

*Highly functional network communication
performance without compromise*

PROmesh Industrial Switches



Indu
Industrial Solutions
Sol

PROmesh P
Full Gigabit 



We provide highly functional switches with best price-performance ratio available

The **PROmesh switches** range includes three product families of high-performance industrial switches for all applications and every environmental situation. Permanently installed in the control cabinet or decentrally in the field for IP67 environments.

Above-average **quality, performance** and **versatility** in use are features taken for granted with the PROmesh series products.

Many products are already equally usable for **PROFINET** and **Ethernet/IP**.

Our know-how as a **specialist for machine networks** with more than 20 years of experience in all **leading technological branches of industry** and **automation** is embedded in all product families.



PROmesh P product family

stands for high-performance managed industrial switches, line diagnosis, condition monitoring and network management.



PROmesh B product family

PROmesh B has convincing managed industrial switches with high-performance switch function and unbeatable value for money.



PROmesh U product family

These unmanaged industrial switches round off the range with strong switch performance.



PROmesh P product family

Condition monitoring and network diagnosis with intelligent industrial switches

PROmesh P, our product family of high-performance diagnostic **industrial switches**, has integrated monitoring and diagnostic functions:

With PROmesh P switches

- » you keep an eye on the condition of the system or network section – end-to-end and transparent at all times.
- » you localise identified sources of disturbance – without additional measuring equipment or time lost due to manual measuring tasks.

In this way, emerging faults or wear phenomena in the network can be identified and counteracted in good time and unscheduled machine stoppages, caused by network errors detected too late, can be prevented. The plant availability increases and you have fewer costs.

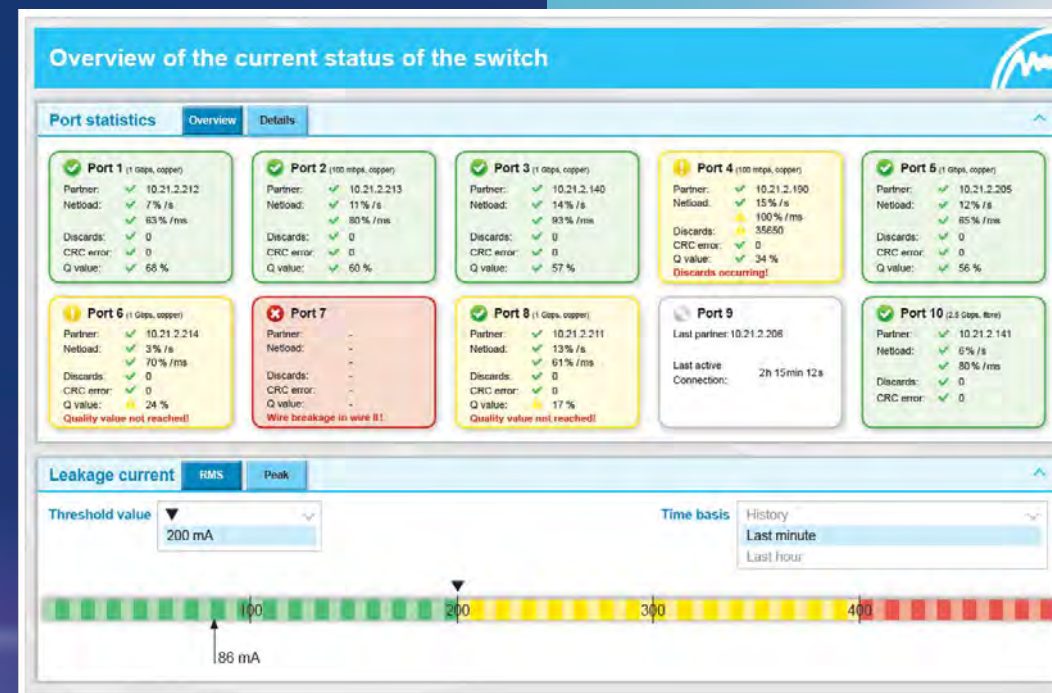
With their **performance, diagnostic and monitoring functions**, PROmesh P switches combine the standards of modern electrical design and the effective, forward-looking maintenance of automation systems and industrial plants.

Integrated in the condition monitoring management system (**CMMS**) for **PROFINET/Ethernet/IP** applications, the PROmesh P switch becomes a powerful diagnostic and management tool and contributes significantly to the CMMS's detection of up to 90% of the anomalies that lead to unscheduled downtimes.

A PROmesh P switch is thus “state-of-the-art”. As an intelligent sensor with performance-oriented industrial switch technology, it is designed for the increasing data traffic and ever more complex machine and building networks.



Monitor the lines for mechanical indications of wear or ageing phenomena, identify shield currents and diverse other values within the devices, such as the temperature, which allows conclusions to be drawn regarding temperature changes within the control cabinet.



PROmesh P product family

High performance with condition monitoring functions

- » mechanical line monitoring,
with display of wear or ageing phenomena

» monitoring of temperatures and
warning of overheating
- » monitoring of shield currents of the
data lines

» automatic alerting function
- » Netload class III certified

» 24 volt monitoring

General data	PROmesh P8+F	PROmesh P9+	PROmesh P10+	PROmesh P10X	PROmesh P20
Line diagnosis	✓	✓	✓	✓	×
EMC monitoring	✓	✓	✓	✓	✓
TCP/IP retransmission	×	×	✓	×	×
Environment monitoring	24V, temperature	24V, temperature	24V, temperature, vibration, light, humidity	24V, temperature	24V, temperature
Performance monitoring	✓	✓	✓	✓	✓
Ports	8 x 1 Gbit/s RJ45	9 x 1 Gbit/s RJ45	8 x 1 Gbit/s RJ45 2 x 2,5 Gbit/s SFP	8 x 100 Mbit/s M12 d-coded 2 x 1 Gbit/s M12 x-coded	16 x 100 Mbit/s RJ45 4 x 1 Gbit/s SFP
PROFINET standard	V 2.4	V 2.4	V 2.4	V 2.4	V 2.3
PROFINET Conformance class	B	B	B	B	B
Netload class	III	III	III	III	III
Routing	×	×	NAT	×	NAT
Firewall	×	×	✓	×	✓
PoE	×	×	×	×	×
VLAN	✓	✓	✓	✓	✓
Redundancy	MRP, RSTP, MSTP	MRP, RSTP, MSTP	MRP, RSTP, MSTP	MRP, RSTP, MSTP	MRP, RSTP, MSTP
SNMP	v1, v2c, v3	v1, v2c, v3	v1, v2c, v3	v1, v2c, v3	v1, v2c, v3
Protection rating	IP20	IP20	IP20	IP67	IP30
Operating temperature	-40 °C ... 75 °C	-40 °C to 75 °C	-40 °C to 85 °C	-40 °C to 75 °C	-40 °C to 75 °C
Voltage supply	24 VDC	24 VDC	24 VDC	24 VDC	24 VDC
Dimensions (W x H x D) in mm	150 x 130 x 60	60 x 110 x 131	60 x 110 x 131	60 x 284 x 28	68 x 130 x 138
Weight	900 g	900 g	900 g	800 g	960 g
Type of assembly	Top hat rail	Top hat rail	Top hat rail	Wall mounting	Top hat rail
Backplane [Gbps]	16	18	26	20	12,8
Throughput [Mpps]	13,4	13,4	19,3	14,9	8,5
Shared buffer [Mbit]	2	2	2	2	4
Article number	114110198	114110194	114110204	114110211	114110022



Online line diagnosis

Only those who know the current condition of the lines in the machine network can proactively prevent downtime costs

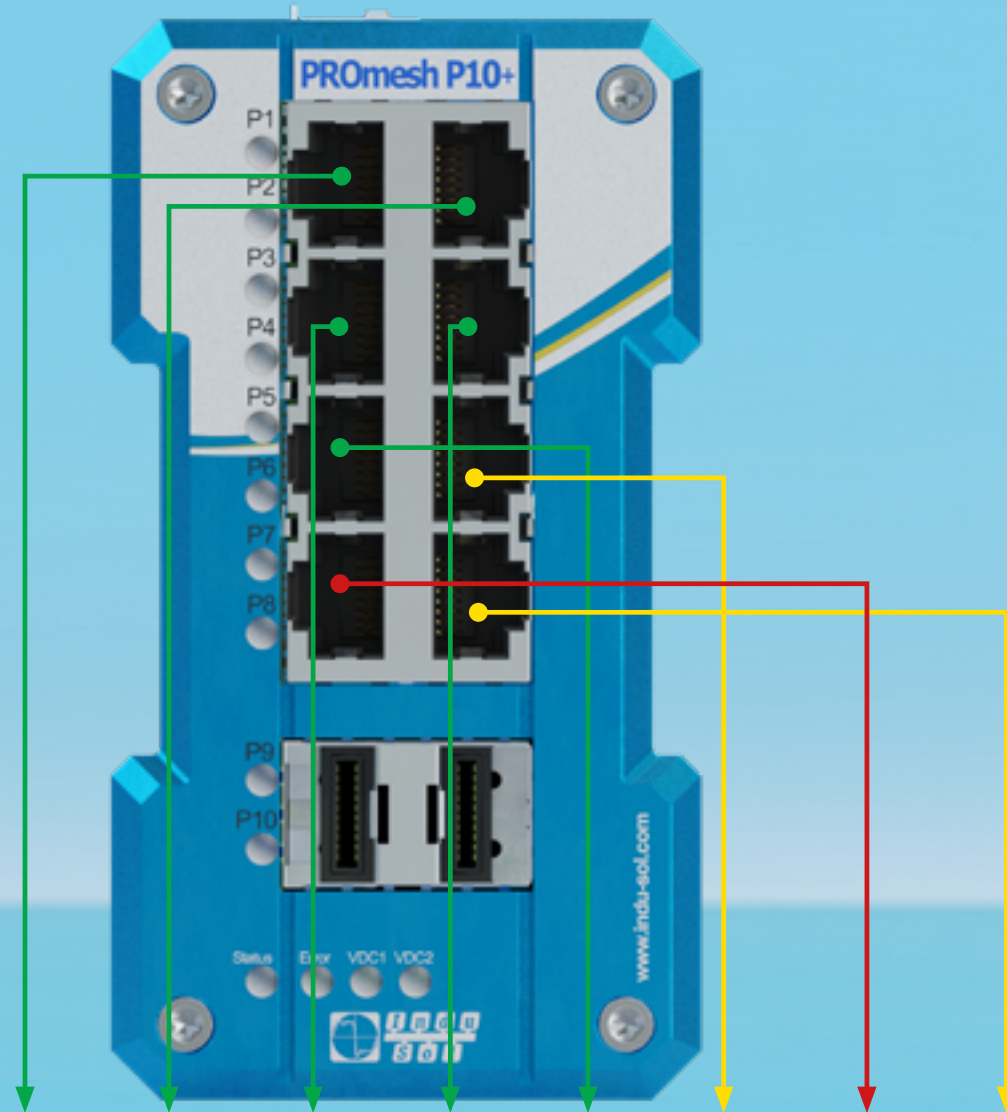
Permanent network monitoring is an important measure for ensuring the availability and security of industrial networks.

With the PROmesh P switches from Indu-Sol, you cannot only control the data streams in your network, but also monitor the quality and performance of the network. The PROmesh P switches offer the following advantages:

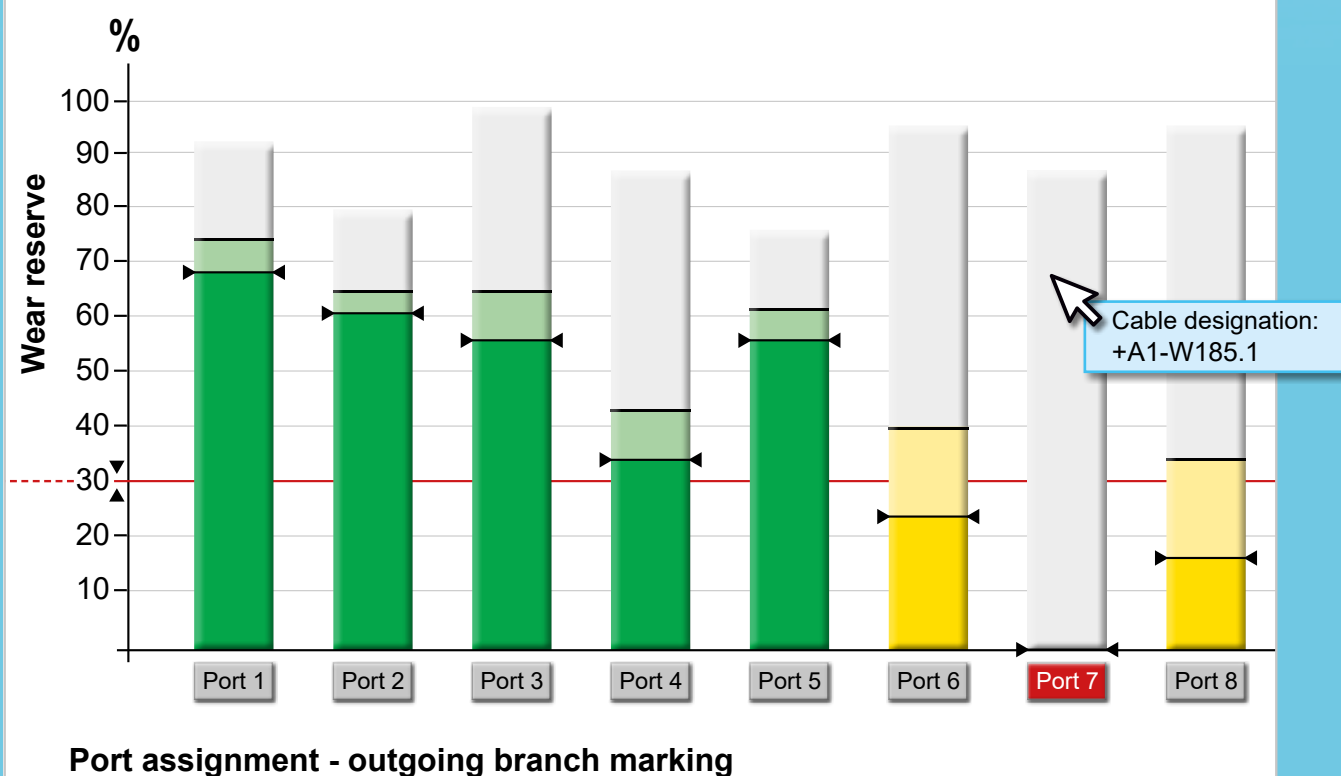
- » Provision of the network data for the creation of topology for the network planning or OT security audits via PROscan® Active V2.
- » Define and configure alarms in order to be notified and to respond quickly in the event of critical events in the network.

» Increase the network security by protecting access to the switches with passwords and via HTTPS, SSH and SNMPv3 and filtering out unwanted data packets.

The PROmesh P switches are an ideal solution for permanent network monitoring in industry. They enable high transparency, reliability and efficiency in the machine network, not only on the OT but also on the SCADA level.

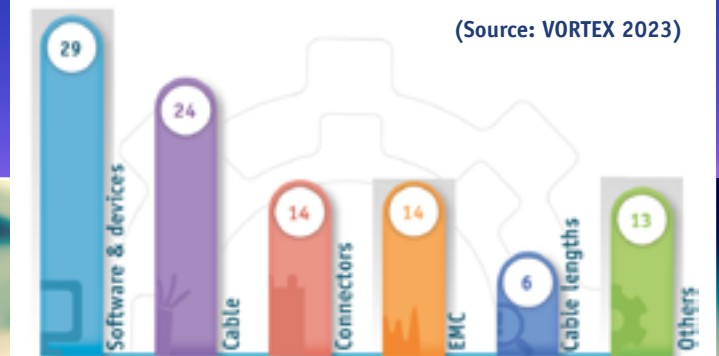


Line diagnosis / quality values



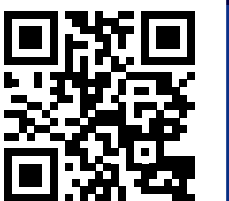
Causes of network errors

(Source: VORTEX 2023)



The reasons for more than 90% of these downtime costs could have been identified in good time and prevented with proactive **condition monitoring** and **predictive maintenance**.

More about the typical sources of errors in industrial networks can be found in the current **VORTEX Report 2023**.



PROmesh B product family

Managed industrial switches for a strong network

Our PROmesh B switches function with convincingly high-performance and provide unbeatable value for money.

» Netload class III certified

* massive price advantage of up to 15% compared to your current source

» secure and stable

General data	PROmesh B8	PROmesh B8 compact	PROmesh B16	PROmesh B12 PoE	PROmesh B28-R	PROmesh B28-RL
Line diagnosis	x	x	x	x	x	x
EMC monitoring	x	x	x	x	x	x
TCP/IP retransmission	x	x	x	x	x	x
Environment monitoring	24 V, temperature	24 V, temperature	24 V, temperature	x	x	x
Performance monitoring	✓	✓	✓	x	x	x
Ports	8 x 100 Mbit/s	8 x 100 Mbit/s	16 x 100 Mbit/s RJ45	8 x 1 Gbit/s RJ45 2 x 1 Gbit/s SFP 2 x 2,5 Gbit/s SFP	16 x 1 Gbit/s RJ45 8 x 1 Gbit/s Combo Ports 4 x 1 Gbit/SFP	16 x 1 Gbit/s RJ45 8 x 1 Gbit/s Combo Ports 4 x 10 Gbit/SFP
PROFINET standard	V 2.4	V 2.4	V 2.4	x	x	x
PROFINET Conformance class	B	B	B	A	A	A
Netload class	III	III	III	x	x	x
Routing	x	x	x	x	x	NAT, VRRP, RIP, OSPF, BGP
Firewall	x	x	x	x	x	✓
PoE	x	x	x	30 W (max. 120 W)	x	x
VLAN	✓	✓	✓	✓	✓	✓
Redundancy	MRP, RSTP	MRP, RSTP	MRP, RSTP	RSTP, MSTP	MRP, RSTP, MSTP	MRP, RSTP, MSTP
SNMP	v1, v2c, v3	v1, v2c, v3	v1, v2c, v3	v1, v2c, v3	v1, v2, v3	v1, v2, v3
Protection rating	IP 20	IP 20	IP 20	IP 40	IP 30	IP 30
Operating temperature	-10 °C to 60 °C	-10 °C to 60 °C	-10 °C to 60 °C	-40 °C to 75 °C	-40 °C to 75 °C	-40 °C to 75 °C
Voltage supply	24 VDC	24 VDC	24 VDC	24 VDC	100 – 240 VAC	100 – 240 VAC
Dimensions (W x H x D) in mm	53 x 138 x 110	50 x 100 x 60	53 x 138 x 110	53 x 138 x 110	440 x 44 x 305	440 x 44 x 305
Weight	700 g	350 g	800 g	780 g	3940 g	3940 g
Type of assembly	Top hat rail	Top hat rail	Top hat rail	Top hat rail	19-inch rack	19-inch rack
Backplane [Gbps]	6,3	6,3	13,4	30	56	128
Throughput [Mpps]	1,6	1,6	3,7	22, 32	65,5	95,2
Shared buffer [Mbit]	2	2	2	4	12	12
Article number	114110501	114110520	114110510	114110251	114110100	114110110



PROmesh B8 compact



PROmesh B8



PROmesh B16



PROmesh B12 PoE



PROmesh B28-R



PROmesh B28-RL

PROmesh B8 compact

This managed switch provides maximum performance in the smallest space.

With the innovative PROmesh B8 compact, probably the **smallest and strongest managed switch in the world**, the focus is on high performance, quality and reliable availability in the smallest possible space.

This switch is suitable for numerous applications in which space and flexibility are required, such as:

- » **Creates valuable space in every control cabinet.** This makes handling connectors and cables and achieving optimum radii significantly easier.
- » Offers **up to approx. 80% space saving** compared to customary managed switches with comparable performance.
- » **Works in the smallest space directly in the machine**, e.g. robot arm, printing machine inking units, automated guided vehicle systems (AGV), terminal boxes (decentralised networks, and much more)

» **Security and convenience for installations in control boxes** (e.g. extensive systems, etc.)

» **Attractive price advantage**, the SD card for the device configuration is included with no extra charge

The PROmesh B8 compact drives the miniaturisation of the managed switch technology to the peak performance and becomes the joker in every control cabinet and for every application. At the same time, the PROmesh B8 Compact makes absolutely no compromises regarding performance.

Up to 80 % space saving*



The joker for every control cabinet and every application!



***playing card for size comparison**



PROmesh U product family

Unmanaged industrial switches for reliable network connections

PROmesh U rounds off the range with strong switch performance and is used wherever managed switches are not required.

- » for smaller networks
- » plug-and-play, simply plug in and off you go

General data	PROmesh U3	PROmesh U5	PROmesh U8	PROmesh U16
Line diagnosis	x	x	x	x
EMC monitoring	x	x	x	x
TCP/IP retransmission	x	x	x	x
Environment monitoring	x	x	x	x
Performance monitoring	x	x	x	x
Ports	2 x 100 Mbit/s RJ45 1x 100 Mbit/s LWL MM	5 x 100 Mbit/s RJ45	8 x 100 Mbit/s RJ45	16 x 100 Mbit/s RJ45
PROFINET standard	x	x	x	x
PROFINET conformance class	A	A	A	A
Netload class	x	x	x	x
Routing	x	x	x	x
Firewall	x	x	x	x
PoE	x	x	x	x
VLAN	✓	✓	✓	x
Redundancy	x	x	x	x
SNMP	x	x	x	x
Protection rating	IP 40	IP 40	IP 40	IP40
Operating temperature	-40 °C to +75 °C	-40 °C to +75 °C	-40 °C to +75 °C	-40 °C to +75 °C
Voltage supply	24 VDC	24 VDC	24 VDC	24 VDC
Dimensions (W x H x D) in mm	31 x 110 x 95	28 x 103 x 78	41 x 103 x 78	53 x 138 x 110
Weight	352 g	170 g	220 g	677 g
Type of assembly	Top hat rail	Top hat rail	Top hat rail	Top hat rail
Backplane [Gbps]	1	1	1,6	3,2
Throughput [Mpps]	0,75	0,75	1,19	2,4
Shared buffer [Mbit]	1	1	1	1
Article number	114110130	114110120	114110122	114110124





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Video: How does a switch work?

Use the QR code or simply enter „indusol america switch film“ in your browser.