HIRSCHMANN
A BELDEN BRAND

SPIDER III Standard and Premium Line Switches

Be certain.
Belden.

Delivering reliable communication – in the harshest environments – through proven Hirschmann technology.

Your needs define Standard or Premium.

HIRSCHMANN
A BELDEN BRAND

Select a Standard or Premium Line Unmanaged Switch to Meet Your Needs

Transferring large amounts of data in harsh environments and in industrial applications just got easier with the plug-and-play technology built into this full-range line of unmanaged switches from Hirschmann.

The SPIDER III family of industrial Ethernet switches offers both Standard and Premium options. Which to use depends on the specific requirements for your application.

Be certain.
Belden.

Compare Features – Which best meets your needs: Standard or Premium?

Choose from our SPIDER III Standard or Premium series of unmanaged switches.
Both are easy to install and will help you maximize your network availability.

SPIDER III STANDARD LINE: Cost-Effective and Compact

The Standard Line delivers increased performance and reduces your costs, while enabling you to take advantage of Ethernet technology.

- Designed especially for reliable operation in harsh industrial conditions
- Small size saves space in tight areas and makes installation simple and fast
- High data throughput achieved by Gigabit data speeds, while fiber communication options ensure long-term scalability
- Reduces overall lifecycle costs with low power consumption

SPIDER III PREMIUM LINE: Full-Featured and User Customizable

The SPIDER III Premium switches expand on the benefits of the Standard Line offerings by adding configurable switch functionality typically only found in managed switches. Plus, you'll find additional hardware options and expanded industrial certifications for broader deployment in what matters – your applications. Easy installation and customization of each switch's ports for specific applications through the SPIDER's USB port and free stand-alone software tool.

- Withstands extreme industrial conditions due to an extended temperature range, a ruggedized metal housing and an optional conformal coating which protects the electronics against dust, humidity and noxious gases.
- Meets additional industry standards and approvals, including those for transportation, process automation and marine applications.

		Standard Line	Premium Line
Ports	Max. Port Count	8	9
	Fast Ethernet Ports TX/FX	Up to 8/2	Up to 9/3
	Gigabit Ethernet Ports TX/FX	Up to 8/2	Up to 8/1
PoE	PoE Ports	–	4 (Q4 2016)
Power Supply	Redundant Power Input	–	✓
	Standard Voltage Power Supply	12/24 V DC	12/24 V DC
	Extended Voltage Power Supply	–	12/24/48 V DC, 24 V AC (optional)
Enclosure	Dimensions (W x H x D – w/o Terminal Block)	26/38 x 102 x 79 mm, 45 x 110 x 88 mm	39/49/56 x 135 x 117 mm
	Protection Class, Material	IP30, plastic	IP40, metal
Temperature Range	Standard	0 °C to +60 °C	–
	Extended	-40 °C to +70 °C *	-40 °C to +70 °C
	Conformal Coating	–	✓ (optional)
Interfaces	Plug-in Terminal Block (Screw Clamps Standard, Spring Clamps are Optional)	✓	✓
	Fault Relay (Power, Port Break)	–	✓
	USB Port for Configuration	–	✓ **
Features	Jumbo Frames (up to 9014 Bytes)	–	✓
	Quality of Service (QoS)	–	✓
	Energy Efficient Ethernet (IEEE 802.3az)	–	✓
	Disable Unused Ports	–	✓
	Broadcast/Multicast Storm Protection	–	✓
	PROFINET CC-A Compliant	–	✓
Approvals	Safety	EN 60950-1, EN 61131-2, cUL61010-1/-2-201	EN 60950-1, EN 61131-2, cUL61010-1/-2-201
	Ship	–	GL, DNV
	Hazardous Locations	–	ISA12.12.01 C1D2, ATEX Zone 2
	Transportation	–	EN 50121-4, E1
	Substation	–	IEC 61850-3, IEEE 1613 ***

* Applies only for SPIDER-SL-20-05T1999999, SPIDER-SL-20-08T1999999, SPIDER-SL-20-04T1M29999, SPIDER-SL-20-04T1M49999
** Doesn't apply for media converters • *** Applies only for media converters

HIRSCHMANN
A BELDEN BRAND

Markets and Applications

SPIDER III Standard Line switches are suitable for both harsh environments and applications in which switch management is unnecessary. This makes them the ideal choice for the OEM machine manufacturing industry where reliability and cost-effectiveness are the driving decision makers.

The Premium Line offers similar port densities and media mixes, but meet a broader range of market-specific certifications, standards and approvals. Approvals include those for use in process industries (ISA12.12.01 and ATEX Class 2), transportation applications (EN 50121-4 and E1) and marine applications (Navy GL and DNV). In addition the switches fulfill PROFINET Conformance Class A requirements to set up PROFINET networks.

PROFINET CC-A FIT

Manufacturing and Machine Building

Due to the increasing amount of Ethernet-based field devices like sensors and actuators, there is a need for Industrial Ethernet switches with a higher port count and data rates at the field level. The SPIDER III standard switches utilize the latest Hirschmann technology to create a cost-effective way to take advantage of the Ethernet. Furthermore the compact design of the switches saves spaces in tight areas, such as cabinets.

Transportation

With a lot of market-specific certifications, the Premium Line switches are not only ideal for manufacturing and machine building, but also for transportation applications.

- EN 50121-4 for use on railway lines
- E1 for use in road vehicles
- GL and DNV approval for marine applications

Automation

The Standard Line switches employ a plug-and-play principle that allows for easy installation without compromising quality or reliability. And the low power consumption allows for the reduction of overall lifecycle costs.

Hazardous Locations

The premium switches are designed for the special requirements of process automation. They meet the relevant industry standards (e.g. ISA12.12.01 C1D2 and ATEX, Zone 2), provide very high operational reliability even under extreme conditions, and also long-term reliability and flexibility.

Physical Security

Due to Gigabit speed the SPIDER switches can quickly transmit large volume of data at high speed. This increased performance results in uninterrupted and smooth communication.

USB Configuration Interface

The Hirschmann SPIDER III Premium switches come with a USB interface that allows for quick customization of individual port parameters. The easy-to-use Switch Programing Tool makes it easy to generate a configuration file and transfer it to a switch using a USB drive. This free application is available for both Windows and Linux operating systems. And it's portable so it doesn't require any installation.

In order to document the configuration of a particular switch, the Switch Programming Tool can also export a detailed configuration report in PDF format. Plus, you can download the running configuration of a switch and open it with the Switch Programming Tool so the configuration can be read and edited.

Four Easy Steps to Configure a Premium Switch

1. Use the Switch Programming Tool to configure all switch and port parameters.
2. Save the configuration file to a USB drive.
3. Connect the USB drive to the switch.
4. Power-cycle the switch to transfer and apply the new configuration.

Benefits

- Turn off unused ports to help secure the network.
- Use the potential free-fault relay contact to supervise redundant power status or any port's link status without management software.
- During periods of heavy traffic the flow control mechanism – which acts as an overload protection for the device – holds off additional traffic from the network and ensures that no data packets are lost.
- Activate Broadcast and/or Multicast Storm protection to limit traffic on the ports when Broadcast or Multicast data packets flood the device.
- Enable or disable the transmission of large data packets (jumbo frames) to increase network efficiency.
- Eliminate duplex mismatch errors by matching Auto-Negotiation, Speed and Duplex Mode parameters to the end device settings.
- Use the Quality of Service function to prevent time-critical data traffic (language, video or real-time data) from being disrupted by less time-critical data traffic during periods of heavy traffic. By enabling this feature the switches can be applied in PROFINET conformance class A applications.
- Regulate energy efficiency depending on network traffic through the Energy Efficient Ethernet standard. Save energy by operating the physical layer of a link in low power mode when there is no traffic to send.

Overview of Configurable Parameters

	Parameter	Values
Global	Power Supply Unit 1/2 Alarm	Enable/Disable
	Aging Time	0s … 1048575s
	QoS 802.1 D/p Mapping	VLAN Priority 0 … 7, Traffic Class 0 … 3
	QoS DSCP Mapping	DSCP value 0 … 63, Traffic Class 0 … 3
Per Port	Port State	On/Off
	Flow Control	On/Off
	Link Alarm	On/Off
	Broadcast Mode	On/Off
	Broadcast Threshold	0% … 100%
	Multicast Mode	On/Off
	Multicast Threshold	0% … 100%
	Jumbo Frames	On/Off
	QoS Trust Mode	Untrusted, TrustDot1p, TrustIpDscp
	Port Priority	0 … 7
Per TX Port	Auto-Negotiation	On/Off
	Speed	10 Mbit/s, 100 Mbit/s
	Duplex Mode	FDX/HDX
	Auto-Crossing	On/Off
	MDI State	MDI, MDI-X
	Energy Efficient Ethernet	On/Off
Per FX Port	Duplex Mode	FDX/HDX

The stand-alone SPIDER Switch Programming Tool runs without installation (even from a USB drive), allowing for the customization of each individual port to the application's needs.

HIRSCHMANN
A BELDEN BRAND

Technical Information – SPIDER III Standard and Premium Line Switches

Product Description		
Type	**SPIDER III Standard Line Switches**	**SPIDER III Premium Line Switches**
Description	Unmanaged, Industrial ETHERNET Rail Switch, fanless design, store and forward switching mode, electrical and optical Fast-Ethernet (10/100 MBit/s) and Gigabit-Ethernet (10/100/1000 MBit/s), IP30 plastic housing	Unmanaged, configurable Industrial ETHERNET Rail Switch, fanless design, store and forward switching mode, electrical and optical Fast-Ethernet (10/100 MBit/s) and Gigabit-Ethernet (10/100/1000 MBit/s), USB port for configuration, IP40 metal housing
Port Type and Quantity	Up to 8 FE or GE ports, thereof max. 2 FE or GE FX ports	Up to 9 FE or 8 GE ports, thereof max. 3 FE or 1 GE FX ports
Interfaces		
Power Supply/Signaling Contact	1 x plug-in terminal block, 3-pin, with spring clamps	1 x plug-in terminal block, 6-pin, with spring clamps
USB Interface	n/a	1 x USB for configuration
Power Requirements		
Operating Voltage	12/24 V DC (9.6 to 32 V DC)	12/24/48 V DC (9.6 to 60 V DC), 24 V AC, redundant
Current Consumption at 24 V DC	Max. 555 mA depending on the variant	Max. 360 mA depending on the variant
Power Consumption	1.3 to 13.3 W depending on the variant	2.4 to 9.0 W depending on the variant
Service		
Diagnostics	LEDs (power, link status, data)	LEDs (power, link status, data), Fault Relay
Configurable Parameters	n/a	Global settings: power supply unit alarm, aging time, QoS 802.1p mapping, QoS DSCP mapping Port settings: flow control, port state, broadcast mode/threshold, multicast mode/threshold, QoS Trust Mode, port priority, link alarm TX port settings: auto-negotiation, speed, duplex mode, auto-crossing, MDI state, energy efficient ethernet FX port settings: duplex mode
Ambient Conditions		
Operation Temperature	0 °C to +60 °C, -40 °C to +70 °C (depending on the variant)	-40 °C to +70 °C
Storage/Transport Temperature	-40 °C to +85 °C	
Relative Humidity (non-condensing)	10% to 95%	
Protective Paint on PCB	n/a	Conformal Coating
Mechanical Construction		
Dimensions (W x H x D)	26/38 x 102 x 79 mm, 45 x 110 x 88 mm (w/o terminal block) depending on the variant	39/49/56 x 135 x 117 mm (w/o terminal block) depending on the variant
Mounting	DIN Rail, Wall Mounting (requires a Mounting Plate)	
Weight	100 g to 250 g depending on the variant	400 g to 510 g depending on the variant
Protection Class	IP30 (plastic housing)	IP40 (metal housing)
Mechanical Stability		
IEC 60068-2-27 Shock	15 g, 11 ms duration, 18 shocks	
IEC 60068-2-6 Vibration	3.5 mm, 5 Hz to 8.4 Hz, 10 cycles, 1 octave/min. 1 g, 8.4 Hz to 150 Hz, 10 cycles, 1 octave/min.	
EMC Interference Immunity		
EN 61000-4-2 Electrostatic Discharge (ESD)	4 kV contact discharge, 8 kV air discharge	
EN 61000-4-3 Electromagnetic Field	10 V/m (80 to 1000 MHz)	
EN 61000-4-4 Fast Transients (Burst)	2 kV power line, 4 kV data line	
EN 61000-4-5 Surge Voltage	Power line: 2 kV (line/earth), 1 kV (line/line), 1 kV data line	
EN 61000-4-6 Conducted Immunity	10 V (150 kHz to 80 MHz)	
EMC Emitted Immunity		
FCC CFR47 Part 15	FCC CFR47 Part 15 Class A	
EN 55022	EN 55022 Class A	
Approvals		
Safety of Industrial Control Equipment	cUL 61010-1/61010-2-201 (pending)	
Hazardous Locations	n/a	ISA12.12.01 Class 1 Div. 2, ATEX Class 2 (pending)
Ship	n/a	Germanischer Lloyd, DNV (pending)
Railway	n/a	EN 50121-4 (pending)
Road Vehicles	n/a	E1 (pending)
Substation	n/a	EN 61850-3, IEEE 1613 (pending)

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

SPIDER III Standard and Premium Line Switch Configurations

S P I D E R - P L - 2 0 - 0 8 T 1 | 9 9 | 9 9 | 9 9 | T | Z 9 | H H | H H

Design

SPIDER-SL-20 = Standard Line Fast Ethernet Ports
SPIDER-SL-40 = Standard Line Gigabit Ethernet Ports
SPIDER PL-20 = Premium Line Fast Ethernet Ports
SPIDER PL-40 = Premium Line Gigabit Ethernet Ports

Number of Copper Ports

01T1 = 1 x Twisted-Pair, RJ45
05T1 = 5 x Twisted-Pair, RJ45
07T1 = 7 x Twisted-Pair, RJ45
04T1 = 4 x Twisted-Pair, RJ45
06T1 = 6 x Twisted-Pair, RJ45
08T1 = 8 x Twisted-Pair, RJ45

Type 1 Fiber Port

O6 = SFP Slot (100/1000 Mbit/s)
S2 = Singlemode, SC (100 Mbit/s)
M4 = Multimode, ST (100 Mbit/s)
Z6 = SFP Slot (100 Mbit/s)
M2 = Multimode, SC (100 Mbit/s)
99 = Empty

Type 2 Fiber Port

O6 = SFP Slot (100/1000 Mbit/s
S2 = Singlemode, SC (100 Mbit/s)
99 = Empty
Z6 = SFP Slot (100 Mbit/s)
M2 = Multimode, SC (100 Mbit/s)

Type 3 Fiber Port

Z6 = SFP Slot (100 Mbit/s)
99 = Empty

Temperature Range

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

Approvals

Z9 = CE, FCC, EN 61131, EN 60950
X9 = CE, FCC, EN 61131, EN 60950, cUL61010, ISA12.12.01 C1D2
UY = CE, FCC, EN 61131, EN 60950, cUL61010, DNVGL
R9 = CE, FCC, EN 61131, EN 60950, e1
Y9 = CE, FCC, EN 61131, EN 60950, cUL61010
W9 = CE, FCC, EN 61131, EN 60950, ATEX Zone 2
TY = CE, FCC, EN 61131, EN 60950, cUL61010, EN 50121-4
WV = CE, FCC, EN 61131, EN 60950, cUL61010, ISA12.12.01 C1D2, ATEX Zone 2, DNVGL, EN 50121-4, e1
WW = CE, FCC, EN 61131, EN 60950, cUL61010, ISA12.12.01 C1D2, ATEX Zone 2, DNVGL, EN 50121-4, IEC 61850-3, IEEE 1613

Customization

HK = Plug-in Terminal Block with Spring Clamps
HH = Standard

Configuration

HV = Extended Voltage Range: 12/24/48 V DC, 24 V AC
HH = Standard Voltage Range: 12/24 V DC

Common SPIDER III Standard and Premium Line Switch Configurations

Order Code	Product Code	Description
942132001	SPIDER-SL-20-05T1999999SY9HHHH	5 x 10/100Base-TX
942132016	SPIDER-SL-20-05T1999999TY9HHHH	5 x 10/100Base-TX*
942132002	SPIDER-SL-20-08T1999999SY9HHHH	8 x 10/100Base-TX
942132017	SPIDER-SL-20-08T1999999TY9HHHH	8 x 10/100Base-TX*
942132003	SPIDER-SL-40-05T1999999SY9HHHH	5 x 10/100/1000Base-T
942132004	SPIDER-SL-40-08T1999999SY9HHHH	8 x 10/100/1000Base-T
942132005	SPIDER-SL-20-01T1M29999SY9HHHH	1 x 10/100Base-TX, 1 x 100Base-FX, MM-SC
942132006	SPIDER-SL-20-01T1S29999SY9HHHH	1 x 10/100Base-TX, 1 x 100Base-FX, SM-SC
942132007	SPIDER-SL-20-04T1M29999SY9HHHH	4 x 10/100Base-TX, 1 x 100Base-FX, MM-SC
942132018	SPIDER-SL-20-04T1M29999TY9HHHH	4 x 10/100Base-TX, 1 x 100Base-FX, MM-SC*
942132008	SPIDER-SL-20-04T1M49999SY9HHHH	4 x 10/100Base-TX, 1 x 100Base-FX, MM-ST
942132019	SPIDER-SL-20-04T1M49999TY9HHHH	4 x 10/100Base-TX, 1 x 100Base-FX, MM-ST*
942132009	SPIDER-SL-20-04T1S29999SY9HHHH	4 x 10/100Base-TX, 1 x 100Base-FX, SM-SC
942132010	SPIDER-SL-20-06T1M29999SY9HHHH	6 x 10/100Base-TX, 1 x 100Base-FX, MM-SC
942132011	SPIDER-SL-20-06T1S29999SY9HHHH	6 x 10/100Base-TX, 1 x 100Base-FX, SM-SC
942132012	SPIDER-SL-20-06T1M2M299SY9HHHH	6 x 10/100Base-TX, 2 x 100Base-FX, MM-SC
942132013	SPIDER-SL-20-06T1S2S299SY9HHHH	6 x 10/100Base-TX, 2 x 100Base-FX, SM-SC
942132014	SPIDER-SL-40-06T1O69999SY9HHHH	6 x 10/100/1000Base-T, 1 x FE/GE SFP slot
942132015	SPIDER-SL-40-06T1O6O699SY9HHHH	6 x 10/100/1000Base-T, 2 x FE/GE SFP slot

Order Code	Product Code	Description
942141016	SPIDER-PL-20-05T1999999TY9HHHH	5 x 10/100Base-TX
942141017	SPIDER-PL-20-08T1999999TY9HHHH	8 x 10/100Base-TX
942141019	SPIDER-PL-40-05T1999999TY9HHHH	5 x 10/100/1000Base-T
942141020	SPIDER-PL-40-08T1999999TY9HHHH	8 x 10/100/1000Base-T
942141022	SPIDER-PL-20-01T1M29999TY9HHHH	1 x 10/100Base-TX, 1 x 100Base-FX, MM-SC
942141023	SPIDER-PL-20-01T1S29999TY9HHHH	1 x 10/100Base-TX, 1 x 100Base-FX, SM-SC
942141024	SPIDER-PL-20-04T1M29999TY9HHHH	4 x 10/100Base-TX, 1 x 100Base-FX, MM-SC
942141025	SPIDER-PL-20-04T1M49999TY9HHHH	4 x 10/100Base-TX, 1 x 100Base-FX, MM-ST
942141026	SPIDER-PL-20-04T1S29999TY9HHHH	4 x 10/100Base-TX, 1 x 100Base-FX, SM-SC
942141027	SPIDER-PL-20-06T1Z6Z6Z6TY9HHHH	6 x 10/100Base-TX, 3 x FE SFP slot
942141028	SPIDER-PL-20-08T1M29999TY9HHHH	8 x 10/100Base-TX, 1 x 100Base-FX, MM-SC
942141029	SPIDER-PL-20-08T1S29999TY9HHHH	8 x 10/100Base-TX, 1 x 100Base-FX, SM-SC
942141030	SPIDER-PL-20-07T1M2M299TY9HHHH	7 x 10/100Base-TX, 2 x 100Base-FX, MM-SC
942141031	SPIDER-PL-20-07T1S2S299TY9HHHH	7 x 10/100Base-TX, 2 x 100Base-FX, SM-SC
942141033	SPIDER-PL-40-01T1O69999TY9HHHH	1 x 10/100/1000Base-T, 1 x FE/GE SFP slot
942141034	SPIDER-PL-40-04T1O69999TY9HHHH	4 x 10/100/1000Base-T, 1 x FE/GE SFP slot

* = Extended temperature range

HIRSCHMANN
A BELDEN BRAND

www.beldensolutions.com

GLOBAL LOCATIONS

For more information, please visit us at:
www.beldensolutions.com

Be certain you stay in touch.

UNITED STATES

Division Headquarters – Americas
2200 U.S. Highway 27 South
Richmond, IN 47374
Phone: 765-983-5200
Inside Sales: 800-235-3361
Fax: 765-983-5294
info@belden.com
www.belden.com

Belden
2200 U.S. Highway 27 South
Richmond, IN 47374a
Inside Sales:
1-800-BELDEN-1
(1-800-235-3361)
Phone: 765-983-5200
Fax: 765-983-5294
info@belden.com

Industrial Networking
(Hirschmann/GarrettCom/
Tofino Security)
255 Fourier Ave.
Fremont, CA 94539, USA
Phone: 510-438-9071
Fax: 510-952-3456
www.belden.com
gciepofr@belden.com

CANADA

National Business Center
2280 Alfred-Nobel
Suite 200
Saint-Laurent, QC
Canada H4S 2A4
Phone: 514-822-2345
Fax: 514-822-7979

LATIN AMERICA and the CARIBBEAN ISLANDS

Regional Office
6100 Hollywood Boulevard
Suite 110
Hollywood, Florida 33024
Phone: 954-987-5044
Fax: 954-987-8022
salesla@belden.com

EUROPE/MIDDLE EAST/AFRICA

Division Headquarters – EMEA
Edisonstraat 9
5928 PG Venlo, 5900 AA,
Postbus 9
The Netherlands
Phone: +31-773-878-555
Fax: +31-773-878-448
venlo.salesinfo@belden.com
www.beldensolutions.com

Regional Offices
Manchester
International Office
Centre, Suite 13
Styal Road
Manchester M22 5WB
United Kingdom
Phone: +44-61-4983749
Fax: +44-161-4983762
manchester.salesinfo@
belden.com

Location Neckartenzlingen –
Stuttgarter Straße 45-51
72654 Neckartenzlingen
Germany
Phone: +49-(0)-712714-0
Fax: +49-(0)-7127/14-1313
inet-sales@belden.com

ASIA-PACIFIC

Division Headquarters – APAC
7/F Harbour View 2
16 Science Park East Avenue
Hong Kong Science Park
Shatin, Hong Kong
Phone: 852-2955-0128
Fax: 852-2907-6933
hongkong.sales@belden.com

Regional Offices
Unit 301 No. 19 Building,
1515 Gu Mei Road
Caohejing High-tech Park
Shanghai 200233
People's Republic of China
Phone: 021-54452388
Fax: 021-54452366/77
hongkong.sales@belden.com

101 27 International Business
Park #05-01 iQuest @ IBP
Singapore 609924
Phone: 65-6879-9800
Fax: 65-6251-5010
singapore.sales@belden.com

SPIDER-III-STANDARD-AND-PREMIUM-LINE-SWITCHES_BR_INIT_HIR_0516_E_EMEA