PROmesh P10X
the latest generation switch

THE solution for your machine network

Q-Values „Line diagnostics"
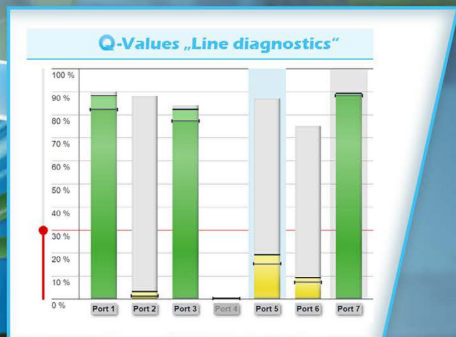
Dear reader,

The right choice of infrastructure „switch" is crucial for the reliability, stability and security of your network.

As data volumes increase, digitization places tremendous demands on the performance capabilities of a switch.

A wide variety of applications at different times generate load peaks to which the infrastructure must be adapted.

The **PROmesh family** provides you with a powerful PROFINET / Ethernet switch with extensive diagnostic functions:

- » **Data line monitoring**
- » **Shield current monitoring**
- » **24V power supply monitoring**

Interested?
Furthermore, I would like to talk with you about the following topics:

- » **OT network planning & bandwidth calculation**
- » **Network design**
- » **Acceptance and testing / troubleshooting**
- » **Maintenance & remote service**

Learn more about the features of the PROmesh P10X switch of the PROmesh family on the following pages.

Kind regards,

Thomas Kosse

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PROmesh P10X – IP67

» Network diagnostics and monitoring
» Fully managed
» Use in harsh environments

» **Smart sensor functionality**

Communication interference, contact problems, wear and tear and therefore the quality of the connected data line are monitored continuously.
A sophisticated measuring method ensures that shield currents are monitored and makes EMC interference visible at an early stage.

» **Remote service - Everything at a glance**

The integrated web interface signals the logical and physical network status in simple traffic light colors. A port-related matrix provides a straightforward overview of the performance statistics. Adjustable triggers allow warning before failure.

» **Reduce costs**

A decentralized network structure creates an overview and minimizes the installation and hardware effort. Shorter data lines create clarity and transparency.
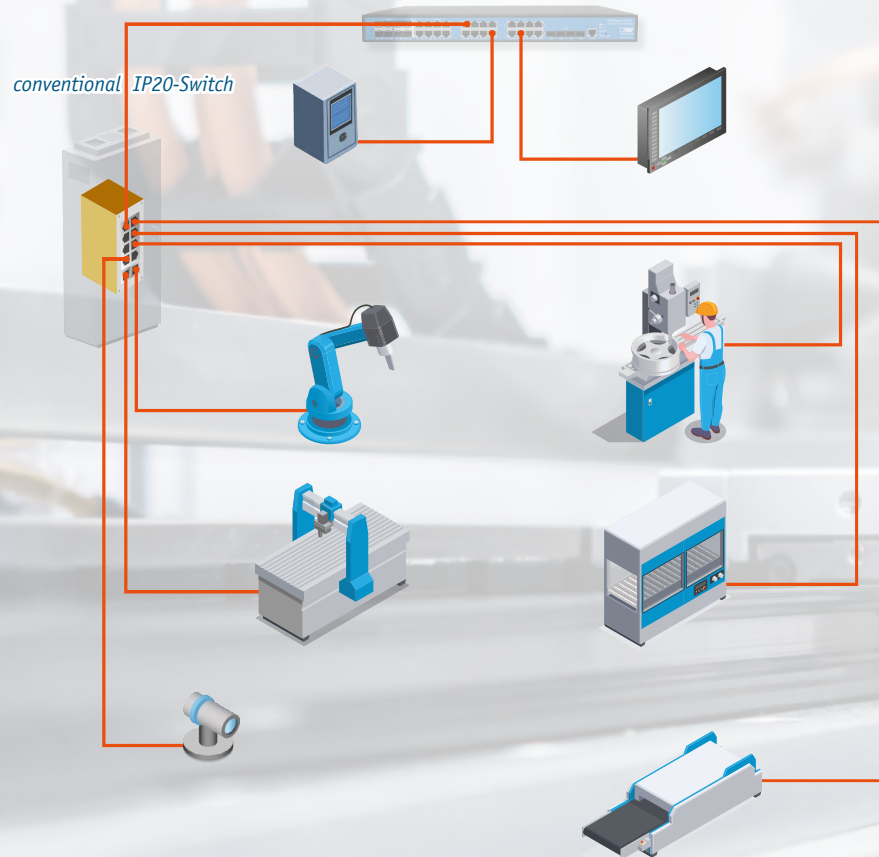
This results in a cost saving of more than 20% per port.

Q-Value „Line diagnostics" »

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Central network structure

» long line routes
» higher material costs
» higher installation costs

without PROmesh P10X
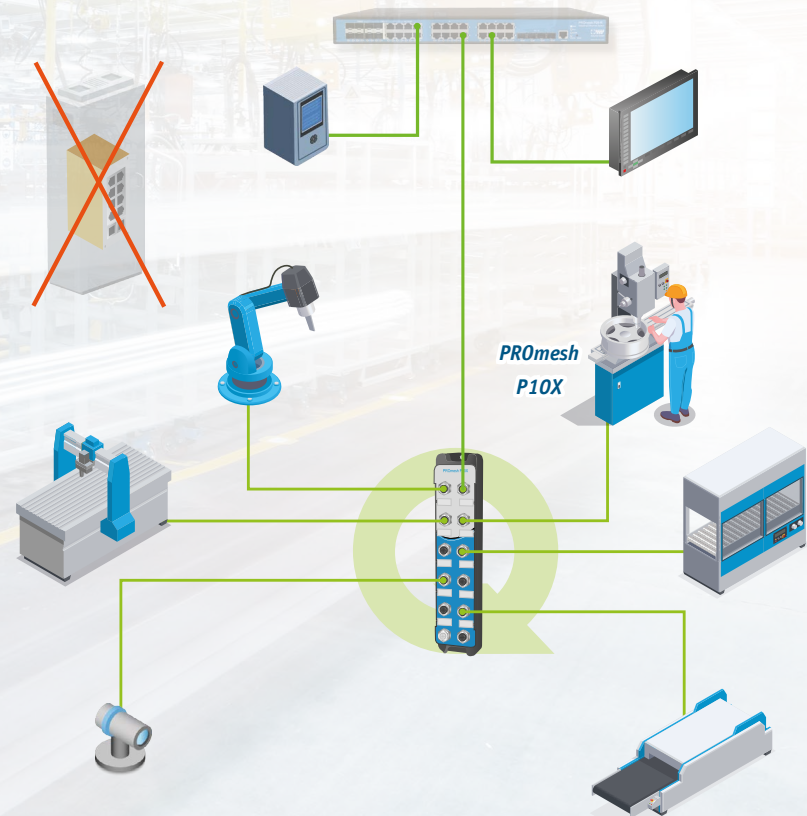
**Σ 400 m
line routes**

conventional IP20-Switch

Decentralized network structure

» Shorter line routes
» Lower material costs
» Lower installation costs
» **Savings potential per port: 20%**

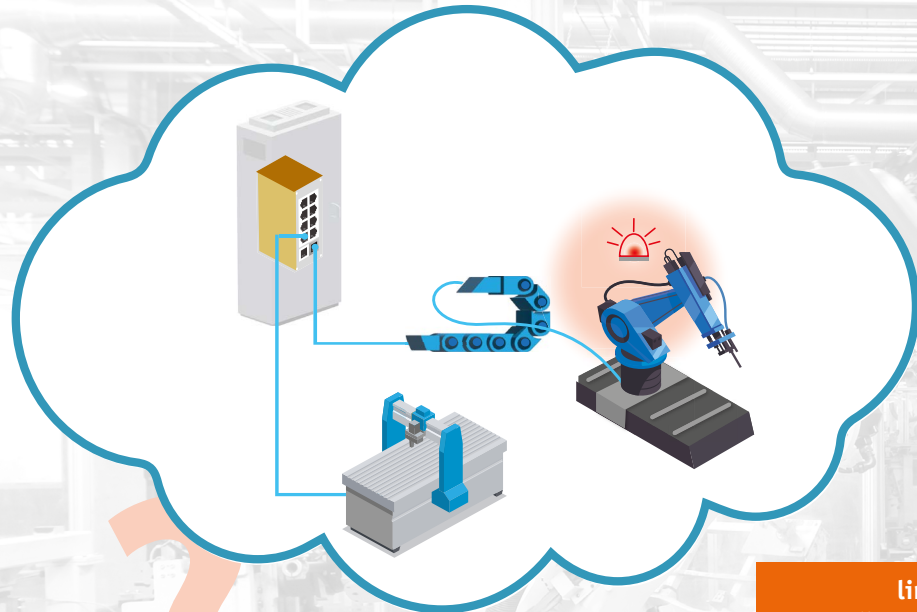## with PROmesh P10X

**Σ 100 m
line routes**

*PROmesh
P10X*

Q -Value „Line diagnostics" »

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Network diagnostics?

Network diagnostics!

Demo web interface:
p10demo.indu-sol.com

Q-Value „Line diagnostics"

Quality values of Port: 5

100 %
90 %
80 %
70 %
60 %
50 %
40 %
30 %
20 %
10 %
0 %

Port 1   Port 2   Port 3   Port 4   Port 5

Minimum: 15%
Current: 18%
Maximum: 07%

Legend

Cable quality OK - no action required

Cable quality has fallen below the limit - change advised

Cable is faulty - immediate change necessary

leakage current

RMS   Peak

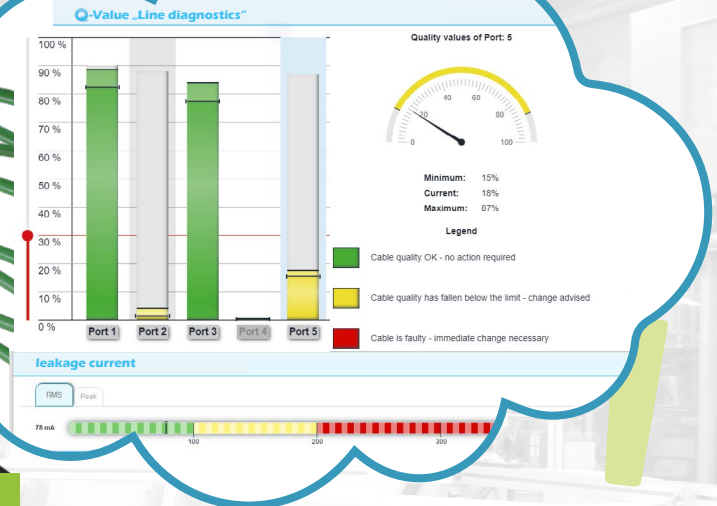78 mA   100   200   300

limited diagnostics

Extended diagnostics

Status Quo:

» Malfunction prolongs commissioning

» Multilayered error pattern

» Service case makes site visit necessary

Advantages:

» Diagnostics shortens commissioning

» Time-consuming performance test is omitted

» Precise information for remote maintenance

Q-Value „Line diagnostics" »

PROmesh P10X – IP67

» Industrial diagnostics switch
» Hiqhspeed gigabit in the backbone
» PROFINET conformance class B

Diagnostic monitoring

» Permanent line measurement / determination of the degree of wear
» Permanent measurement of leakage currents
» Internal monitoring of the 24V voltage supply in the measuring range 12 - 36V
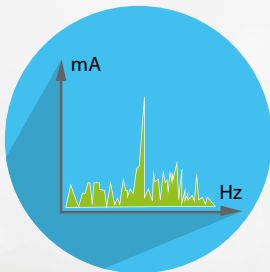
Performance monitoring

» Highest robustness against high netloads (Netload Class III)
» Integrated broadcast limitation
» Data exchange: up to 1.0 Gbit/s
» For demanding network performance:
   - up to 20.0 Gbit/s backplane capacity
   - up to 14.9 Mbit/s data throughput
   - up to 2.0 Mbit shared buffer

Latest technologies: PROFINET 2.4 and TSN ready

Smart sensor functions

Wear monitoring (data lines)

mA

EMC monitoring (shield current)

Hz

Performance monitoring (load analysis)

PROmesh Switch family

» **Powerful high performance**

Increase redundancy in the network
» With MRP and STP/RSTP/MSTP

More security through network segmentation
» With VLAN, NAT or firewall

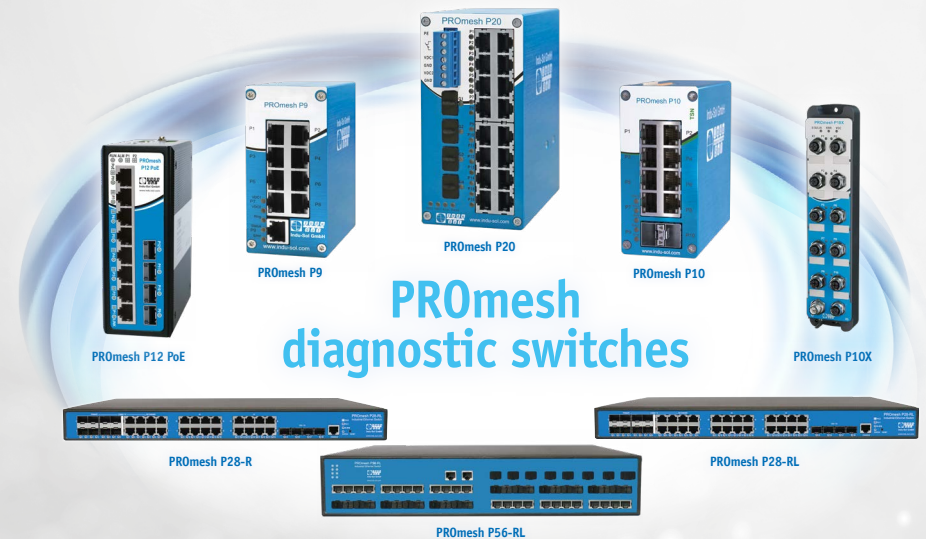**More power in the backbone of your network**
» Coupling gigabit data links with link aggregation

Simple device management and configuration
» Through integrated web interface, SD card, TiA / Step7 or PROmanage® NT

Log messages with correct timestamp
» With time synchronization through SNTP

PROmesh P20

PROmesh P9

PROmesh P10

PROmesh P12 PoE

PROmesh diagnostic switches

PROmesh P10X

PROmesh P28-R

PROmesh P28-RL

PROmesh P56-RL

All switches in stock

Advantages of PROmesh P10X - IP67

Compact, robust and can be used almost anywhere

Thanks to its robust and compact design, the PROmesh P10X in the metal housing version is optimally suited for applications outside of control cabinets in harsh environments.

Shorten commissioning time

Thanks to extensive monitoring functions, the status of the network and the connected data line are automatically determined after the operating voltage is switched on. Weak spots are immediately visible from the colour change of the bar graph (WEB).

Remote service

When preset triggers are exceeded, the anomalies in the network can be transmitted directly via email/SNMP trap. The set DELTA enables a warning before failure and makes the service call plannable.

Wide range of configuration options

Configuration can be done via the TIA Portal, a Micro SD card, web-based management or as a group with several devices via the central monitoring software PROmanage® NT.

Further information & & data sheets at:

www.indu-sol.com/en/promesh-p10x

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