply	2 power inputs
Diagnostic LEDs (Power / Link status / Data / Data rate)	Yes / Yes / Yes / Yes
Operating temperature	0 °C … +60 °C
Dimensions (mm) W x H x D	45.3 x 90 x 90.5
Housing	Aluminum profile
Mounting	Top-hat rail and screw fastening
Terminal type	Plug-in screw terminal
Terminal cross-section	Up to 1.5 mm² (AWG 16)
Weight	260 g
Protection rating	IP 40
Approvals	CE cULus FCC

Unmanaged Ethernet Switches (Fast Ethernet)

wienet UMS 6-L

Type	Art. No.
wienet UMS 6-L	83.040.0000.1

Technical data	
Number of ports	6 RJ45 ports
Port types	6 x Ethernet and Fast Ethernet (10/100 Mbit/s)
Store and forward switching mode	Yes
Autocrossing	Yes
Autonegotiation	Yes
Autosensing	Yes
Autopolarity	Yes
Full IEEE 802.3 compatibility	Yes
Line, star, and mesh topology possible	Yes
Operating voltage	9 … 30 V DC
Redundant power supply	2 power inputs
Diagnostic LEDs (Power / Link status / Data / Data rate)	Yes / Yes / Yes / Yes
Operating temperature	0 °C … +60 °C
Dimensions (mm) W x H x D	45 x 90 x 80
Housing	Hardened plastic
Mounting	Top-hat rail and screw fastening
Terminal type	Plug-in screw terminal
Terminal cross-section	Up to 1.5 mm² (AWG 16)
Weight	160 g
Protection rating	IP 40
Approvals	CE cULus FCC

wienet UMS 8

Type	Art. No.
wienet UMS 8	83.040.0001.0

Technical data	
Number of ports	8 RJ45 ports
Port types	8 x Ethernet and Fast Ethernet (10/100 Mbit/s)
Store and forward switching mode	Yes
Autocrossing	Yes
Autonegotiation	Yes
Autosensing	Yes
Autopolarity	Yes
Full IEEE 802.3 compatibility	Yes
Line, star, and mesh topology possible	Yes
Operating voltage	9 … 30 V DC
Redundant power supply	2 power inputs
Diagnostic LEDs (Power / Link status / Data / Data rate)	Yes / Yes / Yes / Yes
Operating temperature	-10 °C … +70 °C
Dimensions (mm) W x H x D	45.3 x 90 x 90.5
Housing	Aluminum profile
Mounting	Top-hat rail and screw fastening
Terminal type	Plug-in screw terminal
Terminal cross-section	Up to 1.5 mm² (AWG 16)
Weight	270 g
Protection rating	IP 40
Approvals	CE cULus FCC

# Unmanaged Gigabit Ethernet Switches

wienet UMS 5G

- 5 10/100/1000 Base-T(X) ports
- Support for up to 10K jumbo frames
- Wide temperature range of -40 °C to 70 °C
- Redundant power supply of 12 V DC to 52 V DC

Type	Art. No.
wienet UMS 5G	83.040.0130.0
Technical data	
Ethernet	
Type	Unmanaged
Number of 10/100/1000 Base-T(X) ports	5
Ethernet transfer rates	10/100/1000 Mbps
Standards	IEEE 802.3 for 10 Base-T,
	IEEE 802.3u for 100 Base-T(x)
	IEEE 802.3z for 1000 Base-T(x)
	IEEE 802.3Q for VLAN Tagging
	IEEE 802.3p for Class of Service
	IEEE 802.3x for Flow Control
	IEEE 802.3x for Flow Control
	IEEE 802.3az for Energy Efficient Ethernet
Transmission length	up to 100 m
Topologies	Star, line, mesh
Data flow control	Back pressure and pause frame-based flow control schemes
LLDP	Forwarding
Switch properties	
Technique	Store and forward
MAC address table	8096
Jumbo frame	10 Kbytes
Packet buffer	1 Mbit
Auto MDI/MDI(x)	Yes
Autonegotiation	Yes
Power supply	
Operating voltage	12 … 52 V DC
Power consumption typical without PoE	0.5 A at 12 V DC; 0.25 A at 24 V DC
Power without PoE	6 W
Relay output	max. 0.5 A at 24 V DC
Connection	Push-in terminals, pluggable
LED	
Displays	PWR1, PWR2, Alarm, RJ45 Act/Link
Physical properties	
Housing	SECC aluminum housing IP30 according to EN 60529
Dimensions (mm) W x H x D	approx. 32 x 90 x 110
Weight	approx. 420 g
Installation	Top-hat rail or on wall
Ambient conditions	
Operating temperature	-40 °C … 70 °C
Storage temperature	-40 °C … 85 °C
Relative humidity	5 % … 95 % (55 °C) Non-condensing
Approvals	
Safety	UL 61010-2-201, UL C1D2/ATEX Zone 2
EMC	EN 55032
	EN 61000-6-4
	EB 55024
	EN 61000-6-2
Tested according to	
IEC 61000-4-2	ESD Level 4
IEC 61000-4-3	RS Level 3
IEC 61000-4-4	EFT Level 3 (Power Port), Level 4 (Signal Port)
IEC 61000-4-5	Surge Level 3
IEC 61000-4-6	CS Level 3
IEC 61000-4-8	PFMF Level 3
IEC 61000-4-11	DIP
Shock	MIL-STD-810F Method 516.5
Drop	MIL-STD-810F Method 516.5
Vibration	MIL-STD-810F Method 514.5 C-1 & C-2
Shock	MIL-STD-810F Method 516.5
RoHs	Yes

Unmanaged Gigabit Ethernet Switches

wienet UMS 8-G

Type	Art. No.
wienet UMS 8-G	83.040.0106.0

Technical data	
Number of ports	8 x RJ45
Port types	8 x Giga Ethernet (10/100/1000 Mbit/s)
Store and forward switching mode	Yes
Autocrossing	Yes
Autonegotiation	Yes
Autosensing	Yes
Autopolarity	Yes
Full IEEE 802.3 compatibility	Yes
Line, star, and mesh topology possible	Yes
Operating voltage	9 … 48 V DC
Redundant power supply	2 power inputs
Diagnostic LEDs (Power / Link status / Data / Data rate)	Yes / Yes / Yes / Yes
Operating temperature	-10 °C … +70 °C
Dimensions (mm) W x H x D	45.3 x 90 x 90.5
Housing	Metal
Mounting	Top-hat rail and screw fastening
Terminal type	Plug-in screw terminal
Terminal cross-section	0.2 – 1.5 mm² (AWG 24–16)
Weight	255 g
Protection rating	IP 50
Approvals	CE c(UL)us FCC

wienet UMS 8-2G

Type	Art. No.
wienet UMS 8-2G	83.040.0103.0

Technical data	
Number of ports	10 RJ45 ports
Port types	8 x Ethernet and Fast Ethernet (10/100 Mbit/s) 2 x Giga Ethernet (10/100/1000 Mbit/s)
Store and forward switching mode	Yes
Autocrossing	Yes
Autonegotiation	Yes
Autosensing	Yes
Autopolarity	Yes
Full IEEE 802.3 compatibility	Yes
Line, star, and mesh topology possible	Yes
Operating voltage	12 … 48 V DC
Redundant power supply	2 power inputs
Diagnostic LEDs (Power / Link status / Data / Data rate)	Yes / Yes / Yes / Yes
Operating temperature	-40 °C … +70 °C
Dimensions (mm) W x H x D	54 x 146 x 130.5
Housing	Aluminum profile
Mounting	Top-hat rail and screw fastening
Terminal type	Plug-in screw terminal
Terminal cross-section	Up to 1.5 mm² (AWG 16)
Weight	1000 g
Protection rating	IP 40
Approvals	CE c(UL)us FCC

Power over Ethernet (PoE)

The *wienet* Power over Ethernet switches enable the joint transfer of energy and data as per IEEE 802.3 on one Ethernet line. Up to 15.4 W can be supplied per PoE port.

✓ **IP network cameras**

✓ **Scanners and RFID stations**

✓ **WLAN access points**

✓ **Anywhere where voltage supply for network devices is difficult**

✓ **VoIP telephony**

Advantages

- Save additional power supply units and the related installation costs
- Mount cameras, IP telephones or WLAN access points with only one cable

PoE standards

IEEE standard	a.k.a.	Current	Remarks
802.3af	PoE	15.4 Watt (max)	
802.3at	PoE+	25.5 Watt (max)	
802.3bt	4PPoE	55 Watt (Level 3); 90-100 Watt (Level 4)	as per IEEE
NA	UPoE	60 Watt (max)	as per CISCO

Higher-level network

WLAN access point

DC

Camera

Data

Data with power supply
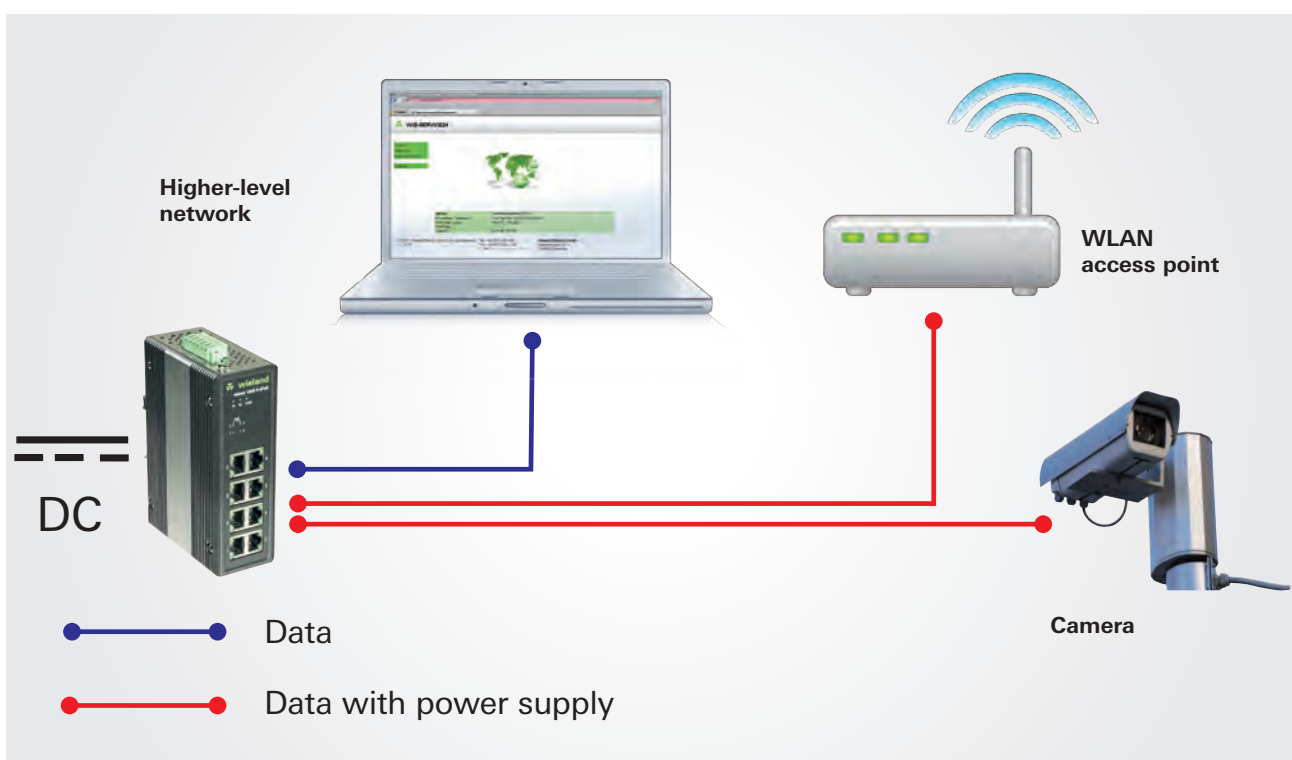
Power over Ethernet switches (Fast Ethernet)

wienet UMS 8-4 PoE-W

- 8 Fast Ethernet ports
- 4 PoE ports with injector function
- Broadcast power protection
- Ethernet ESD protection
- Power line EFT protection
- Redundant 24 V/48 V DC voltage supply
- With signal relay
- Extensive operating temperature range from -40 °C to 75 °C

Type	Art. No.
wienet UMS 8-4 PoE-W	83.040.1203.0
Technical data	
Ethernet	
Type	Unmanaged
Number of ports	8 x 10/100Base-T(X)
PoE ports	1-4
Ethernet transfer rates	10/100 Mbps
Standards	IEEE 802.3, 802.3u, 802.3x, 802.3af
Transmission length	up to 100 m
Topology	Line, star, mesh
Power supply	
Operating voltage	24/48 V DC
Redundant power supply	2 power inputs P1, P2
Diagnostic LEDs	P1, P2, P-Fail, 10/100T (X): Link/Activity, Duplex/Collision
Power requirement	65 W at full load PoE
PoE port output	15.4 W at 48 V DC
Ambient conditions	
Operating temperature	-40 °C … +75 °C
Storage temperature	-40 °C … +85 °C
Rel. air humidity during operation	5 ... 95% (non-condensing)
Other technical data	
Dimensions (mm) W x H x D	48.6 x 140 x 95
Housing	Metal
Mounting	Top-hat rail, wall (mounting set)
Weight	approx. 700 g
Protection rating	IP30
Relay output	in case of missing redundant voltage supply
Approvals	
	UL 508, FCC Part 15 Subpart B Class A
	EN 55022 Class A
	EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8
	IEC 60068-2-27, IEC 60068-2-32, IEC 60068-2-6

wienet UMS 5G-4PoE

- 5 10/100/1000 Base-T(X) ports
- 4 PoE ports 802.3af (15.4 W) or 802.3at (30 W)
- Support for up to 10K jumbo frames
- Wide temperature range of -40 °C to 70 °C
- Redundant power supply of 12 V DC to 52 V DC

Standards

IEEE 802.3 for 10 Base-T, IEEE 802.3u for 100 Base-T(x), IEEE 802.3z for 1000 Base-T(x), IEEE 802.3Q for VLAN Tagging, IEEE 802.3p for Class of Service, IEEE 802.3x for Flow Control, IEEE 802.3af for PoE (15.4 W), IEEE 802.3at for PoE+ (30 W), IEEE 802.3x for Flow Control, IEEE 802.3az for Energy Efficient Ethernet

Type	Art. No.
wienet UMS 5G-4PoE	83.040.0131.0
Technical data	
Ethernet	
Type	Unmanaged
Number of 10/100/1000 Base-T(X) ports	5
Number of PoE	4
Power per PoE port (802.3af)	15.4 W
Power per PoE port (802.3at)	30 W
Maximum total power PoE	120 W
Ethernet transfer rates	10/100/1000 Mbps
Transmission length	up to 100 m
Topologies	Star, line, mesh
Data flow control	Back pressure and pause frame-based flow control schemes
LLDP	Forwarding
Switch properties	
Technique	Store and forward
MAC address table	8096
Jumbo frame	10 Kbytes
Packet buffer	1 Mbit
Auto MDI/MDI(x)	Yes
Autonegotiation	Yes
Power supply	
Operating voltage	12-52 V DC
Power consumption typical without PoE	0.5 A at 12 V DC; 0.25 A at 24 V DC
Power without PoE	6 W
Max. power consumption typical with PoE	2.6 A at 51 V DC
Max. power with PoE	120 W
Relay output	max. 0.5 A at 24 V DC
Connection	Push-in terminals, pluggable
LED	
Displays	PWR1, PWR2, Alarm, RJ45 Act/Link
Physical properties	
Housing	SECC aluminum housing IP30 according to EN 60529
Dimensions (mm) W x H x D	approx. 32 x 90 x 110
Weight	approx. 420 g
Installation	Top-hat rail or on wall
Ambient conditions	
Operating temperature	-40 °C … 70 °C
Storage temperature	-40 °C … 85 °C
Relative humidity	5 % … 95 % (55 °C) Non-condensing
Approvals	
Safety	UL 61010-2-201, UL C1D2/ATEX Zone 2
EMC	EN 55032, EN 61000-6-4, EB 55024, EN 61000-6-2

Fiber-optic technology
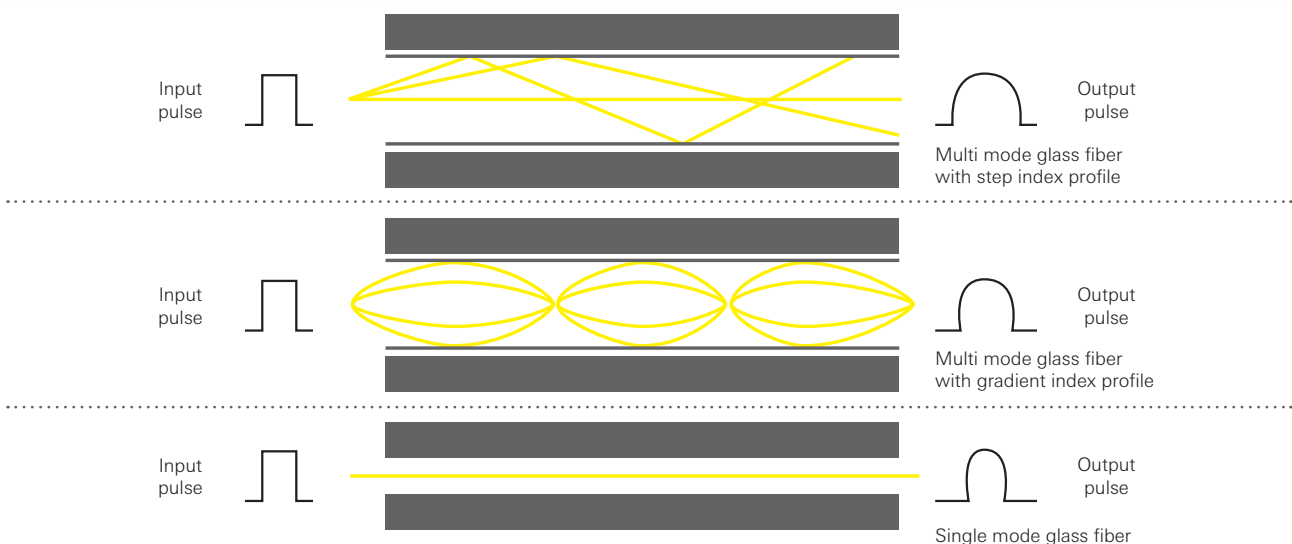## Interference-free and powerful

The **wienet** managed switches enable data cabling using fiber-optic cables via variable SFP (small form-factor pluggable) ports. All you have to do is select the right SFP transceiver. Choose single mode for long distances or multi mode for shorter connection paths.

✓ **Large transmission distances**

✓ **EMC problems are avoided**

✓ **Potentials can be insulated galvanically**

✓ **SFP modules for flexibility in selecting the right fiber-optic connection**

✓ **Lightning and explosion protection**

✓ **Higher bandwidths possible**

✓ **No crosstalk between the fibers**

✓ **Protection against interception**

Realizable lengths with fiber-optic technology

Fiber	Without connectors	One additional connector	Two additional connectors
Plastic Optical Fiber (POF)	50 m	43.5 m	37 m
Plastic Cladded Fiber (PCF)	100 m	100 m	100 m
Multi mode glass fiber	10 km	10 km	10 km
Single mode glass fiber	80 km	80 km	80 km

Input pulse — Output pulse
Multi mode glass fiber with step index profile

Input pulse — Output pulse
Multi mode glass fiber with gradient index profile

Input pulse — Output pulse
Single mode glass fiber

Unmanaged Ethernet Switches (with fiber optic)

wienet UMS 4-1FM

Type	Art. No.
wienet UMS 4-1FM	83.040.0002.0
Technical data	
Number of ports	4 x RJ45, 1 x ST (fiber-optic multi mode)
Port types	10/100BaseT(X), 100BaseFX
Maximum distance	2 km
Store and forward switching mode	Yes
Autocrossing	Yes
Autonegotiation	Yes
Autosensing	Yes
Autopolarity	Yes
Full IEEE 802.3 compatibility	Yes
Line, star, and mesh topology possible	Yes
Operating voltage	9 … 30 V DC
Redundant power supply	2 power inputs
Diagnostic LEDs (Power / Link status / Data / Data rate)	Yes / Yes / Yes / Yes
Operating temperature	-10 °C … +70 °C
Dimensions (mm) W x H x D	45.3 x 90 x 90.5 mm
Housing	Metal
Mounting	Top-hat rail and screw fastening
Terminal type	Plug-in screw terminal
Terminal cross-section	0.2 – 1.5 mm² (AWG 24 – 16)
Weight	260 g
Protection rating	IP 50
Approvals	CE c(UL)us FCC

wienet UMS 4-1FS

Type	Art. No.
wienet UMS 4-1FS	83.040.0003.0
Technical data	
Number of ports	4 x RJ45, 1 x SC (fiber-optic single mode)
Port types	10/100BaseT(X), 100BaseFX
Maximum distance	2 km
Store and forward switching mode	Yes
Autocrossing	Yes
Autonegotiation	Yes
Autosensing	Yes
Autopolarity	Yes
Full IEEE 802.3 compatibility	Yes
Line, star, and mesh topology possible	Yes
Operating voltage	9 … 30 V DC
Redundant power supply	2 power inputs
Diagnostic LEDs (Power / Link status / Data / Data rate)	Yes / Yes / Yes / Yes
Operating temperature	-10 °C … +70 °C
Dimensions (mm) W x H x D	45.3 x 90 x 90.5 mm
Housing	Metal
Mounting	Top-hat rail and screw fastening
Terminal type	Plug-in screw terminal
Terminal cross-section	0.2 – 1.5 mm² (AWG 24 – 16)
Weight	260 g
Protection rating	IP 50
Approvals	CE c(UL)us FCC

Light Managed Switches
wienet LMS series

The **wienet** light managed switches (LMS switches) close the gap between completely unmanaged switches and fully manageable switches which are difficult to configure. LMS switches combine the advantages of both (managed and unmanaged switches) to enable a simple and cost-effective solution for centralized network management. The **wienet** LMS series uses Modbus TCP to communicate with SCADA systems. At the same time, communication with an NMS (Networking Management System) via SNMP is possible, providing full device control for responsible control engineers and/or IT engineers.
wienet LMS switches can be used in plant automation for connecting end devices with the backbone network or another network.

✓ **Communication with SCADA systems via Modbus TCP**

✓ **Jumbo frame support up to 2,048 bytes**

✓ **Communication with NMS (Network Management Systems) via SNMP**

✓ **Port-based QoS (Quality of Service) for deterministic data traffic**

WebAccess

NMS

Industrial IT

Industrial Automation

Integrated to SCADA Client

WebAccess
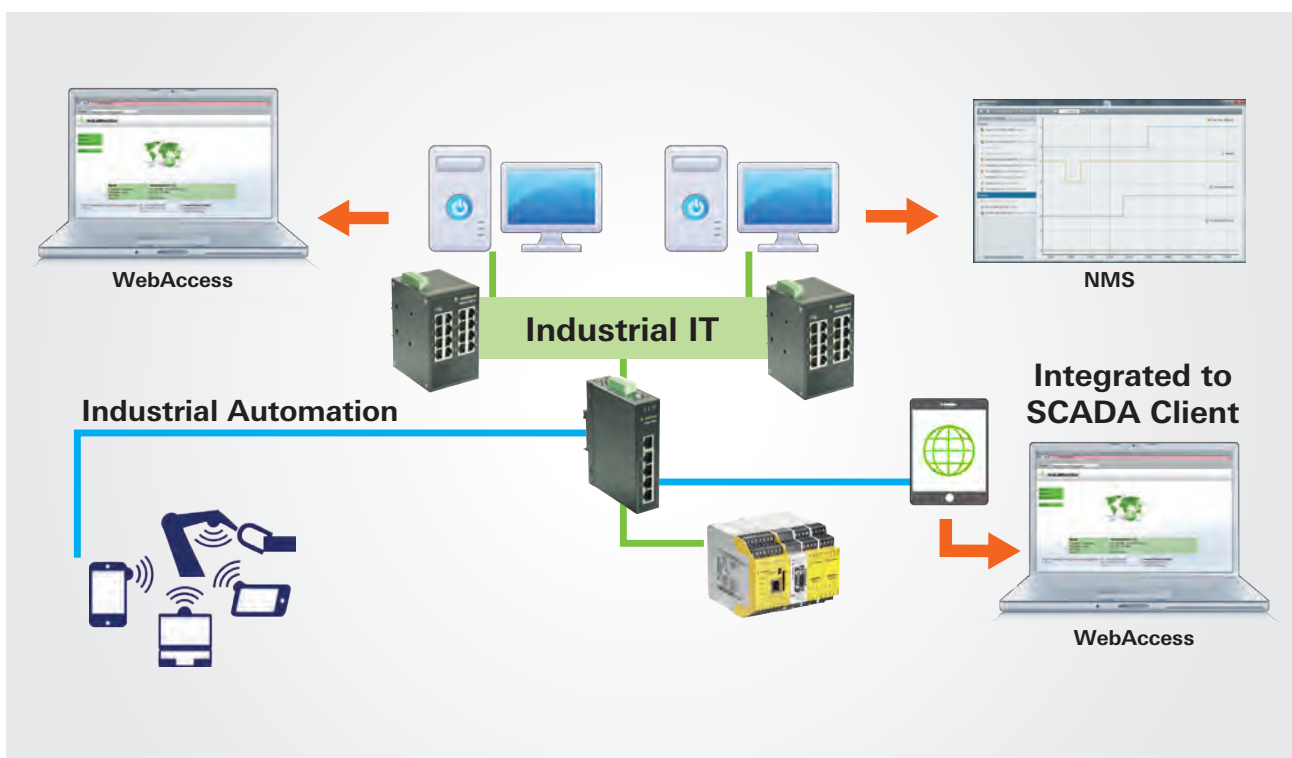
Light Managed Switches

wienet LMS 16-W

- 16 Fast Ethernet ports with Auto MDI/MDI-X
- Communication with SCADA software via Modbus TCP
- Communication with NMS (Network Management System) via SNMP
- Port-based QoS for deterministic data traffic
- EMC Level 3 protection for extreme outdoor and industrial applications
- IEEE 802.3az Energy Efficient Ethernet (EEE)
- Jumbo frame support (up to 2,048 bytes)
- Extensive operating temperature range from -40 °C to 75 °C

Type	Art. No.
wienet LMS 16-W	83.040.1334.0
Technical data	
Ethernet	
Type	Light Managed
Number of ports	16 x RJ-45 10/100Base-T(X)
Ethernet transfer rates	10/100 Mbps
Standards	IEEE 802.3, 802.3u, 802.3x, 802.31p, 802.3az, 802.3ab
Transmission length	up to 100 m
Topology	Line, star, mesh
Switch properties	
MAC table size	8 k
Packet buffer	128 kbit
Switch capacitance	3.2 Gbps
Jumbo frame	2,048 bytes
Power supply	
Operating voltage	8.4 - 52.8 V DC
Redundant power supply	2 power inputs P1, P2
Diagnostic LEDs	P1, P2, P-Fail, Loop Detection10/100T (X): Link/Activity, Speed
Power requirement	Max. 3.84 W
Ambient conditions	
Operating temperature	-40 °C … +75 °C
Storage temperature	-40 °C … +85 °C
Rel. air humidity during operation	10 ... 95 % (non-condensing)
Other technical data	
Dimensions (mm) W x H x D	74 x 120 x 84
Housing	Metal
Mounting	Top-hat rail, wall (mounting set)
Weight	approx. 700 g
Protection rating	IP30
Relay output	in case of missing redundant voltage supply
Approvals	
	FCC Part 15 Subpart B Class A, EN 55011/55022 Class A
	EN 61000-4-2 (Level 3); EN 61000-4-3 2 (Level 3); EN 61000-4-4 2 (Level 3);
	EN 61000-4-5 2 (Level 3); EN 61000-4-6 2 (Level 3); EN 61000-4-8 2 (Level 3)
	IEC/EN60950, UL 60950, UL 508, Class 1 Division 2, ATEX

Managed Switches
Full control on the network

The *wienet* managed switches enable optimum control and diagnostics of the industrial Ethernet network. Configurable ring structures allow redundant topologies and increase network availability. Integrated Ethernet technologies, such as VLAN Tagging, Quality of Service, and Port Trunking, offer various possible ways of optimizing the network. With Power over Ethernet (PoE), the ports of the Ethernet switches also provide connected devices with energy. All switches are certified for use in Profinet networks (Conformance Class A and B) by PNO (Profinet user organization). A huge range of port variants from 10/100 Base-T(X) RJ45 ports to variable SFP ports and through to Gigabit combi ports enable optimum adaptation of the chosen switch to the application environment.

✓ **More data flow control on the network**

✓ **Data flow optimization through segmentation via VLANs**

✓ **Ethernet packet prioritization for data with real-time requirement**

✓ **PoE+ support, i.e. full 30 W on every PoE port**

✓ **Suitable for Profinet up to CC B and Ethernet IP**

✓ **EMC Level 3 for highest industry requirements**

✓ **Various possible ways of creating redundant ring topologies**

Ring redundancy

Enables the network to recover by itself in the event of a connection failure. This ensures maximum availability in industrial network applications. There are various protocols with advantages and disadvantages.

wienet managed switches support the following, among others:

ERPS, MRP (for ProfiNet networks), RSTP, STP

ERPS ring
recovery time < 20 ms

Port Trunking to increase bandwidth

The Link Aggregation Control Protocol (LACP) standardized in IEEE 802.3ad enables the bundling of several physical LAN interfaces into one logical channel. This increases the data throughput and failure safety compared to a simple network interface. With *wienet* managed switches up to 8 ports can be combined to create one logical channel.

2–8 ports form a trunk group
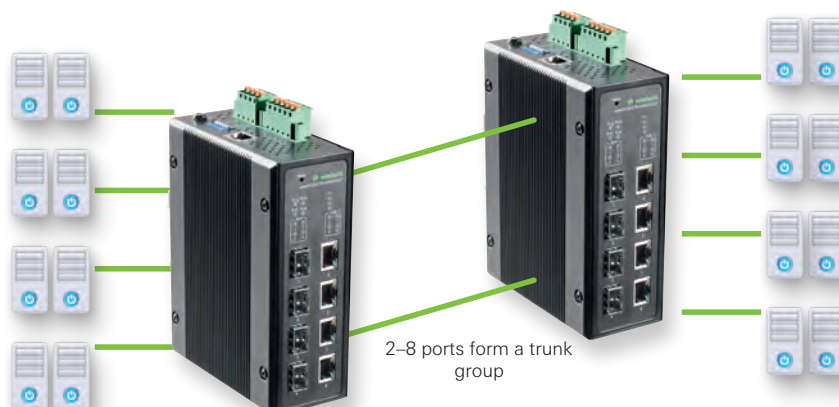
Managed Switches
Full control on the network

Quality of Service (QoS)

IEEE 802.1p describes how data traffic can be prioritized. *wienet* managed switches support QoS and thereby enable the highest prioritized data to be forwarded first at all times on industrial Ethernet networks. This enhances network performance and ensures that time-critical applications with the highest priority can communicate.

Highest priority

Lowest priority

Average priority
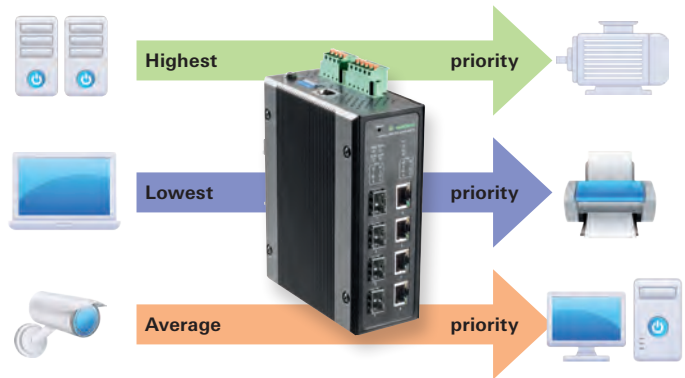
VLAN

Virtual LAN networks (VLANs) enable segmentation of the network. A VLAN is a logical subnet within a switch or an entire physical network. It can be extended over several switches. *wienet* managed switches only forward data packets (Ethernet frames) to the subscribers on a VLAN. The ability to isolate Ethernet networks with VLANs from each other increases the security of data transmission and therefore offers additional protection against unwanted access or data traffic.

VLAN 1

VLAN 2

VLAN 3

Precision Time Protocol

IEEE 1588 PTO describes the Precision Time Protocol (PTP). This synchronizes real-time clocks located at certain nodes within a distributed system. *wienet* managed switches support time synchronization according to IEEE 1588 PTP. This synchronizes distributed clocks to the nanosecond. As a result, *wienet* managed switches are also ideal for motion control applications.

Grand Master Clock: Sets the reference time for the network

Boundary Clock: Slave to the grand master and master to its slaves

Ordinary Clock: Obtains the time as a slave from the boundary clock master
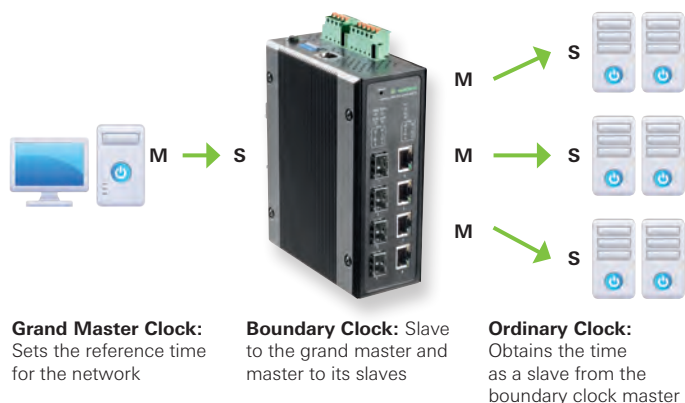
Multicast filter

IGMP (Internet Group Management Protocol) and GMRP (Generic Multicast Registration Protocol) are protocols which restrict multicast data traffic. Data packets are only forwarded to the end-user devices that actually need them. This reduces unnecessary data traffic on the network.

Group 1 multicast messages

Group 2 multicast messages

IGMP group 1   IGMP group 2   IGMP group 1   IGMP group 2
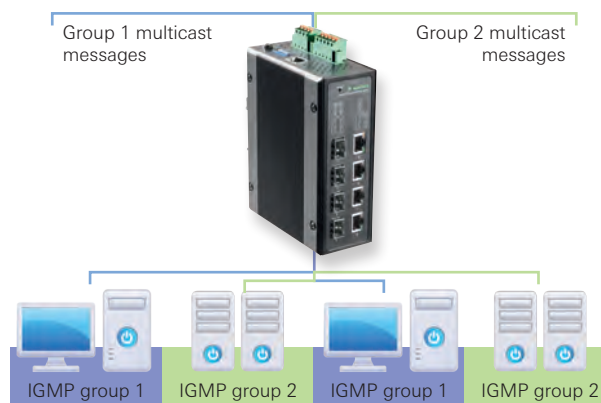
Topology recognition with LLDP

The LLDP protocol (Link Layer Discovery Protocol) described in IEEE 802.1 ab is a Data Link Layer protocol which discloses information relating to a device, such as its IP address, description, and functionalities, to neighboring devices via the network. *wienet* managed switches fully support LLDP. LLDP-enabled devices are recognized and managed with the network management software "*wienet* Manager". The "*wienet* Manager" uses this information to create precise network topologies automatically and to manage information about connected devices.
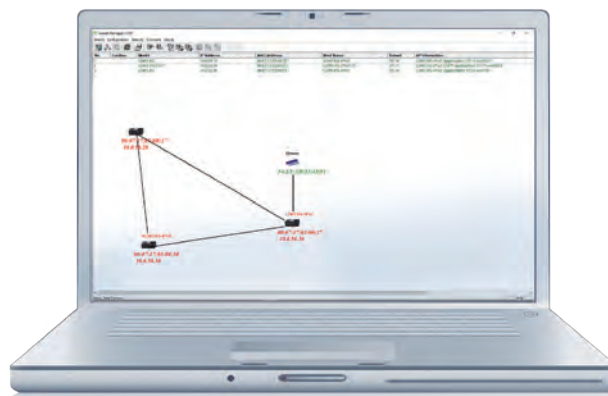
Several paths lead to the right configuration

wienet managed switches are easy to configure using a web browser, Telnet console, MIB or Hyper Terminal. It is possible to choose between the various access options in line with personal preferences. These tools can also be used to store the configuration of the switches or to implement firmware updates.

Managed Fast Ethernet Switches
Full control on the network

The **wienet** managed fast Ethernet switches are extremely reliable and fault-tolerant industrial managed (PoE) Ethernet switches. They are equipped with up to eight 10/100BASE-T (X) RJ-45 ports and up to four 10/100/1000BASE-T(X)/FX RJ-45 and SFP ports. With a recovery time of less than 20 ms, self-healing redundant backup networks can be realized. Thanks to a multifunctional web dashboard, the switches offer smart functions such as Quality of Service (QoS), virtual LAN (VLAN), IGMP, port mirroring, and security. The **wienet** managed fast Ethernet series was developed for industrial, robust applications. Key features are double power supply, 2 floating relay contacts for diagnostics and a robust metal housing with protection rating IP 30.

✓ **More data flow control on the network**

✓ **Suitable for Profinet up to CC B and Ethernet IP**

✓ **Data flow optimization through segmentation via VLANs**

✓ **EMC Level 3 for highest industry requirements**

✓ **Ethernet packet prioritization for data with real-time requirement**

✓ **Various possible ways of creating redundant ring topologies**

✓ **PoE+ support, i.e. full 30 W on every PoE port**

Overview of Managed Fast Ethernet Switches

Item number	Type	Description	10/100 RJ45 ports	10/100/1000 RJ45 ports	10/100/1000 SFP ports	Max. PoE ports
83.040.0200.0	L2MS 6-2SFP	6-port managed fast Ethernet switch, 2 SFP	4	-	2	
83.040.0201.0	L2MS 6-4PoE-2SFP	6-port managed fast Ethernet switch with 4 PoE and 2 SFP	4	-	2	4
83.040.0210.0	L2MS 8-4G-4SFP	8-port managed fast Ethernet switch with 4 gigabit combo uplink ports	4	(4)	(4)	
83.040.0211.0	L2MS 8-4G-4PoE-4SFP	8-port managed fast Ethernet switch with 4 PoE and 4 gigabit combo uplink ports	4	(4)	(4)	4
83.040.0220.0	L2MS 12-4G-4SFP	12-port managed fast Ethernet switch with 4 gigabit combo uplink ports	8	(4)	(4)	
83.040.0221.0	L2MS 12-4G-4PoE-4SFP	12-port managed fast Ethernet switch with 4 PoE and 4 gigabit combo uplink ports	8	(4)	(4)	4
83.040.0222.0	L2MS 12-4G-8PoE-4SFP	12-port managed fast Ethernet switch with 8 PoE and 4 gigabit combo uplink ports	8	(4)	(4)	8

(4) Combo ports: either RJ45 or SFP per port

80°C
-40°C

PROFI NET ®

IEEE 1588

Ring

Industrial EMC

IP30
IEC60529

6-Port Managed Fast Ethernet Switches

wienet L2MS 6-2SFP
wienet L2MS 6-4PoE-2SFP

- 4 10/100 Base-T(X) ports
- 2 SFP uplink ports
- 4 PoE ports 802.3af (15.4 W) or 802.3at (30 W) with L2MS 6-4PoE-2SFP
- ERPS ring (recovery time < 20 ms with 40 switches, STP/RSTP for network redundancy
- Suitable for Profinet (CC A and CC B), Ethernet IP, and Modbus TCP
- Redundant power supply

Standards

IEEE 802.3 for 10 Base-T, IEEE 802.3u for 100 Base-T(x), IEEE 802.3z for 1000 Base-T(x),
IEEE 802.3Q for VLAN Tagging, IEEE 802.3p for Class of Service, IEEE 802.3x for Flow Control,
IEEE 802.3af for PoE (15.4 W), IEEE 802.3at for PoE+ (30 W), IEEE 802.3x for Flow Control,
IEEE 802.3az for Energy Efficient Ethernet,
IEEE 802.1D-2004 for Spanning Tree Protocol,
IEEE 802.1w for Rapid STP, IEEE 802.1X for Authentication, IEEE 802.3ad for Port Trunking with LACP

Protocols

IPv4, IPv6, IGMPv1/v2/v3, IGMP Snooping, GARP, GRMP, GVRP, SNMP v1/v2/v4, SNMP inform, ICMP, Telnet, SSH, DHCP Server/Relay/Client, DHCP Option 66/67/82, BootP, RARP, TFTP, NTP Server/Client, SNTP, SMTP, SMTP (Gmail), RMON, HTTP, HTTPS, Syslog, MRP (Client), LLDP, IEEE 1588 PRP v1/v2, IEEE 1588 Hardware Transparent Clock, 802.1x, EAP, RADIUS, TACACS+, Mirror Port, QoS, ACL, Serial console, U-Ring, STP, RSTP, MSTP, Redundancy Compatible Ring, Profinet, Ethernet IP, Modbus TCP

Type		Art. No.	
wienet L2MS 6-2SFP		83.040.0200.0	
wienet L2MS 6-4PoE-2SFP			83.040.0201.0

Technical data		
Power supply		
Operating voltage	18 - 30 V DC	9 - 48 V DC
with PoE as per IEEE 802.3 af		45 - 57 V DC
with PoE as per IEEE 802.3 at		51 - 57 V DC
Power consumption with PoE IEEE 802.3 af		Max. 1.6 A at 45 V DC
Power consumption with PoE IEEE 802.3 at		Max. 2.8 A at 51 V DC
Power consumption typical AC without PoE	Max. 1.5 A at 18 V DC	
Power consumption typical DC without PoE	Max. 2.0 A at 9 V DC	
Reverse polarity protection	Exists with DC feed	
Ethernet		
Number of PoE		4
Power per PoE port (802.3 af)		15.4 W
Power per PoE port (802.3 at)		30 W
Maximum total power PoE		120 W
Type	Managed	
Number of 10/100 Base-T(X) ports	4	
Number of SFP ports	2	
Ethernet transfer rates	10/100/1000 Mbps	
Transmission length	up to 100 m	
Topologies	Star, line, mesh, ring	
Data flow control	Back pressure and pause frame-based flow control schemes	
Switch properties		
Technique	Store and forward	
MAC address table	16K	
Priority levels	8	
Packet buffer	12 Mbit	
VLAN ID range	VID 1 to 4094	
Static IGMP groups	256	
Dynamic IGMP groups	256	
Connection	Push-in terminals, pluggable	
Interface		
LED displays	PWR1, PWR2, Alarm, Run, Ring, Ring Master, RJ45 Act/Link, SFP Link, PoE	
Console	RS232 (RJ45 connection)	
Relay output	2 relay outputs with max. 2 A at 30 V DC	
DIP switch	Ring control	
Reset switch	Yes	
Physical properties		
Housing	Metal housing IP30 according to EN 60529	
Dimensions (mm) W x H x D	approx. 60.3 x 137.9 x 164	
Weight	approx. 1.2 kg max.	
Installation	Top-hat rail	
Ambient conditions		
Operating temperature	-20 °C … 70 °C	
Storage temperature	-40 °C … 85 °C	
Relative humidity	5 % … 95 % (55 °C) Non-condensing	
Approvals		
Safety	UL 60950-1 2nd Ed./CSA C22.2 No. 60950-1-07 2nd Ed./EN61000-6-2:2005	
EMC	FCC Part 15, Subpart B, Class A/EN61000-6-4:2007 +A1:2011/EN61000-6-2:2005	

Test	What		Value	Level
IEC 61000-4-2	ESD	Contact Discharge	± 6 kV	3
		Air Discharge	± 8 kV	3
IEC 61000-4-3	RS	Radiated (Enclosure)	10 V/m	3
IEC 61000-4-4	EFT	AC Power Port	± 2 kV	3
		DC Power Port	± 2 kV	3
		Signal Port	± 1 kV	3
IEC 61000-4-5	Surge	AC Power Port	Line-to-Line ± 1 kV	3
		AC Power Port	Line-to-Earth ± 2 kV	3
		DC Power Port	Line-to-Line ± 1 kV	3
		DC Power Port	Line-to-Earth ± 2 kV	3
		Signal Port	Line-to-Earth ± 1 kV	3
IEC 61000-4-6	CS	Conducted (Enclosure)	10 Vrms	3
IEC 61000-4-8	PFMF	(Enclosure)	30 A/m	4
IEC 61000-4-11	DIP	AC Power Port	-	-
Shock		IEC 60068-2-27		
Fall		IEC 60068-2-32		
Vibration		IEC 60068-2-64		
Flow control		NEMA TS-2		
RoHs		Yes		
MTBF		11 years		

8-Port Managed Fast Ethernet Switches

wienet L2MS 8-4G-4SFP
wienet L2MS 8-4G-4PoE-4SFP

- 4 10/100 Base-T(X) ports
- 4 RJ45 / SFP uplink combo ports
- 4 PoE ports 802.3af (15.4 W) or 802.3at (30 W) with L2MS 8-4G-4PoE-4SFP
- ERPS ring (recovery time < 20 ms with 40 switches, STP/RSTP for network redundancy
- Access via web browser, Telnet console, Serial console, and **wienet** Manager software
- Suitable for Profinet (CC A and CC B), Ethernet IP, and Modbus TCP

Standards

IEEE 802.3 for 10 Base-T, IEEE 802.3u for 100 Base-T(x), IEEE 802.3z for 1000 Base-T(x),

IEEE 802.3Q for VLAN Tagging, IEEE 802.3p for Class of Service, IEEE 802.3x for Flow Control,

IEEE 802.3af for PoE (15.4 W), IEEE 802.3at for PoE+ (30 W), IEEE 802.3x for Flow Control,

IEEE 802.3az for Energy Efficient Ethernet,

IEEE 802.1D-2004 for Spanning Tree Protocol,

IEEE 802.1w for Rapid STP, IEEE 802.1X for Authentication, IEEE 802.3ad for Port Trunking with LACP

Protocols

IPv4, IPv6, IGMPv1/v2/v3, IGMP Snooping, GARP, GRMP, GVRP, SNMP v1/v2/v4, SNMP inform, ICMP, Telnet, SSH, DHCP Server/Relay/Client, DHCP Option 66/67/82, BootP, RARP, TFTP, NTP Server/Client, SNTP, SMTP, SMTP (Gmail), RMON, HTTP, HTTPS, Syslog, MRP (Client), LLDP, IEEE 1588 PRP v1/v2, IEEE 1588 Hardware Transparent Clock, 802.1x, EAP, RADIUS, TACACS+, Mirror Port, QoS, ACL, Serial console, U-Ring, STP, RSTP, MSTP, Redundancy Compatible Ring, Profinet, Ethernet IP, Modbus TCP

* Combo ports Either the RJ45 10/100/1000 Mbps port or the SFP port is used

Type		Art. No.
wienet L2MS 8-4G-4SFP	83.040.0210.0	
wienet L2MS 8-4G-4PoE-4SFP		83.040.0211.0

Technical data		
Power supply		
Operating voltage	18 - 30 V DC	9 - 48 V DC
with PoE as per IEEE 802.3 af		45 - 57 V DC
with PoE as per IEEE 802.3 at		51 - 57 V DC
Power consumption with PoE IEEE 802.3 af		Max. 1.6 A at 45 V DC
Power consumption with PoE IEEE 802.3 at		Max. 2.8 A at 51 V DC
Power consumption typical AC without PoE	Max. 1.5 A at 18 V DC	
Power consumption typical DC without PoE	Max. 2.0 A at 9 V DC	
Reverse polarity protection	Exists with DC feed	
Ethernet		
Number of PoE		4
Power per PoE port (802.3 af)		15.4 W
Power per PoE port (802.3 at)		30 W
Maximum total power PoE		120 W
Type	Managed	
Number of 10/100 Base-T(X) ports	4	
Number of RJ45/SFP combo ports 100/1000 Mbps*	4	
Ethernet transfer rates	10/100/1000 Mbps	
Transmission length	up to 100 m	
Topologies	Star, line, mesh, ring	
Data flow control	Back pressure and pause frame-based flow control schemes	
Switch properties		
Technique	Store and forward	
MAC address table	16K	
Priority levels	8	
Packet buffer	12 Mbit	
VLAN ID range	VID 1 to 4094	
Static IGMP groups	256	
Dynamic IGMP groups	256	
Connection	Push-in terminals, pluggable	
Interface		
LED displays	PWR1, PWR2, Alarm, Run, Ring, Ring Master, RJ45 Act/Link, SFP Link, PoE	
Console	RS232 (RJ45 connection)	
Relay output	2 relay outputs with max. 2 A at 30 V DC	
DIP switch	Ring control	
Reset switch	Yes	
Physical properties		
Housing	Metal housing IP30 according to EN 60529	
Dimensions (mm) W x H x D	approx. 60.3 x 137.9 x 164	
Weight	approx. 1.2 kg max.	
Installation	Top-hat rail	
Ambient conditions		
Operating temperature	-20 °C … 70 °C	
Storage temperature	-40 °C … 85 °C	
Relative humidity	5 % … 95 % (55 °C) Non-condensing	
Approvals		
Safety	UL 60950-1 2nd Ed./CSA C22.2 No. 60950-1-07 2nd Ed./EN61000-6-2:2005	
EMC	FCC Part 15, Subpart B, Class A/EN61000-6-4:2007 +A1:2011/EN61000-6-2:2005	

Test	What		Value	Level
IEC 61000-4-2	ESD	Contact Discharge	± 6 kV	3
		Air Discharge	± 8 kV	3
IEC 61000-4-3	RS	Radiated (Enclosure)	10 V/m	3
IEC 61000-4-4	EFT	AC Power Port	± 2 kV	3
		DC Power Port	± 2 kV	3
		Signal Port	± 1 kV	3
IEC 61000-4-5	Surge	AC Power Port	Line-to-Line ± 1 kV	3
		AC Power Port	Line-to-Earth ± 2 kV	3
		DC Power Port	Line-to-Line ± 1 kV	3
		DC Power Port	Line-to-Earth ± 2 kV	3
		Signal Port	Line-to-Earth ± 1 kV	3
IEC 61000-4-6	CS	Conducted (Enclosure)	10 Vrms	3
IEC 61000-4-8	PFMF	(Enclosure)	30 A/m	4
IEC 61000-4-11	DIP	AC Power Port	-	-
Shock	IEC 60068-2-27			
Fall	IEC 60068-2-32			
Vibration	IEC 60068-2-64			
Flow control	NEMA TS-2			
RoHs	Yes			
MTBF	11 years			

12-Port Managed Fast Ethernet Switches

wienet L2MS 12-4G-4SFP
wienet L2MS 12-4G-4PoE-4SFP
wienet L2MS 12-4G-8PoE-4SFP

- 8 10/100 Base-T(X) ports
- 4 RJ45 / SFP uplink combo ports
- 4 or 8 PoE ports 802.3af (15.4 W) or 802.3 at (30 W) with L2MS 12-4G-4PoE-4SFP or L2MS 12-4G-8PoE-4SFP
- ERPS ring (recovery time < 20 ms with 40 switches, STP/RSTP for network redundancy
- Access via web browser, Telnet console, Serial console, and *wienet* Manager software
- Suitable for Profinet (CC A and CC B), Ethernet IP, and Modbus TCP

Standards

IEEE 802.3 for 10 Base-T, IEEE 802.3u for 100 Base-T(x), IEEE 802.3z for 1000 Base-T(x),

IEEE 802.3Q for VLAN Tagging, IEEE 802.3p for Class of Service, IEEE 802.3x for Flow Control,

IEEE 802.3af for PoE (15.4 W), IEEE 802.3at for PoE+ (30 W), IEEE 802.3x for Flow Control,

IEEE 802.3az for Energy Efficient Ethernet,

IEEE 802.1D-2004 for Spanning Tree Protocol,

IEEE 802.1w for Rapid STP, IEEE 802.1X for Authentication, IEEE 802.3ad for Port Trunking with LACP

Protocols

IPv4, IPv6, IGMPv1/v2/v3, IGMP Snooping, GARP, GRMP, GVRP, SNMP v1/v2/v4, SNMP inform, ICMP, Telnet, SSH, DHCP Server/Relay/Client, DHCP Option 66/67/82, BootP, RARP, TFTP, NTP Server/Client, SNTP, SMTP, SMTP (Gmail), RMON, HTTP, HTTPS, Syslog, MRP (Client), LLDP, IEEE 1588 PRP v1/v2, IEEE 1588 Hardware Transparent Clock, 802.1x, EAP, RADIUS, TACACS+, Mirror Port, QoS, ACL, Serial console, U-Ring, STP, RSTP, MSTP, Redundancy Compatible Ring, Profinet, Ethernet IP, Modbus TCP

* Combo ports Either the RJ45 10/100/1000 Mbps port or the SFP port is used

Type	Art. No.		
wienet L2MS 12-4G-4SFP	83.040.0220.0		
wienet L2MS 12-4G-4PoE-4SFP		83.040.0221.0	
wienet L2MS 12-4G-8PoE-4SFP			83.040.0222.0

Technical data			
Power supply			
Operating voltage	18 - 30 V DC	9 - 48 V DC	
with PoE as per IEEE 802.3 af		45 - 57 V DC	
with PoE as per IEEE 802.3 at		51 - 57 V DC	
Power consumption with PoE IEEE 802.3 af		Max. 1.6 A at 45 V DC	Max. 3.2 A at 45 V DC
Power consumption with PoE IEEE 802.3 at		Max. 2.8 A at 51 V DC	Max. 5.5 A at 51 V DC
Power consumption typical AC without PoE	Max. 1.5 A at 18 V DC		
Power consumption typical DC without PoE	Max. 2.0 A at 9 V DC		
Reverse polarity protection	Exists with DC feed		
Ethernet			
Number of PoE	-	4	8
Power per PoE port (802.3 af)	-	15.4 W	15.4 W
Power per PoE port (802.3 at)	-	30 W	30 W
Maximum total power PoE	-	120 W	240 W
Type	Managed		
Number of 10/100/1000 Base-T(X) ports	8		
Number of RJ45/SFP combo ports 100/1000 Mbps*	4		
Ethernet transfer rates	10/100/1000 Mbps		
Transmission length	up to 100 m		
Topologies	Star, line, mesh, ring		
Data flow control	Back pressure and pause frame-based flow control schemes		
Switch properties			
Technique	Store and forward		
MAC address table	16K		
Priority levels	8		
Packet buffer	12 Mbit		
VLAN ID range	VID 1 to 4094		
Static IGMP groups	256		
Dynamic IGMP groups	256		
Connection	Push-in terminals, pluggable		
Interface			
LED displays	PWR1, PWR2, Alarm, Run, Ring, Ring Master, RJ45 Act/Link, SFP Link, PoE		
Console	RS232 (RJ45 connection)		
Relay output	2 relay outputs with max. 2 A at 30 V DC		
DIP switch	Ring control		
Reset switch	Yes		
Physical properties			
Housing	Metal housing IP30 according to EN 60529		
Dimensions (mm) W x H x D	approx. 60.3 x 137.9 x 164		
Weight	approx. 1.2 kg max.		
Installation	Top-hat rail		
Ambient conditions			
Operating temperature	-20 °C … 70 °C		
Storage temperature	-40 °C … 85 °C		
Relative humidity	5 % … 95 % (55 °C) Non-condensing		
Approvals			
Safety	UL 60950-1 2nd Ed./CSA C22.2 No. 60950-1-07 2nd Ed./EN61000-6-2:2005		
EMC	FCC Part 15, Subpart B, Class A/EN61000-6-4:2007 +A1:2011/EN61000-6-2:2005		

Test	What		Value	Level
IEC 61000-4-2	ESD	Contact Discharge	± 6 kV	3
		Air Discharge	± 8 kV	3
IEC 61000-4-3	RS	Radiated (Enclosure)	10 V/m	3
IEC 61000-4-4	EFT	AC Power Port	± 2 kV	3
		DC Power Port	± 2 kV	3
		Signal Port	± 1 kV	3
IEC 61000-4-5	Surge	AC Power Port	Line-to-Line ± 1 kV	3
		AC Power Port	Line-to-Earth ± 2 kV	3
		DC Power Port	Line-to-Line ± 1 kV	3
		DC Power Port	Line-to-Earth ± 2 kV	3
		Signal Port	Line-to-Earth ± 1 kV	3
IEC 61000-4-6	CS	Conducted (Enclosure)	10 Vrms	3
IEC 61000-4-8	PFMF	(Enclosure)	30 A/m	4
IEC 61000-4-11	DIP	AC Power Port	-	-
Shock		IEC 60068-2-27		
Fall		IEC 60068-2-32		
Vibration		IEC 60068-2-64		
Flow control		NEMA TS-2		
RoHs		Yes		
MTBF		11 years		

wienet

Managed Gigabit Ethernet Switches
Full control on the network

The **wienet** managed gigabit series offers full industry functionality. The series was developed for an incredibly reliable, fault-tolerant, and extremely fast network connection in a harsh environment. The **wienet** managed gigabit series, with its compact top-hat rail housing design, enables a choice between different connection combinations: 10/100/1000 BASE-T (X) RJ45 connection, 1000 BASE-X SFP connection, and IEEE 802.3af/at PoE RJ45. As several compatible rings are also supported, **wienet** may be the best option for extending an existing infrastructure without any problems and without jeopardizing the topology of the network and the existing work pattern. And that's not all. With automation in mind, the switches have been conceived so that they are compatible with Profinet CC-B and Ethernet/IP.

✓ **Full gigabit power on all ports**

✓ **More data flow control on the network**

✓ **Data flow optimization through segmentation via VLANs**

✓ **Ethernet packet prioritization for data with real-time requirement**

✓ **PoE+ support, i.e. full 30 W on every PoE port**

✓ **Suitable for Profinet up to CC B and Ethernet IP**

✓ **Ring topologies ERPS, RSTP, STP, MRP (Client)**

✓ **IEEE 1588v2 Precision Time Protocol HW-Based Transparent Clock**

Overview of Managed Gigabit Ethernet Switches

Item number	Type	Description	10/100 RJ45 ports	10/100/1000 RJ45 ports	10/100/1000 SFP ports	Max. PoE ports
83.040.0300.0	L2MS 4G	4-port managed gigabit switch	-	4	-	
83.040.0301.0	L2MS 4G-4PoE	4-port managed gigabit switch with 4 PoE ports	-	4	-	4
83.040.0302.0	L2MS 4G-2SFP	4-port managed gigabit switch with 2 SFP slots	-	2	2	
83.040.0303.0	L2MS 4G-2PoE-2SFP	4-port managed gigabit switch with 2 SFP slots and 2 PoE ports	-	2	2	2
83.040.0310.0	L2MS 8G	8-port managed gigabit switch	-	8	-	-
83.040.0312.0	L2MS 8G-4SFP	8-port managed gigabit switch with 4 SFP slots	-	4	4	-
83.040.0313.0	L2MS 8G-4PoE-4SFP	8-port managed gigabit switch with 4 SFP slots and 4 PoE ports	-	4	4	4
83.040.0314.0	L2MS 8G-8PoE	8-port managed gigabit switch with 8 PoE ports		8	-	8

(4) Combo ports: either RJ45 or SFP per port

80ºC
-40ºC

PROFINET®

IEEE 1588

Ring

Industrial EMC

IP30
IEC60529

4-port managed gigabit switches

wienet L2MS 4G
wienet L2MS 4G-4PoE
wienet L2MS 4G-2SFP
wienet L2MS 4G-2PoE-2SFP

- 2 or 4 10/100/1000 Base-T(X) ports
- 2 SFP uplink combo ports
- 2 or 4 PoE ports 802.3af (15.4 W) or 802.3at (30 W) with L2MS 4G-4PoE or L2MS 4G-2PoE-2SFP
- ERPS ring (recovery time < 20 ms with 40 switches, STP/RSTP for network redundancy
- Access via web browser, Telnet console, Serial console, and *wienet* Manager software
- Suitable for Profinet (CC A and CC B), Ethernet IP, and Modbus TCP

Standards

IEEE 802.3 for 10 Base-T, IEEE 802.3u for 100 Base-T(x), IEEE 802.3z for 1000 Base-X, IEEE 802.3ab for 1000 Base-T, IEEE 802.3Q for VLAN Tagging, IEEE 802.3p for Class of Service, IEEE 802.3x for Flow Control, IEEE 802.3af for PoE (15.4 W), IEEE 802.3at for PoE+ (30 W), IEEE 802.3x for Flow Control, IEEE 802.3az for Energy Efficient Ethernet, IEEE 802.1D-2004 for Spanning Tree Protocol, IEEE 802.1s for Multiple Spanning Tree Protocol, IEEE 802.1w for Rapid STP, IEEE 802.1X for Authentication, IEEE 802.3ad for Port Trunking with LACP

Protocols

IPv4, IPv6, IGMPv1/v2/v3, IGMP Snooping, GARP, GRMP, GVRP, SNMP v1/v2c/v4, SNMP inform, ICMP, Telnet, SSH, DHCP Server/Relay/Client, DHCP Option 66/67/82, BootP, RARP, TFTP, NTP Server/Client, SNTP, SMTP, SMTP (Gmail), RMON, HTTP, HTTPS, Syslog, MRP (Client), LLDP, IEEE 1588 PRP v1/v2, IEEE 1588 Hardware Transparent Clock, 802.1x, EAP, RADIUS, TACACS+, Mirror Port, QoS, ACL, ITU-T G.803.2 ERPS Ring, Serial console, U-Ring, STP, RSTP, MSTP, Redundancy Compatible Ring, Profinet, Ethernet IP, Modbus TCP

Type	Art. No.			
wienet L2MS 4G	83.040.0300.0			
wienet L2MS 4G-4PoE		83.040.0301.0		
wienet L2MS 4G-2SFP			83.040.0302.0	
wienet L2MS 4G-2PoE-2SFP				83.040.0303.0

Technical data				
Power supply				
Operating voltage	9-57 V DC			
with PoE as per IEEE 802.3 af		45 - 57 V DC		45 - 57 V DC
with PoE as per IEEE 802.3 at		51 - 57 V DC		51 - 57 V DC
Power consumption with PoE IEEE 802.3 af		Max. 1.6 A at 45 V DC		Max. 1.6 A at 45 V DC
Power consumption with PoE IEEE 802.3 at		Max. 2.8 A at 51 V DC		Max. 2.8 A at 51 V DC
Power consumption typical DC without PoE	Max. 1.4 A at 9 V DC			
Reverse polarity protection	Exists			
Ethernet				
Number of SFP ports 1000Base-X	-	-	2	2
Number of PoE	-	4	-	2
Power per PoE port (802.3 af)	-	15.4 W	-	15.4 W
Power per PoE port (802.3 at)	-	30 W	-	30 W
Maximum total power PoE	-	120 W	-	60 W
Type	Managed			
Number of 10/100 Base-T(X) ports	4			
Ethernet transfer rates	10/100/1000 Mbps			
Automation profiles	Profinet v2.33 CC-B certified, Ethernet IP, Modbus TCP device status registers provided			
Transmission length	up to 100 m			
Topologies	Star, line, mesh, ring			
Data flow control	Back pressure and pause frame-based flow control schemes			
Switch properties				
Technique	Store and forward			
MAC address table	16K			
Priority levels	8			
Packet buffer	12 Mbit			
VLAN ID range	VID 1 to 4094			
Static IGMP groups	256			
Dynamic IGMP groups	256			
Connection	Push-in terminals, pluggable			
Interface				
LED displays	PWR1, PWR2, Alarm, Run, Ring, Ring Master, RJ45 Act/Link, SFP Link, PoE			
Console	RS232 (RJ45 connection)			
Relay output	2 relay outputs with max. 1 A at 24 V DC			
DIP switch	Ring control			
Reset switch	Yes			
Physical properties				
Housing	Metal housing IP30 according to EN 60529			
Dimensions (mm) W x H x D	approx. 54 x 113 x 145			
Weight	approx. 800g max.			
Installation	Top-hat rail			
Ambient conditions				
Operating temperature	-20 °C … 70 °C			
Storage temperature	-40 °C … 85 °C			
Relative humidity	5 % … 95 % (55 °C) Non-condensing			
Approvals				
Safety	UL 60950-1 2nd Ed./CSA C22.2 No. 60950-1-07 2nd Ed./EN60950-1/CB			
EMC	FCC Part 15, Subpart B, Class A / EN55032, EN55024, EN61000-3-2, EN61000-3-3, EN61000-6-2, EN61000-6-4			

Test	**What**		**Value**	**Level**
IEC 61000-4-2	ESD	Contact Discharge	± 6 kV	3
		Air Discharge	± 8 kV	3
IEC 61000-4-3	RS	80-1000MHz	10 V/m	3
		1.4-2.0GHz	3 V/m	3
		2.0-2.7GHz	10 V/m	3
IEC 61000-4-4	EFT	AC Power Port	± 2 kV	3
		DC Power Port	± 2 kV	3
		Signal Port	± 1 kV	3
IEC 61000-4-5	Surge	AC Power Port	Line-to-Line ± 1 kV	3
		AC Power Port	Line-to-Earth ± 2 kV	3
		DC Power Port	Line-to-Line ± 1 kV	3
		DC Power Port	Line-to-Earth ± 2 kV	3
		Signal Port	Line-to-Earth ± 1 kV	3
IEC 61000-4-6	CS	Conducted (Enclosure)	10 Vrms	3
IEC 61000-4-8	PFMF	(Enclosure)	30 A/m	4
IEC 61000-4-11	DIP	AC Power Port	-	-
Shock	MIL-STD-810G Method 516.5			
Fall	MIL-STD-810F Method 516.5			
Vibration	MIL-STD-810F Method 514.5 C-1&C-2			
Flow control	NEMA TS-2			
RoHs	Yes			
MTBF	20 years			

8-port managed gigabit switches

wienet L2MS 8G
wienet L2MS 8G-4SFP
wienet L2MS 8G-4PoE-4SFP
wienet L2MS 8G-8PoE

- 2 or 4 10/100/1000 Base-T(X) ports
- 2 SFP uplink combo ports
- 2 or 4 PoE ports 802.3af (15.4 W) or 802.3at (30 W) with L2MS 4G-4PoE or L2MS 4G-2PoE-2SFP
- ERPS ring (recovery time < 20 ms with 40 switches, STP/RSTP for network redundancy
- Access via web browser, Telnet console, Serial console, and **wienet** Manager software
- Suitable for Profinet (CC A and CC B), Ethernet IP, and Modbus TCP

Standards

IEEE 802.3 for 10 Base-T, IEEE 802.3u for 100 Base-T(x), IEEE 802.3z for 1000 Base-X, IEEE 802.3ab for 1000 Base-T, IEEE 802.3Q for VLAN Tagging, IEEE 802.3p for Class of Service, IEEE 802.3x for Flow Control, IEEE 802.3af for PoE (15.4 W), IEEE 802.3at for PoE+ (30 W), IEEE 802.3x for Flow Control, IEEE 802.3az for Energy Efficient Ethernet, IEEE 802.1D-2004 for Spanning Tree Protocol, IEEE 802.1s for Multiple Spanning Tree Protocol, IEEE 802.1w for Rapid STP, IEEE 802.1X for Authentication, IEEE 802.3ad for Port Trunking with LACP

Protocols

IPv4, IPv6, IGMPv1/v2/v3, IGMP Snooping, GARP, GRMP, GVRP, SNMP v1/v2c/v4, SNMP inform, ICMP, Telnet, SSH, DHCP Server/Relay/Client, DHCP Option 66/67/82, BootP, RARP, TFTP, NTP Server/Client, SNTP, SMTP, SMTP (Gmail), RMON, HTTP, HTTPS, Syslog, MRP (Client), LLDP, IEEE 1588 PRP v1/v2, IEEE 1588 Hardware Transparent Clock, 802.1x, EAP, RADIUS, TACACS+, Mirror Port, QoS, ACL, ITU-T G.803.2 ERPS Ring, Serial console, U-Ring, STP, RSTP, MSTP, Redundancy Compatible Ring, Profinet, Ethernet IP, Modbus TCP

Type	Art. No.			
wienet L2MS 8G	83.040.0310.0			
wienet L2MS 8G-4SFP		83.040.0312.0		
wienet L2MS 8G-4PoE-4SFP			83.040.0313.0	
wienet L2MS 8G-8PoE				83.040.0314.0

Technical data				
Power supply				
Operating voltage	9 - 57 V DC			
with PoE as per IEEE 802.3 af		45 - 57 V DC		
with PoE as per IEEE 802.3 at		51 - 57 V DC		
Power consumption with PoE IEEE 802.3 af		Max. 2.9 A at 45 V DC		
Power consumption with PoE IEEE 802.3 at		Max. 5.0 A at 51 V DC		
Power consumption typical DC without PoE	Max. 1.4 A at 9 V DC			
Reverse polarity protection	Exists			
Ethernet				
Number of SFP ports 1000Base-X	-	4	4	-
Number of PoE	-	-	4	8
Power per PoE port (802.3 af)	-	15.4 W	-	15.4 W
Power per PoE port (802.3 at)	-	30 W	-	30 W
Maximum total power PoE	-	120 W	-	60 W
Type	Managed			
Number of 10/100 Base-T(X) ports	8			
Ethernet transfer rates	10/100/1000 Mbps			
Automation profiles	Profinet v2.33 CC-B certified, Ethernet IP, Modbus TCP device status registers provided			
Transmission length	up to 100 m			
Topologies	Star, line, mesh, ring			
Data flow control	Back pressure and pause frame-based flow control schemes			
Switch properties				
Technique	Store and forward			
MAC address table	16K			
Priority levels	8			
Packet buffer	12 Mbit			
VLAN ID range	VID 1 to 4094			
Static IGMP groups	256			
Dynamic IGMP groups	256			
Connection	Push-in terminals, pluggable			
Interface				
LED displays	PWR1, PWR2, Alarm, Run, Ring, Ring Master, RJ45 Act/Link, SFP Link, PoE			
Console	RS232 (RJ45 connection)			
Relay output	2 relay outputs with max. 1 A at 24 V DC			
DIP switch	Ring control			
Reset switch	Yes			
Physical properties				
Housing	Metal housing IP30 according to EN 60529			
Dimensions (mm) W x H x D	approx. 54 x 113 x 145			
Weight	approx. 800g max.			
Installation	Top-hat rail			
Ambient conditions				
Operating temperature	-20 °C … 70 °C			
Storage temperature	-40 °C … 85 °C			
Relative humidity	5 % … 95 % (55 °C) Non-condensing			
Approvals				
Safety	UL 60950-1 2nd Ed./CSA C22.2 No. 60950-1-07 2nd Ed./EN60950-1/CB			
EMC	FCC Part 15, Subpart B, Class A / EN55032, EN55024, EN61000-3-2, EN61000-3-3, EN61000-6-2, EN61000-6-4			

Test	What		Value	Level
IEC 61000-4-2	ESD	Contact Discharge	± 6 kV	3
		Air Discharge	± 8 kV	3
IEC 61000-4-3	RS	80-1000MHz	10 V/m	3
		1.4-2.0GHz	3 V/m	3
		2.0-2.7GHz	10 V/m	3
IEC 61000-4-4	EFT	AC Power Port	± 2 kV	3
		DC Power Port	± 2 kV	3
		Signal Port	± 1 kV	3
IEC 61000-4-5	Surge	AC Power Port	Line-to-Line ± 1 kV	3
		AC Power Port	Line-to-Earth ± 2 kV	3
		DC Power Port	Line-to-Line ± 1 kV	3
		DC Power Port	Line-to-Earth ± 2 kV	3
		Signal Port	Line-to-Earth ± 1 kV	3
IEC 61000-4-6	CS	Conducted (Enclosure)	10 Vrms	3
IEC 61000-4-8	PFMF	(Enclosure)	30 A/m	4
IEC 61000-4-11	DIP	AC Power Port	-	-
Shock	MIL-STD-810G Method 516.5			
Fall	MIL-STD-810F Method 516.5			
Vibration	MIL-STD-810F Method 514.5 C-1&C-2			
Flow control	NEMA TS-2			
RoHs	Yes			
MTBF	20 years			

SFP transceivers

Fast Ethernet LWL
wienet SFP F MM LED
wienet SFP F SM FP

- Single mode up to 30 km
- Multi mode up to 2 km

(Picture similar)

Type	Art. No.	
wienet SFP F MM LED	83.040.0700.0	
wienet SFP F SM FP		83.040.0701.0
Technical data		
Data rate	155 Mbps	155 Mbps
Wavelength	1310 nm	1310 nm
Light source	LED	FP
Media type	Multi mode	Single mode
Tx power	-20 … -14 dbm with 62.5/125µm fiber	-15 … -8 dbm with 9/125µm fiber
Rx sensitivity	-31 dbm	-34 dbm
Link budget	11 dbm	19 dbm
Saturation	-8 dbm	0
Distance	2 km	30 km
Ambient conditions		
Operating temperature	-40 °C … 85 °C	-40 °C … 85 °C
Approvals		
Safety	UL/TÜV	UL/TÜV

Gigabit LWL
wienet SFP G MM VCSEL
wienet SFP G MM FP
wienet SFP G SM FP
wienet SFP G SM DFB

- Single mode up to 30 km
- Multi mode up to 2 km

Type	Art. No.			
wienet SFP G MM VCSEL	83.040.0710.0			
wienet SFP G MM FP		83.040.0711.0		
wienet SFP G SM FP			83.040.0712.0	
wienet SFP G SM DFB				83.040.0713.0
Technical data				
Data rate	1250 Mbps	1250 Mbps	1250 Mbps	1250 Mbps
Wavelength	850 nm	1310 nm	1310 nm	1310 nm
Light source	VCSEL	FP	FP	DFB
Media type	Multi mode	Multi mode	Single mode	Single mode
Tx power	-9.5 … -4 dbm with 50/125 µm or 62.5/125 µm fiber	-9 … -1 dbm with 50/125 µm or 62.5/125 µm fiber	-9.5 … -3 dbm with 9/125 µm fiber	-4 … +1 dbm with 9/125 µm fiber
Rx sensitivity	-18 bm	-19 dbm	-20 dbm	-24 dbm
Link budget	8.5 bm	10 dbm	10.5 dbm	20 dbm
Saturation	0 dbm	-1 dbm	-3 dbm	-3 dbm
Distance	550 m	2 km	10 km	30 km
Ambient conditions				
Operating temperature	-40 °C … 85 °C	-40 °C … 85 °C	-40 °C … 85 °C	-40 °C … 85 °C
Approvals				
Safety	UL/TÜV	UL/TÜV	UL/TÜV	UL/TÜV

Fast/Gigabit Ethernet RJ45
wienet SFP G RJ45
wienet SFP F/E (auto-neg) RJ45

- RJ45 transceiver with 1000 Mbps
- RJ45 transceiver with 10/100/1000 Mbps (auto-negotiation)
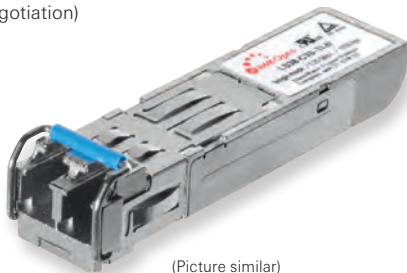
(Picture similar)

Type	Art. No.	
wienet SFP G RJ45	83.040.0714.0	
wienet SFP F/E (auto-neg) RJ45		83.040.0715.0
Technical data		
Data rate	1000 Mbps	10/100/1000 Mbps
Maximum data transfer rate	1.25 Gbps	1.25 Gbps
Auto-negotiation	No	Yes
Number of RJ45 ports	1	1
Media type	Copper	Copper
Standards	IEEE 802.3ab 1000BASE-T	IEEE 802.3ab 1000BASE-T
IEEE 802.3ab 1000BASE-T	11 dbm	19 dbm
Distance	100 m	100 m
Ambient conditions		
Operating temperature	-0 °C … 70 °C	-0 °C … 70 °C
Approvals		
Safety	UL/TÜV	UL/TÜV

wienet WLAN Access Point

WLAN networks are everywhere nowadays. This trend is extending to industrial applications, for which the new access point *wienet* AP-ETH-A has been developed.

✓ **WLAN access point in industrial design**

✓ **Ethernet 10/100BaseT**

✓ **Operating voltage 24 V DC**

✓ **WLAN standard IEEE 802.11n/g/b**

✓ **Protection rating IP20**

✓ **35 mm top-hat rail mounting (EN60715)**

Possible applications

Access point:	LAN ➔ WLAN
WLAN router:	LAN & WLAN
	WAN ➔ WLAN
Network bridge:	WLAN ➔ LAN
	WLAN ➔ WLAN (& LAN) – repeater
LAN cable substitute:	LAN ➔ WLAN tunnel ➔ LAN

Example application:
configuration of barely accessible end devices via WLAN
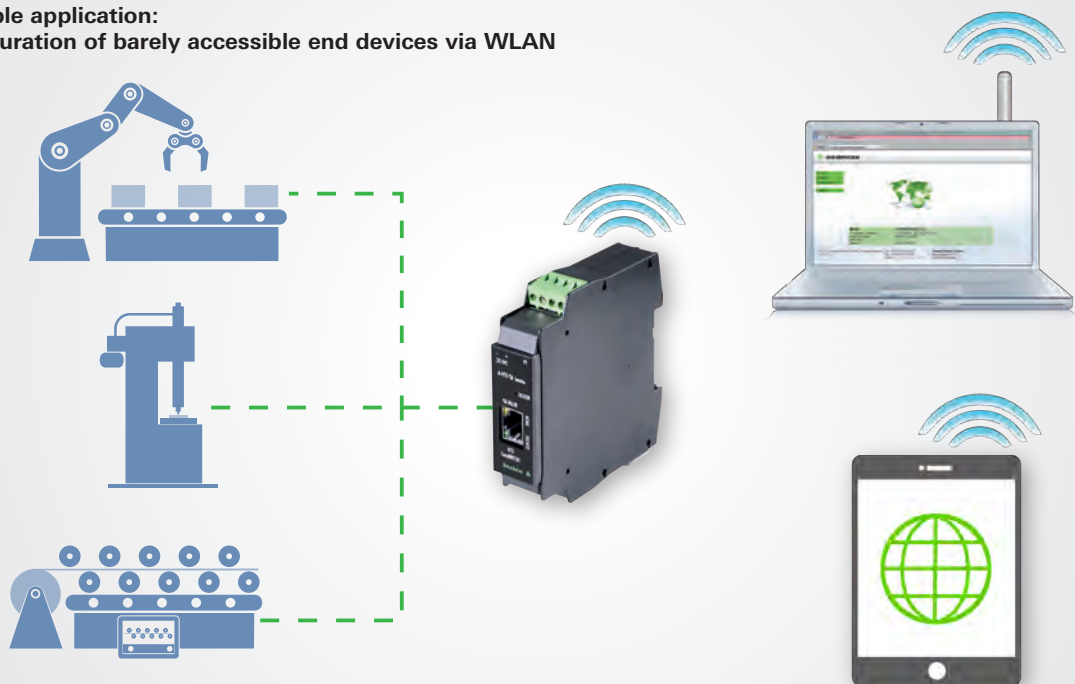
Wireless LAN Access Point 24 V DC

wienet AP-ETH-A / ...-A
wienet AP 3P ETH-A / ...-A

- WLAN access point in industrial design
- WLAN standard IEEE 802.11b/g/n
- Ethernet 10/100BaseT
- Operating voltage 24 V DC
- Protection rating IP20
- 35 mm top-hat rail mounting as per EN60715
- One or three RJ45 LAN ports

Type	Art. No.
wienet AP-ETH-A (with integrated antenna)	83.040.0050.0
wienet AP-ETH-A-A (with antenna connection)	83.040.0051.0
wienet AP 3P ETH-A	83.040.0052.0
wienet AP 3P ETH-A-A	83.040.0053.0

Technical data	
Operating voltage connection	
Nominal voltage	24 V DC (voltage range: 9 ... 28 V DC)
Output (24 V DC) approx.	1 W
Connection type	Plug-in screw terminal
Connection cross section, fine-stranded/solid or fine-stranded with ferrules	2 x 0.14 -0.75 mm² / 1 x 0.14 - 2.5 mm²
WLAN	
Wireless LAN standard	IEEE 802.11n/g/b
Frequency	2.4 . . . 2.4835 GHz
Data rate	Max. 150 Mbit/s
Security	WEP, WPA, WPA2 PSK + EAP
Antenna	Integrated or external via RP-SMA socket
Ethernet (LAN)	
Connection type	RJ-45 socket
Medium	Twisted pair 10/100BaseT
Environmental conditions	
Operating temperature range	-5 °C … +55 °C
Storage temperature range	-20 °C … +60 °C
Rel. humidity	5 … 93 %
Condensation	Not permitted
Housing, mounting	
Housing material	Plastic, color: black
Dimensions (W x H x D)	22.5 x 96.5 x 91.5 mm
Weight approx.	95 g
Protection rating	IP 20
Mount to	35 mm top-hat rail as per EN60715
Operation and display elements	
RES button	< 3 sec. restart 5-30 sec. restart with factory settings
Green LED	Status display, on = OK / flashing = AP starts
Yellow LED	Ethernet status, data traffic

Accessories	
wienet Antenne 1 5854v2 WIFI	F0.000.0037.4
wienet Antenne 15874v2 WIFI	F0.000.0037.5

wienet Security Router

Ready for Industry 4.0 - secure connection to the Internet

Remote access to local networks is the communication basis for virtually all Industry 4.0 or IoT applications. With *wienet* security routers and the VPN server portal WIE-Service24, machines and devices are connected to the Internet securely and data is transferred over VPN in an encrypted and entirely protocol-independent manner. *wienet* communication solutions create the foundations for translating advancing digitization into economic success as well. Examples include the increase in availability thanks to predictive maintenance and live support for staff on machines, especially during the commissioning process.

✓ **Energy supply**
Wind turbines, solar farms, transformer stations, combined heat and power units, biogas cogeneration systems, heat pumps, …

✓ **Water and waste water management**

✓ **System monitoring in machine building**
Washing machines, compressors, packaging machines, …

✓ **External surveillance camera**

✓ **Vending**
Online telemetry of sales or ticket vending machines

✓ **Mobile fleet management**

✓ **Smart metering**

IoT
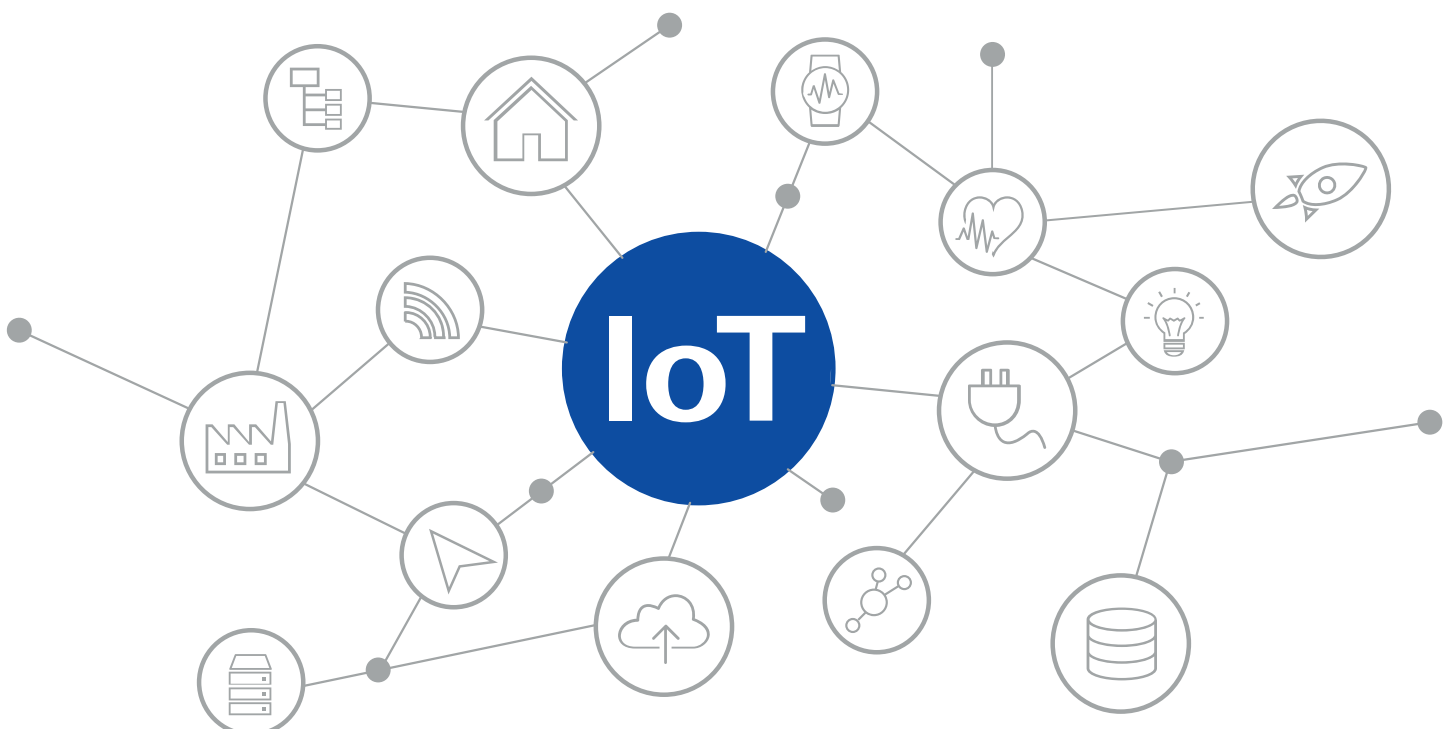
wienet VPN Industrial Router –

unlimited M2M communication

W ieland's *wienet* VPN industrial routers ensure increased efficiency and data security. Whether the focus is on controlling machines, monitoring production lines, or coordinating all production areas, permanent communication between devices is needed to complete such complex tasks. But access to stored data using wireless networks is not always possible or safe everywhere. Now Wieland is opening up new areas of application with its modern router technology.

For example, control commands, level indicators, or video signals can be transmitted. At download speeds of up to 100 Mbit/s and upload speeds of up to 50 Mbits/s (depending on the network operator), *wienet* VPN industrial routers are sure to cover the full range of available connectivity options from GPRS to LTE. With automatic login on the network, these routers will always access the fastest available connection. Every router receives its own IP address and can be preconfigured using the integrated web interface. Services such as DHCP, DynDNS, and NAT are supported. The routers communicate directly or via the central station with a secure open VPN connection. The setup of an IPSec encrypted tunnel is also an alternative option. *wienet* VPN industrial routers are ideal components for use in connection with VPN service portals, such as Wie-Service24. With the arrangement of the ports on the front of the device and a standard USB connection, *wienet* VPN industrial routers are extremely user-friendly. Transparent statistics for mobile communications enable better control. The devices are also optionally available with a second SIM card slot, additional I/Os, RS-232, RS-422/RS-485, M-Bus, several Ethernet interfaces, WiFi module, or an integrated 3-port or 5-port switch.

✓ **Expanded operating temperature range of -40 °C to 75 °C**

✓ **An extremely robust aluminum housing**

✓ **DIN top-hat rail assembly**

Industrial Mobile Router WR-LTE v3

wienet WR-LTE v3 SL

- High-performance CPU Cortex A8, 1 GHz (2000 DMIPS)
- Memory: 256 MB flash memory, 512 MB RAM, 128 kB M-RAM
- 2x SIM card slot (Mini SIM 2FF)
- 2x or 5x Ethernet
- 1x RJ45 port expansion RS232 or RS485/422
- 1x USB 2.0 host
- 2x DI
- 1x DO
- 1x MicroSD
- 3 antenna ports: Main, DIV, GPS, WIFI (optional)
- 1x WIFI/WLAN 802.11 b/g/n (optional), supports access point and client mode

Scope of supply:

VPN mobile router

Including mobile radio antennas and WIFI antenna (optional)

Including USB stick with documentation

Including RJ45 patch cable

Including top-hat rail adapter

Type	Interfaces	Art. No.
wienet WR-LTE v3 SL		
WR-LTE v3 SL	2x LAN, USB, 2DI, 1DO, 2x SIM	83.041.0700.1
WR-LTE v3 SL WIFI	2x LAN, USB, 2DI, 1DO, 2x SIM, WIFI	83.041.0760.1
WR-LTE v3 SL RS232	2x LAN, USB, 2DI, 1DO, 2x SIM, RS232	83.041.0701.1
WR-LTE v3 SL RS232+RS422/485	2x LAN, USB, 2DI, 1DO, 2x SIM, RS232+RS422/485	83.041.0702.1
WR-LTE v3 SL RS232+RS422/485 WIFI	2x LAN, USB, 2DI, 1DO, 2x SIM, RS232+RS422/485, WIFI	83.041.0762.1
WR-LTE v3 SL 5-Port	5x LAN, USB, 2DI, 1DO, 2x SIM	83.041.0709.1
WR-LTE v3 SL 5-Port WIFI	5x LAN, USB, 2DI, 1DO, 2x SIM, WIFI	83.041.0769.1

Networks	
DHCP - automatic IP address on LAN network	NAT/PAT - Network/Port Address Translation
SNMP v1/v2c/v3 - Network management, communication with router and its I/O and M-Bus modules	VRRP - redundant communication paths (routing)
DynDNS - access to router if dynamic IP used	Dial-In - Dial-up router option (network) - communication via "CSD call"
Integrated firewall (SPI)	OSPF, BGP, RIP - routing protocols (optional)
VLAN, QoS - expanded Layer 2 network functions (optional)	DMVPN
PPPoE bridge	IGMP, BGP, OSPF, RIP, SMTP, SMTPS
VPN tunnel	
Secure data encryption with IPSec and OpenVPN (incl. X.509 certificates)	Basic data transmission without encoding via GRE and L2TP tunnel
EasyVPN	
Configuration and diagnostics	
Configuration and firmware update via web interface, USB stick, and central Internet server	Remote router maintenance via SMS - switch Internet connection on and off, change SIM card, switch digital output, query status information
Change between different configuration profiles (via web interface, SMS, digital input, or scheduler)	Comprehensive mobile radio statistics options (reception strength, radio cell, adjacent cells, transported volume, connection cancellations, etc.)
LED status displays	Network status
Mobile radio status	One-CLICK reports: Current configuration, system log, routing table, reboot log, kernel log
SNMP v1/v2c/v3 - status queries	
Optional expansions	
Second SIM card - redundancy to protect communication when roaming; data volume used, and active digital input (DI)	User (software) modules - various function expansions
Wie-Service24 - VPN server portal	
Additional functions and characteristics	
NTP client, NTP server - time synchronization	Communication via SMS - AT commands to the RS232, Ethernet, and I/O interface
Script programming - StartUp script, Up/Down script	Script language Bash, Python

Technical data	
Installation	Top-hat rail or table
Operating voltage	10 - 60 V DC
Power consumption typical / average / peak / sleep mode	2.5 W / 4 W / 11 W / 10 mW
Operating temperature / storage temperature	-30 °C … +60° C / -40 °C … +85 °C
Humidity	0 … 95 %
Protection rating	IP30
On-board I/O	6-pin plug-in socket
– Output (DO)	300 mA / max. 60 V
– 2x input (DI)	10-60 V DC
Dimensions (HxWxD)	125 x 55 x 97
Weight	375 g
Antenna connector	
– ANT + DIV mobile radio antenna	SMA
– GPS antenna	SMA
– WIFI antenna (optional)	R-SMA
Frequency bands	
– GSM/GPRS/EDGE	900/1800/1900 MHz
– UMTS	900/2100 MHz
– HSPA+	900/2100 MHz
– LTE	800/900/1800/2100/2600 MHz
Bit rates	
– Download | Upload GPRS/Edge	Max. 236.7 kbit/s | Max. 118.4 kbit/s
– Download | Upload UMTS/HSPA+	Max. 21.1 Mbit/s | Max. 5.76 Mbit/s
– Download | Upload LTE	Max. 100 Mbit/s | Max. 50 Mbit/s
Technical data GPS	
– Protocol	NMEA 0183 v3.0
– Frequency	1575.42 MHz
– Antenna	50 Ohm - active
Technical data microSD	
– Supported technologies	SDHC, SDXC
– Supported capacities	SDHC to 32 GB, SDXC from 32 GB to 64 GB
Complies with standards	EN 61000-4-2 (ESD), IEC 61000-4-3 (RF field AM modulated),
	EN 61000-4-4 (fast transient), EN 61000-4-5 (surge)
	EN 61000-4-6 (RF-conducted), EN 55022, EN 61000-4-8,
	EN 60068-2-2, EN 60068-2-1, EN 60068-2-78, E8 10R-04

Industrial Mobile Router 4G LTE v2

wienet LTE LR77 v2 SL „Basic"

- 1x SIM card slot
- 1x Ethernet
- 1x RJ45 port expansion
- 1x USB
- 1x DI
- 1x DO

wienet LTE LR77v2 SL „Compact"

- 2x SIM card slot
- 2x Ethernet (LAN-to-LAN or switch-bridge)
- Best price-performance ratio
- No USB interface
- No DIO

wienet LTE LR77v2 SL „Full"

- 2x SIM card slot
- 1x Ethernet
- 2x RJ45 port expansion
- 1x USB
- 1x DI
- 1x DO
- GPS receiver (not in combination with WIFI)

Scope of supply:

VPN mobile router
Including antennas
Including USB stick with documentation
Including RJ45 patch cable
Including top-hat rail adapter

Type	Interfaces	Art. No.
wienet **LR77v2 SL Basic**		
LR77v2	LAN, USB, DI, DO, 1xSIM	83.041.0050.1
LR77v2 RS232	LAN, USB, DI, DO, 1xSIM, RS232	83.041.0051.1
LR77v2 RS485/422	LAN, USB, DI, DO, 1xSIM, RS485/422	83.041.0052.1
LR77v2 MBUS	LAN, USB, DI, DO, 1xSIM, M-Bus	83.041.0053.1
LR77v2 CNT	LAN, USB, 5DI, 3DO, 2AI, 1xSIM	83.041.0054.1
LR77v2 ETH	2x LAN, USB, DI, DO, 1xSIM	83.041.0055.1
wienet **LR77v2 SL Compact**		
LR77v2c SL ETH	2x LAN, 2xSIM	83.041.0505.3
LR77v2c SL ETH WIFI	2x LAN, WIFI, 2xSIM	83.041.0565.3
wienet **LR77v2 SL Full**		
LR77v2f SL	LAN, USB, DI, DO, 2xSIM	83.041.0500.1
LR77v2f SL RS232	LAN, USB, DI, DO, 2xSIM, RS232	83.041.0501.1
LR77v2f SL RS485/422	LAN, USB, DI, DO, 2xSIM, RS485/422	83.041.0502.1
LR77v2f SL MBUS	LAN, USB, DI, DO, 2xSIM, M-Bus	83.041.0503.1
LR77v2f SL CNT	LAN, USB, 5DI, 3DO, 2AI, 2xSIM	83.041.0504.1
LR77v2f SL ETH	2xLAN, USB, DI, DO, 2xSIM	83.041.0505.1
LR77v2f SL WIFI	LAN, USB, DI, DO, 2xSIM, WIFI	83.041.0560.1
LR77v2f SL RS232 RS232	LAN, USB, DI, DO, 2xSIM, 2xRS232	83.041.0511.1
LR77v2f SL RS485 RS232	LAN, USB, DI, DO, 2xSIM, RS232, RS485/422	83.041.0512.1
LR77v2f SL MBUS RS232	LAN, USB, DI, DO, 2xSIM, RS232, M-Bus	83.041.0513.1
LR77v2f SL CNT RS232	LAN, USB, 5xDI, 3xDO, 2xAI, 2xSIM, RS232	83.041.0514.1
LR77v2f SL ETH RS232	2xLAN, USB, DI, DO, 2xSIM, RS232	83.041.0515.1
LR77v2f SL RS485 RS485	LAN, USB, DI, DO, 2xSIM, 2xRS485/422	83.041.0522.1
LR77v2f SL MBUS RS485	LAN, USB, DI, DO, 2xSIM, RS485/422, M-Bus	83.041.0523.1
LR77v2f SL CNT RS485	LAN, USB, 5xDI, 3xDO, 2xAI, 2xSIM, RS485/422	83.041.0524.1
LR77v2f SL ETH RS485	2xLAN, USB, DI, DO, 2xSIM, RS485/422	83.041.0525.1
LR77v2f SL RS232 WIFI	LAN, USB, DI, DO, 2xSIM, WIFI, RS232	83.041.0561.1
LR77v2f SL RS485 WIFI	LAN, USB, DI, DO, 2xSIM, WIFI, RS485/422	83.041.0562.1
LR77v2f SL MBUS WIFI	LAN, USB, DI, DO, 2xSIM, WIFI, M-Bus	83.041.0563.1
LR77v2f SL CNT WIFI	LAN, USB, 5xDI, 3xDO, 2xAI, 2xSIM, WIFI	83.041.0564.1
LR77v2f SL ETH WIFI	2xLAN, USB, DI, DO, 2xSIM, WIFI	83.041.0565.1
LR77v2f SL 3-Port	3xLAN, USB, DI, DO, 2xSIM	83.041.0599.1

Networks	
DHCP - automatic IP address on LAN network	NAT/PAT - Network/Port Address Translation
SNMP - network management, communication with router and its I/O and M-Bus modules	VRRP - redundant communication paths (routing)
DynDNS - access to router if dynamic IP used	Dial-In - Dial-up router option (network) - communication via "CSD call"
Integrated firewall (SPI)	OSPF, BGP, RIP - routing protocols (optional)
VLAN, QoS - expanded Layer 2 network functions (optional)	
VPN tunnel	
Secure data encryption with IPSec and OpenVPN (incl. X.509 certificates)	Basic data transmission without encoding via GRE and L2TP tunnel
Configuration and diagnostics	
Web interface	SMS functions
Several profiles	Comprehensive mobile radio statistics options
LED status displays	Telnet and SSH - command line access
Optional expansions	
Second SIM card	User (software) modules - various function expansions
Wie-Service24 - VPN server portal	
Additional functions and characteristics	
NTP client, NTP server - time synchronization	Communication via SMS - AT commands to the RS232, Ethernet, and I/O interface

Technical data	
Installation	Top-hat rail or table
Operating voltage	10 - 30 V DC
Power consumption	5.5 W max.
Operating temperature	-30 °C … +60 °C
On-board I/O	
– PIN allocation	DO/GND/DI
– Output (DO)	120 mA / max. 30 V
– Input (DI)	10-30 V DC
Dimensions (HxWxD)	42 x 80.5 x 113.5 mm
Weight	270 g
Antenna connector	2x SMA - 50 Ohm
Frequency bands	
– GSM/GPRS/EDGE	900/1800/1900 MHz
– UMTS	850/2100 MHz
– LTE	800/900/1800/2100/2600 MHz
Download | Upload UMTS	Max. 42 Mbit/s | Max. 5.7 Mbit/s
Download | Upload LTE	Max. 100 Mbit/s | Max. 50 Mbit/s
Complies with standards	CE, E8
	EN 61000-4-3, EN 61000-4-8
	EN 55022, E8 10R-04 7056

Industrial Mobile Router 3G UMTS/HSDPA/HSUPA/HSPA+ v2

wienet HSPA+ UR5iv2 SL „Basic"

- 1x SIM card slot
- 1x Ethernet
- 1x RJ45 port expansion
- 1x USB
- 1x DI
- 1x DO

wienet HSPA+ UR5iv2 SL „Compact"

- 2x SIM card slot
- 2x Ethernet (LAN-to-LAN or switch-bridge)
- Best price-performance ratio
- No USB interface
- No DIO

wienet HSPA+ UR5iv2 SL „Full"

- 2x SIM card slot
- 1x Ethernet
- 2x RJ45 port expansion
- 1x USB
- 1x DI
- 1x DO
- GPS receiver (not in combination with WIFI)

Scope of supply:

VPN mobile router
Including USB stick with documentation
Including RJ45 patch cable
Including top-hat rail adapter

Type	Interfaces	Art. No.
wienet UR5iv2 SL Basic		
UR5iv2	LAN, USB, DI, DO, 1xSIM	83.041.0040.1
UR5iv2 RS232	LAN, USB, DI, DO, 1xSIM, RS232	83.041.0041.1
UR5iv2 RS485/422	LAN, USB, DI, DO, 1xSIM, RS485/422	83.041.0042.1
UR5iv2 MBUS	LAN, USB, DI, DO, 1xSIM, M-Bus	83.041.0043.1
UR5iv2 CNT	LAN, USB, 5DI, 3DO, 2AI, 1xSIM	83.041.0044.1
UR5iv2 ETH	2x LAN, USB, DI, DO, 1xSIM	83.041.0045.1
wienet UR5iv2 SL Compact		
UR5iv2c SL ETH	2x LAN, 2xSIM	83.041.0405.3
UR5iv2c SL ETH WIFI	2x LAN, WIFI, 2xSIM	83.041.0465.3
wienet UR5iv2 SL Full		
UR5iv2f SL	LAN, USB, DI, DO, 2xSIM	83.041.0400.1
UR5iv2f SL RS232	LAN, USB, DI, DO, 2xSIM, RS232	83.041.0401.1
UR5iv2f SL RS485/422	LAN, USB, DI, DO, 2xSIM, RS485/422	83.041.0402.1
UR5iv2f SL MBUS	LAN, USB, DI, DO, 2xSIM, M-Bus	83.041.0403.1
UR5iv2f SL CNT	LAN, USB, 5DI, 3DO, 2AI, 2xSIM	83.041.0404.1
UR5iv2f SL ETH	2xLAN, USB, DI, DO, 2xSIM	83.041.0405.1
UR5iv2f SL WIFI	LAN, USB, DI, DO, 2xSIM, WIFI	83.041.0460.1
UR5iv2f SL RS232 RS232	LAN, USB, DI, DO, 2xSIM, 2xRS232	83.041.0411.1
UR5iv2f SL RS485 RS232	LAN, USB, DI, DO, 2xSIM, RS232, RS485/422	83.041.0412.1
UR5iv2f SL MBUS RS232	LAN, USB, DI, DO, 2xSIM, RS232, M-Bus	83.041.0413.1
UR5iv2f SL CNT RS232	LAN, USB, 5xDI, 3xDO, 2xAI, 2xSIM, RS232	83.041.0414.1
UR5iv2f SL ETH RS232	2xLAN, USB, DI, DO, 2xSIM, RS232	83.041.0415.1
UR5iv2f SL RS485 RS485	LAN, USB, DI, DO, 2xSIM, 2xRS485/422	83.041.0422.1
UR5iv2f SL MBUS RS485	LAN, USB, DI, DO, 2xSIM, RS485/422, M-Bus	83.041.0423.1
UR5iv2f SL CNT RS485	LAN, USB, 5xDI, 3xDO, 2xAI, 2xSIM, RS485/422	83.041.0424.1
UR5iv2f SL ETH RS485	2xLAN, USB, DI, DO, 2xSIM, RS485/422	83.041.0425.1
UR5iv2f SL RS232 WIFI	LAN, USB, DI, DO, 2xSIM, WIFI, RS232	83.041.0461.1
UR5iv2f SL RS485 WIFI	LAN, USB, DI, DO, 2xSIM, WIFI, RS485/422	83.041.0462.1
UR5iv2f SL MBUS WIFI	LAN, USB, DI, DO, 2xSIM, WIFI, M-Bus	83.041.0463.1
UR5iv2f SL CNT WIFI	LAN, USB, 5xDI, 3xDO, 2xAI, 2xSIM, WIFI	83.041.0464.1
UR5iv2f SL ETH WIFI	2xLAN, USB, DI, DO, 2xSIM, WIFI	83.041.0465.1
UR5iv2f SL 3-Port	3xLAN, USB, DI, DO, 2xSIM	83.041.0499.1

Networks	
DHCP - automatic IP address on LAN network	NAT/PAT - Network/Port Address Translation
SNMP - network management, communication with router and its I/O and M-Bus modules	VRRP - redundant communication paths (routing)
DynDNS - access to router if dynamic IP used	Dial-In - Dial-up router option (network) - communication via "CSD call"
Integrated firewall (SPI)	OSPF, BGP, RIP - routing protocols (optional)
VLAN, QoS - expanded Layer 2 network functions (optional)	
VPN tunnel	
Secure data encryption with IPSec and OpenVPN (incl. X.509 certificates)	Basic data transmission without encoding via GRE and L2TP tunnel
Configuration and diagnostics	
Web interface	SMS functions
Several profiles	Comprehensive mobile radio statistics options
LED status displays	Telnet and SSH - command line access
Optional expansions	
Second SIM card	User (software) modules - various function expansions
Wie-Service24 - VPN server portal	
Additional functions and characteristics	
NTP client, NTP server - time synchronization	Communication via SMS - AT commands to the RS232, Ethernet, and I/O interface

Technical data	
Installation	Top-hat rail or table
Operating voltage	10 - 30 V DC
Power consumption	5.5 W max.
Operating temperature	-30 °C … +60 °C
On-board I/O	
– PIN allocation	DO/GND/DI
– Output (DO)	120 mA / max. 30 V
– Input (DI)	10-30 V DC
Dimensions (HxWxD)	42 x 80.5 x 113.5 mm
Weight	287 g
Antenna connector	2x SMA - 50 Ohm
Frequency bands	
– GSM/GPRS/EDGE	800/900/1800/1900 MHz
– UMTS	850/900/1900/2100 MHz
Complies with standards	CE, E8
	EN 61000-4-3, EN 61000-4-8
	EN 55022, E8 10R-04 7056

Industrial LAN Router

wienet WR-LAN v3 SL

- High-performance CPU Cortex A8, 1 GHz (2000 DMIPS)
- Memory: 256 MB flash memory, 512 MB RAM, 128 kB M-RAM
- 5x Ethernet
- 1x USB 2.0 host
- 2x DI
- 1x DO
- 1x MicroSD
- 1x WIFI/WLAN 802.11 b/g/n (optional), supports access point and client mode

Scope of supply:

VPN LAN router

Including USB stick with documentation

Including RJ45 patch cable

Including top-hat rail adapter

Type	Interfaces	Art. No.
wienet WR-LANv3 SL		
WR-LAN v3 SL 5-Port	5xLAN, USB, DI, DO	83.041.0809.1
WR-LAN v3 SL 5-Port WIFI	5xLAN, USB, DI, DO, WIFI	83.041.0869.1

Networks	
DHCP - automatic IP address on LAN network	NAT/PAT - Network/Port Address Translation
SNMP v1/v2c/v3 - Network management, communication with router and its I/O and M-Bus modules	VRRP - redundant communication paths (routing)
PPPoE bridge	DynDNS - access to router if dynamic IP used
IGMP, BGP, OSPF, RIP, SMTP, SMTPS	OSPF, BGP, RIP - routing protocols (optional)
Integrated firewall (SPI)	VLAN, QoS - expanded Layer 2 network functions (optional)
DMVPN	HTTPS, SSH, SFTP
VPN tunnel	
Secure data encryption with IPSec and OpenVPN (incl. X.509 certificates)	Basic data transmission without encoding via GRE and L2TP tunnel
EasyVPN	
Configuration and diagnostics	
Configuration and firmware update via web interface, USB stick, and central Internet server	One-CLICK reports: Current configuration, system log, routing table, reboot log, kernel log
LED status displays	Change between different configuration profiles (via web digital input or scheduler)
SNMP v1/v2c/v3 - status queries	Network status
Optional expansions	
Wie-Service24 - VPN server portal	User (software) modules - various function expansions
Additional functions and characteristics	
Script programming - StartUp script, Up/Down script Script language Bash, Python	NTP client, NTP server - time synchronization

Technical data	
Installation	Top-hat rail or table
Operating voltage	10 - 60 V DC
Power consumption typical / average / peak / sleep mode	2 W / 3.25 W / 4.5 W / 10 mW
Operating temperature / storage temperature	-30 °C … +60 °C / -40 °C … +85 °C
Humidity	0 … 95 %
Protection rating	IP30
On-board I/O	
– Output (DO)	300 mA / max. 60 V
– 2x input (DI)	10-60 V DC
Dimensions (HxWxD)	125 x 55 x 97
Weight	327 g
Antenna connector	
– WIFI antenna (optional)	R-SMA
Technical data microSD	
– Supported technologies	SDHC, SDXC
– Supported capacities	SDHC to 32 GB, SDXC from 32 GB to 64 GB
Complies with standards	EN 61000-4-2 (ESD), IEC 61000-4-3 (RF field AM modulated),
	EN 61000-4-4 (fast transient), EN 61000-4-5 (surge)
	EN 61000-4-6 (RF-conducted), EN 55022, EN 61000-4-8,
	EN 60068-2-2, EN 60068-2-1, EN 60068-2-78, E8 10R-04

Industrial LAN Router

wienet LAN Router XR5iv2 SL

- 1x Ethernet
- 1x RJ45 port expansion
- 1x USB
- 1x DI
- 1x DO

wienet LAN Router XR5iv2 SL „compact"

- 2x Ethernet (LAN-to-LAN or switch-bridge)
- Best price-performance ratio
- No USB interface
- No DIO

Scope of supply:

VPN LAN router
Including USB stick with documentation
Including RJ45 patch cable
Including top-hat rail adapter

Type	Interfaces	Art. No.
wienet XR5iv2 SL		
XR5iv2 ETH	2xLAN, USB, DI, DO	83.041.0605.1
XR5iv2 ETEH RS232	2xLAN, USB, DI, DO, RS232	83.041.0615.1
XR5iv2 ETH RS485/422	2xLAN, USB, DI, DO, RS485/422	83.041.0625.1
XR5iv2 ETH MBUS	2xLAN, USB, DI, DO, M-Bus	83.041.0635.1
XR5iv2f SL WIFI	LAN, USB, DI, DO, WIFI	83.041.0660.1
XR5iv2f SL RS232 WIFI	LAN, USB, DI, DO, WIFI, RS232	83.041.0661.1
XR5iv2f SL RS485 WIFI	LAN, USB, DI, DO, WIFI, RS485/422	83.041.0662.1
XR5iv2f SL MBUS WIFI	LAN, USB, DI, DO, WIFI, M-Bus	83.041.0663.1
XR5iv2f SL CNT WIFI	LAN, USB, 5xDI, 3xDO, 2xAI, WIFI	83.041.0664.1
XR5iv2f SL ETH WIFI	2xLAN, USB, DI, DO, WIFI	83.041.0665.1
wienet XR5iv2 SL Compact		
XR5iv2c SL ETH	2x LAN	83.041.0605.3
XR5iv2c SL ETH WIFI	2x LAN, WIFI	83.041.0665.3

Networks	
DHCP - automatic IP address on LAN network	NAT/PAT - Network/Port Address Translation
SNMP - network management, communication with router and its I/O and M-Bus modules	VRRP - redundant communication paths (routing)
Integrated firewall (SPI)	DynDNS - access to router if dynamic IP used
VLAN, QoS - expanded Layer 2 network functions (optional)	OSPF, BGP, RIP - routing protocols (optional)
PPPoE - DSL modem support	
VPN tunnel	
Secure data encryption with IPSec and OpenVPN (incl. X.509 certificates)	Basic data transmission without encoding via GRE and L2TP tunnel
Configuration and diagnostics	
Web interface	Several profiles
LED status displays	Telnet and SSH - command line access
Optional expansions	
User (software) modules - various function expansions	Wie-Service24 - VPN server portal
Additional functions and characteristics	
NTP client, NTP server - time synchronization	

Technical data	
Installation	Top-hat rail or table
Operating voltage	10 - 30 V DC
Power consumption	5.5 W max.
Operating temperature	-30 °C … +60 °C
On-board I/O	
– PIN allocation	DO/GND/DI
– Output (DO)	120 mA / max. 30 V
– Input (DI)	10-30 V DC
Dimensions (HxWxD)	42 x 80.5 x 113.5 mm
Weight	270 g
Complies with standards	CE
	EN 61000-4-3, EN 61000-4-8
	EN 55022

M2M Device Management
with own OpenVPN server

With the **wienet** VPN industrial routers from Wieland and the VPN service portal Wie-Service24, VPN communication in the cloud is child's play. Interlink everything securely and dependably – from individual devices to entire systems – this is the guarantee from the modular router and cloud-based management solution Wie-Service24.

✓ **Security through VPN**

✓ **Automatic generation of router configuration**

✓ **Less need for coordination with IT and simple commissioning**

✓ **Connection of complete networks without additional routing settings**

✓ **No access to local network required**

✓ **Only outgoing connections to Wie-Service24 are needed**

✓ **directRemote: direct access with any browser via a unique URL**

✓ **Mobile access to all devices after router with smartphone or tablet PC**

A watchful eye on everything with our cloud-based management solution:

Wie-Service24

Wie-Service24 VPN service portal

All systems on the network!

Technicians

VPN Portal

Technicians

Notification – SMS

LAN-TO-LAN   **Machines and systems**

WLAN   **Machines and systems**

Mobile routers   **Machines and systems**
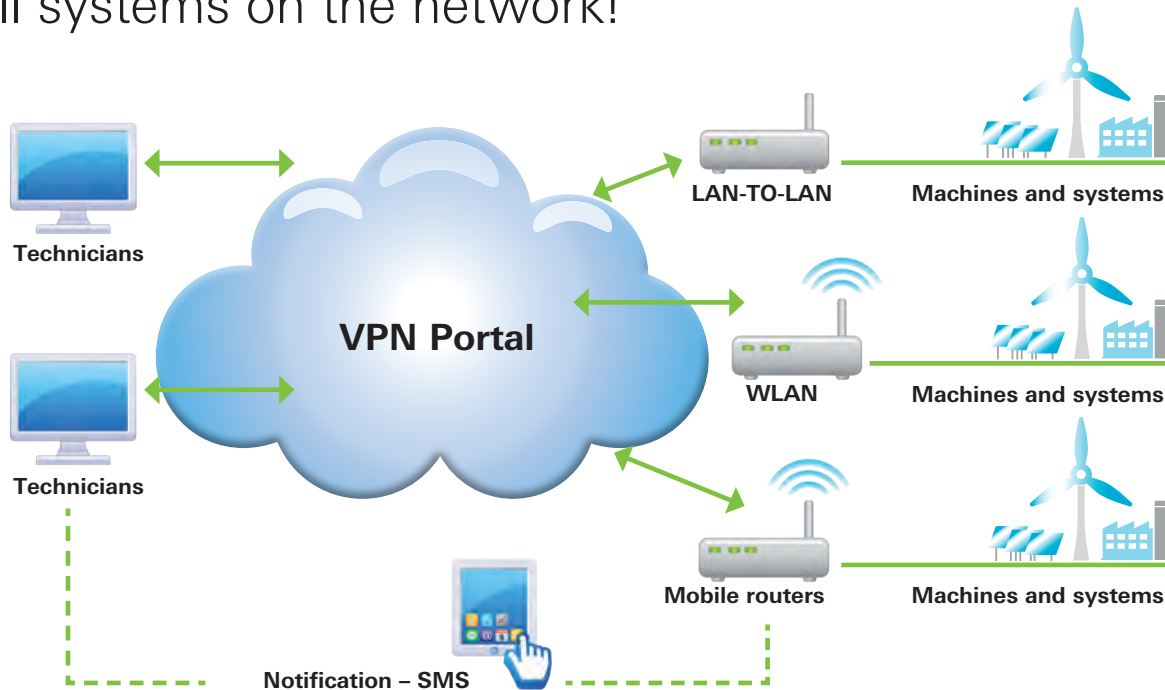
The Wie-Service24 VPN service portal is available in different variants:

The Wieland VPN server Wie-Service24 can be used for entry (up to 30 router clients / 30 PC clients) at no cost. After that, you can lease additional accesses or install your own server portal. Installation of the portal on a virtual machine, in a data center in a customer computer center, or in a data center on an Internet server. The small VPN server "Smart-Service24", delivered completely installed on its own energy-saving hardware, is also suitable for entry to a VPN server of your own.

	Starter kit	Virtual machine	Data center Customer computer center	Data center Internet server	Small VPN server Smart-Service24
Art. No.	**ZD.000.0011.1**	**ZD.000.0012.0**	**ZD.000.0015.0**	**ZD.000.0016.0**	**ZD.000.0017.0**
Client access	•	•	•	•	•
Name	WIE-SERVICE24 30	WIE-SERVICE24 VM	WIE-SERVICE24 DC Custom	WIE-SERVICE24 DC Internet	SMART-SERVICE24
Administration access	–	•	•	•	•
Server hardware from	Wieland	Customer	Customer	Provider	Wieland
Internet connection by	Wieland	Customer		Provider	Customer
Installation by	Wieland	Wieland partner	Wieland partner	Wieland partner	Wieland (completely installed)
Number of VPN client licenses "PC"	30	> 1000	> 1000	> 1000	100
Number of VPN client licenses "Router"	30	> 1000	> 1000	> 1000	100
Cost model	No cost	1x fixed price*	1x fixed price*	1x fixed price*	1x fixed price

* Maintenance contract on request

Additional information is available from our Technical Service:

Phone   +49 9 51 93 24-995

Fax   +49 9 51 93 26-991

wie-service24@wieland-electric.com

VPN server "Wie-Service24"

T he VPN service portal WIE-SERVICE24 ensures the secure connection of your machines and systems. Individual determination of the access rights and encoding of the VPN connections protect your machines and systems. Tedious, error-prone manual router configuration is no longer necessary. Remote access can be accomplished with any Internet-capable PC or smartphone. If the VPN connection happens to break, WIE-SERVICE24 re-establishes it.

VPN licenses WIE-SERVICE24

• 30 VPN client licenses included for new router customers

Type	Art. No.
wienet WIE-SERVICE24-30	ZD.000.0011.1
Complete network routing for up to 30 Wieland VPN routers, VPN client accesses for PCs and mobile end-user devices included for new customers.	
Technical data	
30 software single licenses with fixed IP included	– Client access – No administration access; VPN accesses set up and hosted by Wieland – Server hardware in the industrial data center – Administration via web interface, SSL, and SSH
Firewall	– Stateful inspection firewall – Failover mechanism present
Technical data: VPN server	– Max. data throughput: Wire speed – Max. number of simultaneous VPN sessions: 1000 – Number of determined VPN tunnels: 1000 – SSL/TLS – Blowfish encoding – Authentication: PKI

VPN service portal WIE-SERVICE24 full server license

• Virtual machine
• Customer server
• Internet data center

Type	Art. No.
wienet WIE-SERVICE24-VM	ZD.000.0012.0
As a virtual machine for the Oracle VirtualBox, the VPN service portal WIE-SERVICE24 enables full network routing for almost any number of Wieland VPN routers. Additional virtualization environments can be established by installation from a CD. The operating system Debian GNU/Linux is a component of the installation CD/DVD.	
wienet WIE-SERVICE24-DC-Custom	ZD.000.0015.0
The VPN service portal WIE-SERVICE24, installed ready-to-operate in your data center, enables full network routing for any number of Wieland VPN routers. You can set up and manage as many VPN client accesses as you want, on your own. The client configurations are automatically generated from the VPN service portal.	
wienet WIE-SERVICE24-DC-Intern.	ZD.000.0016.0
The VPN service portal WIE-SERVICE24 in the Internet data center – our Top Seller! Installed ready-to-operate at your Internet service provider, it enables full network routing for any number of Wieland VPN routers. You can set up and manage as many VPN client accesses as you want, on your own. The client configurations are automatically generated from the VPN service portal.	
Technical data	
VPN server portal: – On virtual machine – For Oracle VirtualBox – On server at customer – On server at Internet service provider	– Administration and client access – Server hardware and Internet connection by customer – Installation by customer or Wieland partner – Administration via web interface, SSL, and SSH
Firewall	– Stateful inspection firewall – Failover mechanism present
VPN	– Max. data throughput: Wire speed – Max. number of simultaneous VPN sessions: 1000 – Number of determined VPN tunnels: 1000 – SSL/TLS – Blowfish encoding – Authentication: PKI
Service	– Four weeks of telephone installation support – 12 months of update service

VPN Server "Smartservice24"

The compact VPN server SMARTSERVICE24 enables your easy entry to a VPN infrastructure of your own. It ensures the secure connection of your machines and systems: You are protected by individual determination of access rights and encoding of VPN connections. You set up the authorization management in seconds, individually for each device. Tedious, error-prone manual router configuration is no longer necessary. Remote access can be accomplished with any Internet-capable PC or smartphone. If the VPN connection happens to break, the Digicluster re-establishes it independently.

Compact VPN server SMARTSERVICE24	Type	Art. No.
	wienet SMARTSERVICE24	ZD.000.0017.0

Features	
The compact VPN server SMARTSERVICE24, installed ready-to-operate on a small, energy-saving hardware unit, enables full network routing for up to 100 Wieland VPN routers. Also, up to 100 VPN client accesses for PCs and smartphones can be set up and managed. The client configurations are automatically generated from the VPN service portal.	

Technical data	
Software installed ready-to-operate on environmentally-friendly embedded hardware.	– Limited to 100 VPN tunnels – Administration and client access – Server hardware from Wieland – Internet connection by customer – Administration via web interface, SSL, and SSH
Firewall	– Stateful inspection firewall – Failover mechanism present
VPN	– Max. data throughput: Wire speed – Max. number of simultaneous VPN sessions: 200 – Number of determined VPN tunnels: 200 – SSL/TLS – Blowfish encoding – Authentication: PKI
Service	– One-time feature update – 12 months of update service

Accessories

For perfect industrial communication
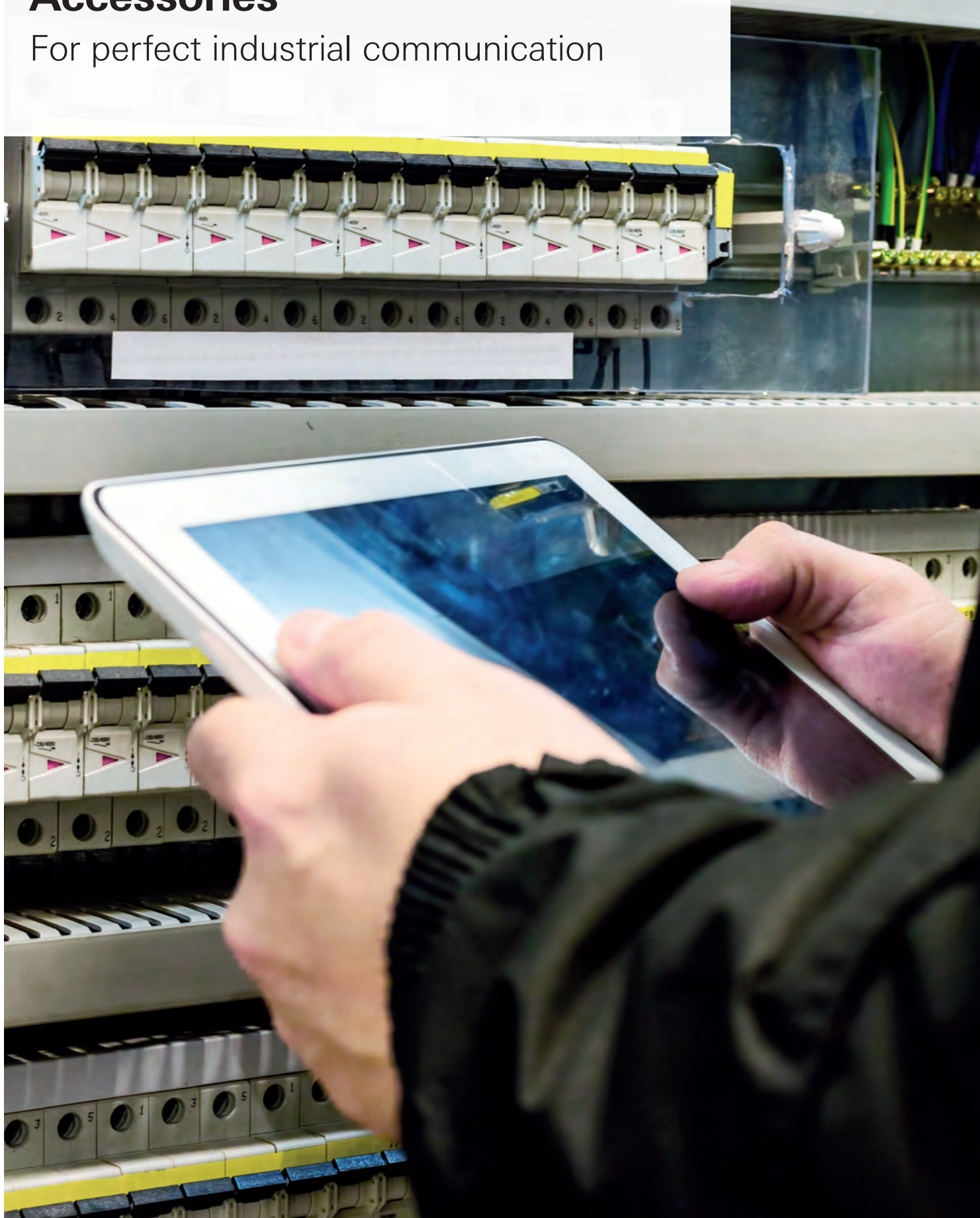
Accessories

Round beam roof antenna
wienet Antenna LPB-7-27

Type	Art. No.
wienet Antenne 15863-v2	F0.000.0035.1
Technical data	
Frequency range	GSM, GPRS, EDGE, UMTS, LTE
Connector	SMA/M
Gain	4 dBi
Cable length	5 m
Dimensions (mm)	Approx. 82 x 48 x 48
Installation	Including mast or wall mounting bracket

Magnetic holder for antennas with SMA/M connection
wienet Antenna 15018

Type	Art. No.
wienet Antenne 15018	F0.000.0036.1
Technical data	
Frequency range	GSM, GPRS, EDGE, UMTS, LTE
Antenna connector	SMA/F
Cable connector	SMA/M
Cable length	2.5 m
Dimensions (H x ø)	42/50 mm
Installation	Magnetic holder

LTE antenna
wienet Antenna 15018A

Type	Art. No.
wienet Antenne 15018A	F0.000.0036.2
Technical data	
Frequency range	GSM, GPRS, EDGE, UMTS, LTE
Cable connector	2x SMA/M
Gain	Max. 5 dBi
Dimensions	Height approx. 240 mm

Vehicle antenna
wienet Antenna 15869v2

Type	Art. No.
wienet Antenne 15869v2	F0.000.0035.2
Technical data	
Frequency range	GSM, GPRS, EDGE, UMTS, LTE
Radio technology	Supports MiMo and Diversity (no directional radio)
Cable connector	2x SMA/M
Gain	Max. 5 dBi
Cable length	2 x 5 m
Dimensions (H x ø)	82 x 176 mm
Installation	Roof mounting

LTE panel antenna
wienet Antenna 15862v2
High-performance outdoor antenna for LTE

Type	Art. No.
wienet Antenne 15862v2	F0.000.0037.6
Technical data	
Frequency range	GSM, GPRS, EDGE, UMTS, LTE
Cable connector	2x SMA/M
Gain	Max. 5 dBi
Cable length	2 x 5 m
Dimensions	186 x 155 mm
Installation	Wall or mast mounting, including wall holder

LTE panel antenna
wienet Antenna 15872v2
High-performance outdoor antenna for LTE

Type	Art. No.
wienet Antenne 15872v2	F0.000.0037.8
Technical data	
Frequency range	GSM, GPRS, EDGE, UMTS, LTE
Cable connector	2x SMA/M
Gain	Max. 9 dBi
Cable length	2 x 5 m
Dimensions	230 x 180 mm
Installation	Wall or mast mounting, including wall holder

Accessories

**Round beam
Rod antenna
wienet GXS606**

Type	Art. No.
wienet GXS606	83.041.0210.0
Technical data	
Frequency range	GSM, GPRS, EDGE, UMTS
Connector	FME/F
Gain	2.2 dBi
Cable length	5 m
Rod length (mm)	Approx. 300

**Flat antenna
wienet GXR623**

Type	Art. No.
wienet GXR623	83.041.0200.0
Technical data	
Frequency range	GSM, GPRS, EDGE, UMTS
Connector	SMA/M
Gain	2.2 dBi
Cable length	2.5 m
Dimensions (mm)	Approx. 75 x 80 x 13

**WLAN/WIFI antenna
wienet Antenna
15854v2 WIFI**

Type	Art. No.
wienet Antenne 1 5854v2 WIFI	F0.000.0037.4
Technical data	
Frequency range	2.4 GHz ISM band for WIFI/WLAN, Bluetooth, or Zigbee
Connector	SMA/M-RP
Cable	RG 174
Gain	4.8 dBi
Polarization	Vertical
Resistor	50 Ohm
Cable length	2.5 m
Dimensions	223 x 29 mm
Installation	Roof mounting

**WLAN/WIFI roof or
wall antenna
wienet Antenna
15874v2 WIFI**

Type	Art. No.
wienet Antenne 15874v2 WIFI	F0.000.0037.5
Technical data	
Frequency range	2.4 GHz ISM band for WIFI/WLAN, Bluetooth, or Zigbee
Connector	SMA/R
Gain	4.8 dBi
Resistor	50 Ohm
Cable length	5 m
Dimensions (mm)	Approx. 82 x 48 x 48
Installation	Including mast or wall mounting bracket

**Antenna extension
wienet Antenna 15815v2**

Type	Art. No.
wienet Antenne 15815v2	F0.000.0036.7
Technical data	
Connector	SMA female / SMA male
Cable	Low-loss cable
Cable length	10 m

Accessories

Programming adapter MPI-ETH ADAPTER ACCON-NETLINK-PRO
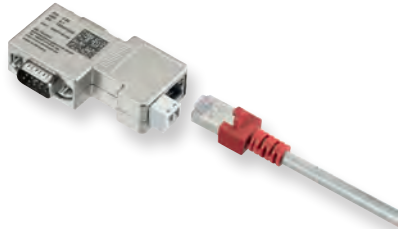
Type	Art. No.
MPI-ETH ADAPTER ACCON-NETLINK-PRO	F0.000.0031.8

Technical data	
Supported operating systems	No restriction
Hardware requirements	Ethernet interface and TCP/IP protocol
Supported PLCs	S7-200, S7-300, S7-400
Weight in kg	Approx. 0.25
Protection rating	IP 20
Supply voltage	24 V DC ± 25 %
External power supply	Yes
Max. current consumption	150 mA
Galvanically insulated	Yes
Operating temperature	0 °C to 60 °C
Storage/transport temperature	-20 °C to 90 °C
Admissible relative air humidity	5 % to 85 % at 30 °C (non-condensing)
Connection cable to the PLC	Permanently mounted, active (no stub line, 1.2 m)
Connection cable to PC/router	Patch cable (Ethernet, straight, 3 m)
Supported bus profiles	MPI, DP, standard, universal (DP/FMS), user-defined, with automatic detection
Supported transmission rates from bus connection to PLC	9.6 Kbit/s to 12 Mbit/s with automatic detection
Supported Ethernet transmission rates	10/100 Mbit/s with automatic detection
Max. number of connections on TCP/IP	16

Switching power supply 12 V for v3 router wienet PS 12 V v3

Type	Art. No.
wienet PS 12 V v3	F0.000.0037.7

Technical data	
Input voltage	100-240 V AC 50/60 Hz
Output voltage	12 V DC
Output current max.	1000 mA

Switching power supply 12 V for v2 router wienet PS 12 V v2

Type	Art. No.
wienet PS 12 V v2	F0.000.0037.3

Technical data	
Input voltage	100-240 V AC 50/60 Hz
Output voltage	12 V DC
Output current max.	1000 mA

Pre-assembled 6-pole IO male with wires for v3 router wienet IO cable v3

Type	Art. No.
wienet IO cable 1m	F0.000.0037.9
wienet IO cable 3m	F0.000.0038.0

Technical data	
Cables	CYA 0.5 mm² (2x white, 2x purple, 2x orange)
Male	WR-MPC4 for v3 router IO interface

RJ45 interface modules wienet RJ45 8S terminal wienet RJ45 extender

- Passive interface modules
- RJ45 on RJ45
- RJ45 on PCB terminals
- Screen is connected
- Screen connection terminal with PCB variant

Type	Art. No.	
wienet RJ45 8S Terminal	80.000.3001.0	
wienet RJ45 Extender		80.000.3002.0

Technical data		
Connecting cable	STP Cat 5	
Rated current	0.9 A	
Rated voltage	50 V DC	
Voltage resistance	300 V	
Data rate	100 Mbit/s	
Operating temperature range	-40 °C to 65 °C (85 °C max. 0.6 A)	
Weight approx.	approx. 50 g	
Pin assignment	1:1	
Housing	Plastic PA 6.0 GK30	
Installation	Top-hat rail	
Dimensions (W x H x D)	25.6 x 51 x 80 mm	25.3 x 46.5 x 80 mm
Connection type	Push-in terminals and RJ45 socket	2x RJ45 socket

HMI ECO Family – Touch Panels

Cost-effective operation and visualization

Starting with cell phones, we have replaced numerous actuating elements in everyday life with touch screens. Instead of conventional buttons with lamps, these days machine and system builders increasingly prefer touch panels for process visualization, operation, observation, and even diagnostics. HMI ECO touch panels can be programmed using the visualization software **hmi**PLAN from Wieland Electric GmbH. The installation file for **hmi**PLAN can be downloaded at any time from www.wieland-electric.com. With a one-time license, you can use the software indefinitely and obtain updates free of charge. The HMI ECO family for industrial touch panels enables users to commission machines and systems quickly, easily, and cost-effectively.

✓ **High-quality housing / optimal screen size**

✓ **Protection rating of IP66 for front in harsh environments**

✓ **Communication via Ethernet and Modbus TCP**

✓ **Easy programming with hmi**PLAN **via Ethernet and USB**

✓ **Convenient data exchange with samos®**PRO COMPACT

✓ **Extended operating temperatures from -20 °C to 60 °C**

✓ **Over 7000 programmable menu pages**

✓ **Quick connection to controllers via special software drivers**

✓ **Customized front design with your own logo**

HMI ECO Touch Panels

HMI ECO family

Type	Description	Art. No.
HMI-LICENSE-SINGLE	Single-user license for *hmi*PLAN	ZW.000.0170.0
SP-CABLE-ETH1	Ethernet programming cable, 2 m	R1.190.1020.0

General technical data	
Programming software	*hmi*PLAN
Screen type	Color, TFT LCD Touch
Serial interface	COM1 to COM5
Number of colors	65536
USB 2.0	Host and client
Ethernet	RJ-45
Operating voltage	24 VDC +- 10% (insulated)
Power	10 W
Ambient temperature	-10…+60 °C (-20…+60°C on request)
Approvals	CE c(UL)us*') (SB)*)

*) available from Q1/2018
*') cULus is in process

HMI ECO
4,3" Touch Panel

Type	Description	Art. No.
HMI-ECO-043	HMI ECO Touchpanel, 4,3"	83.050.0000.0

Technical data	
Screen size	4.3" diagonal
Resolution	480 x 272 pixels
Dimensions (WxHxD) (mm) *T: without front cover ring	129 x 103 x 33
Frame size	118.5 x 92.5

HMI ECO Touch Panels

HMI ECO Wide Screen 7" Touch Panel

Type	Description	Art. No.
HMI-ECO-070	HMI ECO Touchpanel, 7"	83.050.0001.0
General technical data		
Screen size	7" diagonal, wide-screen	
Resolution	800 x 480 pixels	
Dimensions (WxHxD) (mm) *T: without front cover ring	203.5 x 148.5 x 37	
Frame size	191.5 x 138	

HMI ECO Wide Screen 10" Touch Panel

Type	Description	Art. No.
HMI-ECO-100	HMI ECO Touchpanel, 10"	83.050.0002.0
Technical data		
Screen size	10" diagonal	
Resolution	1024 x 600 pixels	
Dimensions (WxHxD) (mm) *T: without front cover ring	270.8 x 212.8 x 42.5	
Frame size	259.5 x 201.5	

Wieland at a glance
Our range of products and services for your industry

Product portfolio
- Electronic and electrical engineering for the control cabinet
- Safety technology
- Network and fieldbus systems
- Energy bus systems for industry and buildings
- Connectors up to protection rating IP 6X
- Building automation
- PCB terminals and plug connectors
- Sensor/actuator cabling

Industries
- Machine building
- Construction machines & cranes
- Buildings and lighting
- Logistics
- Power engineering
- Renewable energy sources
- Heating and air conditioning systems

Business services
- Pre-assembly and wiring
- Product labeling service
- Integrated solutions in distributors
- Customized solutions
- On-site project support
- Optimization of decentralized, pluggable installation solutions
- Certified machine safety tests

Safety training
- Software validation
- CSE Certified Safety Engineer
- Basic principles and standards of functional safety
- Modification of old machinery and major changes
- Design of safety functions and calculation with Sistema
- Machinery Directive, liability issues, and CE Declarations of Conformity

Software/configuration tools
- **wieplan** CLICK2BUY, configuration of terminal strips with online ordering function
- **wieprint**, marking system for DIN rail terminal blocks
- **revos** configurator for connectors
- **gesis**®PLAN for building installation
- **podis**®PLAN for configuring the **podis**® energy bus system
- **samos**®PLAN 6, programming tool for **samos**®PRO COMPACT
- **hmi** PLAN, visualization software for HMI touch panels

Why Wieland?
- Standardized industrial solutions
- Customized solutions
- Support for your project
- Broad product portfolio
- Products usable worldwide due to international licenses
- Group-wide observance of human rights, including at suppliers
- Eco-friendly production

Technical consultation

and general information

Use the Wieland hotline – a phone call is all it takes

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