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Edition 2015

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SPIDER Series Unmanaged DIN Rail Mount Ethernet Switches

Entry-level Industrial Unmanaged Switches

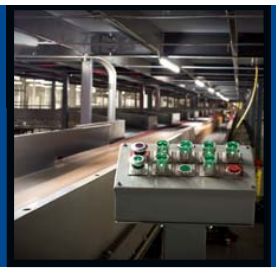
The SPIDER family of switches provides users with an economical, yet highly reliable hardened Ethernet switch. Models are available with Fast Ethernet, Gigabit Ethernet and PoE ports.

All copper/RJ45 ports are auto-negotiating and auto-crossing – the SPIDERS will work with either patch or cross-over cables. The fiber ports are available in multimode (MM), singlemode (SM) with either SC or ST sockets or via SFP transceiver (see page 96). All SPIDER switches are extremely compact and have LED indicators that provide information on power status, link status, and data rate. Additional to that all "PRO" Variants fulfill the requirements of PROFINET Conformance Class A.

Technical Information

Product Description								
Type	**SPIDER 1TX/1FX-x**	**SPIDER xTX-x**	**SPIDER II 8TX/x**	**SPIDER II Giga 5TX/x**	**SPIDER II 16TX/x**	**SPIDER Giga 2TX PoE EEC**	**SPIDER II 8TX PoE**	**SPIDER xTX-x PD EEC**
Switching/Routing	Unmanaged							
Available Ports	2	3, 5, 8	8, 9, 10	5, 7	16, 18	2	8	2, 5
Construction								
Mounting	DIN Rail							
Protection Class	IP30							
Dimensions (WxHxD)	25 x 114 x 79 mm 25 x 126 x 79 mm for ST fiber models		35 x 154 x 121 mm 35 x 168 x 121 mm for ST fiber models			30 x 140 x 95 mm	35 x 154 x 121 mm	25 x 114 x 79 mm
Weight	177 g		270 g		730 g	420 g	560 g	198 g
Ambient Conditions								
Operating Temperature	0 °C to +60 °C, -40 °C to +70 °C for EEC models					-40 °C to +70 °C	-10 °C to +60 °C	-40 °C to +70 °C
Storage/Transport Temperature	-40 °C to +70 °C, -40 °C to +85 °C for EEC models					-40 °C to +85 °C	-20 °C to +70 °C	-40 °C to +85 °C
Relative Humidity (non-condensing)	0% to 95%							
Conformal Coating	n/a							
Interfaces								
V.24 Interface	n/a							
USB Interface	n/a							
Power Requirements								
Operating Voltage	9.6 to 32 V DC				18 to 32 V DC	21 to 53 V DC	18 to 32 V DC	36 to 57 V DC
PoE (802.3af) Ports Supported	n/a						4	n/a
PoE Plus (802.3at) Ports	n/a					1	n/a	
Powered Device (PD)	no							yes
Regulatory Approvals								
Safety of Industrial Control Equipment	cUL508				cUL508, cUL60950-1	cUL508		
Hazardous Locations	n/a				ISA 12.12.01 C1D2, ATEX Zone 2	n/a		
Reliability								
MTBF Range	138 to 265 years	129 to 360 years	88 to 185 years	114 years	37 years	162 years	55 years	46 to 55 years
Warranty	5 years standard							

NOTE: These are the prominent technical specifications. For complete technical specifications visit: www.hirschmann.com



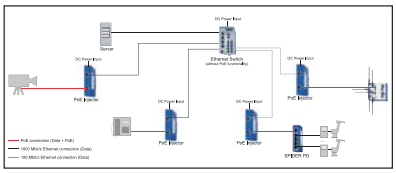
All Copper/RJ45		
Part No.	**Order No.**	**Ports**
SPIDER 3TX-TAP	943 899-001	3 x 10/100 Mbit/s RJ45
SPIDER 5TX	943 824-002	5 x 10/100 Mbit/s RJ45
SPIDER 5TX EEC	943 824-102	5 x 10/100 Mbit/s RJ45
SPIDER 8TX	943 376-001	8 x 10/100 Mbit/s RJ45
SPIDER 8TX EEC	943 376-201	8 x 10/100 Mbit/s RJ45
SPIDER II 8TX	943 957-001	8 x 10/100 Mbit/s RJ45
SPIDER II 8TX EEC	943 958-001	8 x 10/100 Mbit/s RJ45
SPIDER II 16TX EEC	942 120-001	16 x 10/100 Mbit/s RJ45
SPIDER II Giga 5T EEC	943 962-002	5 x 10/100/1000 Mbit/s RJ45
SPIDER II Giga 5T EEC Pro	943 962-102	5 x 10/100/1000 Mbit/s RJ45, QoS according to IEEE 802.1D
SPIDER II Giga 5T EEC Jumbo	943 962-202	5 x 10/100/1000 Mbit/s RJ45, Jumbo Frames with up to 9014 Bytes user data

Copper/RJ45 and Fiber		
Part No.	**Order No.**	**Ports**
SPIDER 1TX/1FX	943 890-001	1 x 10/100 Mbit/s RJ45, 1 x 100 Mbit/s MM SC
SPIDER 1TX/1FX EEC	943 927-101	1 x 10/100 Mbit/s RJ45, 1 x 100 Mbit/s MM SC
SPIDER 1TX/1FX-SM	943 891-001	1 x 10/100 Mbit/s RJ45, 1 x 100 Mbit/s SM SC
SPIDER 1TX/1FX SM EEC	943 928-001	1 x 10/100 Mbit/s RJ45, 1 x 100 Mbit/s SM SC
SPIDER 4TX/1FX	943 221-001	4 x 10/100 Mbit/s RJ45, 1 x 100 Mbit/s MM SC
SPIDER 4TX/1FX EEC	943 221-101	4 x 10/100 Mbit/s RJ45, 1 x 100 Mbit/s MM SC
SPIDER 4TX/1FX-ST EEC	943 914-001	4 x 10/100 Mbit/s RJ45, 1 x 100 Mbit/s MM ST
SPIDER 4TX/1FX SM EEC	943 880-001	4 x 10/100 Mbit/s RJ45, 1 x 100 Mbit/s SM SC
SPIDER II 8TX/1FX EEC	943 958-111	8 x 10/100 Mbit/s RJ45, 1 x 100 Mbit/s MM SC
SPIDER II 8TX/1FX-ST EEC	943 958-121	8 x 10/100 Mbit/s RJ45, 1 x 100 Mbit/s MM ST
SPIDER II 8TX/2FX EEC	943 958-211	8 x 10/100 Mbit/s RJ45, 2 x 100 Mbit/s MM SC
SPIDER II 8TX/2FX-ST EEC	943 958-221	8 x 10/100 Mbit/s RJ45, 2 x 100 Mbit/s MM ST
SPIDER II 8TX/1FX-SM EEC	943 958-131	8 x 10/100 Mbit/s RJ45, 1 x 100 Mbit/s SM SC
SPIDER II 8TX/2FX-SM EEC	943 958-231	8 x 10/100 Mbit/s RJ45, 2 x 100 Mbit/s SM SC
SPIDER II 16TX/2DS-S EEC	942 121-001	16 x 10/100 Mbit/s RJ45, 2 x 100/1000 Mbit/s SFP
SPIDER II Giga 5T/2S EEC	943 963-002	5 x 10/100/1000 Mbit/s RJ45, 2 x 1000 Mbit/s SFP
SPIDER II Giga 5T/2S EEC Pro	943 963-102	5 x 10/100/1000 Mbit/s RJ45, 2 x 1000 Mbit/s SFP, QoS according to IEEE 802.1D
SPIDER II Giga 5T/2S EEC Jumbo	943 963-202	5 x 10/100/1000 Mbit/s RJ45, 2 x 1000 Mbit/s SFP, Jumbo Frames with up to 9014 Bytes user data

Ethernet Switches powered via PoE		
Part No.	**Order No.**	**Ports**
SPIDER 5TX PD EEC	942 051-001	5 x 10/100 Mbit/S RJ45, 1 x PoE PD according to IEEE 802.3af
SPIDER 1TX/1FX-MM PD EEC	942 051-002	1x 10/100 Mbit/S RJ45, 1 x PoE PD according to IEEE 802.3af, 1 x 100 Mbit/s MM SC
SPIDER 1TX/1FX-SM PD EEC	942 051-003 1	1x 10/100 Mbit/S RJ45, 1 x PoE PD according to IEEE 802.3af, 1 x 100 Mbit/s SM SC

PoE Ethernet Switch/Injector		
Part No.	**Order No.**	**Ports**
SPIDER II 8TX PoE	942 008-001	8 x 10/100 Mbit/s RJ45, 4 x PoE according to IEEE802.3af
SPIDER GIGA 2TX PoE EEC	942 059-001	2 x 10/100/1000 Mbit/s RJ45, 1 x PoE+ according to IEEE802.3at

NOTE: EEC stands for extended environmental conditions (-40 °C to +70 °C).



Example of PoE Injector Installation Illustrating the use of PoE.

RS2 Unmanaged DIN Rail Mount Ethernet Switches

Configurable Unmanaged Ethernet-Switches with Tailor-made Configurations

The RS2 Series of switches offer advanced features such as redundant power inputs and most offer fault relay (triggerable by loss of power and/or port-link).

Standard features include 10/100 auto-negotiating and auto-crossing (either patch or cross-over cables will work in the ports), a 0 °C to +60 °C operating range (-40 °C to +70 °C available), a 24 V DC power input and an average MTBF exceeding 100 years.

All of the multimode (MM) and singlemode (SM) fiber optic ports are 100 Mbit/s and are available in a variety of connector options.

All Copper/RJ45 – RS2		
Part No.	**Order No.**	**Ports/Features**
RS2-4TX EEC	943 819-001	4 x 10/100 Mbit/s RJ45, link loss alarm, power loss alarm, fault relay output, ext. temp. -40 ° C to +70 °C
RS2-5TX	943 732-003	5 x 10/100 Mbit/s RJ45, rugged die-cast metal housing offering wall-mount option
RS2-TX	943 686-003	8 x 10/100 Mbit/s RJ45, link loss alarm, power loss alarm, fault relay output

Copper/RJ45 and Fiber Mix		
Part No.	**Order No.**	**Ports/Features**
RS2-3TX/2FX EEC	943 771-001	3 x 10/100 Mbit/s RJ45 and 2 x 100 Mbit/s MM SC, link loss alarm, power loss alarm, fault relay output, ext. temp. -40 °C to +70 °C
RS2-3TX/2FX-SM EEC	943 772-001	3 x 10/100 Mbit/s RJ45 and 2 x 100 Mbit/s SM SC, link loss alarm, power loss alarm, fault relay output, ext. temp. -40 °C to +70 °C
RS 2-5TX/FX	943 732-103	4 x 10/100 Mbit/s RJ45 and 1 x 100 Mbit/s MM MTRJ, rugged die-cast metal housing offering wall-mount option
RS 2-4TX/1FX EEC	943 773-001	4 x 10/100 Mbit/s RJ45 and 1 x 100 Mbit/s MM SC, link loss alarm, power loss alarm, fault relay output, ext. temp. -40 °C to +70 °C
RS 2-4TX/1FX-ST EEC	943 119-002	4 x 10/100 Mbit/s RJ45 and 1 x 100 Mbit/s MM ST, link loss alarm, power loss alarm, fault relay output, ext. temp. -40 °C to +70 °C
RS 2-4TX/1FX-SM EEC	943 774-001	4 x 10/100 Mbit/s RJ45 and 1 x 100 Mbit/s SM SC, link loss alarm, power loss alarm, fault relay output, ext. temp. -40 °C to +70 °C

RS20 and RS30 Unmanaged DIN Rail Mount Ethernet Switches

Tailor-made Configurable Unmanaged Ethernet-Switches

The RS20/30 Unmanaged Ethernet switches are ideal for applications that are less dependent upon the features of switch management while maintaining the highest feature-set for an unmanaged switch.

Features include: from 8 up to 25 ports Fast Ethernet with options for up to 3x fiber ports or up to 24 fast Ethernet and option for 2 Gigabit Ethernet uplink ports SFP or RJ45 redundant power inputs via dual 24 V DC, fault relay (triggerable by loss of one power input and/or the loss of the link(s) specified), auto-negotiating and auto crossing, variety of connector options for Multimode (MM) and Singlemode (SM) fiber optic ports, choice of operating temperatures and conformal coating (standard is 0 °C to +60 °C, with -40 °C to +70 °C also available), and variety of approvals including IEC 61850-3, IEEE 1613, EN 50121-4 and ATEX 100a Zone 2.

Standard Variants RS20

All Copper/RJ45		
Part No.	**Order No.**	**Ports/Features**
RS20-1600T1T1SDAU	943 434-047	16 x 10/100 Mbit/s RJ45

Multimode (MM)		
Part No.	**Order No.**	**Ports/Features**
RS20-0900NNM4TDAU	943 434-058	3 x 100 Mbit/s MM ST and 6 x 10/100 Mbit/s RJ45
RS20-0900MMM2TDAU	943 434-059	3 x 100 Mbit/s MM SC and 6 x 10/100 Mbit/s RJ45
RS20-1600M2T1SDAU	943 434-049	1 x 100 Mbit/s MM SC and 15 x 10/100 Mbit/s RJ45
RS20-1600M2M2SDAU	943 434-048	2 x 100 Mbit/s MM SC and 14 x 10/100 Mbit/s RJ45
RS20-1600S2M2SDAU	943 434-052	1 x 100 Mbit/s MM SC, 1 x 100 Mbit/s SM SC and 14 x 10/100 Mbit/s RJ45
RS20-1600L2M2SDAU	943 434-055	1 x 100 Mbit/s MM SC, 1 x 100 Mbit/s Long Haul SM SC and 14 x 10/100 Mbit/s RJ45

Singlemode (SM)		
Part No.	**Order No.**	**Ports/Features**
RS20-0900VVM2TDAU	943 434-060	3 x 100 Mbit/s SM SC and 6 x 10/100 Mbit/s RJ45
RS20-1600S2T1SDAU	943 434-051	1 x 100 Mbit/s SM SC and 15 x 10/100 Mbit/s RJ45
RS20-1600S2S2SDAU	943 434-053	2 x 100 Mbit/s SM SC and 14 x 10/100 Mbit/s RJ45
RS20-1600L2T1SDAU	943 434-054	1 x 100 Mbit/s Long Haul SM SC and 15 x 10/100 Mbit/s RJ45
RS20-1600L2S2SDAU	943 434-056	1 x 100 Mbit/s Long Haul SM SC, 1 x 100 Mbit/s SM SC and 14 x 10/100 Mbit/s RJ45
RS20-1600L2L2SDAU	943 434-057	2 x 100 Mbit/s Long Haul SM SC and 14 x 10/100 Mbit/s RJ45
RS20-1600S2M2SDAU	943 434-052	1 x 100 Mbit/s MM SC, 1 x 100 Mbit/s SM SC and 14 x 10/100 Mbit/s RJ45
RS20-1600L2M2SDAU	943 434-055	1 x 100 Mbit/s MM SC, 1 x 100 Mbit/s Long Haul SM SC and 14 x 10/100 Mbit/s RJ45

NOTE: For further combinations for RS20 and RS30 unmanaged switches please visit: www.hirschmann.com

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Lite Managed Industrial Ethernet Switch – GECKO 4TX

Lite Managed Industrial Ethernet Rail-Switch

The GECKO 4TX industrial Ethernet switch provides diagnostic, redundancy and security functions at an outstanding price-performance ratio. Although this "lightly" managed switch stands out with its simplicity, it also offers functionalities that enable more advanced capabilities than available with unmanaged devices. These include redundancy functionality for a high reliability of the network, and fast and simple error diagnosis for higher machine uptime and smooth production workflows. Furthermore, it is possible to turn off unused ports to prevent unwanted connections that may cause harm to your network. Finally, the GECKO helps you to get more status information from your network.

PROFINET CC-A FIT

Technical Information

Product Description	
Type	**GECKO 4TX**
Description	Lite Managed Industrial ETHERNET Rail-Switch, Store and Forward Switching Mode, fanless design
Switching/Routing	Lite managed Layer 2
Available Ports	4 x 10/100BASE-TX, TP-cable, RJ45 sockets, auto-crossing, auto-negotiation, auto-polarity
Order No.	942 104-001
Construction	
Mounting	DIN-Rail
Protection Class	IP30
Dimensions (WxHxD)	25 x 114 x 79 mm
Weight	100g
Ambient Conditions	
Operating Temperature	0 °C to +60 °C
Storage/Transport Temperature	-40 °C to +85 °C
Relative Humidity (non-condensing)	5% to 95%
Interfaces	
V.24 Interface	n/a
USB Interface	n/a
Power Requirements	
Operating Voltage	9.6 to 32 V DC
PoE (802.3af/at) Ports Supported	n/a
Software	
Management	SNMP v1, v2c, v3, Web based management
Diagnostic	Device status indication (LEDs), RMON (1) statistics , Simple interface statistics (MIB-2), Local Log-Files, LLDP
Configuration	BOOTP/DHCP
Security	Possibility to disable each port
Redundancy	RSTP
Filter	Store and Forward switching, QoS, TOS/DSCP prioritization, Static unicast/multicast address entries
Regulatory Approvals	
Safety of Industrial Control Equipment	cUL61010-1/-2-201
Reliability	
MTBF Range	56.6 years
Warranty	5 years standard

NOTE: These are the prominent technical specifications. For complete technical specifications visit: www.hirschmann.com

RSB20 Series Basic Managed DIN Rail Mount Switches

Fast Ethernet Uplink Ports

The RSB20 series of managed switches consists of 8 core models, each of which are optionally available in high temperature configurations and/or preconfigured with IGMP Snooping initially active (multicast filtering) for EtherNet/IP use. These switches offer redundant DC power inputs and a variety of multimode (SC), singlemode (SC), and SFP socket options.

The RSB20 portfolio offers users a quality, hardened, reliable communications solution that provides an economically attractive entry into the segment of managed switches.

Technical Information

Product Description	
Type	**RSB20 Series**
Available Ports	8 to 9
Construction	
Mounting	DIN Rail
Protection Class	IP20
Dimensions (WxHxD)	47 x 131 x 111 mm
Weight	400 g
Ambient Conditions	
Operating Temperature	0 °C to +60 °C, -40 °C to +70 °C
Storage/Transport Temperature	-40 °C to +85 °C
Relative Humidity (non-condensing)	10% to 95%
Conformal Coating	No
Interfaces	
V.24 Interface	1 x RJ11 socket
USB Interface	n/a
Software	
Supported Classic Software Levels	Layer 2 Basic (L2B)
Power Requirements	
Operating Voltage	24 V DC (18 to 32 V)
PoE (802.3af) Ports Supported	n/a
PoE Plus (802.3at) Ports Supported	n/a
Regulatory Approvals	
Safety of Industrial Control Equipment	cUL508
Hazardous Locations	ISA12.12.01 Class 1 Div 2
Ship	n/a
Transportation	n/a
Railway (norm)	n/a
Substation	n/a
Reliability	
MTBF Range	58.8 to 88 years
Warranty	5 years standard

NOTE: These are the prominent technical specifications. For complete technical specifications visit: www.hirschmann.com

RSB20 Series Basic Managed DIN Rail Mount Switch Configurations

Fast Ethernet Uplink Ports

All Copper/RJ45		
Part No.	**Order No.**	**Ports/Features**
RSB20-0800T1T1SAAB	942 014-001	8TX
RSB20-0800T1T1SAABE	942 014-017	8TX E, pre-configured MC filtering for EtherNet/IP
RSB20-0800T1T1TAABE	942 014-025	8TX EEC E, pre-configured MC filtering for EtherNet/IP
RSB20-0800T1T1TAAB	942 014-009	8TX EEC

Multimode (MM)		
Part No.	**Order No.**	**Ports/Features**
RSB20-0800M2M2SAAB	942 014-002	6TX/2FX MM
RSB20-0800M2M2SAABE	942 014-018	6TX/2FX MM E, pre-configured MC filtering for EtherNet/IP
RSB20-0800M2M2TAABE	942 014-026	6TX/2FX MM EEC E, pre-configured MC filtering for EtherNet/IP
RSB20-0800M2M2TAAB	942 014-010	6TX/2FX MM EEC
RSB20-0900M2TTSAAB	942 014-005	8TX/1FX MM
RSB20-0900M2TTSAABE	942 014-021	8TX/1FX MM E, pre-configured MC filtering for EtherNet/IP
RSB20-0900M2TTTAABE	942 014-029	8TX/1FX MM EEC E, pre-configured MC filtering for EtherNet/IP
RSB20-0900M2TTTAAB	942 014-013	8TX/1FX MM EEC
RSB20-0900MMM2SAAB	942 014-007	6TX/3FX MM
RSB20-0900MMM2SAABE	942 014-023	6TX/3FX MM E, pre-configured MC filtering for EtherNet/IP
RSB20-0900MMM2TAABE	942 014-031	6TX/3FX MM EEC E, pre-configured MC filtering for EtherNet/IP
RSB20-0900MMM2TAAB	942 014-015	6TX/3FX MM EEC

Singlemode (SM) Fiber and Copper		
Part No.	**Order No.**	**Ports/Features**
RSB20-0800S2S2SAAB	942 014-003	6TX/2FX SM
RSB20-0800S2S2SAABE	942 014-019	6TX/2FX SM E, pre-configured MC filtering for EtherNet/IP
RSB20-0800S2S2TAABE	942 014-027	6TX/2FX SM EEC E, pre-configured MC filtering for EtherNet/IP
RSB20-0800S2S2TAAB	942 014-011	6TX/2FX SM EEC
RSB20-0900S2TTSAAB	942 014-006	8TX/1FX SM
RSB20-0900S2TTSAABE	942 014-022	8TX/1FX SM E, pre-configured MC filtering for EtherNet/IP
RSB20-0900S2TTTAABE	942 014-030	8TX/1FX SM EEC E, pre-configured MC filtering for EtherNet/IP
RSB20-0900S2TTTAAB	942 014-014	8TX/1FX SM EEC

Singlemode (SM)/Multimode (MM) Fiber and Copper		
Part No.	**Order No.**	**Ports/Features**
RSB20-0900VVM2SAAB	942 014-008	6TX/2FX SM/1 FX MM
RSB20-0900VVM2SAABE	942 014-024	6TX/2FX SM/1 FX MM E, pre-configured MC filtering for EtherNet/IP
RSB20-0900VVM2TAABE	942 014-032	6TX/2FX SM/1 FX MM EEC E, pre-configured MC filtering for EtherNet/IP
RSB20-0900VVM2TAAB	942 014-016	6TX/2FX SM/1 FX MM EEC

SFP		
Part No.	**Order No.**	**Ports/Features**
RSB20-0900ZZZ6SAAB	942 014-004	6TX/3SFP
RSB20-0900ZZZ6SAABE	942 014-020	6TX/3SFP E, pre-configured MC filtering for EtherNet/IP
RSB20-0900ZZZ6TAABE	942 014-028	6TX/3SFP EEC E, pre-configured MC filtering for EtherNet/IP
RSB20-0900ZZZ6TAAB	942 014-012	6TX/3SFP EEC

RS20/RS30 Compact OpenRail Managed Ethernet Switches

Fast Ethernet Ports with/without PoE

The RS20 compact OpenRail managed Ethernet switches can accommodate from 4 to 25 port densities and are available with different Fast Ethernet uplink ports – all copper, or 1, 2 or 3 fiber ports. The fiber ports are available in multimode and/or singlemode.

Gigabit Ethernet Ports with/without PoE

The RS30 compact OpenRail managed Ethernet switches can accommodate from 8 to 24 port densities with 2 Gigabit ports and 8, 16 or 24 Fast Ethernet ports. The configuration includes 2 Gigabit ports with TX or SFP slots.

Technical Information

Product Description					
Type	**RS20 Series 4 Ports**	**RS20 Series 8 and 9 Ports**	**RS20 Series 16, 17, 24 and 25 Ports**	**RS30 Series 8 Ports**	**RS30 Series 16 and 24 Ports**
Available Ports	4 to 25				
Construction					
Mounting	DIN Rail				
Protection Class	IP20				
Dimensions (W x H x D)	47 x 131 x 111 mm	74 x 131 x 111 mm	110 x 131 x 111 mm	74 x 131 x 111 mm	110 x 131 x 111 mm
Weight	400 g	410 g	630 g	410 g	630 g
Ambient Conditions					
Operating Temperature	0 °C to +60 °C, -40 °C to +70 °C, or -40 °C to +70 °C (optional Conformal Coating)				
Storage/Transport Temperature	-40 °C to +70 °C				
Relative Humidity (non-condensing)	10% to 95%				
Conformal Coating	Yes (variant dependent)				
Interfaces					
V.24 Interface	1 x RJ11 socket				
USB Interface	1 x USB (ACA21-USB adapter)				
Software					
Supported Classic Software Levels	Layer 2 Enhanced (L2E), Layer 2 Professional (L2P)				
Power Requirements					
Operating Voltage	12/24/48 V DC (9.6 to 60 V) and 24 V AC (18 to 30 V) (redundant)				
Regulatory Approvals					
Safety of Industrial Control Equipment	cUL508				
Hazardous Locations	ISA12.12.01 Class 1 Div 2, ATEX 100a, Zone 2				
Ship	Germanischer Lloyd				
Transportation	NEMA TS2				
Railway (track)	EN 50121-4				
Substation	IEC 61850-3, IEEE 1613				
Reliability					
MTBF Range	65.5 to 74.9 years	43.9 to 62.5 years	22.1 to 44.8 years	30.6 to 51.9 years	22.9 to 39.1 years
Warranty	5 years standard				

NOTE: These are the prominent technical specifications. For complete technical specifications visit: www.hirschmann.com

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Configurator

RS20/RS22/RS30/RS32 Compact OpenRail Ethernet Switch Configurations

Fast Ethernet Uplink Ports/Fast Ethernet Uplink Ports with PoE
Gigabit Ethernet Uplink Ports/Gigabit Ethernet Uplink Ports with PoE

RS32-	16	02	OO	ZZ	S	P	A	P	H	F	XX.X

Design/Models
RS20 = Fast-Ethernet Uplink Ports
RS22 = Fast-Ethernet Uplink Ports with PoE
RS30 = Gigabit Ethernet Uplink Ports
RS32 = Gigabit Ethernet Ports with PoE

Fast Ethernet Ports
04 = 4 x 10/100 Mbit/s
08 = 8 x 10/100 Mbit/s
09 = 9 x 10/100 Mbit/s
16 = 16 x 10/100 Mbit/s
17 = 17 x 10/100 Mbit/s
24 = 24 x 10/100 Mbit/s
25 = 25 x 10/100 Mbit/s

Gigabit Ethernet Ports
00 = None (not present)
02 = 2 x 1000 Mbit/s

Type 1 Uplink Port
T1 = 1 x Twisted-Pair RJ45
M2 = 1 x Multimode SC
M4 = 1 x Multimode ST
S2 = 1 x Singlemode SC
S4 = 1 x Singlemode ST
L2 = 1 x Long Haul SC
G2 = 1 x Long Haul + SC
E2 = 1 x Singlemode + SC
EE = 2 x Singlemode + SC
O6 = 1 x SFP Slot GE
OO = 2 x SFP Slots GE
MM = 2 x Multimode SC
NN = 2 x Multimode ST
VV = 2 x Singlemode S
UU = 2 x Singlemode ST

Type 2 Uplink Port
T1 = 1 x Twisted-Pair RJ45
M2 = 1 x Multimode SC
M4 = 1 x Multimode ST
E2 = 1 x Singlemode+ SC
S2 = 1 x Singlemode SC
S4 = 1 x Singlemode ST
L2 = Singlemode Long Haul FX DSC (only 100 Mbit/s)
G2 = Singlemode Long Haul FX DSC 200 km (only 100 Mbit/s)
O6 = SFP slot (only 1000 Mbit/s)
ZZ = 2 x SFP Slots FE

Temperature Range
S = 0 °C to +60 °C
T = -40 °C to +70 °C (+60 °C PoE)
E = -40 °C to +70 °C (+60 °C PoE) inclusive Conformal Coating

Power Supply
D = 9.6 to 60 V DC and 18 to 30 V AC
P = 47 to 52 V DC (PoE)

Approvals
A = cUL508, cUL1604 Class 1 Div 2
H = cUL508, cUL1604, Class 1 Div 2, Germanischer Lloyd, IEC 61850-3: Substation, IEEE 1613: Substation - EN 50121-4: Railway (track)
B = cUL508, cUL1604, Class 1 Div 2, Germanischer Lloyd, IEC 61850-3: Substation, IEEE 1613: Substation – EN 50121-4: Railway (track)/ATEX 100a, Zone 2: Hazardous Location

Software Version (see page 12-15 for additional Management Software Functionality details)
E = Enhanced, additional filters and redundancy
P = Professional, DHCP server, additional security and diagnostics, advanced filtering and redundancy
U = Unmanaged

Configuration
H = Standard
E = EtherNet/IP Pre Settings
P = PROFINET Pre Settings

OEM Type
H = Standard
F = Steel Cabinet (PoE)

Software Release
XX.X = Current Software Release

NOTE: The last three part number categories (**Configuration, OEM Type** and **Software Release**) are optional.

RS40 Compact OpenRail Managed Ethernet Switches

All Ports are Gigabit

The RS40 compact OpenRail managed Ethernet switch has 9 Gigabit ports. The switch offers 5 x 10/100/1000 RJ45 and 4 x 100/1000 RJ45/SFP combo ports (function of one RJ45 combo port is lost for each SFP utilized). Fiber uplink ports are available in multimode and/or single-mode by using Gigabit or 100 Mbit/s SFP transceivers.

Technical Information

Product Description		
Type	**RS40 Series Standard Temperature**	**RS40 Series Extended Temperature**
Available Ports	9	
Construction		
Mounting	DIN Rail	
Protection Class	IP20	
Dimensions (W x H x D)	74 x 131 x 111 mm	110 x 131 x 111 mm
Weight	530 g	600 g
Ambient Conditions		
Operating Temperature	0 °C to +60 °C, -40 °C to +70 °C	-40 °C to +70 °C (optional Conformal Coating)
Storage/Transport Temperature	-40 °C to +70 °C	
Relative Humidity (non-condensing)	10% to 95%	
Conformal Coating	Yes (variant dependent)	
Interfaces		
V.24 Interface	1 x RJ11 socket	
USB Interface	1 x USB (ACA21-USB adapter)	
Software		
Supported Classic Software Levels	Layer 2 Enhanced (L2E), Layer 2 Professional (L2P)	
Power Requirements		
Operating Voltage	12/24/48 V DC (9.6 to 60 V) and 24 V AC (18 to 30 V) (redundant)	
Regulatory Approvals		
Safety of Industrial Control Equipment	cUL508	
Hazardous Locations	ISA12.12.01 Class 1 Div 2, ATEX 100a, Zone 2	
Ship	Germanischer Lloyd	
Transportation	NEMA TS2	
Railway (track)	EN 50121-4	
Substation	IEC 61850-3, IEEE 1613	
Reliability		
MTBF Range	25.8 to 27.1 years	
Warranty	5 years standard	

NOTE: These are the prominent technical specifications. For complete technical specifications visit: www.hirschmann.com

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Configurator

RS40 Compact OpenRail Managed Ethernet Switch Configurations

Full Gigabit Ethernet Switches RS40

R	S	4	0	-	0	0	0	9	C	C	C	C	S	D	-	A	P	E	H	X	X	.	X

Design/Model

RS40 = Full Gigabit Ethernet Switch

Fast Ethernet Port

00 = 0 x 10/100 Mbit/s

Gigabit Ethernet Ports

09 = 9 x 1000 Mbit/s

Type 1 Uplink Port

CC = 2 x SFP Combo Port GE

Type 2 Uplink Port

CC = 2 x SFP Combo Port GE

Temperature Range

S = 0 °C to +60 °C
T = -40 °C to +70 °C
E = -40 °C to +70 °C inclusive Conformal Coating

Power Supply

D = 9.6 to 60 V DC and 18 to 30 V AC

Approvals

A = cUL508, cUL1604 Class 1 Div 2
H = cUL508, cUL1604, Class 1 Div 2, Germanischer Lloyd, IEC 61850-3: Substation/IEEE 1613: Substation – EN 50121-4: Railway (track)
B = cUL508, cUL1604, Class 1 Div 2, Germanischer Lloyd, IEC 61850-3: Substation IEEE 1613: Substation – EN 50121-4: Railway (track), ATEX 100a, Zone 2: Hazardous Location

Software Version (see page 12-15 for additional Management Software Functionality details)

E = Enhanced, additional filters and redundancy
P = Professional, DHCP server, additional security and diagnostics, advanced filtering and redundancy

Configuration

H = Standard
E = EtherNet/IP Pre Settings
P = PROFINET Pre Settings

OEM Type

H = Standard

Software Release

XX.X = Current Software Release

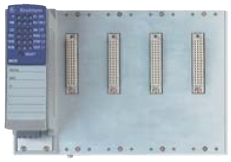
NOTE: The last three part number categories (**Configuration, OEM Type** and **Software Release**) are optional.

MS20 Managed Modular DIN Rail Mount Ethernet Switches

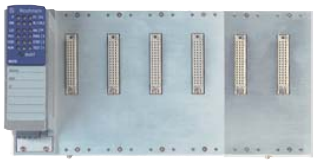
The MS20 series of Ethernet switches have eight to twenty-four 100 Mbit/s max ports. Fully managed (web, SNMP and CLI) IGMP snooping (multicast filtering), VLAN, port mirroring, port control, port security, link alarms, broadcast limiter, traffic diagnostics, HIPER-Ring redundancy, RSTP, etc.

Features include: available in a 2 and 4 slot version (4 slot can be expanded to a 6 slot using MB-2T), requires the use of hot-swappable media modules for any combination of copper/fiber ports, dual power inputs and dual fault relay outputs, USB configuration backup/restore and fast device replacement, standard 0 °C to +60 °C (-40 °C to +70 °C and conformal coating available), differentiator between similar switches listed is the firmware level/features (E = Enhanced, P = Professional). Last digit in part number category software version (see page 12-15 for additional Management Software Functionality details).

MS20-08



MS20-16



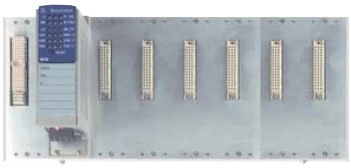
MS20-16
(including backplane extension MB-2T)

All Ports are 10/100 Mbit/s		
Part No.	**Order No.**	**Ports/Features**
MS20-0800SAAE	943 435-001	2 x any MM2/MM3 (2 slots, max. 8 x 10/100 Mbit/s ports)
MS20-0800SAAP	943 435-002	2 x any MM2/MM3 (2 slots, max. 8 x 10/100 Mbit/s ports)
MS20-0800ECCP	943 956-001	2 x any MM2/MM3 (2 slots, max. 8 x 10/100 Mbit/s ports), -40 °C to +70 °C, conformal coated, 24/48 V DC, EN 50155
MS20-1600SAAE	943 435-003	4 x any MM2/MM3 (6 slots max. 16 x 10/100 Mbit/s ports/24 ports w/ MB-2T)
MS20-1600SAAP	943 435-004	4 x any MM2/MM3 (6 slots max. 16 x 10/100 Mbit/s ports/24 ports w/ MB-2T)
MS20-1600ECCP	943 956-002	4 x any MM2/MM3 (6 slots max. 16 x 10/100 Mbit/s ports/24 ports w/ MB-2T), -40 °C to +70 °C, conformal coated, 24/48 V DC, EN 50155

MS30 Managed Modular DIN Rail Mount Ethernet Switches

MS30-08

MS30-16



MS30-16 (including backplane extension MB-2T)

The MS30 series of Ethernet switches have the same functionality and features as the MS20 series, with the exception of an added slot for a Gigabit Media Module (for 2 x 10/100/1000 RJ45/Gigabit SFP combo ports).

Features include: uplink ports are 10/100/1000 Mbit/s, all other ports are 10/100 Mbit/s, MS30-08 can have a max of 8 x 10/100 Mbit/s ports and 2 x 10/100 RJ45/Gigabit SFP combo ports. Ports can be any combination of copper and/or fiber, and Gigabit RJ45/SFP combo ports compatible with Gigabit SFPs.

All Ports are 10/100 Mbit/s		
Part No.	**Order No.**	**Ports/Features**
MS30-0802SAAE	943 435-005	2 x any MM2/MM3 and 1 x MM4-2TX/SFP (max 10 ports)
MS30-0802SAAP	943 435-006	2 x any MM2/MM3 and 1 x MM4-2TX/SFP (max 10 ports)
MS30-1602SAAE	943 435-007	4 x any MM2/MM3 (6 x w/MB-2T) and 1 x MM4-2TX/SFP (max 26 ports)

MS Backplane Extensions

MICE 2-slot backplane extensions are used for MS20-16, MS30-16 and MS4128. Only one per switch may be used for a maximum of six total slots.

Backplane Extensions		
Part No.	**Order No.**	**Ports/Features**
MB-2T	943 733-102	MS20-16, MS30-16, and MS4128
MB20-2TAHH	943 435-002	Same as above but with -40 °C to +70 °C

Managed Modular DIN Rail Mount Switches

Any combination of the following hot-swappable media modules may be used to attain the desired port density/type on a MS switch. The only restriction is the number of slots that the MS backplane has (one media module per slot).

Modules: All Copper		
Part No.	**Order No.**	**Ports/Features**
MM2-4TX1	943 722-101	4 x 10/100 Mbit/s RJ45
MM2-4TX1-EEC	943 722-151	4 x 10/100 Mbit/s RJ45, extended temperature range

Modules: Multimode			
Type	**Part No.**	**Order No.**	**Ports/Features**
MM	MM2-2FXM2	943 718-101	2 x 100 Mbit/s MM SC
MM	MM3-4FXM2	943 764-101	4 x 100 Mbit/s MM SC
MM	MM3-4FXM4	943 835-101	4 x 100 Mbit/s MM ST
MM	MM3-1FXM2/3TX1	943 839-101	1 x 100 Mbit/s MM SC, 3 x RJ45
MM	MM3-2FXM4/2TX1	943 837-101	2 x 100 Mbit/s MM ST, 2 x RJ45
MM	MM3-4FLM4	943 760-101	4 x 10 Mbit/s MM ST
MM	MM3-2FXM2/2TX1	943 761-101	2 x 100 Mbit/s MM SC, 2 x RJ45
MM	MM3-2FXM2/2TX1-EEC	943 761-151	2 x 100 Mbit/s MM SC, 2 x RJ45, ext. temperature range
MM	MM3-1FXM2/1FXS2/2TX1	943 929-101	2 x 100 Mbit/s SC (1 x MM and 1 x SM), 2 x RJ45
MM	MM2-4FXM3	943 721-101	4 x 100 Mbit/s MM MTRJ
MM	MM2-2FXM3/2TX1	943 720-101	2 x 100 Mbit/s MM MTRJ, 2 x RJ45
SFP	MM20-Z6Z6Z6Z6SAHH	943 938-001	4 x 100 Mbit/s SFP sockets (SFPs are sold separately), for MS20, MS30 and MS4128

Modules: Singlemode			
Type	**Part No.**	**Order No.**	**Ports/Features**
SM	MM2-2FXS2	943 719-101	2 x 100 Mbit/s SM SC
SM	MM3-2FXS2/2TX1	943 762-101	2 x 100 Mbit/s SM SC, 2 x RJ45
SM	MM3-2FXS2/2TX1-EEC	943 762-151	2 x 100 Mbit/s SM SC, 2 x RJ45, ext. temperature range
SM	MM3-1FXS2/3TX1	943 838-101	1 x 100 Mbit/s SM SC, 3 x RJ45
SM	MM3-4FXS2	943 836-101	4 x 100 Mbit/s SM SC
SM	MM3-1FXL2/3TX1	943 763-101	1 x 100 Mbit/s SM SC Long Haul, 3 x RJ45
SM	MM3-1FXLH/3TX1	943 930-101	1 x 100 Mbit/s SM SC Long Haul+, 3 x RJ45
SM	MM3-1FXS2/3TX1-EEC	943 838-151	1 x 100 Mbit/s SM SC, 3 x RJ45, ext. temperature range
SFP	MM20-Z6Z6Z6Z6SAHH	943 938-001	4 x 100 Mbit/s SFP sockets (SFPs are sold separately), for MS20, MS30 and MS4128

Modules: Gigabit			
Type	**Part No.**	**Order No.**	**Ports/Features**
Gigabit	MM4-2TX/SFP	943 622-001	2 x Gigabit RJ45/SFP combo ports for use with MS30 and MS4128
Gigabit	MM4-4TX/SFP	943 010-001	4 x Gigabit RJ45/SFP combo ports for use with MS4128 only

Managed Modular DIN Rail Mount Switches *(continued)*

Modules: Special Purpose			
Type	**Part No.**	**Order No.**	**Ports/Features**
Realtime	MM23-T1T1T1T1SAAH PTPv2	–	IEEE 1588 Version 2 PTP module, 4 x 10/100 RJ45, replacement for 943 117-001
Realtime	MM23-M2M2T1T1SAAH PTPv2	–	IEEE 1588 Version 2 PTP module, 2 x multimode, SC sockets, replacement for 943 117-002
Realtime	MM23-S2S2T1T1SAAH PTPv2	–	IEEE 1588 Version 2 PTP module, 2 x singlemode, SC sockets, replacement for 943 117-003
Realtime	MM23-F4F4T1T1SAAH PTPv2	–	IEEE 1588 Version 2 PTP module, 2 x multimode, ST sockets, replacement for 943 117-004
Realtime	MM33-07079999SA PTPv2	–	IEEE 1588 Version 2 PTP module, SFP sockets
Realtime	MM3-4TX1-RT-EEC	943 955-001	4 x RJ45, railway certifications EN 50155, EN 50121-4, IEEE 1588 Version 1
Realtime	MM3-2FXM2/2TX1-RT-EEC	943 955-002	2 x 100 Mbit/s MM SC, 2 x RJ45, IEEE 1588 Version 1, railway certifications EN 50155, EN 50121-4
Realtime	MM3-2FXS2/2TX1-RT-EEC	943 955-003	2 x 100 Mbit/s SM SC, 2 x RJ 45, IEEE 1588 Version 1, railway certifications EN 50155, EN 50121-4
AUI	MM20-A8A89999SAHH	943 840-101	2 x AUI SUB-D 15-pin male D-sub
M12	MM3-4TX5	943 841-101	4 x M12 sockets (D-code), for connectors see OCTOPUS family
PoE	MM22-T1T1T1T1SAHH	943 938-002	4 x RJ45 PoE (external PoE power supply)
SFP	MM20-Z6Z6Z6Z6SAHH	943 938-001	4 x 100 Mbit/s SFP sockets (SFPs are sold separately), for MS20, MS30 and MS4128

Fast Ethernet MICE Media Modules, Digital I/O		
Part No.	**Order No.**	**Ports/Features**
MM24-IOIOIOIOSZHH	MM24-IOIOIOIOSZHH	Port 1: 1 x digital input, 1 x digital output Port 2: 1 x digital input, 1 x digital output Port 3: 1 x digital input, 1 x digital output Port 4: 1 x digital input, 1 x digital output
MM24-IOIOIOIOTZHH	MM24-IOIOIOIOTZHH	Same as above, except with extended temperature range -40 °C to +70 °C
MM24-IOIOIOIOEZHH	MM24-IOIOIOIOEZHH	Same as above, except with extended temperature range and conformal coating

MSP30/MSP32 Managed Modular DIN Rail Mount Switches

MSP30/MSP32 MICE Switch Power

The Hirschmann MSP30 Layer 3 switch extends the unique security functions of the MSP30 family to include high-performance routing. This functionality is offered in a variety of hardware packages. Unicast dynamic routing (UR) and multicast dynamic routing (MR) offer customers an attractive cost benefit – "Just pay for what you need." With its existing modular IPv6-ready hardware, the MSP30 Layer 3 switch enables complete solutions that meet all network requirements.

Technical Information

Product Description		
Type	**MSP30-Series**	**MSP32-Series**
Available Ports	12, 20, 28 four of which can be Gigabit (variant dependent)	
Enhanced Redundancy Functions	MRP	
Construction		
Mounting	DIN Rail	
Protection Class	IP30	
Dimensions (W x H x D)	236.6/313.8/391 x 147.2 x 141.75 mm (variant dependent)	
Weight	2100/2400/2650 g (variant dependent)	2200/2500/2750 g (variant dependent)
Ambient Conditions		
Operating Temperature	0 °C to +60 °C, -40 °C to +70 °C or -40 °C to +70 °C (inclusive Conformal Coating), IEC 60068-2-2 Dry Heat Test	
Storage/Transport Temperature	-40 °C to +85 °C	
Relative Humidity (non-condensing)	5% to 95%	
Conformal Coating	Yes (variant dependent)	
Interfaces		
V.24 Interface	1 x RJ45 socket	
USB Interface	1 x USB socket (to connect auto-configuration adapter ACA21-USB)	
SD Interface	1 x SD socket (to connect auto-configuration adapter ACA31-SD)	
Software		
Supported HiOS Software Levels	Layer 2 Advanced (L2A), Layer 3 Advanced (L3A)	
Power Requirements		
Operating Voltage	24/36/48 V DC redundant	
PoE (802.3af) Ports Supported	n/a	integrated PoE Plus function with up to 120 W
PoE Plus (802.3at) Ports Supported	n/a	integrated PoE Plus function with up to 120 W
Regulatory Approvals		
Safety of Industrial Control Equipment	cUL508	
Hazardous Locations	ISA-12.12.-01 Class 1 Div. 2 Group A, B, C, D – Haz. Loc (pending), ATEX-95 Approval, Category 3G (Zone 2), Group IIC, T4, "nA" (pending)	
Ship	Germanischer Lloyd (pending)	
Transportation	NEMA TS2 (pending)	
Railway (norm)	EN 50121-4 (pending)	
Substation	IEC 61850-3, IEEE 1613 (pending)	
Reliability		
MTBF Range	www.hirschmann.com	
Warranty	5 years standard	

NOTE: These are the prominent technical specifications. For complete technical specifications visit: www.hirschmann.com

MSP MICE Switch Power Configurations

Gigabit Ethernet Uplink Ports, Gigabit Ethernet Uplink Ports with PoE+ Capability

MSP30-	08	04	0	S	C	Z9	99	HH	E	3A	XX.X

Design

MSP30 = Gigabit Ethernet Uplink Ports
MSP32 = Gigabit Ethernet Uplink Ports with PoE(+) Capability

Number of Fast Ethernet Ports

08 = 08 x 10/100 Mbit/s
16 = 16 x 10/100 Mbit/s
24 = 24 x 10/100 Mbit/s

Number of Gigabit Ethernet Ports

04 = 4 x 10/100/1000 Mbit/s

Number of 10 Gigabit Ethernet Ports

0 = 10/100/1000/10000 Mbit/s

Temperature Range

S = Standard 0 °C to +60 °C
T = Extended -40 °C to +70 °C
E = Extended -40 °C to +70 °C with conformal coating

Power Supply

C = 24/36/48 V DC (18 to 60 V DC)
P = 47 to 57 V DC (PoE), 53 to 57 V DC (PoE+)

Approvals

Z9 = CE, FCC, EN 61131 (EN 60950)
Y9 = Z9 + cUL508 (UL60950)
W9 = Z9 + ATEX Zone 2
WY = Y9 + ATEX Zone 2
X9 = Y9 + ISA 12.12.01 Class 1 Div. 2
V9 = Z9 + IEC 61850, IEEE 1613
VY = V9 + cUL508 (UL60950)
VU = VY + GL (ABS, BV, DNS, LR)
VT = VY + EN50121-4
T9 = Z9 + EN50121-4
TY = T9 + cUL508 (UL60950)
U9 = Z9 + GL (ABS, BV, DNS, LR)
UY = U9 + cUL508 (UL60950)
UW = UY + ATEX Zone 2
UX = UY + ISA 12.12.01 Class 1 Div. 2

Software Packages

99 = Reserved
UR = Unicast Routing
MR = Multicast Routing

Customization

HH = Hirschmann Standard
HX = Hirschmann Extreme

Software Configuration

E = Entry (Hirschmann Standard Configuration)

Software Level

3A = HiOS Layer 3 Advanced
2A = HiOS Layer 2 Advanced

Software Release

XX.X = Current Software Release
03.0 = Software Version 03.0
02.0 = Software Version 02.0

NOTE: The last four categories (**Customization, Software Configuration, Software Level** and **Software Release**) are optional.

Managed Modular MICE Switch Power Media Modules

MSM20/MSM24/MSM40/MSM42
Managed Modular MICE Switch Power Media Modules

The variety of transmission media and range of connector versions ensure an optimum degree of flexibility and application coverage.

Transmission media

- Copper
- Multimode Fiber
- Singlemode Fiber
- Long Haul Fiber
- Long Haul+

Connector versions

- RJ45
- SC
- ST
- LC via SFP (small form-factor pluggable)

Any combination of the hot-swappable media modules may be used to attain the desired port density/type on a MICE Switch Power switch. The sole limitation is the number of media module slots on a switch (one media module per slot).

Media modules are available as Fast Ethernet and Gigabit variants and their uniform design allows the customer to place them on any module slot of MSP. Additionally PoE+ variant of the Gigabit module ensure integration of PoE based end devices into the network.

Modules: Copper		
Part No.	**Order No.**	**Ports/Features**
MSM40-T1T1T1T1SZ9HH 9E99.9.99	942 077-999	4 x Gigabit Ethernet Ports RJ45, Standard Temperature Range 0 °C to +60 °C, Basic Approvals
MSM40-T1T1T1T1TZ9HH 9E99.9.99	942 077-999	4 x Gigabit Ethernet Ports RJ45, Extended Temperature Range -40 °C to +70 °C, Basic Approvals
MSM40-C1C1C1C1SZ9HH 9E99.9.99	942 077-999	4 x Gigabit Ethernet Combo Ports RJ45/SFP, Standard Temperature Range 0 °C to +60 °C, Basic Approvals
MSM40-C1C1C1C1TZ9HH 9E99.9.99	942 077-999	4 x Gigabit Ethernet Combo Ports RJ45/SFP, Extended Temperature Range -40 °C to +70 °C, Basic Approvals

Modules: Multimode		
Part No.	**Order No.**	**Ports/Features**
MSM20-M2T1T1T1SZ9HH 9E99.9.99	942 077-999	1 x Fast Ethernet Multimode Fiber Port, 3 x Fast Ethernet Ports RJ45, Standard Temperature Range 0 °C to +60 °C, Basic Approvals
MSM20-M2M2T1T1SZ9HH 9E99.9.99	942 077-999	2 x Fast Ethernet Multimode Fiber Ports, 2 x Fast Ethernet Ports RJ45, Standard Temperature Range 0 °C to +60 °C, Basic Approvals
MSM20-M2M2M2M2SZ9HH 9E99.9.99	942 077-999	4 x Fast Ethernet Multimode Fiber Ports, Standard Temperature Range 0 °C to +60 °C, Basic Approvals
MSM20-M2M2M2M2TZ9HH 9E99.9.99	942 077-999	4 x Fast Ethernet Multimode Fiber Ports, Extended Temperature Range -40 °C to +70 °C, Basic Approvals

NOTE: For further combinations and options such as Conformal Coating, please visit our website at: www.hirschmann.com

Managed Modular MICE Switch Power Media Modules *(continued)*

Managed Modular MSM20/MSM24/MSM40/MSM42 MICE Switch Power Media Modules

Modules: Singlemode		
Part No.	**Order No.**	**Ports/Features**
MSM20-S2T1T1T1SZ9HH9E99.9.99	942 077-999	1 x Fast Ethernet Singlemode Fiber Port, 3 x Fast Ethernet Ports RJ45, Standard Temperature Range 0 °C to +60 °C, Basic Approvals
MSM20-S2S2T1T1SZ9HH9E99.9.99	942 077-999	2 x Fast Ethernet Singlemode Fiber Ports, 2 x Fast Ethernet Ports RJ45, Standard Temperature Range 0 °C to +60 °C, Basic Approvals
MSM20-S2S2S2S2SZ9HH9E99.9.99	942 077-999	4 x Fast Ethernet Singlemode Fiber Ports, Standard Temperature Range 0 °C to +60 °C, Basic Approvals
MSM20-S2S2S2S2TZ9HH9E99.9.99	942 077-999	4 x Fast Ethernet Singlemode Fiber Ports, Extended Temperature Range -40 °C to +70 °C, Basic Approvals

Modules: Long Haul		
Part No.	**Order No.**	**Ports/Features**
MSM20-G2T1T1T1SZ9HH9E99.9.99	942 077-999	1 x Fast Ethernet Long Haul Fiber Port, 3 x Fast Ethernet Ports RJ45, Standard Temperature Range 0 °C to +60 °C, Basic Approvals
MSM20-G2G2T1T1SZ9HH9E99.9.99	942 077-999	2 x Fast Ethernet Long Haul Fiber Ports, 2 x Fast Ethernet Ports RJ45, Standard Temperature Range 0 °C to +60 °C, Basic Approvals
MSM20-G2G2G2G2SZ9HH9E99.9.99	942 077-999	4 x Fast Ethernet Long Haul Fiber Ports, Standard Temperature Range 0 °C to +60 °C, Basic Approvals
MSM40-C1C1C1C1TZ9HH9E99.9.99	942 077-999	4 x Fast Ethernet Long Haul Fiber Ports, Extended Temperature Range -40 °C to +70 °C, Basic Approvals

Modules: Power over Ethernet		
Part No.	**Order No.**	**Ports/Features**
MSM42-T1T1T1T1SZ9HH9E99.9.99	942 077-999	4 x Gigabit Ethernet PoE+ Ports RJ45, Standard Temperature Range 0 °C to +60 °C, Basic Approvals
MSM42-T1T1T1T1TZ9HH9E99.9.99	942 077-999	4 x Gigabit Ethernet PoE+ Ports RJ45, Extended Temperature Range -40 °C to +70 °C, Basic Approvals

Modules: Digital I/O		
Part No.	**Order No.**	**Ports/Features**
MSM24-IOIOIOIOSZ9HH9E99.9.99	942 077-999	4 x Digital I/O Interface, Standard Temperature Range 0 °C to +60 °C, Basic Approvals
MSM24-IOIOIOIOTZ9HH9E99.9.99	942 077-999	4 x Digital I/O Interface, Extended Temperature Range -40 °C to +70 °C, Basic Approvals

NOTE: For further combinations and options such as Conformal Coating, please visit our website at: www.hirschmann.com

MICE Switch Power Media Module Configurations

Fast Ethernet Ports, Fast Ethernet/Gigabit Ethernet Ports, Fast Ethernet/Gigabit Ethernet Ports with PoE+ Capability, Fast Ethernet/Gigabit Ethernet Ports with Enhanced Redundancy and PTP

MSM40-	T1	T1	T1	T1	S	Z9	HH	9	E	99.9	99

Design

MSM20 = Fast Ethernet Ports
MSM24 = Fast Ethernet Digital Input/Output
MSM40 = Fast Ethernet/Gigabit Ethernet Ports
MSM42 = Fast Ethernet/Gigabit Ethernet Ports with PoE(+) Capability

Port Type 1. Uplink

T1 = Twisted Pair (TX)/RJ45 (10/100/1000 Mbit/s)
T5 = Twisted Pair (TX)/M12 (10/100 Mbit/s)
C1 = Combo Port Twisted Pair (TX)/RJ45 (10/100/1000 Mbit/s) & - Fiber Optic SFP Cage (100/1000 Mbit/s)
G2 = Singlemode Long Haul FX DSC 200 km (100 Mbit/s)
L2 = Singlemode Long Haul FX DSC (100 Mbit/s)
S4 = Singlemode FX ST (100 Mbit/s)
M2 = Multimode FX DSC (100 Mbit/s)
M4 = Multimode FX ST (100 Mbit/s)
I/O = Digital Input/Output
S2 = Singlemode FX DSC (100 Mbit/s)

Port Type 2. Uplink

(see port type 1. Uplink)

Port Type 3. Uplink

(see port type 1. Uplink)

Port Type 4. Uplink

(see port type 1. Uplink)

Temperature Range

S = 0 °C to +60 °C
T = -40 °C to +70 °C
P = -40 °C to +70 °C inclusive conformal coating

Approvals

Z9 = CE, FCC, EN 61131 (EN 60950)
Y9 = Z9 + cUL508 (UL60950)
W9 = Z9 + ATEX Zone 2
WY = Y9 + ATEX Zone 2
X9 = Y9 + ISA 12.12.01 Class 1 Div. 2
V9 = Z9 + IEC 61850, IEEE 1613
VY = V9 + cUL508 (UL60950)
VU = VY + GL (ABS, BV, DNS, LR)
VT = VY + EN50121-4
T9 = Z9 + EN50121-4
TY = T9 + cUL508 (UL60950)
U9 = Z9 + GL (ABS, BV, DNS, LR)
UY = U9 + cUL508 (UL60950)
UW = UY + ATEX Zone 2
UX = UY + ISA 12.12.01 Class 1 Div. 2

Customization

HH = Hirschmann Standard
HX = Hirschmann Extreme

Hardware Configuration

9 = No FPGA

Software Configuration

E = Entry (without configuration)

Software Release

99.9 = No Software

Maintenance

99 = No Maintenance Version

NOTE: The categories (**Customization, Hardware Configuration, Software Configuration** and **Software Release**) are optional.

HIRSCHMANN
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Entry-level Redundancy Switch

RED25

The RED25 family of switches offers maximum flexibility and a future-proof network design. This is an affordable solution for industrial network engineers, system integrators and machine builders working on entry-level applications.
Based on Hirschmann Operating System (HiOS) software, RED25 supports several redundancy technologies, while offering a comprehensive range of security features.

This Fast Ethernet (FE) switch is offered in two, four-port versions:

- Four FE TX ports
- Two FE TX ports, plus two FE small form-factor pluggable (SFP) ports

The SFP-based fiber support enables a flexible network structure by allowing to change fiber ports in the field. A comprehensive set of security features also offers all-around network protection. The RED25 switches guarantee a reliable network of applications with rigorous real-time requirements in accordance with IEEE 1588 v2. Further features include an extended operating temperature range from -40 °C to +70 °C, broad immunity to electrostatic discharges and high-vibration resistance.

Technical Information

Product Description	
Type	**RED25-xx**
Description	Managed, Industrial Switch DIN Rail, fanless Design
Port Type and Quantity	Ports in total: 4, 4 x 10/100 TX, or 2 x 10/100 TX/2 x FE SFP
Additional Interfaces	
V.24 Interface	1x RJ11 socket
USB	1x to connect auto-configuration adapter ACA22 USB
Fast ETHERNET Network Size	
Twisted Pair	0 to 100 m
Multimode Fiber (MM) 50/125 µm	50/125 µm, 0 to 5000 m, 8 dB link budget; 62.5/125 µm, 0 to 4000 m, 11 dB link budget (with M-Fast SFP-MM/LC)
Singlemode Fiber (SM) 9/125 µm	0 to 25 km, 13 dB link budget (with M-Fast SFP-SM/LC); 25 to 65 km, 10 to 29 dB link budget (with M-Fast SFP-SM+/LC)
Singlemode Fiber (LH) 9/125 µm	40 to 104 km, 10 to 29 dB link budget (with M-Fast SFP-LH/LC)
Network Size – Cascadibility	
Line -/Star Topology	any
Ring Structure	>200 Switches
Fault Recovery Time	0 ms with PRP or HSR
Power Requirements	
Operating Voltage	12 to 48 V DC redundant, or 24 V AC
Software	
Supported HiOS Software Levels	Layer 2 Standard (LS2)
Ambient Conditions	
Operating Temperature	0 °C to +60 °C or -40 °C to +70 °C, optional conformal coating
Relative Humidity (non-condensing)	10% to 95%
Mechanical Construction	
Dimensions (W x H x D)	46 x 130 x 105 mm
Weight	320 g
Protection Class	IP20
Approvals	
Safety of Industrial Control Equipment	EN 60950, UL 61010-1/-2-210 (pending)
Reliability	
MTBF Range	www.hirschmann.com
Warranty	5 years standard

NOTE: These are the prominent technical specifications. For complete technical specifications visit: www.hirschmann.com

Entry-level Redundancy Switch Configurations

RED25-04 00 2Z6 TT S DD Z9 HM E 2S 04.1.

Design

RED25 = Redundancy Switch

Number of Fast Ethernet Ports

04 = 4 Fast Ethernet TX Ports

Number of Gigabit Ethernet Ports

00 = not supported

Uplink Port Configuration

2T1 = 2 x Twisted Pair TX, RJ45, 100 Mbit/s
2Z6 = 2 x SFP Slots, 100 Mbit/s

Port Configuration

TT = 2 x Twisted Pair TX, RJ45, 100 Mbit/s

Temperature Range

S = 0 °C to + 60 °C
T = – 40 °C to + 70 °C
E = – 40 °C to + 70 °C Conformal Coating

Power Supply

DD = 2 x 12 to 48 V DC, 24 V AC

Approvals

Z9 = CE, FCC, EN 61131, EN 60950
Y9 = CE, FCC, EN 61131, EN 60950, UL 61010-1/-2-210

Pre-Configuration

HM = Fast MRP
HP = PRP
HH = HSR
HD = DLR

Software Configuration

E = Standard

Software Level

2S = HiOS Layer 2 Standard

Software Version

04.1. = Software Version 04.1.
XX.X = Current Software Release

HIRSCHMANN
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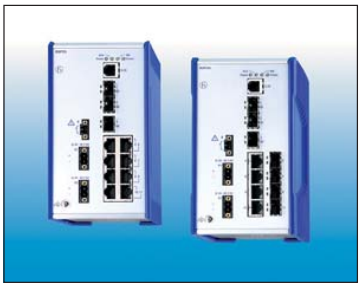
RSP Managed Industrial Ethernet Switch with Fanless Design



Fast and Gigabit Ethernet Networks

The new RSP family of switches with robust hardware and a powerful operating system, are able to withstand extremely harsh environmental conditions. For the first time, the integration of new redundancy protocols allows uninterrupted data communication. These new techniques, PRP (Parallel Redundancy Protocol) and HSR (High-availability Seamless Redundancy), are based on the international IEC 62439 standard and therefore guarantee future security and interoperability. Precision time synchronization in accordance with IEEE 1588v2, synchronizes sensors, drives, and measuring equipment. Gigabit Ethernet provides for a fast connection to the backbone, while connections to terminal equipment use 100Base-TX – either alone or in combination with 100Base-FX.

Technical Information

Product Description		
Type	**RSP Series Standard Temperature**	**RSP Series Extended Temperature**
Available Ports	11	
Enhanced Redundancy Functions	Fast MRP, HSR, PRP (variant dependent)	
Construction		
Mounting	DIN Rail	
Protection Class	IP30	
Dimensions (WxHxD)	90 x 164 x 120 mm	98 x 164 x 120 mm
Weight	1.2 kg	1.5 kg
Ambient Conditions		
Operating Temperature	0 °C to +60 °C, -40 °C to +70 °C, or -40 °C to +70 °C (inclusive Conformal Coating), IEC 60068-2-2 Dry Heat Test +85°C 16 Hours	
Storage/Transport Temperature	-40 °C to +85 °C	
Relative Humidity (non-condensing)	10% to 95%	
Conformal Coating	Yes (variant dependent)	
Interfaces		
V.24 Interface	1 x RJ11 socket	
USB Interface	1 x to connect auto-configuration adapter ACA31 (SD-card)	
Software		
Supported HiOS Software Levels	Layer 2 Standard (L2S), Layer 2 Advanced (L2A), Layer 3 Advanced (L3A)	
Power Requirements		
Operating Voltage	24/36/48 V DC redundant, or 60/120/250 V DC and 110/230 V AC	
PoE (802.3af) Ports Supported	n/a	
PoE Plus (802.3at) Ports Supported	n/a	
Regulatory Approvals		
Safety of Industrial Control Equipment	cUL508	
Hazardous Locations	IECEx, ISA12.12.01 Class 1 Div. 2 Group A, B, C, D, ATEX 100a Zone 2	
Ship	German Lloyd GL (pending)	
Transportation	NEMA TS2	
Railway (norm)	EN 50121-4	
Substation	IEC 61850-3, IEEE 1613	
Reliability		
MTBF Range	www.hirschmann.com	
Warranty	5 years standard	

NOTE: These are the prominent technical specifications. For complete technical specifications visit: www.hirschmann.com

Configurator

RSP Series Managed Industrial DIN Rail Switch Configurations

Fast and Gigabit Ethernet Networks

RSP-	3	5	08	03	3O6	TT	E	K9	Y9	HP	E	2S	XX.X

Design/Model
RSP = Rail Switch Power

Data Rates
2 = 10/100 Mbit/s Ports
3 = 10/100 Mbit/s and 10/100/1000 Mbit/s Ports

Hardware Type
0 = Standard
5 = Enhanced Redundancy (PRP, Fast MRP, HSR), Hardware IEEE 1588 v2

Fast Ethernet Ports
08 = 8 x 10/100 Mbit/s
11 = 11 x 10/100 Mbit/s

Gigabit Ethernet Ports
00 = None
03 = 3 x 10/100/1000 Mbit/s

Uplink Ports
3Z6 = 3 x SFP Slots (100 Mbit/s)
3O6 = 3 x SFP Slots (1000 Mbit/s)

Port Configuration
TT = All Twisted Pair/RJ45
ZT = 4 x SFP Slots (100 Mbit/s), 4 x (100 Mbit/s) Twisted Pair/RJ45

Temperature Range
S = Standard 0 °C to +60 °C
T = Extended -40 °C to +70 °C
E = Extended -40 °C to +70 °C inclusive Conformal Coating

Voltage Range
CC = 2 x 24/36/48 V DC (18 to 60 V DC)
K9 = 1 x 60/110/125/220/250 V DC (48 V to 320 V DC) and 110/120/220/230 V AC (88 to 265 V AC)
KK = 2 x 60/110/125/220/250 V DC (48 V to 320 V DC) and 110/120/220/230 V AC (88 to 265 V AC)

Approvals
Z9 = CE, FCC, EN 61131
Y9 = CE, FCC, EN 61131, cUL508
V9 = CE, FCC, EN 61131, IEC 61850, IEEE 1613
VY = CE, FCC, EN 61131, IEC 61850, IEEE 1613, cUL508

Customization
HS = Standard
HM = Fast MRP
HP = PRP
HH = HSR
HD = DLR

Software Configuration
E = Enhanced Encryption

Software Level
2S = HiOS Layer 2 Standard
2A = HiOS Layer 2 Advanced
3S = HiOS Layer 3 Standard

Software Release
XX.X = Current Software Release

NOTE: The part number categories (**Configuration** and **Software Release**) are optional.

HIRSCHMANN
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RSPS-Smart Managed Industrial DIN Rail Switch with Fanless Design

Fast and Gigabit Ethernet Networks

The RSP-Smart features six Fast Ethernet ports designed for twisted-pair cables (100 BASE-TX), which can also be equipped with two/four SFP transceivers (100 BASE-FX). All ports support precise time synchronization compliant with IEEE 1588v2. Security mechanisms such as role based access protect against unauthorized access. MRP (Media Redundancy Protocol) and RSTP (Rapid Spanning Tree) redundancy methods ensure high network availability. Switch versions also available provide support for the PRP (Parallel Redundancy Protocol) and HSR (High-Availability Seamless Redundancy) redundancy methods, ensuring zero switchover times. Power can be supplied via 24/36/48 V DC or alternatively via 110/250 V DC and 110/230 V AC. Other features of the RSP-Smart include IP30 protection rating, an extended operating temperature range from -40 °C to +70 °C, compact stainless steel housing and user-friendly configuration and diagnostics.

Technical Information

Product Description		
Type	**RSPS20-xx Series**	**RSPS25-xx Series**
Available Ports	Ports in total: 6; 6 x 10/100 TX, or 4 x 10/100 TX/2 x FE SFP, or 2 x 10/100 TX/4 x FE SFP Ports	
Enhanced Redundancy Functions	–	PRP, HSR
Construction		
Mounting	DIN Rail	
Protection Class	IP30	
Dimensions (W x H x D)	90 x 164 x 120 mm	
Weight	1.2 kg	
Ambient Conditions		
Operating Temperature	0 °C to +60 °C, or -40 °C to +70 °C, IEC 60068-2-2 Dry Heat Test +85°C 16 Hours	
Storage/Transport Temperature	-40 °C to +85 °C	
Relative Humidity (non-condensing)	10% to 95%	
Conformal Coating	Yes (variant dependent)	
Interfaces		
V.24 Interface	1 x RJ11 socket	
SD Interface	1 x to connect auto-configuration adapter ACA31 (SD-card)	
Software		
Supported HiOS Software Levels	Layer 2 Standard (L2S)	
Power Requirements		
Operating Voltage	24 to 48 V DC redundant, or 60 to 250 V DC and 110 to 230 V AC	
PoE (802.3af) Ports Supported	n/a	
PoE Plus (802.3at) Ports Supported	n/a	
Regulatory Approvals		
Safety	EN 60950-1, cUL508	
Hazardous Locations	n/a	
Ship	n/a	
Transportation	NEMA TS2	
Railway (norm)	EN 50121-4	
Substation	IEC 61850-3, IEEE 1613	
Reliability		
MTBF Range	www.hirschmann.com	
Warranty	5 years standard	

NOTE: These are the prominent technical specifications. For complete technical specifications visit: www.hirschmann.com

Configurator

RSPS-Smart Managed Industrial DIN Rail Switch Configurations

Fast Ethernet Networks

R	S	P	S	-	2	5	0	6	0	0	2	Z	6	T	T	E	M	9	Y	9	H	P	E	2	S	X	X	.	X

Design/Model
RSPS = Rail Switch Power

Data Rates
2 = 10/100 Mbit/s Ports

Hardware Type
0 = Standard
5 = Enhanced Redundancy (PRP, Fast MRP, HSR), Hardware IEEE 1588 v2

Fast Ethernet Ports
06 = 6 x 10/100 Mbit/s

Gigabit Ethernet Ports
00 = None

Uplink Ports
2T1 = 2 x Twisted Pair 10/100 Mbit/s Ethernet Ports
2Z6 = 2 x SFP Slots (100 Mbit/s)

Port Configuration
TT = All Twisted Pair/RJ45
YT = 2 x SFP Slots (100 Mbit/s), remaining Ports (100 Mbit/s) Twisted Pair/RJ45

Temperature Range
S = Standard 0 °C to +60 °C
T = Extended -40 °C to +70 °C
E = Extended -40 °C to +70 °C inclusive Conformal Coating

Voltage Range
CC = 2 x 24/36/48 V DC (18 to 60 V DC)
M9 = 1 x 110 to 250 V DC (88 to 320 V DC) and 110 to 230 V AC (88 to 265 V AC)
K9 = 1 x 60 to 250 V DC (48 to 320 V DC) and 110 to 230 V AC (88 to 265 V AC)

Approvals
Z9 = CE, FCC, EN 61131
Y9 = CE, FCC, EN 61131, cUL508
V9 = CE, FCC, EN 61131, IEC 61850, IEEE 1613
VY = CE, FCC, EN 61131, IEC 61850, IEEE 1613, cUL508

Customization
HS = Standard
HM = Fast MRP
HP = PRP
HH = HSR
HD = DLR

Software Configuration
E = Enhanced Encryption

Software Level
2S = HiOS Layer 2 Standard

Software Release
XX.X = Current Software Release

NOTE: The part number categories (**Configuration** and **Software Release**) are optional.

HIRSCHMANN
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RSPL-Lite Managed Industrial Ethernet Switch with Fanless Design

Fast and Gigabit Ethernet Networks

RSPL-Lite switches from Hirschmann offer eight Fast Ethernet ports and optionally, 2 Gigabit Combo Ports. The FE ports can be configured either with two SFP slots and six 100 BASE-TX or a combination of four SFP transceivers and four TX ports. The RSPL-Lite switches offer all-round carefree package for the highest level of security while insuring increased productivity and profitability. The switches feature comprehensive security functions like MAC based port security, Authentication (IEEE 802.1x), different privilege levels, management authentication via RADIUS, account locking, configurable password policy, audit trail, configurable login attempts, HTTPS certificate management, DoS prevention to provide all-round protection against network attacks.

Technical Information

Product Description		
Type	**RSPL20-xx Series**	**RSPL30-xx Series**
Available Ports	Ports in total: 8; 4 x 10/100 TX/4 x FE SFP, or 6 x 10/100 TX/2 x FE SFP ports	Ports in total: 10; 2 x GE Combo ports and 4 x 10/100 TX/4 x FE SFP, or 2 x GE Combo ports und 6 x 10/100 TX/2 x FE SFP ports
Construction		
Mounting	DIN Rail	
Protection Class	IP30	
Dimensions (WxHxD)	90 x 164 x 120 mm	118 x 164 x 120 mm
Weight	1.0 kg	1.2 kg
Ambient Conditions		
Operating Temperature	0 °C to +60 °C, or -40 °C to +70 °C, IEC 60068-2-2 Dry Heat Test +85°C 16 Hours	
Storage/Transport Temperature	-40 °C to +85 °C	
Relative Humidity (non-condensing)	10% to 95%	
Conformal Coating	Yes (variant dependent)	
Interfaces		
V.24 Interface	1 x RJ11 socket	
SD Interface	1 x to connect auto-configuration adapter ACA31 (SD-card)	
Software		
Supported HiOS Software Levels	Layer 2 Standard (L2S)	
Power Requirements		
Operating Voltage	24 to 48 V DC redundant, or 110 to 250 V DC and 110 to 230 V AC	
PoE (802.3af) Ports Supported	n/a	
PoE Plus (802.3at) Ports Supported	n/a	
Regulatory Approvals		
Safety	EN 60950-1, cUL508	
Hazardous Locations	n/a	
Ship	n/a	
Transportation	NEMA TS2	
Railway (norm)	EN 50121-4	
Substation	IEC 61850-3, IEEE 1613	
Reliability		
MTBF Range	www.hirschmann.com	
Warranty	5 years standard	

NOTE: These are the prominent technical specifications. For complete technical specifications visit: www.hirschmann.com

Configurator

RSPL-Lite Managed Industrial Ethernet Switch Configurations

Fast and Gigabit Ethernet Networks

R	S	P	L	-	3	0	0	8	0	2	2	O	7	T	T	E	M	9	Y	9	H	S	E	2	S	X	X	.	X

Design/Model

RSPL = Rail Switch Power

Data Rates

2 = 10/100 Mbit/s Ports
3 = 10/100 Mbit/s and 10/100/1000 Mbit/s Ports

Hardware Type

0 = Standard

Fast Ethernet Ports

08 = 8 x 10/100 Mbit/s

Gigabit Ethernet Ports

00 = None
02 = 2 x 10/100/1000 Mbit/s

Uplink Ports

2Z6 = 2 x SFP Slots (100 Mbit/s)
2O7 = 2 x SFP Combo Ports (100/1000 Mbit/s)

Port Configuration

TT = All Twisted Pair/RJ45
YT = 2 x SFP Slots (100 Mbit/s), 6 x (100 Mbit/s) Twisted Pair/RJ45
ZT = 4 x SFP Slots (100 Mbit/s), 4 x (100 Mbit/s) Twisted Pair/RJ45

Temperature Range

S = Standard 0 °C to +60 °C
T = Extended -40 °C to +70 °C
E = Extended -40 °C to +70 °C inclusive Conformal Coating

Voltage Range

CC = 2 x 24 to 48 V DC (18 to 60 V DC)
M9 = 1 x 110 to 250 V DC (88 to 320 V DC) and 110 to 230 V AC (88 to 265 V AC)

Approvals

Z9 = CE, FCC, EN 61131
Y9 = CE, FCC, EN 61131, cUL508
V9 = CE, FCC, EN 61131, IEC 61850, IEEE 1613
VY = CE, FCC, EN 61131, IEC 61850, IEEE 1613, cUL508

Customization

HS = Standard

Software Configuration

E = Enhanced Encryption

Software Level

2S = HiOS Layer 2 Standard

Software Release

XX.X = Current Software Release

NOTE: The part number categories (**Configuration** and **Software Release**) are optional.

HIRSCHMANN
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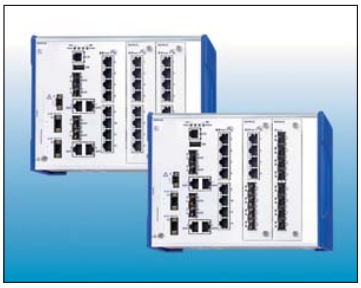
RSPE – Expandable Managed Industrial DIN Rail Switch with Fanless Design



Fast and Gigabit Ethernet Networks

The compact and extremely robust RSPE switches comprise a basic device with eight twisted pair ports and four combination ports that support Fast Ethernet or Gigabit Ethernet. The basic device – optionally available with the HSR (High-Availability Seamless Redundancy) and PRP (Parallel Redundancy Protocol) uninterruptible redundancy protocols, plus precise time synchronization in accordance with IEEE 1588 v2 – can be extended to provide up to 28 ports by adding two media modules. Different combinations of copper or fiber ports (plus PoE/PoE+) can be selected depending on the module type.

The RSPE switches also provide comprehensive management, diagnostic and filtering features, as well as numerous redundancy methods, bringing all-around security to your network. The Layer 3 version offers full wired speed IPv4 routing with lowest latency.

Further features include an extended operating temperature range from -40 °C to +70 °C, high vibration resistance and broad immunity to electrostatic discharges.

Technical Information

Product Description		
Type	**RSPE30-xx, RSPE32-xx**	**RSPE35-xx, RSPE37-xx**
Description	Modular Managed Industrial Switch DIN Rail, fanless design	
Port Type and Quantity	Ports in total up to 28, Basic unit: 4 x FE/GE Combo ports plus 8 FE TX ports, expandable with two slots for media modules with 8 FE ports each	
Number of Fiber Ports	16 fiber ports: 4 GE/FE basic unit plus 12 FE with media modules	
Power over Ethernet (PoE)	PoE, PoE+ option with up to 24 Ports and 120 Watt	
Construction		
Mounting	DIN Rail	
Protection Class	IP30	
Dimensions (WxHxD)	209 (217) x 164 x 120 mm (EEC)	
Weight	2.2 kg; 2.5 kg EEC, plus media modules	
Power Requirements		
Operating Voltage	24 to 48 V DC redundant, or 60 to 250 V DC and 110 to 230 V AC optional redundant, PoE/PoE+ with 48/54 V DC	
Power Consumption	maximum 34 W plus PoE	maximum 36 W plus PoE
Interfaces		
V.24 Interface	1 x RJ11 socket	
USB and SD Card Slot	1 x to connect auto-configuration adapter ACA22 (USB) or ACA31 (SD-card)	
Software		
Supported HiOS Software Levels	Layer 2 Standard (L2S), Layer 2 Advanced (L2A) or Layer 3 Standard (L3S)	

NOTE: These are the prominent technical specifications. For complete technical specifications visit: www.hirschmann.com

Technical Information

Product Description Media Modules for RSPE			
Type	**RSPM20-4Z64Z6xx**	**RSPM20-4T14Z6xx RSPM22-4T14Z6xx (PoE type)**	**RSPM20-4T14T1xx RSPM22-4T14T1xx (PoE type)**
			
Port Type and Quantity	8 FE SFP slots	4 FE SFP slots / 4 FE TX ports (PoE option)	8 FE TX ports (PoE option)
Weight	290 g	220 g	130 g

Common Technical Data Basic Units and Media Modules	
Type	**RSPE30, RSPE32, RSPE35, RSPE37, RSPM20, RSPM22**
Gigabit ETHERNET Network Size	
Twisted Pair (TP)	0 to 100 m
Multimode Fiber (MM) 50/125 µm	0 to 550 m, 7.5 dB link budget; 62.5/125 µm 0 to 275 m, 7.5 dB link budget (with M-SFP-SX/LC)
Singlemode Fiber (SM) 9/125 µm	0 to 20 km, 11 dB link budget (with M-SFP-LX/LC); 14 to 42 km, 5 to 20 dB link budget (with M-SFP-LX+/LC)
Singlemode Fiber (LH) 9/125 µm	23 to 80 km, 5 to 22 dB link budget (with M-SFP-LH/LC); 71 to 128 km, 15 to 30 dB link budget (with M-SFP-LH+/LC)
Fast ETHERNET Network Size	
Twisted Pair (TP)	0 to 100 m
Multimode Fiber (MM) 50/125 µm	0 to 5000 m, 8 dB link budget; 62.5/125 µm, 0 to 4000 m, 11 dB link budget (with M-Fast SFP-MM/LC)
Singlemode Fiber (SM) 9/125 µm	0 to 25 km, 13 dB link budget (with M-Fast SFP-SM/LC); 25 to 65 km, 10 to 29 dB link budget (with M-Fast SFP-SM+/LC)
Singlemode Fiber (LH) 9/125 µm	47 to 104 km, 10 to 29 dB link budget (with M-Fast SFP-LH/LC)
Network Size – Cascadibility	
Line-/star Topology	Any
Ring Structure	>200 switches MRP
Fault Recovery Time	0ms with PRP or HSR
Ambient Conditions	
Operating Temperature	0 °C to +60 °C, or -40 °C to +70 °C, IEC 60068-2-2 Dry Heat Test +85 °C 16 Hours, optional Conformal Coating
Storage/Transport Temperature	-40 °C to +85 °C
Relative Humidity (non-condensing)	5% to 95%
Approvals Configurable	
Safety of Industrial Control Equipment	EN 60950-1, EN 61131-2 , UL61010-1/-2-201
Substation	IEC 61850-3, IEEE 1613
Ship	GL – Germanischer Lloyd (pending)
Hazardous Locations	IECEx, ISA12.12.01 Class 1 Div. 2 Group A, B, C, D, ATEX 100a Zone 2
Transportation	NEMA TS2, EN 50121-4
Scope of Delivery and Accessories	
Device Replacement and Logging	ACA31 (SD card) 942 074-001, ACA22-USB EEC 942 124-001
Empty Module Slot Cover	RSPM-cover: Order No. 942 131-001
Reliability	
Warranty	5 years (standard)

NOTE: These are the prominent technical specifications. For complete technical specifications visit: www.hirschmann.com

Configurator

RSPE Switch Configurations

R	S	P	E	3	5	-	2	4	0	4	4	O	7	T	9	9	-	T	K	9	V	T	9	9	H	H	P	E	2	A	0	4	.	0

Design

RSPE30 = Standard Version
RSPE32 = Standard Version with PoE(+) Capability
RSPE35 = Standard Version with Enhanced Redundancy HSR, PRP, Fast MRP
RSPE37 = Standard Version with Enhanced Redundancy HSR, PRP, Fast MRP and PoE(+)

Number of Fast Ethernet Ports

24 = 24 x 10/100 Mbit/s

Number of Gigabit Ethernet Ports

04 = 04 x 10/100/1000 Mbit/s

Uplink Ports

407 = 04 x Combo Ports (10/100/1000 Mbit/s)

Port Configuration

T99 = 04 x Combo Ports (10/100/1000 Mbit/s)

Temperature Range

S = 0 °C to +60 °C
T = -40 °C to +70 °C
E = -40 °C to +70 °C inclusive Conformal Coating

Power Supply

CC = 02 x 24 to 60 V DC
K9 = 01 x 60 to 250 V DC and 110 to 230 V AC
KK = 02 x 60 to 250 V DC and 110 to 230 V AC
KK = 2 x 60/110/125/220/250 V DC (48 V to 320 V DC) and 110/120/220/230 V AC (88 to 265 V AC)
PP = 02 x 47 to 57 V DC (PoE) or 53 to 57 V DC (PoE+)

Approvals

Z9 = CE, FCC, EU Safety
X9 = CE, FCC, EU Safety, US Safety, Hazardous Locations
VY = CE, FCC, EU Safety, US Safety, Substation
VU = CE, FCC, EU Safety, US Safety, Substation, Marine
VT = CE, FCC, EU Safety, US Safety, Substation, Transportation
UY = CE, FCC, EU Safety, US Safety, Marine
UT = CE, FCC, EU Safety, US Safety, Marine, Transportation
Y9 = CE, FCC, EU Safety, US Safety
V9 = CE, FCC, EU Safety, Substation
U9 = CE, FCC, EU Safety, Marine
T9 = CE, FCC, EU Safety, Transportation
TY = CE, FCC, EU Safety, US Safety, Transportation

Software Packages

99 = Reserved

OEM Type

HH = Standard

Hardware Configuration

S = Standard
M = Fast MRP
P = PRP
H = HSR
D = HSR

Software Configuration

E = Hirschmann Standard Configuration

Software Version

2S = HiOS Layer 2 Standard
2A = HiOS Layer 2 Advanced
3S = HiOS Layer 3 Standard

Software Release

04.0 = Software Version 04.0
XX.X = Current Software Release

NOTE: The last four categories (**OEM type, configurations, software version** and **software release**) are optional.

RSPM Media Module Configurations

Configurator

RSPM22-4T1 4T1-T Z9 HH S E XX.X

Design

RSPM20 = Standard Version
RSPM22 = Standard Version with PoE(+) Capability

Port Configuration A

4Z6 = 4 x SFP Slot (100 Mbit/s)
4T1 = 4 x (100 Mbit/s) Twisted Pair (TX)/RJ45

Port Configuration B

4Z6 = 4 x SFP Slot (100 Mbit/s)
4T1 = 4 x (100 Mbit/s) Twisted Pair (TX)/RJ45

Temperature Range

S = 0 °C to +60 °C
T = -40 °C to +70 °C
E = -40 °C to +70 °C inclusive Conformal Coating

Approvals

Z9 = CE, FCC, EU Safety
Y9 = CE, FCC, EU Safety, US Safety
X9 = CE, FCC, EU Safety, US Safety, Hazardous Locations
V9 = CE, FCC, EU Safety, Substation
VY = CE, FCC, EU Safety, US Safety, Substation
VU = CE, FCC, EU Safety, US Safety, Substation, Marine
VT = CE, FCC, EU Safety, US Safety, Substation, Transportation
U9 = CE, FCC, EU Safety, Marine
UY = CE, FCC, EU Safety, US Safety, Marine
UT = CE, FCC, EU Safety, US Safety, Marine, Transportation
T9 = CE, FCC, EU Safety, Transportation
TY = CE, FCC, EU Safety, US Safety, Transportation

OEM Type

HH = Customization

Hardware Configuration

S = Standard

Software Configuration

E = Entry (without configuration)

Software Release

XX.X = Current Software Release
99.9 = No Software Release

NOTE: The last four categories (**OEM type, hardware configuration, software configuration** and **software release**) are optional.

HIRSCHMANN
A BELDEN BRAND

RSR Series Über-Rugged™
Managed DIN Rail Mount Ethernet Switches

Fast Ethernet Uplink Ports and Gigabit Ethernet Uplink Ports

RSR series switches are available with optional gigabit ports and an extended temperature range of -40 °C to +85 °C. Ultra-fast ring recovery times under 10 ms are possible using HIPER-Ring redundancy protocol and the switch's robust metal housing offers extended RFI/EMI and vibration immunity.

The term "Über-Rugged" is the only way to describe a switch that goes above and beyond the already rugged capabilities of Hirschmann switches by being able to provide maximum uptime in extreme environmental conditions.

Technical Information

Product Description		
Type	**RSR20 Series**	**RSR30 Series**
Available Ports	8 to 9	9 to 10
Construction		
Mounting	DIN Rail	
Protection Class	IP30	
Dimensions (WxHxD)	120 x 145 x 115 mm	
Weight	appr. 1 kg	
Ambient Conditions		
Operating Temperature	0 °C to +60 °C, -40 °C to +85 °C, or -40 °C to +85 °C (optional Conformal Coating)	
Storage/Transport Temperature	-40 °C to +85 °C	
Relative Humidity (non-condensing)	10% to 95%	
Conformal Coating	Yes (variant dependent)	
Interfaces		
V.24 Interface	1 x RJ11 socket	
USB Interface	1 x USB (ACA21-USB adapter)	
Software		
Supported Classic Software Levels	Layer 2 Professional (L2P)	
Power Requirements		
Operating Voltage	24/36/48 V DC or 60/120/250 V DC, 110/230 V AC	
PoE (802.3af) Ports Supported	n/a	
PoE Plus (802.3at) Ports Supported	n/a	
Regulatory Approvals		
Safety of Industrial Control Equipment	cUL508	
Hazardous Locations	Class 1 Div 2 (cUL1604)	
Ship	Germanischer Lloyd	
Transportation	NEMA TS2	
Railway (norm)	EN 50121-4	
Substation	IEC 61850-3, IEEE 1613	
Reliability		
MTBF Range	45.6 to 61.8 years	49.2 to 57.9 years
Warranty	5 years standard	

NOTE: These are the prominent technical specifications. For complete technical specifications visit: www.hirschmann.com

Configurator

RSR Über-Rugged™ Managed DIN Rail Mount Ethernet Switch Configurations

Fast Ethernet Switch RSR20 and Gigabit Ethernet Switch RSR30

R S 3 0 - 0 6 | 0 2 | T 1 | Z Z | Z 6 | S | C | C | H | P | H | H | X X . X

Design/Models
RSR20 = Rail Switch Rugged Fast Ethernet
RSR30 = Rail Switch Rugged Gigabit Ethernet

Fast Ethernet Ports

06 = 6 x 10/100 Mbit/s	08 = 8 x 10/100 Mbit/s
07 = 7 x 10/100 Mbit/s	09 = 9 x 10/100 Mbit/s

Gigabit Ethernet Ports

00 = 0 x 1000 Mbit/s	03 = 3 x 1000 Mbit/s
02 = 2 x 1000 Mbit/s (only RSR30-08)	

Type 1 Uplink Port

T1 = 1 x Twisted-Pair RJ45	06 = SFP Slot Gigabit
M2 = 1 x Multimode SC	07 = Combo Port Gigabit
M4 = 1 x Multimode ST	MM = 2 x Multimode SC
S2 = 1 x Singlemode SC	JJ = 2 x Multimode MTRJ
S4 = 1 x Singlemode ST	NN = 2 x Multimode ST
L2 = 1 x Long Haul SC	UU = 2 x Singlemode SC
G2 = 1 x Long Haul + SC	VV = 2 x Singlemode ST
CC = 2 x Combo Port Gigabit	LL = 2 x Singlemode Long Haul SC
OO = 2 x SFP Slots Gigabit	GG = 2 x Singlemode Long Haul+ SC (200 km)

Type 2 Uplink Port

T1 = 1 x Twisted-Pair RJ45 (only if T1 is selected for Type 1 Uplink Port)	S2 = 1 x Singlemode SC S4 = 1 x Singlemode ST L2 = 1 x Singlemode Long Haul SC G2 = 1 x Singlemode Long Haul+ SC (200 km)
M2 = 1 x Multimode SC	06 = SFP Slot Gigabit
M3 = 1 x Multimode MTRJ (only if JJ selected above)	07 = Combo Port Gigabit
M4 = 1 x Multimode ST	**ZZ** = 2 x SFP Slots Gigabit (only RSR30-08)

Remaining Ports

T1 = 1 x Twisted-Pair RJ45	**Z6** = SFP Slot (100 Mbit/s) (only RSR30-07)

Temperature Range

S = 0 °C to +60 °C	F = -40 °C to +85 °C inclusive Conformal Coating
U = -40 °C to +85 °C	

Voltage Range 1

C = 24/36/48 V DC	K = 60/120/250 V DV and 110/230 V AC

Voltage Range 2

C = 24/36/48 V DC	K = 60/120/250 V DC and 110/230 V AC (only if K is selected for Voltage Range 1)
9 = None (only if K is selected above)	

Approvals
H = cUL508, Germanischer Lloyd, IEC 61850, IEEE 1613, EN 50121

Software Version (see page 12-15 for additional Management Software Functionality details)
P = Professional

Configuration
H = Standard

OEM Type
H = Standard

Software Release
XX.X = Current Software Release

NOTE: The last three part number categories (**Configuration, OEM Type** and **Software Release**) are optional.