Prokorment
VERTROUWEN IN PRAKTIJK

Indu-Sol Industrial Solutions

Indu-Sol GmbH– NETWORKS. OUR PASSION. YOUR BUSINESS.

New products

2023 | 2024

The joker for every control cabinet and every application!

Maximum performance in the smallest space

The PROmesh B8 compact

Prokorment – VERTROUWEN IN PRAKTIJK

Indu Industrial Solutions Sol

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.

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.

Technical data

Environment monitoring	24V, temperature
Performance monitoring	yes
Ports	8 x 100 Mbit/s
PROFINET standard	V 2.4
PROFINET Conformance Class	B
Ethernet/IP	yes
Netload class	III
VLAN	yes
Redundancy	MRP Master, MRP Client, STP, RSTP
SNMP	v1, v2c, c3
Degree of protection	IP20
Operating temperature	-10 °C to +60 °C
Voltage supply	24 VDC
Backplane (Gbps)	6.3
Throughput (Mpps)	1.6
Shared buffer (Mbit)	2.0
SD memory card	yes
Dimensions in mm	50 x 100 x 60 mm
Weight	350 g
Type of assembly	Top hat rail

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 micro SD card for the device configuration is included with no extra charge

The Indu-Sol competence partnership

OT network competence partnership from the planning to reliable production and beyond

Industrial communication and network diagnosis are an important requirement for efficient and reliable production. To support plant operators and installers, Indu-Sol, one of the leading providers of solutions in this area, offer an OT network competence partnership.

This partnership enables a comprehensive exchange of knowledge and an optimum cooperation throughout the whole life cycle of a plant.

- Network concept
- Layout
- Link
- Monitoring

Requirements specification – network layout criteria with condition monitoring

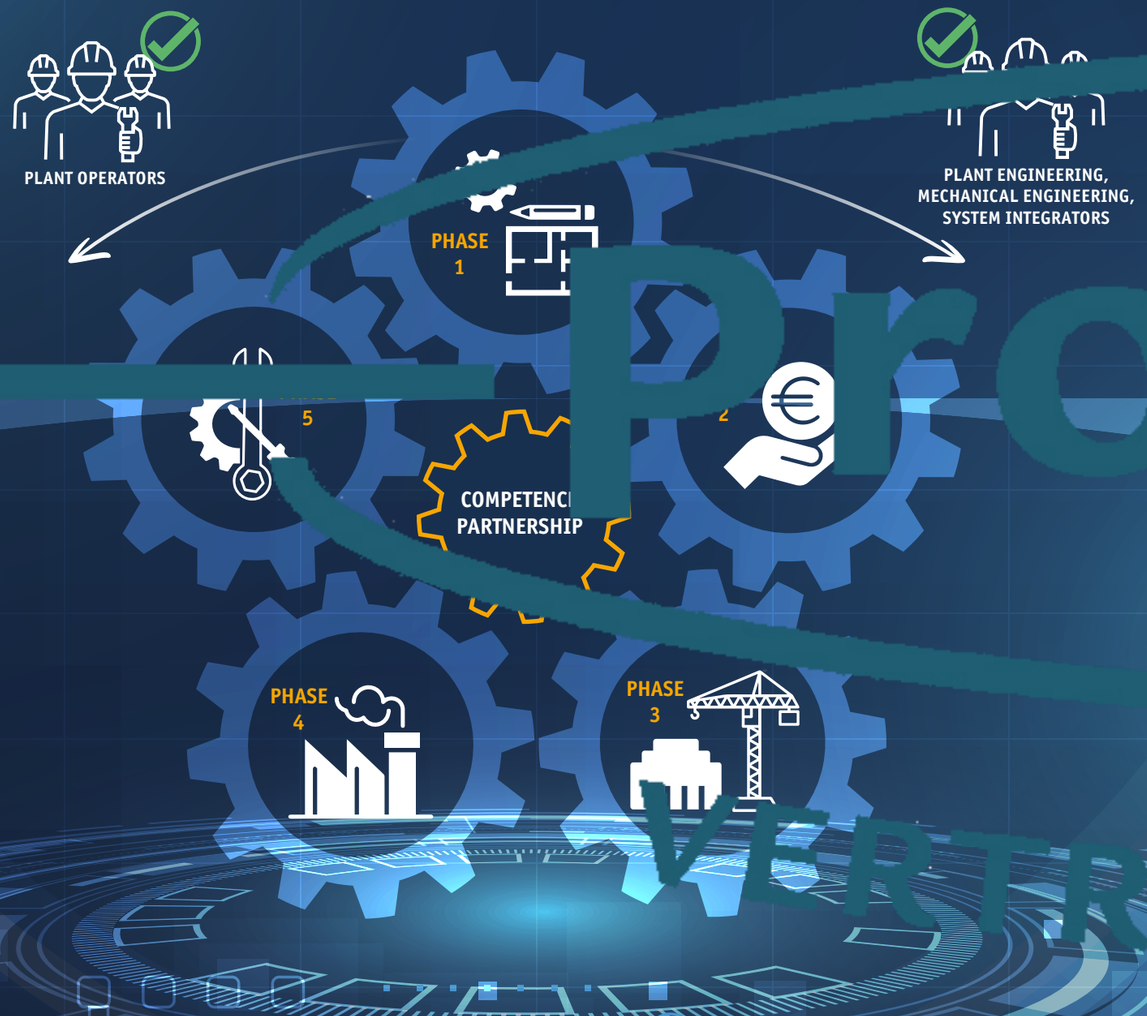
- Supplier support
- Project partner
- Preliminary network acceptance

- Network acceptance
- Verification

Network monitoring incl. security

Maintenance strategy

- Qualification of the maintenance on site
- Remote service with Indu-Sol
- Operation of the network by Indu-Sol



PHASE 1
Strategic planning

INDU-SOL CONTRIBUTION
Consulting, concept development

PHASE 2
[illegible]

INDU-SOL CONTRIBUTION
[illegible]

PHASE 3
Installation and commissioning

INDU-SOL CONTRIBUTION
Preliminary network acceptance, network acceptance, OT security installation / [illegible] advice, commissioning

PHASE 4
Operation

INDU-SOL CONTRIBUTION
System solution, condition monitoring, OT security / network management predictive maintenance, troubleshooting, service level agreements

PHASE 5
[illegible]profit

INDU-SOL CONTRIBUTION
Consulting, network modification

smart industrial environment digitalization sensor

SIEDS

Indu-Sol presents a new multi-functional sensor for condition monitoring

Indu-Sol, a leading provider of solutions for industrial communications, presents a new multifunctional sensor for predictive maintenance. The sensor named SIEDS is part of the **CM&SM system (Condition Monitoring & Security Management System)** and can measure ten important physical parameters, which influence the availability of plants.

The SIEDS combines sensors, data processing and network communication in a compact and robust IP65 housing and can be used for different condition monitoring applications.
The **sensor detects and analyses ambient conditions** such as temperature, pressure, humidity, air quality, acceleration and acoustics. The SIEDS also has intelligent alarm management, which can be adapted to different assets as in the industrial environment by the teach mode.

The SIEDS is ideal for application cases in which multiple physical parameters can indicate the failure of a critical part of the plant and thus enable **targeted and timely maintenance**.

EXAMPLE FOR ELECTRIC MOTORS

An example for the use of SIEDS in the environment of a powerful water pump

Technical data

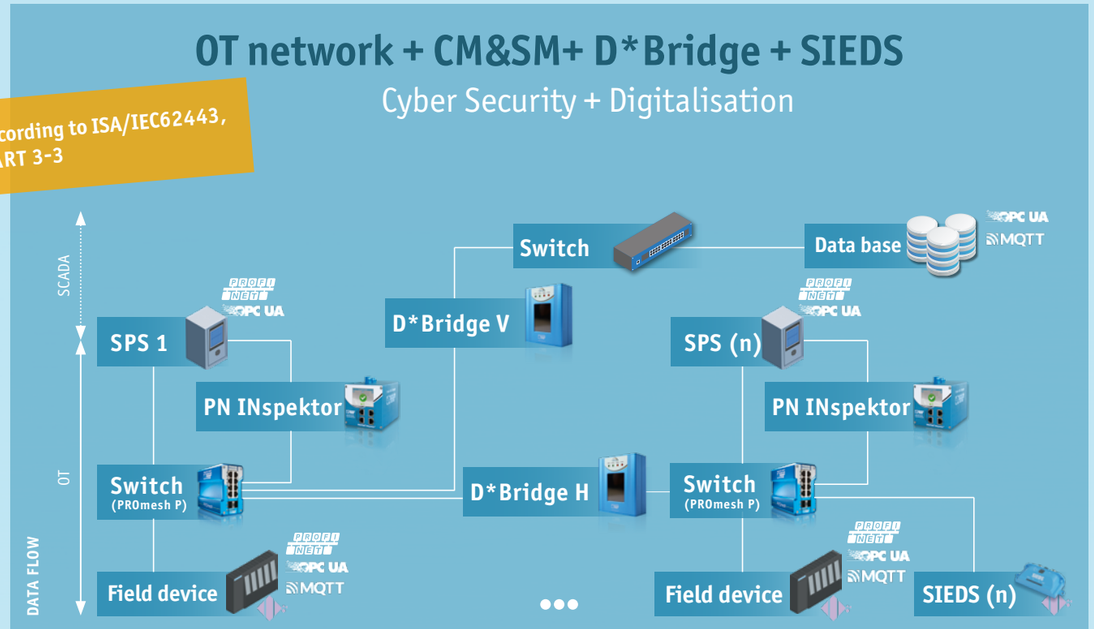
- Network connection: M12 D-coded
- Transmission rates: 100 Mbps
- Power supply: Power over Ethernet
- Operating temperature: -40 °C to +70 °C
- Degree of protection: IP65
- Installation: Direct installation
- Protocols: RestAPI, MQTT, HTTPS

Sensors

Acceleration · Rotation · Magnetometer · Acoustic sensor · Carbon dioxide
VOC air quality · Temperature · Air pressure · Humidity · Brightness

The bridge in digitalisation

D*Bridge



The **D*Bridges H and V** are intelligent bridge devices that automatically manage data exchange in the OT network between individual machines/systems and from the shop floor directly to the SCADA level, allowing only relevant data traffic to pass through. Like a firewall, the digitalisation bridges ensure a secure connection of homogeneous networks and secure data access.

D*Bridge H

Enables secure data exchange (horizontal) between individual machines/systems and creates secure, homogeneous-convergent network structures for digitalisation between fieldbuses on the shop floor.

D*Bridge V

Creates the secure, vertical connection of the homogeneous convergent network structures for processing smart sensor data from the shop floor directly to the SCADA level.

The way to a secure future

The Indu-Sol CM&SM system

Condition monitoring and security management system for plants and OT networks with PROFINET and EtherNet/IP

The times in which fieldbuses could function homogeneously as island solutions are largely gone. The advantages that can result from convergent networks and direct access to the smart sensor data of the machines and plants are too attractive.

To ensure the security of the OT networks, Indu-Sol offers a system solution that meets the requirements of **IEC 62443-3-3** in machine networks with Profinet application. The crucial point is that this system, which has already proven its worth in the past for the availability and reliable operation of networks and plants with focus on predictive maintenance, can now also be used for OT security in accordance with the requirements of IEC 62443-3-3 “System security requirements and security levels”.

The linchpin is the PROFINET Inspektor® NT in which “2 hearts” now beat. One for condition monitoring and one for security management.

In future, the system will be named **CM&SM (Condition Monitoring & Security Management System)**.

The CM&SM system checks the data communication for unwanted changes, uses encryption methods for secure data transmission, segments individual network areas for security reasons if necessary, ensures continuous data monitoring and automated alerting or helps with the backup and restoring of device configurations.

And with the new SIEDS (multipurpose sensor) and D*Bridge product categories and the services geared to them, the offer can be extended to the whole plant. Personnel resources and operating assets can then be spared significantly by the automation of periodic maintenance activities.

OT-Cyber-Security:

- ISA/IEC 62443, Part 3-3
- Defence-in-Depth
- Security audit
- Plant asset management
- Machinery Regulation (EU) 2023/1230
- Connect fieldbuses to create secure OT networks

Automation / digitalisation:

- Automate maintenance activities
- Condition monitoring of the whole plant
- Make smart sensor data from the shop floor accessible to SCADA without PLC

Predictive maintenance management:

- Increase plant availability
- Optimise overall equipment effectiveness (OEE)

1 PROmesh P-Switches

The best worker in the network.

The industrial managed ethernet switches, which alongside their strong switch performance also determine the quality parameters of the network lines.

2 The D*Bridge

The reliable OT security solution.

- D*Bridge H connects multiple fieldbuses to form a secure OT network
- D*Bridge V makes smart sensor data from the field level available to SCADA without impairing the PLC. OT security according to IEC 62443-3-3

3 The SIEDS

The all-rounder among the sensors.

Detects 10 physical events. For universal use and for condition monitoring of vulnerable plant parts.

4 PROscan® Active V2 and PROmanage® NT V2

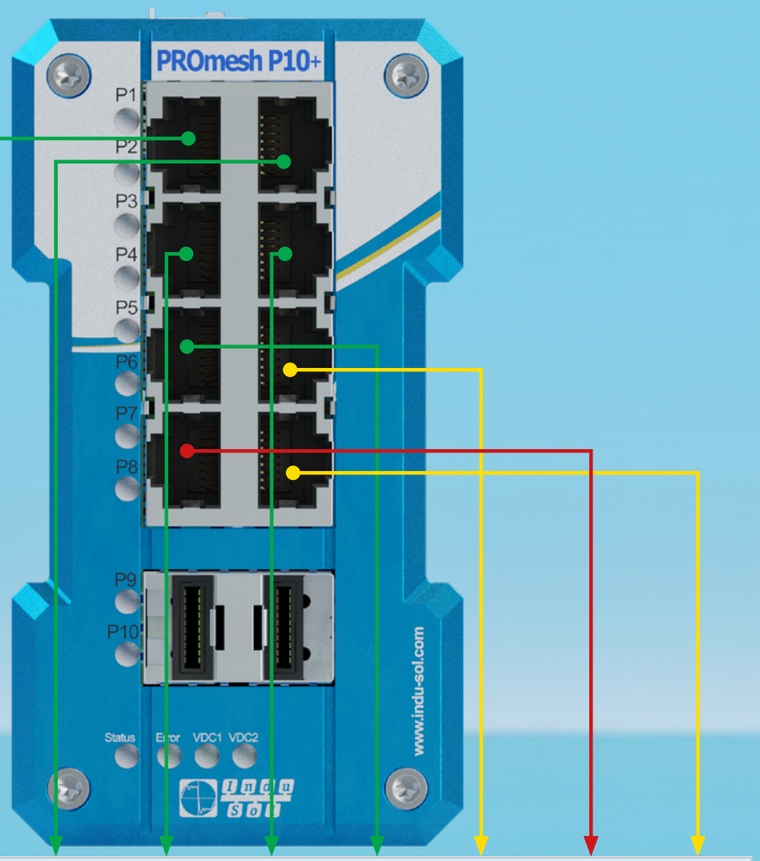
The duo for perfect network management.

The comprehensive software package for the planning, optimisation and secure operation of industrial networks.

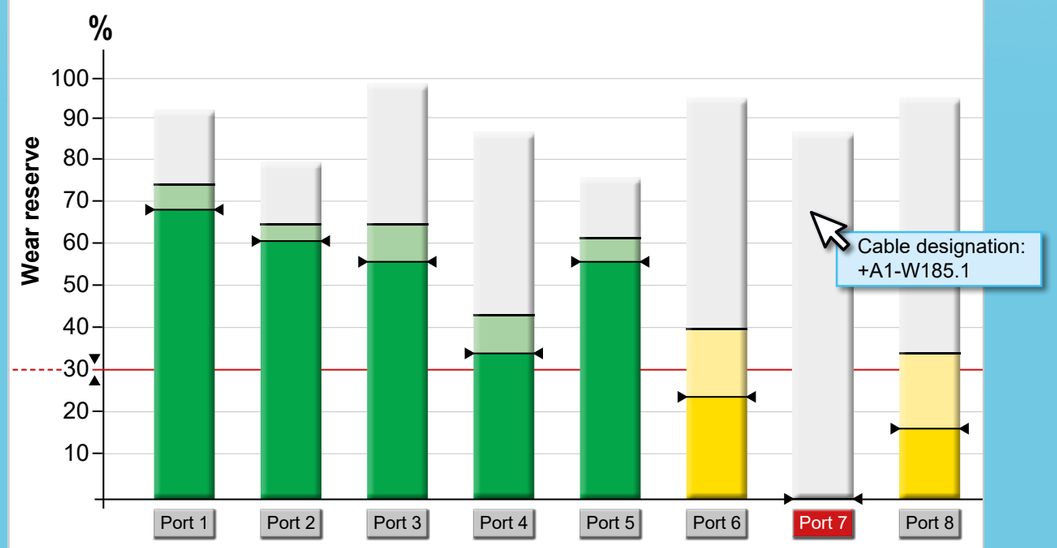
5 PROFINET-INspektor® NT

2 hearts beat in its chest.

Measures, analyses and documents the quality and performance of the PROFINET communication. Detects and reports any type of access to the network in real time.



Line diagnosis / quality values



Port assignment - outgoing branch marking

Detect and correct line-based defects early

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.

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.**

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Indu-Sol is certified according to DIN EN ISO 9001:2015

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