

Коммутаторы Ethernet-APL и сопутствующее оборудование

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Ethernet-APL Rail Field Switch

FieldConnex®

ARS11-B2-IC08-2

- Managed Ethernet-APL field switch for process industries
- Powered spur ports intrinsically safe Ex ic according to 2-WISE and FISCO
- PROFINET MRP, S2 redundancy and dynamic reconfiguration
- 2 ports each for 1000BASE-T and SFP transceivers
- Redundant power input 20 VDC ... 60 VDC
- Installation in Zone 2
- Physical layer diagnostics at the spur
- Configuration and diagnosis with FDI, web interface, PROFINET device functions and SNMP
- Support of network security
- Support of Ethernet-APL and PROFIBUS PA instruments

Ethernet-APL rail field switch with 8 intrinsically safe Ex ic spur ports and spring terminals with proxy support selectable for PROFIBUS PA field devices



ethernet-apl™
advanced physical layer



Function

The Ethernet-APL rail field switch is a ruggedized, managed field switch offering connectivity for Ethernet-APL devices to Ethernet networks via any protocol. The connections, i. e., "spur" ports, provide intrinsically safe (Ex ic) power and communication to instruments located in Zone 2. APL field switches can be installed in Zone 2.

The APL field switch features 2 Gigabit Ethernet ports and 2 SFP ports. The SFP ports provide connections for a choice of optional SFP transceivers to be used in explosion-hazardous areas and different distances.

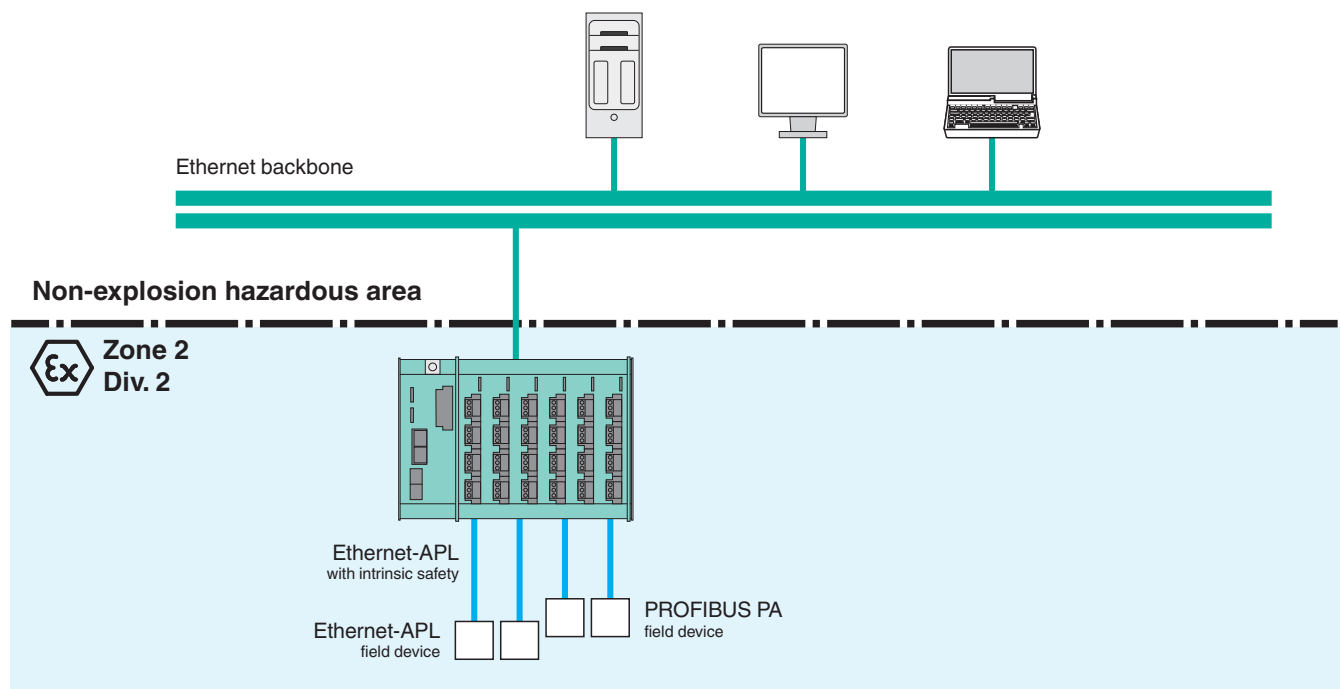
For PROFINET, the APL field switch supports Class B networks. For high-availability installations, the APL field switch provides redundancy mechanisms such as MRP ring redundancy and S2 system redundancy.

PROFINET dynamic reconfiguration permits re-configuration of the APL field switch during runtime without interrupting the data exchange.

Easy configuration and diagnostics of the APL field switch are accessible via FDI and web-based management. PROFINET device functions and SNMP assure fast start-up and enable the use of predictive maintenance. Comprehensive network and physical layer diagnostics enable proactive management strategies to reduce risk of failure and downtime.

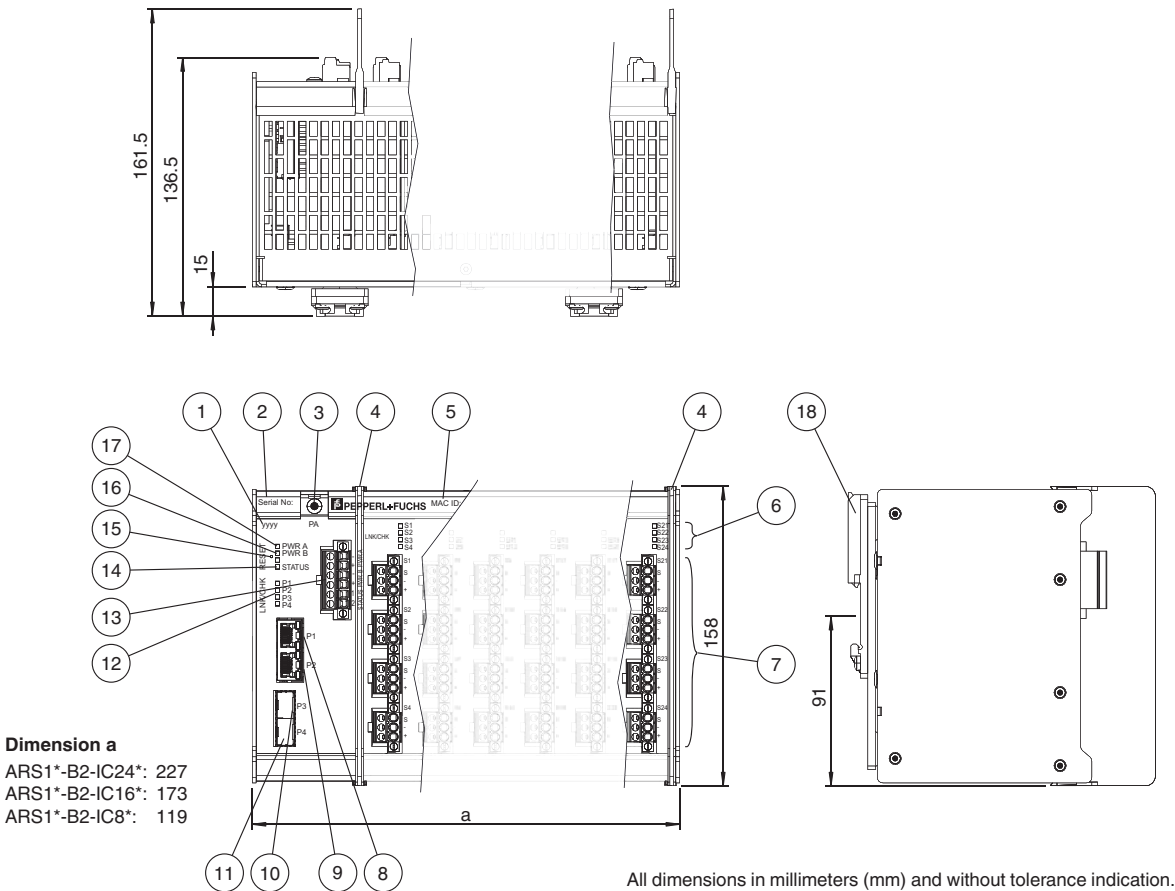
The APL field switch implements enhanced network security and supports SNMPv3, the locking of unused ports, and the HTTPS protocol.

Function Principle



Dimensions

DIN Rail Mounting



- | | |
|---|---|
| 1 Year of production | 11 Ethernet SFP port P4 |
| 2 Serial number | 12 LED LNK/CHK P1 ... P4, communication status LED P1 ... P4 |
| 3 PA, connection to equipotential bonding | 13 Connector for auxiliary power and status indication output |
| 4 Slot for separation wall | 14 LED STATUS, status rail field switch |
| 5 MAC ID | 15 Reset button |
| 6 LED S1 ... Sn, status spur ports S1 ... Sn | 16 LED PWR B, status power input B |
| 7 Connectors for intrinsically safe spurs S1 ... Sn | 17 LED PWR A, status power input A |
| 8 Ethernet port P1 | 18 DIN rail mounting brackets |
| 9 Ethernet port P2 | |
| 10 Ethernet SFP port P3 | |

Technical Data

General specifications

Design / Mounting	Cabinet installation
Installation in hazardous area	Zone 2
Fieldbus support	PROFIBUS PA

Supply

Rated voltage	U_r	20 ... 60 V
Rated current	I_r	0.37 ... 1.1 A
Power dissipation		13.2 W

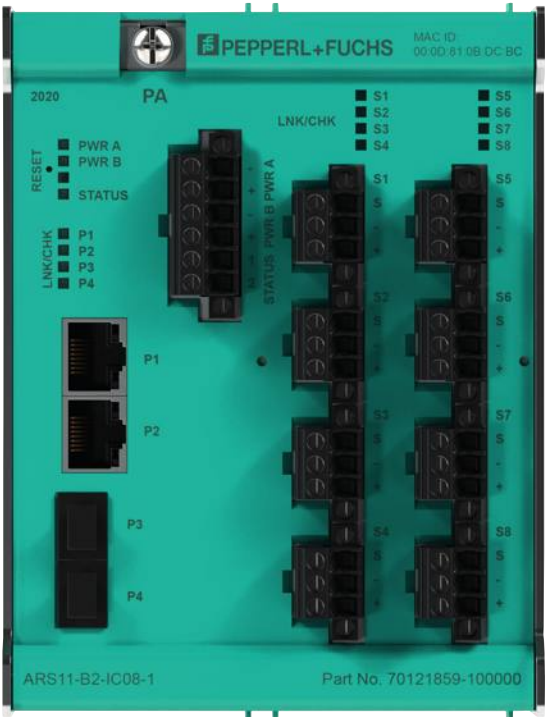
Technical Data

Voltage difference dual supply input		+/- 10 %
Power consumption		max. 22 W
Redundancy		dual supply input
Indicators/operating means		
LED PWR A/B		green: power on
LED LNK/CHK		Off: no communication link active , Green: communication link active , Green flashing: communication link activity , Yellow flashing: communication with PROFIBUS PA field device , Red flashing: check function
LED STATUS		Off: Good , Blue: Maintenance required , Red: Failure
Fault signal		VFC alarm 100 mA, 32 V DC, normally closed
Button		Device reset
Interface 1		
Interface type		Ethernet-APL : 1 Vpp option spur connection , PROFIBUS PA
Port classification		S P C C
Number of ports		8
Port identification		S 1 ... S 8
Power option		powered
Transfer rate		10 MBit/s full duplex
Rated voltage		11.61 V
Rated current		95 mA
Rated power		1.11 W
Cable shield grounding option		capacitive grounded
Connection type		spring terminals , pluggable
Conductor cross section solid wire		2.08 ... 0.326 mm ² , 14 ... 18 AWG
Conductor cross section flexible wire		2.08 ... 0.326 mm ² , 14 ... 18 AWG
Interface 2		
Interface type		1000BASE-T
Number of ports		2
Port identification		P 1 ... P 2
Transfer rate		10/100/1000 Mbps
Connection type		RJ-45 , EIA/TIA 568 B
Interface 3		
Interface type		Slot for SFP transceiver SFP Multi-Source (MSA) compliant
Number of ports		2
Port identification		P 3 ... P 4
Galvanic isolation		
Spurs/Supply		1500 V AC
SFP/Supply		500 V AC
1000BASE-T/Supply		1500 V AC
1000BASE-T/Spurs		1500 V AC
1000BASE-T/1000BASE-T		1500 V AC
Housing/All		620 V AC
Fault signal/All		1500 V AC
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 61326-1:2013
Conformity		
Galvanic isolation		IEC 61010-1
Electromagnetic compatibility		EN 61326 , NE 21
Degree of protection		IEC 60529

Technical Data

Ethernet		IEEE 802.3z , IEEE 802.3u , IEEE 802.3cg
Shock resistance		EN 60068-2-27
Vibration resistance		EN 60068-2-6
Climatic conditions		DIN IEC 721
Software		
Industrial protocols		PROFINET , CC-B (PA) , dynamic reconfiguration , Netload Class III , pruning
Management		Web user interface , SNMP v1, v2 , v3 , PROFINET
Redundancy		PROFINET MRP , PROFINET system redundancy S2
Management Information Base (MIB)		PROFINET conformance class B
Diagnostics function		10BASE-T1L physical layer , port , Packet statistics , LLDP , PROFIBUS PA
Cybersecurity		
Ambient conditions		
Ambient temperature		-40 ... 70 °C (-40 ... 158 °F) horizontally mounted no SFP installed -40 ... 65 °C (-40 ... 149 °F) horizontally mounted SFP installed
Storage temperature		-40 ... 85 °C (-40 ... 185 °F)
Relative humidity		≤ 95 % non-condensing
Shock resistance		15 g 11 ms
Vibration resistance		1 g 10 ... 150 Hz
Pollution degree		max. 2, according to IEC 60664
Corrosion resistance		acc. to ISA-S71.04-1985, severity level G3
Mechanical specifications		
Housing material		stainless steel 1.4301 , Polycarbonate
Degree of protection		IP20
Mass		2100 g
Dimensions		
Height		158 mm
Width		119 mm
Depth		136.5 mm
Mounting		DIN rail mounting , wall mounting
Data for application in connection with hazardous areas		
EU-type examination certificate		TÜV 20 ATEX 8571 X
Marking		Ⓜ II 3 G Ex ic ec nC [ic] IIC T4 Gc Ⓜ II (3) D [Ex ic Dc] IIIC
Supply		
Maximum safe voltage	U _m	60 V
Interface 1		2-WISE power source, FISCO power supply
Voltage U _o		17.5 V
Current I _o		105 mA
Interface 2		
Maximum safe voltage U _m		60 V
Interface 3		
Maximum safe voltage U _m		60 V
Directive conformity		
Directive 2014/34/EU		EN 60079-0:2018 , EN 60079-11:2012 , EN 60079-7:2015+A1:2018 , EN 60079-15:2019 , IEC TS 60079-47:2021
International approvals		
IECEx approval		IECEx TUR 20.0105X
Approved for		Ex ic ec nC [ic] IIC T4 Gc [Ex ic Dc] IIIC
Certificates and approvals		
Patents		This product may be covered by the following patent: US 9,762,409
General information		

Assembly



Mounting

Wall Mounting Option
For wall mounting the APL rail field switch use the accessory ACC-ARS-WM. See manual for details and dimensions.

Type Code

ARS1	(1)	B	2	-	IC	(2)	-	(3)
ARS1	Device							
ARS1	Ethernet-APL Rail Field Switch							
(1)	PROFIBUS PA Proxy							
1	With proxy							
2	Without proxy							
B	Power Supply							
B	Separately powered 20 V ... 60 V							
2	Uplink Ports							
2	2 ports each for RJ45 and SFP slots							
IC	Intrinsic Safety at Spurs							
IC	Ex ic IIC							
(2)	Spur Port Count							
08	Spur ports							
16	Spur ports							
24	Spur ports							
(3)	Pluggable Terminal Types							
1	Screw terminals							
2	Spring terminals							



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ARS11-B2-IC08-1

- Managed Ethernet-APL field switch for process industries
- Powered spur ports intrinsically safe Ex ic according to 2-WISE and FISCO
- PROFINET MRP, S2 redundancy and dynamic reconfiguration
- 2 ports each for 1000BASE-T and SFP transceivers
- Redundant power input 20 VDC ... 60 VDC
- Installation in Zone 2
- Physical layer diagnostics at the spur
- Configuration and diagnosis with FDI, web interface, PROFINET device functions and SNMP
- Support of network security
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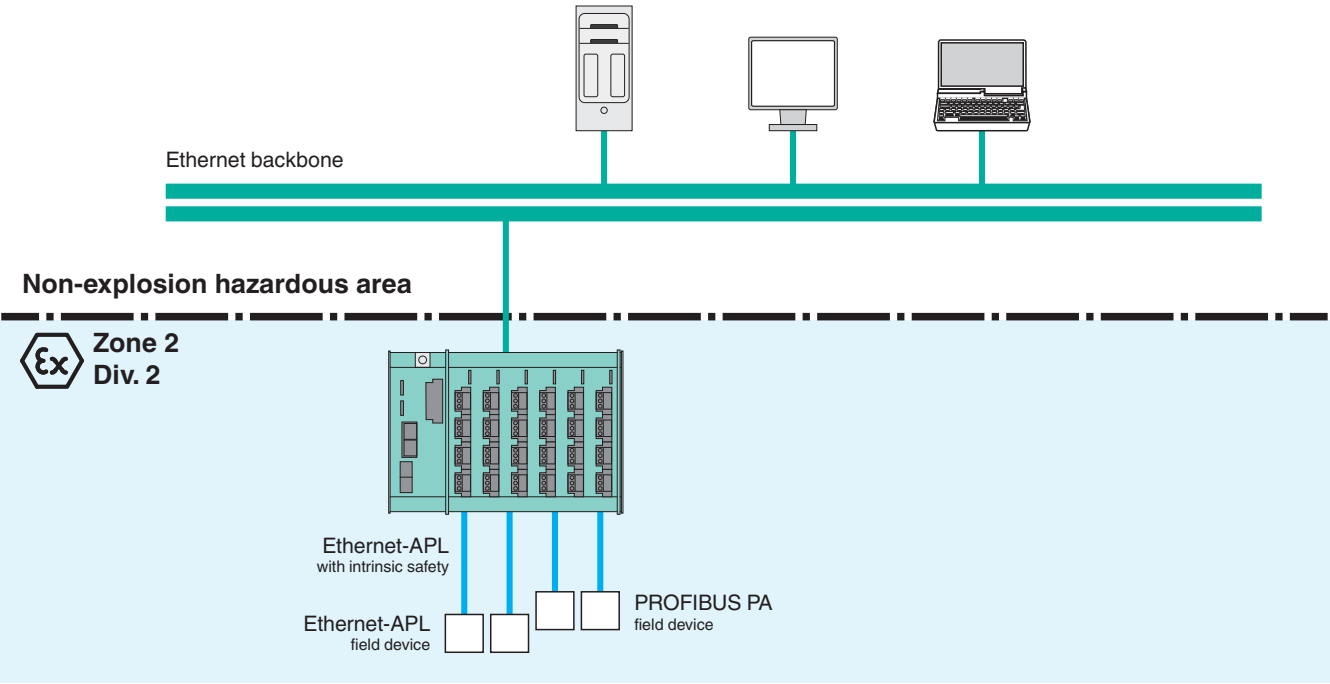
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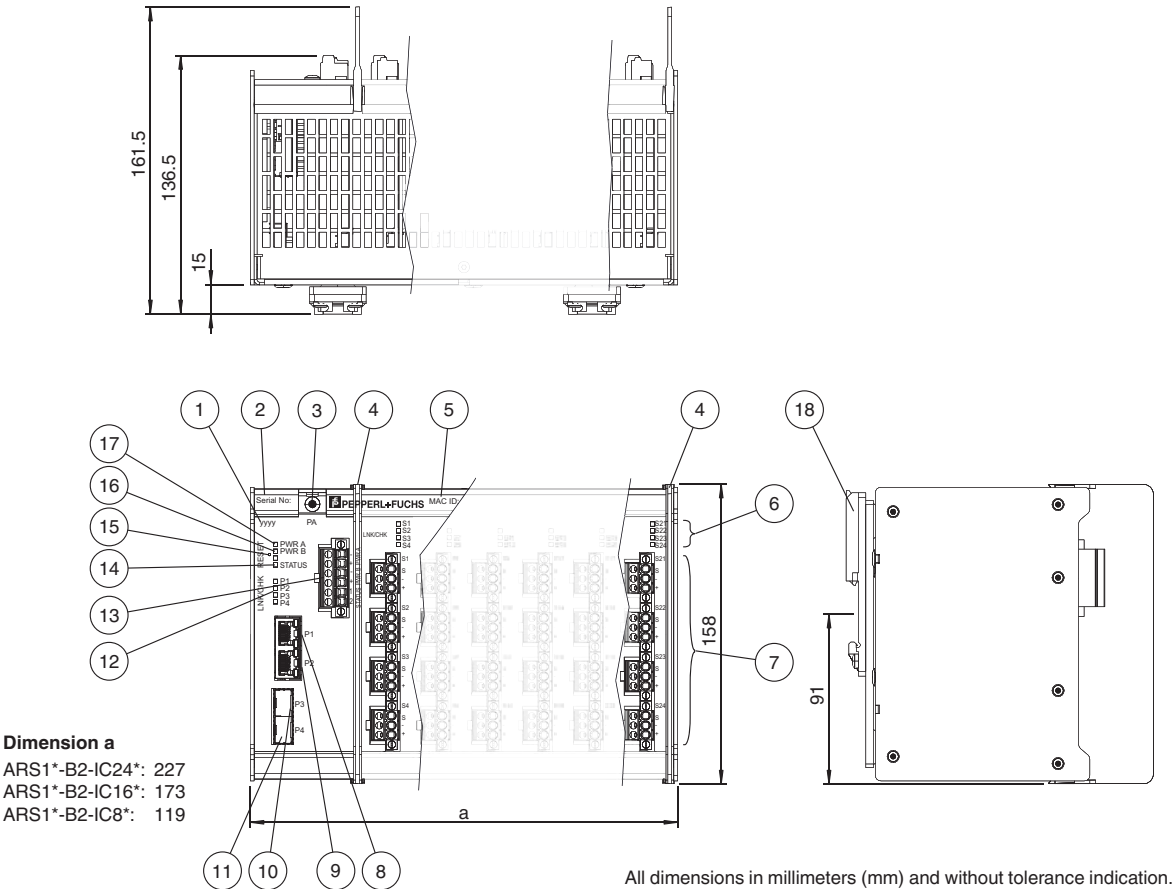
The APL field switch implements enhanced network security and supports SNMPv3, the locking of unused ports, and the HTTPS protocol.

Function Principle



Dimensions

DIN Rail Mounting



- | | |
|---|---|
| 1 Year of production | 11 Ethernet SFP port P4 |
| 2 Serial number | 12 LED LNK/CHK P1 ... P4, communication status LED P1 ... P4 |
| 3 PA, connection to equipotential bonding | 13 Connector for auxiliary power and status indication output |
| 4 Slot for separation wall | 14 LED STATUS, status rail field switch |
| 5 MAC ID | 15 Reset button |
| 6 LED S1 ... Sn, status spur ports S1 ... Sn | 16 LED PWR B, status power input B |
| 7 Connectors for intrinsically safe spurs S1 ... Sn | 17 LED PWR A, status power input A |
| 8 Ethernet port P1 | 18 DIN rail mounting brackets |
| 9 Ethernet port P2 | |
| 10 Ethernet SFP port P3 | |

Technical Data

General specifications		
Design / Mounting		Cabinet installation
Installation in hazardous area		Zone 2
Fieldbus support		PROFIBUS PA
Supply		
Rated voltage	U _r	20 ... 60 V
Rated current	I _r	0.37 ... 1.1 A
Power dissipation		13.2 W

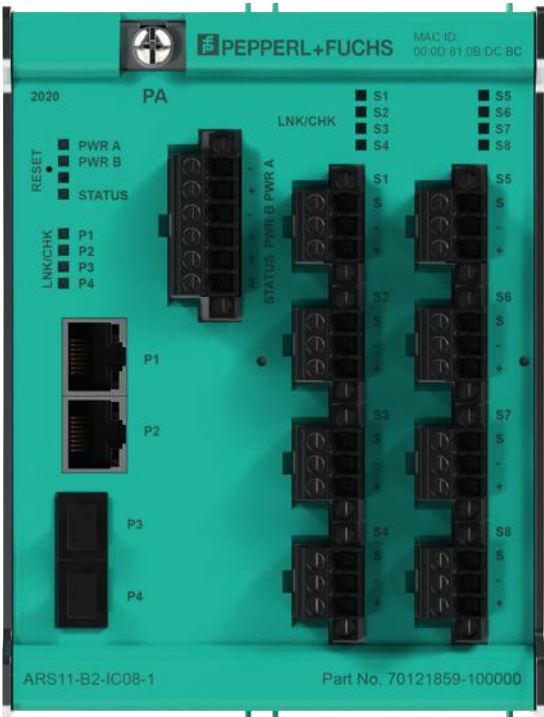
Technical Data

Voltage difference dual supply input		+/- 10 %
Power consumption		max. 22 W
Redundancy		dual supply input
Indicators/operating means		
LED PWR A/B		green: power on
LED LNK/CHK		Off: no communication link active , Green: communication link active , Green flashing: communication link activity , Yellow flashing: communication with PROFIBUS PA field device , Red flashing: check function
LED STATUS		Off: Good , Blue: Maintenance required , Red: Failure
Fault signal		VFC alarm 100 mA, 32 V DC, normally closed
Button		Device reset
Interface 1		
Interface type		Ethernet-APL : 1 Vpp option spur connection , PROFIBUS PA
Port classification		S P C C
Number of ports		8
Port identification		S 1 ... S 8
Power option		powered
Transfer rate		10 MBit/s full duplex
Rated voltage		11.61 V
Rated current		95 mA
Rated power		1.11 W
Cable shield grounding option		capacitive grounded
Connection type		screw terminals , pluggable
Conductor cross section solid wire		2.08 ... 0.326 mm ² , 14 ... 18 AWG
Conductor cross section flexible wire		2.08 ... 0.326 mm ² , 14 ... 18 AWG
Interface 2		
Interface type		1000BASE-T
Number of ports		2
Port identification		P 1 ... P 2
Transfer rate		10/100/1000 Mbps
Connection type		RJ-45 , EIA/TIA 568 B
Interface 3		
Interface type		Slot for SFP transceiver SFP Multi-Source (MSA) compliant
Number of ports		2
Port identification		P 3 ... P 4
Galvanic isolation		
Spurs/Supply		1500 V AC
SFP/Supply		500 V AC
1000BASE-T/Supply		1500 V AC
1000BASE-T/Spurs		1500 V AC
1000BASE-T/1000BASE-T		1500 V AC
Housing/All		620 V AC
Fault signal/All		1500 V AC
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 61326-1:2013
Conformity		
Galvanic isolation		IEC 61010-1
Electromagnetic compatibility		EN 61326 , NE 21
Degree of protection		IEC 60529

Technical Data

Ethernet		IEEE 802.3z , IEEE 802.3u , IEEE 802.3cg
Shock resistance		EN 60068-2-27
Vibration resistance		EN 60068-2-6
Climatic conditions		DIN IEC 721
Software		
Industrial protocols		PROFINET , CC-B (PA) , dynamic reconfiguration , Netload Class III , pruning
Management		Web user interface , SNMP v1, v2 , v3 , PROFINET
Redundancy		PROFINET MRP , PROFINET system redundancy S2
Management Information Base (MIB)		PROFINET conformance class B
Diagnostics function		10BASE-T1L physical layer , port , Packet statistics , LLDP , PROFIBUS PA
Cybersecurity		
Ambient conditions		
Ambient temperature		-40 ... 70 °C (-40 ... 158 °F) horizontally mounted no SFP installed -40 ... 65 °C (-40 ... 149 °F) horizontally mounted SFP installed
Storage temperature		-40 ... 85 °C (-40 ... 185 °F)
Relative humidity		≤ 95 % non-condensing
Shock resistance		15 g 11 ms
Vibration resistance		1 g 10 ... 150 Hz
Pollution degree		max. 2, according to IEC 60664
Corrosion resistance		acc. to ISA-S71.04-1985, severity level G3
Mechanical specifications		
Housing material		stainless steel 1.4301 , Polycarbonate
Degree of protection		IP20
Mass		2100 g
Dimensions		
Height		158 mm
Width		119 mm
Depth		136.5 mm
Mounting		DIN rail mounting , wall mounting
Data for application in connection with hazardous areas		
EU-type examination certificate		TÜV 20 ATEX 8571 X
Marking		Ⓜ II 3 G Ex ic ec nC [ic] IIC T4 Gc Ⓜ II (3) D [Ex ic Dc] IIIC
Supply		
Maximum safe voltage	U _m	60 V
Interface 1		2-WISE power source, FISCO power supply
Voltage U _o		17.5 V
Current I _o		105 mA
Interface 2		
Maximum safe voltage U _m		60 V
Interface 3		
Maximum safe voltage U _m		60 V
Directive conformity		
Directive 2014/34/EU		EN 60079-0:2018 , EN 60079-11:2012 , EN 60079-7:2015+A1:2018 , EN 60079-15:2019 , IEC TS 60079-47:2021
International approvals		
IECEx approval		IECEx TUR 20.0105X
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(1)	PROFIBUS PA Proxy							
1	With proxy							
2	Without proxy							
B	Power Supply							
B	Separately powered 20 V ... 60 V							
2	Uplink Ports							
2	2 ports each for RJ45 and SFP slots							
IC	Intrinsic Safety at Spurs							
IC	Ex ic IIC							
(2)	Spur Port Count							
08	Spur ports							
16	Spur ports							
24	Spur ports							
(3)	Pluggable Terminal Types							
1	Screw terminals							
2	Spring terminals							



Ethernet-APL Rail Field Switch

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ARS11-B2-IC16-1

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- Powered spur ports intrinsically safe Ex ic according to 2-WISE and FISCO
- PROFINET MRP, S2 redundancy and dynamic reconfiguration
- 2 ports each for 1000BASE-T and SFP transceivers
- Redundant power input 20 VDC ... 60 VDC
- Installation in Zone 2
- Physical layer diagnostics at the spur
- Configuration and diagnosis with FDI, web interface, PROFINET device functions and SNMP
- Support of network security
- Support of Ethernet-APL and PROFIBUS PA instruments

Ethernet-APL rail field switch with 16 intrinsically safe Ex ic spur ports and screw terminals with proxy support selectable for PROFIBUS PA field devices



ethernet-apl™
advanced physical layer



Function

The Ethernet-APL rail field switch is a ruggedized, managed field switch offering connectivity for Ethernet-APL devices to Ethernet networks via any protocol. The connections, i. e., "spur" ports, provide intrinsically safe (Ex ic) power and communication to instruments located in Zone 2. APL field switches can be installed in Zone 2.

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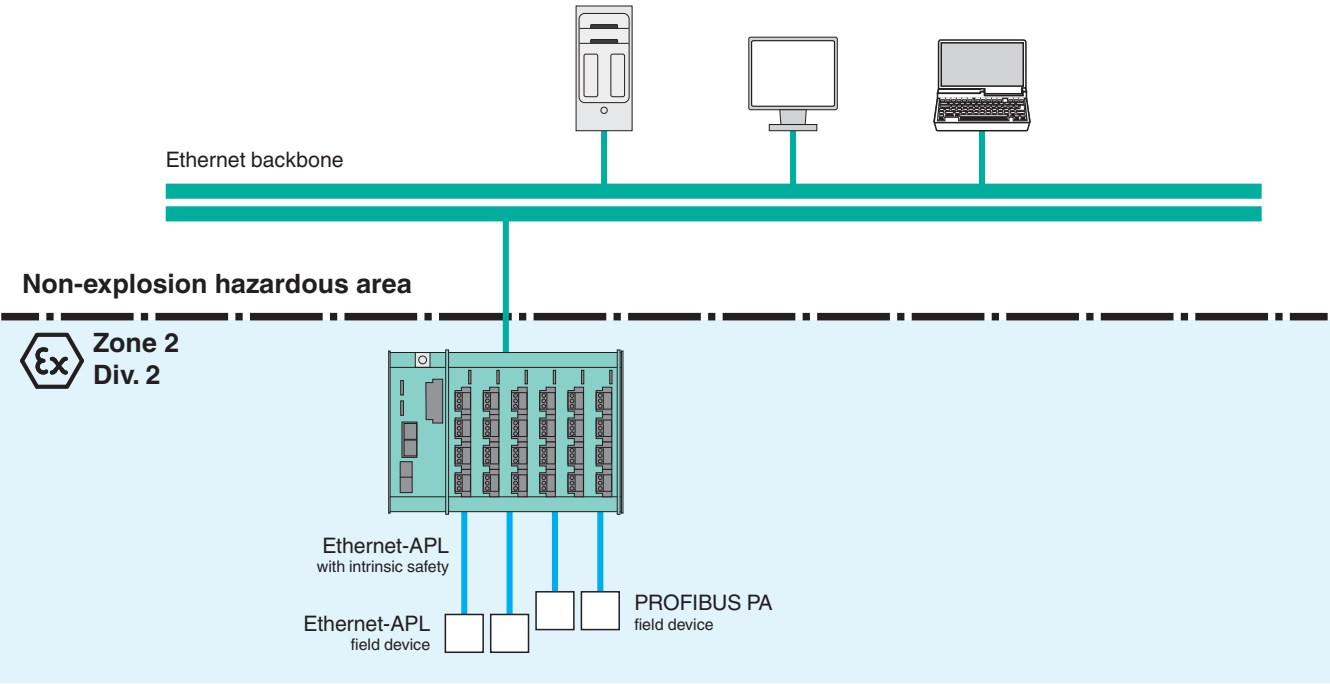
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PROFINET dynamic reconfiguration permits re-configuration of the APL field switch during runtime without interrupting the data exchange.

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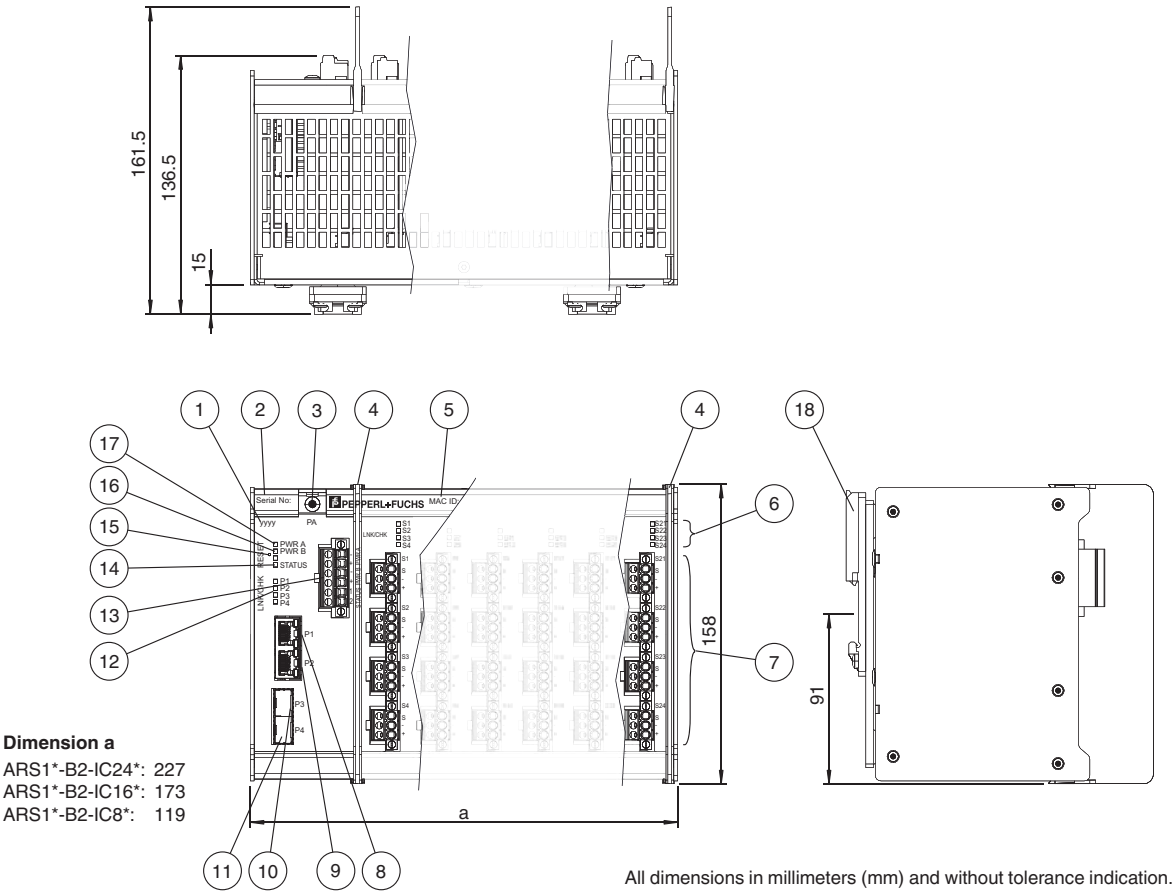
The APL field switch implements enhanced network security and supports SNMPv3, the locking of unused ports, and the HTTPS protocol.

Function Principle



Dimensions

DIN Rail Mounting



- 1

Year of production
- 2

Serial number
- 3

PA, connection to equipotential bonding
- 4

Slot for separation wall
- 5

MAC ID
- 6

LED S1 ... Sn, status spur ports S1 ... Sn
- 7

Connectors for intrinsically safe spurs S1 ... Sn
- 8

Ethernet port P1
- 9

Ethernet port P2
- 10

Ethernet SFP port P3
- 11

Ethernet SFP port P4
- 12

LED LNK/CHK P1 ... P4, communication status
LED P1 ... P4
- 13

Connector for auxiliary power and status
indication output
- 14

LED STATUS, status rail field switch
- 15

Reset button
- 16

LED PWR B, status power input B
- 17

LED PWR A, status power input A
- 18

DIN rail mounting brackets

Technical Data

General specifications			
Design / Mounting		Cabinet installation	
Installation in hazardous area		Zone 2	
Fieldbus support		PROFIBUS PA	
Supply			
Rated voltage	U _r	20 ... 60 V	
Rated current	I _r	0.6 ... 1.8 A	
Power dissipation		18.3 W	

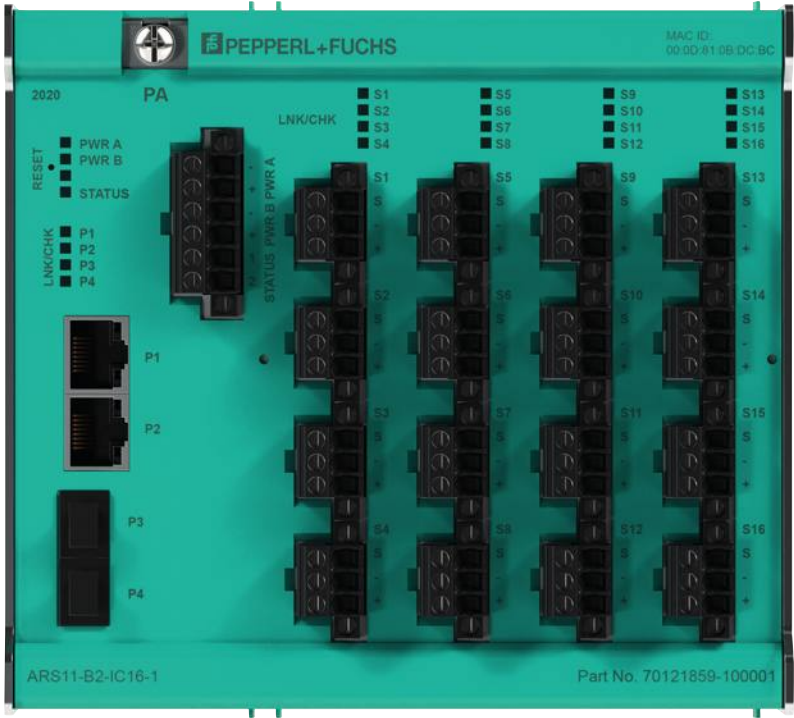
Technical Data

Voltage difference dual supply input		+/- 10 %
Power consumption		max. 36 W
Redundancy		dual supply input
Indicators/operating means		
LED PWR A/B		green: power on
LED LNK/CHK		Off: no communication link active , Green: communication link active , Green flashing: communication link activity , Yellow flashing: communication with PROFIBUS PA field device , Red flashing: check function
LED STATUS		Off: Good , Blue: Maintenance required , Red: Failure
Fault signal		VFC alarm 100 mA, 32 V DC, normally closed
Button		Device reset
Interface 1		
Interface type		Ethernet-APL : 1 Vpp option spur connection , PROFIBUS PA
Port classification		S P C C
Number of ports		16
Port identification		S 1 ... S 16
Power option		powered
Transfer rate		10 MBit/s full duplex
Rated voltage		11.61 V
Rated current		95 mA
Rated power		1.11 W
Cable shield grounding option		capacitive grounded
Connection type		screw terminals , pluggable
Conductor cross section solid wire		2.08 ... 0.326 mm ² , 14 ... 18 AWG
Conductor cross section flexible wire		2.08 ... 0.326 mm ² , 14 ... 18 AWG
Interface 2		
Interface type		1000BASE-T
Number of ports		2
Port identification		P 1 ... P 2
Transfer rate		10/100/1000 Mbps
Connection type		RJ-45 , EIA/TIA 568 B
Interface 3		
Interface type		Slot for SFP transceiver SFP Multi-Source (MSA) compliant
Number of ports		2
Port identification		P 3 ... P 4
Galvanic isolation		
Spurs/Supply		1500 V AC
SFP/Supply		500 V AC
1000BASE-T/Supply		1500 V AC
1000BASE-T/Spurs		1500 V AC
1000BASE-T/1000BASE-T		1500 V AC
Housing/All		620 V AC
Fault signal/All		1500 V AC
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 61326-1:2013
Conformity		
Galvanic isolation		IEC 61010-1
Electromagnetic compatibility		EN 61326 , NE 21
Degree of protection		IEC 60529

Technical Data

Ethernet		IEEE 802.3z , IEEE 802.3u , IEEE 802.3cg
Shock resistance		EN 60068-2-27
Vibration resistance		EN 60068-2-6
Climatic conditions		DIN IEC 721
Software		
Industrial protocols		PROFINET , CC-B (PA) , dynamic reconfiguration , Netload Class III , pruning
Management		Web user interface , SNMP v1, v2 , v3 , PROFINET
Redundancy		PROFINET MRP , PROFINET system redundancy S2
Management Information Base (MIB)		PROFINET conformance class B
Diagnostics function		10BASE-T1L physical layer , port , Packet statistics , LLDP , PROFIBUS PA
Cybersecurity		
Ambient conditions		
Ambient temperature		-40 ... 70 °C (-40 ... 158 °F) horizontally mounted no SFP installed -40 ... 65 °C (-40 ... 149 °F) horizontally mounted SFP installed
Storage temperature		-40 ... 85 °C (-40 ... 185 °F)
Relative humidity		≤ 95 % non-condensing
Shock resistance		15 g 11 ms
Vibration resistance		1 g 10 ... 150 Hz
Pollution degree		max. 2, according to IEC 60664
Corrosion resistance		acc. to ISA-S71.04-1985, severity level G3
Mechanical specifications		
Housing material		stainless steel 1.4301 , Polycarbonate
Degree of protection		IP20
Mass		2920 g
Dimensions		
Height		158 mm
Width		173 mm
Depth		136.5 mm
Mounting		DIN rail mounting , wall mounting
Data for application in connection with hazardous areas		
EU-type examination certificate		TÜV 20 ATEX 8571 X
Marking		Ⓜ II 3 G Ex ic ec nC [ic] IIC T4 Gc Ⓜ II (3) D [Ex ic Dc] IIIC
Supply		
Maximum safe voltage	U _m	60 V
Interface 1		2-WISE power source, FISCO power supply
Voltage U _o		17.5 V
Current I _o		105 mA
Interface 2		
Maximum safe voltage U _m		60 V
Interface 3		
Maximum safe voltage U _m		60 V
Directive conformity		
Directive 2014/34/EU		EN 60079-0:2018 , EN 60079-11:2012 , EN 60079-7:2015+A1:2018 , EN 60079-15:2019 , IEC TS 60079-47:2021
International approvals		
IECEx approval		IECEx TUR 20.0105X
Approved for		Ex ic ec nC [ic] IIC T4 Gc [Ex ic Dc] IIIC
Certificates and approvals		
Patents		This product may be covered by the following patent: US 9,762,409
General information		

Assembly



Mounting

Wall Mounting Option
For wall mounting the APL rail field switch use the accessory ACC-ARS-WM. See manual for details and dimensions.

Type Code

ARS1	(1)	B	2	-	IC	(2)	-	(3)
ARS1	Device							
ARS1	Ethernet-APL Rail Field Switch							
(1)	PROFIBUS PA Proxy							
1	With proxy							
2	Without proxy							
B	Power Supply							
B	Separately powered 20 V ... 60 V							
2	Uplink Ports							
2	2 ports each for RJ45 and SFP slots							
IC	Intrinsic Safety at Spurs							
IC	Ex ic IIC							
(2)	Spur Port Count							
08	Spur ports							
16	Spur ports							
24	Spur ports							
(3)	Pluggable Terminal Types							
1	Screw terminals							
2	Spring terminals							



Ethernet-APL Rail Field Switch

FieldConnex®

ARS11-B2-IC24-1

- Managed Ethernet-APL field switch for process industries
- Powered spur ports intrinsically safe Ex ic according to 2-WISE and FISCO
- PROFINET MRP, S2 redundancy and dynamic reconfiguration
- 2 ports each for 1000BASE-T and SFP transceivers
- Redundant power input 20 VDC ... 60 VDC
- Installation in Zone 2
- Physical layer diagnostics at the spur
- Configuration and diagnosis with FDI, web interface, PROFINET device functions and SNMP
- Support of network security
- Support of Ethernet-APL and PROFIBUS PA instruments

Ethernet-APL rail field switch with 24 intrinsically safe Ex ic spur ports and screw terminals with proxy support selectable for PROFIBUS PA field devices



ethernet-apl™
advanced physical layer



Function

The Ethernet-APL rail field switch is a ruggedized, managed field switch offering connectivity for Ethernet-APL devices to Ethernet networks via any protocol. The connections, i. e., "spur" ports, provide intrinsically safe (Ex ic) power and communication to instruments located in Zone 2. APL field switches can be installed in Zone 2.

The APL field switch features 2 Gigabit Ethernet ports and 2 SFP ports. The SFP ports provide connections for a choice of optional SFP transceivers to be used in explosion-hazardous areas and different distances.

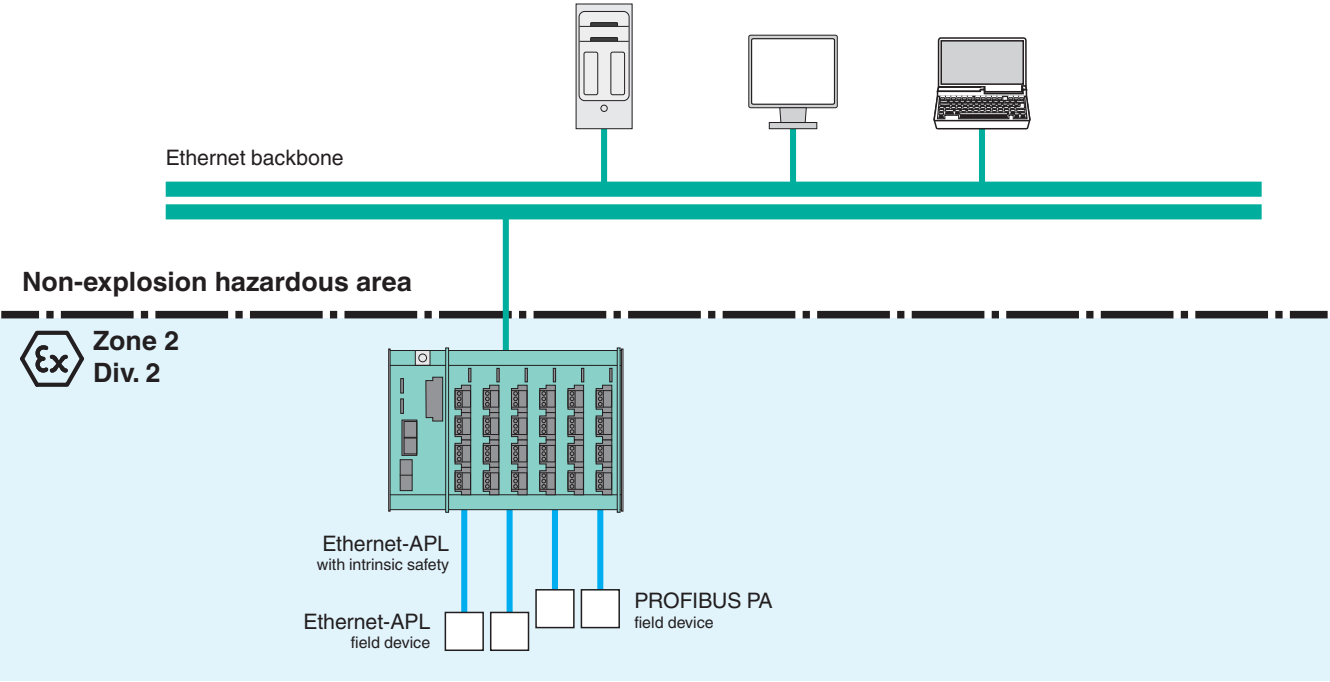
For PROFINET, the APL field switch supports Class B networks. For high-availability installations, the APL field switch provides redundancy mechanisms such as MRP ring redundancy and S2 system redundancy.

PROFINET dynamic reconfiguration permits re-configuration of the APL field switch during runtime without interrupting the data exchange.

Easy configuration and diagnostics of the APL field switch are accessible via FDI and web-based management. PROFINET device functions and SNMP assure fast start-up and enable the use of predictive maintenance. Comprehensive network and physical layer diagnostics enable proactive management strategies to reduce risk of failure and downtime.

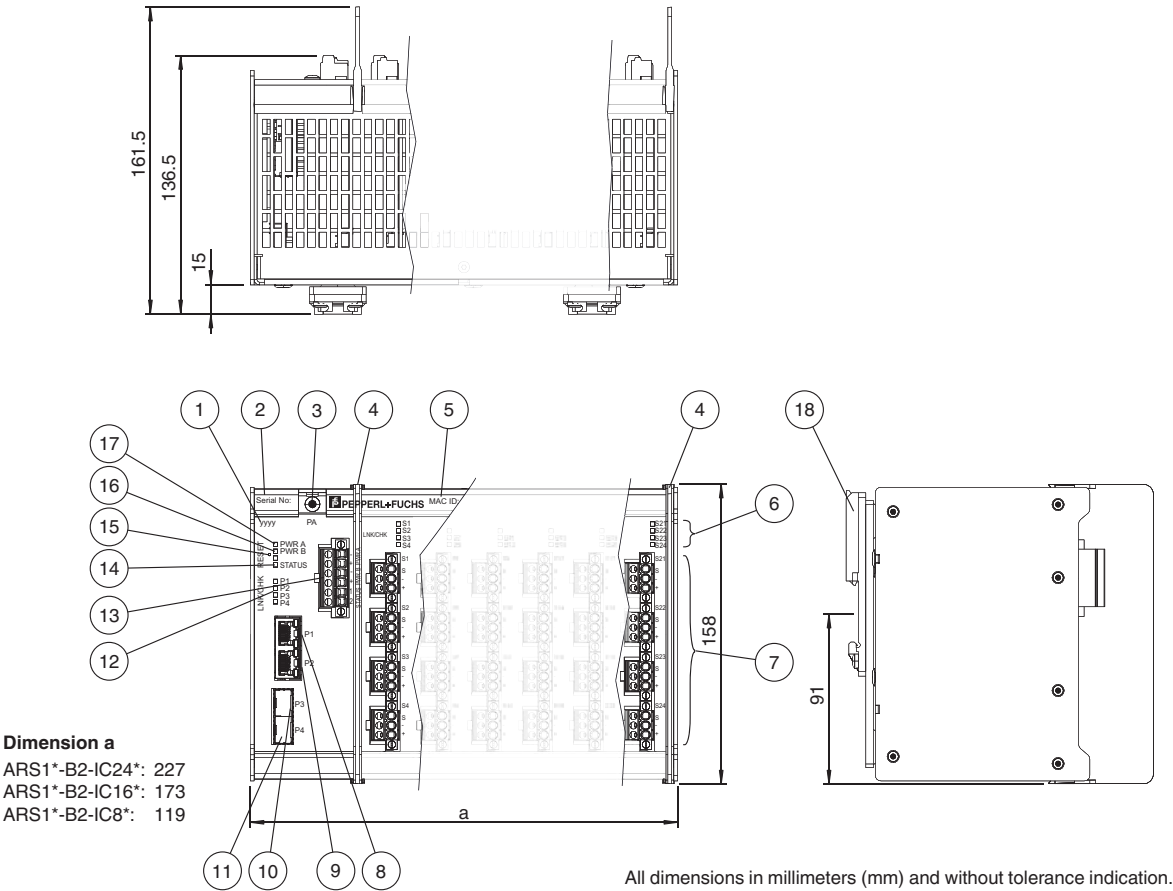
The APL field switch implements enhanced network security and supports SNMPv3, the locking of unused ports, and the HTTPS protocol.

Function Principle



Dimensions

DIN Rail Mounting



- 1

Year of production
- 2

Serial number
- 3

PA, connection to equipotential bonding
- 4

Slot for separation wall
- 5

MAC ID
- 6

LED S1 ... Sn, status spur ports S1 ... Sn
- 7

Connectors for intrinsically safe spurs S1 ... Sn
- 8

Ethernet port P1
- 9

Ethernet port P2
- 10

Ethernet SFP port P3
- 11

Ethernet SFP port P4
- 12

LED LNK/CHK P1 ... P4, communication status
LED P1 ... P4
- 13

Connector for auxiliary power and status
indication output
- 14

LED STATUS, status rail field switch
- 15

Reset button
- 16

LED PWR B, status power input B
- 17

LED PWR A, status power input A
- 18

DIN rail mounting brackets

Technical Data

General specifications		
Design / Mounting		Cabinet installation
Installation in hazardous area		Zone 2
Fieldbus support		PROFIBUS PA
Supply		
Rated voltage	U _r	20 ... 60 V
Rated current	I _r	0.85 ... 2.55 A
Power dissipation		26.7 W

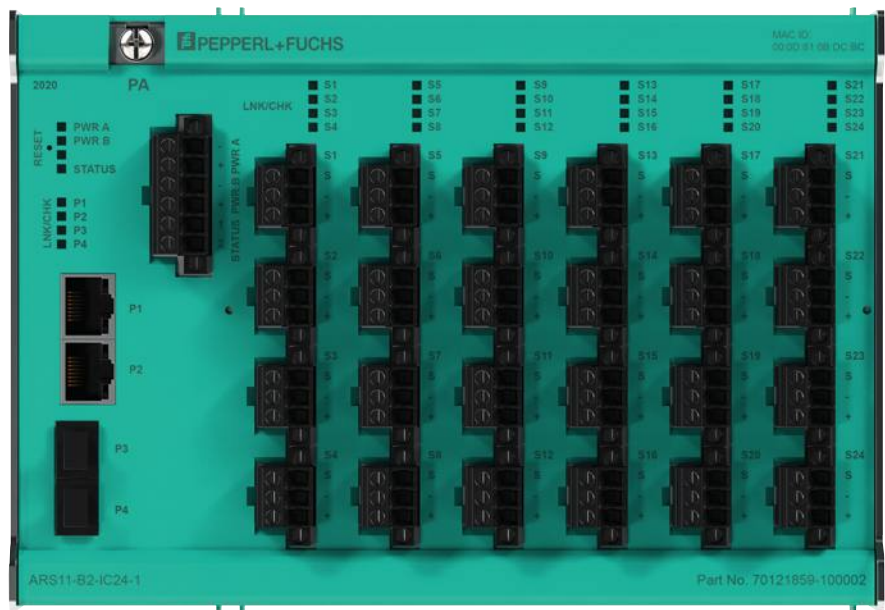
Technical Data

Voltage difference dual supply input		+/- 10 %
Power consumption		max. 51 W
Redundancy		dual supply input
Indicators/operating means		
LED PWR A/B		green: power on
LED LNK/CHK		Off: no communication link active , Green: communication link active , Green flashing: communication link activity , Yellow flashing: communication with PROFIBUS PA field device , Red flashing: check function
LED STATUS		Off: Good , Blue: Maintenance required , Red: Failure
Fault signal		VFC alarm 100 mA, 32 V DC, normally closed
Button		Device reset
Interface 1		
Interface type		Ethernet-APL : 1 Vpp option spur connection , PROFIBUS PA
Port classification		S P C C
Number of ports		24
Port identification		S 1 ... S 24
Power option		powered
Transfer rate		10 MBit/s full duplex
Rated voltage		11.61 V
Rated current		95 mA
Rated power		1.11 W
Cable shield grounding option		capacitive grounded
Connection type		screw terminals , pluggable
Conductor cross section solid wire		2.08 ... 0.326 mm ² , 14 ... 18 AWG
Conductor cross section flexible wire		2.08 ... 0.326 mm ² , 14 ... 18 AWG
Interface 2		
Interface type		1000BASE-T
Number of ports		2
Port identification		P 1 ... P 2
Transfer rate		10/100/1000 Mbps
Connection type		RJ-45 , EIA/TIA 568 B
Interface 3		
Interface type		Slot for SFP transceiver SFP Multi-Source (MSA) compliant
Number of ports		2
Port identification		P 3 ... P 4
Galvanic isolation		
Spurs/Supply		1500 V AC
SFP/Supply		500 V AC
1000BASE-T/Supply		1500 V AC
1000BASE-T/Spurs		1500 V AC
1000BASE-T/1000BASE-T		1500 V AC
Housing/All		620 V AC
Fault signal/All		1500 V AC
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 61326-1:2013
Conformity		
Galvanic isolation		IEC 61010-1
Electromagnetic compatibility		EN 61326 , NE 21
Degree of protection		IEC 60529

Technical Data

Ethernet		IEEE 802.3z , IEEE 802.3u , IEEE 802.3cg
Shock resistance		EN 60068-2-27
Vibration resistance		EN 60068-2-6
Climatic conditions		DIN IEC 721
Software		
Industrial protocols		PROFINET , CC-B (PA) , dynamic reconfiguration , Netload Class III , pruning
Management		Web user interface , SNMP v1, v2 , v3 , PROFINET
Redundancy		PROFINET MRP , PROFINET system redundancy S2
Management Information Base (MIB)		PROFINET conformance class B
Diagnostics function		10BASE-T1L physical layer , port , Packet statistics , LLDP , PROFIBUS PA
Cybersecurity		
Ambient conditions		
Ambient temperature		-40 ... 70 °C (-40 ... 158 °F) horizontally mounted no SFP installed -40 ... 65 °C (-40 ... 149 °F) horizontally mounted SFP installed
Storage temperature		-40 ... 85 °C (-40 ... 185 °F)
Relative humidity		≤ 95 % non-condensing
Shock resistance		15 g 11 ms
Vibration resistance		1 g 10 ... 150 Hz
Pollution degree		max. 2, according to IEC 60664
Corrosion resistance		acc. to ISA-S71.04-1985, severity level G3
Mechanical specifications		
Housing material		stainless steel 1.4301 , Polycarbonate
Degree of protection		IP20
Mass		3530 g
Dimensions		
Height		158 mm
Width		227 mm
Depth		136.5 mm
Mounting		DIN rail mounting , wall mounting
Data for application in connection with hazardous areas		
EU-type examination certificate		TÜV 20 ATEX 8571 X
Marking		Ⓜ II 3 G Ex ic ec nC [ic] IIC T4 Gc Ⓜ II (3) D [Ex ic Dc] IIIC
Supply		
Maximum safe voltage	U _m	60 V
Interface 1		2-WISE power source, FISCO power supply
Voltage U _o		17.5 V
Current I _o		105 mA
Interface 2		
Maximum safe voltage U _m		60 V
Interface 3		
Maximum safe voltage U _m		60 V
Directive conformity		
Directive 2014/34/EU		EN 60079-0:2018 , EN 60079-11:2012 , EN 60079-7:2015+A1:2018 , EN 60079-15:2019 , IEC TS 60079-47:2021
International approvals		
IECEx approval		IECEx TUR 20.0105X
Approved for		Ex ic ec nC [ic] IIC T4 Gc [Ex ic Dc] IIIC
Certificates and approvals		
Patents		This product may be covered by the following patent: US 9,762,409
General information		

Assembly



Mounting

Wall Mounting Option
For wall mounting the APL rail field switch use the accessory ACC-ARS-WM. See manual for details and dimensions.

Type Code

ARS1	(1)	B	2	-	IC	(2)	-	(3)
ARS1	Device							
ARS1	Ethernet-APL Rail Field Switch							
(1)	PROFIBUS PA Proxy							
1	With proxy							
2	Without proxy							
B	Power Supply							
B	Separately powered 20 V ... 60 V							
2	Uplink Ports							
2	2 ports each for RJ45 and SFP slots							
IC	Intrinsic Safety at Spurs							
IC	Ex ic IIC							
(2)	Spur Port Count							
08	Spur ports							
16	Spur ports							
24	Spur ports							
(3)	Pluggable Terminal Types							
1	Screw terminals							
2	Spring terminals							



Ethernet-APL Rail Field Switch

FieldConnex®

ARS12-B2-IC16-1

- Managed Ethernet-APL field switch for process industries
- Powered spur ports intrinsically safe Ex ic according to 2-WISE and FISCO
- PROFINET MRP, S2 redundancy and dynamic reconfiguration
- 2 ports each for 1000BASE-T and SFP transceivers
- Redundant power input 20 VDC ... 60 VDC
- Installation in Zone 2
- Physical layer diagnostics at the spur
- Configuration and diagnosis with FDI, web interface, PROFINET device functions and SNMP
- Support of network security

Ethernet-APL rail field switch with 16 intrinsically safe Ex ic spur ports and screw terminals



ethernet-apl™
advanced physical layer



Function

The Ethernet-APL rail field switch is a ruggedized, managed field switch offering connectivity for Ethernet-APL devices to Ethernet networks via any protocol. The connections, i. e., "spur" ports, provide intrinsically safe (Ex ic) power and communication to instruments located in Zone 2. APL field switches can be installed in Zone 2.

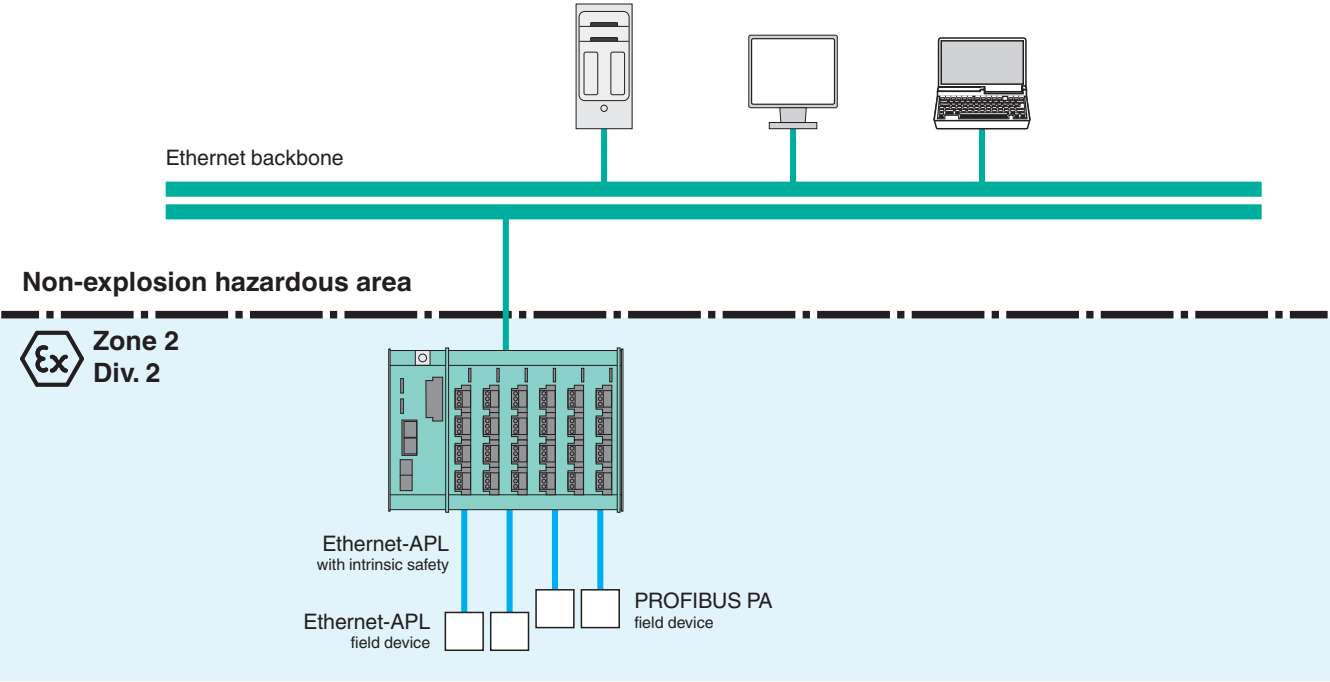
The APL field switch features 2 Gigabit Ethernet ports and 2 SFP ports. The SFP ports provide connections for a choice of optional SFP transceivers to be used in explosion-hazardous areas and different distances.

For PROFINET, the APL field switch supports Class B networks. For high-availability installations, the APL field switch provides redundancy mechanisms such as MRP ring redundancy and S2 system redundancy.

Easy configuration and diagnostics of the APL field switch are accessible via FDI and web-based management. PROFINET device functions and SNMP assure fast start-up and enable the use of predictive maintenance. Comprehensive network and physical layer diagnostics enable proactive management strategies to reduce risk of failure and downtime.

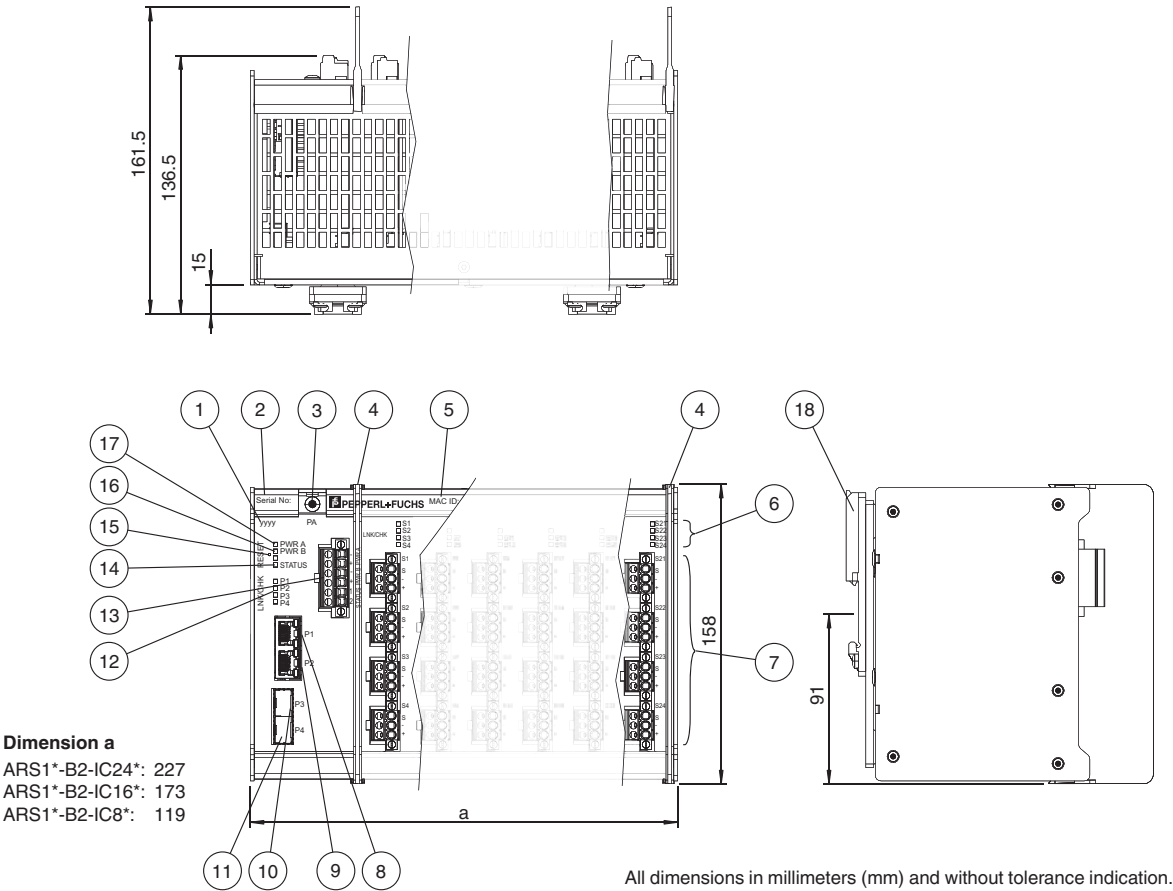
The APL field switch implements enhanced network security and supports SNMPv3, the locking of unused ports, and the HTTPS protocol.

Function Principle



Dimensions

DIN Rail Mounting



- 1

Year of production
- 2

Serial number
- 3

PA, connection to equipotential bonding
- 4

Slot for separation wall
- 5

MAC ID
- 6

LED S1 ... Sn, status spur ports S1 ... Sn
- 7

Connectors for intrinsically safe spurs S1 ... Sn
- 8

Ethernet port P1
- 9

Ethernet port P2
- 10

Ethernet SFP port P3
- 11

Ethernet SFP port P4
- 12

LED LNK/CHK P1 ... P4, communication status
LED P1 ... P4
- 13

Connector for auxiliary power and status
indication output
- 14

LED STATUS, status rail field switch
- 15

Reset button
- 16

LED PWR B, status power input B
- 17

LED PWR A, status power input A
- 18

DIN rail mounting brackets

Technical Data

General specifications			
Design / Mounting		Cabinet installation	
Installation in hazardous area		Zone 2	
Supply			
Rated voltage	U _r	20 ... 60 V	
Rated current	I _r	0.6 ... 1.8 A	
Power dissipation		18.3 W	
Voltage difference dual supply input		+/- 10 %	

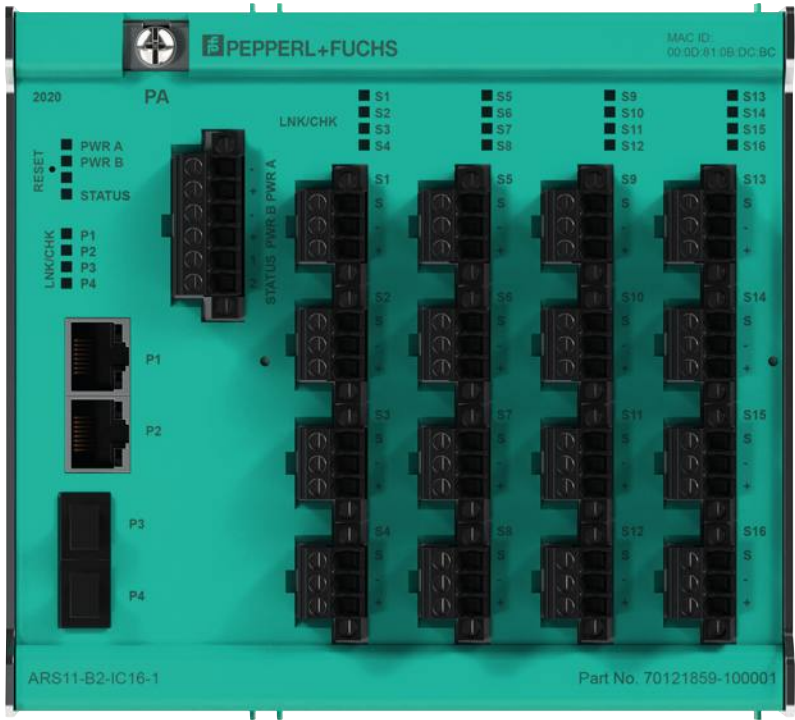
Technical Data

Power consumption		max. 36 W
Redundancy		dual supply input
Indicators/operating means		
LED PWR A/B		green: power on
LED LNK/CHK		Off: no communication link active , Green: communication link active , Green flashing: communication link activity , Red flashing: check function
LED STATUS		Off: Good , Blue: Maintenance required , Red: Failure
Fault signal		VFC alarm 100 mA, 32 V DC, normally closed
Button		Device reset
Interface 1		
Interface type		Ethernet-APL : 1 Vpp option spur connection
Port classification		S P C C
Number of ports		16
Port identification		S 1 ... S 16
Power option		powered
Transfer rate		10 MBit/s full duplex
Rated voltage		11.61 V
Rated current		95 mA
Rated power		1.11 W
Cable shield grounding option		capacitive grounded
Connection type		screw terminals , pluggable
Conductor cross section solid wire		2.08 ... 0.326 mm ² , 14 ... 18 AWG
Conductor cross section flexible wire		2.08 ... 0.326 mm ² , 14 ... 18 AWG
Interface 2		
Interface type		1000BASE-T
Number of ports		2
Port identification		P 1 ... P 2
Transfer rate		10/100/1000 Mbps
Connection type		RJ-45 , EIA/TIA 568 B
Interface 3		
Interface type		Slot for SFP transceiver SFP Multi-Source (MSA) compliant
Number of ports		2
Port identification		P 3 ... P 4
Galvanic isolation		
Spurs/Supply		1500 V AC
SFP/Supply		500 V AC
1000BASE-T/Supply		1500 V AC
1000BASE-T/Spurs		1500 V AC
1000BASE-T/1000BASE-T		1500 V AC
Housing/All		620 V AC
Fault signal/All		1500 V AC
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 61326-1:2013
Conformity		
Galvanic isolation		IEC 61010-1
Electromagnetic compatibility		EN 61326 , NE 21
Degree of protection		IEC 60529
Ethernet		IEEE 802.3z , IEEE 802.3u , IEEE 802.3cg
Shock resistance		EN 60068-2-27

Technical Data

Vibration resistance	EN 60068-2-6
Climatic conditions	DIN IEC 721
Software	
Industrial protocols	PROFINET , CC-B (PA) , dynamic reconfiguration , Netload Class III , pruning
Management	Web user interface , SNMP v1, v2 , v3 , PROFINET
Redundancy	PROFINET MRP , PROFINET system redundancy S2
Management Information Base (MIB)	PROFINET conformance class B
Diagnostics function	10BASE-T1L physical layer , port , Packet statistics , LLDP
Cybersecurity	
Ambient conditions	
Ambient temperature	-40 ... 70 °C (-40 ... 158 °F) horizontally mounted no SFP installed -40 ... 65 °C (-40 ... 149 °F) horizontally mounted SFP installed
Storage temperature	-40 ... 85 °C (-40 ... 185 °F)
Relative humidity	≤ 95 % non-condensing
Shock resistance	15 g 11 ms
Vibration resistance	1 g 10 ... 150 Hz
Pollution degree	max. 2, according to IEC 60664
Corrosion resistance	acc. to ISA-S71.04-1985, severity level G3
Mechanical specifications	
Housing material	stainless steel 1.4301 , Polycarbonate
Degree of protection	IP20
Mass	2920 g
Dimensions	
Height	158 mm
Width	173 mm
Depth	136.5 mm
Mounting	DIN rail mounting , wall mounting
Data for application in connection with hazardous areas	
EU-type examination certificate	TÜV 20 ATEX 8571 X
Marking	Ⓔ II 3 G Ex ic ec nC [ic] IIC T4 Gc Ⓔ II (3) D [Ex ic Dc] IIIC
Supply	
Maximum safe voltage	U _m 60 V
Interface 1	2-WISE power source
Voltage U _o	17.5 V
Current I _o	105 mA
Interface 2	
Maximum safe voltage U _m	60 V
Interface 3	
Maximum safe voltage U _m	60 V
Directive conformity	
Directive 2014/34/EU	EN 60079-0:2018 , EN 60079-11:2012 , EN 60079-7:2015+A1:2018 , EN 60079-15:2019 , IEC TS 60079-47:2021
International approvals	
IECEx approval	IECEx TUR 20.0105X
Approved for	Ex ic ec nC [ic] IIC T4 Gc [Ex ic Dc] IIIC
Certificates and approvals	
Patents	This product may be covered by the following patent: US 9,762,409
General information	

Assembly



Mounting

Wall Mounting Option
For wall mounting the APL rail field switch use the accessory ACC-ARS-WM. See manual for details and dimensions.

Type Code

ARS1	(1)	B	2	-	IC	(2)	-	(3)
ARS1	Device							
ARS1	Ethernet-APL Rail Field Switch							
(1)	PROFIBUS PA Proxy							
1	With proxy							
2	Without proxy							
B	Power Supply							
B	Separately powered 20 V ... 60 V							
2	Uplink Ports							
2	2 ports each for RJ45 and SFP slots							
IC	Intrinsic Safety at Spurs							
IC	Ex ic IIC							
(2)	Spur Port Count							
08	Spur ports							
16	Spur ports							
24	Spur ports							
(3)	Pluggable Terminal Types							
1	Screw terminals							
2	Spring terminals							



Ethernet-APL Rail Field Switch

FieldConnex®

ARS12-B2-IC24-1

- Managed Ethernet-APL field switch for process industries
- Powered spur ports intrinsically safe Ex ic according to 2-WISE and FISCO
- PROFINET MRP, S2 redundancy and dynamic reconfiguration
- 2 ports each for 1000BASE-T and SFP transceivers
- Redundant power input 20 VDC ... 60 VDC
- Installation in Zone 2
- Physical layer diagnostics at the spur
- Configuration and diagnosis with FDI, web interface, PROFINET device functions and SNMP
- Support of network security

Ethernet-APL rail field switch with 24 intrinsically safe Ex ic spur ports and screw terminals



ethernet-apl™
advanced physical layer



Function

The Ethernet-APL rail field switch is a ruggedized, managed field switch offering connectivity for Ethernet-APL devices to Ethernet networks via any protocol. The connections, i. e., "spur" ports, provide intrinsically safe (Ex ic) power and communication to instruments located in Zone 2. APL field switches can be installed in Zone 2.

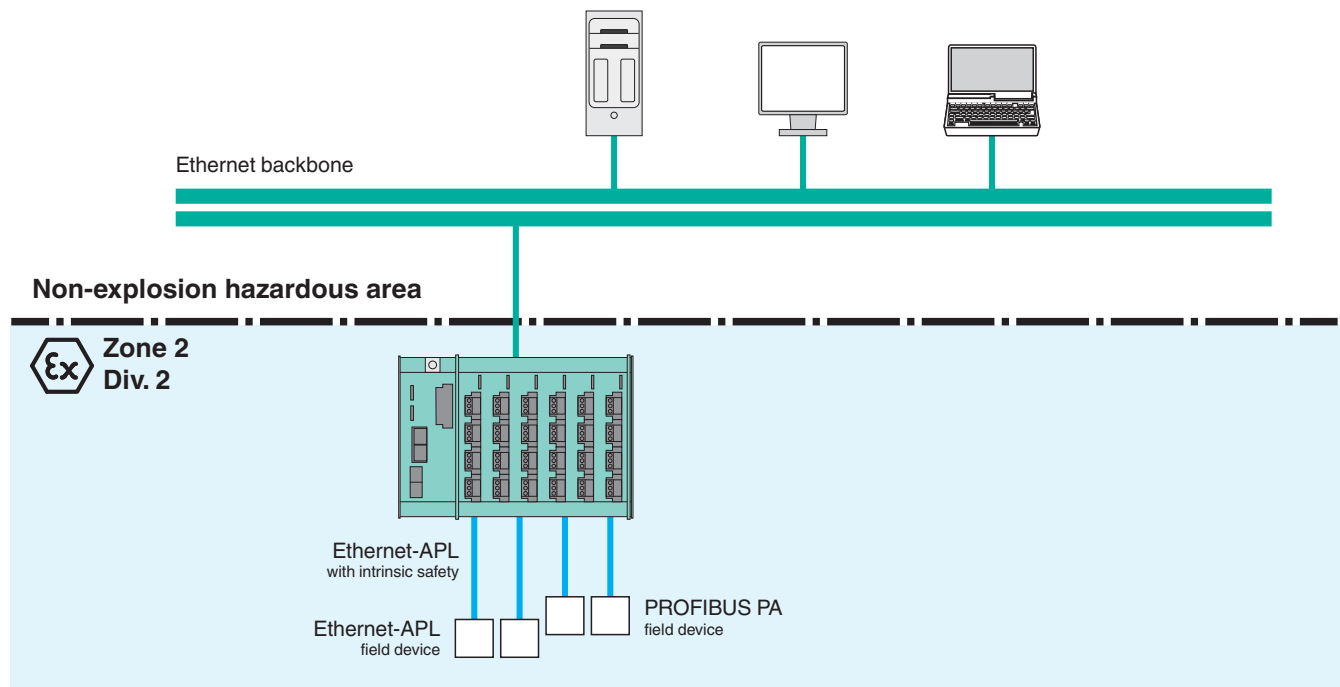
The APL field switch features 2 Gigabit Ethernet ports and 2 SFP ports. The SFP ports provide connections for a choice of optional SFP transceivers to be used in explosion-hazardous areas and different distances.

For PROFINET, the APL field switch supports Class B networks. For high-availability installations, the APL field switch provides redundancy mechanisms such as MRP ring redundancy and S2 system redundancy.

Easy configuration and diagnostics of the APL field switch are accessible via FDI and web-based management. PROFINET device functions and SNMP assure fast start-up and enable the use of predictive maintenance. Comprehensive network and physical layer diagnostics enable proactive management strategies to reduce risk of failure and downtime.

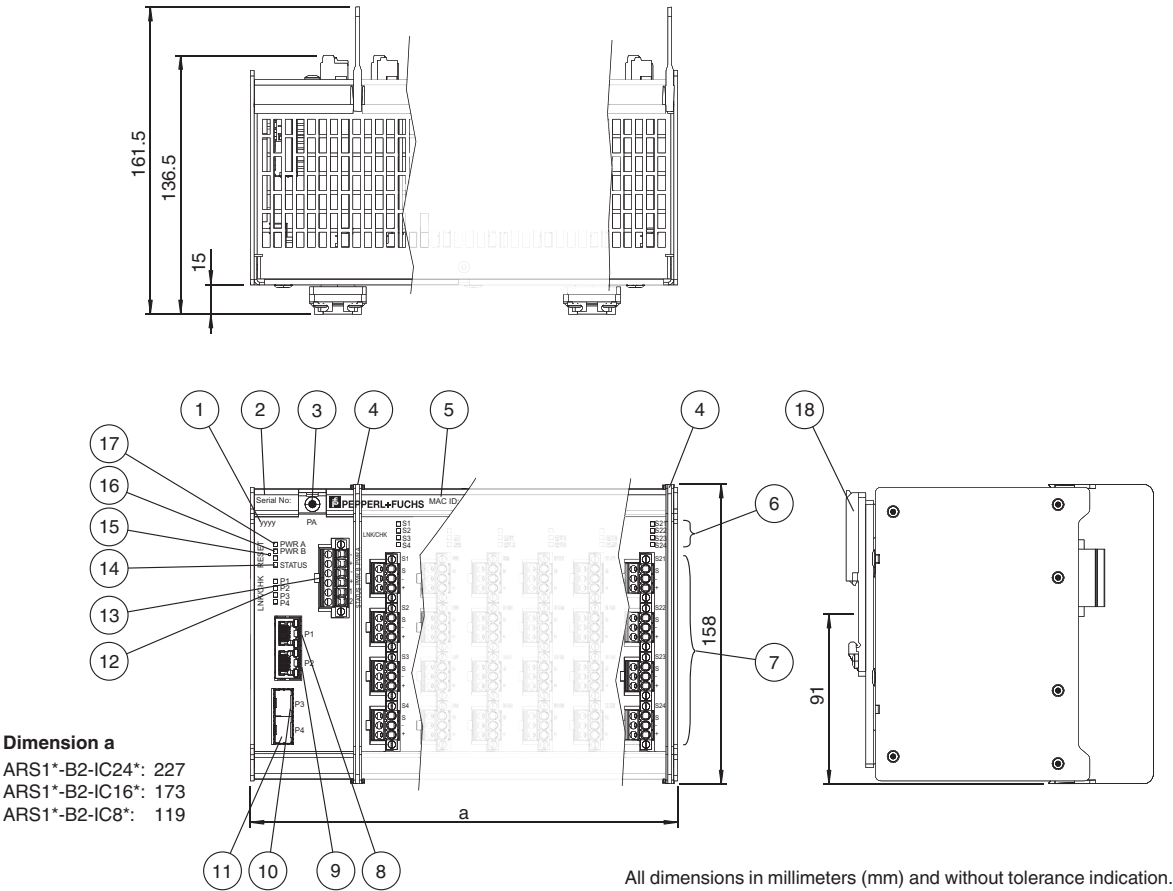
The APL field switch implements enhanced network security and supports SNMPv3, the locking of unused ports, and the HTTPS protocol.

Function Principle



Dimensions

DIN Rail Mounting



- | | |
|---|--|
| 1 Year of production | 11 Ethernet SFP port P4 |
| 2 Serial number | 12 LED LNK/CHK P1 ... P4, communication status
LED P1 ... P4 |
| 3 PA, connection to equipotential bonding | 13 Connector for auxiliary power and status
indication output |
| 4 Slot for separation wall | 14 LED STATUS, status rail field switch |
| 5 MAC ID | 15 Reset button |
| 6 LED S1 ... Sn, status spur ports S1 ... Sn | 16 LED PWR B, status power input B |
| 7 Connectors for intrinsically safe spurs S1 ... Sn | 17 LED PWR A, status power input A |
| 8 Ethernet port P1 | 18 DIN rail mounting brackets |
| 9 Ethernet port P2 | |
| 10 Ethernet SFP port P3 | |

Technical Data

General specifications			
Design / Mounting		Cabinet installation	
Installation in hazardous area		Zone 2	
Supply			
Rated voltage	U _r	20 ... 60 V	
Rated current	I _r	0.85 ... 2.55 A	
Power dissipation		26.7 W	
Voltage difference dual supply input		+/- 10 %	

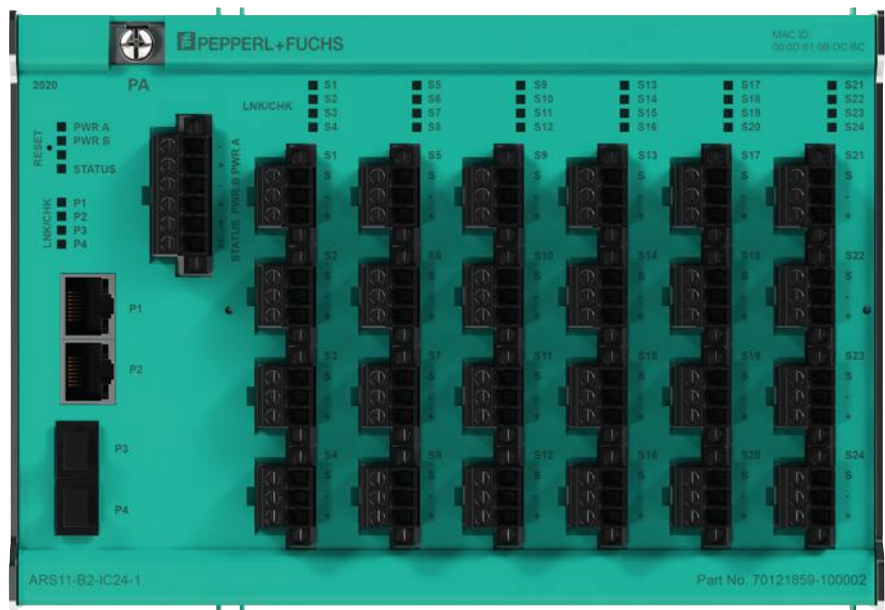
Technical Data

Power consumption		max. 51 W
Redundancy		dual supply input
Indicators/operating means		
LED PWR A/B		green: power on
LED LNK/CHK		Off: no communication link active , Green: communication link active , Green flashing: communication link activity , Red flashing: check function
LED STATUS		Off: Good , Blue: Maintenance required , Red: Failure
Fault signal		VFC alarm 100 mA, 32 V DC, normally closed
Button		Device reset
Interface 1		
Interface type		Ethernet-APL : 1 Vpp option spur connection
Port classification		S P C C
Number of ports		24
Port identification		S 1 ... S 24
Power option		powered
Transfer rate		10 MBit/s full duplex
Rated voltage		11.61 V
Rated current		95 mA
Rated power		1.11 W
Cable shield grounding option		capacitive grounded
Connection type		screw terminals , pluggable
Conductor cross section solid wire		2.08 ... 0.326 mm ² , 14 ... 18 AWG
Conductor cross section flexible wire		2.08 ... 0.326 mm ² , 14 ... 18 AWG
Interface 2		
Interface type		1000BASE-T
Number of ports		2
Port identification		P 1 ... P 2
Transfer rate		10/100/1000 Mbps
Connection type		RJ-45 , EIA/TIA 568 B
Interface 3		
Interface type		Slot for SFP transceiver SFP Multi-Source (MSA) compliant
Number of ports		2
Port identification		P 3 ... P 4
Galvanic isolation		
Spurs/Supply		1500 V AC
SFP/Supply		500 V AC
1000BASE-T/Supply		1500 V AC
1000BASE-T/Spurs		1500 V AC
1000BASE-T/1000BASE-T		1500 V AC
Housing/All		620 V AC
Fault signal/All		1500 V AC
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 61326-1:2013
Conformity		
Galvanic isolation		IEC 61010-1
Electromagnetic compatibility		EN 61326 , NE 21
Degree of protection		IEC 60529
Ethernet		IEEE 802.3z , IEEE 802.3u , IEEE 802.3cg
Shock resistance		EN 60068-2-27

Technical Data

Vibration resistance	EN 60068-2-6
Climatic conditions	DIN IEC 721
Software	
Industrial protocols	PROFINET , CC-B (PA) , dynamic reconfiguration , Netload Class III , pruning
Management	Web user interface , SNMP v1, v2 , v3 , PROFINET
Redundancy	PROFINET MRP , PROFINET system redundancy S2
Management Information Base (MIB)	PROFINET conformance class B
Diagnostics function	10BASE-T1L physical layer , port , Packet statistics , LLDP
Cybersecurity	
Ambient conditions	
Ambient temperature	-40 ... 70 °C (-40 ... 158 °F) horizontally mounted no SFP installed -40 ... 65 °C (-40 ... 149 °F) horizontally mounted SFP installed
Storage temperature	-40 ... 85 °C (-40 ... 185 °F)
Relative humidity	
Shock resistance	15 g 11 ms
Vibration resistance	1 g 10 ... 150 Hz
Pollution degree	max. 2, according to IEC 60664
Corrosion resistance	acc. to ISA-S71.04-1985, severity level G3
Mechanical specifications	
Housing material	stainless steel 1.4301 , Polycarbonate
Degree of protection	IP20
Mass	3530 g
Dimensions	
Height	158 mm
Width	227 mm
Depth	136.5 mm
Mounting	DIN rail mounting , wall mounting
Data for application in connection with hazardous areas	
EU-type examination certificate	TÜV 20 ATEX 8571 X
Marking	Ⓔ II 3 G Ex ic ec nC [ic] IIC T4 Gc Ⓔ II (3) D [Ex ic Dc] IIIC
Supply	
Maximum safe voltage	U _m 60 V
Interface 1	2-WISE power source
Voltage U _o	17.5 V
Current I _o	105 mA
Interface 2	
Maximum safe voltage U _m	60 V
Interface 3	
Maximum safe voltage U _m	60 V
Directive conformity	
Directive 2014/34/EU	EN 60079-0:2018 , EN 60079-11:2012 , EN 60079-7:2015+A1:2018 , EN 60079-15:2019 , IEC TS 60079-47:2021
International approvals	
IECEx approval	IECEx TUR 20.0105X
Approved for	Ex ic ec nC [ic] IIC T4 Gc [Ex ic Dc] IIIC
Certificates and approvals	
Patents	This product may be covered by the following patent: US 9,762,409
General information	

Assembly



Mounting

Wall Mounting Option

For wall mounting the APL rail field switch use the accessory ACC-ARS-WM. See manual for details and dimensions.

Type Code

ARS1	(1)	B	2	-	IC	(2)	-	(3)
ARS1	Device							
ARS1	Ethernet-APL Rail Field Switch							
(1)	PROFIBUS PA Proxy							
1	With proxy							
2	Without proxy							
B	Power Supply							
B	Separately powered 20 V ... 60 V							
2	Uplink Ports							
2	2 ports each for RJ45 and SFP slots							
IC	Intrinsic Safety at Spurs							
IC	Ex ic IIC							
(2)	Spur Port Count							
08	Spur ports							
16	Spur ports							
24	Spur ports							
(3)	Pluggable Terminal Types							
1	Screw terminals							
2	Spring terminals							



Ethernet-APL Rail Field Switch

FieldConnex®

ARS11-B2-IC16-2

- Managed Ethernet-APL field switch for process industries
- Powered spur ports intrinsically safe Ex ic according to 2-WISE and FISCO
- PROFINET MRP, S2 redundancy and dynamic reconfiguration
- 2 ports each for 1000BASE-T and SFP transceivers
- Redundant power input 20 VDC ... 60 VDC
- Installation in Zone 2
- Physical layer diagnostics at the spur
- Configuration and diagnosis with FDI, web interface, PROFINET device functions and SNMP
- Support of network security
- Support of Ethernet-APL and PROFIBUS PA instruments

Ethernet-APL rail field switch with 16 intrinsically safe Ex ic spur ports and spring terminals with proxy support selectable for PROFIBUS PA field devices



ethernet-apl™
advanced physical layer



Function

The Ethernet-APL rail field switch is a ruggedized, managed field switch offering connectivity for Ethernet-APL devices to Ethernet networks via any protocol. The connections, i. e., "spur" ports, provide intrinsically safe (Ex ic) power and communication to instruments located in Zone 2. APL field switches can be installed in Zone 2.

The APL field switch features 2 Gigabit Ethernet ports and 2 SFP ports. The SFP ports provide connections for a choice of optional SFP transceivers to be used in explosion-hazardous areas and different distances.

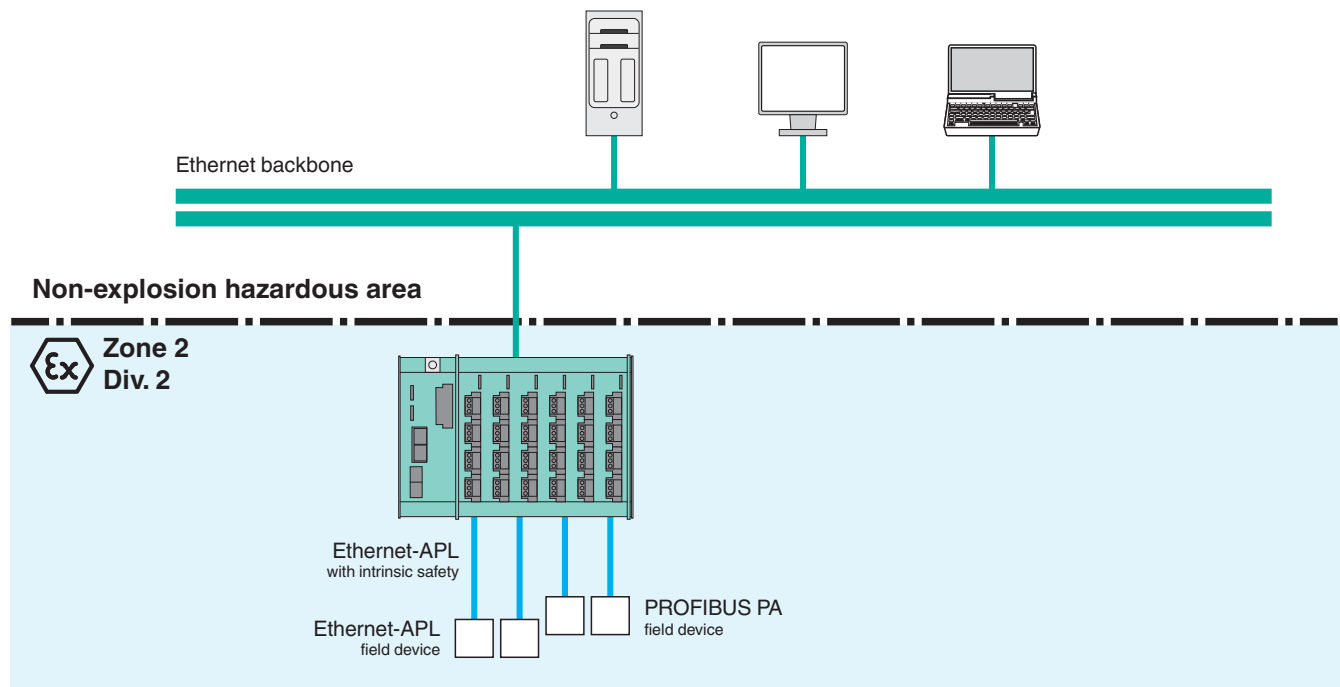
For PROFINET, the APL field switch supports Class B networks. For high-availability installations, the APL field switch provides redundancy mechanisms such as MRP ring redundancy and S2 system redundancy.

PROFINET dynamic reconfiguration permits re-configuration of the APL field switch during runtime without interrupting the data exchange.

Easy configuration and diagnostics of the APL field switch are accessible via FDI and web-based management. PROFINET device functions and SNMP assure fast start-up and enable the use of predictive maintenance. Comprehensive network and physical layer diagnostics enable proactive management strategies to reduce risk of failure and downtime.

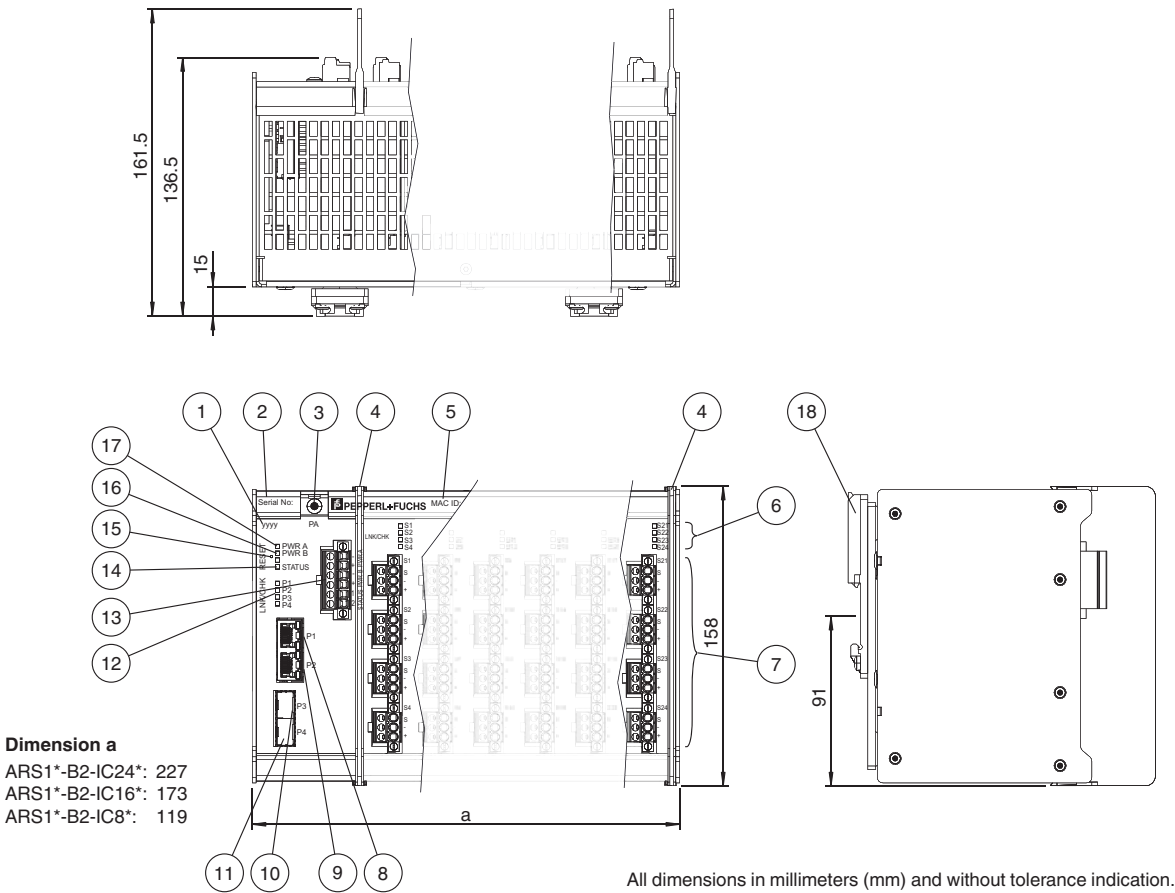
The APL field switch implements enhanced network security and supports SNMPv3, the locking of unused ports, and the HTTPS protocol.

Function Principle



Dimensions

DIN Rail Mounting



- | | |
|---|---|
| 1 Year of production | 11 Ethernet SFP port P4 |
| 2 Serial number | 12 LED LNK/CHK P1 ... P4, communication status LED P1 ... P4 |
| 3 PA, connection to equipotential bonding | 13 Connector for auxiliary power and status indication output |
| 4 Slot for separation wall | 14 LED STATUS, status rail field switch |
| 5 MAC ID | 15 Reset button |
| 6 LED S1 ... Sn, status spur ports S1 ... Sn | 16 LED PWR B, status power input B |
| 7 Connectors for intrinsically safe spurs S1 ... Sn | 17 LED PWR A, status power input A |
| 8 Ethernet port P1 | 18 DIN rail mounting brackets |
| 9 Ethernet port P2 | |
| 10 Ethernet SFP port P3 | |

Technical Data

General specifications			
Design / Mounting		Cabinet installation	
Installation in hazardous area		Zone 2	
Fieldbus support		PROFIBUS PA	
Supply			
Rated voltage	U _r	20 ... 60 V	
Rated current	I _r	0.6 ... 1.8 A	
Power dissipation		18.3 W	

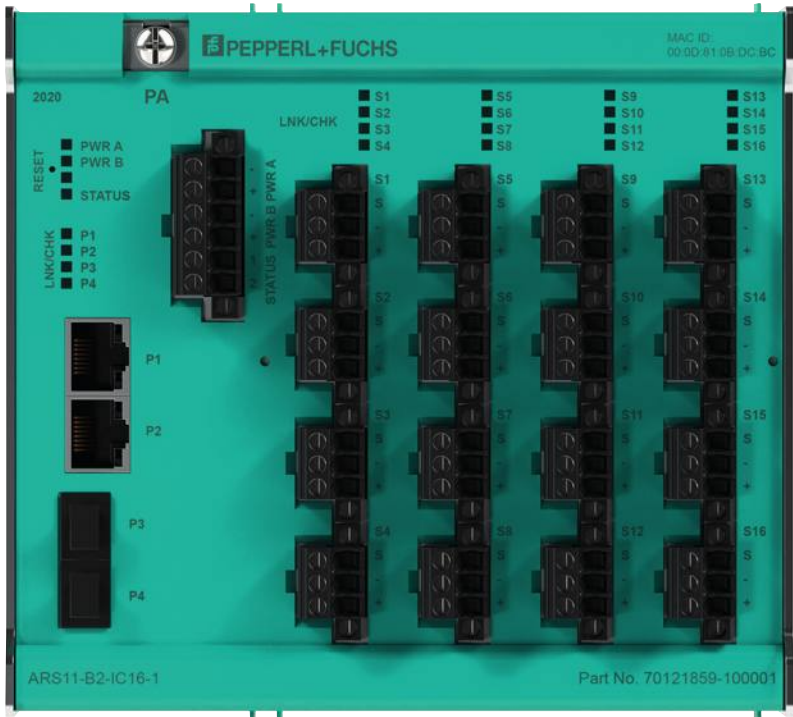
Technical Data

Voltage difference dual supply input		+/- 10 %
Power consumption		max. 36 W
Redundancy		dual supply input
Indicators/operating means		
LED PWR A/B		green: power on
LED LNK/CHK		Off: no communication link active , Green: communication link active , Green flashing: communication link activity , Yellow flashing: communication with PROFIBUS PA field device , Red flashing: check function
LED STATUS		Off: Good , Blue: Maintenance required , Red: Failure
Fault signal		VFC alarm 100 mA, 32 V DC, normally closed
Button		Device reset
Interface 1		
Interface type		Ethernet-APL : 1 Vpp option spur connection , PROFIBUS PA
Port classification		S P C C
Number of ports		16
Port identification		S 1 ... S 16
Power option		powered
Transfer rate		10 MBit/s full duplex
Rated voltage		11.61 V
Rated current		95 mA
Rated power		1.11 W
Cable shield grounding option		capacitive grounded
Connection type		spring terminals , pluggable
Conductor cross section solid wire		2.08 ... 0.326 mm ² , 14 ... 18 AWG
Conductor cross section flexible wire		2.08 ... 0.326 mm ² , 14 ... 18 AWG
Interface 2		
Interface type		1000BASE-T
Number of ports		2
Port identification		P 1 ... P 2
Transfer rate		10/100/1000 Mbps
Connection type		RJ-45 , EIA/TIA 568 B
Interface 3		
Interface type		Slot for SFP transceiver SFP Multi-Source (MSA) compliant
Number of ports		2
Port identification		P 3 ... P 4
Galvanic isolation		
Spurs/Supply		1500 V AC
SFP/Supply		500 V AC
1000BASE-T/Supply		1500 V AC
1000BASE-T/Spurs		1500 V AC
1000BASE-T/1000BASE-T		1500 V AC
Housing/All		620 V AC
Fault signal/All		1500 V AC
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 61326-1:2013
Conformity		
Galvanic isolation		IEC 61010-1
Electromagnetic compatibility		EN 61326 , NE 21
Degree of protection		IEC 60529

Technical Data

Ethernet		IEEE 802.3z , IEEE 802.3u , IEEE 802.3cg
Shock resistance		EN 60068-2-27
Vibration resistance		EN 60068-2-6
Climatic conditions		DIN IEC 721
Software		
Industrial protocols		PROFINET , CC-B (PA) , dynamic reconfiguration , Netload Class III , pruning
Management		Web user interface , SNMP v1, v2 , v3 , PROFINET
Redundancy		PROFINET MRP , PROFINET system redundancy S2
Management Information Base (MIB)		PROFINET conformance class B
Diagnostics function		10BASE-T1L physical layer , port , Packet statistics , LLDP , PROFIBUS PA
Cybersecurity		
Ambient conditions		
Ambient temperature		-40 ... 70 °C (-40 ... 158 °F) horizontally mounted no SFP installed -40 ... 65 °C (-40 ... 149 °F) horizontally mounted SFP installed
Storage temperature		-40 ... 85 °C (-40 ... 185 °F)
Relative humidity		≤ 95 % non-condensing
Shock resistance		15 g 11 ms
Vibration resistance		1 g 10 ... 150 Hz
Pollution degree		max. 2, according to IEC 60664
Corrosion resistance		acc. to ISA-S71.04-1985, severity level G3
Mechanical specifications		
Housing material		stainless steel 1.4301 , Polycarbonate
Degree of protection		IP20
Mass		2920 g
Dimensions		
Height		158 mm
Width		173 mm
Depth		136.5 mm
Mounting		DIN rail mounting , wall mounting
Data for application in connection with hazardous areas		
EU-type examination certificate		TÜV 20 ATEX 8571 X
Marking		Ⓜ II 3 G Ex ic ec nC [ic] IIC T4 Gc Ⓜ II (3) D [Ex ic Dc] IIIC
Supply		
Maximum safe voltage	U _m	60 V
Interface 1		2-WISE power source, FISCO power supply
Voltage U _o		17.5 V
Current I _o		105 mA
Interface 2		
Maximum safe voltage U _m		60 V
Interface 3		
Maximum safe voltage U _m		60 V
Directive conformity		
Directive 2014/34/EU		EN 60079-0:2018 , EN 60079-11:2012 , EN 60079-7:2015+A1:2018 , EN 60079-15:2019 , IEC TS 60079-47:2021
International approvals		
IECEx approval		IECEx TUR 20.0105X
Approved for		Ex ic ec nC [ic] IIC T4 Gc [Ex ic Dc] IIIC
Certificates and approvals		
Patents		This product may be covered by the following patent: US 9,762,409
General information		

Assembly



Mounting

Wall Mounting Option
For wall mounting the APL rail field switch use the accessory ACC-ARS-WM. See manual for details and dimensions.

Type Code

ARS1	(1)	B	2	-	IC	(2)	-	(3)
ARS1	Device							
ARS1	Ethernet-APL Rail Field Switch							
(1)	PROFIBUS PA Proxy							
1	With proxy							
2	Without proxy							
B	Power Supply							
B	Separately powered 20 V ... 60 V							
2	Uplink Ports							
2	2 ports each for RJ45 and SFP slots							
IC	Intrinsic Safety at Spurs							
IC	Ex ic IIC							
(2)	Spur Port Count							
08	Spur ports							
16	Spur ports							
24	Spur ports							
(3)	Pluggable Terminal Types							
1	Screw terminals							
2	Spring terminals							



Ethernet-APL Rail Field Switch

FieldConnex®

ARS11-B2-IC24-2

- Managed Ethernet-APL field switch for process industries
- Powered spur ports intrinsically safe Ex ic according to 2-WISE and FISCO
- PROFINET MRP, S2 redundancy and dynamic reconfiguration
- 2 ports each for 1000BASE-T and SFP transceivers
- Redundant power input 20 VDC ... 60 VDC
- Installation in Zone 2
- Physical layer diagnostics at the spur
- Configuration and diagnosis with FDI, web interface, PROFINET device functions and SNMP
- Support of network security
- Support of Ethernet-APL and PROFIBUS PA instruments

Ethernet-APL rail field switch with 24 intrinsically safe Ex ic spur ports and spring terminals with proxy support selectable for PROFIBUS PA field devices



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advanced physical layer



Function

The Ethernet-APL rail field switch is a ruggedized, managed field switch offering connectivity for Ethernet-APL devices to Ethernet networks via any protocol. The connections, i. e., "spur" ports, provide intrinsically safe (Ex ic) power and communication to instruments located in Zone 2. APL field switches can be installed in Zone 2.

The APL field switch features 2 Gigabit Ethernet ports and 2 SFP ports. The SFP ports provide connections for a choice of optional SFP transceivers to be used in explosion-hazardous areas and different distances.

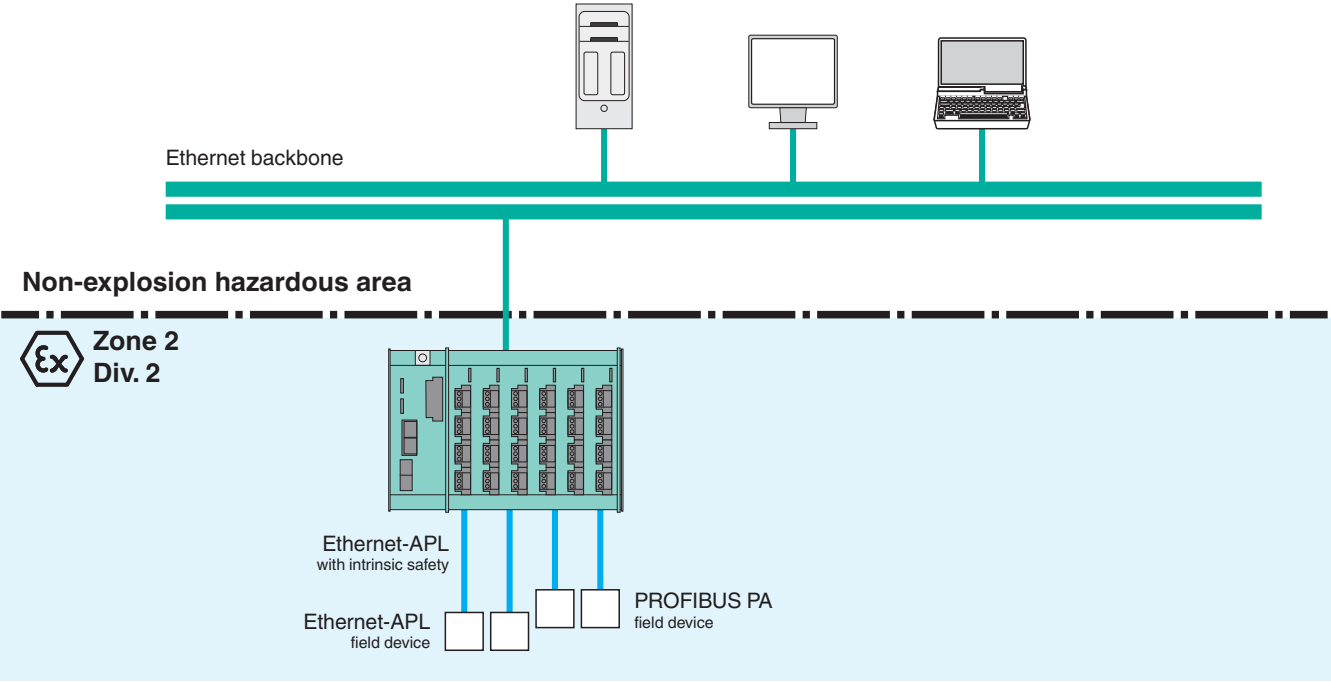
For PROFINET, the APL field switch supports Class B networks. For high-availability installations, the APL field switch provides redundancy mechanisms such as MRP ring redundancy and S2 system redundancy.

PROFINET dynamic reconfiguration permits re-configuration of the APL field switch during runtime without interrupting the data exchange.

Easy configuration and diagnostics of the APL field switch are accessible via FDI and web-based management. PROFINET device functions and SNMP assure fast start-up and enable the use of predictive maintenance. Comprehensive network and physical layer diagnostics enable proactive management strategies to reduce risk of failure and downtime.

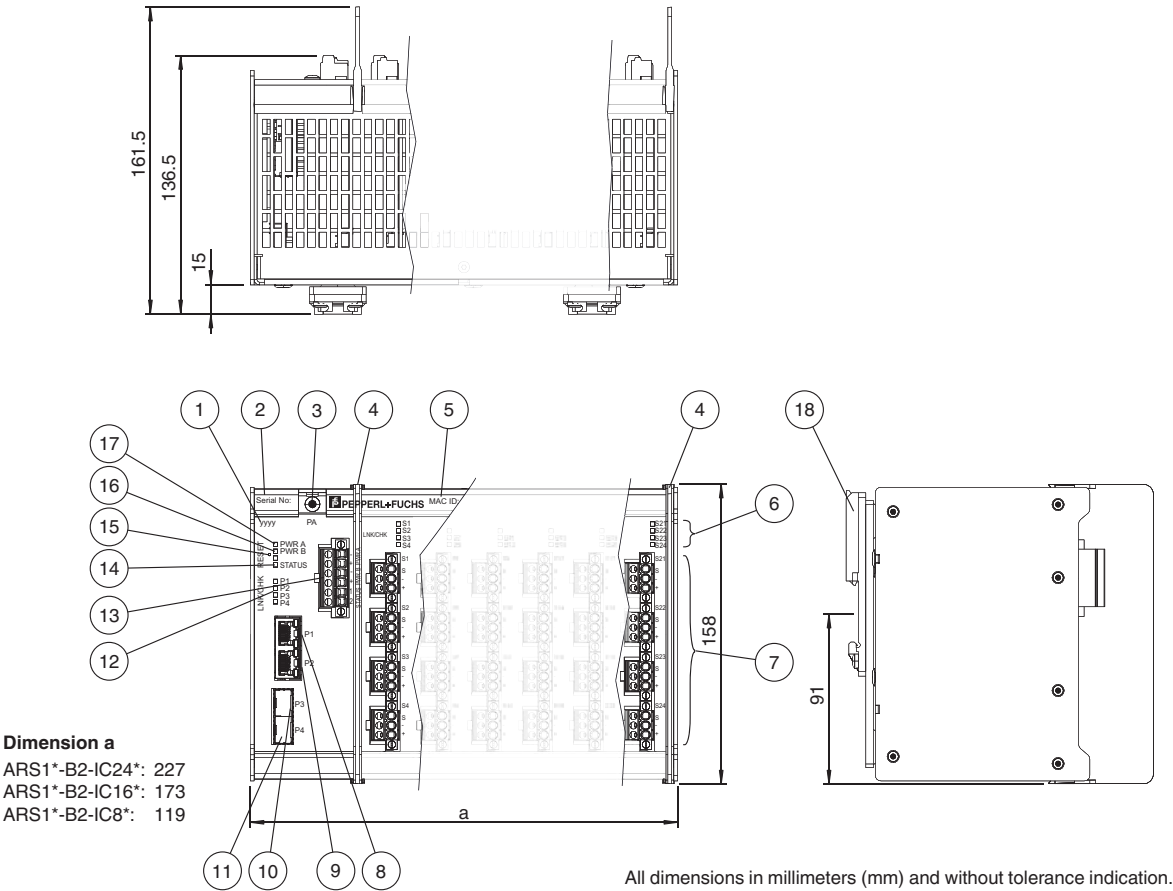
The APL field switch implements enhanced network security and supports SNMPv3, the locking of unused ports, and the HTTPS protocol.

Function Principle



Dimensions

DIN Rail Mounting



- 1

Year of production
- 2

Serial number
- 3

PA, connection to equipotential bonding
- 4

Slot for separation wall
- 5

MAC ID
- 6

LED S1 ... Sn, status spur ports S1 ... Sn
- 7

Connectors for intrinsically safe spurs S1 ... Sn
- 8

Ethernet port P1
- 9

Ethernet port P2
- 10

Ethernet SFP port P3
- 11

Ethernet SFP port P4
- 12

LED LNK/CHK P1 ... P4, communication status
LED P1 ... P4
- 13

Connector for auxiliary power and status
indication output
- 14

LED STATUS, status rail field switch
- 15

Reset button
- 16

LED PWR B, status power input B
- 17

LED PWR A, status power input A
- 18

DIN rail mounting brackets

Technical Data

General specifications		
Design / Mounting		Cabinet installation
Installation in hazardous area		Zone 2
Fieldbus support		PROFIBUS PA
Supply		
Rated voltage	U _r	20 ... 60 V
Rated current	I _r	0.85 ... 2.55 A
Power dissipation		26.7 W

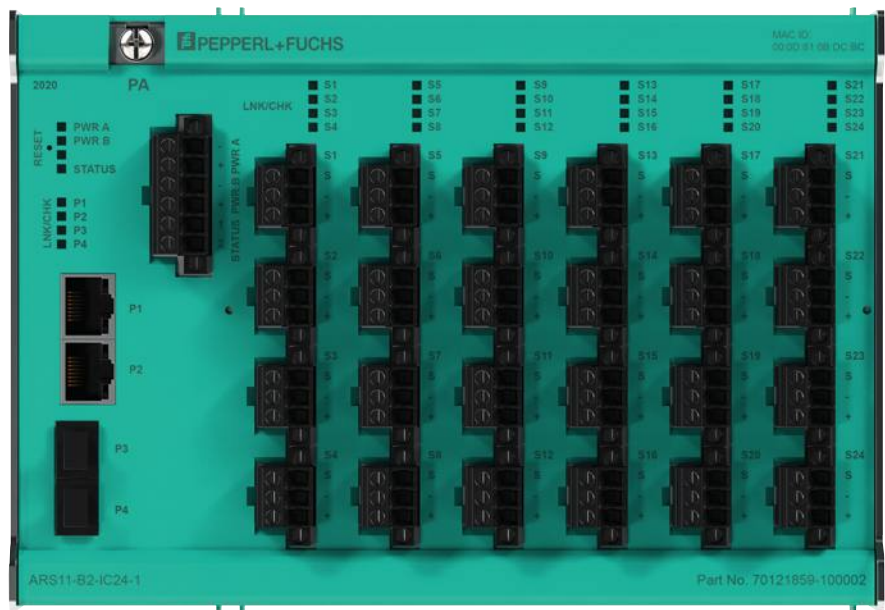
Technical Data

Voltage difference dual supply input		+/- 10 %
Power consumption		max. 51 W
Redundancy		dual supply input
Indicators/operating means		
LED PWR A/B		green: power on
LED LNK/CHK		Off: no communication link active , Green: communication link active , Green flashing: communication link activity , Yellow flashing: communication with PROFIBUS PA field device , Red flashing: check function
LED STATUS		Off: Good , Blue: Maintenance required , Red: Failure
Fault signal		VFC alarm 100 mA, 32 V DC, normally closed
Button		Device reset
Interface 1		
Interface type		Ethernet-APL : 1 Vpp option spur connection , PROFIBUS PA
Port classification		S P C C
Number of ports		24
Port identification		S 1 ... S 24
Power option		powered
Transfer rate		10 MBit/s full duplex
Rated voltage		11.61 V
Rated current		95 mA
Rated power		1.11 W
Cable shield grounding option		capacitive grounded
Connection type		spring terminals , pluggable
Conductor cross section solid wire		2.08 ... 0.326 mm ² , 14 ... 18 AWG
Conductor cross section flexible wire		2.08 ... 0.326 mm ² , 14 ... 18 AWG
Interface 2		
Interface type		1000BASE-T
Number of ports		2
Port identification		P 1 ... P 2
Transfer rate		10/100/1000 Mbps
Connection type		RJ-45 , EIA/TIA 568 B
Interface 3		
Interface type		Slot for SFP transceiver SFP Multi-Source (MSA) compliant
Number of ports		2
Port identification		P 3 ... P 4
Galvanic isolation		
Spurs/Supply		1500 V AC
SFP/Supply		500 V AC
1000BASE-T/Supply		1500 V AC
1000BASE-T/Spurs		1500 V AC
1000BASE-T/1000BASE-T		1500 V AC
Housing/All		620 V AC
Fault signal/All		1500 V AC
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 61326-1:2013
Conformity		
Galvanic isolation		IEC 61010-1
Electromagnetic compatibility		EN 61326 , NE 21
Degree of protection		IEC 60529

Technical Data

Ethernet		IEEE 802.3z , IEEE 802.3u , IEEE 802.3cg
Shock resistance		EN 60068-2-27
Vibration resistance		EN 60068-2-6
Climatic conditions		DIN IEC 721
Software		
Industrial protocols		PROFINET , CC-B (PA) , dynamic reconfiguration , Netload Class III , pruning
Management		Web user interface , SNMP v1, v2 , v3 , PROFINET
Redundancy		PROFINET MRP , PROFINET system redundancy S2
Management Information Base (MIB)		PROFINET conformance class B
Diagnostics function		10BASE-T1L physical layer , port , Packet statistics , LLDP , PROFIBUS PA
Cybersecurity		
Ambient conditions		
Ambient temperature		-40 ... 70 °C (-40 ... 158 °F) horizontally mounted no SFP installed -40 ... 65 °C (-40 ... 149 °F) horizontally mounted SFP installed
Storage temperature		-40 ... 85 °C (-40 ... 185 °F)
Relative humidity		≤ 95 % non-condensing
Shock resistance		15 g 11 ms
Vibration resistance		1 g 10 ... 150 Hz
Pollution degree		max. 2, according to IEC 60664
Corrosion resistance		acc. to ISA-S71.04-1985, severity level G3
Mechanical specifications		
Housing material		stainless steel 1.4301 , Polycarbonate
Degree of protection		IP20
Mass		3530 g
Dimensions		
Height		158 mm
Width		227 mm
Depth		136.5 mm
Mounting		DIN rail mounting , wall mounting
Data for application in connection with hazardous areas		
EU-type examination certificate		TÜV 20 ATEX 8571 X
Marking		Ⓜ II 3 G Ex ic ec nC [ic] IIC T4 Gc Ⓜ II (3) D [Ex ic Dc] IIIC
Supply		
Maximum safe voltage	U _m	60 V
Interface 1		2-WISE power source, FISCO power supply
Voltage U _o		17.5 V
Current I _o		105 mA
Interface 2		
Maximum safe voltage U _m		60 V
Interface 3		
Maximum safe voltage U _m		60 V
Directive conformity		
Directive 2014/34/EU		EN 60079-0:2018 , EN 60079-11:2012 , EN 60079-7:2015+A1:2018 , EN 60079-15:2019 , IEC TS 60079-47:2021
International approvals		
IECEx approval		IECEx TUR 20.0105X
Approved for		Ex ic ec nC [ic] IIC T4 Gc [Ex ic Dc] IIIC
Certificates and approvals		
Patents		This product may be covered by the following patent: US 9,762,409
General information		

Assembly



Mounting

Wall Mounting Option

For wall mounting the APL rail field switch use the accessory ACC-ARS-WM. See manual for details and dimensions.

Type Code

ARS1	(1)	B	2	-	IC	(2)	-	(3)
ARS1	Device							
ARS1	Ethernet-APL Rail Field Switch							
(1)	PROFIBUS PA Proxy							
1	With proxy							
2	Without proxy							
B	Power Supply							
B	Separately powered 20 V ... 60 V							
2	Uplink Ports							
2	2 ports each for RJ45 and SFP slots							
IC	Intrinsic Safety at Spurs							
IC	Ex ic IIC							
(2)	Spur Port Count							
08	Spur ports							
16	Spur ports							
24	Spur ports							
(3)	Pluggable Terminal Types							
1	Screw terminals							
2	Spring terminals							



Ethernet-APL Rail Field Switch

FieldConnex®

ARS12-B2-IC08-2

- Managed Ethernet-APL field switch for process industries
- Powered spur ports intrinsically safe Ex ic according to 2-WISE and FISCO
- PROFINET MRP, S2 redundancy and dynamic reconfiguration
- 2 ports each for 1000BASE-T and SFP transceivers
- Redundant power input 20 VDC ... 60 VDC
- Installation in Zone 2
- Physical layer diagnostics at the spur
- Configuration and diagnosis with FDI, web interface, PROFINET device functions and SNMP
- Support of network security

Ethernet-APL rail field switch with 8 intrinsically safe Ex ic spur ports and spring terminals



ethernet-apl™
advanced physical layer



Function

The Ethernet-APL rail field switch is a ruggedized, managed field switch offering connectivity for Ethernet-APL devices to Ethernet networks via any protocol. The connections, i. e., "spur" ports, provide intrinsically safe (Ex ic) power and communication to instruments located in Zone 2. APL field switches can be installed in Zone 2.

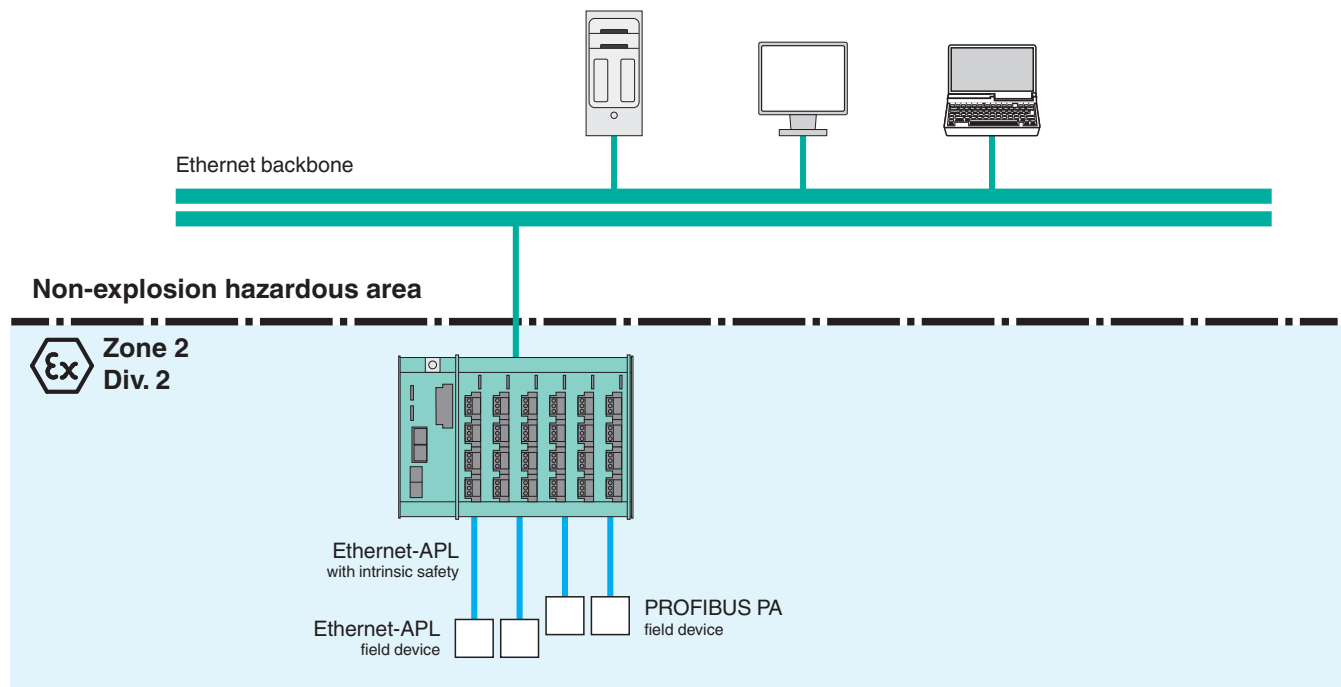
The APL field switch features 2 Gigabit Ethernet ports and 2 SFP ports. The SFP ports provide connections for a choice of optional SFP transceivers to be used in explosion-hazardous areas and different distances.

For PROFINET, the APL field switch supports Class B networks. For high-availability installations, the APL field switch provides redundancy mechanisms such as MRP ring redundancy and S2 system redundancy.

Easy configuration and diagnostics of the APL field switch are accessible via FDI and web-based management. PROFINET device functions and SNMP assure fast start-up and enable the use of predictive maintenance. Comprehensive network and physical layer diagnostics enable proactive management strategies to reduce risk of failure and downtime.

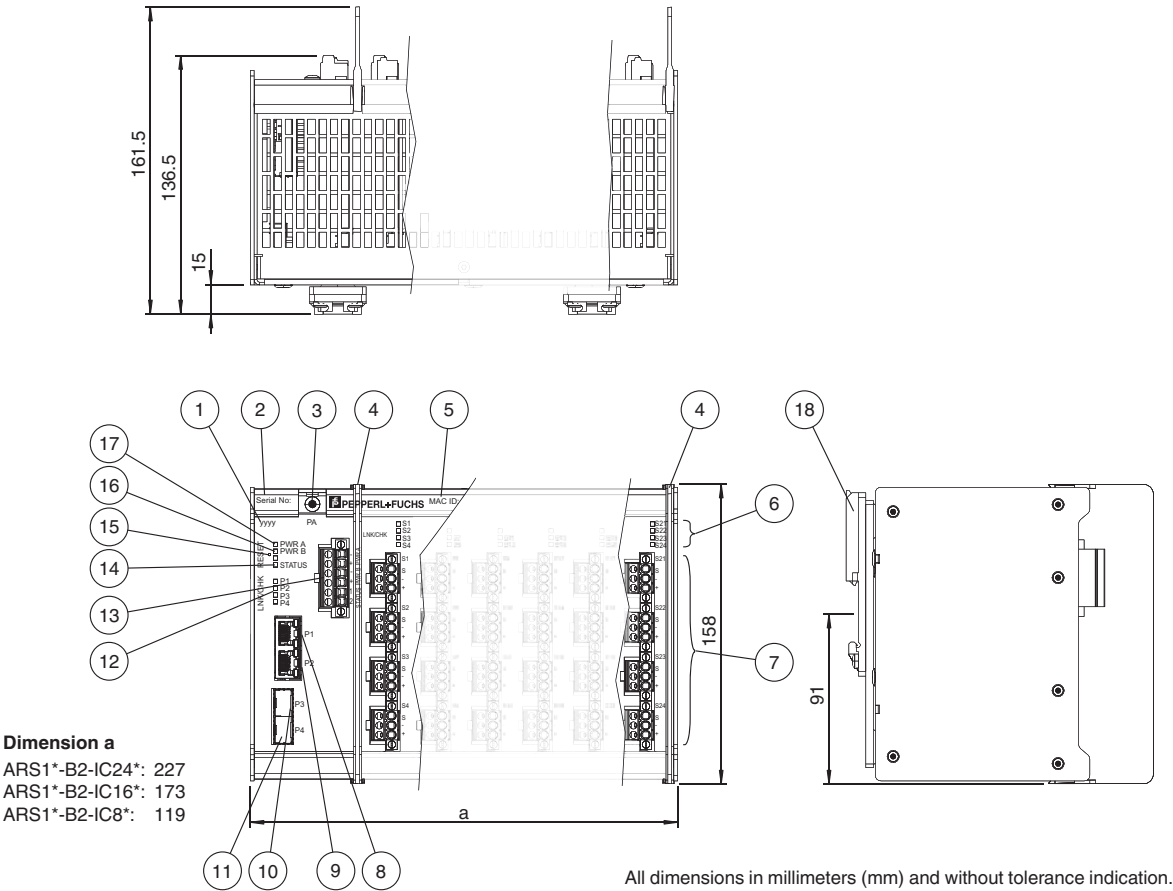
The APL field switch implements enhanced network security and supports SNMPv3, the locking of unused ports, and the HTTPS protocol.

Function Principle



Dimensions

DIN Rail Mounting



- 1

Year of production
- 2

Serial number
- 3

PA, connection to equipotential bonding
- 4

Slot for separation wall
- 5

MAC ID
- 6

LED S1 ... Sn, status spur ports S1 ... Sn
- 7

Connectors for intrinsically safe spurs S1 ... Sn
- 8

Ethernet port P1
- 9

Ethernet port P2
- 10

Ethernet SFP port P3
- 11

Ethernet SFP port P4
- 12

LED LNK/CHK P1 ... P4, communication status
LED P1 ... P4
- 13

Connector for auxiliary power and status
indication output
- 14

LED STATUS, status rail field switch
- 15

Reset button
- 16

LED PWR B, status power input B
- 17

LED PWR A, status power input A
- 18

DIN rail mounting brackets

Technical Data

General specifications		
Design / Mounting		Cabinet installation
Installation in hazardous area		Zone 2
Supply		
Rated voltage	U _r	20 ... 60 V
Rated current	I _r	0.37 ... 1.1 A
Power dissipation		13.2 W
Voltage difference dual supply input		+/- 10 %

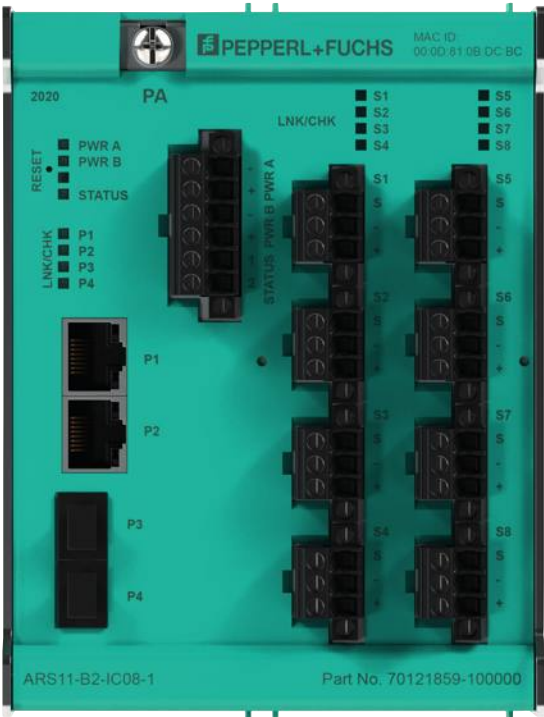
Technical Data

Power consumption		max. 22 W
Redundancy		dual supply input
Indicators/operating means		
LED PWR A/B		green: power on
LED LNK/CHK		Off: no communication link active , Green: communication link active , Green flashing: communication link activity , Red flashing: check function
LED STATUS		Off: Good , Blue: Maintenance required , Red: Failure
Fault signal		VFC alarm 100 mA, 32 V DC, normally closed
Button		Device reset
Interface 1		
Interface type		Ethernet-APL : 1 Vpp option spur connection
Port classification		S P C C
Number of ports		8
Port identification		S 1 ... S 8
Power option		powered
Transfer rate		10 MBit/s full duplex
Rated voltage		11.61 V
Rated current		95 mA
Rated power		1.11 W
Cable shield grounding option		capacitive grounded
Connection type		spring terminals , pluggable
Conductor cross section solid wire		2.08 ... 0.326 mm ² , 14 ... 18 AWG
Conductor cross section flexible wire		2.08 ... 0.326 mm ² , 14 ... 18 AWG
Interface 2		
Interface type		1000BASE-T
Number of ports		2
Port identification		P 1 ... P 2
Transfer rate		10/100/1000 Mbps
Connection type		RJ-45 , EIA/TIA 568 B
Interface 3		
Interface type		Slot for SFP transceiver SFP Multi-Source (MSA) compliant
Number of ports		2
Port identification		P 3 ... P 4
Galvanic isolation		
Spurs/Supply		1500 V AC
SFP/Supply		500 V AC
1000BASE-T/Supply		1500 V AC
1000BASE-T/Spurs		1500 V AC
1000BASE-T/1000BASE-T		1500 V AC
Housing/All		620 V AC
Fault signal/All		1500 V AC
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 61326-1:2013
Conformity		
Galvanic isolation		IEC 61010-1
Electromagnetic compatibility		EN 61326 , NE 21
Degree of protection		IEC 60529
Ethernet		IEEE 802.3z , IEEE 802.3u , IEEE 802.3cg
Shock resistance		EN 60068-2-27

Technical Data

Vibration resistance	EN 60068-2-6
Climatic conditions	DIN IEC 721
Software	
Industrial protocols	PROFINET , CC-B (PA) , dynamic reconfiguration , Netload Class III , pruning
Management	Web user interface , SNMP v1, v2 , v3 , PROFINET
Redundancy	PROFINET MRP , PROFINET system redundancy S2
Management Information Base (MIB)	PROFINET conformance class B
Diagnostics function	10BASE-T1L physical layer , port , Packet statistics , LLDP
Cybersecurity	
Ambient conditions	
Ambient temperature	-40 ... 70 °C (-40 ... 158 °F) horizontally mounted no SFP installed -40 ... 65 °C (-40 ... 149 °F) horizontally mounted SFP installed
Storage temperature	-40 ... 85 °C (-40 ... 185 °F)
Relative humidity	≤ 95 % non-condensing
Shock resistance	15 g 11 ms
Vibration resistance	1 g 10 ... 150 Hz
Pollution degree	max. 2, according to IEC 60664
Corrosion resistance	acc. to ISA-S71.04-1985, severity level G3
Mechanical specifications	
Housing material	stainless steel 1.4301 , Polycarbonate
Degree of protection	IP20
Mass	2100 g
Dimensions	
Height	158 mm
Width	119 mm
Depth	136.5 mm
Mounting	DIN rail mounting , wall mounting
Data for application in connection with hazardous areas	
EU-type examination certificate	TÜV 20 ATEX 8571 X
Marking	Ⓜ II 3 G Ex ic ec nC [ic] IIC T4 Gc Ⓜ II (3) D [Ex ic Dc] IIIC
Supply	
Maximum safe voltage	U _m 60 V
Interface 1	2-WISE power source
Voltage U _o	17.5 V
Current I _o	105 mA
Interface 2	
Maximum safe voltage U _m	60 V
Interface 3	
Maximum safe voltage U _m	60 V
Directive conformity	
Directive 2014/34/EU	EN 60079-0:2018 , EN 60079-11:2012 , EN 60079-7:2015+A1:2018 , EN 60079-15:2019 , IEC TS 60079-47:2021
International approvals	
IECEx approval	IECEx TUR 20.0105X
Approved for	Ex ic ec nC [ic] IIC T4 Gc [Ex ic Dc] IIIC
Certificates and approvals	
Patents	This product may be covered by the following patent: US 9,762,409
General information	

Assembly



Mounting

Wall Mounting Option
For wall mounting the APL rail field switch use the accessory ACC-ARS-WM. See manual for details and dimensions.

Type Code

ARS1	(1)	B	2	-	IC	(2)	-	(3)
ARS1	Device							
ARS1	Ethernet-APL Rail Field Switch							
(1)	PROFIBUS PA Proxy							
1	With proxy							
2	Without proxy							
B	Power Supply							
B	Separately powered 20 V ... 60 V							
2	Uplink Ports							
2	2 ports each for RJ45 and SFP slots							
IC	Intrinsic Safety at Spurs							
IC	Ex ic IIC							
(2)	Spur Port Count							
08	Spur ports							
16	Spur ports							
24	Spur ports							
(3)	Pluggable Terminal Types							
1	Screw terminals							
2	Spring terminals							



Ethernet-APL Rail Field Switch

FieldConnex®

ARS12-B2-IC16-2

- Managed Ethernet-APL field switch for process industries
- Powered spur ports intrinsically safe Ex ic according to 2-WISE and FISCO
- PROFINET MRP, S2 redundancy and dynamic reconfiguration
- 2 ports each for 1000BASE-T and SFP transceivers
- Redundant power input 20 VDC ... 60 VDC
- Installation in Zone 2
- Physical layer diagnostics at the spur
- Configuration and diagnosis with FDI, web interface, PROFINET device functions and SNMP
- Support of network security

Ethernet-APL rail field switch with 16 intrinsically safe Ex ic spur ports and spring terminals



ethernet-apl™
advanced physical layer



Function

The Ethernet-APL rail field switch is a ruggedized, managed field switch offering connectivity for Ethernet-APL devices to Ethernet networks via any protocol. The connections, i. e., "spur" ports, provide intrinsically safe (Ex ic) power and communication to instruments located in Zone 2. APL field switches can be installed in Zone 2.

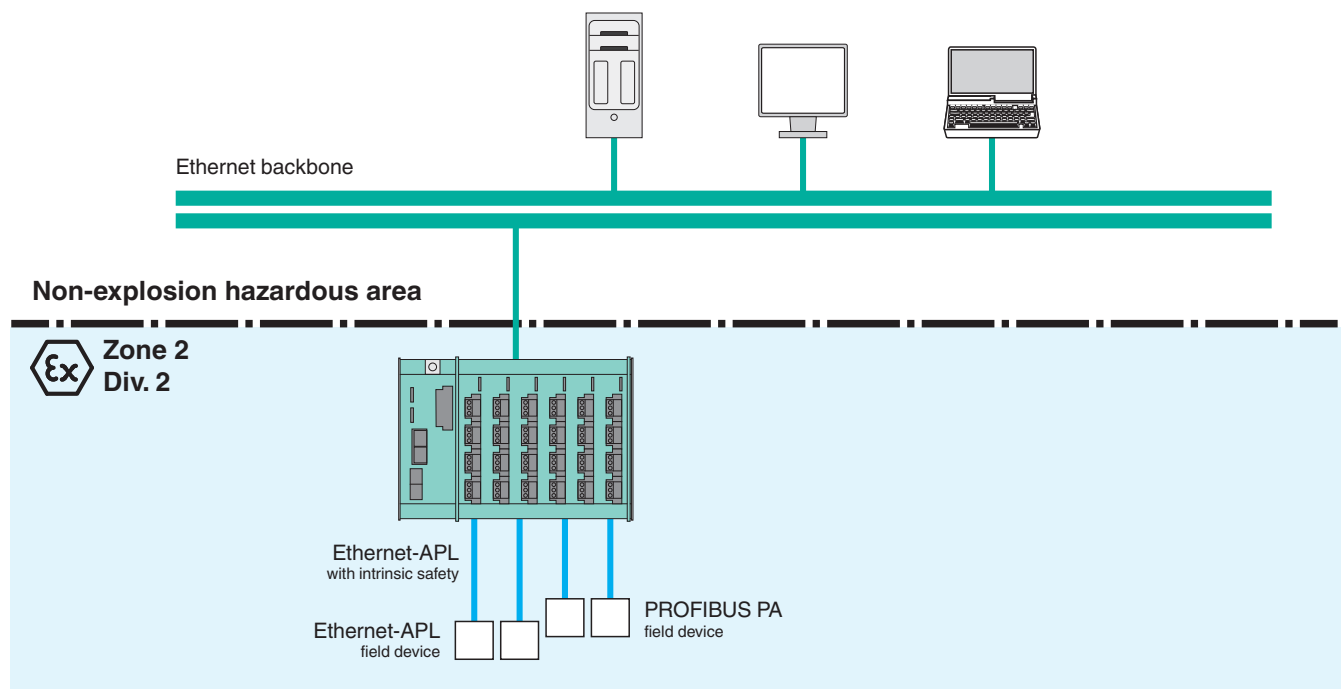
The APL field switch features 2 Gigabit Ethernet ports and 2 SFP ports. The SFP ports provide connections for a choice of optional SFP transceivers to be used in explosion-hazardous areas and different distances.

For PROFINET, the APL field switch supports Class B networks. For high-availability installations, the APL field switch provides redundancy mechanisms such as MRP ring redundancy and S2 system redundancy.

Easy configuration and diagnostics of the APL field switch are accessible via FDI and web-based management. PROFINET device functions and SNMP assure fast start-up and enable the use of predictive maintenance. Comprehensive network and physical layer diagnostics enable proactive management strategies to reduce risk of failure and downtime.

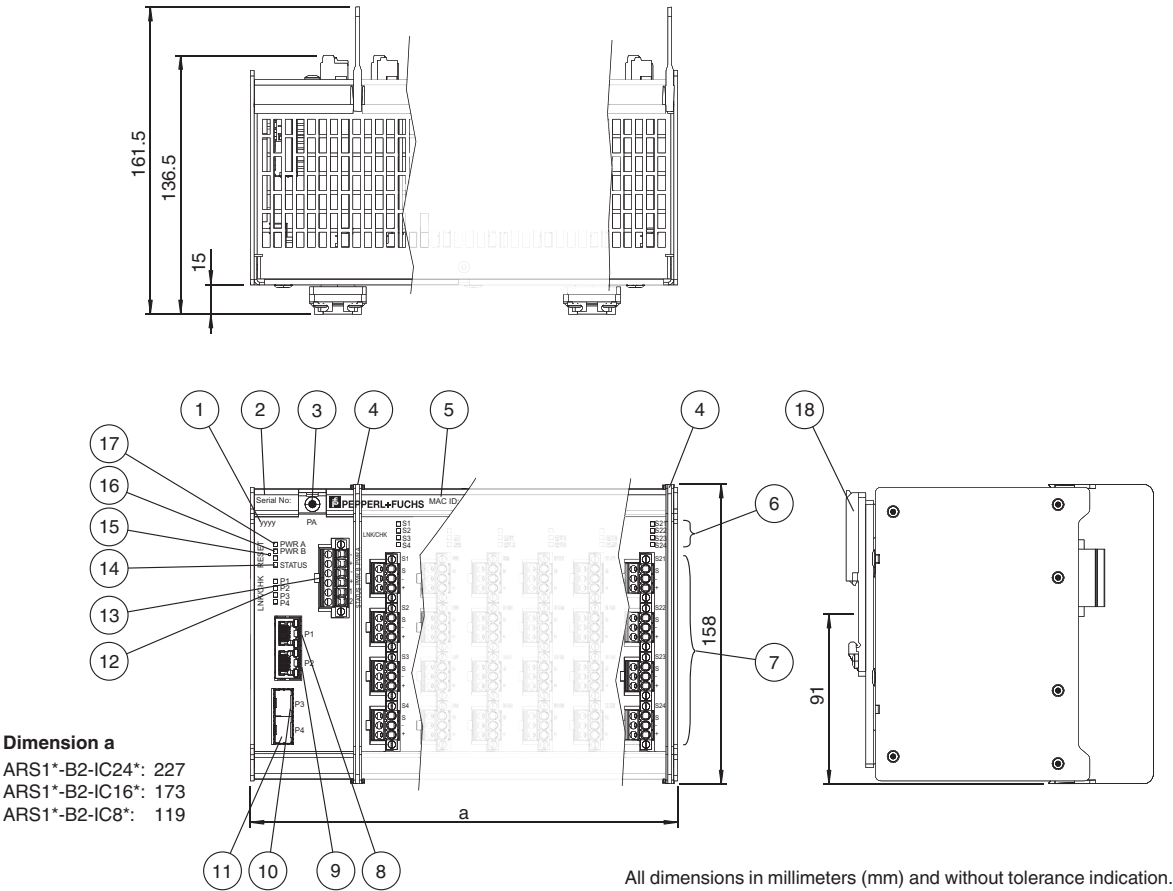
The APL field switch implements enhanced network security and supports SNMPv3, the locking of unused ports, and the HTTPS protocol.

Function Principle



Dimensions

DIN Rail Mounting



- 1

Year of production
- 2

Serial number
- 3

PA, connection to equipotential bonding
- 4

Slot for separation wall
- 5

MAC ID
- 6

LED S1 ... Sn, status spur ports S1 ... Sn
- 7

Connectors for intrinsically safe spurs S1 ... Sn
- 8

Ethernet port P1
- 9

Ethernet port P2
- 10

Ethernet SFP port P3
- 11

Ethernet SFP port P4
- 12

LED LNK/CHK P1 ... P4, communication status
LED P1 ... P4
- 13

Connector for auxiliary power and status
indication output
- 14

LED STATUS, status rail field switch
- 15

Reset button
- 16

LED PWR B, status power input B
- 17

LED PWR A, status power input A
- 18

DIN rail mounting brackets

Technical Data

General specifications		
Design / Mounting		Cabinet installation
Installation in hazardous area		Zone 2
Supply		
Rated voltage	U _r	20 ... 60 V
Rated current	I _r	0.6 ... 1.8 A
Power dissipation		18.3 W
Voltage difference dual supply input		+/- 10 %

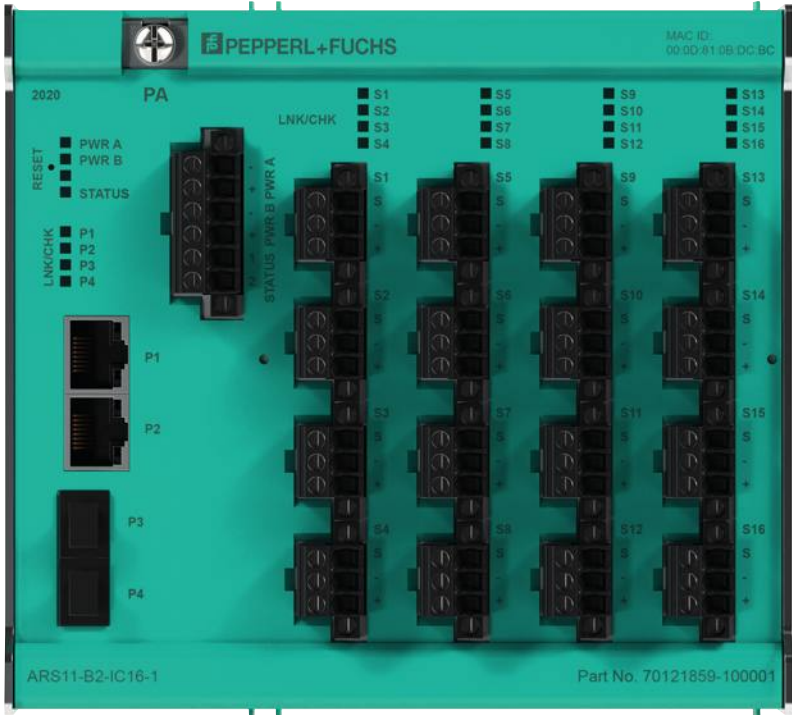
Technical Data

Power consumption		max. 36 W
Redundancy		dual supply input
Indicators/operating means		
LED PWR A/B		green: power on
LED LNK/CHK		Off: no communication link active , Green: communication link active , Green flashing: communication link activity , Red flashing: check function
LED STATUS		Off: Good , Blue: Maintenance required , Red: Failure
Fault signal		VFC alarm 100 mA, 32 V DC, normally closed
Button		Device reset
Interface 1		
Interface type		Ethernet-APL : 1 Vpp option spur connection
Port classification		S P C C
Number of ports		16
Port identification		S 1 ... S 16
Power option		powered
Transfer rate		10 MBit/s full duplex
Rated voltage		11.61 V
Rated current		95 mA
Rated power		1.11 W
Cable shield grounding option		capacitive grounded
Connection type		spring terminals , pluggable
Conductor cross section solid wire		2.08 ... 0.326 mm ² , 14 ... 18 AWG
Conductor cross section flexible wire		2.08 ... 0.326 mm ² , 14 ... 18 AWG
Interface 2		
Interface type		1000BASE-T
Number of ports		2
Port identification		P 1 ... P 2
Transfer rate		10/100/1000 Mbps
Connection type		RJ-45 , EIA/TIA 568 B
Interface 3		
Interface type		Slot for SFP transceiver SFP Multi-Source (MSA) compliant
Number of ports		2
Port identification		P 3 ... P 4
Galvanic isolation		
Spurs/Supply		1500 V AC
SFP/Supply		500 V AC
1000BASE-T/Supply		1500 V AC
1000BASE-T/Spurs		1500 V AC
1000BASE-T/1000BASE-T		1500 V AC
Housing/All		620 V AC
Fault signal/All		1500 V AC
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 61326-1:2013
Conformity		
Galvanic isolation		IEC 61010-1
Electromagnetic compatibility		EN 61326 , NE 21
Degree of protection		IEC 60529
Ethernet		IEEE 802.3z , IEEE 802.3u , IEEE 802.3cg
Shock resistance		EN 60068-2-27

Technical Data

Vibration resistance	EN 60068-2-6
Climatic conditions	DIN IEC 721
Software	
Industrial protocols	PROFINET , CC-B (PA) , dynamic reconfiguration , Netload Class III , pruning
Management	Web user interface , SNMP v1, v2 , v3 , PROFINET
Redundancy	PROFINET MRP , PROFINET system redundancy S2
Management Information Base (MIB)	PROFINET conformance class B
Diagnostics function	10BASE-T1L physical layer , port , Packet statistics , LLDP
Cybersecurity	
Ambient conditions	
Ambient temperature	-40 ... 70 °C (-40 ... 158 °F) horizontally mounted no SFP installed -40 ... 65 °C (-40 ... 149 °F) horizontally mounted SFP installed
Storage temperature	-40 ... 85 °C (-40 ... 185 °F)
Relative humidity	≤ 95 % non-condensing
Shock resistance	15 g 11 ms
Vibration resistance	1 g 10 ... 150 Hz
Pollution degree	max. 2, according to IEC 60664
Corrosion resistance	acc. to ISA-S71.04-1985, severity level G3
Mechanical specifications	
Housing material	stainless steel 1.4301 , Polycarbonate
Degree of protection	IP20
Mass	2920 g
Dimensions	
Height	158 mm
Width	173 mm
Depth	136.5 mm
Mounting	DIN rail mounting , wall mounting
Data for application in connection with hazardous areas	
EU-type examination certificate	TÜV 20 ATEX 8571 X
Marking	Ⓔ II 3 G Ex ic ec nC [ic] IIC T4 Gc Ⓔ II (3) D [Ex ic Dc] IIIC
Supply	
Maximum safe voltage	U _m 60 V
Interface 1	2-WISE power source
Voltage U _o	17.5 V
Current I _o	105 mA
Interface 2	
Maximum safe voltage U _m	60 V
Interface 3	
Maximum safe voltage U _m	60 V
Directive conformity	
Directive 2014/34/EU	EN 60079-0:2018 , EN 60079-11:2012 , EN 60079-7:2015+A1:2018 , EN 60079-15:2019 , IEC TS 60079-47:2021
International approvals	
IECEx approval	IECEx TUR 20.0105X
Approved for	Ex ic ec nC [ic] IIC T4 Gc [Ex ic Dc] IIIC
Certificates and approvals	
Patents	This product may be covered by the following patent: US 9,762,409
General information	

Assembly



Mounting

Wall Mounting Option
For wall mounting the APL rail field switch use the accessory ACC-ARS-WM. See manual for details and dimensions.

Type Code

ARS1	(1)	B	2	-	IC	(2)	-	(3)
ARS1	Device							
ARS1	Ethernet-APL Rail Field Switch							
(1)	PROFIBUS PA Proxy							
1	With proxy							
2	Without proxy							
B	Power Supply							
B	Separately powered 20 V ... 60 V							
2	Uplink Ports							
2	2 ports each for RJ45 and SFP slots							
IC	Intrinsic Safety at Spurs							
IC	Ex ic IIC							
(2)	Spur Port Count							
08	Spur ports							
16	Spur ports							
24	Spur ports							
(3)	Pluggable Terminal Types							
1	Screw terminals							
2	Spring terminals							



Ethernet-APL Rail Field Switch

FieldConnex®

ARS12-B2-IC24-2

- Managed Ethernet-APL field switch for process industries
- Powered spur ports intrinsically safe Ex ic according to 2-WISE and FISCO
- PROFINET MRP, S2 redundancy and dynamic reconfiguration
- 2 ports each for 1000BASE-T and SFP transceivers
- Redundant power input 20 VDC ... 60 VDC
- Installation in Zone 2
- Physical layer diagnostics at the spur
- Configuration and diagnosis with FDI, web interface, PROFINET device functions and SNMP
- Support of network security

Ethernet-APL rail field switch with 24 intrinsically safe Ex ic spur ports and spring terminals



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advanced physical layer



Function

The Ethernet-APL rail field switch is a ruggedized, managed field switch offering connectivity for Ethernet-APL devices to Ethernet networks via any protocol. The connections, i. e., "spur" ports, provide intrinsically safe (Ex ic) power and communication to instruments located in Zone 2. APL field switches can be installed in Zone 2.

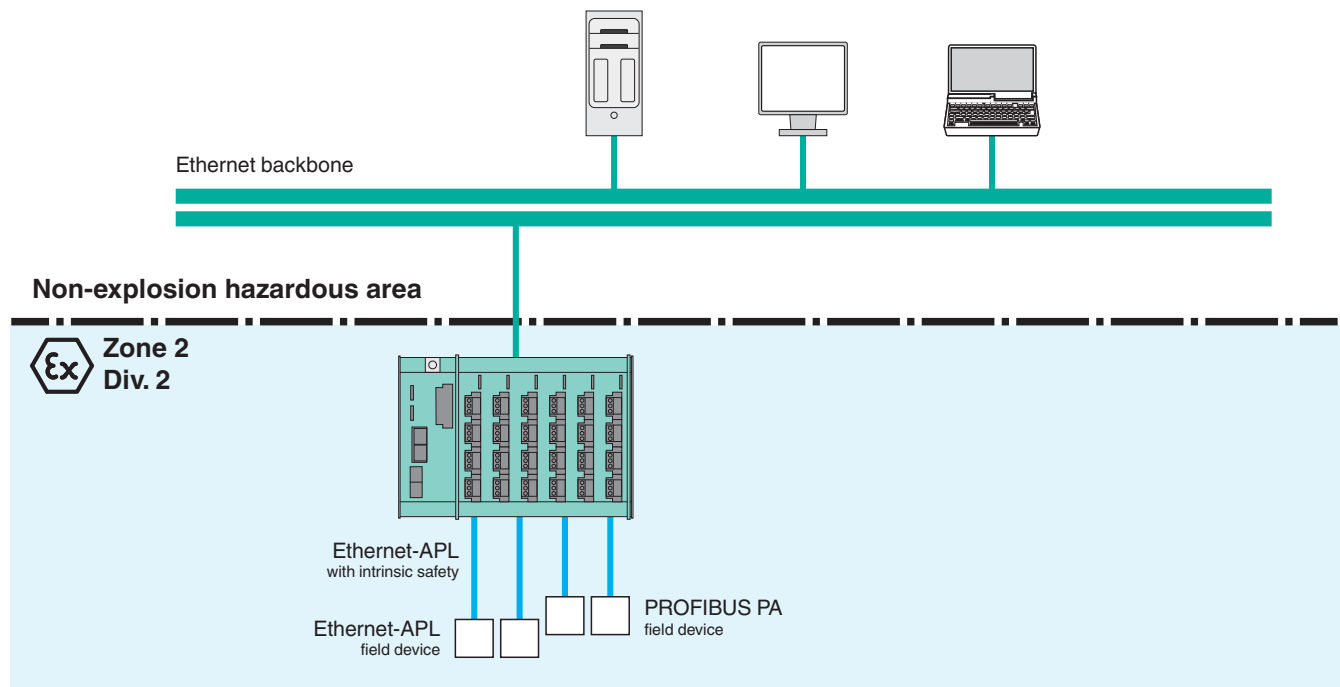
The APL field switch features 2 Gigabit Ethernet ports and 2 SFP ports. The SFP ports provide connections for a choice of optional SFP transceivers to be used in explosion-hazardous areas and different distances.

For PROFINET, the APL field switch supports Class B networks. For high-availability installations, the APL field switch provides redundancy mechanisms such as MRP ring redundancy and S2 system redundancy.

Easy configuration and diagnostics of the APL field switch are accessible via FDI and web-based management. PROFINET device functions and SNMP assure fast start-up and enable the use of predictive maintenance. Comprehensive network and physical layer diagnostics enable proactive management strategies to reduce risk of failure and downtime.

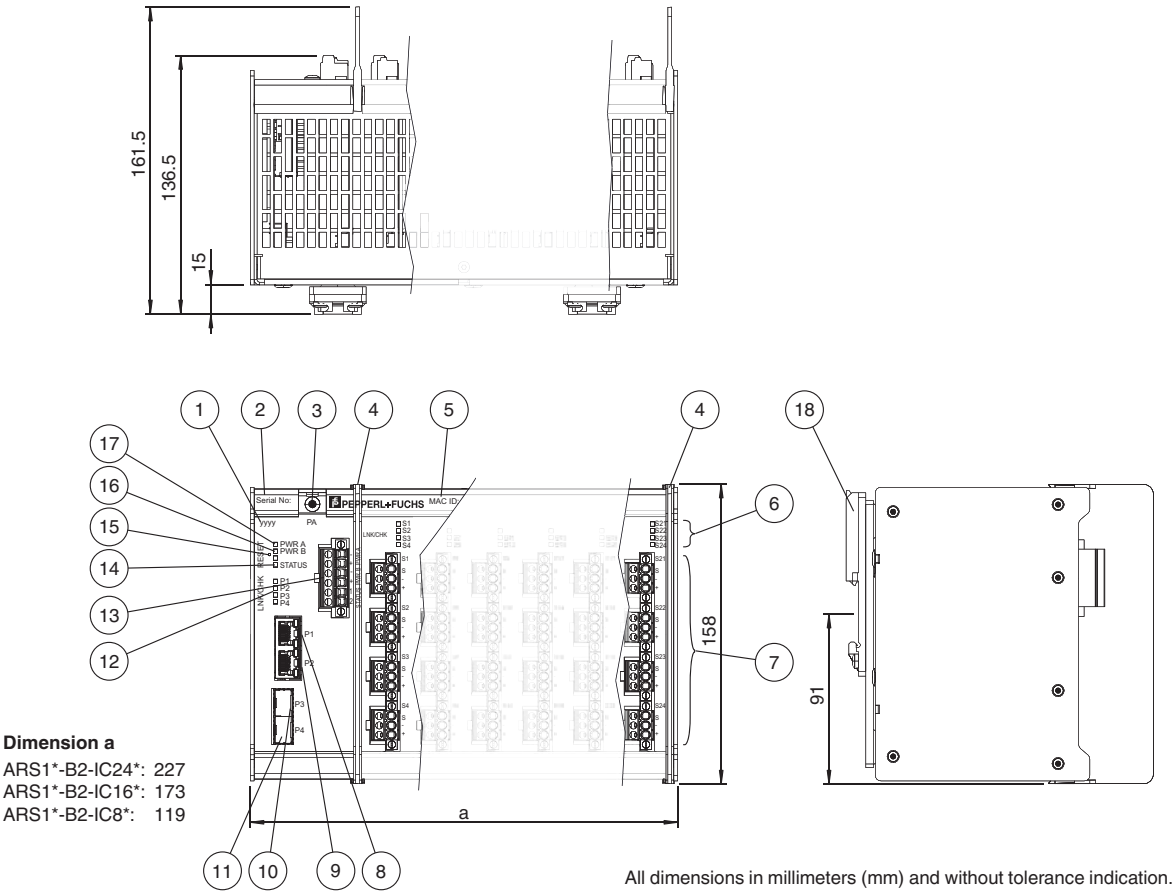
The APL field switch implements enhanced network security and supports SNMPv3, the locking of unused ports, and the HTTPS protocol.

Function Principle



Dimensions

DIN Rail Mounting



- 1

Year of production
- 2

Serial number
- 3

PA, connection to equipotential bonding
- 4

Slot for separation wall
- 5

MAC ID
- 6

LED S1 ... Sn, status spur ports S1 ... Sn
- 7

Connectors for intrinsically safe spurs S1 ... Sn
- 8

Ethernet port P1
- 9

Ethernet port P2
- 10

Ethernet SFP port P3
- 11

Ethernet SFP port P4
- 12

LED LNK/CHK P1 ... P4, communication status
LED P1 ... P4
- 13

Connector for auxiliary power and status
indication output
- 14

LED STATUS, status rail field switch
- 15

Reset button
- 16

LED PWR B, status power input B
- 17

LED PWR A, status power input A
- 18

DIN rail mounting brackets

Technical Data

General specifications		
Design / Mounting		Cabinet installation
Installation in hazardous area		Zone 2
Supply		
Rated voltage	U _r	20 ... 60 V
Rated current	I _r	0.85 ... 2.55 A
Power dissipation		26.7 W
Voltage difference dual supply input		+/- 10 %

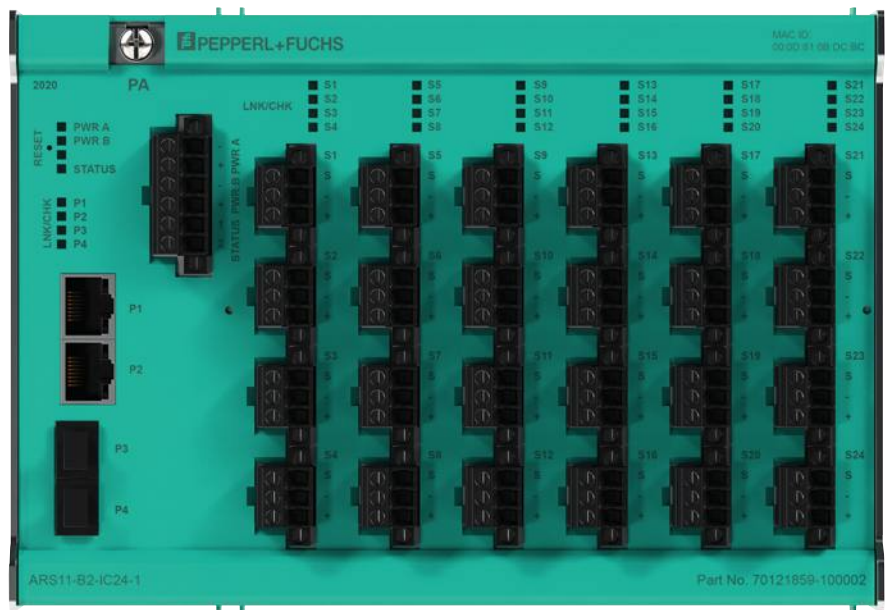
Technical Data

Power consumption		max. 51 W
Redundancy		dual supply input
Indicators/operating means		
LED PWR A/B		green: power on
LED LNK/CHK		Off: no communication link active , Green: communication link active , Green flashing: communication link activity , Red flashing: check function
LED STATUS		Off: Good , Blue: Maintenance required , Red: Failure
Fault signal		VFC alarm 100 mA, 32 V DC, normally closed
Button		Device reset
Interface 1		
Interface type		Ethernet-APL : 1 Vpp option spur connection
Port classification		S P C C
Number of ports		24
Port identification		S 1 ... S 24
Power option		powered
Transfer rate		10 MBit/s full duplex
Rated voltage		11.61 V
Rated current		95 mA
Rated power		1.11 W
Cable shield grounding option		capacitive grounded
Connection type		spring terminals , pluggable
Conductor cross section solid wire		2.08 ... 0.326 mm ² , 14 ... 18 AWG
Conductor cross section flexible wire		2.08 ... 0.326 mm ² , 14 ... 18 AWG
Interface 2		
Interface type		1000BASE-T
Number of ports		2
Port identification		P 1 ... P 2
Transfer rate		10/100/1000 Mbps
Connection type		RJ-45 , EIA/TIA 568 B
Interface 3		
Interface type		Slot for SFP transceiver SFP Multi-Source (MSA) compliant
Number of ports		2
Port identification		P 3 ... P 4
Galvanic isolation		
Spurs/Supply		1500 V AC
SFP/Supply		500 V AC
1000BASE-T/Supply		1500 V AC
1000BASE-T/Spurs		1500 V AC
1000BASE-T/1000BASE-T		1500 V AC
Housing/All		620 V AC
Fault signal/All		1500 V AC
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 61326-1:2013
Conformity		
Galvanic isolation		IEC 61010-1
Electromagnetic compatibility		EN 61326 , NE 21
Degree of protection		IEC 60529
Ethernet		IEEE 802.3z , IEEE 802.3u , IEEE 802.3cg
Shock resistance		EN 60068-2-27

Technical Data

Vibration resistance	EN 60068-2-6
Climatic conditions	DIN IEC 721
Software	
Industrial protocols	PROFINET , CC-B (PA) , dynamic reconfiguration , Netload Class III , pruning
Management	Web user interface , SNMP v1, v2 , v3 , PROFINET
Redundancy	PROFINET MRP , PROFINET system redundancy S2
Management Information Base (MIB)	PROFINET conformance class B
Diagnostics function	10BASE-T1L physical layer , port , Packet statistics , LLDP
Cybersecurity	
Ambient conditions	
Ambient temperature	-40 ... 70 °C (-40 ... 158 °F) horizontally mounted no SFP installed -40 ... 65 °C (-40 ... 149 °F) horizontally mounted SFP installed
Storage temperature	-40 ... 85 °C (-40 ... 185 °F)
Relative humidity	≤ 95 % non-condensing
Shock resistance	15 g 11 ms
Vibration resistance	1 g 10 ... 150 Hz
Pollution degree	max. 2, according to IEC 60664
Corrosion resistance	acc. to ISA-S71.04-1985, severity level G3
Mechanical specifications	
Housing material	stainless steel 1.4301 , Polycarbonate
Degree of protection	IP20
Mass	3530 g
Dimensions	
Height	158 mm
Width	227 mm
Depth	136.5 mm
Mounting	DIN rail mounting , wall mounting
Data for application in connection with hazardous areas	
EU-type examination certificate	TÜV 20 ATEX 8571 X
Marking	Ⓜ II 3 G Ex ic ec nC [ic] IIC T4 Gc Ⓜ II (3) D [Ex ic Dc] IIIC
Supply	
Maximum safe voltage	U_m 60 V
Interface 1	2-WISE power source
Voltage U_o	17.5 V
Current I_o	105 mA
Interface 2	
Maximum safe voltage U_m	60 V
Interface 3	
Maximum safe voltage U_m	60 V
Directive conformity	
Directive 2014/34/EU	EN 60079-0:2018 , EN 60079-11:2012 , EN 60079-7:2015+A1:2018 , EN 60079-15:2019 , IEC TS 60079-47:2021
International approvals	
IECEx approval	IECEx TUR 20.0105X
Approved for	Ex ic ec nC [ic] IIC T4 Gc [Ex ic Dc] IIIC
Certificates and approvals	
Patents	This product may be covered by the following patent: US 9,762,409
General information	

Assembly



Mounting

Wall Mounting Option
For wall mounting the APL rail field switch use the accessory ACC-ARS-WM. See manual for details and dimensions.

Type Code

ARS1	(1)	B	2	-	IC	(2)	-	(3)
ARS1	Device							
ARS1	Ethernet-APL Rail Field Switch							
(1)	PROFIBUS PA Proxy							
1	With proxy							
2	Without proxy							
B	Power Supply							
B	Separately powered 20 V ... 60 V							
2	Uplink Ports							
2	2 ports each for RJ45 and SFP slots							
IC	Intrinsic Safety at Spurs							
IC	Ex ic IIC							
(2)	Spur Port Count							
08	Spur ports							
16	Spur ports							
24	Spur ports							
(3)	Pluggable Terminal Types							
1	Screw terminals							
2	Spring terminals							



Ethernet-APL Rail Field Switch

FieldConnex®

ARS11-B2-IA08-1

- Managed Ethernet-APL field switch for process industries
- PROFINET MRP, S2 redundancy and dynamic reconfiguration
- 2 ports each for 1000BASE-T and SFP transceivers
- Redundant power input 20 VDC ... 60 VDC
- Installation in Zone 2
- Physical layer diagnostics at the spur
- Configuration and diagnosis with FDI, web interface, PROFINET device functions and SNMP
- Support of network security
- Powered spur ports intrinsically safe Ex ia according to 2-WISE and FISCO
- Support of Ethernet-APL and PROFIBUS PA instruments

Ethernet-APL rail field switch with 8 intrinsically safe Ex ia spur ports and screw terminals with proxy support selectable for PROFIBUS PA field devices



ethernet-apl™
advanced physical layer



Function

The Ethernet-APL rail field switch is a ruggedized, managed field switch offering connectivity for Ethernet-APL devices to Ethernet networks via any protocol. The connections, i. e., "spur" ports, provide intrinsically safe (Ex ia) power and communication to instruments located in Zone 0/1. APL field switches can be installed in Zone 2.

The APL field switch features 2 Gigabit Ethernet ports and 2 SFP ports. The SFP ports provide connections for a choice of optional SFP transceivers to be used in explosion-hazardous areas and different distances.

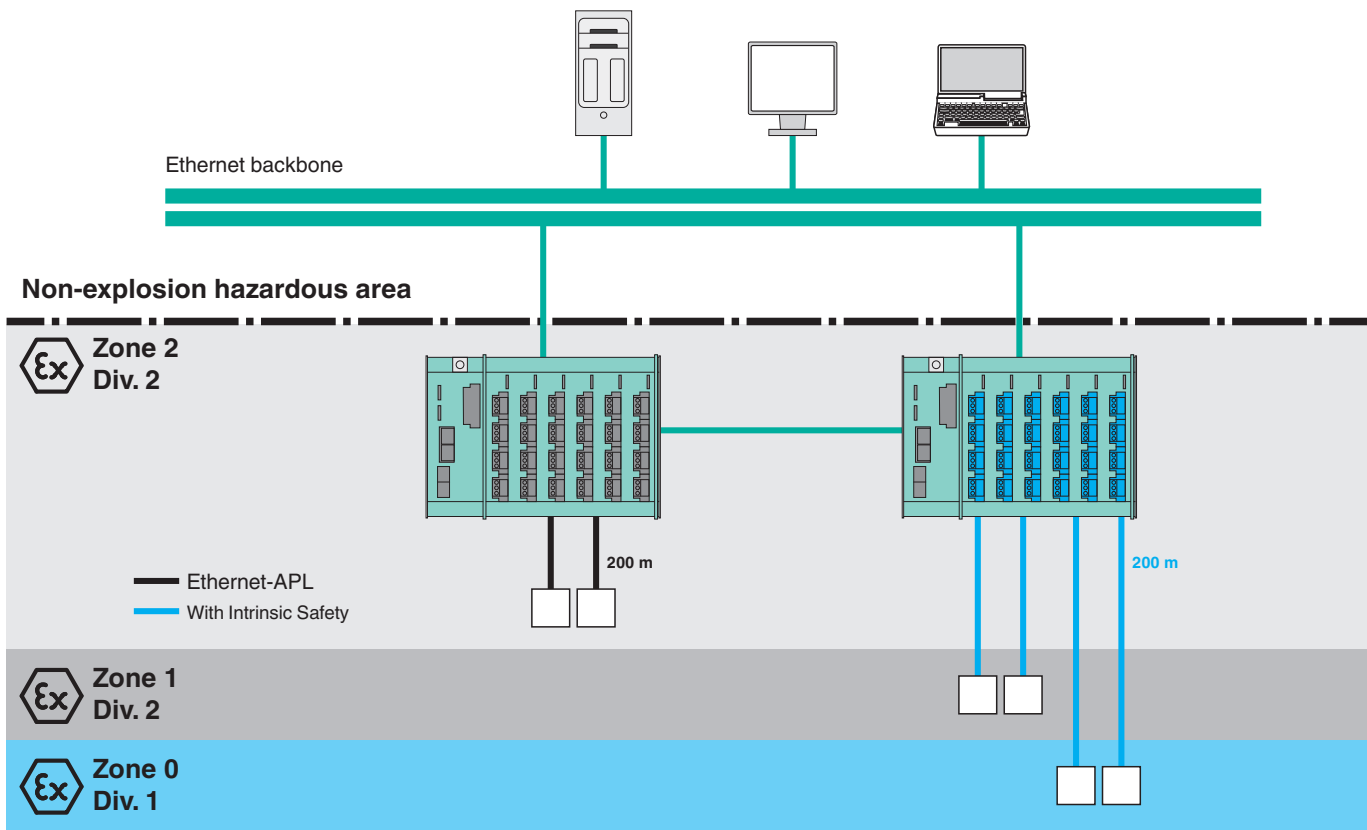
For PROFINET, the APL field switch supports Class B networks. For high-availability installations, the APL field switch provides redundancy mechanisms such as MRP ring redundancy and S2 system redundancy.

PROFINET dynamic reconfiguration permits re-configuration of the APL field switch during runtime without interrupting the data exchange.

Easy configuration and diagnostics of the APL field switch are accessible via FDI and web-based management. PROFINET device functions and SNMP assure fast start-up and enable the use of predictive maintenance. Comprehensive network and physical layer diagnostics enable proactive management strategies to reduce risk of failure and downtime.

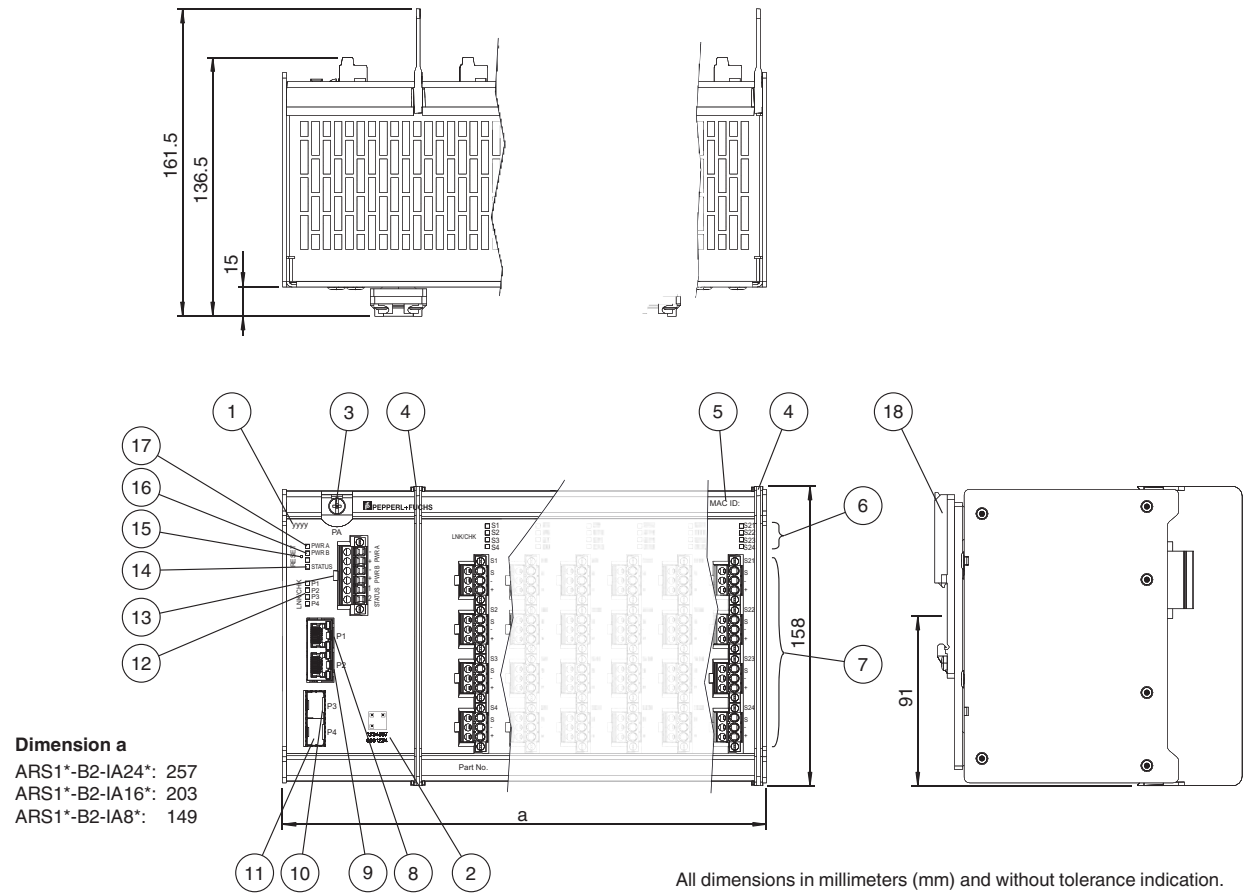
The APL field switch implements enhanced network security and supports SNMPv3, the locking of unused ports, and the HTTPS protocol.

Function Principle



Dimensions

DIN Rail Mounting



- | | |
|---|---|
| 1 Year of production | 11 Ethernet SFP port P4 |
| 2 QR code and serial number | 12 LED LNK/CHK P1 ... P4, communication status LED P1 ... P4 |
| 3 PA, connection to equipotential bonding | 13 Connector for auxiliary power and status indication output |
| 4 Slot for separation wall | 14 LED STATUS, status rail field switch |
| 5 MAC ID | 15 Reset button |
| 6 LED S1 ... Sn, status spur ports S1 ... Sn | 16 LED PWR B, status power input B |
| 7 Connectors for intrinsically safe spurs S1 ... Sn | 17 LED PWR A, status power input A |
| 8 Ethernet port P1 | 18 DIN rail mounting brackets |
| 9 Ethernet port P2 | |
| 10 Ethernet SFP port P3 | |

Technical Data

General specifications			
Design / Mounting		Cabinet installation	
Installation in hazardous area		Zone 2	
Fieldbus support		PROFIBUS PA	
Supply			
Rated voltage	U _r	20 ... 60 V	
Rated current	I _r	0.85 ... 0.3 A	
Power dissipation		max. 13.7 W	

Technical Data

Voltage difference dual supply input		+/- 10 %
Power consumption		max. 18 W
Redundancy		dual supply input
Indicators/operating means		
LED PWR A/B		green: power on
LED LNK/CHK		Off: no communication link active , Green: communication link active , Green flashing: communication link activity , Yellow flashing: communication with PROFIBUS PA field device , Red flashing: check function
LED STATUS		Off: Good , Blue: Maintenance required , Red: Failure
Fault signal		VFC alarm 100 mA, 32 V DC, normally closed
Button		Device reset
Interface 1		
Interface type		Ethernet-APL : 1 Vpp option spur connection , PROFIBUS PA
Port classification		S P A A
Number of ports		8
Port identification		S1...S8
Power option		powered
Transfer rate		10 MBit/s full duplex
Rated voltage		9.6 V
Rated current		55.56 mA
Rated power		540 mW
Cable shield grounding option		capacitive grounded
Connection type		screw terminals , pluggable
Conductor cross section		single wire/stranded wire: 0.2 ... 2.5 mm ²
Conductor cross section solid wire		2.08 ... 0.326 mm ² , 14 ... 18 AWG
Conductor cross section flexible wire		2.08 ... 0.326 mm ² , 14 ... 18 AWG
Interface 2		
Interface type		1000BASE-T
Number of ports		2
Port identification		P 1 ... P 2
Transfer rate		10/100/1000 Mbps
Connection type		RJ-45 , EIA/TIA 568 B
Interface 3		
Interface type		Slot for SFP transceiver SFP Multi-Source (MSA) compliant
Number of ports		2
Port identification		P 3 ... P 4
Galvanic isolation		
Spurs/Supply		safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V
SFP/Supply		620 V AC
1000BASE-T/Supply		1500 V AC
1000BASE-T/Spurs		safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V
1000BASE-T/1000BASE-T		1500 V AC
Housing/All		620 V AC
Fault signal/All		620 V AC
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 61326-1:2013
Conformity		
Galvanic isolation		IEC 61010-1
Electromagnetic compatibility		EN 61326 , NE 21

Technical Data

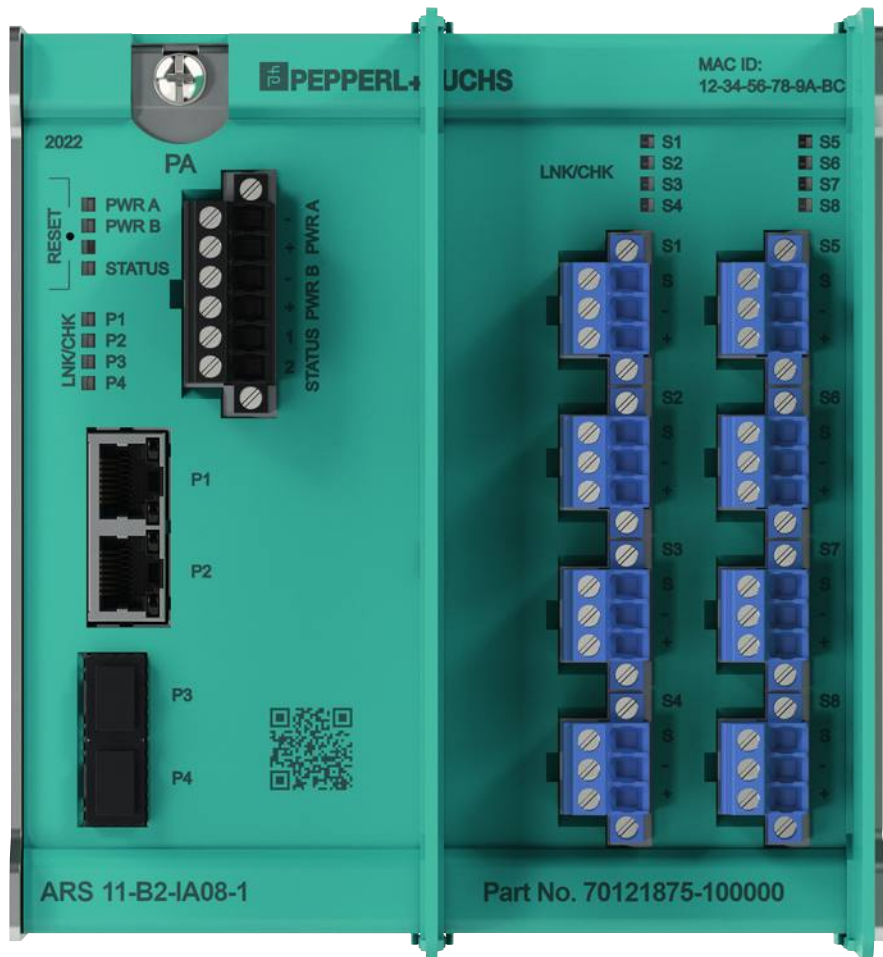
Degree of protection		IEC 60529
Ethernet		IEEE 802.3z , IEEE 802.3u , IEEE 802.3cg
Shock resistance		EN 60068-2-27
Vibration resistance		EN 60068-2-6
Climatic conditions		DIN IEC 721
Software		
Industrial protocols		PROFINET , CC-B (PA) , dynamic reconfiguration , Netload Class III , pruning
Management		Web user interface , SNMP v1, v2 , v3 , PROFINET
Redundancy		PROFINET MRP , PROFINET system redundancy S2
Management Information Base (MIB)		PROFINET conformance class B
Diagnostics function		10BASE-T1L physical layer , port , Packet statistics , LLDP , PROFIBUS PA
Cybersecurity		
Ambient conditions		
Ambient temperature		-40 ... 70 °C (-40 ... 158 °F) horizontally mounted no SFP installed -40 ... 65 °C (-40 ... 149 °F) horizontally mounted SFP installed
Storage temperature		-40 ... 85 °C (-40 ... 185 °F)
Relative humidity		≤ 95 % non-condensing
Shock resistance		15 g 11 ms
Vibration resistance		1 g 10 ... 150 Hz
Pollution degree		max. 2, according to IEC 60664
Corrosion resistance		acc. to ISA-S71.04-1985, severity level G3
Mechanical specifications		
Housing material		stainless steel 1.4301 , Polycarbonate
Degree of protection		IP20
Mass		2656 g
Dimensions		
Height		158 mm
Width		149 mm
Depth		136.5 mm
Mounting		DIN rail mounting , wall mounting
Data for application in connection with hazardous areas		
EU-type examination certificate		TÜV 21 ATEX 8666 X
Marking		Ⓔ II 3 (1) G Ex ic ec [ia Ga] IIC T4 Gc Ⓔ II (1) D [Ex ia Da] IIIC
Supply		
Maximum safe voltage	U_m	60 V
Interface 1		2-WISE power source, FISCO power supply
Voltage U_o		17.5 V
Current I_o		380 mA
Power P_o		1.67 W
Capacitance C_o		IIC : 0.25 µF IIB/IIIC : 1.5 µF
Inductance L_o		IIC : 0.15 mH IIB/IIIC : 0.5 mH
Interface 2		
Maximum safe voltage U_m		60 V
Interface 3		
Maximum safe voltage U_m		60 V
Directive conformity		
Directive 2014/34/EU		EN 60079-0:2018 , EN 60079-11:2012 , EN 60079-7:2015+A1:2018 , IEC TS 60079-47:2021
International approvals		
IECEx approval		IECEx TUR 21.0072X
Approved for		Ex ic ec [ia Ga] IIC T4 Gc [Ex ia Da] IIIC

Technical Data

Certificates and approvals

Patents	This product may be covered by the following patent: US 9,762,409
General information	
Supplementary information	Observe the certificates, declarations of conformity, instruction manuals, and manuals where applicable.

Assembly



Mounting

Wall Mounting Option
For wall mounting the APL rail field switch use the accessory ACC-ARS-WM. See manual for details and dimensions.

Type Code

ARS1	(1)	B	2	-	IA	(2)	-	(3)
ARS1	Device							
ARS1	Ethernet-APL Rail Field Switch							
(1)	PROFIBUS PA Proxy							
1	With proxy							
2	Without proxy							
B	Power Supply							
B	Separately powered 20 V ... 60 V							
2	Uplink Ports							
2	2 ports each for RJ45 and SFP slots							

Type Code	
IA	Intrinsic Safety at Spurs
IA	Ex ia IIC
(2)	Spur Port Count
08	Spur ports
16	Spur ports
24	Spur ports
(3)	Pluggable Terminal Types
1	Screw terminals
2	Spring terminals



Ethernet-APL Rail Field Switch

FieldConnex®

ARS11-B2-IA16-1

- Managed Ethernet-APL field switch for process industries
- PROFINET MRP, S2 redundancy and dynamic reconfiguration
- 2 ports each for 1000BASE-T and SFP transceivers
- Redundant power input 20 VDC ... 60 VDC
- Installation in Zone 2
- Physical layer diagnostics at the spur
- Configuration and diagnosis with FDI, web interface, PROFINET device functions and SNMP
- Support of network security
- Powered spur ports intrinsically safe Ex ia according to 2-WISE and FISCO
- Support of Ethernet-APL and PROFIBUS PA instruments

Ethernet-APL rail field switch with 16 intrinsically safe Ex ia spur ports and screw terminals with proxy support selectable for PROFIBUS PA field devices



ethernet-apl™
advanced physical layer



Function

The Ethernet-APL rail field switch is a ruggedized, managed field switch offering connectivity for Ethernet-APL devices to Ethernet networks via any protocol. The connections, i. e., "spur" ports, provide intrinsically safe (Ex ia) power and communication to instruments located in Zone 0/1. APL field switches can be installed in Zone 2.

The APL field switch features 2 Gigabit Ethernet ports and 2 SFP ports. The SFP ports provide connections for a choice of optional SFP transceivers to be used in explosion-hazardous areas and different distances.

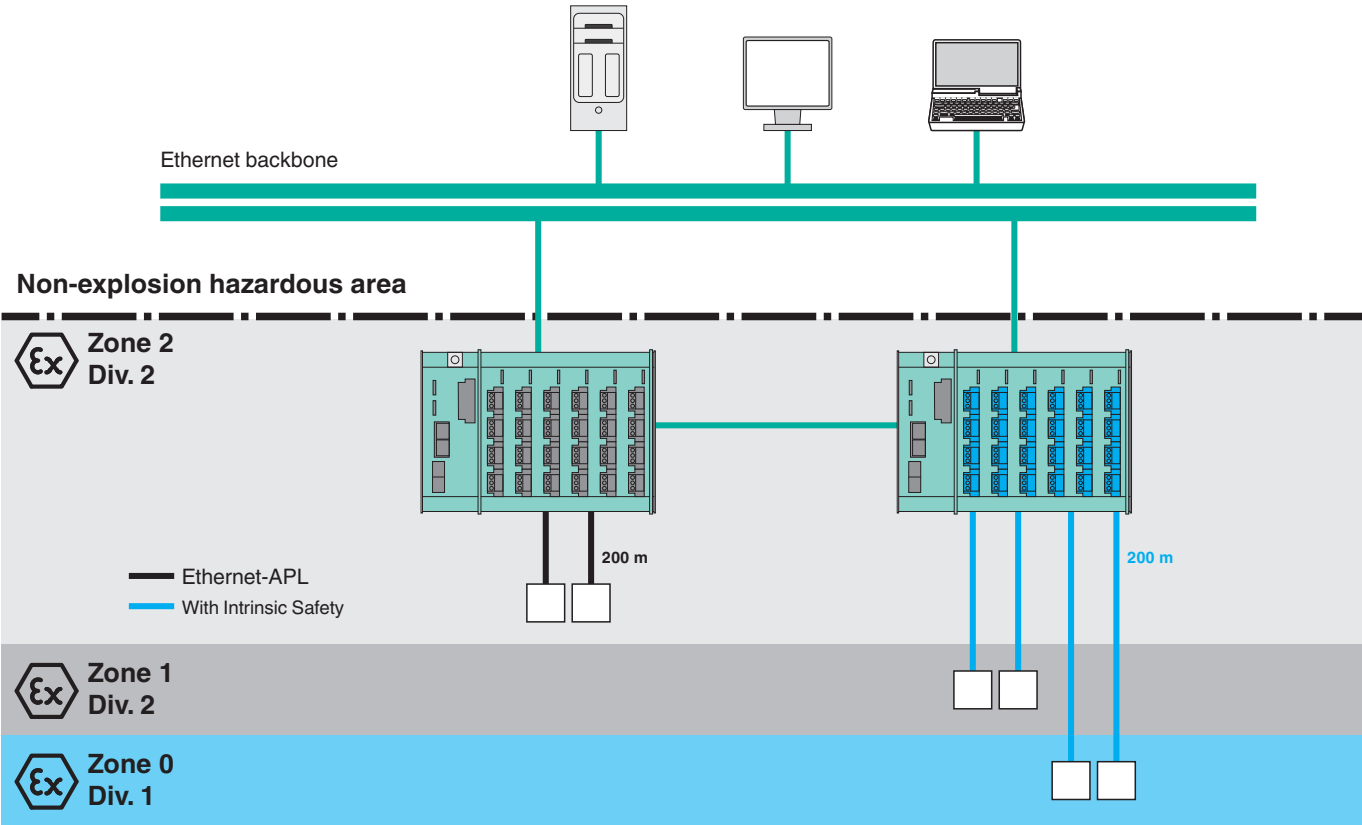
For PROFINET, the APL field switch supports Class B networks. For high-availability installations, the APL field switch provides redundancy mechanisms such as MRP ring redundancy and S2 system redundancy.

PROFINET dynamic reconfiguration permits re-configuration of the APL field switch during runtime without interrupting the data exchange.

Easy configuration and diagnostics of the APL field switch are accessible via FDI and web-based management. PROFINET device functions and SNMP assure fast start-up and enable the use of predictive maintenance. Comprehensive network and physical layer diagnostics enable proactive management strategies to reduce risk of failure and downtime.

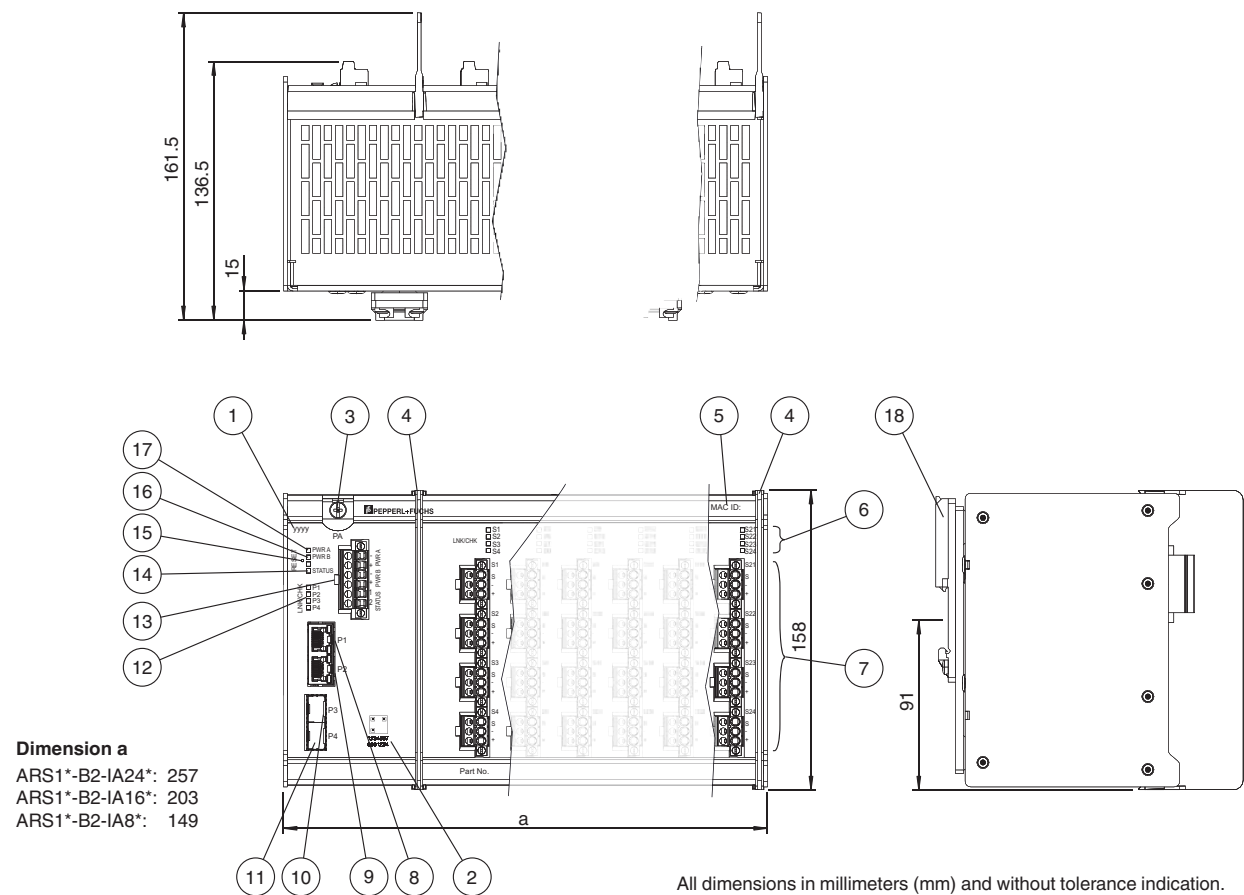
The APL field switch implements enhanced network security and supports SNMPv3, the locking of unused ports, and the HTTPS protocol.

Function Principle



Dimensions

DIN Rail Mounting



- 1 Year of production
- 2 QR code and serial number
- 3 PA, connection to equipotential bonding
- 4 Slot for separation wall
- 5 MAC ID
- 6 LED S1 ... Sn, status spur ports S1 ... Sn
- 7 Connectors for intrinsically safe spurs S1 ... Sn
- 8 Ethernet port P1
- 9 Ethernet port P2
- 10 Ethernet SFP port P3
- 11 Ethernet SFP port P4
- 12 LED LNK/CHK P1 ... P4, communication status LED P1 ... P4
- 13 Connector for auxiliary power and status indication output
- 14 LED STATUS, status rail field switch
- 15 Reset button
- 16 LED PWR B, status power input B
- 17 LED PWR A, status power input A
- 18 DIN rail mounting brackets

Technical Data

General specifications

Design / Mounting	Cabinet installation
Installation in hazardous area	Zone 2
Fieldbus support	PROFIBUS PA

Supply

Rated voltage	U_r	20 ... 60 V
Rated current	I_r	1.3 ... 0.45 A
Power dissipation		max. 17.4 W

Technical Data

Voltage difference dual supply input		+/- 10 %
Power consumption		max. 26 W
Redundancy		dual supply input
Indicators/operating means		
LED PWR A/B		green: power on
LED LNK/CHK		Off: no communication link active , Green: communication link active , Green flashing: communication link activity , Yellow flashing: communication with PROFIBUS PA field device , Red flashing: check function
LED STATUS		Off: Good , Blue: Maintenance required , Red: Failure
Fault signal		VFC alarm 100 mA, 32 V DC, normally closed
Button		Device reset
Interface 1		
Interface type		Ethernet-APL : 1 Vpp option spur connection , PROFIBUS PA
Port classification		S P A A
Number of ports		16
Port identification		S1...S16
Power option		powered
Transfer rate		10 MBit/s full duplex
Rated voltage		9.6 V
Rated current		55.56 mA
Rated power		540 mW
Cable shield grounding option		capacitive grounded
Connection type		screw terminals , pluggable
Conductor cross section		single wire/stranded wire: 0.2 ... 2.5 mm ²
Conductor cross section solid wire		2.08 ... 0.326 mm ² , 14 ... 18 AWG
Conductor cross section flexible wire		2.08 ... 0.326 mm ² , 14 ... 18 AWG
Interface 2		
Interface type		1000BASE-T
Number of ports		2
Port identification		P 1 ... P 2
Transfer rate		10/100/1000 Mbps
Connection type		RJ-45 , EIA/TIA 568 B
Interface 3		
Interface type		Slot for SFP transceiver SFP Multi-Source (MSA) compliant
Number of ports		2
Port identification		P 3 ... P 4
Galvanic isolation		
Spurs/Supply		safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V
SFP/Supply		620 V AC
1000BASE-T/Supply		1500 V AC
1000BASE-T/Spurs		safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V
1000BASE-T/1000BASE-T		1500 V AC
Housing/All		620 V AC
Fault signal/All		620 V AC
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 61326-1:2013
Conformity		
Galvanic isolation		IEC 61010-1
Electromagnetic compatibility		EN 61326 , NE 21

Technical Data

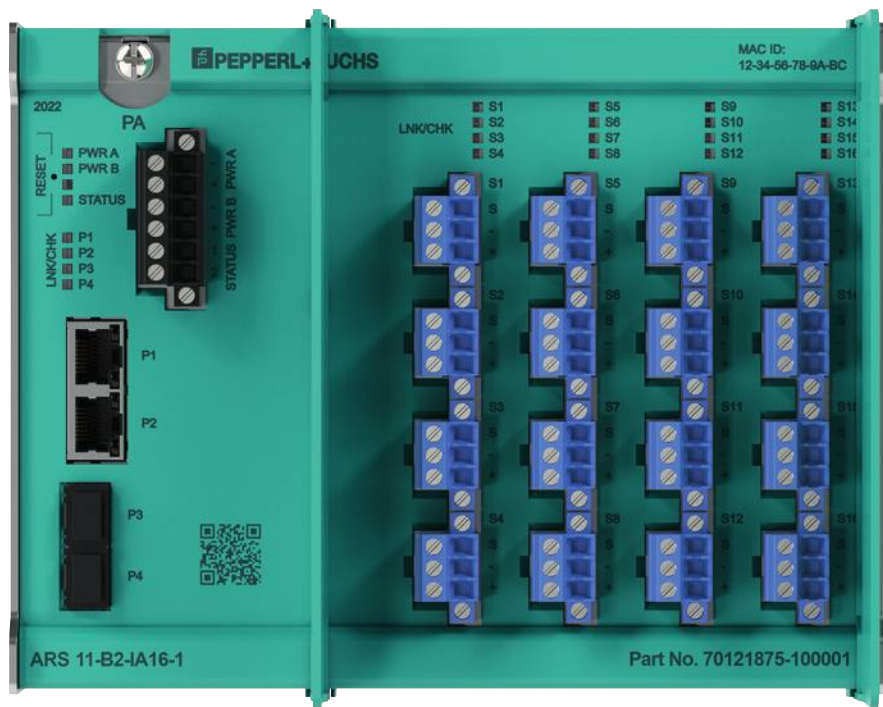
Degree of protection		IEC 60529
Ethernet		IEEE 802.3z , IEEE 802.3u , IEEE 802.3cg
Shock resistance		EN 60068-2-27
Vibration resistance		EN 60068-2-6
Climatic conditions		DIN IEC 721
Software		
Industrial protocols		PROFINET , CC-B (PA) , dynamic reconfiguration , Netload Class III , pruning
Management		Web user interface , SNMP v1, v2 , v3 , PROFINET
Redundancy		PROFINET MRP , PROFINET system redundancy S2
Management Information Base (MIB)		PROFINET conformance class B
Diagnostics function		10BASE-T1L physical layer , port , Packet statistics , LLDP , PROFIBUS PA
Cybersecurity		
Ambient conditions		
Ambient temperature		-40 ... 70 °C (-40 ... 158 °F) horizontally mounted no SFP installed -40 ... 65 °C (-40 ... 149 °F) horizontally mounted SFP installed
Storage temperature		-40 ... 85 °C (-40 ... 185 °F)
Relative humidity		≤ 95 % non-condensing
Shock resistance		15 g 11 ms
Vibration resistance		1 g 10 ... 150 Hz
Pollution degree		max. 2, according to IEC 60664
Corrosion resistance		acc. to ISA-S71.04-1985, severity level G3
Mechanical specifications		
Housing material		stainless steel 1.4301 , Polycarbonate
Degree of protection		IP20
Mass		3201 g
Dimensions		
Height		158 mm
Width		203 mm
Depth		136.5 mm
Mounting		DIN rail mounting , wall mounting
Data for application in connection with hazardous areas		
EU-type examination certificate		TÜV 21 ATEX 8666 X
Marking		Ⓔ II 3 (1) G Ex ic ec [ia Ga] IIC T4 Gc Ⓔ II (1) D [Ex ia Da] IIIC
Supply		
Maximum safe voltage	U_m	60 V
Interface 1		2-WISE power source, FISCO power supply
Voltage U_o		17.5 V
Current I_o		380 mA
Power P_o		1.67 W
Capacitance C_o		IIC : 0.25 µF IIB/IIIC : 1.5 µF
Inductance L_o		IIC : 0.15 mH IIB/IIIC : 0.5 mH
Interface 2		
Maximum safe voltage U_m		60 V
Interface 3		
Maximum safe voltage U_m		60 V
Directive conformity		
Directive 2014/34/EU		EN 60079-0:2018 , EN 60079-11:2012 , EN 60079-7:2015+A1:2018 , IEC TS 60079-47:2021
International approvals		
IECEx approval		IECEx TUR 21.0072X
Approved for		Ex ic ec [ia Ga] IIC T4 Gc [Ex ia Da] IIIC

Technical Data

Certificates and approvals

Patents	This product may be covered by the following patent: US 9,762,409
General information	
Supplementary information	Observe the certificates, declarations of conformity, instruction manuals, and manuals where applicable.

Assembly



Mounting

Wall Mounting Option
For wall mounting the APL rail field switch use the accessory ACC-ARS-WM. See manual for details and dimensions.

Type Code

ARS1	(1)	B	2	-	IA	(2)	-	(3)
ARS1	Device							
ARS1	Ethernet-APL Rail Field Switch							
(1)	PROFIBUS PA Proxy							
1	With proxy							
2	Without proxy							
B	Power Supply							
B	Separately powered 20 V ... 60 V							
2	Uplink Ports							
2	2 ports each for RJ45 and SFP slots							

Type Code	
IA	Intrinsic Safety at Spurs
IA	Ex ia IIC
(2)	Spur Port Count
08	Spur ports
16	Spur ports
24	Spur ports
(3)	Pluggable Terminal Types
1	Screw terminals
2	Spring terminals



Ethernet-APL Rail Field Switch

FieldConnex®

ARS11-B2-IA24-1

- Managed Ethernet-APL field switch for process industries
- PROFINET MRP, S2 redundancy and dynamic reconfiguration
- 2 ports each for 1000BASE-T and SFP transceivers
- Redundant power input 20 VDC ... 60 VDC
- Installation in Zone 2
- Physical layer diagnostics at the spur
- Configuration and diagnosis with FDI, web interface, PROFINET device functions and SNMP
- Support of network security
- Powered spur ports intrinsically safe Ex ia according to 2-WISE and FISCO
- Support of Ethernet-APL and PROFIBUS PA instruments

Ethernet-APL rail field switch with 24 intrinsically safe Ex ia spur ports and screw terminals with proxy support selectable for PROFIBUS PA field devices



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advanced physical layer



Function

The Ethernet-APL rail field switch is a ruggedized, managed field switch offering connectivity for Ethernet-APL devices to Ethernet networks via any protocol. The connections, i. e., "spur" ports, provide intrinsically safe (Ex ia) power and communication to instruments located in Zone 0/1. APL field switches can be installed in Zone 2.

The APL field switch features 2 Gigabit Ethernet ports and 2 SFP ports. The SFP ports provide connections for a choice of optional SFP transceivers to be used in explosion-hazardous areas and different distances.

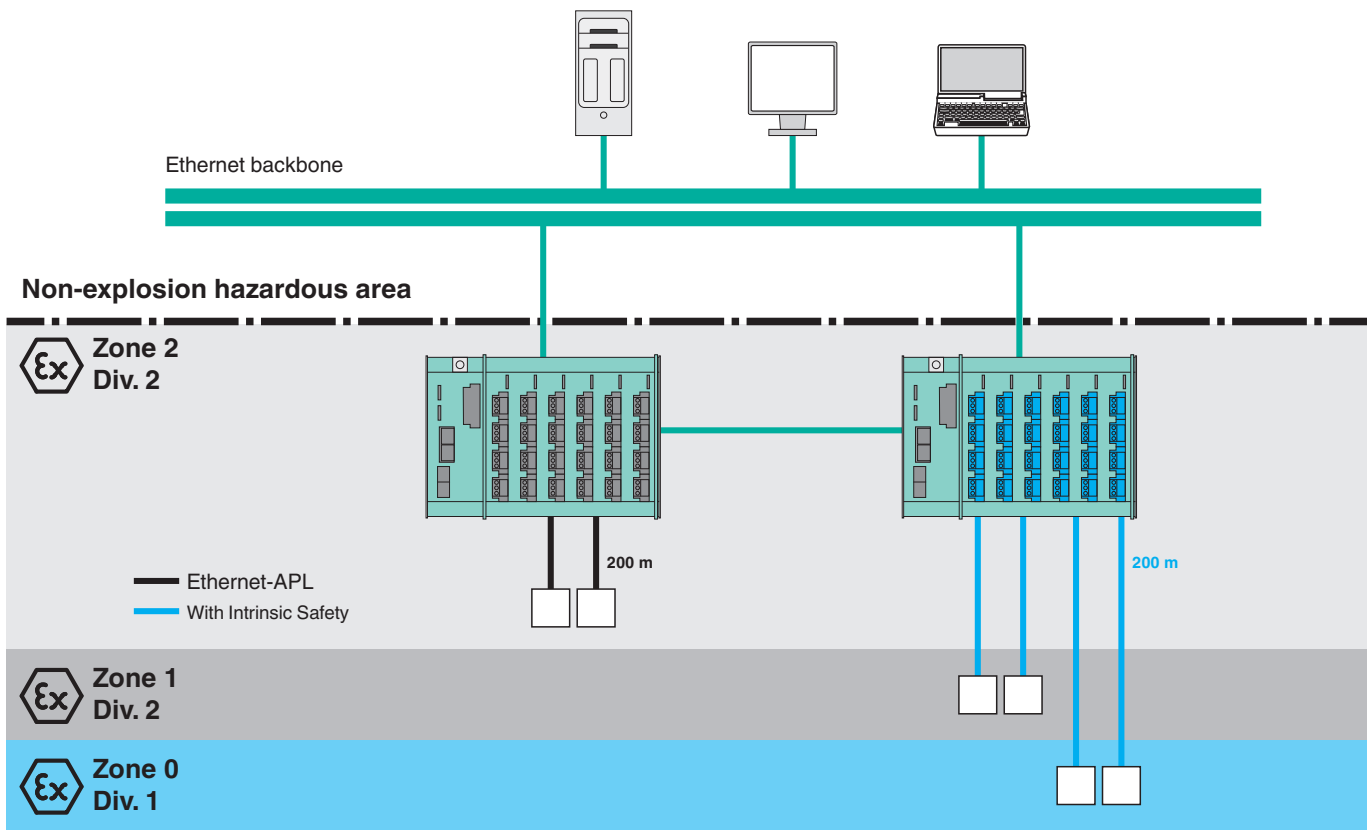
For PROFINET, the APL field switch supports Class B networks. For high-availability installations, the APL field switch provides redundancy mechanisms such as MRP ring redundancy and S2 system redundancy.

PROFINET dynamic reconfiguration permits re-configuration of the APL field switch during runtime without interrupting the data exchange.

Easy configuration and diagnostics of the APL field switch are accessible via FDI and web-based management. PROFINET device functions and SNMP assure fast start-up and enable the use of predictive maintenance. Comprehensive network and physical layer diagnostics enable proactive management strategies to reduce risk of failure and downtime.

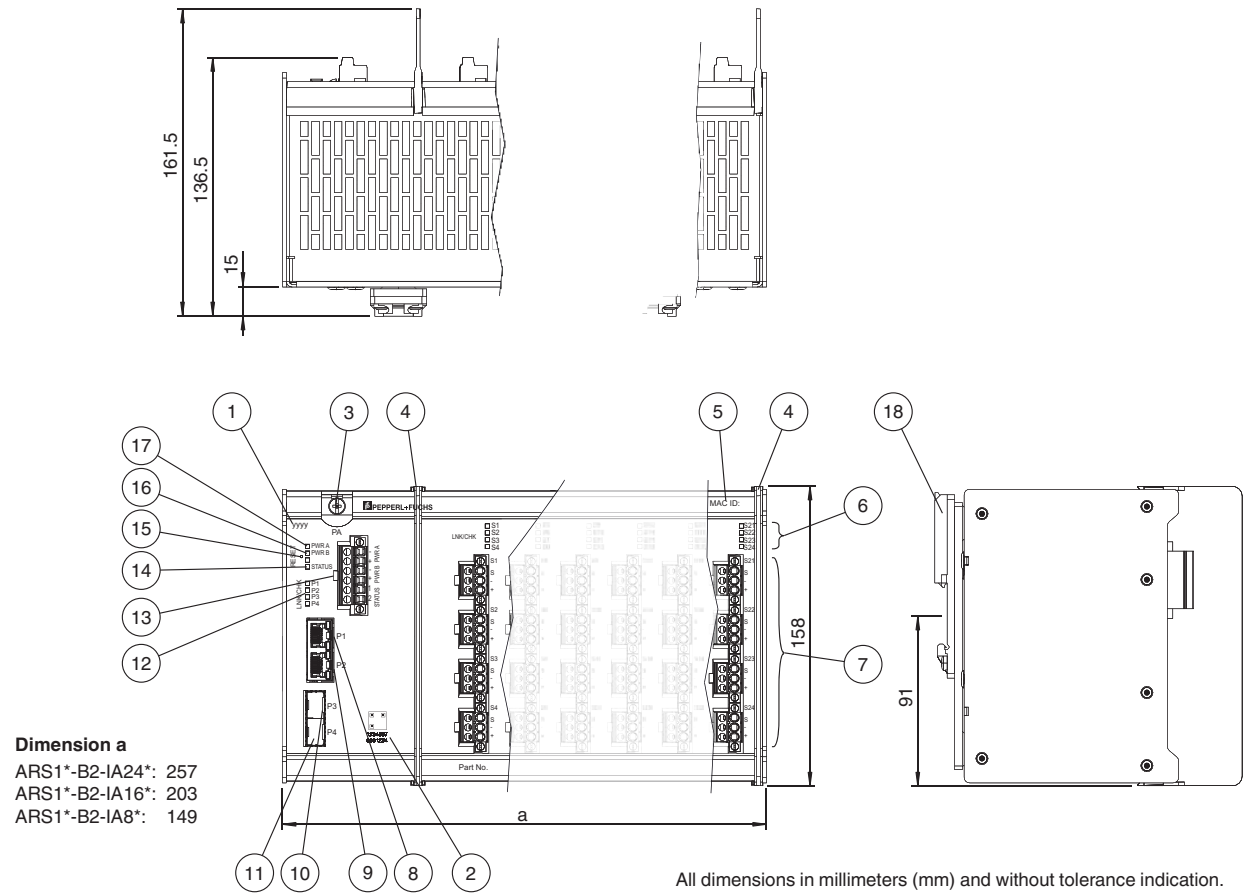
The APL field switch implements enhanced network security and supports SNMPv3, the locking of unused ports, and the HTTPS protocol.

Function Principle



Dimensions

DIN Rail Mounting



- | | |
|---|---|
| 1 Year of production | 11 Ethernet SFP port P4 |
| 2 QR code and serial number | 12 LED LNK/CHK P1 ... P4, communication status LED P1 ... P4 |
| 3 PA, connection to equipotential bonding | 13 Connector for auxiliary power and status indication output |
| 4 Slot for separation wall | 14 LED STATUS, status rail field switch |
| 5 MAC ID | 15 Reset button |
| 6 LED S1 ... Sn, status spur ports S1 ... Sn | 16 LED PWR B, status power input B |
| 7 Connectors for intrinsically safe spurs S1 ... Sn | 17 LED PWR A, status power input A |
| 8 Ethernet port P1 | 18 DIN rail mounting brackets |
| 9 Ethernet port P2 | |
| 10 Ethernet SFP port P3 | |

Technical Data

General specifications

Design / Mounting	Cabinet installation
Installation in hazardous area	Zone 2
Fieldbus support	PROFIBUS PA

Supply

Rated voltage	U_r	20 ... 60 V
Rated current	I_r	1.8 ... 0.6 A
Power dissipation		max. 23 W

Technical Data

Voltage difference dual supply input		+/- 10 %
Power consumption		max. 36 W
Redundancy		dual supply input
Indicators/operating means		
LED PWR A/B		green: power on
LED LNK/CHK		Off: no communication link active , Green: communication link active , Green flashing: communication link activity , Yellow flashing: communication with PROFIBUS PA field device , Red flashing: check function
LED STATUS		Off: Good , Blue: Maintenance required , Red: Failure
Fault signal		VFC alarm 100 mA, 32 V DC, normally closed
Button		Device reset
Interface 1		
Interface type		Ethernet-APL : 1 Vpp option spur connection , PROFIBUS PA
Port classification		S P A A
Number of ports		24
Port identification		S1...S24
Power option		powered
Transfer rate		10 MBit/s full duplex
Rated voltage		9.6 V
Rated current		55.56 mA
Rated power		540 mW
Cable shield grounding option		capacitive grounded
Connection type		screw terminals , pluggable
Conductor cross section		single wire/stranded wire: 0.2 ... 2.5 mm ²
Conductor cross section solid wire		2.08 ... 0.326 mm ² , 14 ... 18 AWG
Conductor cross section flexible wire		2.08 ... 0.326 mm ² , 14 ... 18 AWG
Interface 2		
Interface type		1000BASE-T
Number of ports		2
Port identification		P 1 ... P 2
Transfer rate		10/100/1000 Mbps
Connection type		RJ-45 , EIA/TIA 568 B
Interface 3		
Interface type		Slot for SFP transceiver SFP Multi-Source (MSA) compliant
Number of ports		2
Port identification		P 3 ... P 4
Galvanic isolation		
Spurs/Supply		safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V
SFP/Supply		620 V AC
1000BASE-T/Supply		1500 V AC
1000BASE-T/Spurs		safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V
1000BASE-T/1000BASE-T		1500 V AC
Housing/All		620 V AC
Fault signal/All		620 V AC
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 61326-1:2013
Conformity		
Galvanic isolation		IEC 61010-1
Electromagnetic compatibility		EN 61326 , NE 21

Technical Data

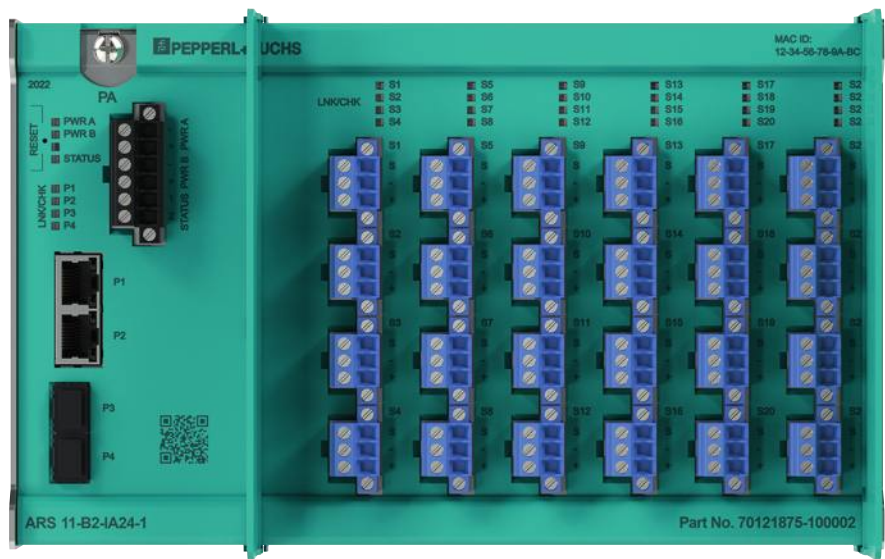
Degree of protection		IEC 60529
Ethernet		IEEE 802.3z , IEEE 802.3u , IEEE 802.3cg
Shock resistance		EN 60068-2-27
Vibration resistance		EN 60068-2-6
Climatic conditions		DIN IEC 721
Software		
Industrial protocols		PROFINET , CC-B (PA) , dynamic reconfiguration , Netload Class III , pruning
Management		Web user interface , SNMP v1, v2 , v3 , PROFINET
Redundancy		PROFINET MRP , PROFINET system redundancy S2
Management Information Base (MIB)		PROFINET conformance class B
Diagnostics function		10BASE-T1L physical layer , port , Packet statistics , LLDP , PROFIBUS PA
Cybersecurity		
Ambient conditions		
Ambient temperature		-40 ... 70 °C (-40 ... 158 °F) horizontally mounted no SFP installed -40 ... 65 °C (-40 ... 149 °F) horizontally mounted SFP installed
Storage temperature		-40 ... 85 °C (-40 ... 185 °F)
Relative humidity		≤ 95 % non-condensing
Shock resistance		15 g 11 ms
Vibration resistance		1 g 10 ... 150 Hz
Pollution degree		max. 2, according to IEC 60664
Corrosion resistance		acc. to ISA-S71.04-1985, severity level G3
Mechanical specifications		
Housing material		stainless steel 1.4301 , Polycarbonate
Degree of protection		IP20
Mass		3826 g
Dimensions		
Height		158 mm
Width		257 mm
Depth		136.5 mm
Mounting		DIN rail mounting , wall mounting
Data for application in connection with hazardous areas		
EU-type examination certificate		TÜV 21 ATEX 8666 X
Marking		Ⓔ II 3 (1) G Ex ic ec [ia Ga] IIC T4 Gc Ⓔ II (1) D [Ex ia Da] IIIC
Supply		
Maximum safe voltage	U_m	60 V
Interface 1		2-WISE power source, FISCO power supply
Voltage U_o		17.5 V
Current I_o		380 mA
Power P_o		1.67 W
Capacitance C_o		IIC : 0.25 µF IIB/IIIC : 1.5 µF
Inductance L_o		IIC : 0.15 mH IIB/IIIC : 0.5 mH
Interface 2		
Maximum safe voltage U_m		60 V
Interface 3		
Maximum safe voltage U_m		60 V
Directive conformity		
Directive 2014/34/EU		EN 60079-0:2018 , EN 60079-11:2012 , EN 60079-7:2015+A1:2018 , IEC TS 60079-47:2021
International approvals		
IECEx approval		IECEx TUR 21.0072X
Approved for		Ex ic ec [ia Ga] IIC T4 Gc [Ex ia Da] IIIC

Technical Data

Certificates and approvals

Patents	This product may be covered by the following patent: US 9,762,409
General information	

Assembly



Mounting

Wall Mounting Option
For wall mounting the APL rail field switch use the accessory ACC-ARS-WM. See manual for details and dimensions.

Type Code

ARS1	(1)	B	2	-	IA	(2)	-	(3)
ARS1	Device							
ARS1	Ethernet-APL Rail Field Switch							
(1)	PROFIBUS PA Proxy							
1	With proxy							
2	Without proxy							
B	Power Supply							
B	Separately powered 20 V ... 60 V							
2	Uplink Ports							
2	2 ports each for RJ45 and SFP slots							

Type Code	
IA	Intrinsic Safety at Spurs
IA	Ex ia IIC
(2)	Spur Port Count
08	Spur ports
16	Spur ports
24	Spur ports
(3)	Pluggable Terminal Types
1	Screw terminals
2	Spring terminals



Ethernet-APL Rail Field Switch

FieldConnex®

ARS12-B2-IA08-1

- Managed Ethernet-APL field switch for process industries
- PROFINET MRP, S2 redundancy and dynamic reconfiguration
- 2 ports each for 1000BASE-T and SFP transceivers
- Redundant power input 20 VDC ... 60 VDC
- Installation in Zone 2
- Physical layer diagnostics at the spur
- Configuration and diagnosis with FDI, web interface, PROFINET device functions and SNMP
- Support of network security
- Powered spur ports intrinsically safe Ex ia according to 2-WISE

Ethernet-APL rail field switch with 8 intrinsically safe Ex ia spur ports and screw terminals



ethernet-apl™
advanced physical layer



Function

The Ethernet-APL rail field switch is a ruggedized, managed field switch offering connectivity for Ethernet-APL devices to Ethernet networks via any protocol. The connections, i. e., "spur" ports, provide intrinsically safe (Ex ia) power and communication to instruments located in Zone 0/1. APL field switches can be installed in Zone 2.

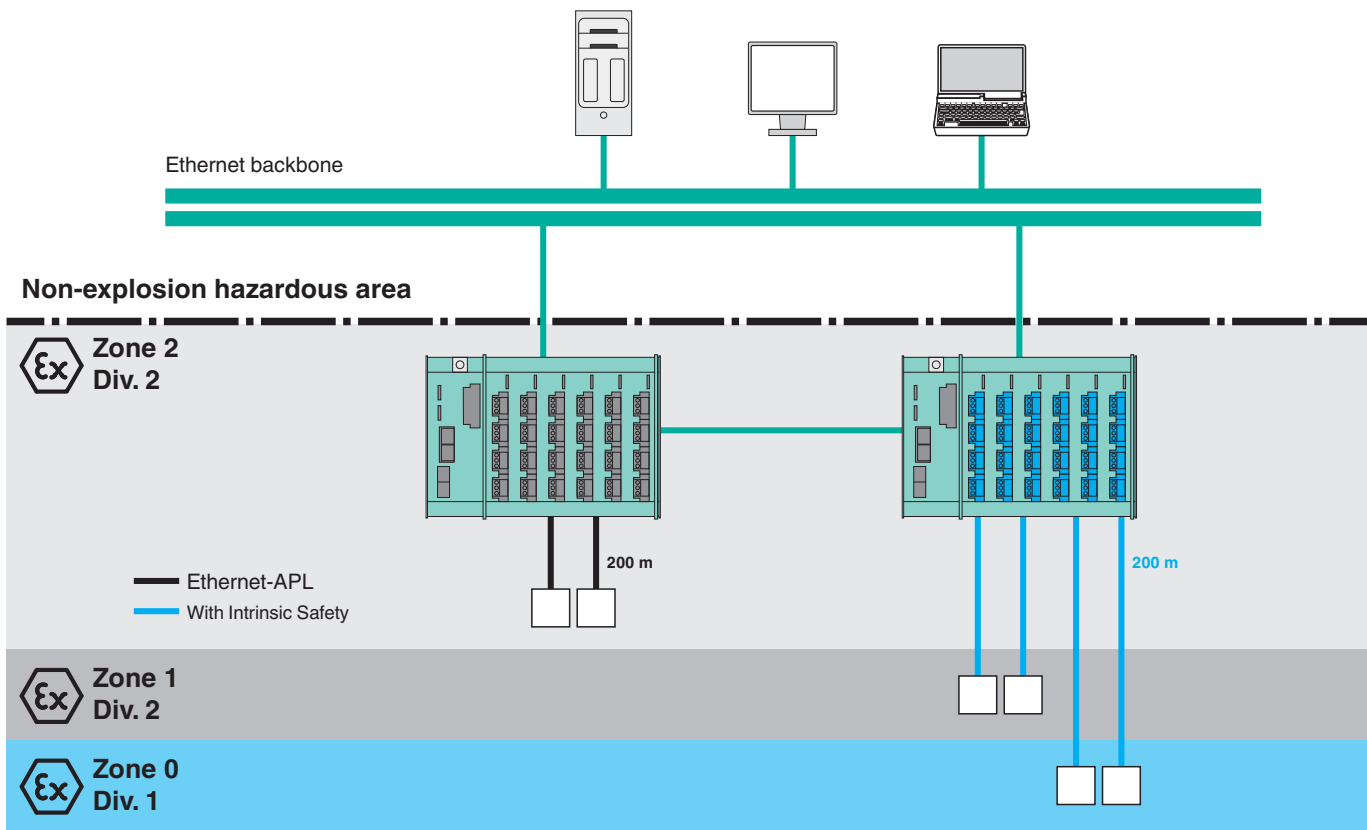
The APL field switch features 2 Gigabit Ethernet ports and 2 SFP ports. The SFP ports provide connections for a choice of optional SFP transceivers to be used in explosion-hazardous areas and different distances.

For PROFINET, the APL field switch supports Class B networks. For high-availability installations, the APL field switch provides redundancy mechanisms such as MRP ring redundancy and S2 system redundancy.

Easy configuration and diagnostics of the APL field switch are accessible via FDI and web-based management. PROFINET device functions and SNMP assure fast start-up and enable the use of predictive maintenance. Comprehensive network and physical layer diagnostics enable proactive management strategies to reduce risk of failure and downtime.

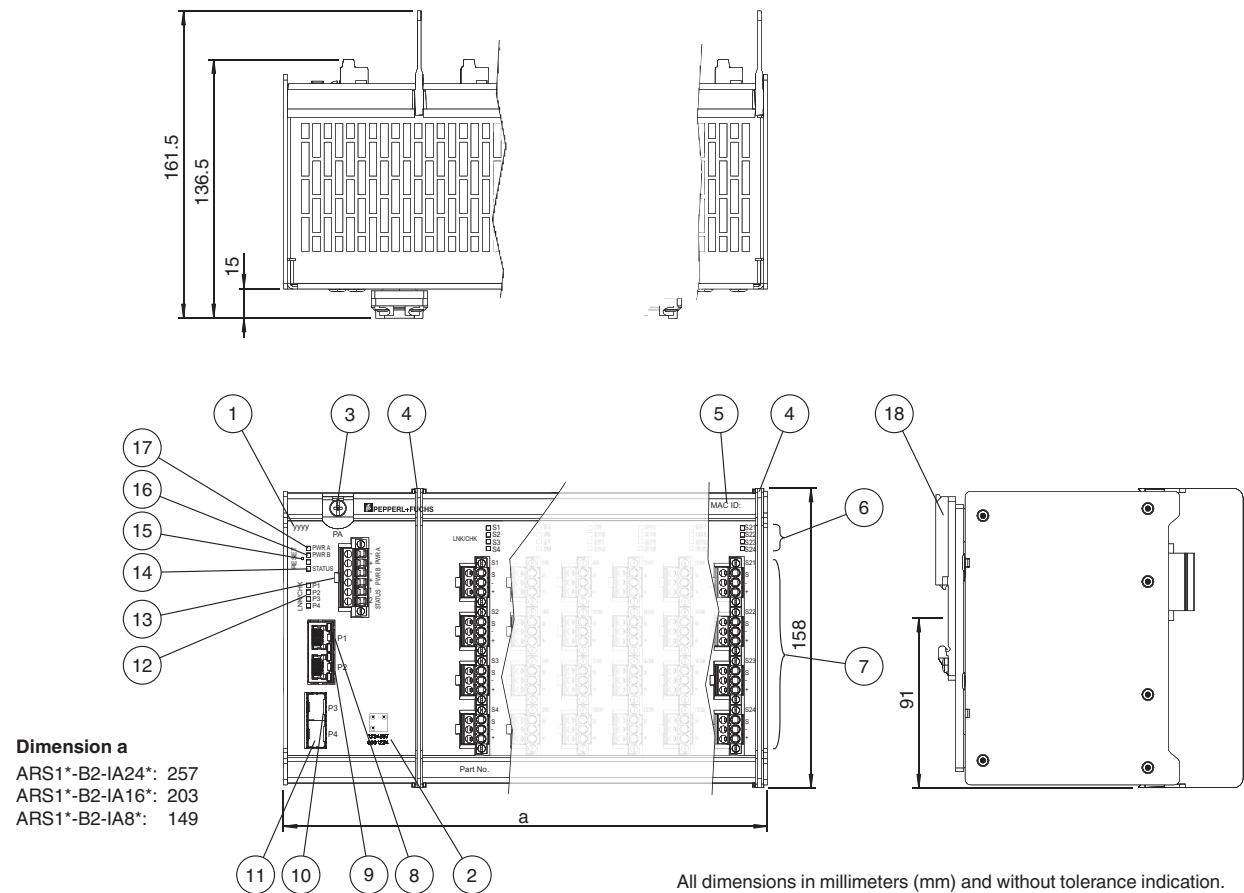
The APL field switch implements enhanced network security and supports SNMPv3, the locking of unused ports, and the HTTPS protocol.

Function Principle



Dimensions

DIN Rail Mounting



- | | |
|---|--|
| 1 Year of production | 11 Ethernet SFP port P4 |
| 2 QR code and serial number | 12 LED LNK/CHK P1 ... P4, communication status
LED P1 ... P4 |
| 3 PA, connection to equipotential bonding | 13 Connector for auxiliary power and status
indication output |
| 4 Slot for separation wall | 14 LED STATUS, status rail field switch |
| 5 MAC ID | 15 Reset button |
| 6 LED S1 ... Sn, status spur ports S1 ... Sn | 16 LED PWR B, status power input B |
| 7 Connectors for intrinsically safe spurs S1 ... Sn | 17 LED PWR A, status power input A |
| 8 Ethernet port P1 | 18 DIN rail mounting brackets |
| 9 Ethernet port P2 | |
| 10 Ethernet SFP port P3 | |

Technical Data

General specifications			
Design / Mounting		Cabinet installation	
Installation in hazardous area		Zone 2	
Supply			
Rated voltage	U _r	20 ... 60 V	
Rated current	I _r	0.85 ... 0.3 A	
Power dissipation		max. 13.7 W	
Voltage difference dual supply input		+/- 10 %	

Technical Data

Power consumption		max. 18 W
Redundancy		dual supply input
Indicators/operating means		
LED PWR A/B		green: power on
LED LNK/CHK		Off: no communication link active , Green: communication link active , Green flashing: communication link activity , Red flashing: check function
LED STATUS		Off: Good , Blue: Maintenance required , Red: Failure
Fault signal		VFC alarm 100 mA, 32 V DC, normally closed
Button		Device reset
Interface 1		
Interface type		Ethernet-APL : 1 Vpp option spur connection
Port classification		S P A A
Number of ports		8
Port identification		S1...S8
Power option		powered
Transfer rate		10 MBit/s full duplex
Rated voltage		9.6 V
Rated current		55.56 mA
Rated power		540 mW
Cable shield grounding option		capacitive grounded
Connection type		screw terminals , pluggable
Conductor cross section		single wire/stranded wire: 0.2 ... 2.5 mm ²
Conductor cross section solid wire		2.08 ... 0.326 mm ² , 14 ... 18 AWG
Conductor cross section flexible wire		2.08 ... 0.326 mm ² , 14 ... 18 AWG
Interface 2		
Interface type		1000BASE-T
Number of ports		2
Port identification		P 1 ... P 2
Transfer rate		10/100/1000 Mbps
Connection type		RJ-45 , EIA/TIA 568 B
Interface 3		
Interface type		Slot for SFP transceiver SFP Multi-Source (MSA) compliant
Number of ports		2
Port identification		P 3 ... P 4
Galvanic isolation		
Spurs/Supply		safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V
SFP/Supply		620 V AC
1000BASE-T/Supply		1500 V AC
1000BASE-T/Spurs		safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V
1000BASE-T/1000BASE-T		1500 V AC
Housing/All		620 V AC
Fault signal/All		620 V AC
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 61326-1:2013
Conformity		
Galvanic isolation		IEC 61010-1
Electromagnetic compatibility		EN 61326 , NE 21
Degree of protection		IEC 60529
Ethernet		IEEE 802.3z , IEEE 802.3u , IEEE 802.3cg

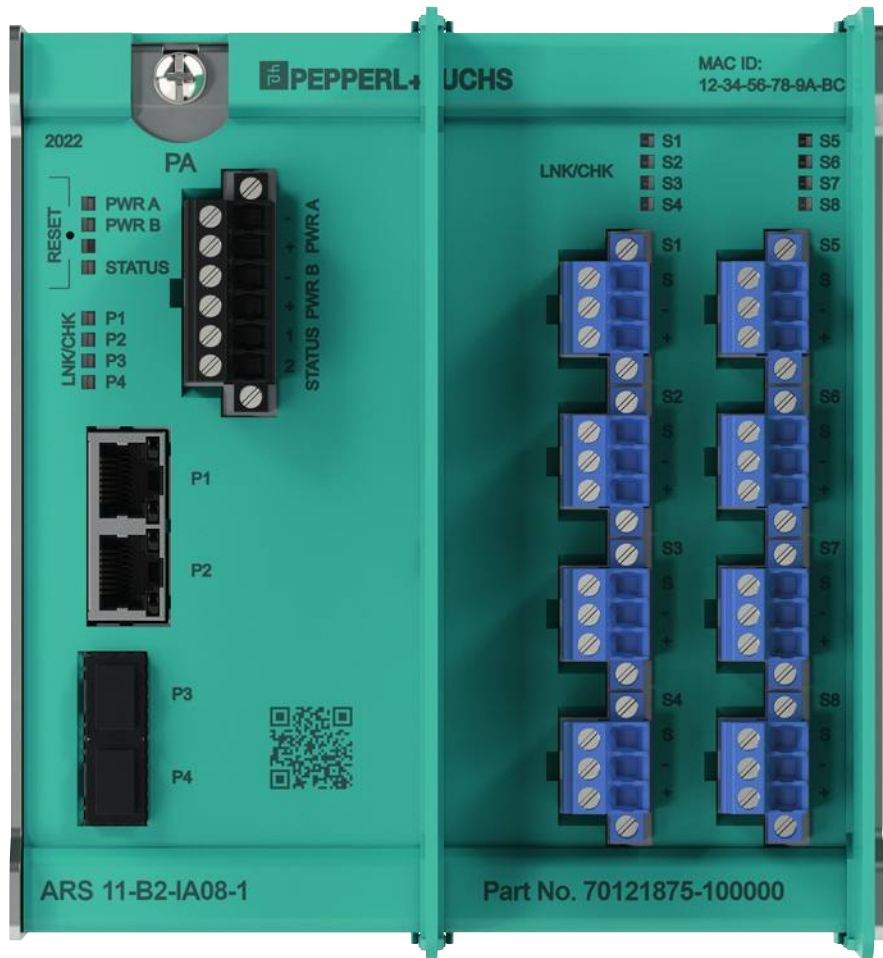
Technical Data

Shock resistance	EN 60068-2-27
Vibration resistance	EN 60068-2-6
Climatic conditions	DIN IEC 721
Software	
Industrial protocols	PROFINET , CC-B (PA) , dynamic reconfiguration , Netload Class III , pruning
Management	Web user interface , SNMP v1, v2 , v3 , PROFINET
Redundancy	PROFINET MRP , PROFINET system redundancy S2
Management Information Base (MIB)	PROFINET conformance class B
Diagnostics function	10BASE-T1L physical layer , port , Packet statistics , LLDP
Cybersecurity	
Ambient conditions	
Ambient temperature	-40 ... 70 °C (-40 ... 158 °F) horizontally mounted no SFP installed -40 ... 65 °C (-40 ... 149 °F) horizontally mounted SFP installed
Storage temperature	-40 ... 85 °C (-40 ... 185 °F)
Relative humidity	≤ 95 % non-condensing
Shock resistance	15 g 11 ms
Vibration resistance	1 g 10 ... 150 Hz
Pollution degree	max. 2, according to IEC 60664
Corrosion resistance	acc. to ISA-S71.04-1985, severity level G3
Mechanical specifications	
Housing material	stainless steel 1.4301 , Polycarbonate
Degree of protection	IP20
Mass	2656 g
Dimensions	
Height	158 mm
Width	149 mm
Depth	136.5 mm
Mounting	DIN rail mounting , wall mounting
Data for application in connection with hazardous areas	
EU-type examination certificate	TÜV 21 ATEX 8666 X
Marking	⊕ II 3 (1) G Ex ic ec [ia Ga] IIC T4 Gc ⊕ II (1) D [Ex ia Da] IIIC
Supply	
Maximum safe voltage	U _m 60 V
Interface 1	
Voltage U _o	17.5 V
Current I _o	380 mA
Power P _o	1.67 W
Capacitance C _o	IIC : 0.25 µF IIB/IIC : 1.5 µF
Inductance L _o	IIC : 0.15 mH IIB/IIC : 0.5 mH
Interface 2	
Maximum safe voltage U _m	60 V
Interface 3	
Maximum safe voltage U _m	60 V
Directive conformity	
Directive 2014/34/EU	EN 60079-0:2018 , EN 60079-11:2012 , EN 60079-7:2015+A1:2018 , IEC TS 60079-47:2021
International approvals	
IECEx approval	IECEx TUR 21.0072X
Approved for	Ex ic ec [ia Ga] IIC T4 Gc [Ex ia Da] IIIC
Certificates and approvals	
Patents	This product may be covered by the following patent: US 9,762,409

Technical Data

General information

Assembly



Mounting

Wall Mounting Option

For wall mounting the APL rail field switch use the accessory ACC-ARS-WM. See manual for details and dimensions.

Type Code

ARS1	(1)	B	2	-	IA	(2)	-	(3)
ARS1	Device							
ARS1	Ethernet-APL Rail Field Switch							
(1)	PROFIBUS PA Proxy							
1	With proxy							
2	Without proxy							
B	Power Supply							
B	Separately powered 20 V ... 60 V							
2	Uplink Ports							
2	2 ports each for RJ45 and SFP slots							
IA	Intrinsic Safety at Spurs							
IA	Ex ia IIC							

Type Code

(2)	Spur Port Count
08	Spur ports
16	Spur ports
24	Spur ports

(3)	Pluggable Terminal Types
1	Screw terminals
2	Spring terminals



Ethernet-APL Rail Field Switch

FieldConnex®

ARS12-B2-IA16-1

- Managed Ethernet-APL field switch for process industries
- PROFINET MRP, S2 redundancy and dynamic reconfiguration
- 2 ports each for 1000BASE-T and SFP transceivers
- Redundant power input 20 VDC ... 60 VDC
- Installation in Zone 2
- Physical layer diagnostics at the spur
- Configuration and diagnosis with FDI, web interface, PROFINET device functions and SNMP
- Support of network security
- Powered spur ports intrinsically safe Ex ia according to 2-WISE

Ethernet-APL rail field switch with 16 intrinsically safe Ex ia spur ports and screw terminals



ethernet-apl™
advanced physical layer



Function

The Ethernet-APL rail field switch is a ruggedized, managed field switch offering connectivity for Ethernet-APL devices to Ethernet networks via any protocol. The connections, i. e., "spur" ports, provide intrinsically safe (Ex ia) power and communication to instruments located in Zone 0/1. APL field switches can be installed in Zone 2.

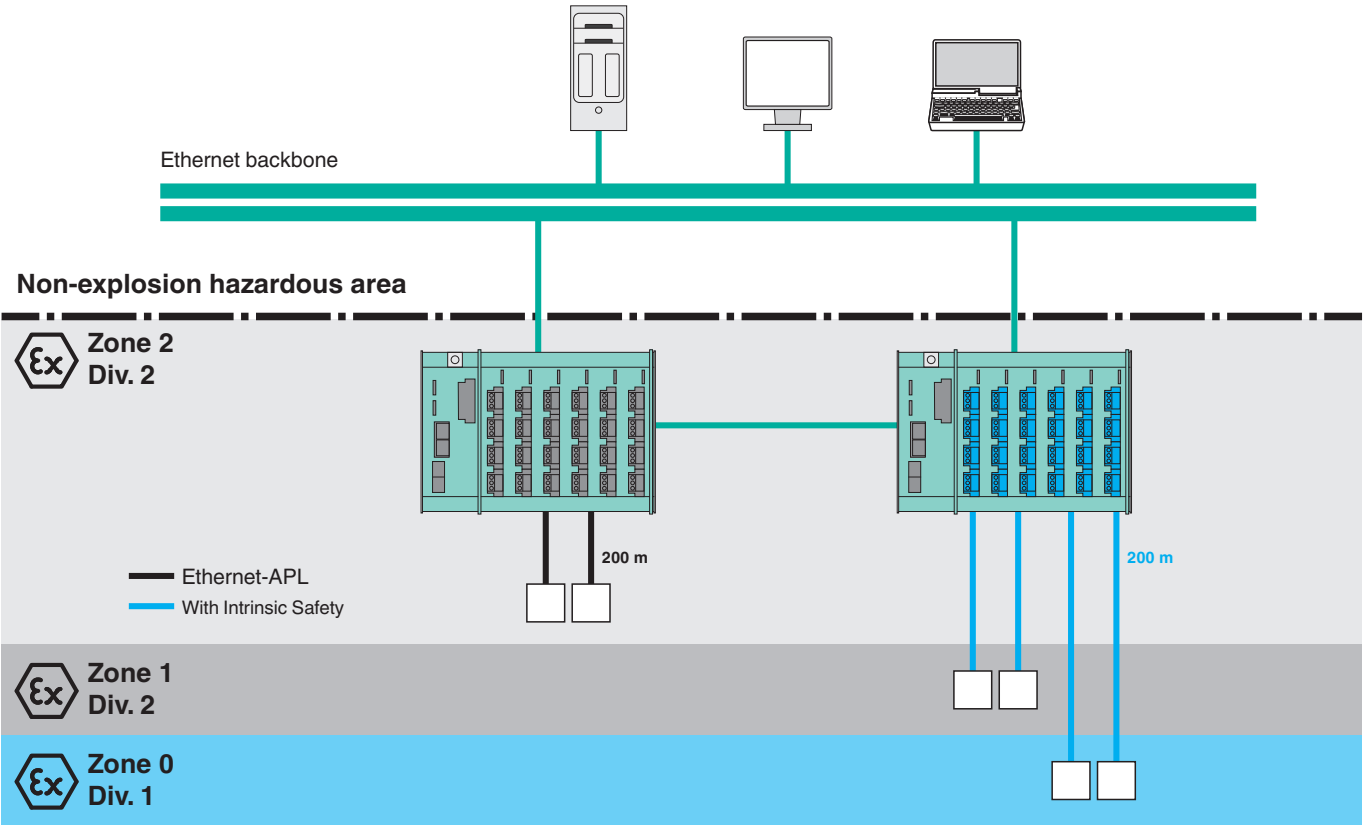
The APL field switch features 2 Gigabit Ethernet ports and 2 SFP ports. The SFP ports provide connections for a choice of optional SFP transceivers to be used in explosion-hazardous areas and different distances.

For PROFINET, the APL field switch supports Class B networks. For high-availability installations, the APL field switch provides redundancy mechanisms such as MRP ring redundancy and S2 system redundancy.

Easy configuration and diagnostics of the APL field switch are accessible via FDI and web-based management. PROFINET device functions and SNMP assure fast start-up and enable the use of predictive maintenance. Comprehensive network and physical layer diagnostics enable proactive management strategies to reduce risk of failure and downtime.

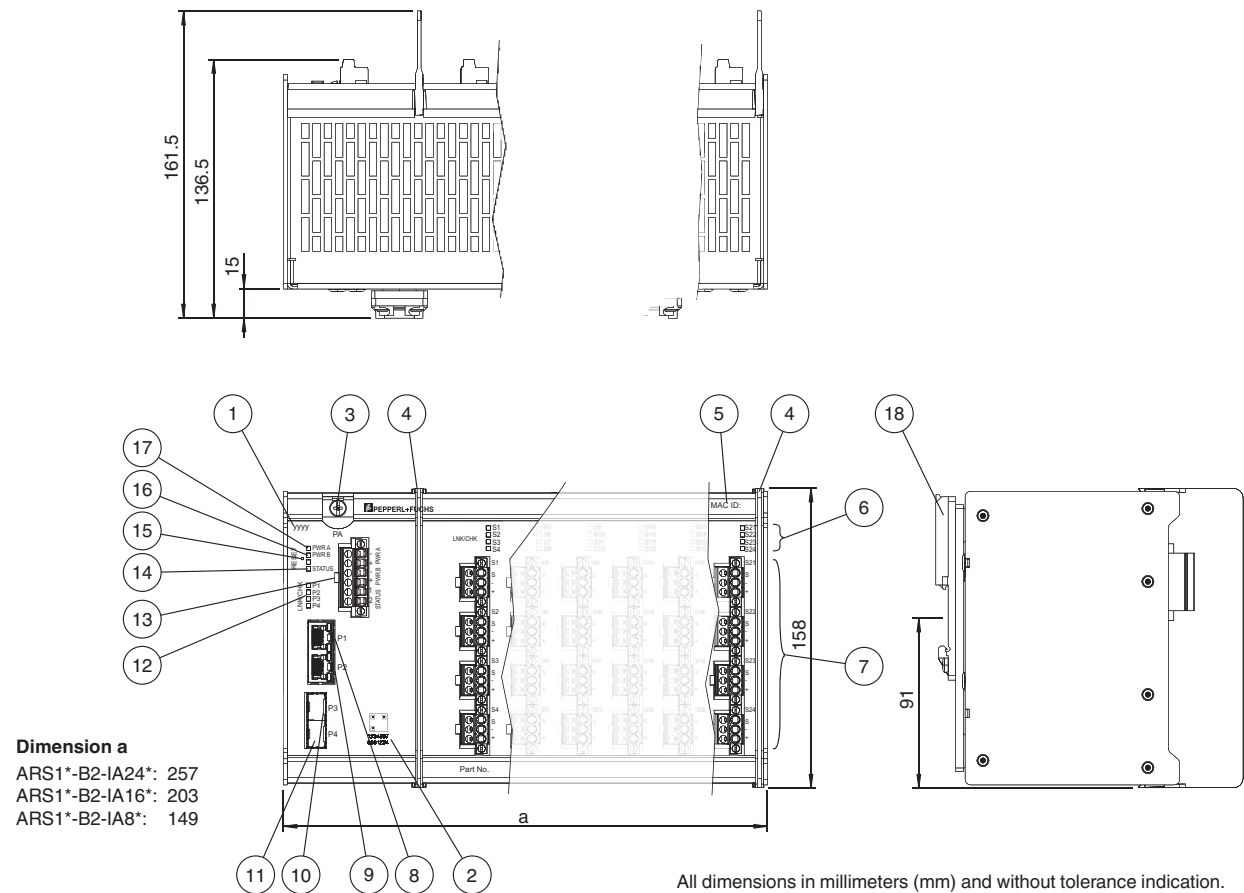
The APL field switch implements enhanced network security and supports SNMPv3, the locking of unused ports, and the HTTPS protocol.

Function Principle



Dimensions

DIN Rail Mounting



- | | |
|---|---|
| 1 Year of production | 11 Ethernet SFP port P4 |
| 2 QR code and serial number | 12 LED LNK/CHK P1 ... P4, communication status LED P1 ... P4 |
| 3 PA, connection to equipotential bonding | 13 Connector for auxiliary power and status indication output |
| 4 Slot for separation wall | 14 LED STATUS, status rail field switch |
| 5 MAC ID | 15 Reset button |
| 6 LED S1 ... Sn, status spur ports S1 ... Sn | 16 LED PWR B, status power input B |
| 7 Connectors for intrinsically safe spurs S1 ... Sn | 17 LED PWR A, status power input A |
| 8 Ethernet port P1 | 18 DIN rail mounting brackets |
| 9 Ethernet port P2 | |
| 10 Ethernet SFP port P3 | |

Technical Data

General specifications			
Design / Mounting		Cabinet installation	
Installation in hazardous area		Zone 2	
Supply			
Rated voltage	U _r	20 ... 60 V	
Rated current	I _r	1.3 ... 0.45 A	
Power dissipation		max. 17.4 W	
Voltage difference dual supply input		+/- 10 %	

Technical Data

Power consumption		max. 26 W
Redundancy		dual supply input
Indicators/operating means		
LED PWR A/B		green: power on
LED LNK/CHK		Off: no communication link active , Green: communication link active , Green flashing: communication link activity , Red flashing: check function
LED STATUS		Off: Good , Blue: Maintenance required , Red: Failure
Fault signal		VFC alarm 100 mA, 32 V DC, normally closed
Button		Device reset
Interface 1		
Interface type		Ethernet-APL : 1 Vpp option spur connection
Port classification		S P A A
Number of ports		16
Port identification		S1...S16
Power option		powered
Transfer rate		10 MBit/s full duplex
Rated voltage		9.6 V
Rated current		55.56 mA
Rated power		540 mW
Cable shield grounding option		capacitive grounded
Connection type		screw terminals , pluggable
Conductor cross section		single wire/stranded wire: 0.2 ... 2.5 mm ²
Conductor cross section solid wire		2.08 ... 0.326 mm ² , 14 ... 18 AWG
Conductor cross section flexible wire		2.08 ... 0.326 mm ² , 14 ... 18 AWG
Interface 2		
Interface type		1000BASE-T
Number of ports		2
Port identification		P 1 ... P 2
Transfer rate		10/100/1000 Mbps
Connection type		RJ-45 , EIA/TIA 568 B
Interface 3		
Interface type		Slot for SFP transceiver SFP Multi-Source (MSA) compliant
Number of ports		2
Port identification		P 3 ... P 4
Galvanic isolation		
Spurs/Supply		safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V
SFP/Supply		620 V AC
1000BASE-T/Supply		1500 V AC
1000BASE-T/Spurs		safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V
1000BASE-T/1000BASE-T		1500 V AC
Housing/All		620 V AC
Fault signal/All		620 V AC
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 61326-1:2013
Conformity		
Galvanic isolation		IEC 61010-1
Electromagnetic compatibility		EN 61326 , NE 21
Degree of protection		IEC 60529
Ethernet		IEEE 802.3z , IEEE 802.3u , IEEE 802.3cg

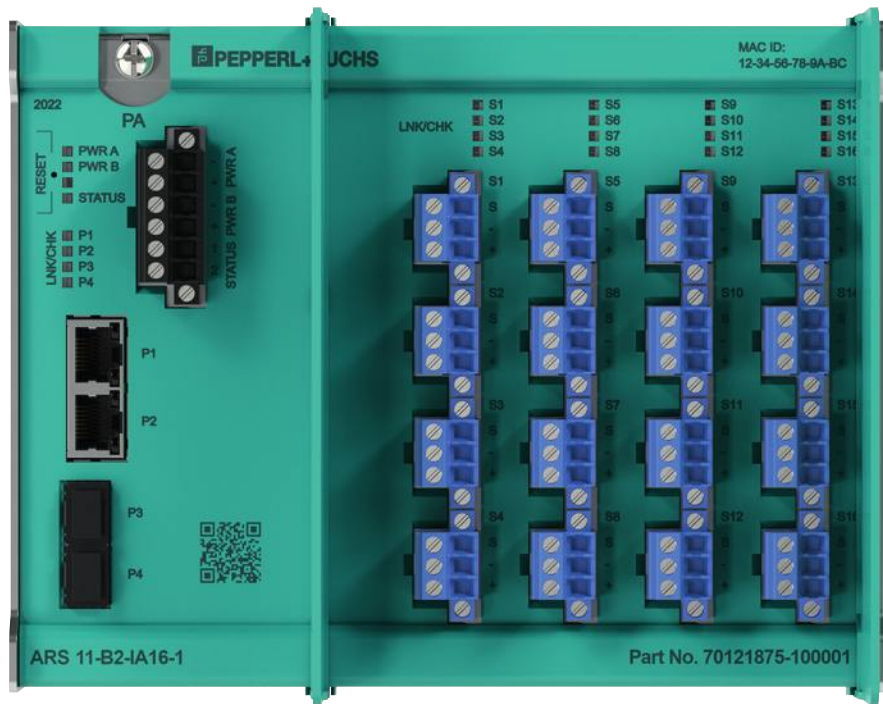
Technical Data

Shock resistance	EN 60068-2-27
Vibration resistance	EN 60068-2-6
Climatic conditions	DIN IEC 721
Software	
Industrial protocols	PROFINET , CC-B (PA) , dynamic reconfiguration , Netload Class III , pruning
Management	Web user interface , SNMP v1, v2 , v3 , PROFINET
Redundancy	PROFINET MRP , PROFINET system redundancy S2
Management Information Base (MIB)	PROFINET conformance class B
Diagnostics function	10BASE-T1L physical layer , port , Packet statistics , LLDP
Cybersecurity	
Ambient conditions	
Ambient temperature	-40 ... 70 °C (-40 ... 158 °F) horizontally mounted no SFP installed -40 ... 65 °C (-40 ... 149 °F) horizontally mounted SFP installed
Storage temperature	-40 ... 85 °C (-40 ... 185 °F)
Relative humidity	≤ 95 % non-condensing
Shock resistance	15 g 11 ms
Vibration resistance	1 g 10 ... 150 Hz
Pollution degree	max. 2, according to IEC 60664
Corrosion resistance	acc. to ISA-S71.04-1985, severity level G3
Mechanical specifications	
Housing material	stainless steel 1.4301 , Polycarbonate
Degree of protection	IP20
Mass	3201 g
Dimensions	
Height	158 mm
Width	203 mm
Depth	136.5 mm
Mounting	DIN rail mounting , wall mounting
Data for application in connection with hazardous areas	
EU-type examination certificate	TÜV 21 ATEX 8666 X
Marking	⊕ II 3 (1) G Ex ic ec [ia Ga] IIC T4 Gc ⊕ II (1) D [Ex ia Da] IIIC
Supply	
Maximum safe voltage	U _m 60 V
Interface 1	2-WISE power source
Voltage U _o	17.5 V
Current I _o	380 mA
Power P _o	1.67 W
Capacitance C _o	IIC : 0.25 µF IIB/IIIC : 1.5 µF
Inductance L _o	IIC : 0.15 mH IIB/IIIC : 0.5 mH
Interface 2	
Maximum safe voltage U _m	60 V
Interface 3	
Maximum safe voltage U _m	60 V
Directive conformity	
Directive 2014/34/EU	EN 60079-0:2018 , EN 60079-11:2012 , EN 60079-7:2015+A1:2018 , IEC TS 60079-47:2021
International approvals	
IECEx approval	IECEx TUR 21.0072X
Approved for	Ex ic ec [ia Ga] IIC T4 Gc [Ex ia Da] IIIC
Certificates and approvals	
Patents	This product may be covered by the following patent: US 9,762,409

Technical Data

General information

Assembly



Mounting

Wall Mounting Option

For wall mounting the APL rail field switch use the accessory ACC-ARS-WM. See manual for details and dimensions.

Type Code

ARS1	(1)	B	2	-	IA	(2)	-	(3)
ARS1	Device							
ARS1	Ethernet-APL Rail Field Switch							
(1)	PROFIBUS PA Proxy							
1	With proxy							
2	Without proxy							
B	Power Supply							
B	Separately powered 20 V ... 60 V							
2	Uplink Ports							
2	2 ports each for RJ45 and SFP slots							
IA	Intrinsic Safety at Spurs							
IA	Ex ia IIC							

Type Code

(2)	Spur Port Count
08	Spur ports
16	Spur ports
24	Spur ports

(3)	Pluggable Terminal Types
1	Screw terminals
2	Spring terminals



Ethernet-APL Rail Field Switch

FieldConnex®

ARS12-B2-IA24-1

- Managed Ethernet-APL field switch for process industries
- PROFINET MRP, S2 redundancy and dynamic reconfiguration
- 2 ports each for 1000BASE-T and SFP transceivers
- Redundant power input 20 VDC ... 60 VDC
- Installation in Zone 2
- Physical layer diagnostics at the spur
- Configuration and diagnosis with FDI, web interface, PROFINET device functions and SNMP
- Support of network security
- Powered spur ports intrinsically safe Ex ia according to 2-WISE

Ethernet-APL rail field switch with 24 intrinsically safe Ex ia spur ports and screw terminals



ethernet-apl™
advanced physical layer



Function

The Ethernet-APL rail field switch is a ruggedized, managed field switch offering connectivity for Ethernet-APL devices to Ethernet networks via any protocol. The connections, i. e., "spur" ports, provide intrinsically safe (Ex ia) power and communication to instruments located in Zone 0/1. APL field switches can be installed in Zone 2.

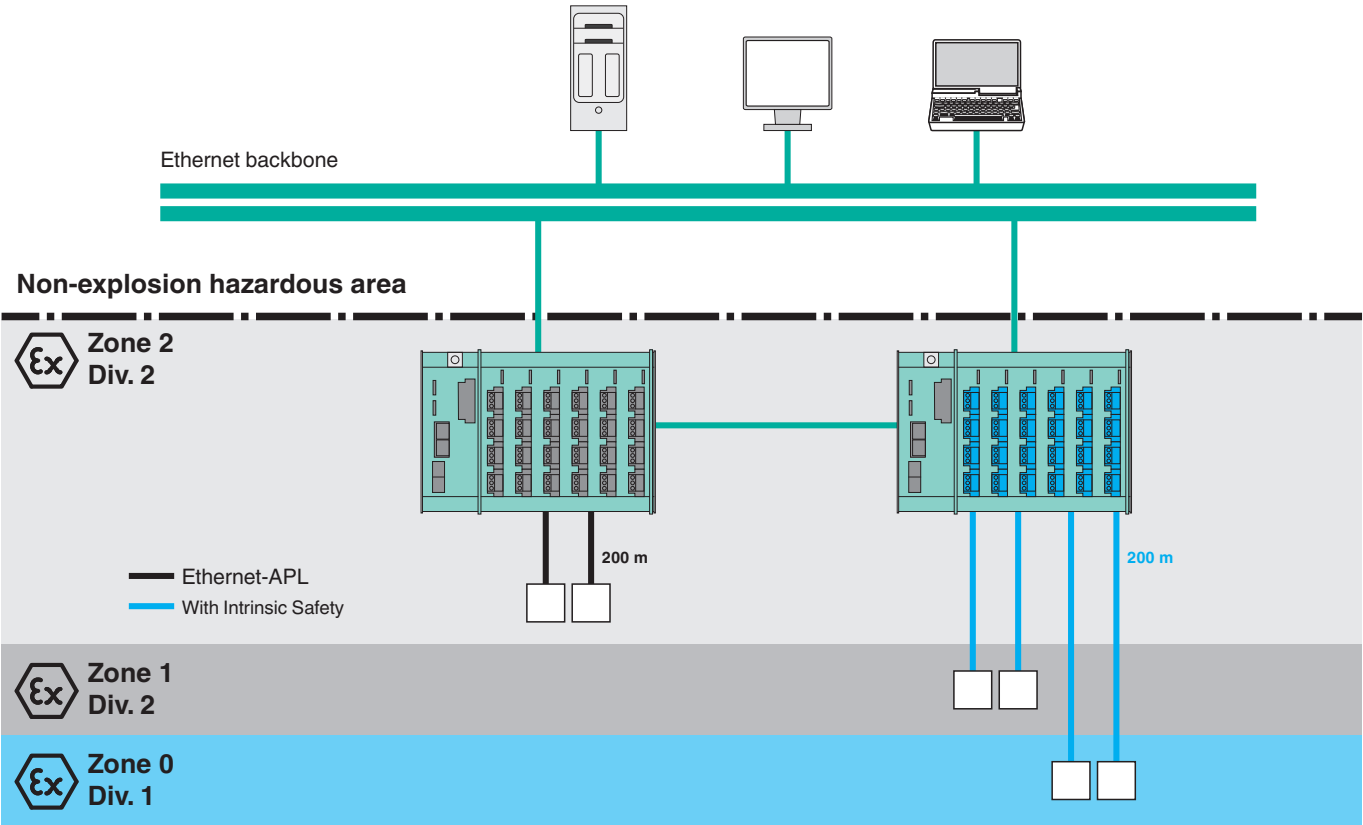
The APL field switch features 2 Gigabit Ethernet ports and 2 SFP ports. The SFP ports provide connections for a choice of optional SFP transceivers to be used in explosion-hazardous areas and different distances.

For PROFINET, the APL field switch supports Class B networks. For high-availability installations, the APL field switch provides redundancy mechanisms such as MRP ring redundancy and S2 system redundancy.

Easy configuration and diagnostics of the APL field switch are accessible via FDI and web-based management. PROFINET device functions and SNMP assure fast start-up and enable the use of predictive maintenance. Comprehensive network and physical layer diagnostics enable proactive management strategies to reduce risk of failure and downtime.

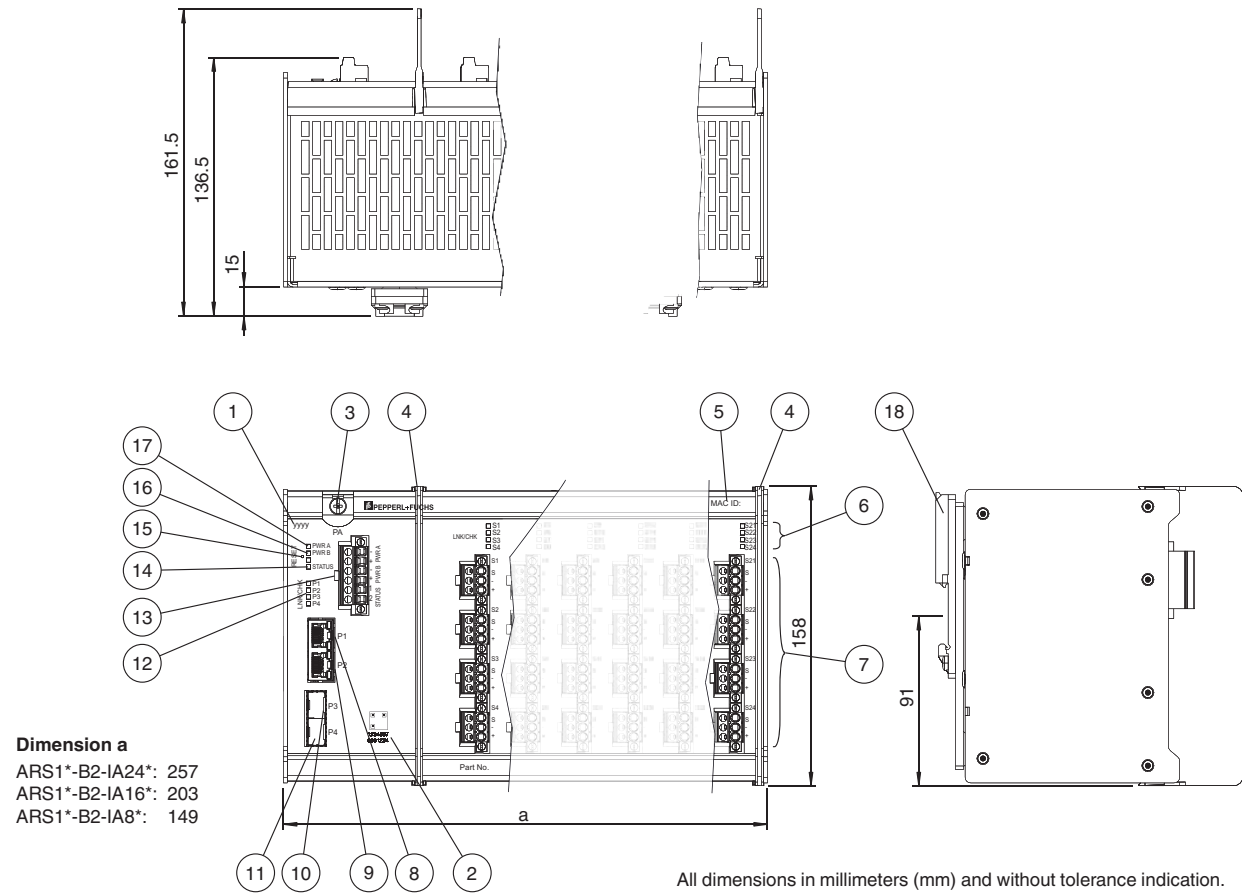
The APL field switch implements enhanced network security and supports SNMPv3, the locking of unused ports, and the HTTPS protocol.

Function Principle



Dimensions

DIN Rail Mounting



- | | |
|---|---|
| 1 Year of production | 11 Ethernet SFP port P4 |
| 2 QR code and serial number | 12 LED LNK/CHK P1 ... P4, communication status LED P1 ... P4 |
| 3 PA, connection to equipotential bonding | 13 Connector for auxiliary power and status indication output |
| 4 Slot for separation wall | 14 LED STATUS, status rail field switch |
| 5 MAC ID | 15 Reset button |
| 6 LED S1 ... Sn, status spur ports S1 ... Sn | 16 LED PWR B, status power input B |
| 7 Connectors for intrinsically safe spurs S1 ... Sn | 17 LED PWR A, status power input A |
| 8 Ethernet port P1 | 18 DIN rail mounting brackets |
| 9 Ethernet port P2 | |
| 10 Ethernet SFP port P3 | |

Technical Data

General specifications

Design / Mounting	Cabinet installation
Installation in hazardous area	Zone 2

Supply

Rated voltage	U_r	20 ... 60 V
Rated current	I_r	1.8 ... 0.6 A
Power dissipation		max. 23 W
Voltage difference dual supply input		+/- 10 %

Technical Data

Power consumption		max. 36 W
Redundancy		dual supply input
Indicators/operating means		
LED PWR A/B		green: power on
LED LNK/CHK		Off: no communication link active , Green: communication link active , Green flashing: communication link activity , Red flashing: check function
LED STATUS		Off: Good , Blue: Maintenance required , Red: Failure
Fault signal		VFC alarm 100 mA, 32 V DC, normally closed
Button		Device reset
Interface 1		
Interface type		Ethernet-APL : 1 Vpp option spur connection
Port classification		S P A A
Number of ports		24
Port identification		S1...S24
Power option		powered
Transfer rate		10 MBit/s full duplex
Rated voltage		9.6 V
Rated current		55.56 mA
Rated power		540 mW
Cable shield grounding option		capacitive grounded
Connection type		screw terminals , pluggable
Conductor cross section		single wire/stranded wire: 0.2 ... 2.5 mm ²
Conductor cross section solid wire		2.08 ... 0.326 mm ² , 14 ... 18 AWG
Conductor cross section flexible wire		2.08 ... 0.326 mm ² , 14 ... 18 AWG
Interface 2		
Interface type		1000BASE-T
Number of ports		2
Port identification		P 1 ... P 2
Transfer rate		10/100/1000 Mbps
Connection type		RJ-45 , EIA/TIA 568 B
Interface 3		
Interface type		Slot for SFP transceiver SFP Multi-Source (MSA) compliant
Number of ports		2
Port identification		P 3 ... P 4
Galvanic isolation		
Spurs/Supply		safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V
SFP/Supply		620 V AC
1000BASE-T/Supply		1500 V AC
1000BASE-T/Spurs		safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V
1000BASE-T/1000BASE-T		1500 V AC
Housing/All		620 V AC
Fault signal/All		620 V AC
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 61326-1:2013
Conformity		
Galvanic isolation		IEC 61010-1
Electromagnetic compatibility		EN 61326 , NE 21
Degree of protection		IEC 60529
Ethernet		IEEE 802.3z , IEEE 802.3u , IEEE 802.3cg

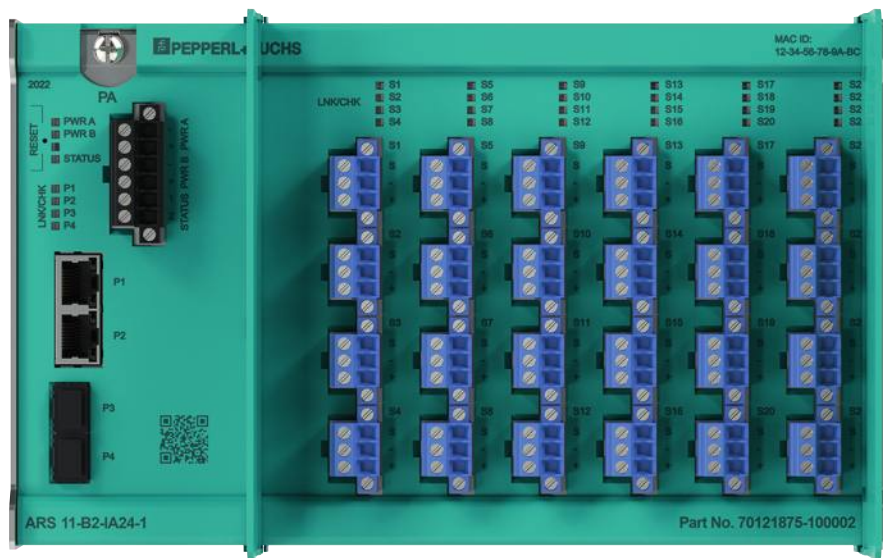
Technical Data

Shock resistance	EN 60068-2-27
Vibration resistance	EN 60068-2-6
Climatic conditions	DIN IEC 721
Software	
Industrial protocols	PROFINET , CC-B (PA) , dynamic reconfiguration , Netload Class III , pruning
Management	Web user interface , SNMP v1, v2 , v3 , PROFINET
Redundancy	PROFINET MRP , PROFINET system redundancy S2
Management Information Base (MIB)	PROFINET conformance class B
Diagnostics function	10BASE-T1L physical layer , port , Packet statistics , LLDP
Cybersecurity	
Ambient conditions	
Ambient temperature	-40 ... 70 °C (-40 ... 158 °F) horizontally mounted no SFP installed -40 ... 65 °C (-40 ... 149 °F) horizontally mounted SFP installed
Storage temperature	-40 ... 85 °C (-40 ... 185 °F)
Relative humidity	≤ 95 % non-condensing
Shock resistance	15 g 11 ms
Vibration resistance	1 g 10 ... 150 Hz
Pollution degree	max. 2, according to IEC 60664
Corrosion resistance	acc. to ISA-S71.04-1985, severity level G3
Mechanical specifications	
Housing material	stainless steel 1.4301 , Polycarbonate
Degree of protection	IP20
Mass	3826 g
Dimensions	
Height	158 mm
Width	257 mm
Depth	136.5 mm
Mounting	DIN rail mounting , wall mounting
Data for application in connection with hazardous areas	
EU-type examination certificate	TÜV 21 ATEX 8666 X
Marking	⊕ II 3 (1) G Ex ic ec [ia Ga] IIC T4 Gc ⊕ II (1) D [Ex ia Da] IIIC
Supply	
Maximum safe voltage	U _m 60 V
Interface 1	2-WISE power source
Voltage U _o	17.5 V
Current I _o	380 mA
Power P _o	1.67 W
Capacitance C _o	IIC : 0.25 µF IIB/IIC : 1.5 µF
Inductance L _o	IIC : 0.15 mH IIB/IIC : 0.5 mH
Interface 2	
Maximum safe voltage U _m	60 V
Interface 3	
Maximum safe voltage U _m	60 V
Directive conformity	
Directive 2014/34/EU	EN 60079-0:2018 , EN 60079-11:2012 , EN 60079-7:2015+A1:2018 , IEC TS 60079-47:2021
International approvals	
IECEx approval	IECEx TUR 21.0072X
Approved for	Ex ic ec [ia Ga] IIC T4 Gc [Ex ia Da] IIIC
Certificates and approvals	
Patents	This product may be covered by the following patent: US 9,762,409

Technical Data

General information

Assembly



Mounting

Wall Mounting Option
For wall mounting the APL rail field switch use the accessory ACC-ARS-WM. See manual for details and dimensions.

Type Code

ARS1	(1)	B	2	-	IA	(2)	-	(3)
ARS1	Device							
ARS1	Ethernet-APL Rail Field Switch							
(1)	PROFIBUS PA Proxy							
1	With proxy							
2	Without proxy							
B	Power Supply							
B	Separately powered 20 V ... 60 V							
2	Uplink Ports							
2	2 ports each for RJ45 and SFP slots							
IA	Intrinsic Safety at Spurs							
IA	Ex ia IIC							

Type Code

(2)	Spur Port Count
08	Spur ports
16	Spur ports
24	Spur ports

(3)	Pluggable Terminal Types
1	Screw terminals
2	Spring terminals



Ethernet-APL Rail Field Switch

FieldConnex®

ARS11-B2-IA08-2

- Managed Ethernet-APL field switch for process industries
- PROFINET MRP, S2 redundancy and dynamic reconfiguration
- 2 ports each for 1000BASE-T and SFP transceivers
- Redundant power input 20 VDC ... 60 VDC
- Installation in Zone 2
- Physical layer diagnostics at the spur
- Configuration and diagnosis with FDI, web interface, PROFINET device functions and SNMP
- Support of network security
- Powered spur ports intrinsically safe Ex ia according to 2-WISE and FISCO
- Support of Ethernet-APL and PROFIBUS PA instruments

Ethernet-APL rail field switch with 8 intrinsically safe Ex ia spur ports and spring terminals with proxy support selectable for PROFIBUS PA field devices



ethernet-apl™
advanced physical layer



Function

The Ethernet-APL rail field switch is a ruggedized, managed field switch offering connectivity for Ethernet-APL devices to Ethernet networks via any protocol. The connections, i. e., "spur" ports, provide intrinsically safe (Ex ia) power and communication to instruments located in Zone 0/1. APL field switches can be installed in Zone 2.

The APL field switch features 2 Gigabit Ethernet ports and 2 SFP ports. The SFP ports provide connections for a choice of optional SFP transceivers to be used in explosion-hazardous areas and different distances.

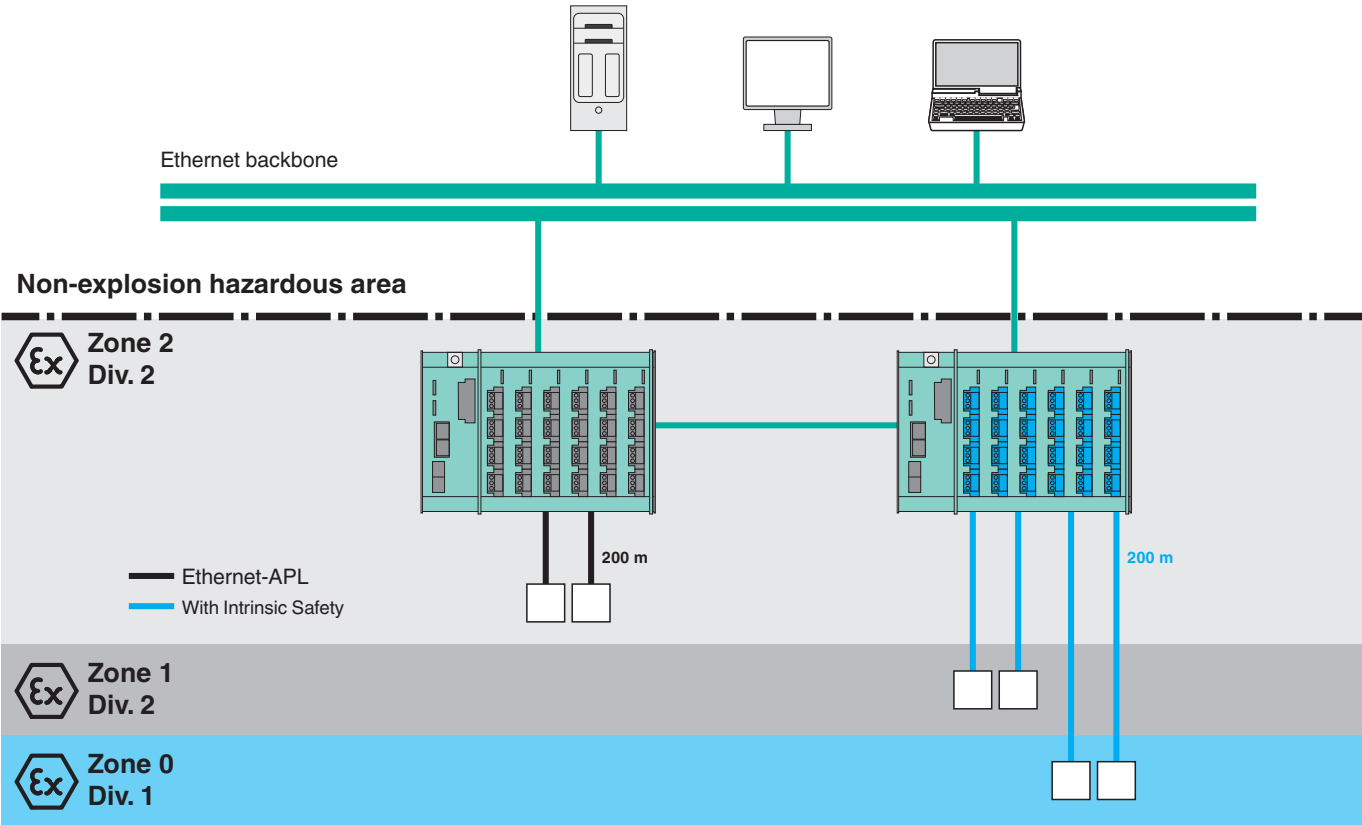
For PROFINET, the APL field switch supports Class B networks. For high-availability installations, the APL field switch provides redundancy mechanisms such as MRP ring redundancy and S2 system redundancy.

PROFINET dynamic reconfiguration permits re-configuration of the APL field switch during runtime without interrupting the data exchange.

Easy configuration and diagnostics of the APL field switch are accessible via FDI and web-based management. PROFINET device functions and SNMP assure fast start-up and enable the use of predictive maintenance. Comprehensive network and physical layer diagnostics enable proactive management strategies to reduce risk of failure and downtime.

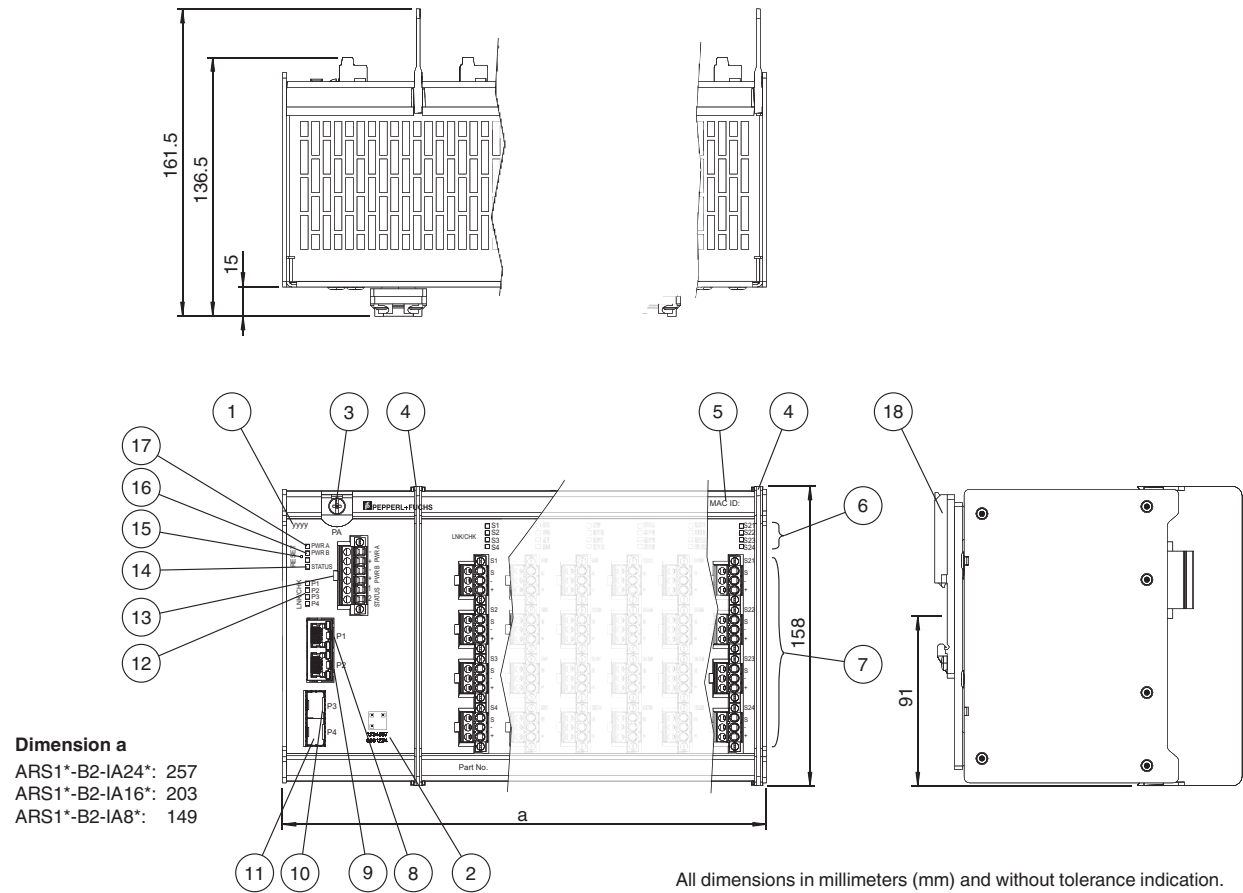
The APL field switch implements enhanced network security and supports SNMPv3, the locking of unused ports, and the HTTPS protocol.

Function Principle



Dimensions

DIN Rail Mounting



- | | |
|---|---|
| 1 Year of production | 11 Ethernet SFP port P4 |
| 2 QR code and serial number | 12 LED LNK/CHK P1 ... P4, communication status LED P1 ... P4 |
| 3 PA, connection to equipotential bonding | 13 Connector for auxiliary power and status indication output |
| 4 Slot for separation wall | 14 LED STATUS, status rail field switch |
| 5 MAC ID | 15 Reset button |
| 6 LED S1 ... Sn, status spur ports S1 ... Sn | 16 LED PWR B, status power input B |
| 7 Connectors for intrinsically safe spurs S1 ... Sn | 17 LED PWR A, status power input A |
| 8 Ethernet port P1 | 18 DIN rail mounting brackets |
| 9 Ethernet port P2 | |
| 10 Ethernet SFP port P3 | |

Technical Data

General specifications

Design / Mounting	Cabinet installation
Installation in hazardous area	Zone 2
Fieldbus support	PROFIBUS PA

Supply

Rated voltage	U_r	20 ... 60 V
Rated current	I_r	0.85 ... 0.3 A
Power dissipation		max. 13.7 W

Technical Data

Voltage difference dual supply input		+/- 10 %
Power consumption		max. 18 W
Redundancy		dual supply input
Indicators/operating means		
LED PWR A/B		green: power on
LED LNK/CHK		Off: no communication link active , Green: communication link active , Green flashing: communication link activity , Yellow flashing: communication with PROFIBUS PA field device , Red flashing: check function
LED STATUS		Off: Good , Blue: Maintenance required , Red: Failure
Fault signal		VFC alarm 100 mA, 32 V DC, normally closed
Button		Device reset
Interface 1		
Interface type		Ethernet-APL : 1 Vpp option spur connection , PROFIBUS PA
Port classification		S P A A
Number of ports		8
Port identification		S1...S8
Power option		powered
Transfer rate		10 MBit/s full duplex
Rated voltage		9.6 V
Rated current		55.56 mA
Rated power		540 mW
Cable shield grounding option		capacitive grounded
Connection type		spring terminals , pluggable
Conductor cross section		single wire/stranded wire: 0.5 ... 2.5 mm ²
Conductor cross section solid wire		2.08 ... 0.326 mm ² , 14 ... 18 AWG
Conductor cross section flexible wire		2.08 ... 0.326 mm ² , 14 ... 18 AWG
Interface 2		
Interface type		1000BASE-T
Number of ports		2
Port identification		P 1 ... P 2
Transfer rate		10/100/1000 Mbps
Connection type		RJ-45 , EIA/TIA 568 B
Interface 3		
Interface type		Slot for SFP transceiver SFP Multi-Source (MSA) compliant
Number of ports		2
Port identification		P 3 ... P 4
Galvanic isolation		
Spurs/Supply		safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V
SFP/Supply		620 V AC
1000BASE-T/Supply		1500 V AC
1000BASE-T/Spurs		safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V
1000BASE-T/1000BASE-T		1500 V AC
Housing/All		620 V AC
Fault signal/All		620 V AC
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 61326-1:2013
Conformity		
Galvanic isolation		IEC 61010-1
Electromagnetic compatibility		EN 61326 , NE 21

Technical Data

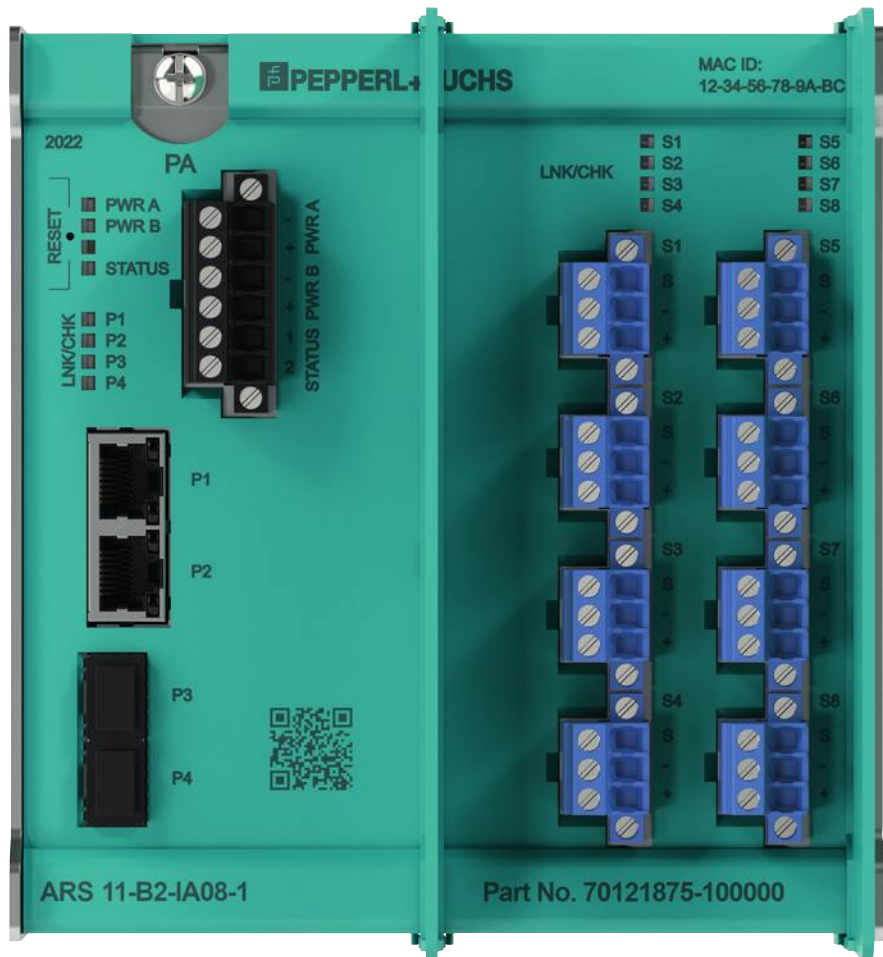
Degree of protection		IEC 60529
Ethernet		IEEE 802.3z , IEEE 802.3u , IEEE 802.3cg
Shock resistance		EN 60068-2-27
Vibration resistance		EN 60068-2-6
Climatic conditions		DIN IEC 721
Software		
Industrial protocols		PROFINET , CC-B (PA) , dynamic reconfiguration , Netload Class III , pruning
Management		Web user interface , SNMP v1, v2 , v3 , PROFINET
Redundancy		PROFINET MRP , PROFINET system redundancy S2
Management Information Base (MIB)		PROFINET conformance class B
Diagnostics function		10BASE-T1L physical layer , port , Packet statistics , LLDP , PROFIBUS PA
Cybersecurity		
Ambient conditions		
Ambient temperature		-40 ... 70 °C (-40 ... 158 °F) horizontally mounted no SFP installed -40 ... 65 °C (-40 ... 149 °F) horizontally mounted SFP installed
Storage temperature		-40 ... 85 °C (-40 ... 185 °F)
Relative humidity		≤ 95 % non-condensing
Shock resistance		15 g 11 ms
Vibration resistance		1 g 10 ... 150 Hz
Pollution degree		max. 2, according to IEC 60664
Corrosion resistance		acc. to ISA-S71.04-1985, severity level G3
Mechanical specifications		
Housing material		stainless steel 1.4301 , Polycarbonate
Degree of protection		IP20
Mass		2656 g
Dimensions		
Height		158 mm
Width		149 mm
Depth		136.5 mm
Mounting		DIN rail mounting , wall mounting
Data for application in connection with hazardous areas		
EU-type examination certificate		TÜV 21 ATEX 8666 X
Marking		Ⓔ II 3 (1) G Ex ic ec [ia Ga] IIC T4 Gc Ⓔ II (1) D [Ex ia Da] IIIC
Supply		
Maximum safe voltage	U_m	60 V
Interface 1		2-WISE power source, FISCO power supply
Voltage U_o		17.5 V
Current I_o		380 mA
Power P_o		1.67 W
Capacitance C_o		IIC : 0.25 µF IIB/IIIC : 1.5 µF
Inductance L_o		IIC : 0.15 mH IIB/IIIC : 0.5 mH
Interface 2		
Maximum safe voltage U_m		60 V
Interface 3		
Maximum safe voltage U_m		60 V
Directive conformity		
Directive 2014/34/EU		EN 60079-0:2018 , EN 60079-11:2012 , EN 60079-7:2015+A1:2018 , IEC TS 60079-47:2021
International approvals		
IECEx approval		IECEx TUR 21.0072X
Approved for		Ex ic ec [ia Ga] IIC T4 Gc [Ex ia Da] IIIC

Technical Data

Certificates and approvals

Patents	This product may be covered by the following patent: US 9,762,409
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Assembly



Mounting

Wall Mounting Option
For wall mounting the APL rail field switch use the accessory ACC-ARS-WM. See manual for details and dimensions.

Type Code

ARS1	(1)	B	2	-	IA	(2)	-	(3)
ARS1	Device							
ARS1	Ethernet-APL Rail Field Switch							
(1)	PROFIBUS PA Proxy							
1	With proxy							
2	Without proxy							
B	Power Supply							
B	Separately powered 20 V ... 60 V							
2	Uplink Ports							
2	2 ports each for RJ45 and SFP slots							

Type Code	
IA	Intrinsic Safety at Spurs
IA	Ex ia IIC
(2)	Spur Port Count
08	Spur ports
16	Spur ports
24	Spur ports
(3)	Pluggable Terminal Types
1	Screw terminals
2	Spring terminals



Ethernet-APL Rail Field Switch

FieldConnex®

ARS11-B2-IA16-2

- Managed Ethernet-APL field switch for process industries
- PROFINET MRP, S2 redundancy and dynamic reconfiguration
- 2 ports each for 1000BASE-T and SFP transceivers
- Redundant power input 20 VDC ... 60 VDC
- Installation in Zone 2
- Physical layer diagnostics at the spur
- Configuration and diagnosis with FDI, web interface, PROFINET device functions and SNMP
- Support of network security
- Powered spur ports intrinsically safe Ex ia according to 2-WISE and FISCO
- Support of Ethernet-APL and PROFIBUS PA instruments

Ethernet-APL rail field switch with 16 intrinsically safe Ex ia spur ports and spring terminals with proxy support selectable for PROFIBUS PA field devices



ethernet-apl™
advanced physical layer



Function

The Ethernet-APL rail field switch is a ruggedized, managed field switch offering connectivity for Ethernet-APL devices to Ethernet networks via any protocol. The connections, i. e., "spur" ports, provide intrinsically safe (Ex ia) power and communication to instruments located in Zone 0/1. APL field switches can be installed in Zone 2.

The APL field switch features 2 Gigabit Ethernet ports and 2 SFP ports. The SFP ports provide connections for a choice of optional SFP transceivers to be used in explosion-hazardous areas and different distances.

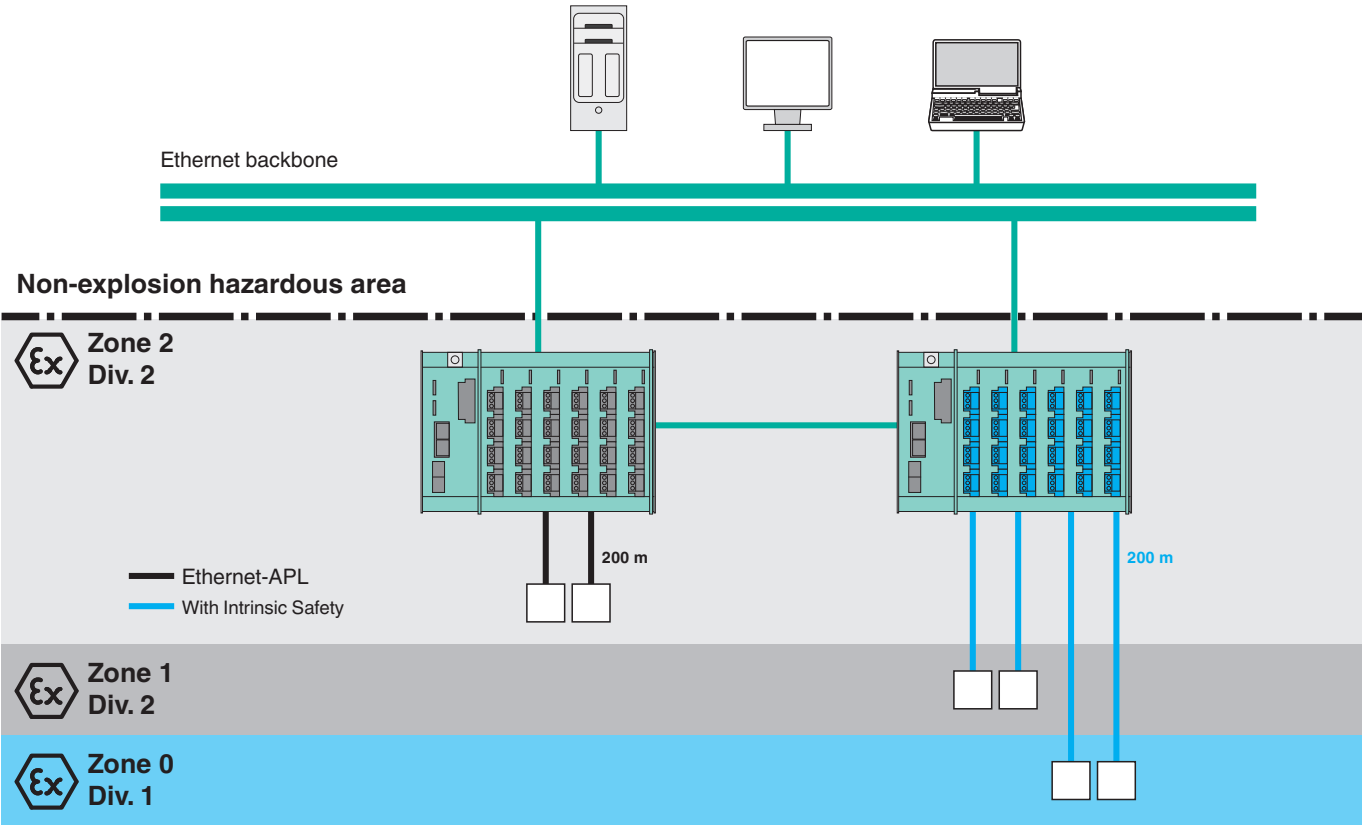
For PROFINET, the APL field switch supports Class B networks. For high-availability installations, the APL field switch provides redundancy mechanisms such as MRP ring redundancy and S2 system redundancy.

PROFINET dynamic reconfiguration permits re-configuration of the APL field switch during runtime without interrupting the data exchange.

Easy configuration and diagnostics of the APL field switch are accessible via FDI and web-based management. PROFINET device functions and SNMP assure fast start-up and enable the use of predictive maintenance. Comprehensive network and physical layer diagnostics enable proactive management strategies to reduce risk of failure and downtime.

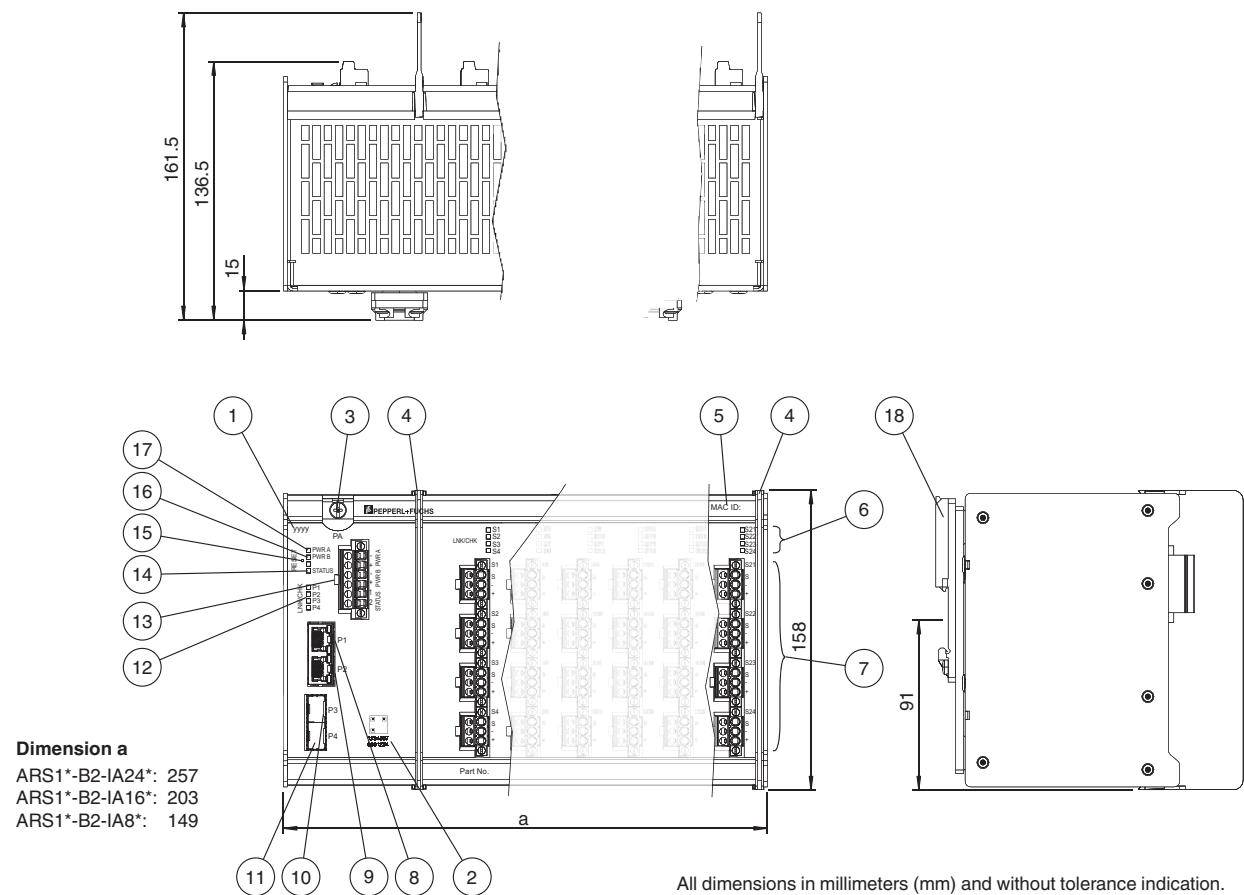
The APL field switch implements enhanced network security and supports SNMPv3, the locking of unused ports, and the HTTPS protocol.

Function Principle



Dimensions

DIN Rail Mounting



- 1 Year of production
- 2 QR code and serial number
- 3 PA, connection to equipotential bonding
- 4 Slot for separation wall
- 5 MAC ID
- 6 LED S1 ... Sn, status spur ports S1 ... Sn
- 7 Connectors for intrinsically safe spurs S1 ... Sn
- 8 Ethernet port P1
- 9 Ethernet port P2
- 10 Ethernet SFP port P3
- 11 Ethernet SFP port P4
- 12 LED LNK/CHK P1 ... P4, communication status LED P1 ... P4
- 13 Connector for auxiliary power and status indication output
- 14 LED STATUS, status rail field switch
- 15 Reset button
- 16 LED PWR B, status power input B
- 17 LED PWR A, status power input A
- 18 DIN rail mounting brackets

Technical Data

General specifications		
Design / Mounting		Cabinet installation
Installation in hazardous area		Zone 2
Fieldbus support		PROFIBUS PA
Supply		
Rated voltage	U _r	20 ... 60 V
Rated current	I _r	1.3 ... 0.45 A
Power dissipation		max. 17.4 W

Technical Data

Voltage difference dual supply input		+/- 10 %
Power consumption		max. 26 W
Redundancy		dual supply input
Indicators/operating means		
LED PWR A/B		green: power on
LED LNK/CHK		Off: no communication link active , Green: communication link active , Green flashing: communication link activity , Yellow flashing: communication with PROFIBUS PA field device , Red flashing: check function
LED STATUS		Off: Good , Blue: Maintenance required , Red: Failure
Fault signal		VFC alarm 100 mA, 32 V DC, normally closed
Button		Device reset
Interface 1		
Interface type		Ethernet-APL : 1 Vpp option spur connection , PROFIBUS PA
Port classification		S P A A
Number of ports		16
Port identification		S1...S16
Power option		powered
Transfer rate		10 MBit/s full duplex
Rated voltage		9.6 V
Rated current		55.56 mA
Rated power		540 mW
Cable shield grounding option		capacitive grounded
Connection type		spring terminals , pluggable
Conductor cross section		single wire/stranded wire: 0.5 ... 2.5 mm ²
Conductor cross section solid wire		2.08 ... 0.326 mm ² , 14 ... 18 AWG
Conductor cross section flexible wire		2.08 ... 0.326 mm ² , 14 ... 18 AWG
Interface 2		
Interface type		1000BASE-T
Number of ports		2
Port identification		P 1 ... P 2
Transfer rate		10/100/1000 Mbps
Connection type		RJ-45 , EIA/TIA 568 B
Interface 3		
Interface type		Slot for SFP transceiver SFP Multi-Source (MSA) compliant
Number of ports		2
Port identification		P 3 ... P 4
Galvanic isolation		
Spurs/Supply		safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V
SFP/Supply		620 V AC
1000BASE-T/Supply		1500 V AC
1000BASE-T/Spurs		safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V
1000BASE-T/1000BASE-T		1500 V AC
Housing/All		620 V AC
Fault signal/All		620 V AC
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 61326-1:2013
Conformity		
Galvanic isolation		IEC 61010-1
Electromagnetic compatibility		EN 61326 , NE 21

Technical Data

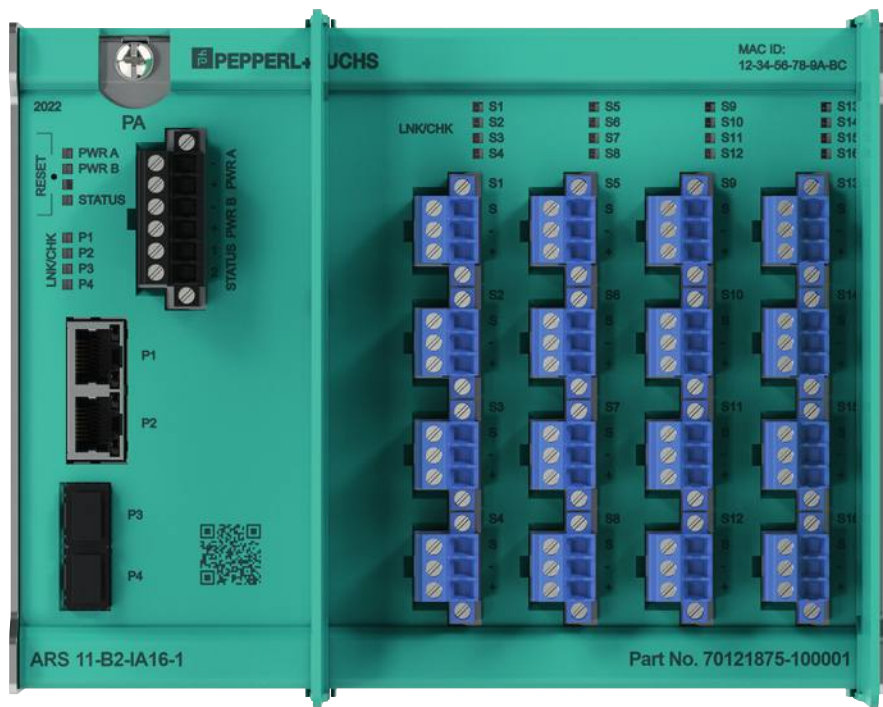
Degree of protection		IEC 60529
Ethernet		IEEE 802.3z , IEEE 802.3u , IEEE 802.3cg
Shock resistance		EN 60068-2-27
Vibration resistance		EN 60068-2-6
Climatic conditions		DIN IEC 721
Software		
Industrial protocols		PROFINET , CC-B (PA) , dynamic reconfiguration , Netload Class III , pruning
Management		Web user interface , SNMP v1, v2 , v3 , PROFINET
Redundancy		PROFINET MRP , PROFINET system redundancy S2
Management Information Base (MIB)		PROFINET conformance class B
Diagnostics function		10BASE-T1L physical layer , port , Packet statistics , LLDP , PROFIBUS PA
Cybersecurity		
Ambient conditions		
Ambient temperature		-40 ... 70 °C (-40 ... 158 °F) horizontally mounted no SFP installed -40 ... 65 °C (-40 ... 149 °F) horizontally mounted SFP installed
Storage temperature		-40 ... 85 °C (-40 ... 185 °F)
Relative humidity		≤ 95 % non-condensing
Shock resistance		15 g 11 ms
Vibration resistance		1 g 10 ... 150 Hz
Pollution degree		max. 2, according to IEC 60664
Corrosion resistance		acc. to ISA-S71.04-1985, severity level G3
Mechanical specifications		
Housing material		stainless steel 1.4301 , Polycarbonate
Degree of protection		IP20
Mass		3201 g
Dimensions		
Height		158 mm
Width		203 mm
Depth		136.5 mm
Mounting		DIN rail mounting , wall mounting
Data for application in connection with hazardous areas		
EU-type examination certificate		TÜV 21 ATEX 8666 X
Marking		Ⓔ II 3 (1) G Ex ic ec [ia Ga] IIC T4 Gc Ⓔ II (1) D [Ex ia Da] IIIC
Supply		
Maximum safe voltage	U_m	60 V
Interface 1		2-WISE power source, FISCO power supply
Voltage U_o		17.5 V
Current I_o		380 mA
Power P_o		1.67 W
Capacitance C_o		IIC : 0.25 µF IIB/IIIC : 1.5 µF
Inductance L_o		IIC : 0.15 mH IIB/IIIC : 0.5 mH
Interface 2		
Maximum safe voltage U_m		60 V
Interface 3		
Maximum safe voltage U_m		60 V
Directive conformity		
Directive 2014/34/EU		EN 60079-0:2018 , EN 60079-11:2012 , EN 60079-7:2015+A1:2018 , IEC TS 60079-47:2021
International approvals		
IECEx approval		IECEx TUR 21.0072X
Approved for		Ex ic ec [ia Ga] IIC T4 Gc [Ex ia Da] IIIC

Technical Data

Certificates and approvals

Patents	This product may be covered by the following patent: US 9,762,409
General information	

Assembly



Mounting

Wall Mounting Option
For wall mounting the APL rail field switch use the accessory ACC-ARS-WM. See manual for details and dimensions.

Type Code

ARS1	(1)	B	2	-	IA	(2)	-	(3)
ARS1	Device							
ARS1	Ethernet-APL Rail Field Switch							
(1)	PROFIBUS PA Proxy							
1	With proxy							
2	Without proxy							
B	Power Supply							
B	Separately powered 20 V ... 60 V							
2	Uplink Ports							
2	2 ports each for RJ45 and SFP slots							

Type Code	
IA	Intrinsic Safety at Spurs
IA	Ex ia IIC
(2)	Spur Port Count
08	Spur ports
16	Spur ports
24	Spur ports
(3)	Pluggable Terminal Types
1	Screw terminals
2	Spring terminals



Ethernet-APL Rail Field Switch

FieldConnex®

ARS11-B2-IA24-2

- Managed Ethernet-APL field switch for process industries
- PROFINET MRP, S2 redundancy and dynamic reconfiguration
- 2 ports each for 1000BASE-T and SFP transceivers
- Redundant power input 20 VDC ... 60 VDC
- Installation in Zone 2
- Physical layer diagnostics at the spur
- Configuration and diagnosis with FDI, web interface, PROFINET device functions and SNMP
- Support of network security
- Powered spur ports intrinsically safe Ex ia according to 2-WISE and FISCO
- Support of Ethernet-APL and PROFIBUS PA instruments

Ethernet-APL rail field switch with 24 intrinsically safe Ex ia spur ports and spring terminals with proxy support selectable for PROFIBUS PA field devices



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advanced physical layer



Function

The Ethernet-APL rail field switch is a ruggedized, managed field switch offering connectivity for Ethernet-APL devices to Ethernet networks via any protocol. The connections, i. e., "spur" ports, provide intrinsically safe (Ex ia) power and communication to instruments located in Zone 0/1. APL field switches can be installed in Zone 2.

The APL field switch features 2 Gigabit Ethernet ports and 2 SFP ports. The SFP ports provide connections for a choice of optional SFP transceivers to be used in explosion-hazardous areas and different distances.

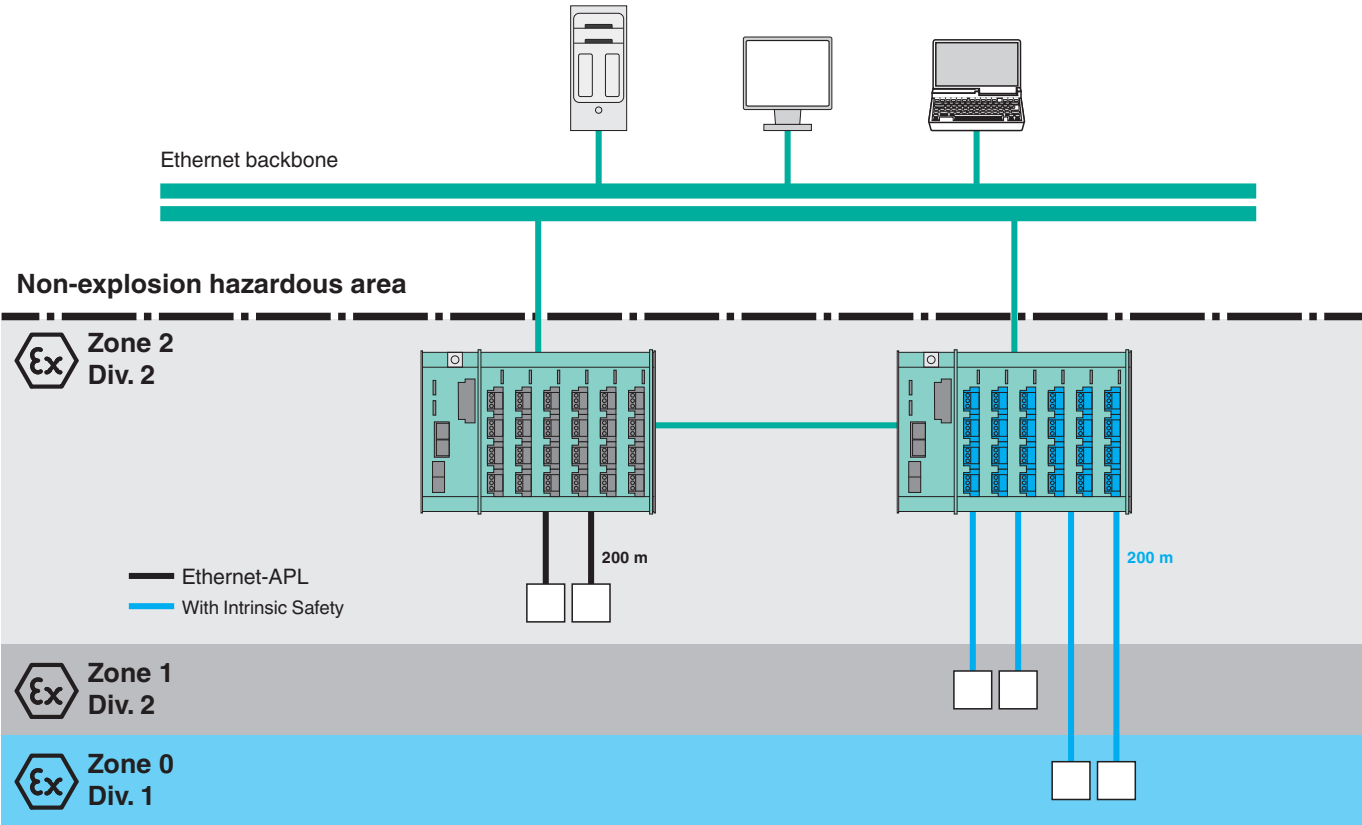
For PROFINET, the APL field switch supports Class B networks. For high-availability installations, the APL field switch provides redundancy mechanisms such as MRP ring redundancy and S2 system redundancy.

PROFINET dynamic reconfiguration permits re-configuration of the APL field switch during runtime without interrupting the data exchange.

Easy configuration and diagnostics of the APL field switch are accessible via FDI and web-based management. PROFINET device functions and SNMP assure fast start-up and enable the use of predictive maintenance. Comprehensive network and physical layer diagnostics enable proactive management strategies to reduce risk of failure and downtime.

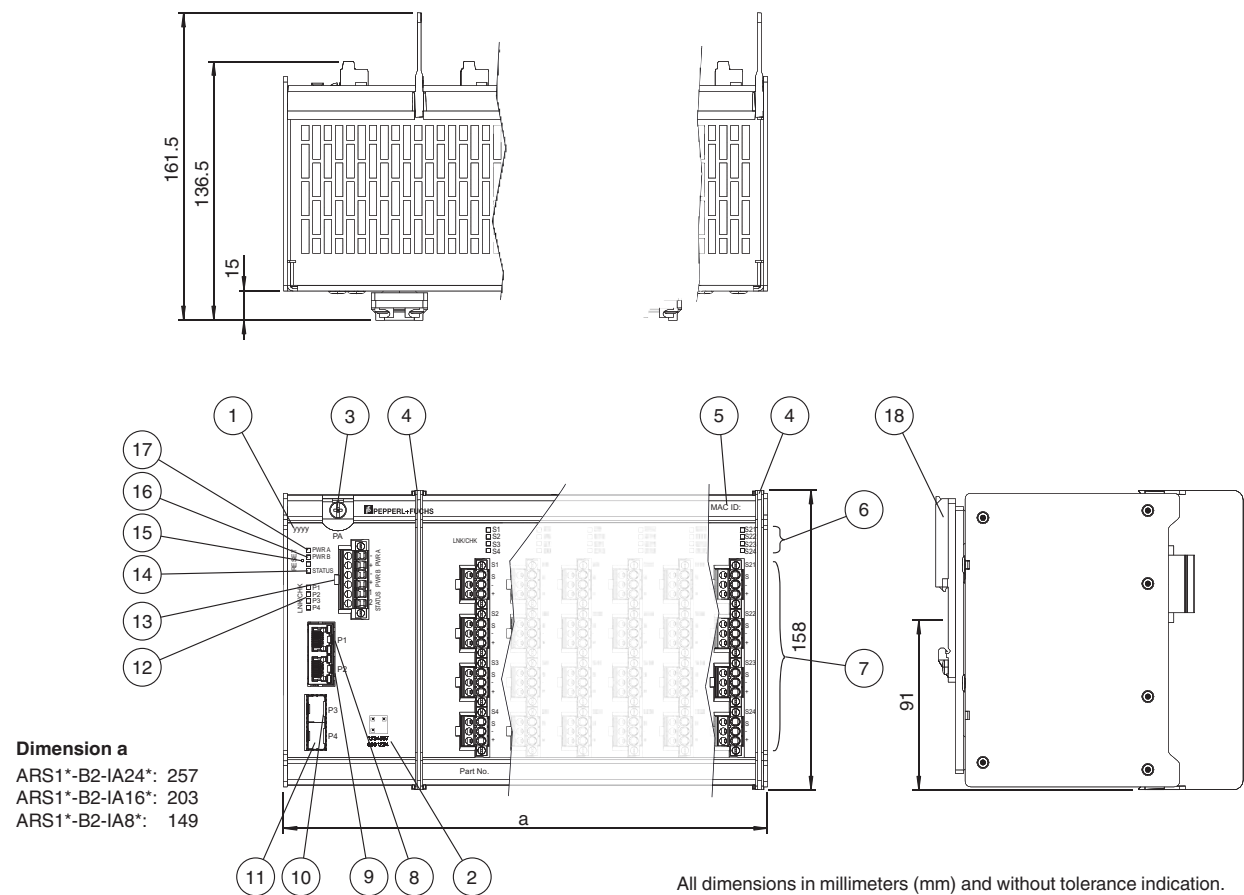
The APL field switch implements enhanced network security and supports SNMPv3, the locking of unused ports, and the HTTPS protocol.

Function Principle



Dimensions

DIN Rail Mounting



- | | |
|---|---|
| 1 Year of production | 11 Ethernet SFP port P4 |
| 2 QR code and serial number | 12 LED LNK/CHK P1 ... P4, communication status LED P1 ... P4 |
| 3 PA, connection to equipotential bonding | 13 Connector for auxiliary power and status indication output |
| 4 Slot for separation wall | 14 LED STATUS, status rail field switch |
| 5 MAC ID | 15 Reset button |
| 6 LED S1 ... Sn, status spur ports S1 ... Sn | 16 LED PWR B, status power input B |
| 7 Connectors for intrinsically safe spurs S1 ... Sn | 17 LED PWR A, status power input A |
| 8 Ethernet port P1 | 18 DIN rail mounting brackets |
| 9 Ethernet port P2 | |
| 10 Ethernet SFP port P3 | |

Technical Data

General specifications		
Design / Mounting		Cabinet installation
Installation in hazardous area		Zone 2
Fieldbus support		PROFIBUS PA
Supply		
Rated voltage	U _r	20 ... 60 V
Rated current	I _r	1.8 ... 0.6 A
Power dissipation		max. 23 W

Technical Data

Voltage difference dual supply input		+/- 10 %
Power consumption		max. 36 W
Redundancy		dual supply input
Indicators/operating means		
LED PWR A/B		green: power on
LED LNK/CHK		Off: no communication link active , Green: communication link active , Green flashing: communication link activity , Yellow flashing: communication with PROFIBUS PA field device , Red flashing: check function
LED STATUS		Off: Good , Blue: Maintenance required , Red: Failure
Fault signal		VFC alarm 100 mA, 32 V DC, normally closed
Button		Device reset
Interface 1		
Interface type		Ethernet-APL : 1 Vpp option spur connection , PROFIBUS PA
Port classification		S P A A
Number of ports		24
Port identification		S1...S24
Power option		powered
Transfer rate		10 MBit/s full duplex
Rated voltage		9.6 V
Rated current		55.56 mA
Rated power		540 mW
Cable shield grounding option		capacitive grounded
Connection type		spring terminals , pluggable
Conductor cross section		single wire/stranded wire: 0.5 ... 2.5 mm ²
Conductor cross section solid wire		2.08 ... 0.326 mm ² , 14 ... 18 AWG
Conductor cross section flexible wire		2.08 ... 0.326 mm ² , 14 ... 18 AWG
Interface 2		
Interface type		1000BASE-T
Number of ports		2
Port identification		P 1 ... P 2
Transfer rate		10/100/1000 Mbps
Connection type		RJ-45 , EIA/TIA 568 B
Interface 3		
Interface type		Slot for SFP transceiver SFP Multi-Source (MSA) compliant
Number of ports		2
Port identification		P 3 ... P 4
Galvanic isolation		
Spurs/Supply		safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V
SFP/Supply		620 V AC
1000BASE-T/Supply		1500 V AC
1000BASE-T/Spurs		safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V
1000BASE-T/1000BASE-T		1500 V AC
Housing/All		620 V AC
Fault signal/All		620 V AC
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 61326-1:2013
Conformity		
Galvanic isolation		IEC 61010-1
Electromagnetic compatibility		EN 61326 , NE 21

Technical Data

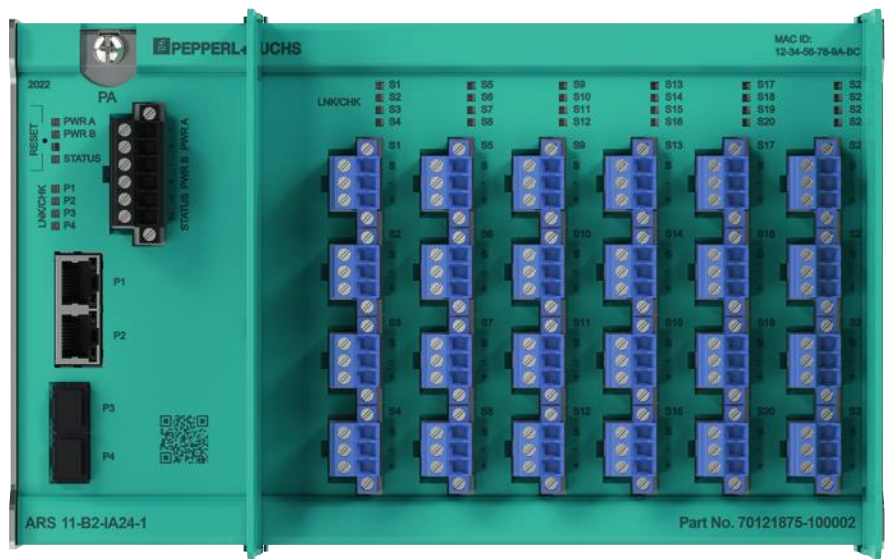
Degree of protection		IEC 60529
Ethernet		IEEE 802.3z , IEEE 802.3u , IEEE 802.3cg
Shock resistance		EN 60068-2-27
Vibration resistance		EN 60068-2-6
Climatic conditions		DIN IEC 721
Software		
Industrial protocols		PROFINET , CC-B (PA) , dynamic reconfiguration , Netload Class III , pruning
Management		Web user interface , SNMP v1, v2 , v3 , PROFINET
Redundancy		PROFINET MRP , PROFINET system redundancy S2
Management Information Base (MIB)		PROFINET conformance class B
Diagnostics function		10BASE-T1L physical layer , port , Packet statistics , LLDP , PROFIBUS PA
Cybersecurity		
Ambient conditions		
Ambient temperature		-40 ... 70 °C (-40 ... 158 °F) horizontally mounted no SFP installed -40 ... 65 °C (-40 ... 149 °F) horizontally mounted SFP installed
Storage temperature		-40 ... 85 °C (-40 ... 185 °F)
Relative humidity		≤ 95 % non-condensing
Shock resistance		15 g 11 ms
Vibration resistance		1 g 10 ... 150 Hz
Pollution degree		max. 2, according to IEC 60664
Corrosion resistance		acc. to ISA-S71.04-1985, severity level G3
Mechanical specifications		
Housing material		stainless steel 1.4301 , Polycarbonate
Degree of protection		IP20
Mass		3826 g
Dimensions		
Height		158 mm
Width		257 mm
Depth		136.5 mm
Mounting		DIN rail mounting , wall mounting
Data for application in connection with hazardous areas		
EU-type examination certificate		TÜV 21 ATEX 8666 X
Marking		Ⓔ II 3 (1) G Ex ic ec [ia Ga] IIC T4 Gc Ⓔ II (1) D [Ex ia Da] IIIC
Supply		
Maximum safe voltage	U _m	60 V
Interface 1		2-WISE power source, FISCO power supply
Voltage U _o		17.5 V
Current I _o		380 mA
Power P _o		1.67 W
Capacitance C _o		IIC : 0.25 µF IIB/IIIC : 1.5 µF
Inductance L _o		IIC : 0.15 mH IIB/IIIC : 0.5 mH
Interface 2		
Maximum safe voltage U _m		60 V
Interface 3		
Maximum safe voltage U _m		60 V
Directive conformity		
Directive 2014/34/EU		EN 60079-0:2018 , EN 60079-11:2012 , EN 60079-7:2015+A1:2018 , IEC TS 60079-47:2021
International approvals		
IECEx approval		IECEx TUR 21.0072X
Approved for		Ex ic ec [ia Ga] IIC T4 Gc [Ex ia Da] IIIC

Technical Data

Certificates and approvals

Patents	This product may be covered by the following patent: US 9,762,409
General information	

Assembly



Mounting

Wall Mounting Option
For wall mounting the APL rail field switch use the accessory ACC-ARS-WM. See manual for details and dimensions.

Type Code

ARS1	(1)	B	2	-	IA	(2)	-	(3)
ARS1	Device							
ARS1	Ethernet-APL Rail Field Switch							
(1)	PROFIBUS PA Proxy							
1	With proxy							
2	Without proxy							
B	Power Supply							
B	Separately powered 20 V ... 60 V							
2	Uplink Ports							
2	2 ports each for RJ45 and SFP slots							

Type Code	
IA	Intrinsic Safety at Spurs
IA	Ex ia IIC
(2)	Spur Port Count
08	Spur ports
16	Spur ports
24	Spur ports
(3)	Pluggable Terminal Types
1	Screw terminals
2	Spring terminals



Ethernet-APL Rail Field Switch

FieldConnex®

ARS12-B2-IA08-2

- Managed Ethernet-APL field switch for process industries
- PROFINET MRP, S2 redundancy and dynamic reconfiguration
- 2 ports each for 1000BASE-T and SFP transceivers
- Redundant power input 20 VDC ... 60 VDC
- Installation in Zone 2
- Physical layer diagnostics at the spur
- Configuration and diagnosis with FDI, web interface, PROFINET device functions and SNMP
- Support of network security
- Powered spur ports intrinsically safe Ex ia according to 2-WISE

Ethernet-APL rail field switch with 8 intrinsically safe Ex ia spur ports and spring terminals



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advanced physical layer



Function

The Ethernet-APL rail field switch is a ruggedized, managed field switch offering connectivity for Ethernet-APL devices to Ethernet networks via any protocol. The connections, i. e., "spur" ports, provide intrinsically safe (Ex ia) power and communication to instruments located in Zone 0/1. APL field switches can be installed in Zone 2.

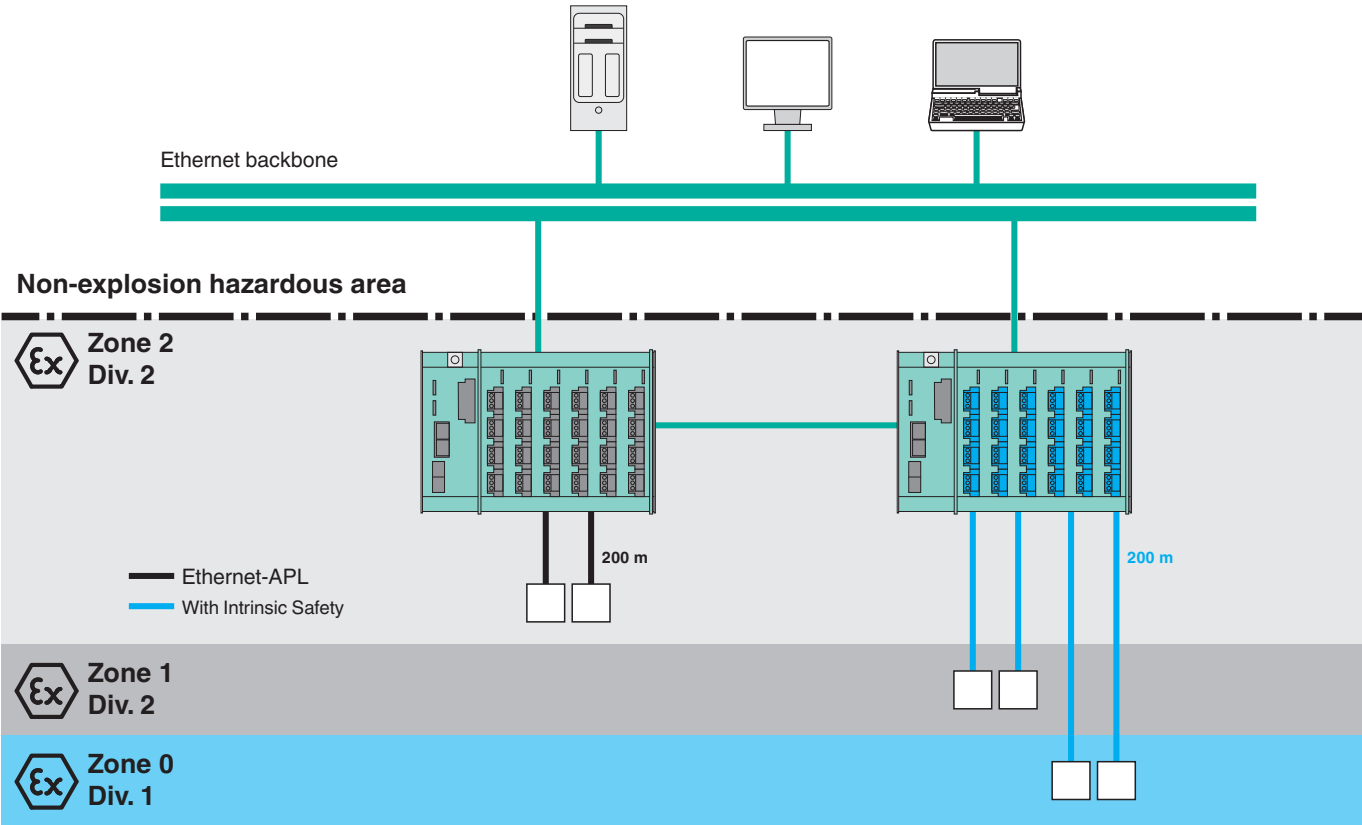
The APL field switch features 2 Gigabit Ethernet ports and 2 SFP ports. The SFP ports provide connections for a choice of optional SFP transceivers to be used in explosion-hazardous areas and different distances.

For PROFINET, the APL field switch supports Class B networks. For high-availability installations, the APL field switch provides redundancy mechanisms such as MRP ring redundancy and S2 system redundancy.

Easy configuration and diagnostics of the APL field switch are accessible via FDI and web-based management. PROFINET device functions and SNMP assure fast start-up and enable the use of predictive maintenance. Comprehensive network and physical layer diagnostics enable proactive management strategies to reduce risk of failure and downtime.

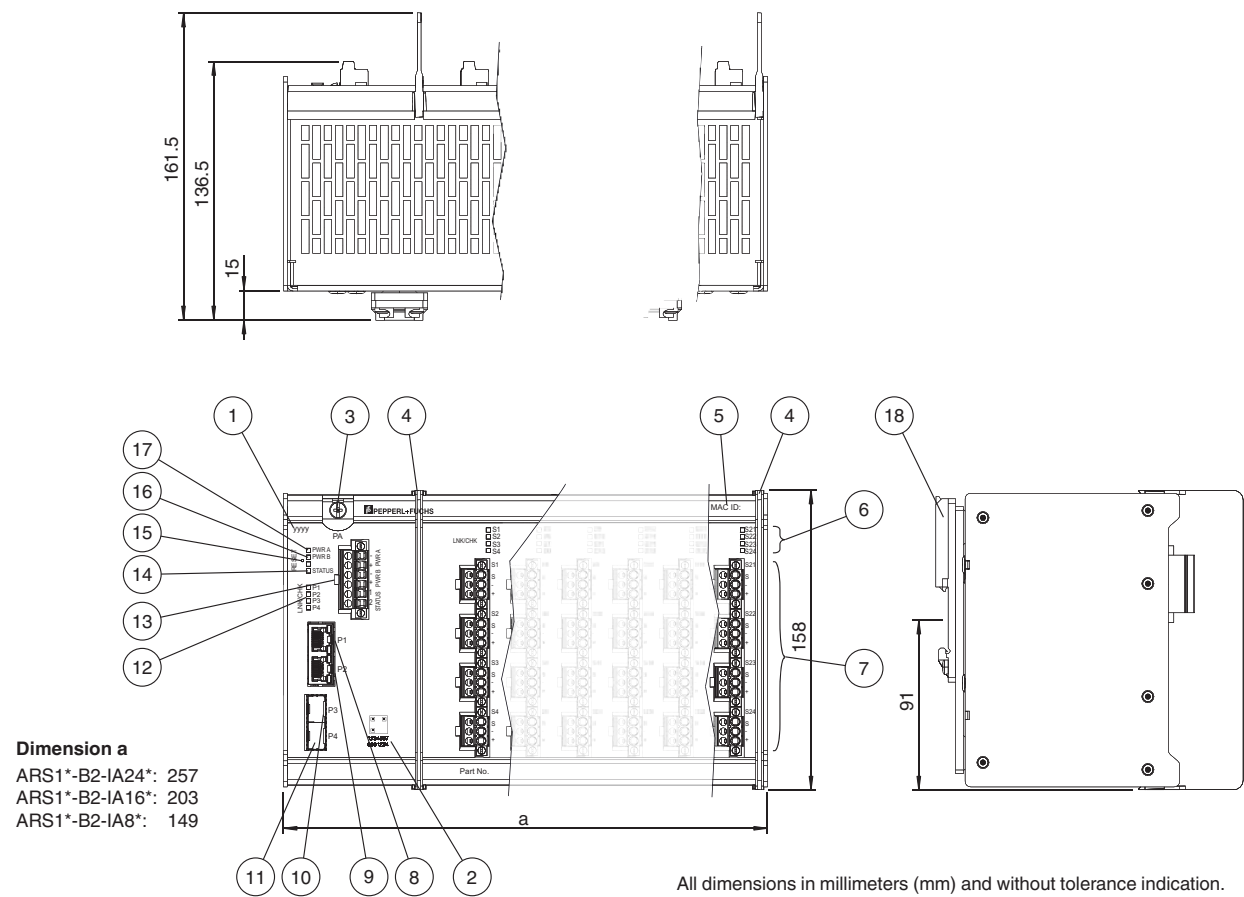
The APL field switch implements enhanced network security and supports SNMPv3, the locking of unused ports, and the HTTPS protocol.

Function Principle



Dimensions

DIN Rail Mounting



- 1 Year of production
- 2 QR code and serial number
- 3 PA, connection to equipotential bonding
- 4 Slot for separation wall
- 5 MAC ID
- 6 LED S1 ... Sn, status spur ports S1 ... Sn
- 7 Connectors for intrinsically safe spurs S1 ... Sn
- 8 Ethernet port P1
- 9 Ethernet port P2
- 10 Ethernet SFP port P3
- 11 Ethernet SFP port P4
- 12 LED LNK/CHK P1 ... P4, communication status LED P1 ... P4
- 13 Connector for auxiliary power and status indication output
- 14 LED STATUS, status rail field switch
- 15 Reset button
- 16 LED PWR B, status power input B
- 17 LED PWR A, status power input A
- 18 DIN rail mounting brackets

Technical Data

General specifications		
Design / Mounting		Cabinet installation
Installation in hazardous area		Zone 2
Supply		
Rated voltage	U _r	20 ... 60 V
Rated current	I _r	0.85 ... 0.3 A
Power dissipation		max. 13.7 W
Voltage difference dual supply input		+/- 10 %

Technical Data

Power consumption		max. 18 W
Redundancy		dual supply input
Indicators/operating means		
LED PWR A/B		green: power on
LED LNK/CHK		Off: no communication link active , Green: communication link active , Green flashing: communication link activity , Red flashing: check function
LED STATUS		Off: Good , Blue: Maintenance required , Red: Failure
Fault signal		VFC alarm 100 mA, 32 V DC, normally closed
Button		Device reset
Interface 1		
Interface type		Ethernet-APL : 1 Vpp option spur connection
Port classification		S P A A
Number of ports		8
Port identification		S1...S8
Power option		powered
Transfer rate		10 MBit/s full duplex
Rated voltage		9.6 V
Rated current		55.56 mA
Rated power		540 mW
Cable shield grounding option		capacitive grounded
Connection type		spring terminals , pluggable
Conductor cross section		single wire/stranded wire: 0.5 ... 2.5 mm ²
Conductor cross section solid wire		2.08 ... 0.326 mm ² , 14 ... 18 AWG
Conductor cross section flexible wire		2.08 ... 0.326 mm ² , 14 ... 18 AWG
Interface 2		
Interface type		1000BASE-T
Number of ports		2
Port identification		P 1 ... P 2
Transfer rate		10/100/1000 Mbps
Connection type		RJ-45 , EIA/TIA 568 B
Interface 3		
Interface type		Slot for SFP transceiver SFP Multi-Source (MSA) compliant
Number of ports		2
Port identification		P 3 ... P 4
Galvanic isolation		
Spurs/Supply		safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V
SFP/Supply		620 V AC
1000BASE-T/Supply		1500 V AC
1000BASE-T/Spurs		safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V
1000BASE-T/1000BASE-T		1500 V AC
Housing/All		620 V AC
Fault signal/All		620 V AC
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 61326-1:2013
Conformity		
Galvanic isolation		IEC 61010-1
Electromagnetic compatibility		EN 61326 , NE 21
Degree of protection		IEC 60529
Ethernet		IEEE 802.3z , IEEE 802.3u , IEEE 802.3cg

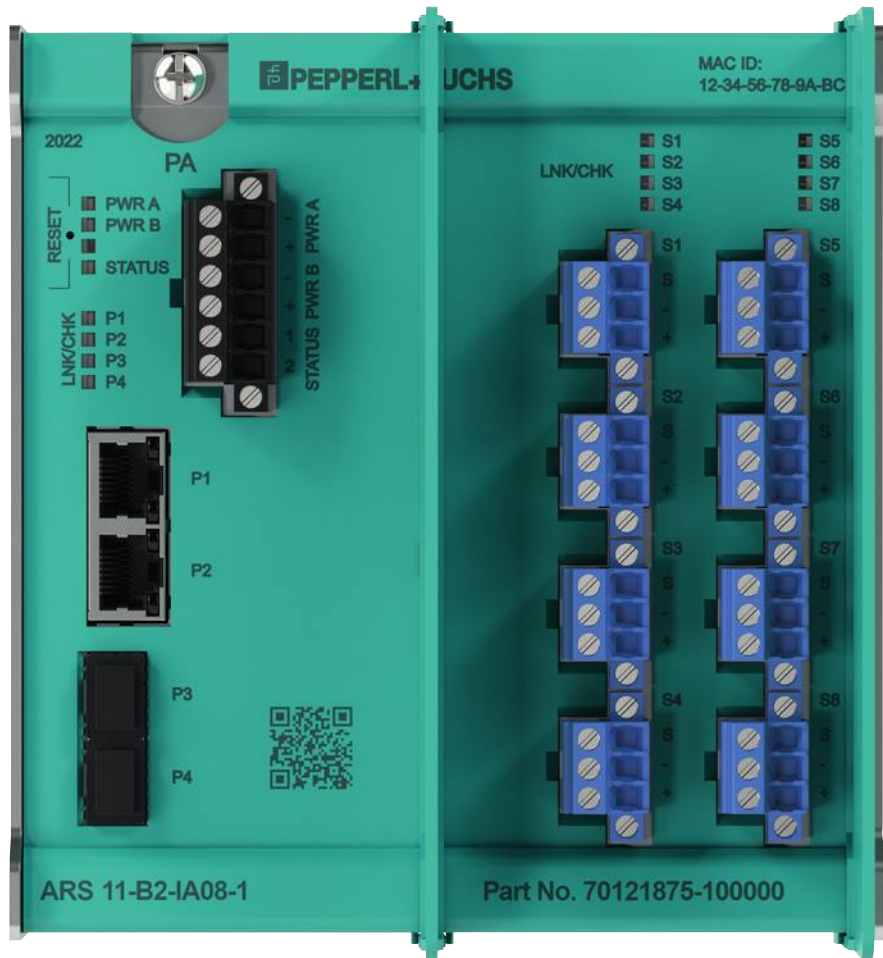
Technical Data

Shock resistance		EN 60068-2-27
Vibration resistance		EN 60068-2-6
Climatic conditions		DIN IEC 721
Software		
Industrial protocols		PROFINET , CC-B (PA) , dynamic reconfiguration , Netload Class III , pruning
Management		Web user interface , SNMP v1, v2 , v3 , PROFINET
Redundancy		PROFINET MRP , PROFINET system redundancy S2
Management Information Base (MIB)		PROFINET conformance class B
Diagnostics function		10BASE-T1L physical layer , port , Packet statistics , LLDP
Cybersecurity		
Ambient conditions		
Ambient temperature		-40 ... 70 °C (-40 ... 158 °F) horizontally mounted no SFP installed -40 ... 65 °C (-40 ... 149 °F) horizontally mounted SFP installed
Storage temperature		-40 ... 85 °C (-40 ... 185 °F)
Relative humidity		≤ 95 % non-condensing
Shock resistance		15 g 11 ms
Vibration resistance		1 g 10 ... 150 Hz
Pollution degree		max. 2, according to IEC 60664
Corrosion resistance		acc. to ISA-S71.04-1985, severity level G3
Mechanical specifications		
Housing material		stainless steel 1.4301 , Polycarbonate
Degree of protection		IP20
Mass		2656 g
Dimensions		
Height		158 mm
Width		149 mm
Depth		136.5 mm
Mounting		DIN rail mounting , wall mounting
Data for application in connection with hazardous areas		
EU-type examination certificate		TÜV 21 ATEX 8666 X
Marking		⊕ II 3 (1) G Ex ic ec [ia Ga] IIC T4 Gc ⊕ II (1) D [Ex ia Da] IIIC
Supply		
Maximum safe voltage	U _m	60 V
Interface 1		2-WISE power source
Voltage U _o		17.5 V
Current I _o		380 mA
Power P _o		1.67 W
Capacitance C _o		IIC : 0.25 µF IIB/IIC : 1.5 µF
Inductance L _o		IIC : 0.15 mH IIB/IIC : 0.5 mH
Interface 2		
Maximum safe voltage U _m		60 V
Interface 3		
Maximum safe voltage U _m		60 V
Directive conformity		
Directive 2014/34/EU		EN 60079-0:2018 , EN 60079-11:2012 , EN 60079-7:2015+A1:2018 , IEC TS 60079-47:2021
International approvals		
IECEx approval		IECEx TUR 21.0072X
Approved for		Ex ic ec [ia Ga] IIC T4 Gc [Ex ia Da] IIIC
Certificates and approvals		
Patents		This product may be covered by the following patent: US 9,762,409

Technical Data

General information

Assembly



Mounting

Wall Mounting Option
For wall mounting the APL rail field switch use the accessory ACC-ARS-WM. See manual for details and dimensions.

Type Code

ARS1	(1)	B	2	-	IA	(2)	-	(3)
ARS1	Device							
ARS1	Ethernet-APL Rail Field Switch							
(1)	PROFIBUS PA Proxy							
1	With proxy							
2	Without proxy							
B	Power Supply							
B	Separately powered 20 V ... 60 V							
2	Uplink Ports							
2	2 ports each for RJ45 and SFP slots							
IA	Intrinsic Safety at Spurs							
IA	Ex ia IIC							

Type Code

(2)	Spur Port Count
08	Spur ports
16	Spur ports
24	Spur ports

(3)	Pluggable Terminal Types
1	Screw terminals
2	Spring terminals



Ethernet-APL Rail Field Switch

FieldConnex®

ARS12-B2-IA16-2

- Managed Ethernet-APL field switch for process industries
- PROFINET MRP, S2 redundancy and dynamic reconfiguration
- 2 ports each for 1000BASE-T and SFP transceivers
- Redundant power input 20 VDC ... 60 VDC
- Installation in Zone 2
- Physical layer diagnostics at the spur
- Configuration and diagnosis with FDI, web interface, PROFINET device functions and SNMP
- Support of network security
- Powered spur ports intrinsically safe Ex ia according to 2-WISE

Ethernet-APL rail field switch with 16 intrinsically safe Ex ia spur ports and spring terminals



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Function

The Ethernet-APL rail field switch is a ruggedized, managed field switch offering connectivity for Ethernet-APL devices to Ethernet networks via any protocol. The connections, i. e., "spur" ports, provide intrinsically safe (Ex ia) power and communication to instruments located in Zone 0/1. APL field switches can be installed in Zone 2.

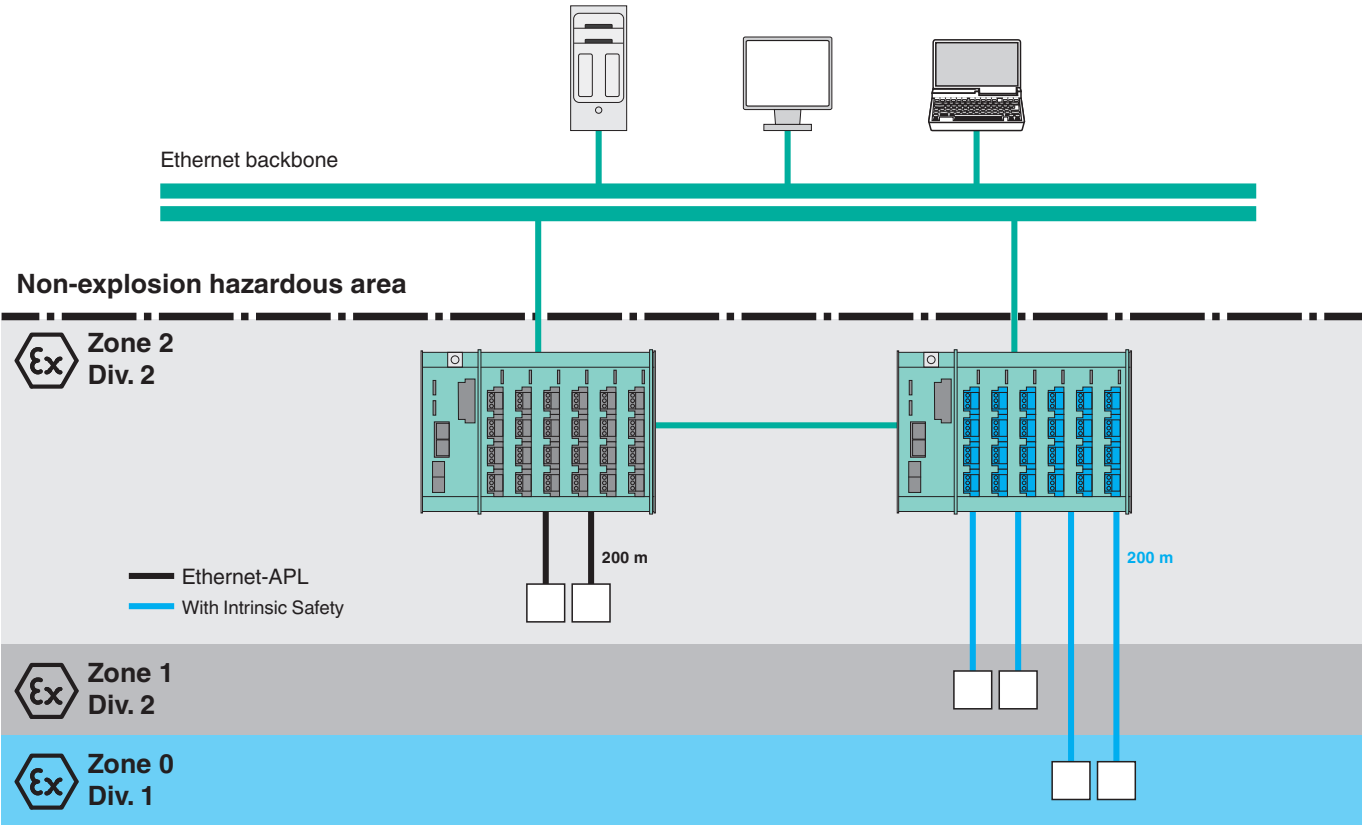
The APL field switch features 2 Gigabit Ethernet ports and 2 SFP ports. The SFP ports provide connections for a choice of optional SFP transceivers to be used in explosion-hazardous areas and different distances.

For PROFINET, the APL field switch supports Class B networks. For high-availability installations, the APL field switch provides redundancy mechanisms such as MRP ring redundancy and S2 system redundancy.

Easy configuration and diagnostics of the APL field switch are accessible via FDI and web-based management. PROFINET device functions and SNMP assure fast start-up and enable the use of predictive maintenance. Comprehensive network and physical layer diagnostics enable proactive management strategies to reduce risk of failure and downtime.

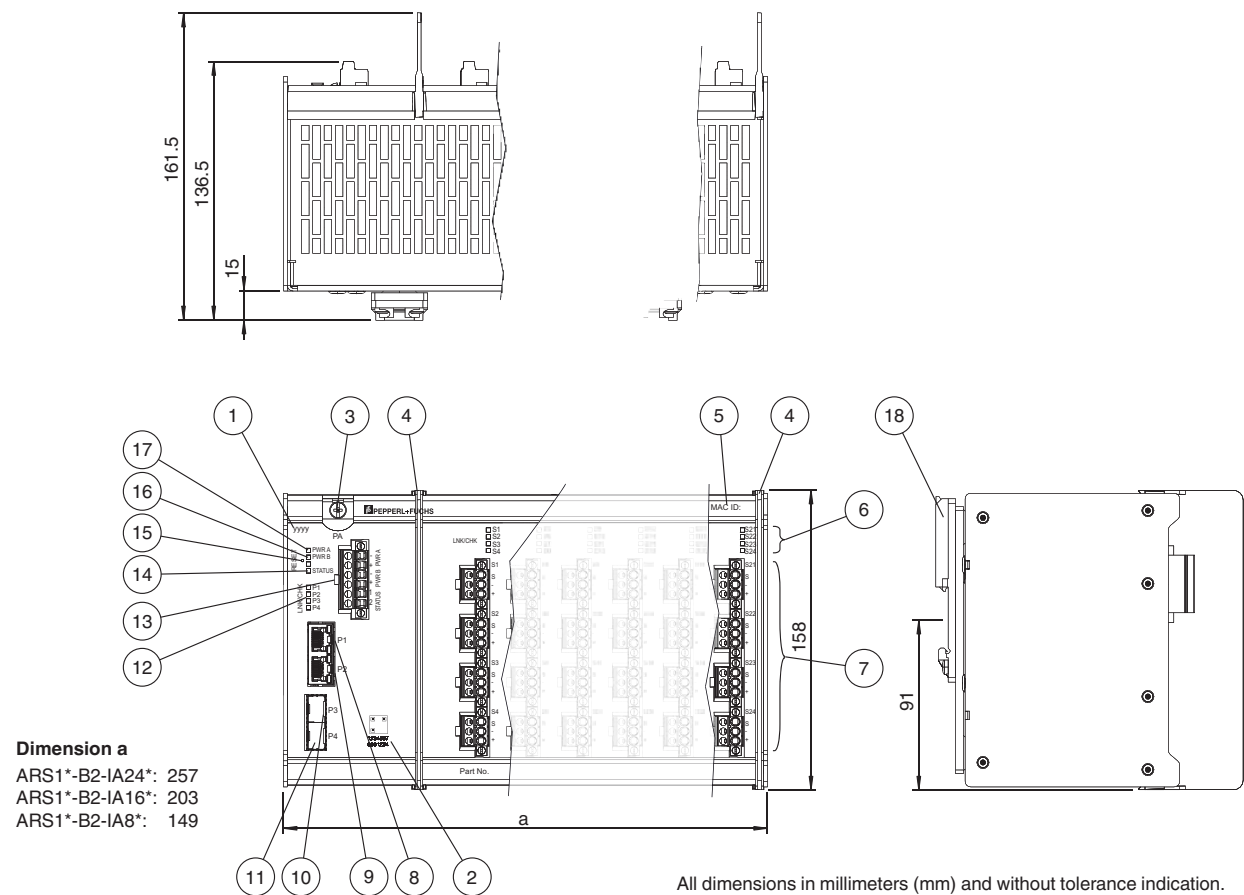
The APL field switch implements enhanced network security and supports SNMPv3, the locking of unused ports, and the HTTPS protocol.

Function Principle



Dimensions

DIN Rail Mounting



- 1 Year of production
- 2 QR code and serial number
- 3 PA, connection to equipotential bonding
- 4 Slot for separation wall
- 5 MAC ID
- 6 LED S1 ... Sn, status spur ports S1 ... Sn
- 7 Connectors for intrinsically safe spurs S1 ... Sn
- 8 Ethernet port P1
- 9 Ethernet port P2
- 10 Ethernet SFP port P3
- 11 Ethernet SFP port P4
- 12 LED LNK/CHK P1 ... P4, communication status LED P1 ... P4
- 13 Connector for auxiliary power and status indication output
- 14 LED STATUS, status rail field switch
- 15 Reset button
- 16 LED PWR B, status power input B
- 17 LED PWR A, status power input A
- 18 DIN rail mounting brackets

Technical Data

General specifications		
Design / Mounting		Cabinet installation
Installation in hazardous area		Zone 2
Supply		
Rated voltage	U _r	20 ... 60 V
Rated current	I _r	1.3 ... 0.45 A
Power dissipation		max. 17.4 W
Voltage difference dual supply input		+/- 10 %

Technical Data

Power consumption		max. 26 W
Redundancy		dual supply input
Indicators/operating means		
LED PWR A/B		green: power on
LED LNK/CHK		Off: no communication link active , Green: communication link active , Green flashing: communication link activity , Red flashing: check function
LED STATUS		Off: Good , Blue: Maintenance required , Red: Failure
Fault signal		VFC alarm 100 mA, 32 V DC, normally closed
Button		Device reset
Interface 1		
Interface type		Ethernet-APL : 1 Vpp option spur connection
Port classification		S P A A
Number of ports		16
Port identification		S1...S16
Power option		powered
Transfer rate		10 MBit/s full duplex
Rated voltage		9.6 V
Rated current		55.56 mA
Rated power		540 mW
Cable shield grounding option		capacitive grounded
Connection type		spring terminals , pluggable
Conductor cross section		single wire/stranded wire: 0.5 ... 2.5 mm ²
Conductor cross section solid wire		2.08 ... 0.326 mm ² , 14 ... 18 AWG
Conductor cross section flexible wire		2.08 ... 0.326 mm ² , 14 ... 18 AWG
Interface 2		
Interface type		1000BASE-T
Number of ports		2
Port identification		P 1 ... P 2
Transfer rate		10/100/1000 Mbps
Connection type		RJ-45 , EIA/TIA 568 B
Interface 3		
Interface type		Slot for SFP transceiver SFP Multi-Source (MSA) compliant
Number of ports		2
Port identification		P 3 ... P 4
Galvanic isolation		
Spurs/Supply		safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V
SFP/Supply		620 V AC
1000BASE-T/Supply		1500 V AC
1000BASE-T/Spurs		safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V
1000BASE-T/1000BASE-T		1500 V AC
Housing/All		620 V AC
Fault signal/All		620 V AC
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 61326-1:2013
Conformity		
Galvanic isolation		IEC 61010-1
Electromagnetic compatibility		EN 61326 , NE 21
Degree of protection		IEC 60529
Ethernet		IEEE 802.3z , IEEE 802.3u , IEEE 802.3cg

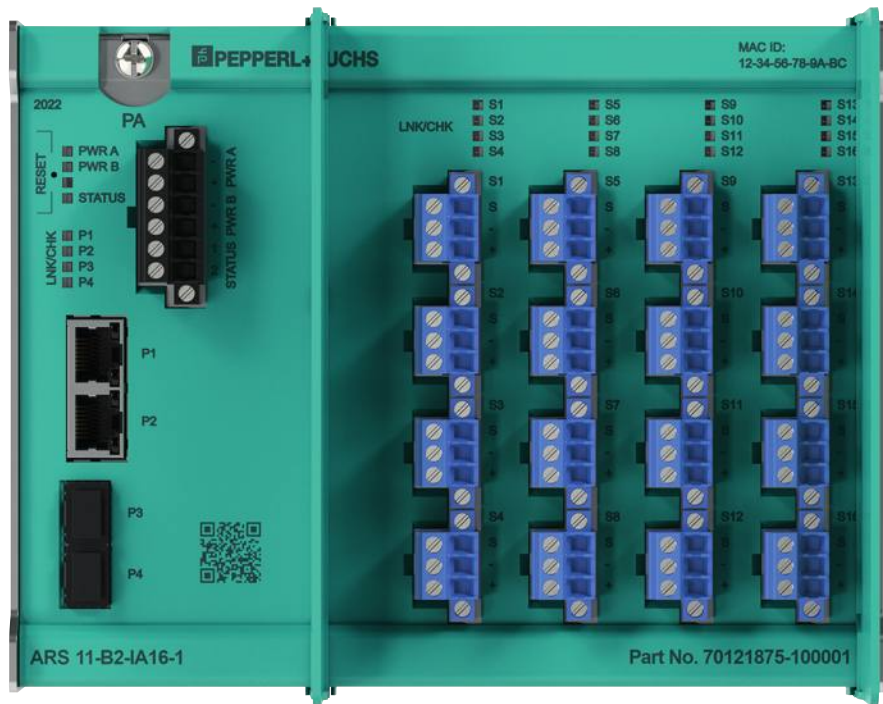
Technical Data

Shock resistance	EN 60068-2-27
Vibration resistance	EN 60068-2-6
Climatic conditions	DIN IEC 721
Software	
Industrial protocols	PROFINET , CC-B (PA) , dynamic reconfiguration , Netload Class III , pruning
Management	Web user interface , SNMP v1, v2 , v3 , PROFINET
Redundancy	PROFINET MRP , PROFINET system redundancy S2
Management Information Base (MIB)	PROFINET conformance class B
Diagnostics function	10BASE-T1L physical layer , port , Packet statistics , LLDP
Cybersecurity	
Ambient conditions	
Ambient temperature	-40 ... 70 °C (-40 ... 158 °F) horizontally mounted no SFP installed -40 ... 65 °C (-40 ... 149 °F) horizontally mounted SFP installed
Storage temperature	-40 ... 85 °C (-40 ... 185 °F)
Relative humidity	≤ 95 % non-condensing
Shock resistance	15 g 11 ms
Vibration resistance	1 g 10 ... 150 Hz
Pollution degree	max. 2, according to IEC 60664
Corrosion resistance	acc. to ISA-S71.04-1985, severity level G3
Mechanical specifications	
Housing material	stainless steel 1.4301 , Polycarbonate
Degree of protection	IP20
Mass	3201 g
Dimensions	
Height	158 mm
Width	203 mm
Depth	136.5 mm
Mounting	DIN rail mounting , wall mounting
Data for application in connection with hazardous areas	
EU-type examination certificate	TÜV 21 ATEX 8666 X
Marking	⊕ II 3 (1) G Ex ic ec [ia Ga] IIC T4 Gc ⊕ II (1) D [Ex ia Da] IIIC
Supply	
Maximum safe voltage	U _m 60 V
Interface 1	2-WISE power source
Voltage U _o	17.5 V
Current I _o	380 mA
Power P _o	1.67 W
Capacitance C _o	IIC : 0.25 µF IIB/IIIC : 1.5 µF
Inductance L _o	IIC : 0.15 mH IIB/IIIC : 0.5 mH
Interface 2	
Maximum safe voltage U _m	60 V
Interface 3	
Maximum safe voltage U _m	60 V
Directive conformity	
Directive 2014/34/EU	EN 60079-0:2018 , EN 60079-11:2012 , EN 60079-7:2015+A1:2018 , IEC TS 60079-47:2021
International approvals	
IECEx approval	IECEx TUR 21.0072X
Approved for	Ex ic ec [ia Ga] IIC T4 Gc [Ex ia Da] IIIC
Certificates and approvals	
Patents	This product may be covered by the following patent: US 9,762,409

Technical Data

General information

Assembly



Mounting

Wall Mounting Option

For wall mounting the APL rail field switch use the accessory ACC-ARS-WM. See manual for details and dimensions.

Type Code

ARS1	(1)	B	2	-	IA	(2)	-	(3)
ARS1	Device							
ARS1	Ethernet-APL Rail Field Switch							
(1)	PROFIBUS PA Proxy							
1	With proxy							
2	Without proxy							
B	Power Supply							
B	Separately powered 20 V ... 60 V							
2	Uplink Ports							
2	2 ports each for RJ45 and SFP slots							
IA	Intrinsic Safety at Spurs							
IA	Ex ia IIC							

Type Code	
(2)	Spur Port Count
08	Spur ports
16	Spur ports
24	Spur ports
(3)	Pluggable Terminal Types
1	Screw terminals
2	Spring terminals



Ethernet-APL Rail Field Switch

FieldConnex®

ARS12-B2-IA24-2

- Managed Ethernet-APL field switch for process industries
- PROFINET MRP, S2 redundancy and dynamic reconfiguration
- 2 ports each for 1000BASE-T and SFP transceivers
- Redundant power input 20 VDC ... 60 VDC
- Installation in Zone 2
- Physical layer diagnostics at the spur
- Configuration and diagnosis with FDI, web interface, PROFINET device functions and SNMP
- Support of network security
- Powered spur ports intrinsically safe Ex ia according to 2-WISE

Ethernet-APL rail field switch with 24 intrinsically safe Ex ia spur ports and spring terminals



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advanced physical layer



Function

The Ethernet-APL rail field switch is a ruggedized, managed field switch offering connectivity for Ethernet-APL devices to Ethernet networks via any protocol. The connections, i. e., "spur" ports, provide intrinsically safe (Ex ia) power and communication to instruments located in Zone 0/1. APL field switches can be installed in Zone 2.

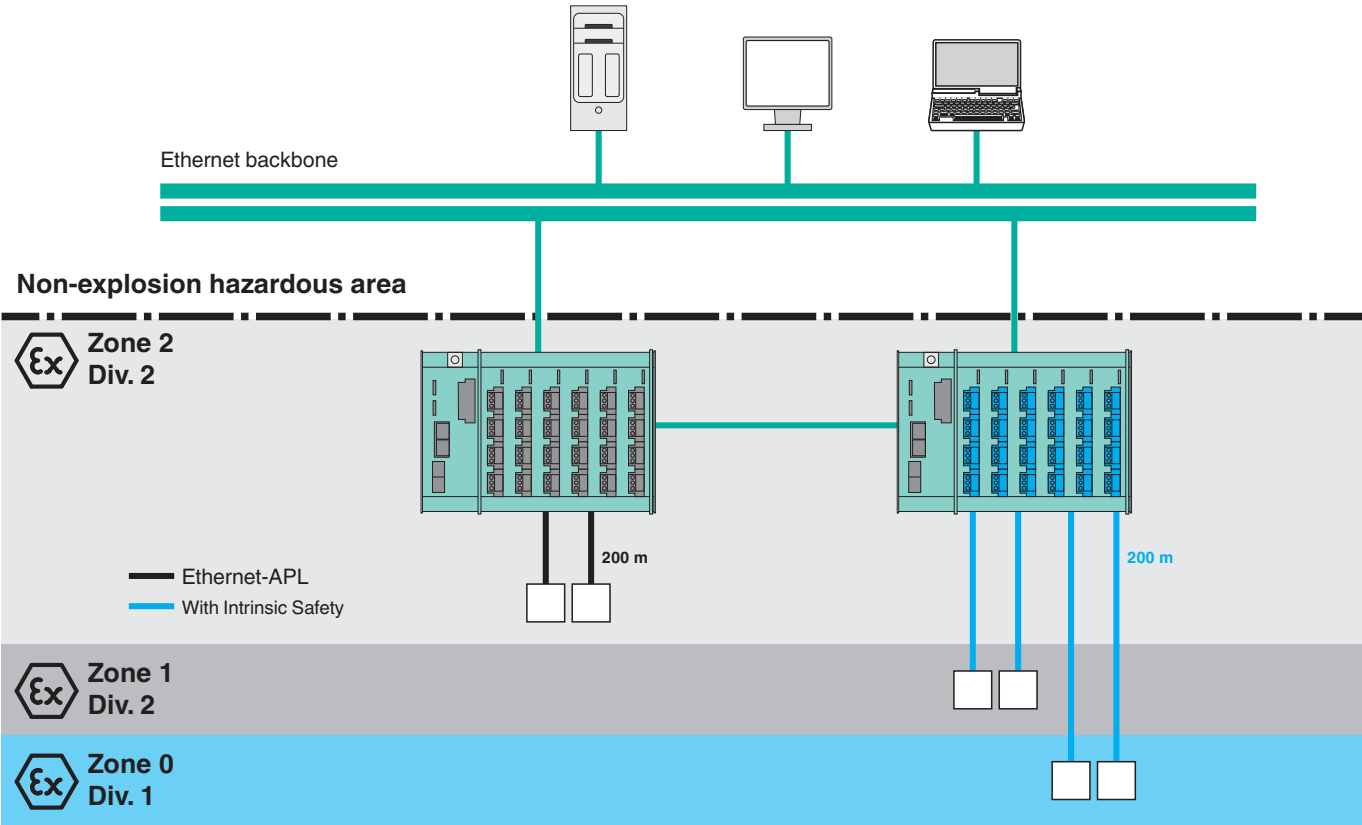
The APL field switch features 2 Gigabit Ethernet ports and 2 SFP ports. The SFP ports provide connections for a choice of optional SFP transceivers to be used in explosion-hazardous areas and different distances.

For PROFINET, the APL field switch supports Class B networks. For high-availability installations, the APL field switch provides redundancy mechanisms such as MRP ring redundancy and S2 system redundancy.

Easy configuration and diagnostics of the APL field switch are accessible via FDI and web-based management. PROFINET device functions and SNMP assure fast start-up and enable the use of predictive maintenance. Comprehensive network and physical layer diagnostics enable proactive management strategies to reduce risk of failure and downtime.

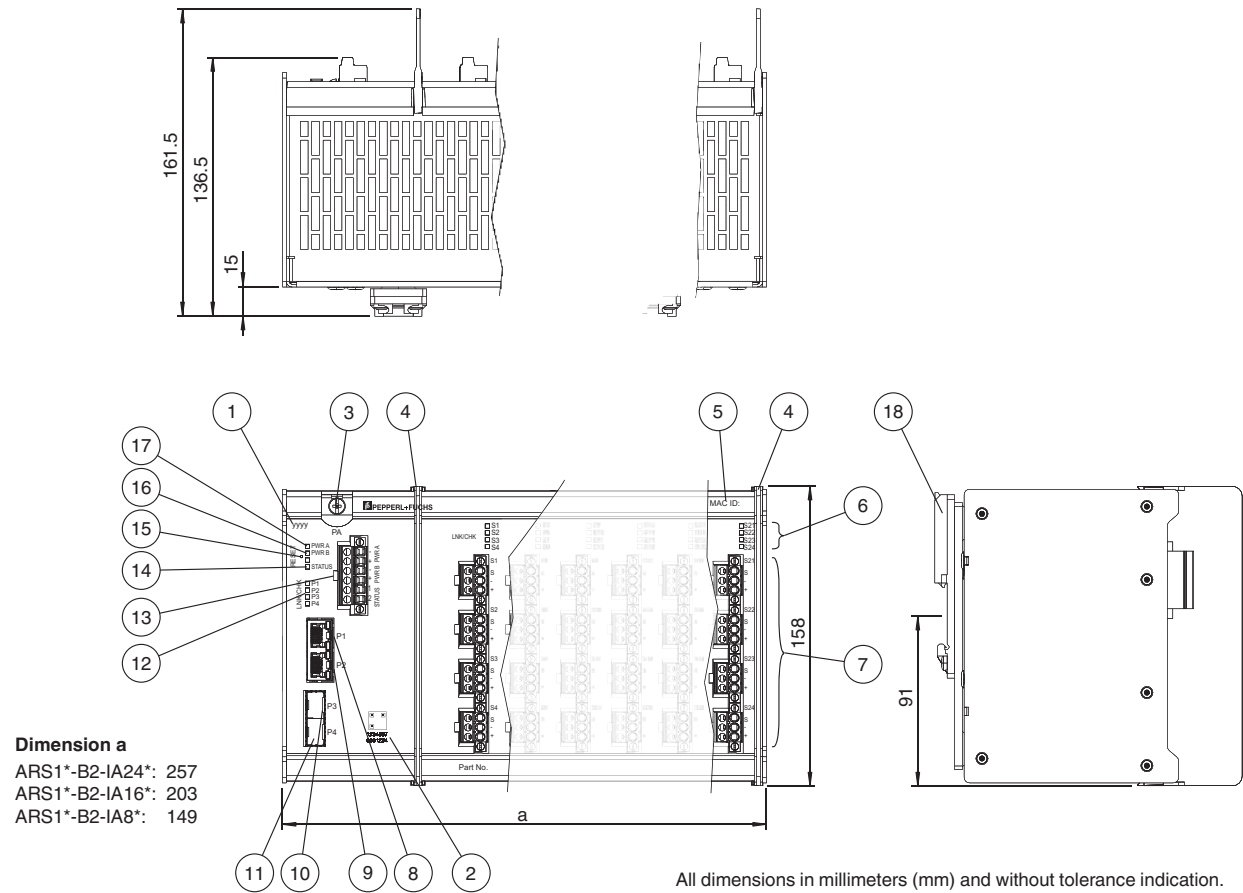
The APL field switch implements enhanced network security and supports SNMPv3, the locking of unused ports, and the HTTPS protocol.

Function Principle



Dimensions

DIN Rail Mounting



- | | |
|---|---|
| 1 Year of production | 11 Ethernet SFP port P4 |
| 2 QR code and serial number | 12 LED LNK/CHK P1 ... P4, communication status LED P1 ... P4 |
| 3 PA, connection to equipotential bonding | 13 Connector for auxiliary power and status indication output |
| 4 Slot for separation wall | 14 LED STATUS, status rail field switch |
| 5 MAC ID | 15 Reset button |
| 6 LED S1 ... Sn, status spur ports S1 ... Sn | 16 LED PWR B, status power input B |
| 7 Connectors for intrinsically safe spurs S1 ... Sn | 17 LED PWR A, status power input A |
| 8 Ethernet port P1 | 18 DIN rail mounting brackets |
| 9 Ethernet port P2 | |
| 10 Ethernet SFP port P3 | |

Technical Data

General specifications			
Design / Mounting		Cabinet installation	
Installation in hazardous area		Zone 2	
Supply			
Rated voltage	U _r	20 ... 60 V	
Rated current	I _r	1.8 ... 0.6 A	
Power dissipation		max. 23 W	
Voltage difference dual supply input		+/- 10 %	

Technical Data

Power consumption		max. 36 W
Redundancy		dual supply input
Indicators/operating means		
LED PWR A/B		green: power on
LED LNK/CHK		Off: no communication link active , Green: communication link active , Green flashing: communication link activity , Red flashing: check function
LED STATUS		Off: Good , Blue: Maintenance required , Red: Failure
Fault signal		VFC alarm 100 mA, 32 V DC, normally closed
Button		Device reset
Interface 1		
Interface type		Ethernet-APL : 1 Vpp option spur connection
Port classification		S P A A
Number of ports		24
Port identification		S1...S24
Power option		powered
Transfer rate		10 MBit/s full duplex
Rated voltage		9.6 V
Rated current		55.56 mA
Rated power		540 mW
Cable shield grounding option		capacitive grounded
Connection type		spring terminals , pluggable
Conductor cross section		single wire/stranded wire: 0.5 ... 2.5 mm ²
Conductor cross section solid wire		2.08 ... 0.326 mm ² , 14 ... 18 AWG
Conductor cross section flexible wire		2.08 ... 0.326 mm ² , 14 ... 18 AWG
Interface 2		
Interface type		1000BASE-T
Number of ports		2
Port identification		P 1 ... P 2
Transfer rate		10/100/1000 Mbps
Connection type		RJ-45 , EIA/TIA 568 B
Interface 3		
Interface type		Slot for SFP transceiver SFP Multi-Source (MSA) compliant
Number of ports		2
Port identification		P 3 ... P 4
Galvanic isolation		
Spurs/Supply		safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V
SFP/Supply		620 V AC
1000BASE-T/Supply		1500 V AC
1000BASE-T/Spurs		safe electrical isolation acc. to IEC/EN 60079-11, voltage peak value 375 V
1000BASE-T/1000BASE-T		1500 V AC
Housing/All		620 V AC
Fault signal/All		620 V AC
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 61326-1:2013
Conformity		
Galvanic isolation		IEC 61010-1
Electromagnetic compatibility		EN 61326 , NE 21
Degree of protection		IEC 60529
Ethernet		IEEE 802.3z , IEEE 802.3u , IEEE 802.3cg

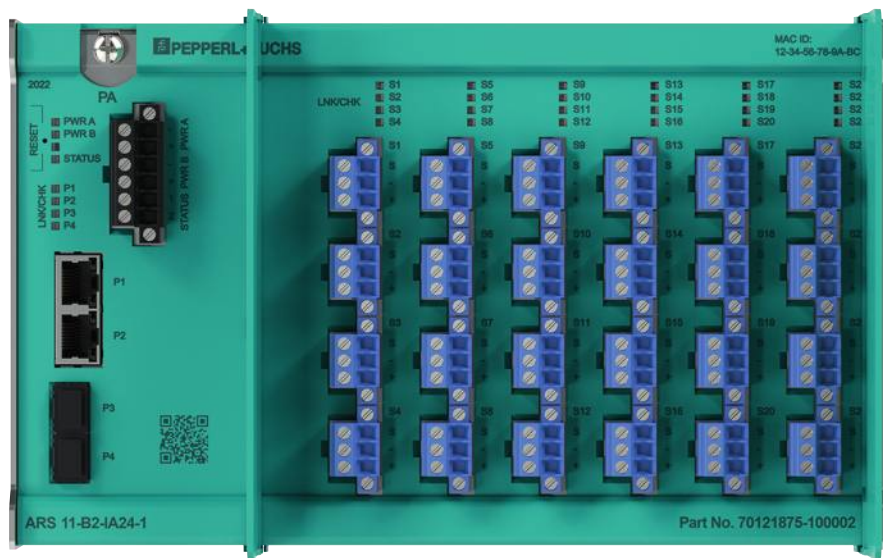
Technical Data

Shock resistance	EN 60068-2-27
Vibration resistance	EN 60068-2-6
Climatic conditions	DIN IEC 721
Software	
Industrial protocols	PROFINET , CC-B (PA) , dynamic reconfiguration , Netload Class III , pruning
Management	Web user interface , SNMP v1, v2 , v3 , PROFINET
Redundancy	PROFINET MRP , PROFINET system redundancy S2
Management Information Base (MIB)	PROFINET conformance class B
Diagnostics function	10BASE-T1L physical layer , port , Packet statistics , LLDP
Cybersecurity	
Ambient conditions	
Ambient temperature	-40 ... 70 °C (-40 ... 158 °F) horizontally mounted no SFP installed -40 ... 65 °C (-40 ... 149 °F) horizontally mounted SFP installed
Storage temperature	-40 ... 85 °C (-40 ... 185 °F)
Relative humidity	≤ 95 % non-condensing
Shock resistance	15 g 11 ms
Vibration resistance	1 g 10 ... 150 Hz
Pollution degree	max. 2, according to IEC 60664
Corrosion resistance	acc. to ISA-S71.04-1985, severity level G3
Mechanical specifications	
Housing material	stainless steel 1.4301 , Polycarbonate
Degree of protection	IP20
Mass	3826 g
Dimensions	
Height	158 mm
Width	257 mm
Depth	136.5 mm
Mounting	DIN rail mounting , wall mounting
Data for application in connection with hazardous areas	
EU-type examination certificate	TÜV 21 ATEX 8666 X
Marking	⊕ II 3 (1) G Ex ic ec [ia Ga] IIC T4 Gc ⊕ II (1) D [Ex ia Da] IIIC
Supply	
Maximum safe voltage	U _m 60 V
Interface 1	2-WISE power source
Voltage U _o	17.5 V
Current I _o	380 mA
Power P _o	1.67 W
Capacitance C _o	IIC : 0.25 µF IIB/IIIC : 1.5 µF
Inductance L _o	IIC : 0.15 mH IIB/IIIC : 0.5 mH
Interface 2	
Maximum safe voltage U _m	60 V
Interface 3	
Maximum safe voltage U _m	60 V
Directive conformity	
Directive 2014/34/EU	EN 60079-0:2018 , EN 60079-11:2012 , EN 60079-7:2015+A1:2018 , IEC TS 60079-47:2021
International approvals	
IECEx approval	IECEx TUR 21.0072X
Approved for	Ex ic ec [ia Ga] IIC T4 Gc [Ex ia Da] IIIC
Certificates and approvals	
Patents	This product may be covered by the following patent: US 9,762,409

Technical Data

General information

Assembly



Mounting

Wall Mounting Option
For wall mounting the APL rail field switch use the accessory ACC-ARS-WM. See manual for details and dimensions.

Type Code

ARS1	(1)	B	2	-	IA	(2)	-	(3)
ARS1	Device							
ARS1	Ethernet-APL Rail Field Switch							
(1)	PROFIBUS PA Proxy							
1	With proxy							
2	Without proxy							
B	Power Supply							
B	Separately powered 20 V ... 60 V							
2	Uplink Ports							
2	2 ports each for RJ45 and SFP slots							
IA	Intrinsic Safety at Spurs							
IA	Ex ia IIC							

Type Code

(2)	Spur Port Count
08	Spur ports
16	Spur ports
24	Spur ports

(3)	Pluggable Terminal Types
1	Screw terminals
2	Spring terminals

Ethernet-APL Rail Field Switch

F.FS*.T50.B24.E.*.***.***.****



- Stainless steel enclosure with Ethernet-APL rail field switch
- Spur outputs intrinsically safe for Zone 0, 1, or 2
- Number of spur outputs selectable
- Packaged certified solution
- Installation in Zone 2 and Zone 22
- Customizable configuration of splice trays, cable entries, and further components

Ethernet-APL field junction box enclosure solution, brushed stainless steel with intrinsically safe spur ports



ethernet-apl™
advanced physical layer



Function

This field junction box is a certified enclosure solution for the Ethernet-APL rail field switch.

Depending on the switch electronics selected, devices can be located in any explosion hazardous area. The number of outputs can be selected.

Brushed stainless steel provides high corrosion and shock resistance at a wide temperature range. The integrated drain channel prevents standing water from damaging the one-piece seal.

Cable entries can be selected individually from a range of cable glands and stopping plugs. A breather drain is included by default. Tag plate, fiber optic splice, wiring terminals, surge protection and grounding bars can be custom-configured.

This field junction box is available pre-wired with all accessories and certified for explosion hazardous areas, enabling fast delivery, site installation, and commissioning.

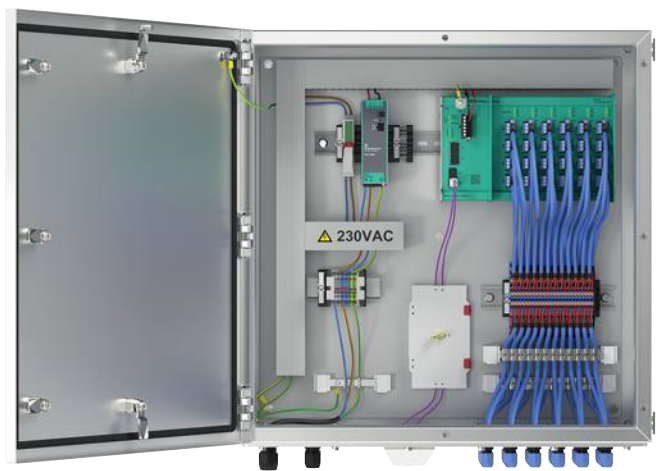
Technical Data

General specifications		
Design / Mounting		Outside installation
Installed components		Ethernet-APL rail field switch ARS1*-B2-I**-** , For technical data on installed electronic component see datasheets.
Fieldbus support		PROFIBUS PA (optional)
Conformity		
Degree of protection		EN 60529
Impact resistance		EN 60079-0
Ambient conditions		
Ambient temperature		-40 ... 50 °C (-40 ... 122 °F)
Storage temperature		-40 ... 85 °C (-40 ... 185 °F)
Relative humidity		< 75 % (annual mean) < 95 % (30 d/year), no moisture condensation
Impact resistance		7J
Mechanical specifications		
Enclosure cover		Hinged door with captive retaining screws
Degree of protection		IP66
Cable entry		cable gland and stopping plug options see separate table
Material		
Housing		Stainless steel 1.4404 / AISI 316L
Surface		brushed
Seal		Silicone, fire-resistant, one piece, foamed
Material thickness		enclosure body, enclosure cover, mounting plate: 1.5 mm

Technical Data

Dimensions	(W x H x D) 600 x 600 x 260 mm
Mounting	thru-holes Ø 7 mm
Grounding	grounding bolt M6 , brass, nickel-plated
Data for application in connection with hazardous areas	
Certificate	PTB 17 ATEX 1011 X
Marking	Ⓜ II 3(1) G Ex ic [ia Ga] IIC T4 Gc Ⓜ II 3(1)G Ex ec [ia Ga] IIC T4 Gc Ⓜ II 3(1)D Ex tc [ia Da] IIIC T135°C Dc
Directive conformity	
Directive 2014/34/EU	EN IEC 60079-0:2018+AC:2020 , EN 60079-1:2014+AC:2018 , EN IEC 60079-7:2015+A1:2018 , EN 60079-11:2012 , EN 60079-18:2015+Cor.2018 , EN 60079-31:2014
International approvals	
IECEx approval	IECEx PTB 07.0036 X , Zone 1 , suitable Junction Box on request IECEx PTB 09.0016 X , Zone 2 , suitable Junction Box on request
General information	

Assembly



Mounting

Wall Mounting Option
For wall mounting the APL rail field switch use the accessory ACC-ARS-WM. See manual for details and dimensions.

Type Code

1		2		3	4		5		6		7		8		9	10	11	12
F.FS*	.	T**	.	*	**	.	E	.	0	.	***	.	***	.	*	*	*	*

Example:
F.FS0.T20.B08.E.0.GP2.GP2.0000

1	Electronic type
F.FS0	Field junction box containing an Ethernet-APL rail field switch (ARS1*-B2-IC-*)

Type Code

1	Electronic type
F.FS1	Field junction box containing an Ethernet-APL rail field switch (ARS1*-B2-IA-*)
2	Enclosure material and dimension - W x H x D
T20	Stainless steel 3.16 - brushed - 380 x 380 x 215 mm (SRM.38.38.22)
T30	Stainless steel 3.16 - brushed - 458 x 382 x 215 mm (SRM.38.48.22)
T40	Stainless steel 3.16 - brushed - 600 x 400 x 220 mm (SRL.40.60.22)
T50	Stainless steel 3.16 - brushed - 600 x 600 x 260 mm (SRL.60.60.26)
T60	Stainless steel 3.16 - brushed - 800 x 800 x 300 mm (SRL.80.80.30)
3	Certification
B	ATEX (Zone 2 and Zone 22)
E	Non-explosion-hazardous (safe area only)
4	Ports
08	8 spur ports/terminals (ARS1*-B2-I*08-*)
16	16 ports/terminals (ARS1*-B2-I*16-*)
24	24 ports/terminals (ARS1*-B2-I*24-*)
nn	n ports/terminals (ARS1*-B2-I***-*)
5	Fieldbus protocol
E	Ethernet with proxy for PROFIBUS PA
N	Ethernet without proxy
6	Terminal options
0	Screw terminals
3	Spring terminals
7	Main cable entry options
GP2	Cable gland, plastic
GPX	Mixed cable glands
GB2	Cable gland, nickel-plated brass
GS2	Cable gland, stainless steel
7	Spur entry options
GP2	Cable gland, plastic
GPX	Mixed cable glands
GB2	Cable gland, nickel-plated brass
GS2	Cable gland, stainless steel
9	Tag plate
0	None
A	Plastic, 120 x 30 mm
B	Stainless steel, 120 x 30 mm
C	Plastic, 95 x 20 mm
D	Stainless steel, 95 x 20 mm
O	Others
10	Grounding bar
0	None
1	With grounding bar, connected to equipotential bonding
2	With grounding bar, isolated
11	Surge protection
0	No surge protection
O	Others - additional accessory to be specified
12	Additional accessories
0	None
D	Document pocket (DIN A4)
O	Others

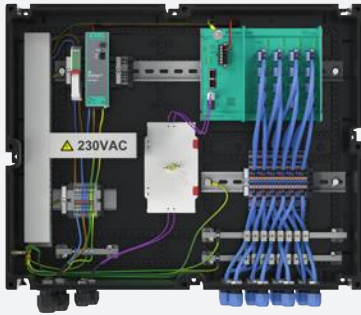
Product Versions

Cable Gland Versions

Type	Cable gland					Stopping plug		
	GP2	GB2	GS2	GN2	GA2	H02	H03	H04
Mechanical specifications								
Degree of protection	IP66	IP66	IP66	IP66	IP66	IP66	IP66	IP66
Material	polyamide	nickel-plated brass	stainless steel	nickel plated brass	stainless steel	polyamide	nickel-plated brass	stainless steel
Thread	M20	M20	M20	M20	M20	M20	M20	M20
Inner sheath (mm)	–	–	–	6 ... 11	6 ... 11	–	–	–
Outer sheath (mm)	6 ... 12	4 ... 12	4 ... 12	8 ... 15	8 ... 15	–	–	–
Cable								
Suitable for armored cable	no	no	no	yes	yes	–	–	–
Data for application with hazardous areas								
Type of protection	Ex e	Ex de	Ex de	Ex de	Ex de	Ex e	Ex de	Ex de

Ethernet-APL Rail Field Switch

F.FS*.G20.B24.E.*.***.***.****



- Glass-fiber reinforced polyester (GRP) enclosure with Ethernet-APL rail field switch
- Spur outputs intrinsically safe for Zone 0, 1, or 2
- Number of spur outputs selectable
- Packaged certified solution
- Installation in Zone 2 and Zone 22
- Customizable configuration of splice trays, cable entries, and further components

Ethernet-APL field junction box enclosure solution, glass-fiber reinforced polyester with intrinsically safe spur ports



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Function

This field junction box is a certified enclosure solution for the Ethernet-APL rail field switch.

Depending on the switch electronics selected, devices can be located in any explosion hazardous area. The number of outputs can be selected.

Glass fiber reinforced polyester provides corrosion resistance and is light weight. The surface resistance prevents electrostatic charge.

Cable entries can be selected individually from a range of cable glands and stopping plugs. A breather drain is included by default. Tag plate, fiber optic splice, wiring terminals, surge protection and grounding bars can be custom-configured.

This field junction box is available pre-wired with all accessories and certified for explosion hazardous areas, enabling fast delivery, site installation, and commissioning.

Technical Data

General specifications

Design / Mounting	Outside installation
Installed components	Ethernet-APL rail field switch ARS1*-B2-I**-** , For technical data on installed electronic component see datasheets.
Fieldbus support	PROFIBUS PA (optional)

Conformity

Degree of protection	EN 60529
Impact resistance	EN 60079-0

Ambient conditions

Ambient temperature	-40 ... 50 °C (-40 ... 122 °F)
Storage temperature	-40 ... 85 °C (-40 ... 185 °F)
Relative humidity	< 75 % (annual mean) < 95 % (30 d/year), no moisture condensation
Impact resistance	7J

Mechanical specifications

Enclosure cover	Hinged door with captive retaining screws
Degree of protection	IP66
Cable entry	cable gland and stopping plug options see separate table
Material	
Housing	polyester , impact resistant, glass fiber reinforced
Surface	black molded finish (RAL 9005)
Surface resistance	< 10 ⁹ Ω

Technical Data

Water absorption	< 6 %
Seal	silicone , one-piece
Material thickness	enclosure body, enclosure cover, mounting plate: 1.5 mm
Dimensions	(W x H x D) 599 x 479 x 242 mm
Mounting	thru-holes Ø 7 mm
Grounding	grounding bolt M6 , brass, nickel-plated

Data for application in connection with hazardous areas

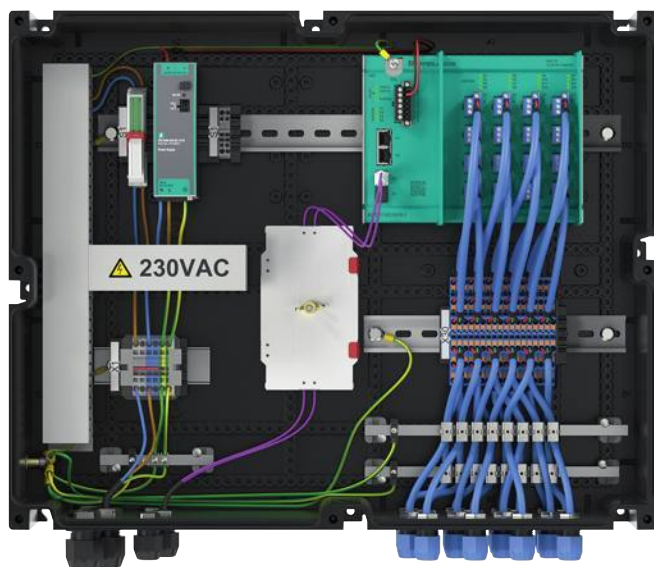
Certificate	PTB 17 ATEX 1011 X	
Marking		Ⓢ II 3(1) G Ex ic [ia Ga] IIC T4 Gc Ⓢ II 3(1)G Ex ec [ia Ga] IIC T4 Gc Ⓢ II 3(1)D Ex tc [ia Da] IIIC T135°C Dc
Directive conformity		
Directive 2014/34/EU		EN IEC 60079-0:2018+AC:2020, EN 60079-1:2014+AC:2018, EN IEC 60079-7:2015+A1:2018, EN 60079-11:2012, EN 60079-18:2015+Cor.2018, EN 60079-31:2014

International approvals

IECEX approval	IECEX PTB 07.0036 X , Zone 1 , suitable Junction Box on request IECEX PTB 09.0016 X , Zone 2 , suitable Junction Box on request
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General information

Assembly



Mounting

Wall Mounting Option

Wall Mounting Option
For wall mounting the APL rail field switch use the accessory ACC-ARS-WM. See manual for details and dimensions.

Type Code

1		2		3	4		5		6		7		8		9	10	11	12
F.FS*	.	G**	.	*	**	.	E	.	0	.	***	.	***	.	*	*	*	*

Example:

F.FS0.G19.B08.E.0.GP2.GP2.0000

1	Electronic type
F.FS0	Field junction box containing an Ethernet-APL rail field switch (ARS1*-B2-IC-*)
F.FS1	Field junction box containing an Ethernet-APL rail field switch (ARS1*-B2-IA-*)

2	Enclosure material - W x H x D
G13	Polyester glass-fiber reinforced - 359 x 359 x 241.5 mm (GR.36.36.24)
G19	Polyester glass-fiber reinforced - 359 x 719 x 241.5 mm (GR.36.72.24)
G20	Polyester glass-fiber reinforced - 599 x 479 x 241.5 mm (GR.48.60.24)

3	Certification
B	ATEX (Zone 2 and Zone 22)
E	Non-explosion-hazardous (safe area only)

4	Ports
08	8 spur ports/terminals (ARS1*-B2-I*08-*)
16	16 ports/terminals (ARS1*-B2-I*16-*)
24	24 ports/terminals (ARS1*-B2-I*24-*)
nn	n ports/terminals (ARS1*-B2-I***-*)

5	Fieldbus type
E	Ethernet with proxy for PROFIBUS PA
N	Ethernet without proxy

6	Terminal options
0	Screw terminals
3	Spring terminals

7	Main cable entry options
GP2	Cable gland, plastic
GPX	Mixed cable glands
GB2	Cable gland, nickel-plated brass
GS2	Cable gland, stainless steel

7	Spur entry options
GP2	Cable gland, plastic
GPX	Mixed cable glands
GB2	Cable gland, nickel-plated brass
GS2	Cable gland, stainless steel

9	Tag plate
0	None
A	Plastic, 120 x 30 mm
B	Stainless steel, 120 x 30 mm
C	Plastic, 95 x 20 mm
D	Stainless steel, 95 x 20 mm
O	Others

10	Grounding bar
0	None
1	With grounding bar, connected to equipotential bonding
2	With grounding bar, isolated

11	Surge protection
0	No surge protection
O	Others - additional accessory to be specified

12	Additional accessories
0	None
D	Document pocket (DIN A4), does not fit all enclosure sizes
O	Others

Product Versions

Cable Gland Versions

Type	Cable gland					Stopping plug		
	GP2	GB2	GS2	GN2	GA2	H02	H03	H04
Mechanical specifications								
Degree of protection	IP66	IP66	IP66	IP66	IP66	IP66	IP66	IP66
Material	polyamide	nickel-plated brass	stainless steel	nickel plated brass	stainless steel	polyamide	nickel-plated brass	stainless steel
Thread	M20	M20	M20	M20	M20	M20	M20	M20
Inner sheath (mm)	–	–	–	6 ... 11	6 ... 11	–	–	–
Outer sheath (mm)	6 ... 12	4 ... 12	4 ... 12	8 ... 15	8 ... 15	–	–	–
Cable								
Suitable for armored cable	no	no	no	yes	yes	–	–	–
Data for application with hazardous areas								
Type of protection	Ex e	Ex de	Ex de	Ex de	Ex de	Ex e	Ex de	Ex de



Ethernet-APL Rail Field Switch

LB9***-T**-B-***-**-*-Y#####

- Stainless steel interface enclosure with remote I/O and Ethernet-APL rail field switch
- Spur outputs intrinsically safe for Zone 0, 1, or 2
- Number of spur outputs selectable
- Packaged certified solution
- Installation in Zone 2 and Zone 22
- Customizable configuration of splice trays, cable entries, and further components

Ethernet-APL field junction box interface enclosure solution with remote I/O, brushed stainless steel with intrinsically safe spur ports



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Function

This field junction box is a certified interface enclosure solution for any field device signal, housing remote I/O and an Ethernet-APL field switch. The solution connects Ethernet-APL, PROFIBUS PA and 4 ... 20 mA/HART field devices to the Ethernet backbone or main cable. The field junction box can be installed in Zone 2.

Depending on the switch or remote I/O electronics selected, devices can be located in any explosion-hazardous area. The number of outputs can be selected.

Brushed stainless steel provides high corrosion and shock resistance at a wide temperature range. The integrated drain channel prevents standing water from damaging the one-piece seal.

Cable entries can be selected individually from a range of cable glands and stopping plugs. A breather drain is included by default. Tag plate, fiber optic splice, wiring terminals, surge protection and grounding bars can be custom-configured.

This field junction box is available pre-wired with all accessories and certified for explosion hazardous areas, enabling fast delivery, site installation, and commissioning.

Technical Data

General specifications

Design / Mounting	Outside installation
Installed components	Ethernet-APL rail field switch ARS1*-B2-I**-** , For technical data on installed electronic component see datasheets.
Fieldbus support	PROFIBUS PA (optional)

Conformity

Degree of protection	EN 60529
Impact resistance	EN 60079-0

Ambient conditions

Ambient temperature	-40 ... 40 °C (-40 ... 104 °F)
Storage temperature	-40 ... 85 °C (-40 ... 185 °F)
Relative humidity	< 75 % (annual mean) < 95 % (30 d/year), no moisture condensation
Impact resistance	7J

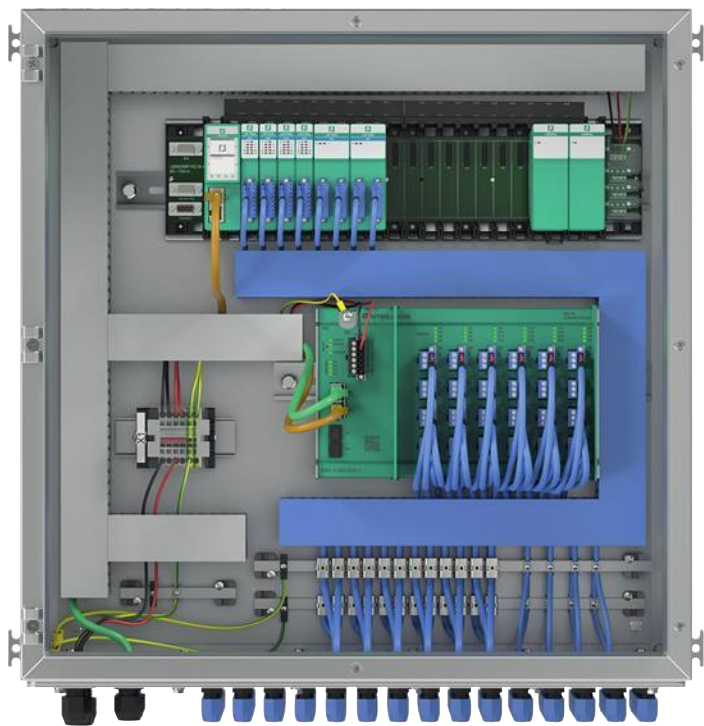
Mechanical specifications

Enclosure cover	Hinged door with captive retaining screws
Degree of protection	IP66
Cable entry	cable gland and stopping plug options see separate table
Material	
Housing	Stainless steel 1.4404 / AISI 316L

Technical Data

Surface		brushed
Seal		Silicone, fire-resistant, one piece, foamed
Material thickness		enclosure body, enclosure cover, mounting plate: 1.5 mm
Dimensions		(W x H x D) 600 x 600 x 260 mm
Mounting		thru-holes Ø 7 mm
Grounding		grounding bolt M6 , brass, nickel-plated
Data for application in connection with hazardous areas		
EU-type examination certificate		
Marking		Ⓔ II 3(1/2)G Ex eb nA [ia Ga/ib Gb/ic] IIC T4 Gc Ⓔ II 3(1/2)D Ex tb [ia Da/ib Db/ic] IIIC T130°C Dc
Certificate		PF 16 CERT 1267 X
Directive conformity		
Directive 2014/34/EU		EN 60079-0:2018 , EN 60079-7:2015 , EN 60079-11:2012 , EN 60079-15:2010 , EN 60079-31:2014
General information		

Assembly



Mounting

Wall Mounting Option
For wall mounting the APL rail field switch use the accessory ACC-ARS-WM. See manual for details and dimensions.

Type Code

1	2	3		4	5	6		7		8	9	10		11	12		13		14
LB	9*	**	-	T	*	*	-	B	-	*	*	*	-	*	*	-	*	-	Y ##- #####

Example:
LB9408-TA2-B-ECB-4A-1

Type Code

1	Electronic type
LB	LB Remote I/O field unit
2	Installation area
94	Zone 2
95	Zone 2/22
96	Non-explosion-hazardous area (safe area)
3	Slots and redundancy
08	8 slots
12	12 slots
16	16 slots
22	22 slots
46	46 slots
4	Enclosure material
T	Stainless steel 3.16 - brushed
5	Enclosure size - W x H x D
6	600 x 600 x 260 mm
7	800 x 800 x 300 mm
8	800 x 1000 x 300 mm
X	Customized
6	Cable entry options for signals
0	Gland plate with entries for M16 cable glands
1	Gland plate with entries for M12 cable glands
2	Gland plate with entries for M20 cable glands
3	Entries for M16 cable glands
4	Entries for M12 cable glands
5	Entries for M20 cable glands
W	Gland plate without entry options
X	Gland plate with mixed entry options
Y	Mixed entry options
Z	Without entry options
7	Certification
B	ATEX (Zone 2 and/or Zone 22)
8	Fieldbus protocol
E	Ethernet protocol
X	Mixed protocols
9	Additional terminal blocks
0	Without
A	Main supply terminal block, screw-type
B	Main supply terminal block, spring-type
C	Main supply terminal block, screw-type Field wiring, screw-type
D	Main supply terminal block, screw-type Field wiring, spring-type
E	Main supply terminal block, spring-type Field wiring, spring-type
F	Field wiring, screw-type
G	Field wiring, spring-type
10	Multifunction terminal (MFT)
0	Without
A	For backplane
B	For power distribution of field devices
C	For I/O modules
D	For backplane For power distribution of field devices
E	For backplane For power distribution of field devices For I/O modules
F	For backplane For I/O modules

Type Code

11	Pneumatics
0	Without
1	Solenoid valve
12	Fiber optic link and Ethernet-APL
0	Without
A	Fiber optic link
B	Splice box
C	Fiber optic link Splice box
1	Ethernet-APL (Ex ic) with proxy
2	Ethernet-APL (Ex ia) with proxy
3	Ethernet-APL (Ex ic) without proxy
4	Ethernet-APL (Ex ia) without proxy
13	Label options
0	Without (only standard nameplate)
1	Tag plate; printed label, customized size
A	Tag plate plastic, 120 x 30 mm
B	Tag plate stainless steel, 120 x 30 mm
14	Type of solution
Y #####	Customized, the last 7 digits represent the Pepperl+Fuchs item number

Product Versions

Cable Gland Versions

Type	Cable gland					Stopping plug		
	GP2	GB2	GS2	GN2	GA2	H02	H03	H04
Mechanical specifications								
Degree of protection	IP66	IP66	IP66	IP66	IP66	IP66	IP66	IP66
Material	polyamide	nickel-plated brass	stainless steel	nickel plated brass	stainless steel	polyamide	nickel-plated brass	stainless steel
Thread	M20	M20	M20	M20	M20	M20	M20	M20
Inner sheath (mm)	–	–	–	6 ... 11	6 ... 11	–	–	–
Outer sheath (mm)	6 ... 12	4 ... 12	4 ... 12	8 ... 15	8 ... 15	–	–	–
Cable								
Suitable for armored cable	no	no	no	yes	yes	–	–	–
Data for application with hazardous areas								
Type of protection	Ex e	Ex de	Ex de	Ex de	Ex de	Ex e	Ex de	Ex de

Ethernet-APL Rail Field Switch

F.FS*.T20.B24.E.*.***.***.****



- Stainless steel enclosure with Ethernet-APL rail field switch
- Spur outputs intrinsically safe for Zone 0, 1, or 2
- Number of spur outputs selectable
- Packaged certified solution
- Installation in Zone 2 and Zone 22
- Customizable configuration of cable entries, and further components

Ethernet-APL field junction box enclosure solution, brushed stainless steel with intrinsically safe spur ports



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Function

This field junction box is a certified enclosure solution for the Ethernet-APL rail field switch.

Depending on the switch electronics selected, devices can be located in any explosion hazardous area. The number of outputs can be selected.

Brushed stainless steel provides high corrosion and shock resistance at a wide temperature range. The integrated drain channel prevents standing water from damaging the one-piece seal.

Cable entries can be selected individually from a range of cable glands and stopping plugs. A breather drain is included by default. Tag plate, fiber optic splice, wiring terminals, surge protection and grounding bars can be custom-configured.

This field junction box is available pre-wired with all accessories and certified for explosion hazardous areas, enabling fast delivery, site installation, and commissioning.

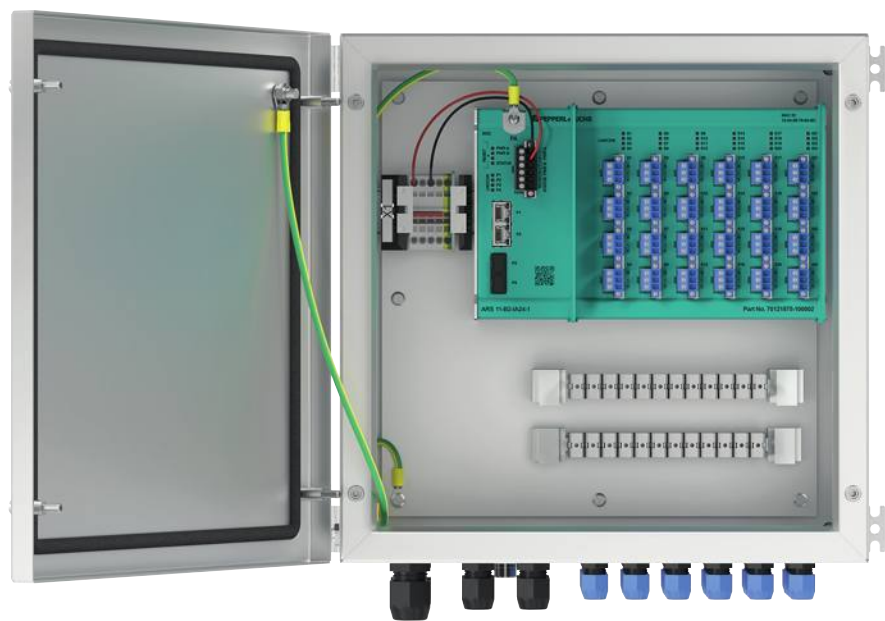
Technical Data

General specifications		
Design / Mounting		Outside installation
Installed components		Ethernet-APL rail field switch ARS1*-B2-I**-** , For technical data on installed electronic component see datasheets.
Fieldbus support		PROFIBUS PA (optional)
Conformity		
Degree of protection		EN 60529
Impact resistance		EN 60079-0
Ambient conditions		
Ambient temperature		-40 ... 50 °C (-40 ... 122 °F)
Storage temperature		-40 ... 85 °C (-40 ... 185 °F)
Relative humidity		< 75 % (annual mean) < 95 % (30 d/year), no moisture condensation
Impact resistance		7J
Mechanical specifications		
Enclosure cover		Hinged door with captive retaining screws
Degree of protection		IP66
Cable entry		cable gland and stopping plug options see separate table
Material		
Housing		Stainless steel 1.4404 / AISI 316L
Surface		brushed
Seal		Silicone, fire-resistant, one piece, foamed
Material thickness		enclosure body, enclosure cover, mounting plate: 1.5 mm

Technical Data

Dimensions	(W x H x D) 380 mm x 380 mm x 220 mm
Mounting	thru-holes Ø 7 mm
Grounding	grounding bolt M6 , brass, nickel-plated
Data for application in connection with hazardous areas	
Certificate	PTB 17 ATEX 1011 X
Marking	Ⓜ II 3(1) G Ex ic [ia Ga] IIC T4 Gc Ⓜ II 3(1)G Ex ec [ia Ga] IIC T4 Gc Ⓜ II 3(1)D Ex tc [ia Da] IIIC T135°C Dc
Directive conformity	
Directive 2014/34/EU	EN IEC 60079-0:2018+AC:2020 , EN 60079-1:2014+AC:2018 , EN IEC 60079-7:2015+A1:2018 , EN 60079-11:2012 , EN 60079-18:2015+Cor.2018 , EN 60079-31:2014
International approvals	
IECEx approval	IECEx PTB 07.0036 X , Zone 1 , suitable Junction Box on request IECEx PTB 09.0016 X , Zone 2 , suitable Junction Box on request
General information	

Assembly



Mounting

Wall Mounting Option
For wall mounting the APL rail field switch use the accessory ACC-ARS-WM. See manual for details and dimensions.

Type Code

1		2		3	4		5		6		7		8		9	10	11	12
F.FS*	.	T**	.	*	**	.	E	.	0	.	***	.	***	.	*	*	*	*

Example:
F.FS0.T20.B08.E.0.GP2.GP2.0000

1	Electronic type
F.FS0	Field junction box containing an Ethernet-APL rail field switch (ARS1*-B2-IC-*)

Type Code

1	Electronic type
F.FS1	Field junction box containing an Ethernet-APL rail field switch (ARS1*-B2-IA-*)
2	Enclosure material and dimension - W x H x D
T20	Stainless steel 3.16 - brushed - 380 x 380 x 220 mm (SRM.38.38.22)
T30	Stainless steel 3.16 - brushed - 480 x 380 x 220 mm (SRM.38.48.22)
T40	Stainless steel 3.16 - brushed - 600 x 400 x 220 mm (SRL.40.60.22)
T50	Stainless steel 3.16 - brushed - 600 x 600 x 260 mm (SRL.60.60.26)
T60	Stainless steel 3.16 - brushed - 800 x 800 x 300 mm (SRL.80.80.30)
3	Certification
B	ATEX (Zone 2 and Zone 22)
E	Non-explosion-hazardous (safe area only)
4	Ports
08	8 spur ports/terminals (ARS1*-B2-I*08-*)
16	16 ports/terminals (ARS1*-B2-I*16-*)
24	24 ports/terminals (ARS1*-B2-I*24-*)
nn	n ports/terminals (ARS1*-B2-I***-*)
5	Fieldbus protocol
E	Ethernet with proxy for PROFIBUS PA
N	Ethernet without proxy
6	Terminal options
0	Screw terminals
3	Spring terminals
7	Main cable entry options
GP2	Cable gland, plastic
GPX	Mixed cable glands
GB2	Cable gland, nickel-plated brass
GS2	Cable gland, stainless steel
7	Spur entry options
GP2	Cable gland, plastic
GPX	Mixed cable glands
GB2	Cable gland, nickel-plated brass
GS2	Cable gland, stainless steel
9	Tag plate
0	None
A	Plastic, 120 x 30 mm
B	Stainless steel, 120 x 30 mm
C	Plastic, 95 x 20 mm
D	Stainless steel, 95 x 20 mm
O	Others
10	Grounding bar
0	None
1	With grounding bar, connected to equipotential bonding
2	With grounding bar, isolated
11	Surge protection
0	No surge protection
O	Others - additional accessory to be specified
12	Additional accessories
0	None
D	Document pocket (DIN A4)
O	Others

Product Versions

Cable Gland Versions

Type	Cable gland					Stopping plug		
	GP2	GB2	GS2	GN2	GA2	H02	H03	H04
Mechanical specifications								
Degree of protection	IP66	IP66	IP66	IP66	IP66	IP66	IP66	IP66
Material	polyamide	nickel-plated brass	stainless steel	nickel plated brass	stainless steel	polyamide	nickel-plated brass	stainless steel
Thread	M20	M20	M20	M20	M20	M20	M20	M20
Inner sheath (mm)	–	–	–	6 ... 11	6 ... 11	–	–	–
Outer sheath (mm)	6 ... 12	4 ... 12	4 ... 12	8 ... 15	8 ... 15	–	–	–
Cable								
Suitable for armored cable	no	no	no	yes	yes	–	–	–
Data for application with hazardous areas								
Type of protection	Ex e	Ex de	Ex de	Ex de	Ex de	Ex e	Ex de	Ex de

По вопросам продаж и поддержки обращайтесь:

Алматы (727)345-47-04
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Владикавказ (8672)28-90-48
Владимир (4922)49-43-18
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89

Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Коломна (4966)23-41-49
Кострома (4942)77-07-48
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Курган (3522)50-90-47
Липецк (4742)52-20-81

Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижегород (831)429-08-12
Новокузнецк (3843)20-46-81
Новосибирск (383)227-86-73
Ноябрьск (3496)41-32-12
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Петрозаводск (8142)55-98-37
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