

Digitalization
Industrie 4.0

Smart Production
E-Mobility
Smart Energy

Energy Efficiency
Smart Infrastructure
Smart Buildings
Renewables

Antonio Gordillo IMA AI Automation Infraestructure / April – May 2021

Welcome

Unmanaged Switches



Our product portfolio



Managed Switches



Cyber Security



Power over Ethernet



Serial Device Server, Gateways



Unmanaged Switches



Remote communication



Network installation



Timeserver



Wireless Ethernet



Media conversion



Software



Unmanaged Switches

New FL SWITCH 1000/1100

New FL SWITCH 1600/1700

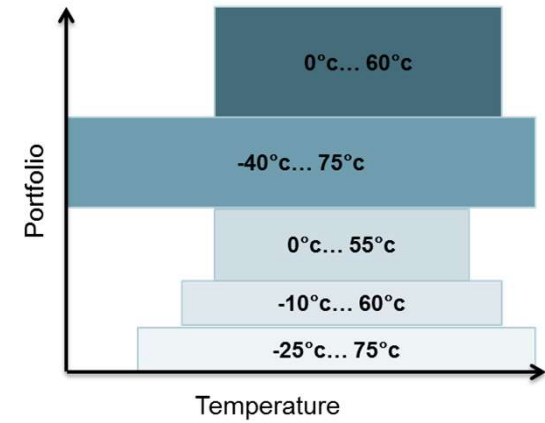


Unmanaged switches

Today's portfolio



Today's Portfolio



Unmanaged Switches

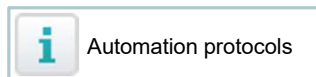


Unmanaged Switches

Wide range of applications



- Standard applications (SF- und SFN-Switches)
- Basic applications (SFNB-Switches)
- Extreme ambient conditions (SFNT-Switches)
- Gigabit applications (SFN-Gigabit-Switches)



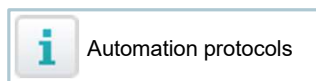


SF(N)
for standard applications

SFNB
for basic applications

SFNT
for extreme ambient conditions

SFN-Gigabit
for Gigabit applications



SFNB-Switches



	FL SWITCH SFNB 5TX	FL SWITCH SFNB 8TX	FL SWITCH SFNB 4TX/FX	FL SWITCH SFNB 4TX/FX ST	FL SWITCH SFNB 4TX/FX SM20
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Application area	Basic	Basic	Basic	Basic	Basic
Design	Slim	Slim	Slim	Slim	Slim
Ports	5x TP-RJ45 (10/100 Mbit/s)	8x TP-RJ45 (10/100 Mbit/s)	4x TP-RJ45 (10/100 Mbit/s) 1x SC-D MM (100 Mbit/s)	4x TP-RJ45 (10/100 Mbit/s) 1x ST-D MM (100 Mbit/s)	4x TP-RJ45 (10/100 Mbit/s) 1x SC-D SM (100 Mbit/s)
Quality of Service	No	No	No	No	No
Temperature range	-10 °C ... 60 °C	-10 °C ... 60 °C	-10 °C ... 60 °C	-10 °C ... 60 °C	-10 °C ... 60 °C
Special features	-	-	-	-	-
Order number	2891001	2891002	2891027	2891028	2891029



 Automation protocols



SFNB-Switches



**FL SWITCH
SFNB 5TX-PNE**

**FL SWITCH
SFNB 8TX-PNE**

Application area	Basic	Basic
Design	Slim	Slim
Ports	5x TP-RJ45 (10/100 Mbit/s)	8x TP-RJ45 (10/100 Mbit/s)
Quality of Service	Yes	Yes
Temperature range	-10 °C ... 60 °C	-10 °C ... 60 °C
Special features	PROFINET & EtherNet/IP prioritization, PTCP filtering	PROFINET & EtherNet/IP prioritization, PTCP filtering
Order number	1071801	1071800

 Automation protocols



SF-Switches



	FL SWITCH SF 8TX	FL SWITCH SF 16TX	FL SWITCH SF 7TX/FX	FL SWITCH SF 7TX/FX ST	FL SWITCH SF 15TX/FX
Application area	Standard	Standard	Standard	Standard	Standard
Design	Flat	Flat	Flat	Flat	Flat
Ports	8x TP-RJ45 (10/100 Mbit/s)	16x TP-RJ45 (10/100 Mbit/s)	7x TP-RJ45 (10/100 Mbit/s) 1x SC-D MM (100 Mbit/s)	7x TP-RJ45 (10/100 Mbit/s) 1x ST-D MM (100 Mbit/s)	15x TP-RJ45 (10/100 Mbit/s) 1x SC-D MM (100 Mbit/s)
Quality of Service	No	No	No	No	No
Temperature range	0°C ... 55°C	0°C ... 55°C	0°C ... 55°C	0°C ... 55°C	0°C ... 55°C
Special features	-	-	-	-	-
Order number	2832771	2832849	2832726	2832577	2832661

 Automation protocols



SF-Switches



	FL SWITCH SF 6TX/2FX	FL SWITCH SF 6TX/2FX ST	FL SWITCH SF 14TX/2FX	FL SWITCH SF 4TX/3FX ST
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Application area	Standard	Standard	Standard	Standard
Design	Flat	Flat	Flat	Flat
Ports	7x TP-RJ45 (10/100 Mbit/s) 2x SC-D MM (100 Mbit/s)	7x TP-RJ45 (10/100 Mbit/s) 2x ST-D MM (100 Mbit/s)	14x TP-RJ45 (10/100 Mbit/s) 2x SC-D MM (100 Mbit/s)	4x TP-RJ45 (10/100 Mbit/s) 3x ST-D MM (100 Mbit/s)
Quality of Service	No	No	No	No
Temperature range	0°C ... 55°C	0°C ... 55°C	0°C ... 55°C	0°C ... 55°C
Special features	-	-	-	-
Order number	2832933	2832674	2832593	2832603

 Automation protocols



SFN-Switches



	FL SWITCH SFN 5TX	FL SWITCH SFN 5TX-PN	FL SWITCH SFN 5TX-24VAC	FL SWITCH SFN 8TX	FL SWITCH SFN 8TX-PN
Application area	Standard	Standard	Standard	Standard	Standard
Design	Slim	Slim	Slim	Slim	Slim
Ports	5x TP-RJ45 (10/100 Mbit/s)	5x TP-RJ45 (10/100 Mbit/s)	5x TP-RJ45 (10/100 Mbit/s)	8x TP-RJ45 (10/100 Mbit/s)	8x TP-RJ45 (10/100 Mbit/s)
Quality of Service	Yes	Yes	Yes	Yes	Yes
Temperature range	0°C ... 60 °C /	0°C ... 60 °C	0°C ... 60 °C	0°C ... 60 °C	0°C ... 60 °C
Special features	-	Optimized for PROFINET	24 V AC/DC supply voltage	-	Optimized for PROFINET
Order number	2891152	2891151	2891021	2891929	2891018

 Automation protocols



SFN-Switches



	FL SWITCH SFN 8TX-24VAC	FL SWITCH SFN 16TX	FL SWITCH SFN 4TX/FX	FL SWITCH SFN 4TX/FX ST	FL SWITCH SFN 7TX/FX
Application area	Standard	Standard	Standard	Standard	Standard
Design	Slim	Slim	Slim	Slim	Slim
Ports	8x TP-RJ45 (10/100 Mbit/s)	16x TP-RJ45 (10/100 Mbit/s)	4x TP-RJ45 (10/100 Mbit/s) 1x SC-D MM (100 Mbit/s)	4x TP-RJ45 (10/100 Mbit/s) 1x ST-D MM (100 Mbit/s)	7x TP-RJ45 (10/100 Mbit/s) 1x SC-D MM (100 Mbit/s)
Quality of Service	Yes	No	Yes	Yes	Yes
Temperature range	0°C ... 60 °C	0°C ... 60 °C	0°C ... 60 °C/	0°C ... 60 °C	0°C ... 60 °C
Special features	24 V AC/DC supply voltage	-	-	-	-
Order number	2891020	2891933	2891851	2891453	2891097

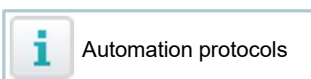
 Automation protocols



SFN-Switches



	FL SWITCH SFN 7TX/FX-NF	FL SWITCH SFN 7TX/FX ST	FL SWITCH SFN 15TX/FX	FL SWITCH SFN 6TX/2FX	FL SWITCH SFN 6TX/2FX-NF
Application area	Standard	Standard	Standard	Standard	Standard
Design	Slim	Slim	Slim	Slim	Slim
Ports	7x TP-RJ45 (10/100 Mbit/s) 1x SC-D MM (100 Mbit/s)	7x TP-RJ45 (10/100 Mbit/s) 1x ST-D MM (100 Mbit/s)	15x TP-RJ45 (10/100 Mbit/s) 1x SC-D MM (100 Mbit/s)	6x TP-RJ45 (10/100 Mbit/s) 2x SC-D MM (100 Mbit/s)	6x TP-RJ45 (10/100 Mbit/s) 2x SC-D MM (100 Mbit/s)
Quality of Service	Yes	Yes	No	Yes	Yes
Temperature range	0°C ... 60 °C	0°C ... 60 °C	0°C ... 60 °C	0°C ... 60 °C	0°C ... 60 °C
Special features	flow control disabled	-	-	-	flow control disabled
Order number	2891023	2891110	2891934	2891314	2891024



SFN-Switches



**FL SWITCH
SFN 6TX/2FX
ST**

**FL SWITCH
SFN 14TX/ 2FX**

Application area	Standard	Standard
Design	Slim	Slim
Ports	6x TP-RJ45 (10/100 Mbit/s) 2x ST-D MM (100 Mbit/s)	14x TP-RJ45 (10/100 Mbit/s) 2x SC-D MM (100 Mbit/s)
Quality of Service	Yes	No
Temperature range	0°C ... 60 °C	0°C ... 60 °C
Special features	-	-
Order number	2891411	2891935

 Automation protocols



SFN-Gigabit-Switches



	FL SWITCH SFN 5GT	FL SWITCH SFN 8GT	FL SWITCH SFN 7GT/SX	FL SWITCH SFN 6GT/2SX	FL SWITCH SFN 6GT/2LX	FL SWITCH SFN 6GT/2LX-20
Application area	Gigabit	Gigabit	Gigabit	Gigabit	Gigabit	Gigabit
Design	Slim	Slim	Slim	Slim	Slim	Slim
Ports	5x RJ45 (10/100/1000 Mbit/s)	8x RJ45 (10/100/1000 Mbit/s)	7x RJ45 1x SC-D MM (10/100/1000 Mbit/s)	7x RJ45 2x SC-D MM (10/100/1000 Mbit/s)	6x RJ45 2x SC-D SM, 10 km (10/100/ 1000 Mbit/s)	6x RJ45 2x SC-D SM, 20 km (10/100/ 1000 Mbit/s)
Quality of Service	Yes	Yes	Yes	Yes	Yes	Yes
Temperature range	-25 °C ... 75 °C	-25 °C ... 75 °C	-25 °C ... 75 °C	-25 °C ... 75 °C	-25 °C ... 75 °C	-25 °C ... 75 °C
Special features	-	-	-	-	-	-
Order number	2891444	2891673	2891518	2891398	2891987	2891563


Automation protocols



SFNT-Switches



	FL SWITCH SFNT 5TX	FL SWITCH SFNT 5TX-C	FL SWITCH SFNT 8TX	FL SWITCH SFNT 8TX-C	FL SWITCH SFNT 16TX
Application area	Harsh environment	Harsh environment	Harsh environment	Harsh environment	Harsh environment
Design	Slim	Slim	Slim	Slim	Slim
Ports	5x TP-RJ45 (10/100 Mbit/s)	5x TP-RJ45 (10/100 Mbit/s)	8x TP-RJ45 (10/100 Mbit/s)	8x TP-RJ45 (10/100 Mbit/s)	16x TP-RJ45 (10/100 Mbit/s)
Quality of Service	Yes	Yes	Yes	Yes	No
Temperature range	-40°C ... 75°C	-40°C ... 75°C	-40°C ... 75°C	-40°C ... 75°C	-40°C ... 75°C
Special features	ATEX approval	Conformal coating	ATEX approval	Conformal coating	ATEX approval
Order number	2891003	2891043	2891005	2891045	2891952



Automation protocols



SFNT-Switches



	FL SWITCH SFNT 4TX/ FX	FL SWITCH SFNT 4TX/ FX- C	FL SWITCH SFNT 7TX/ FX	FL SWITCH SFNT 7TX/ FX- C	FL SWITCH SFNT 7TX/ FX ST	FL SWITCH SFNT 7TX/ FX ST-C
Application area	Harsh environment	Harsh environment	Harsh environment	Harsh environment	Harsh environment	Harsh environment
Design	Slim	Slim	Slim	Slim	Slim	Slim
Ports	4x TP-RJ45 (10/100 Mbit/s) 1x SC-D MM (100 Mbit/s)	4x TP-RJ45 (10/100 Mbit/s) 1x SC-D MM (100 Mbit/s)	7x TP-RJ45 (10/100 Mbit/s) 1x SC-D MM (100 Mbit/s)	7x TP-RJ45 (10/100 Mbit/s) 1x SC-D MM (100 Mbit/s)	7x TP-RJ45 (10/100 Mbit/s) 1x ST-D MM (100 Mbit/s)	7x TP-RJ45 (10/100 Mbit/s) 1x ST-D MM (100 Mbit/s)
Quality of Service	Yes	Yes	Yes	Yes	Yes	Yes
Temperature range	-40°C ... 75°C	-40°C ... 75°C	-40°C ... 75°C	-40°C ... 75°C	-40°C ... 75°C	-40°C ... 75°C
Special features	ATEX approval	Conformal coating	ATEX approval	Conformal coating	-	Conformal coating
Order number	2891004	2891044	2891006	2891046	2891007	2891047

 Automation protocols



SFNT-Switches



**FL SWITCH
SFNT
15TX/FX**

**FL SWITCH
SFNT 6TX/
2FX**

**FL SWITCH
SFNT
6TX/2FX-C**

**FL SWITCH
SFNT 6TX/
2FX ST**

**FL SWITCH
SFNT
6TX/2FX ST-C**

**FL SWITCH
SFNT
14TX/2FX**

Application area	Harsh environment	Harsh environment	Harsh environment	Harsh environment	Harsh environment	Harsh environment
Design	Slim	Slim	Slim	Slim	Slim	Slim
Ports	15x TP-RJ45 (10/100 Mbit/s) 1x SC-D MM (100 Mbit/s)	6x TP-RJ45 (10/100 Mbit/s) 2x SC-D MM (100 Mbit/s)	6x TP-RJ45 (10/100 Mbit/s) 2x SC-D MM (100 Mbit/s)	6x TP-RJ45 (10/100 Mbit/s) 2x ST-D MM (100 Mbit/s)	6x TP-RJ45 (10/100 Mbit/s) 2x ST-D MM (100 Mbit/s)	14x TP-RJ45 (10/100 Mbit/s) 2x SC-D MM (100 Mbit/s)
Quality of Service	No	Yes	Yes	Yes	Yes	No
Temperature range	-40°C ... 75°C	-40°C ... 75°C	-40°C ... 75°C	-40°C ... 75°C	-40°C ... 75°C	-40°C ... 75°C
Special features	-	-	Conformal coating	-	Conformal coating	-
Order number	2891953	2891025	2891048	2891026	2891049	2891954

 Automation protocols



SFNT-Gigabit-Switches



	FL SWITCH SFNT 5GT	FL SWITCH SFNT 5GT-C
Application area	Harsh environment	Harsh environment
Design	Slim	Slim
Ports	5x TP-RJ45 (10/100/1000 Mbit/s)	5x TP-RJ45 (10/100/1000 Mbit/s)
Quality of Service	Yes	Yes
Temperature range	-40°C ... 75°C	-40°C ... 75°C
Special features	-	Conformal coating
Order number	2891390	2891391

 Automation protocols



Further variants



	FL SWITCH 1824	FL SWITCH 1924	FL SWITCH 1001T-POE	FL SWITCH 1008E	FL SWITCH 1605 M12
Application area	Standard	Gigabit	Harsh environmenr	Harsh environment	Field
Design	19"	19"	Slim	Slim	Wall mounting
Ports	24x TP-RJ45 (10/100 Mbit/s)	24x RJ45 (10/100/1000 Mbit/s)	4x PoE+ 1x RJ45 (10/100 Mbit/s)	8x RJ45 (10/100 Mbit/s)	5x M12 (10/100 Mbit/s)
Quality of Service	Yes	Yes	No	No	Yes
Temperature range	0°C ... 55°C	-25 °C ... 75 °C	-40°C ... 75°C	-40°C ... 75°C	-40°C ... 70°C
Special features	-	-	PoE IEEE802.3at	IEC61850-3 IEEE 1613	Degree of protection IP67
Order number	2891041	2891057	2891064	2891065	2700200


Automation protocols



FL SWITCH SFNB 5TX



Switch Ethernet 5 puertos

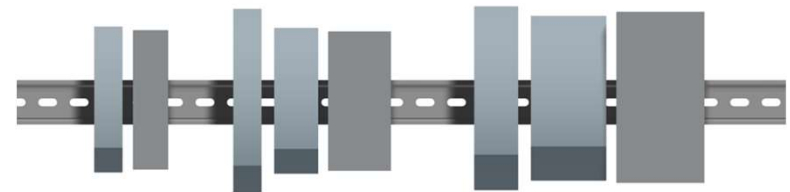
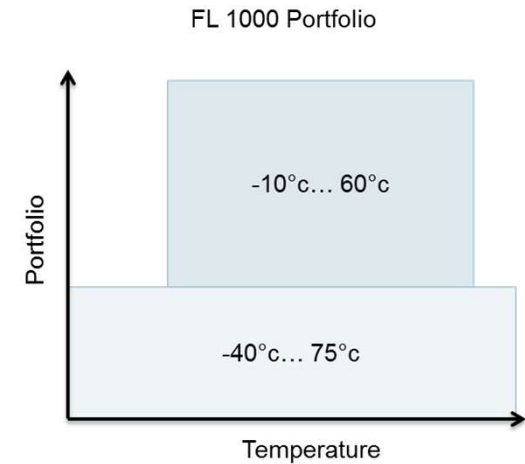
FL SWITCH 1000 Series

Project Goals

❑ Cost Reduction via Unification

❑ Size Reduction optimized by Functions

❑ Sustainable Value based upon Market Trends



FL SWITCH 1000 Series

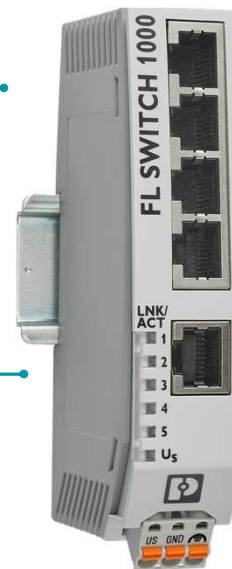
Product Features



* pending

Powered by both 24V DC/AC

Edge mount light pipe
for flat mounting visibility



Industrially Rated Temperature
-10 to 60C

Leaner Profile with
22.5mm Width

Push-In Connector with
extraction feature



FL SWITCH 1000 Series

Product Features

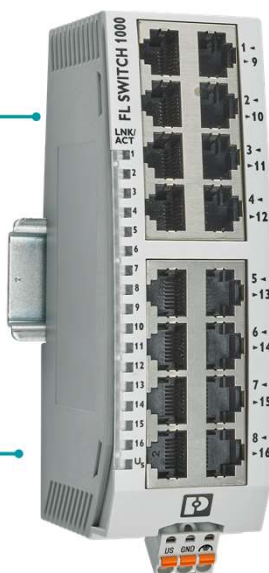


* pending

IEEE 802.3az Compliant



Building Automation
Target Industry



Gigabit Variants in 5 and 8 ports

CC-Link IE ^{*}Field

16 port density in
40mm Width

Predefined Automation
Prioritization with QoS



IEEE 802.3az/ Energy Efficient Ethernet uses a technology called LPI – Low Power Idle, which is actually a low energy consumption state that can be used during periods where there is no link utilization. It should be noted that the IEEE standard defines how LPI is communicated between systems and not why or when it is communicated.

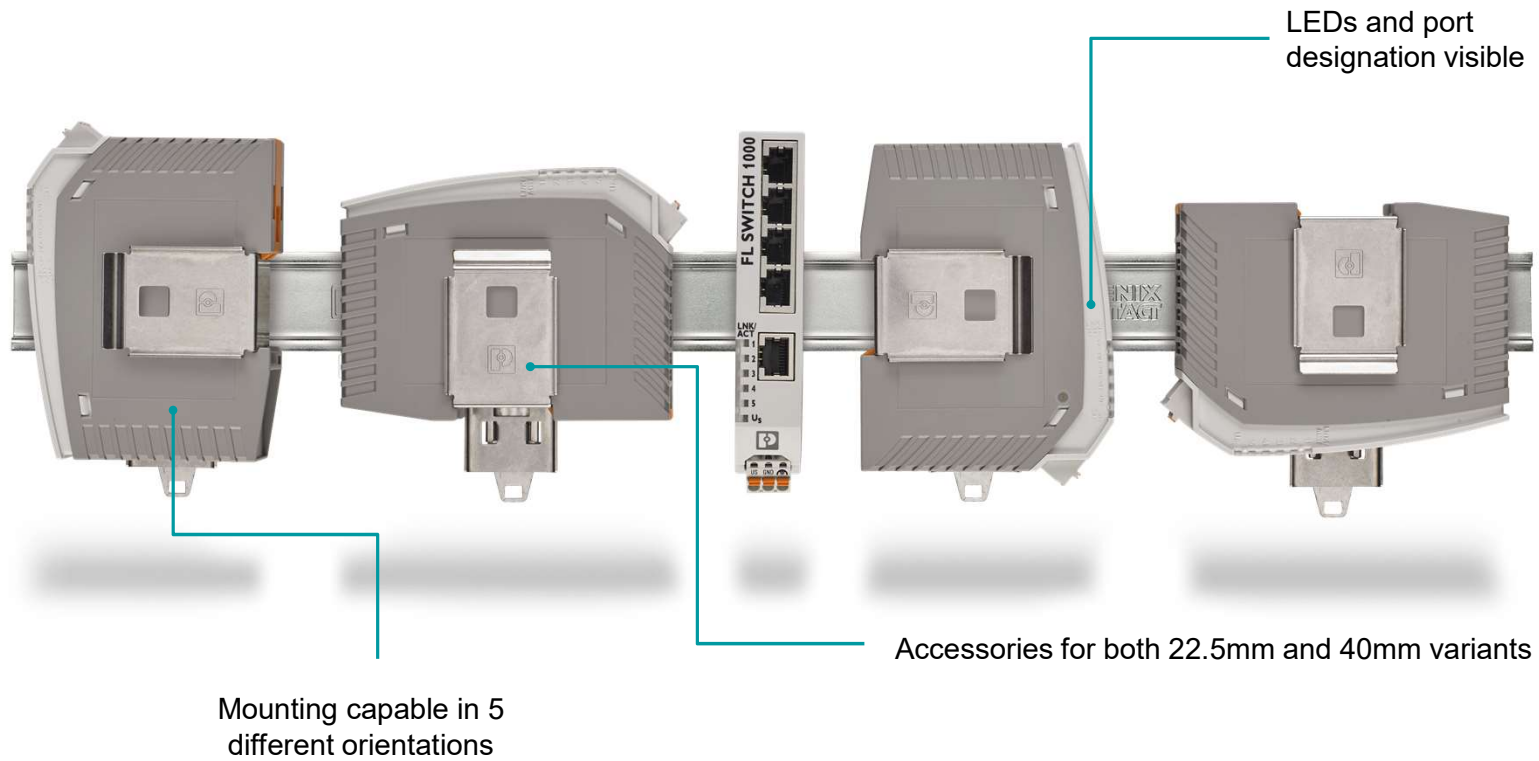
FL SWITCH 1000



Unmanaged FL SWITCH 1000

FL SWITCH 1000 Series

Product Mounting



FL SWITCH 1000 Series

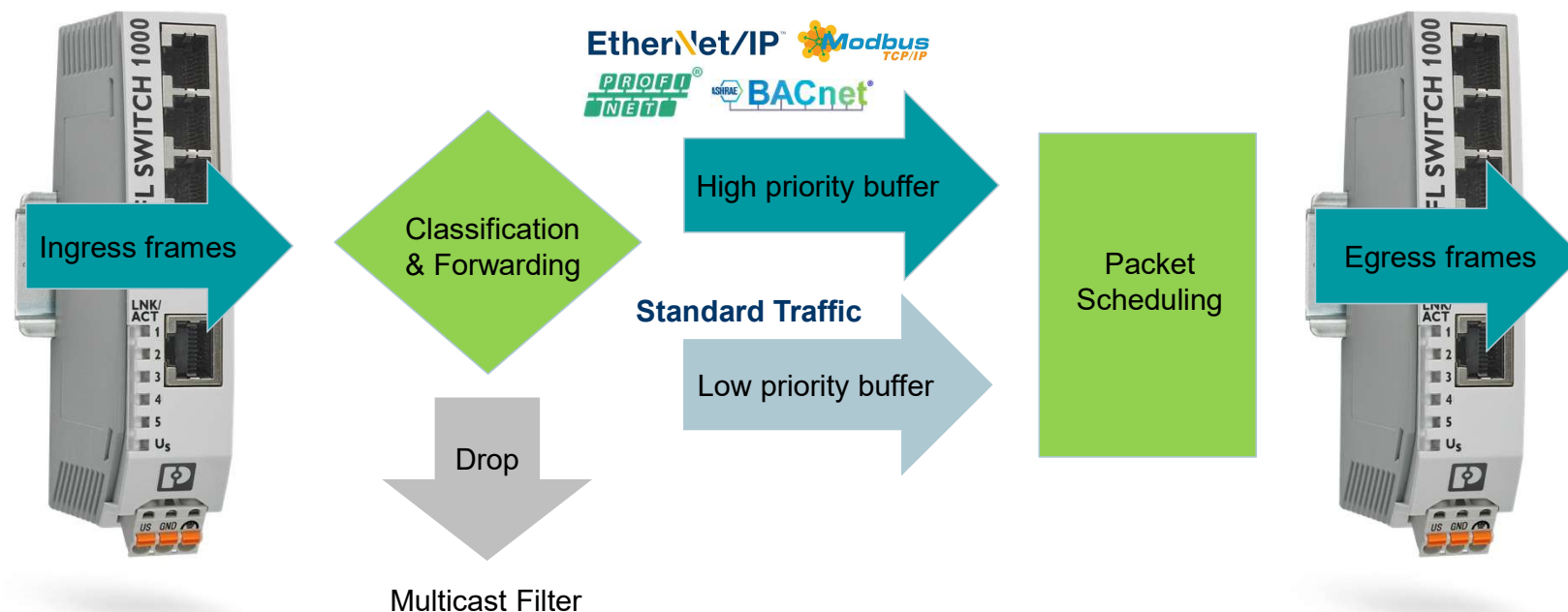
Video



FL SWITCH 1000/1100 First impressions

FL SWITCH 1000 Series

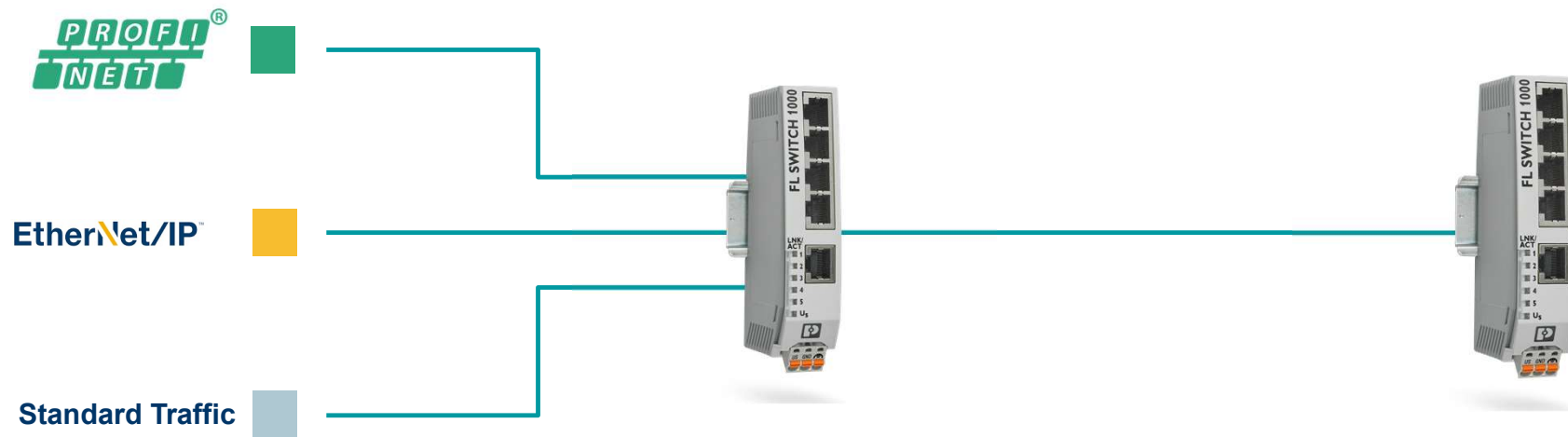
QoS based Traffic Prioritization



FL SWITCH 1000 Series

Prioritization of Automation Protocols

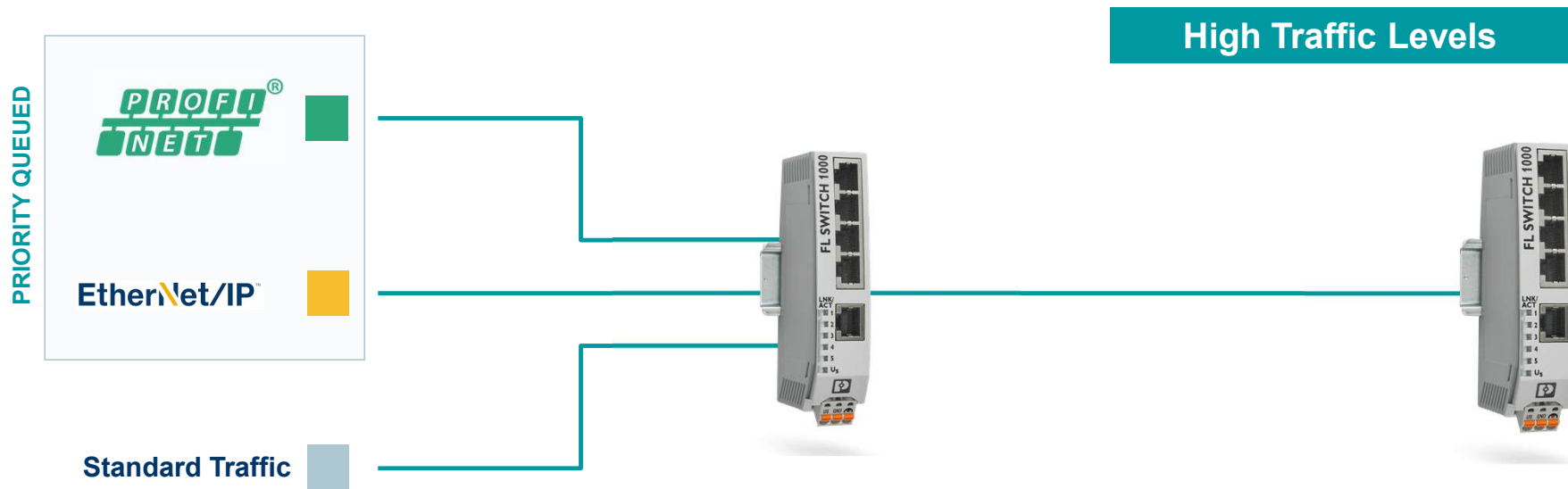
Standard Traffic Levels



As traffic is received, it is transmitted as supplied

FL SWITCH 1000 Series

Prioritization of Automation Protocols



FL SWITCH 1000 Series

Product Technical Data

					
Description	FL SWITCH 1005N	FL SWITCH 1008N	FL SWITCH 1016N	FL SWITCH 1105N	FL SWITCH 1108N
Article	1085039	1085256	1085255	1085254	1085243
Ports	5 RJ45	8 RJ45	16 RJ45	5 RJ45	8 RJ45
Speed	10/100 Mbit/s	10/100 Mbit/s	10/100 Mbit/s	10/100/1000 Mbit/s	10/100/1000 Mbit/s
Input Voltage	9-32V DC and 18-30V AC	9-32V DC and 18-30V AC	9-32V DC and 18-30V AC	9-32V DC and 18-30V AC	9-32V DC and 18-30V AC
Temperature Range	-10 to 60C	-10 to 60C	-10 to 60C	-10 to 60C	-10 to 60C
Dimensions (W x H x D)	22.5 x 117 x 84 mm	22.5 x 140.4 x 92 mm	40 x 140.4 x 92mm	22.5 x 117 x 84 mm	22.5 x 140.4 x 92 mm

FL SWITCH 1000 Series

Future Variants

Product Technical Data

							
Description	FL SWITCH 1004N-FX	FL SWITCH 1004N-FX ST	FL SWITCH 1004N-FX SM	FL SWITCH 1004N-SFX	FL SWITCH 1005N-2SFX	FL SWITCH 1104N-SFP	FL SWITCH 1105N-2SFP
Article	1084159	1085179	1085214	1085177	1085176	1085173	1085171
Ports	4 RJ45, 1FX	4 RJ45, 1 FX ST	4 RJ45, 1 FX SM	4 RJ45, 1 SFX	5 RJ45, 2 SFX	4 RJ45, 1 SFP	5 RJ45, 2 SFP
Speed	10/100 Mbit/s	10/100 Mbit/s	10/100 Mbit/s	10/100 Mbit/s	10/100 Mbit/s	10/100/1000 Mbit/s	10/100/1000 Mbit/s
Input Voltage	9-32V DC and 18-30V AC	9-32V DC and 18-30V AC	9-32V DC and 18-30V AC	9-32V DC and 18-30V AC	9-32V DC and 18-30V AC	9-32V DC and 18-30V AC	9-32V DC and 18-30V AC
Temperature Range	-10 to 60C	-10 to 60C	-10 to 60C	-10 to 60C	-10 to 60C	-10 to 60C	-10 to 60C
Dimensions (W x H x D)	22.5 x 117 x 84 mm	22.5 x 117 x 84 mm	22.5 x 117 x 84 mm	22.5 x 117 x 84 mm	22.5 x 140.4 x 92mm	22.5 x 117 x 84 mm	22.5 x 140.4 x 92mm

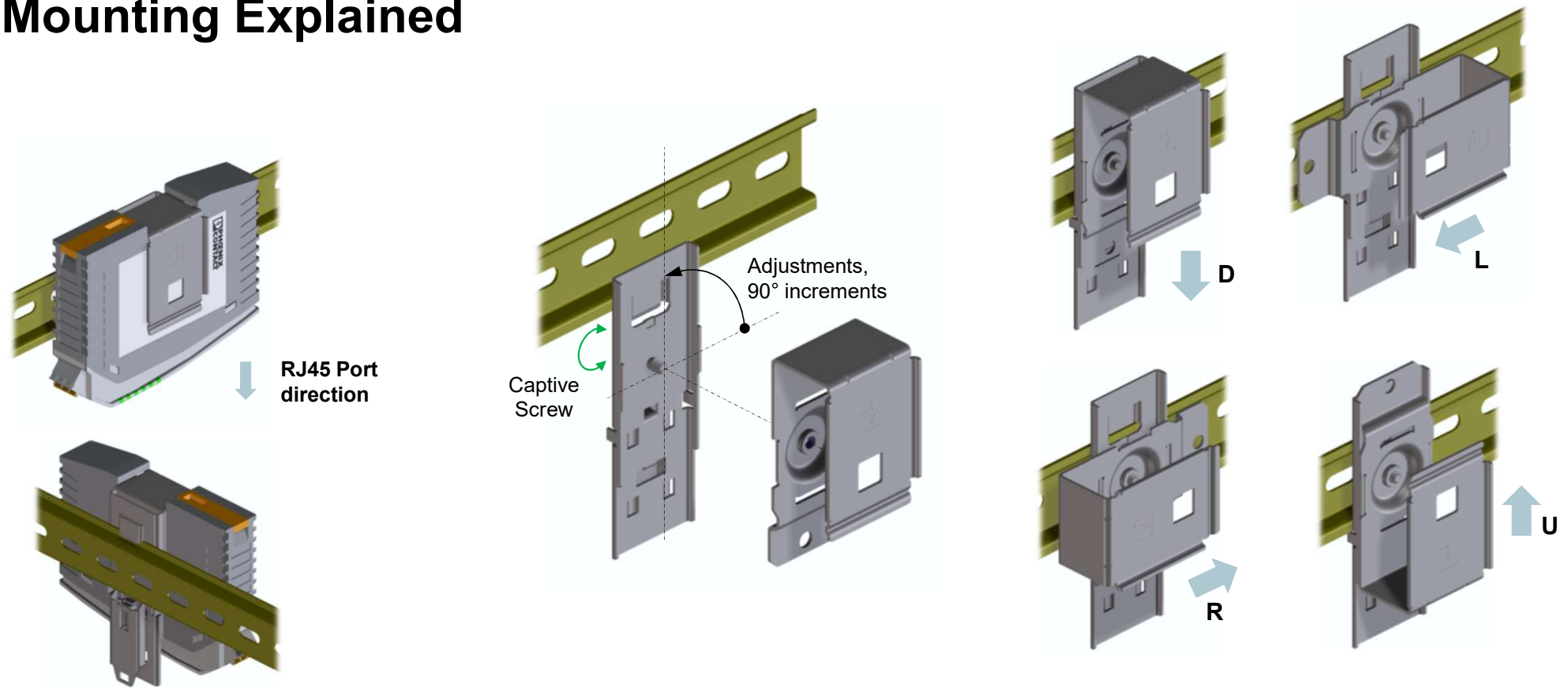
FL SWITCH 1000 Series

Mounting Accessories

				
Description	FL DIN-RAIL ADAPTER 22.5	FL DIN-RAIL ADAPTER 40	FL PANEL ADAPTER 22.5	FL PANEL ADAPTER 40
Article	1085485	1085484	1085488	1085486
Type	DIN-RAIL	DIN-RAIL	PANEL	PANEL
Compatible Products	FL SWITCH 1005N FL SWITCH 1008N FL SWITCH 1105N FL SWITCH 1108N	FL SWITCH 1016N	FL SWITCH 1005N FL SWITCH 1008N FL SWITCH 1105N FL SWITCH 1108N	FL SWITCH 1016N

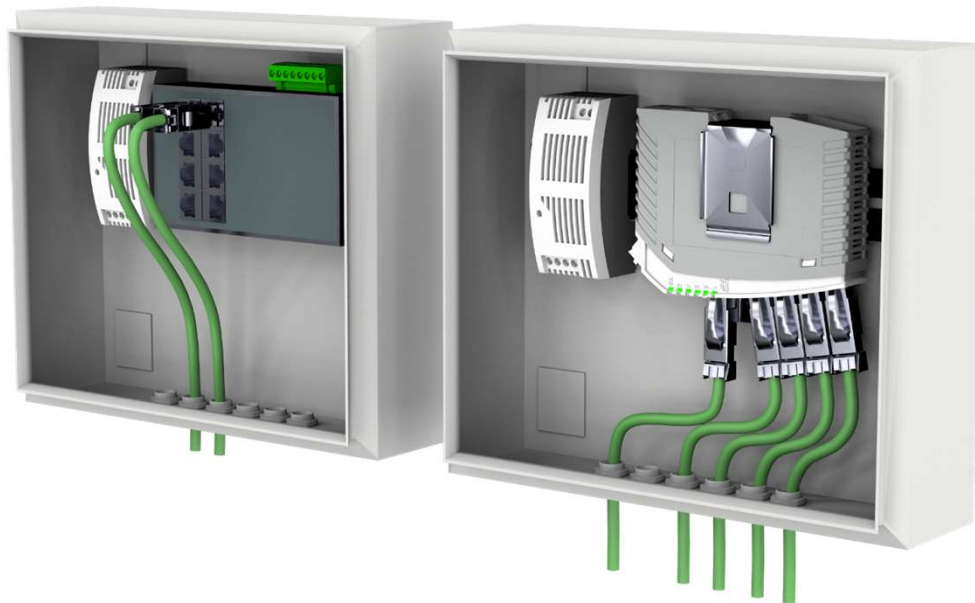
FL SWITCH 1000 Series

Mounting Explained



FL SWITCH 1000 Series

Product Mounting



Products fit within existing product dimensions

- Cable bend-radius is better managed in proposed mounting orientation
- Cable orientation allows installation in shallow enclosures
- Edge light pipe readouts still allow for port-based diagnostics

FL SWITCH 1000 – Portfolio

Ord.-No.	Designation			Function description
1085039	FL SWITCH 1005N			5 port narrow unmanaged switch
1085256	FL SWITCH 1008N			8 port narrow unmanaged switch
1085255	FL SWITCH 1016N			16 port narrow unmanaged switch
1085254	FL SWITCH 1105N			5 port narrow gigabit unmanaged switch
1085243	FL SWITCH 1108N			8 port narrow gigabit unmanaged switch

new

FL SWITCH 1000 --- Feature comparison list

Ord.- No.	Designation	Ports	Speed	Size (W x H x D)	Voltage range	Temperature range	Degree of IP	EEE	Priority Queues	PROFINET conformance	Prioritization for PROFINET	Prioritization for EIP	CC-link IE field certification	Power plug	Flexible Mounting option	
1085039	FL SWITCH 1005N	5	10/100M	22.5 x 117 x 84 mm	9~32VDC 18~30VAC	-10~+60 deg C	IP30	Yes	2	Class A	Yes with PTCP filter	No	N/A	Push-in	Yes	
1085256	FL SWITCH 1008N	8	10/100M	22.5 x 140.4 x 92 mm	9~32VDC 18~30VAC	-10~+60 deg C	IP30	Yes	2	Class A	Yes with PTCP filter	No	N/A	Push-in	Yes	
1085255	FL SWITCH 1016N	16	10/100M	40 x 140.4 x 92 mm	9~32VDC 18~30VAC	-10~+60 deg C	IP30	Yes	2	Class A	Yes with PTCP filter	No	N/A	Push-in	Yes	
1085254	FL SWITCH 1105N	5	10/100/ 1000M	22.5 x 117 x 84 mm	9~32VDC 18~30VAC	-10~+60 deg C	IP30	Yes	4	Class A	Yes with PTCP filter	Yes with DSCP and L4	CC-Link IE field	Push-in	Yes	
1085243	FL SWITCH 1108N	8	10/100/ 1000M	22.5 x 140.4 x 92 mm	9~32VDC 18~30VAC	-10~+60 deg C	IP30	Yes	4	Class A	Yes with PTCP filter	Yes with DSCP and L4	CC-Link IE field	Push-in	Yes	

New unmanaged switches

FL SWITCH 1000 Fiber optic

Push-in Technology[®]

Designed by Phoenix Contact



Your advantages

- ✓ High port density with the narrowest switch family
- ✓ Enhanced traffic prioritization for automation protocols
- ✓ PROFINET Conformance Class A for real-time data exchange
- ✓ Support of high-bandwidth applications thanks to versions with Gigabit RJ45 and dual-rate SFP connections

Main features

- IP30 degree of protection
- Temperature range: -10°C ... +60°C
- AC or DC power supply
- Certified for use in potentially explosive environments (C1D2)
- Energy-efficient Ethernet
- Protection against polarity reversal



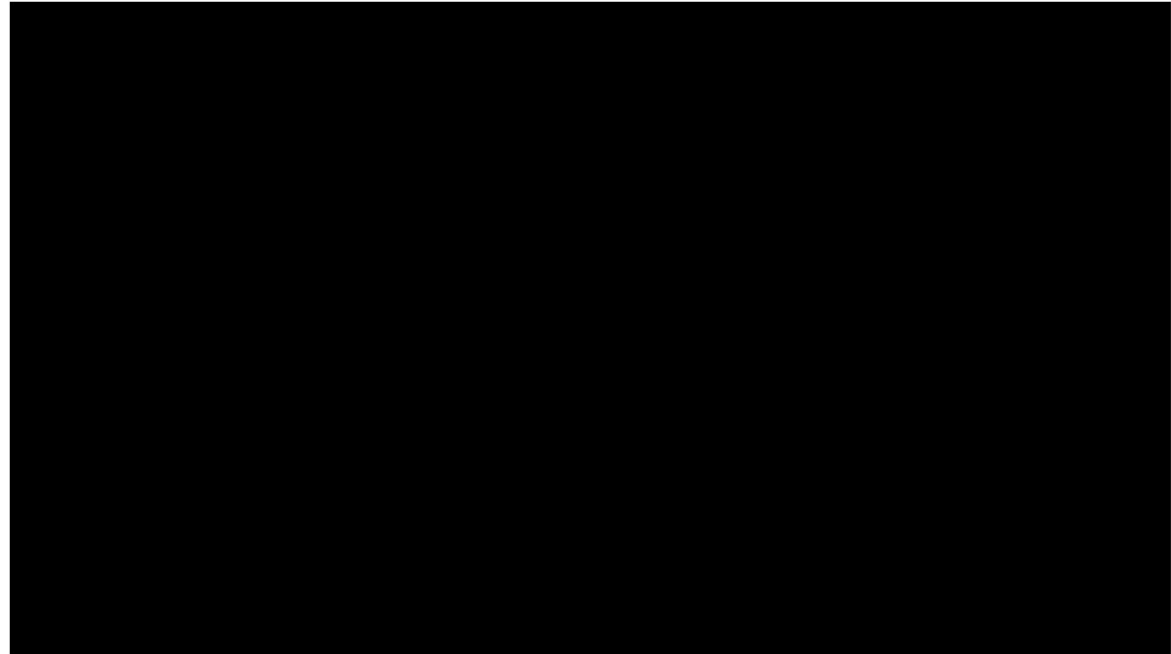
COMPLETE line



Unmanaged Switches with a narrow design				Unmanaged Gigabit Switches with a narrow design	
4 x RJ45, 1 x SC	4 x RJ45, 1 x ST	4 x RJ45, 1 x SFP	5 x RJ45, 2 x SFP	4 x RJ45, 1 x SFP	5 x RJ45, 2 x SFP
10/100 Mbps				10/100/1,000 Mbps	
FL SWITCH 1004N-FX 1004N-FX SM	FL SWITCH 1004N-FX ST	FL SWITCH 1004N-SFX	FL SWITCH 1005N-2SFX	FL SWITCH 1104N-SFP	FL SWITCH 1105N-2SFP
1084159 1085214	1085179	1085177	1085176	1085173	1085171

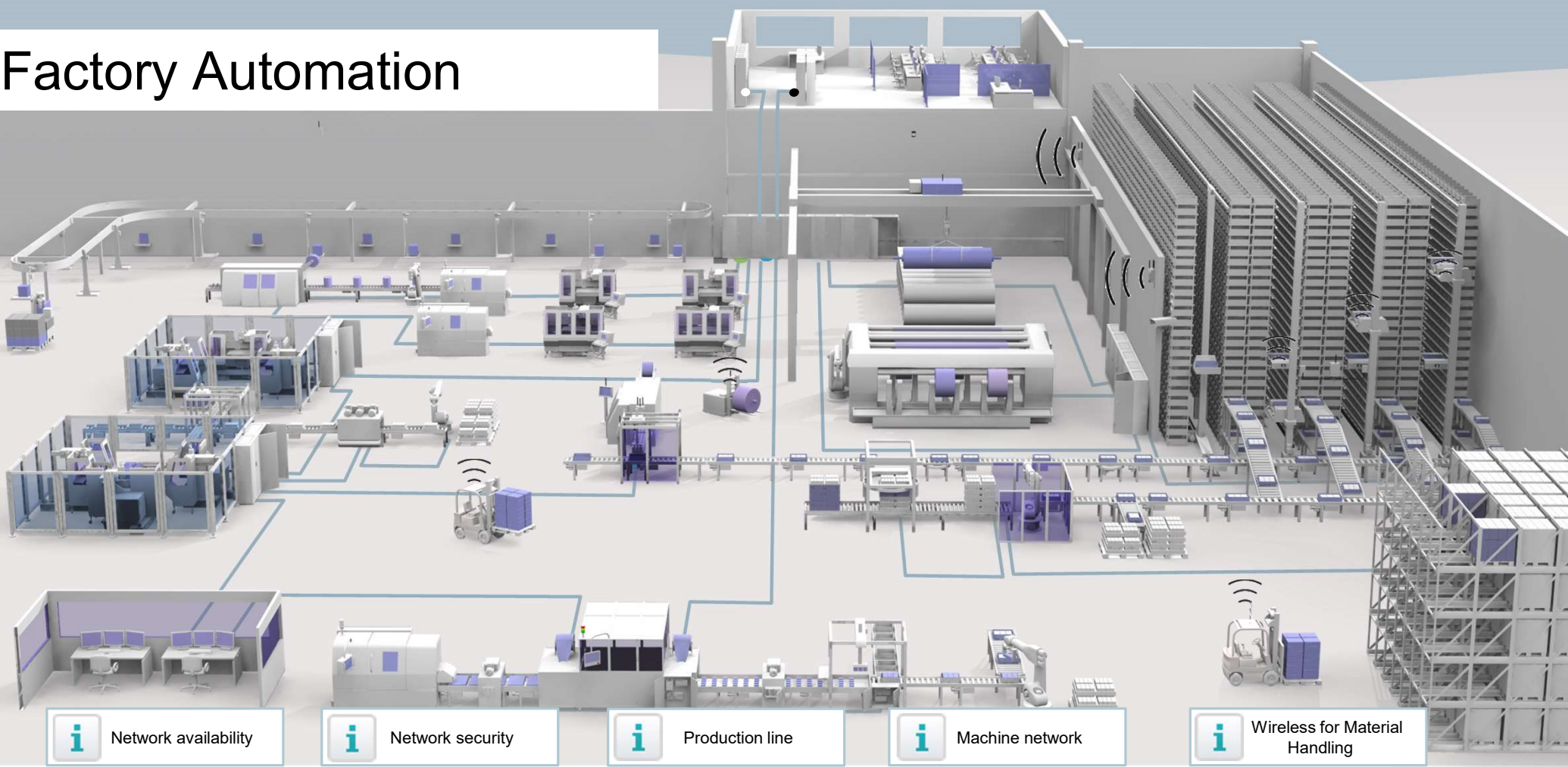
FL SWITCH 1000 Series

Video



A good new family Unmanaged Switch ready to future proof.

Factory Automation

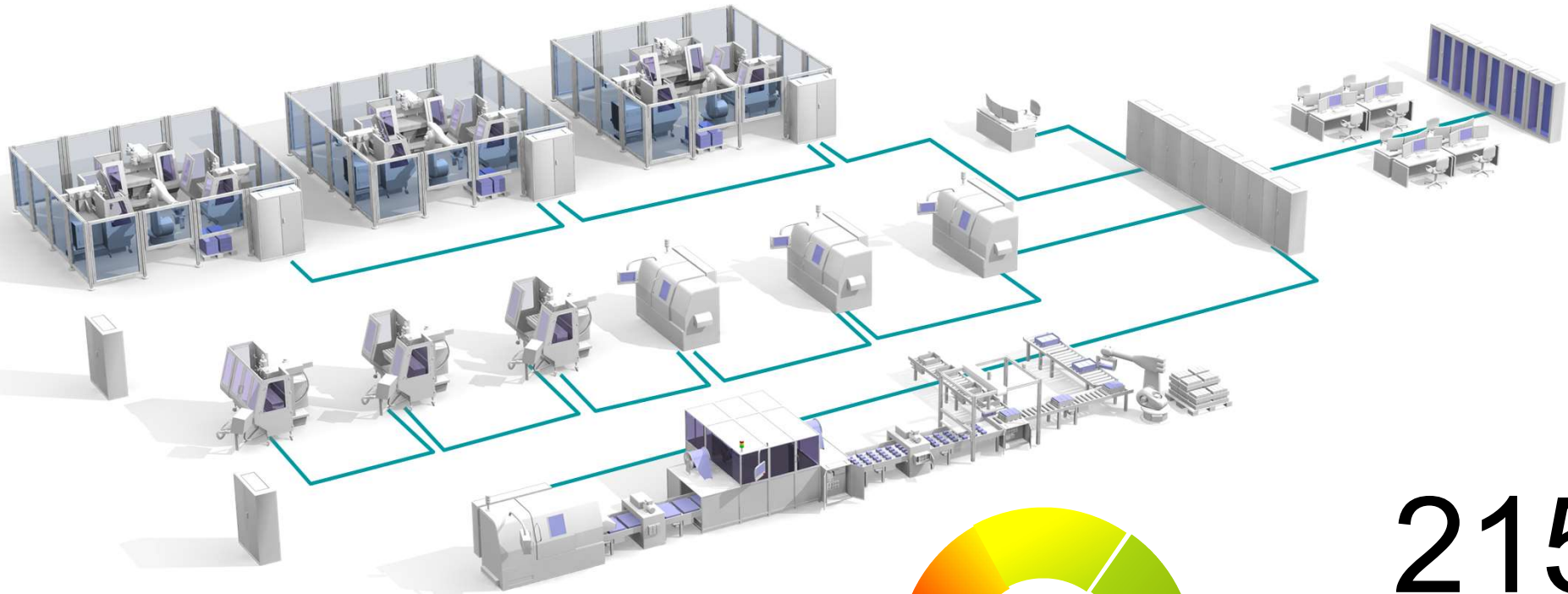


 Solution overview



Typical problems in unmanaged networks

As the network grows, network stability declines



poor



good

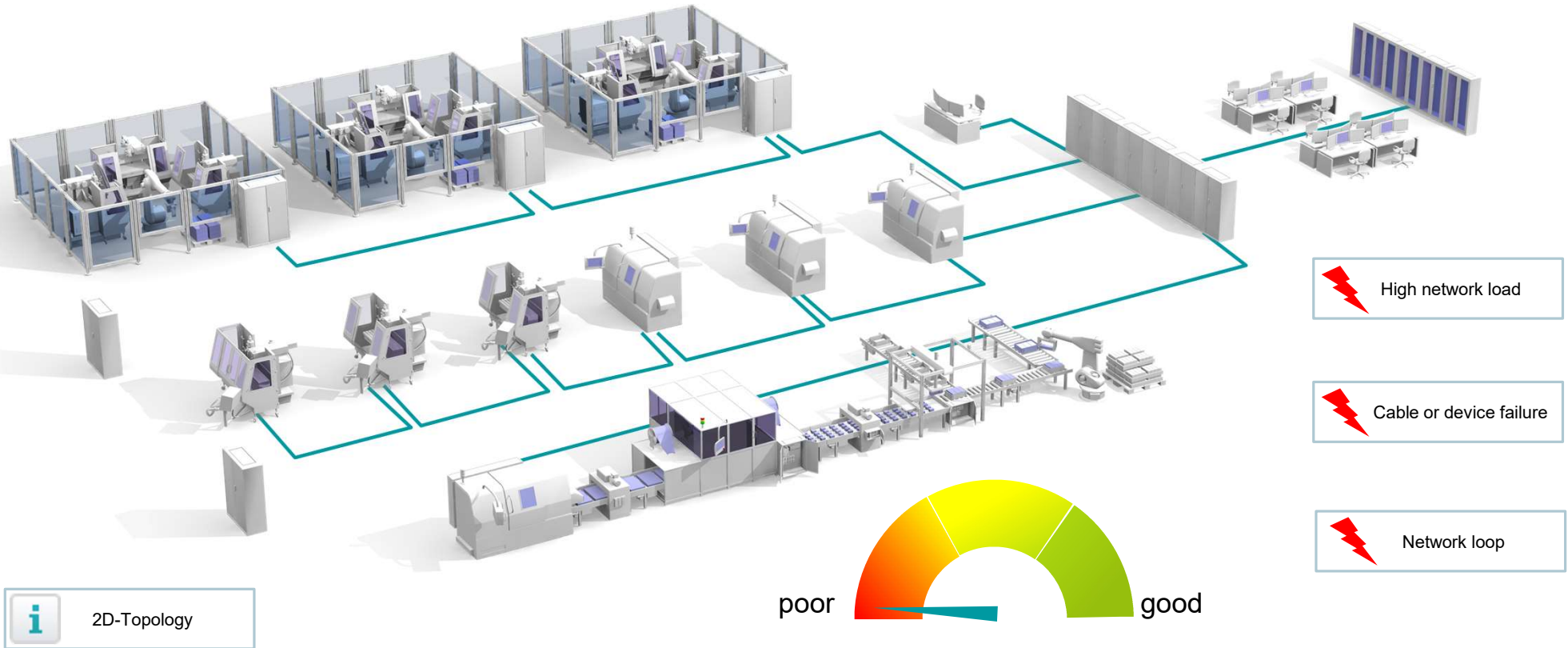
215

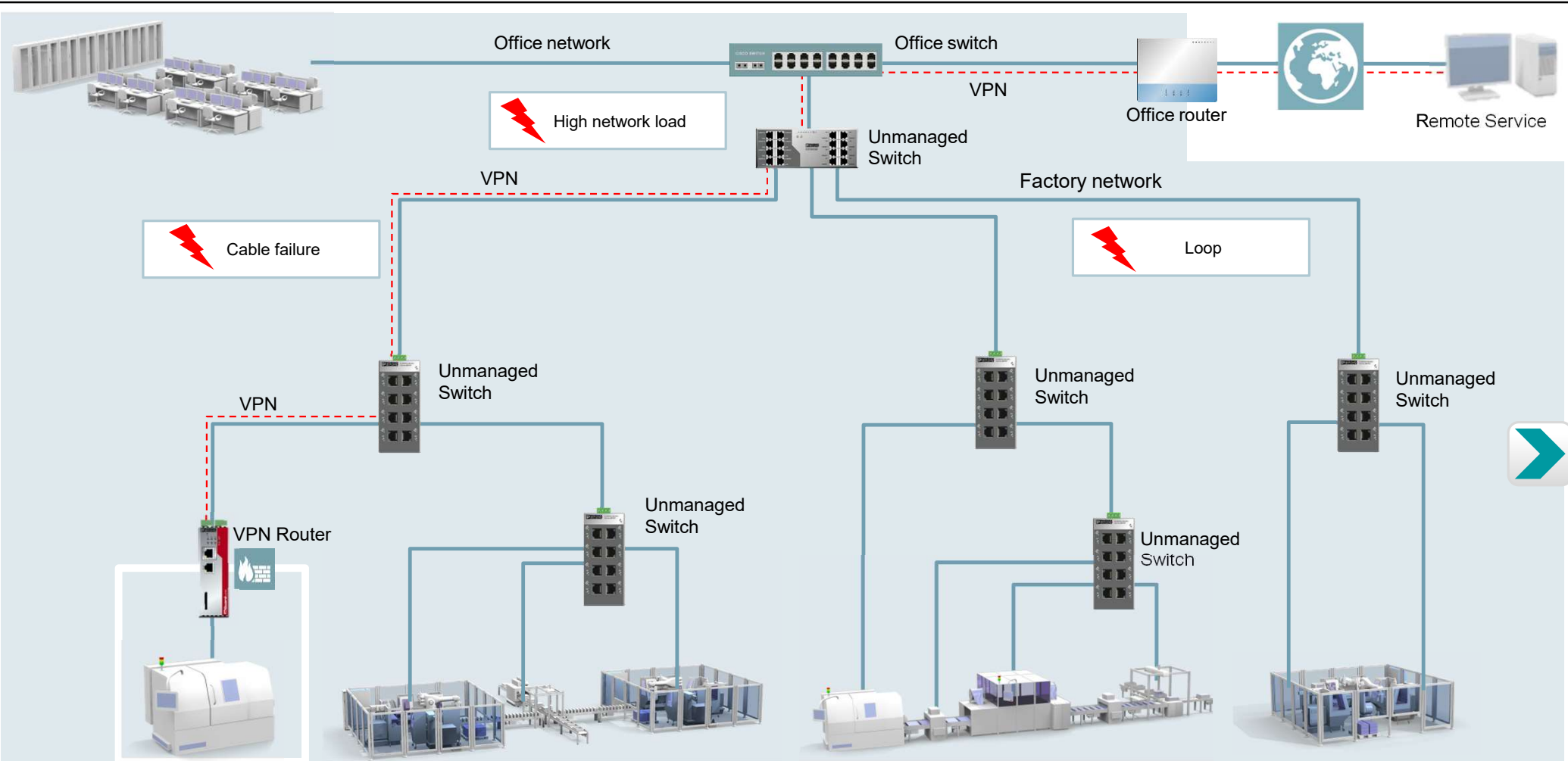
Network devices

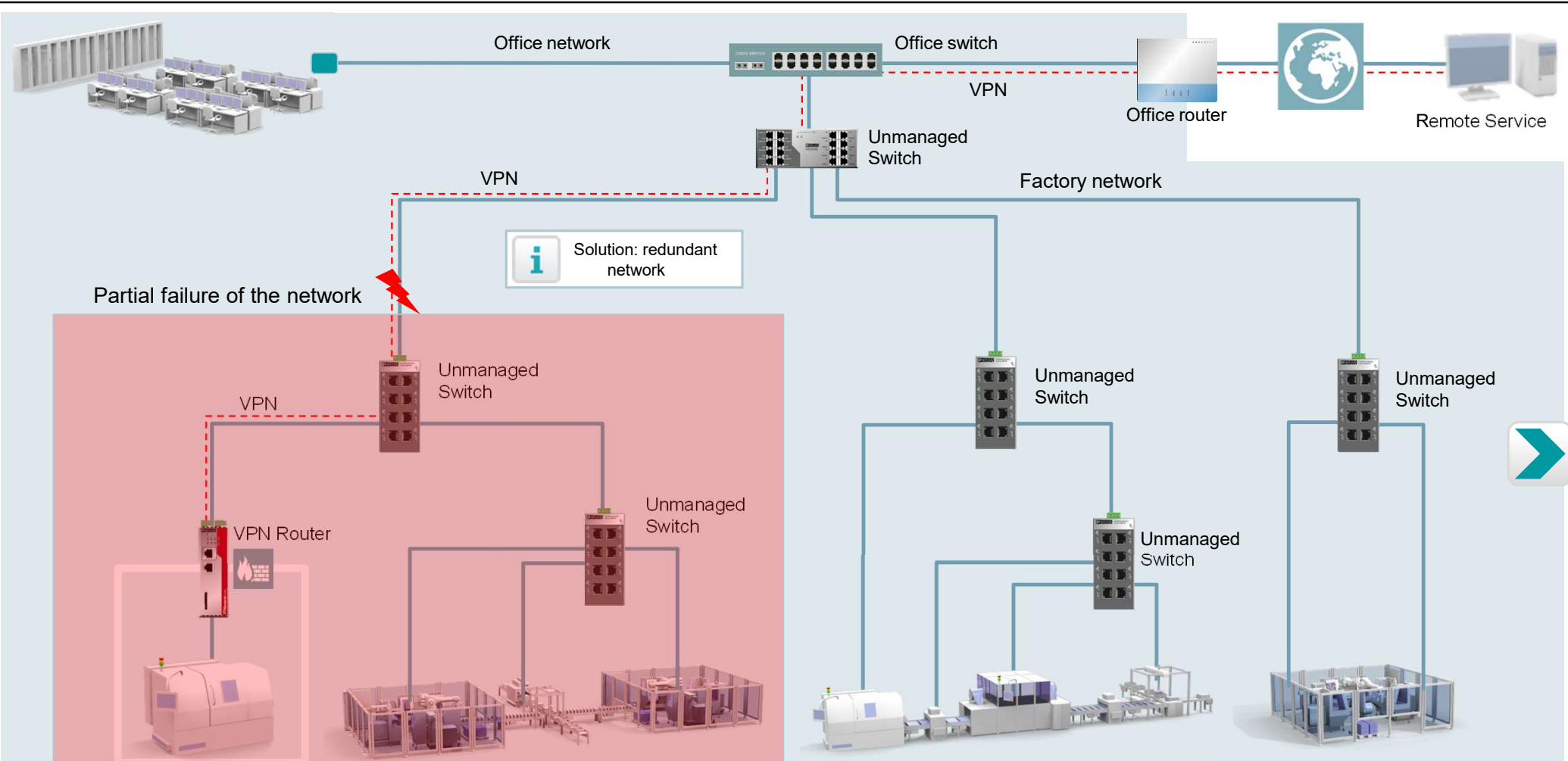


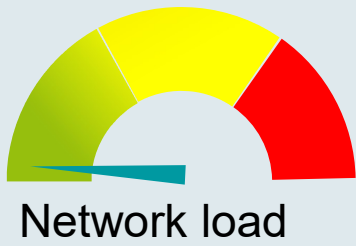
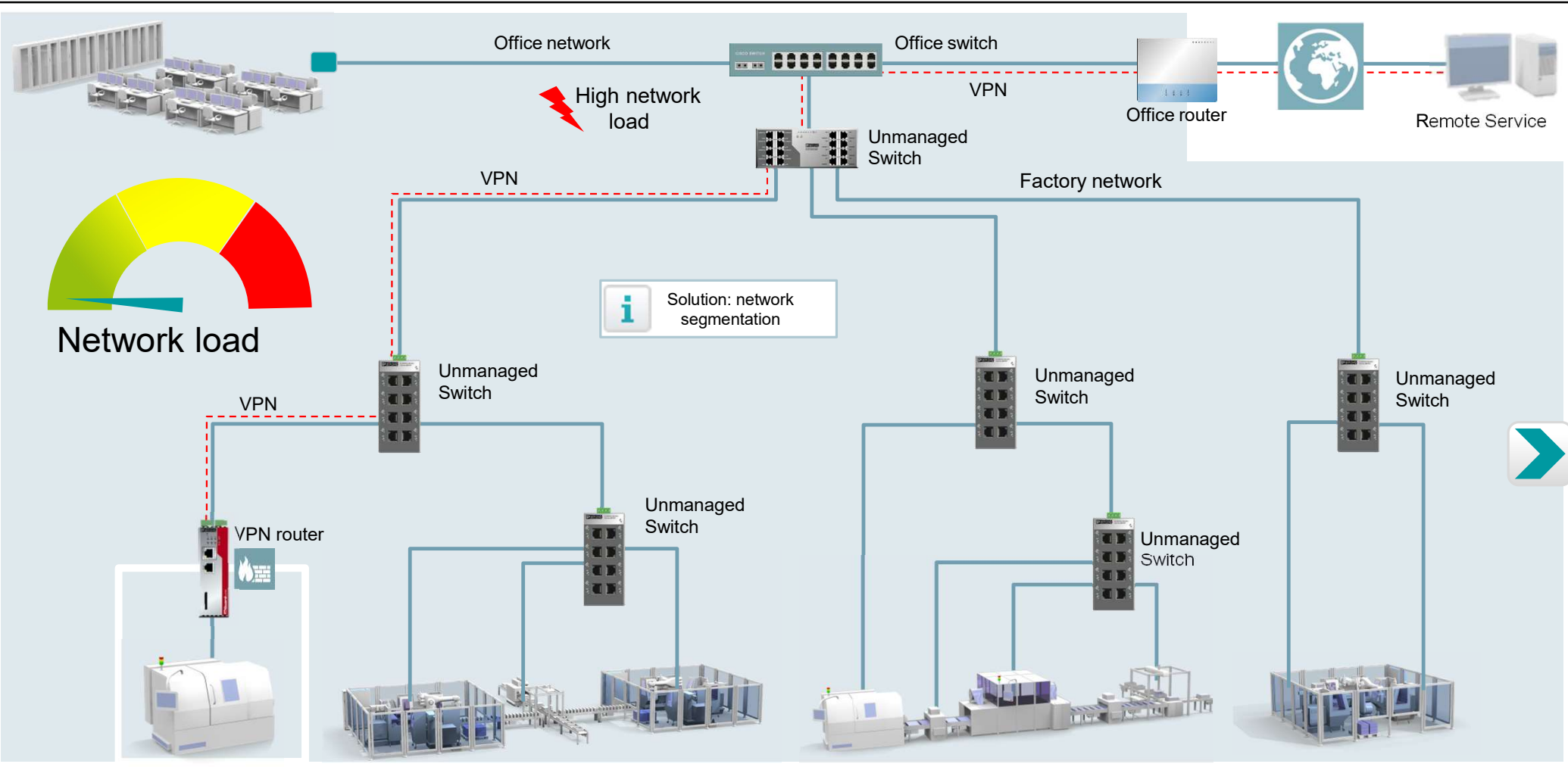
Typical problems in unmanaged networks

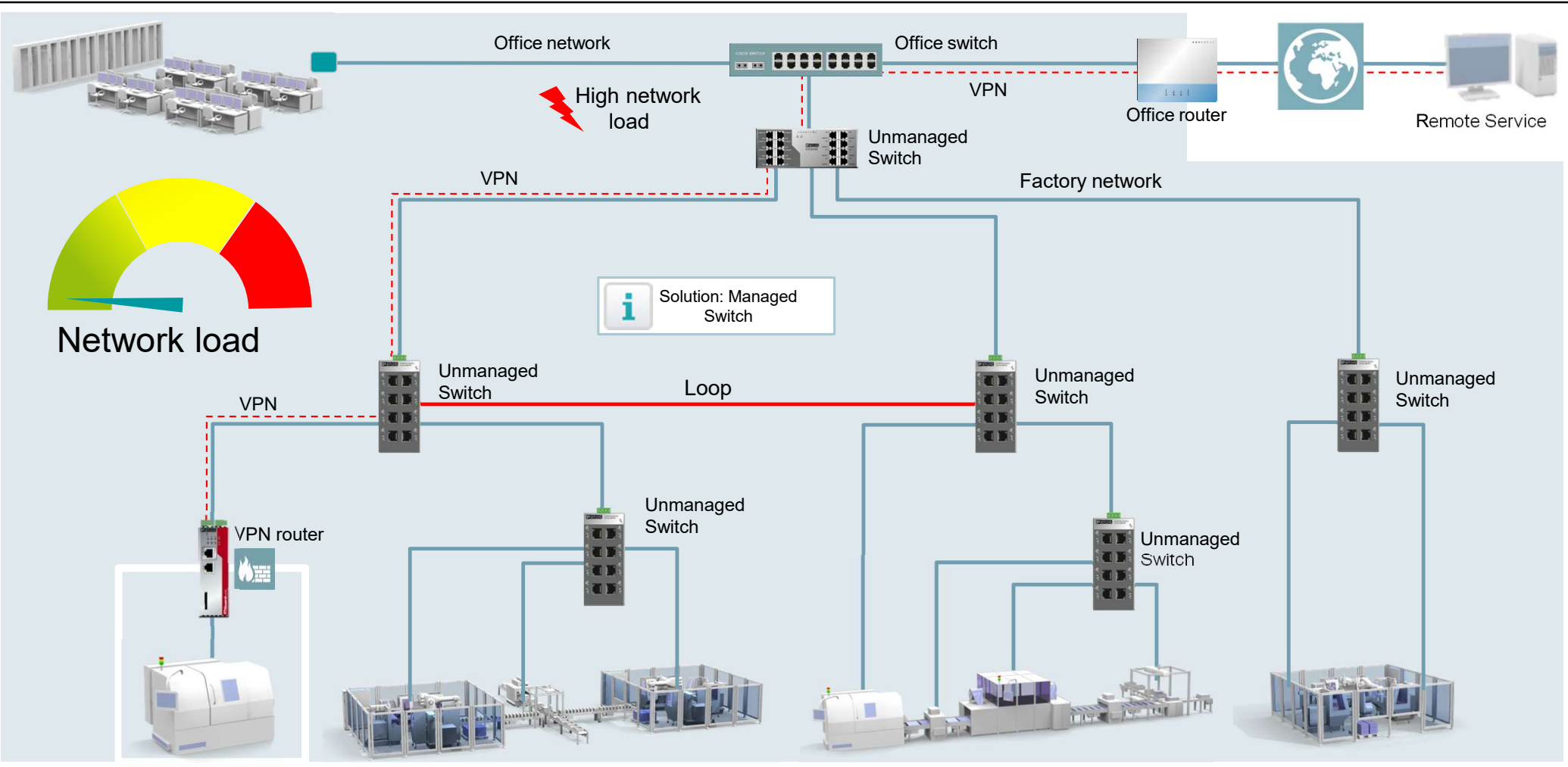
As the network grows, network stability declines





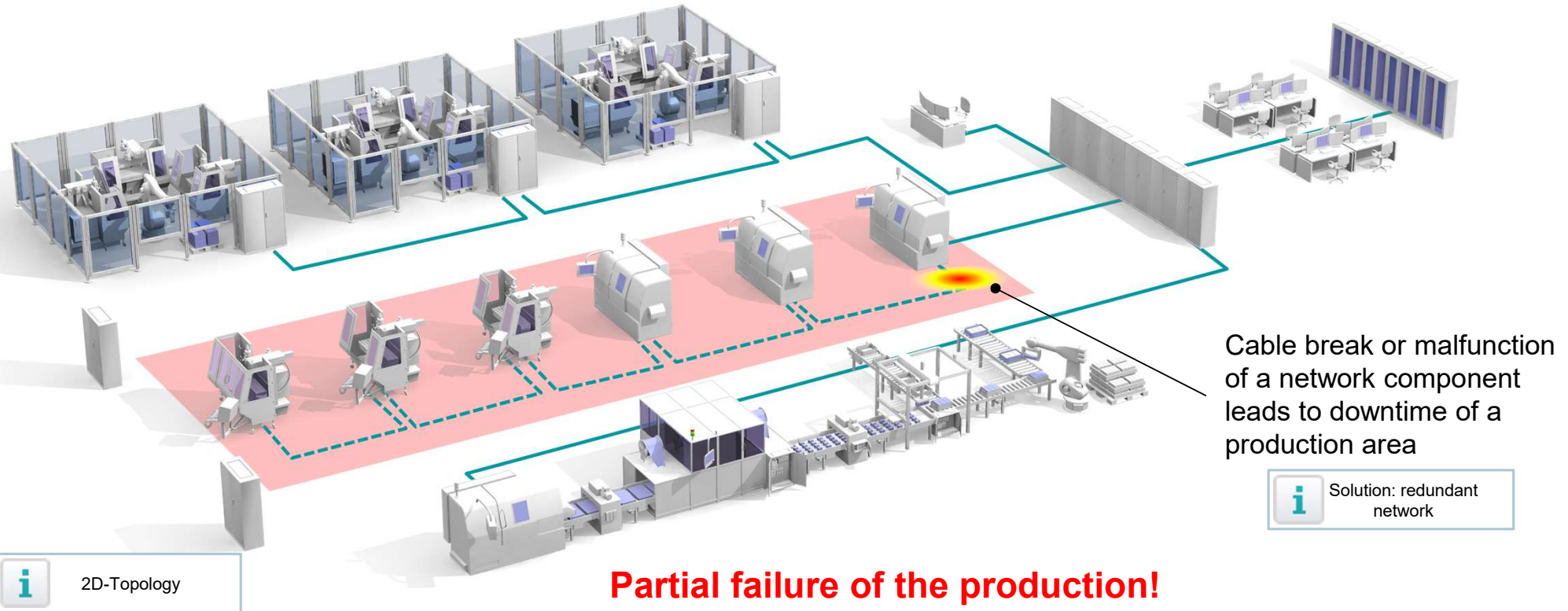






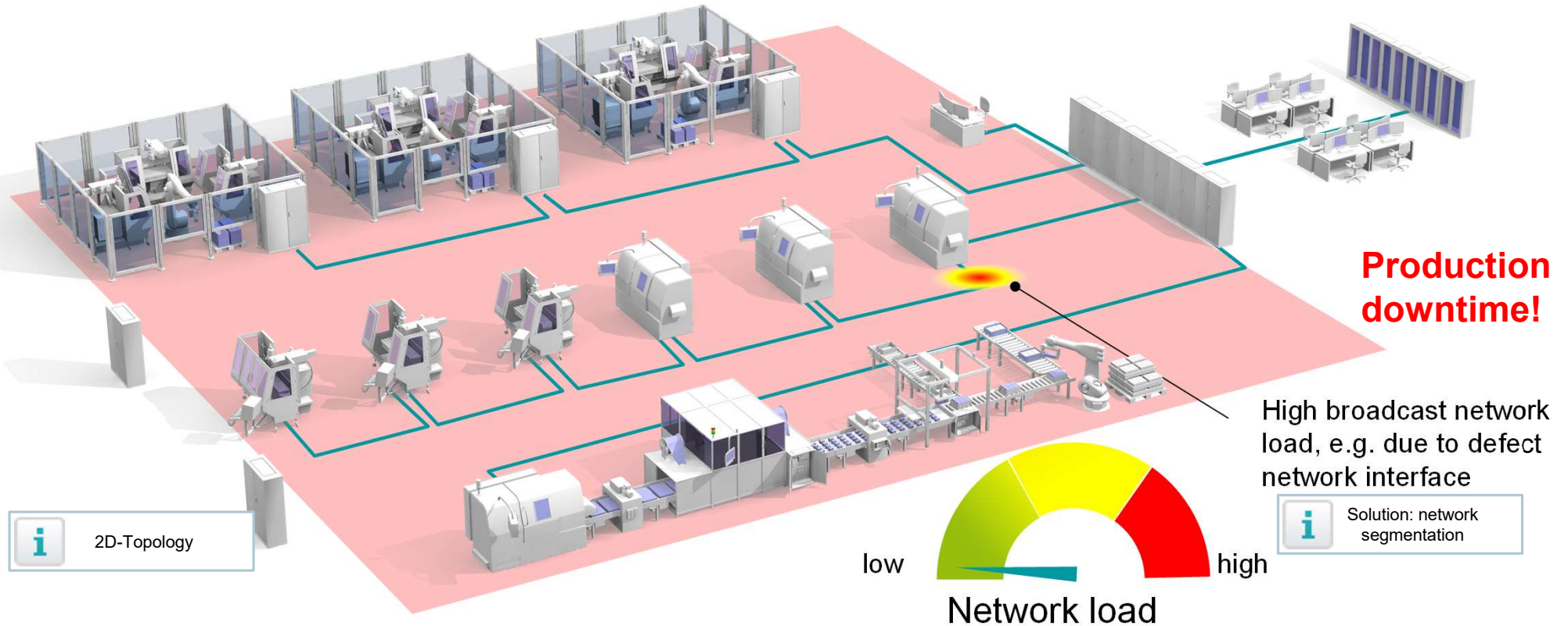
Typical problems in unmanaged networks

Cable or device faults



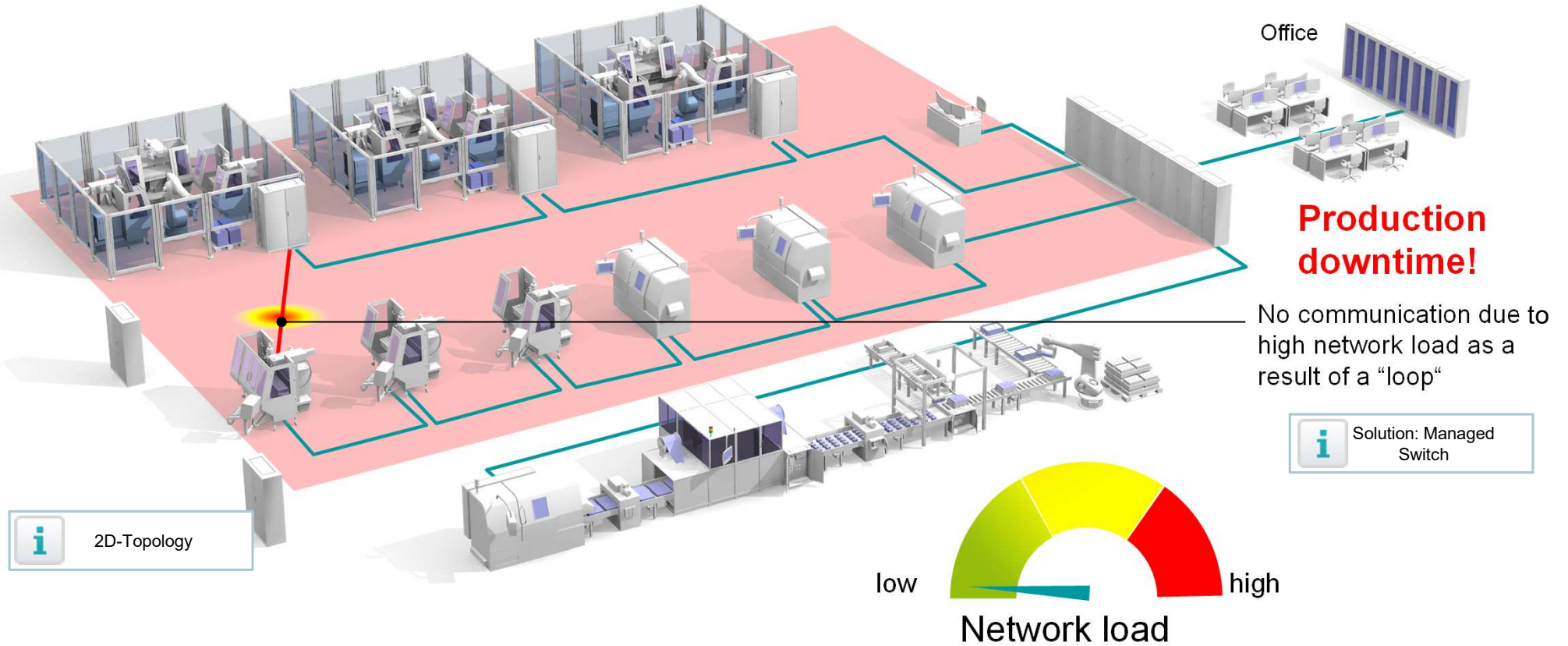
Typical problems in unmanaged networks

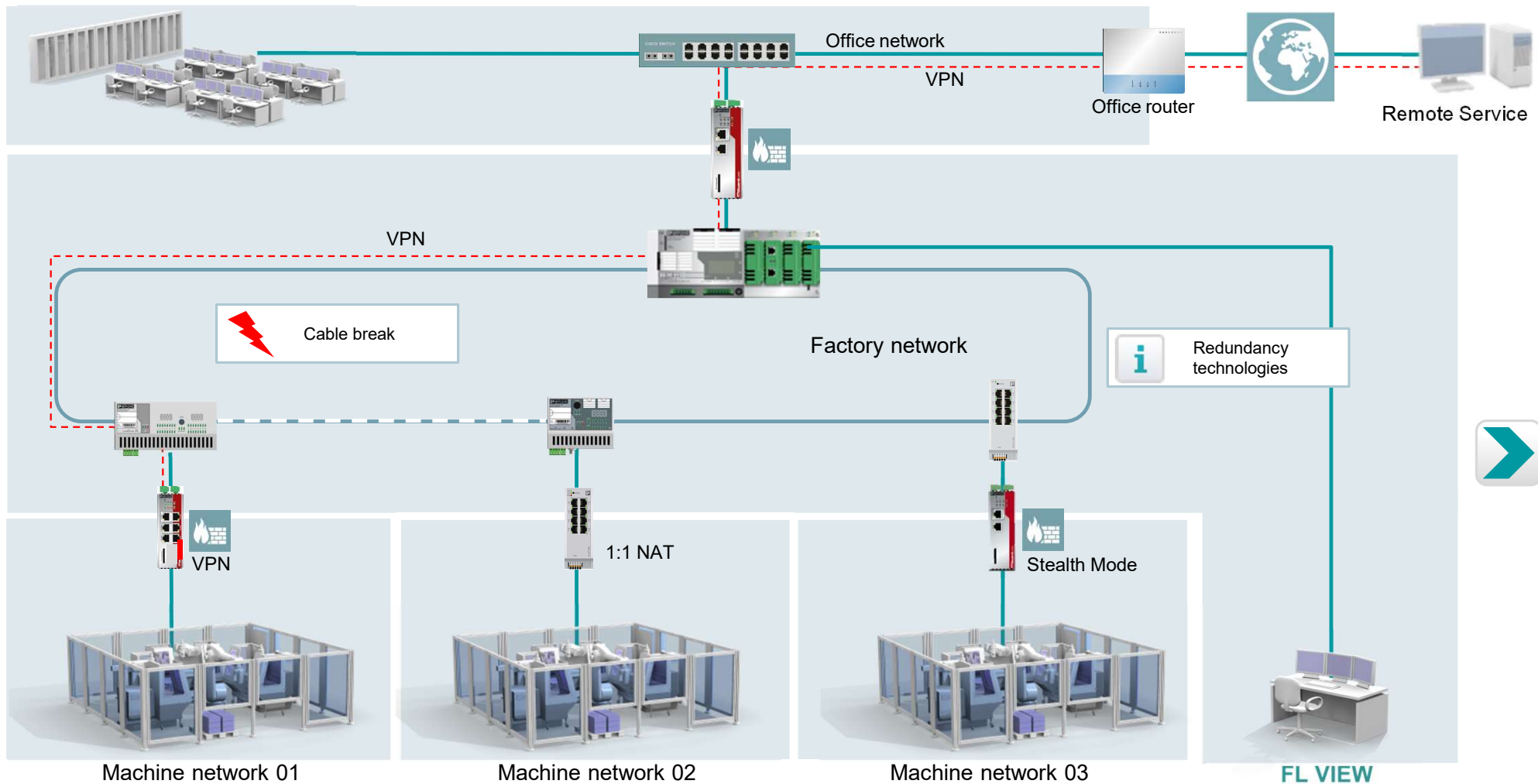
High network load

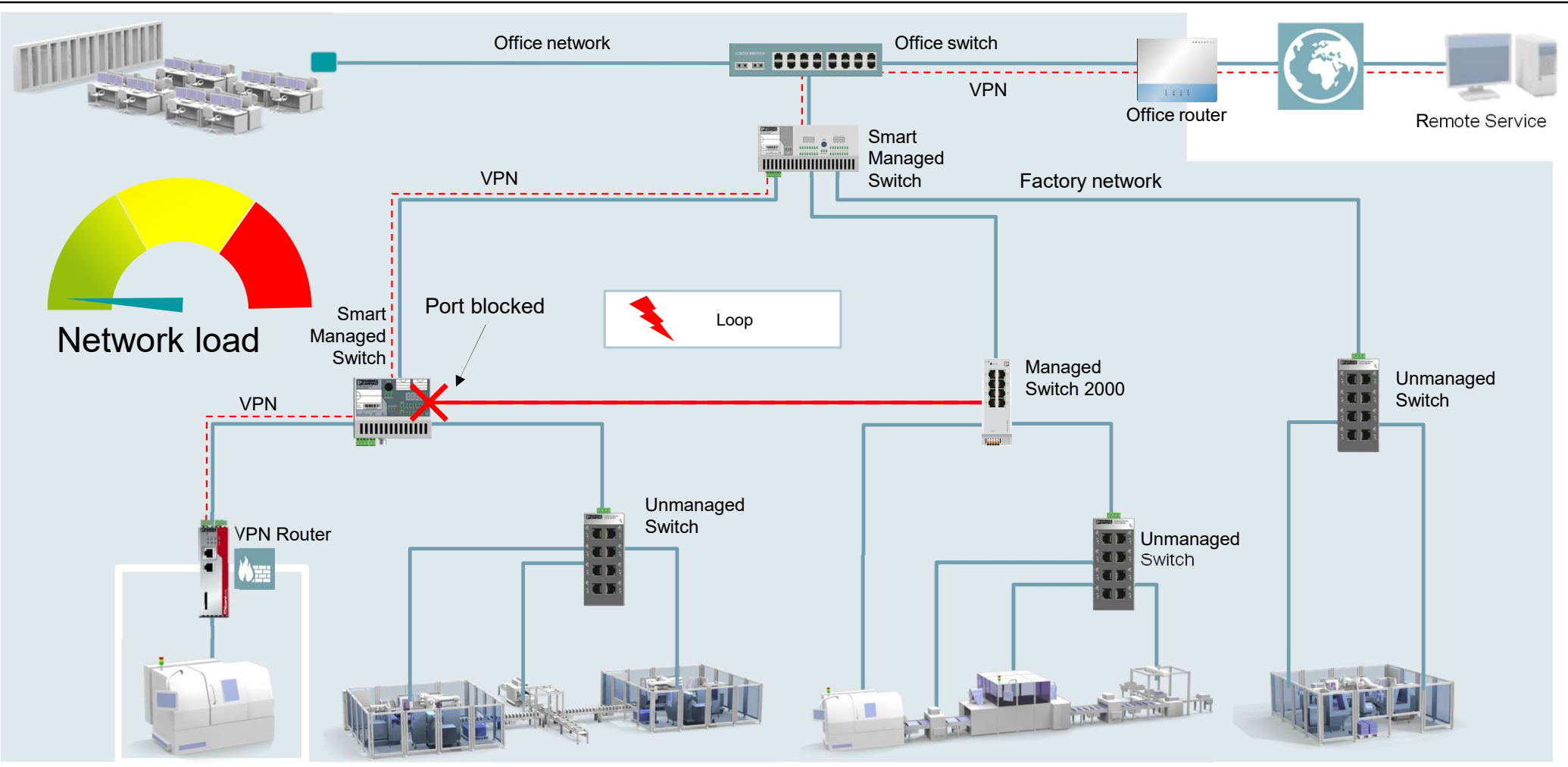


Typical problems in unmanaged networks

Network loop







Factory network



Remote Service

Machine network



Firewall, 1:1 NAT. Router



Machine core network

PROFI NET MRP ring

Managed Switch 2000

Smart Managed Switches

IRT Switches



Unmanaged Switches

Managed Switch 2000

Unmanaged Switches

IRT Switches



Factory network



Remote Service

Machine network



Firewall, 1:1 NAT. Router



Advanced Managed Switches



EtherNet/IP

Unmanaged Switches



Switch 2000



EtherNet/IP

Unmanaged Switches



Advanced Managed Switches





Ethernet Switches for field installation



Ethernet Switches for field installation

M12 classic

- Use existing cables/connectors
- Established technology

M12 Push/Pull

- Save time due to fast locking system



Classical and new connection method

M12

M12 Push/Pull



Ethernet Switches for field installation

Target Industries



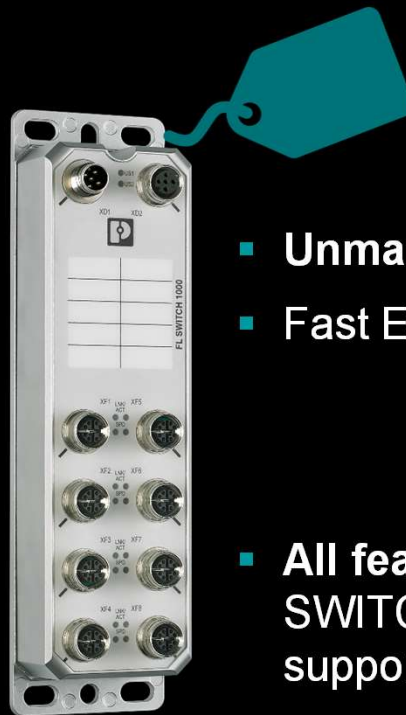
Factory Automation



Other field & M12 applications

Ethernet Switches for field installation

FL SWITCH 1600/1700



- **Unmanaged**
- **Fast Ethernet & Gigabit**
- **All features** of the new FL SWITCH 1000/1100 series supported

FL SWITCH 1600/1700

Portfolio Overview

New – Q1 2021



	FL SWITCH 16xx	FL SWITCH 17xx
Transmission speed	Fast Ethernet (100 Mbit/s)	Gigabit Ethernet (1000 Mbit/s)
Operating temperature	-40°C - 70°C	
Supply voltage	9-57 V DC, redundant	
Alarm output	-	
Degree of protection	IP65/IP66/IP67	
Approvals	CE 	

Target Markets



Factory Automation



Field Installation

New field installation unmanaged switch

FL SWITCH 1600 / 1700



Your advantages

- ✓ Flexible connection technology, suitable for classic M12 screw connection and innovative M12 push-pull technology
- ✓ Practically unlimited mounting options thanks to the narrow 60 mm design
- ✓ Robust metal housing
- ✓ PROFINET Conformance Class A for real-time data exchange

Main features

- IP65/IP66/IP67 degree of protection
- Temperature range: -40°C... +70°C
- Supply voltage: 12 V DC... 57 V DC
- M12 connection technology



 Web code: #2779	 	
	Description Unmanaged Switches with IP67 degree of protection	
Ethernet ports	8 x M12 (D-coded)	8 x M12 (X-coded)
Transmission speed	10/100 Mbps	10/100/1,000 Mbps
Power supply	M12 (A-coded)	
Type	FL SWITCH 1600	FL SWITCH 1700
Order No.	1196227	1196228

Digitalization
Industrie 4.0

Smart Production
E-Mobility

Smart Energy

Energy Efficiency
Smart Infrastructure

Smart Buildings

Renewables

Thanks for your participation

