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## 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.

## (h) HIRSCHMANN

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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 certaín. 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) | $26 / 38 \times 102 \times 79 \mathrm{~mm}, 45 \times 110 \times 88 \mathrm{~mm}$ | 39/49/56 $\times 135 \times 117 \mathrm{~mm}$ |
|  | Protection Class, Material | IP30, plastic | IP40, metal |
| Temperature Range | Standard | $0^{\circ} \mathrm{C}$ to $+60^{\circ} \mathrm{C}$ | - |
|  | Extended | $-40^{\circ} \mathrm{C}$ to $+70^{\circ} \mathrm{C}$ * | $-40^{\circ} \mathrm{C}$ to $+70^{\circ} \mathrm{C}$ |
|  | Conformal Coating | - | (optional) |
| Interfaces | Plug-in Terminal Block (Screw Clamps Standard, Spring Clamps are Optional) | , | , |
|  | Fault Relay (Power, Port Break) | - | $\checkmark$ |
|  | 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 | - | $\checkmark$ |
| 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 *** |

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## 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.


## 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 tight areas, such as cabinets.



## 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 | Os ... 1048575s |
|  | QoS 802.1 D/p Mapping | VLAN Priority $0 \ldots 7$, Traffic Class $0 \ldots 3$ |
|  | QoS DSCP Mapping | DSCP value $0 \ldots .63$, Traffic Class $0 \ldots 3$ |
| Per Port | Port State | On/0ff |
|  | Flow Control | On/Off |
|  | Link Alarm | On/0ff |
|  | Broadcast Mode | On/Off |
|  | Broadcast Threshold | 0\% ... 100\% |
|  | Multicast Mode | On/0ff |
|  | Multicast Threshold | 0\% ... 100\% |
|  | Jumbo Frames | On/Off |
|  | QoS Trust Mode | Untrusted, TrustDot1p, TrustlpDscp |
|  | Port Priority | $0 \ldots 7$ |
| Per TX Port | Auto-Negotiation | On/0ff |
|  | Speed | $10 \mathrm{Mbit} / \mathrm{s}, 100 \mathrm{Mbit} / \mathrm{s}$ |
|  | Duplex Mode | FDX/HDX |
|  | Auto-Crossing | On/0ff |
|  | MDI State | MDI, MDI-X |
|  | Energy Efficient Ethernet | On/0ff |
| 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.

## 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 ( $10 / 100 \mathrm{MBit} / \mathrm{s}$ ) 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 ( $10 / 100 \mathrm{MBit} / \mathrm{s}$ ) and Gigabit-Ethernet (10/100/1000 $\mathrm{MBit} / \mathrm{s}$ ), 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 | $1 \times$ 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 <br> Port settings: flow control, port state, broadcast mode/threshold, multicast mode/threshold, QoS Trust Mode, port priority, link alarm <br> TX port settings: auto-negotiation, speed, duplex mode, auto-crossing, MDI state, energy efficient ethernet FX port settings: duplex mode |
| Ambient Conditions |  |  |
| Operation Temperature | $0^{\circ} \mathrm{C}$ to $+60^{\circ} \mathrm{C},-40^{\circ} \mathrm{C}$ to $+70^{\circ} \mathrm{C}$ (depending on the variant) | $-40^{\circ} \mathrm{C}$ to $+70^{\circ} \mathrm{C}$ |
| Storage/Transport Temperature | $-40^{\circ} \mathrm{C}$ to $+85^{\circ} \mathrm{C}$ |  |
| Relative Humidity (non-condensing) | 10\% to 95\% |  |
| Protective Paint on PCB | n/a | Conformal Coating |
| Mechanical Construction |  |  |
| Dimensions ( $\mathrm{W} \times \mathrm{H} \times \mathrm{D}$ ) | $26 / 38 \times 102 \times 79 \mathrm{~mm}, 45 \times 110 \times 88 \mathrm{~mm}$ (w/o terminal block) depending on the variant | 39/49/56 $\times 135 \times 117 \mathrm{~mm}$ (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 | $15 \mathrm{~g}, 11 \mathrm{~ms}$ duration, 18 shocks |  |
| IEC 60068-2-6 Vibration | $3.5 \mathrm{~mm}, 5 \mathrm{~Hz}$ to $8.4 \mathrm{~Hz}, 10$ cycles, 1 octave/min. $1 \mathrm{~g}, 8.4 \mathrm{~Hz}$ to $150 \mathrm{~Hz}, 10$ 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 | $10 \mathrm{~V} / \mathrm{m}$ (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



Common SPIDER III Standard and Premium Line Switch Configurations

| Order Code | Product Code | Description |
| :---: | :---: | :---: |
| 942132001 | SPIDER-SL-20-05T1999999SY9HHHH | $5 \times 10 / 100 B a s e-T X$ |
| 942132016 | SPIDER-SL-20-05T1999999TY9HHHH | $5 \times 10 / 100$ Base-TX* |
| 942132002 | SPIDER-SL-20-08T1999999SY9HHHH | $8 \times 10 / 100 B a s e-T X$ |
| 942132017 | SPIDER-SL-20-08T1999999TY9HHHH | $8 \times 10 / 100$ Base-TX* |
| 942132003 | SPIDER-SL-40-05T1999999SY9HHHH | $5 \times 10 / 100 / 1000$ Base-T |
| 942132004 | SPIDER-SL-40-08T1999999SY9HHHH | $8 \times 10 / 100 / 1000$ Base-T |
| 942132005 | SPIDER-SL-20-01T1M29999SY9HHHH | $1 \times 10 / 100 B a s e-T X, 1 \times 100 B a s e-F X$, MM-SC |
| 942132006 | SPIDER-SL-20-01T1S29999SY9HHHH | $1 \times 10 / 100 B a s e-T X, 1 \times 100$ Base-FX, SM-SC |
| 942132007 | SPIDER-SL-20-04T1M29999SY9HHHH | $4 \times 10 / 100 \mathrm{Base}-\mathrm{TX}, 1 \times 100 \mathrm{Base}-\mathrm{FX}, \mathrm{MM}-\mathrm{SC}$ |
| 942132018 | SPIDER-SL-20-04T1M29999TY9HHHH | $4 \times 10 / 100 \mathrm{Base}-\mathrm{TX}, 1 \times 100 \mathrm{Base}$-FX, MM-SC* |
| 942132008 | SPIDER-SL-20-04T1M49999SY9HHHH | $4 \times 10 / 100 \mathrm{Base}-\mathrm{TX}, 1 \times 100 \mathrm{Base}$-FX, MM-ST |
| 942132019 | SPIDER-SL-20-04T1M49999TY9HHHH | $4 \times 10 / 100 \mathrm{Base}-\mathrm{TX}, 1 \times 100 \mathrm{Base-FX}, \mathrm{MM}^{\text {S }}$ ST* |
| 942132009 | SPIDER-SL-20-04T1S29999SY9HHHH | $4 \times 10 / 100$ Base-TX, $1 \times 100$ Base-FX, SM-SC |
| 942132010 | SPIDER-SL-20-06T1M29999SY9HHHH | $6 \times 10 / 100 \mathrm{Base}-\mathrm{TX}, 1 \times 100 \mathrm{Base}-\mathrm{FX}, \mathrm{MM}-\mathrm{SC}$ |
| 942132011 | SPIDER-SL-20-06T1S29999SY9HHHH | $6 \times 10 / 100$ Base-TX, $1 \times 100$ Base-FX, SM-SC |
| 942132012 | SPIDER-SL-20-06T1M2M299SY9HHHH | $6 \times 10 / 100 \mathrm{Base}-\mathrm{TX}, 2 \times 100 \mathrm{Base}-\mathrm{FX}, \mathrm{MM}-\mathrm{SC}$ |
| 942132013 | SPIDER-SL-20-06T1S2S299SY9HHHH | $6 \times 10 / 100$ Base-TX, $2 \times 100$ Base-FX, SM-SC |
| 942132014 | SPIDER-SL-40-06T1069999SY9HHHH | $6 \times 10 / 100 / 1000$ Base-T, $1 \times$ FE/GE SFP slot |
| 942132015 | SPIDER-SL-40-06T1060699SY9HHHH | $6 \times 10 / 100 / 1000$ Base-T, $2 \times$ FE/GE SFP slot |


| Order Code | Product Code | Description |
| :---: | :---: | :---: |
| 942141016 | SPIDER-PL-20-05T1999999TY9HHHH | $5 \times 10 / 100$ Base-TX |
| 942141017 | SPIDER-PL-20-08T1999999TY9HHHH | $8 \times 10 / 100 \mathrm{Base}-\mathrm{TX}$ |
| 942141019 | SPIDER-PL-40-05T1999999TY9HHHH | $5 \times 10 / 100 / 1000$ Base-T |
| 942141020 | SPIDER-PL-40-08T1999999TY9HHHH | $8 \times 10 / 100 / 1000$ Base-T |
| 942141022 | SPIDER-PL-20-01T1M29999TY9HHHH | $1 \times 10 / 100 B a s e-T X, 1 \times 100$ Base-FX, MM-SC |
| 942141023 | SPIDER-PL-20-01T1S29999TY9HHHH | $1 \times 10 / 100 B a s e-T X, 1 \times 100 B a s e-F X, S M-S C$ |
| 942141024 | SPIDER-PL-20-04T1M29999TY9HHHH | $4 \times 10 / 100 B a s e-T X, 1 \times 100$ Base-FX, MM-SC |
| 942141025 | SPIDER-PL-20-04T1M49999TY9HHHH | $4 \times 10 / 100$ Base-TX, $1 \times 100$ Base-FX, MM-ST |
| 942141026 | SPIDER-PL-20-04T1S29999TY9HHHH | $4 \times 10 / 100 B a s e-T X, 1 \times 100 B a s e-F X$, SM-SC |
| 942141027 | SPIDER-PL-20-06T1Z6Z6Z6TY9HHHH | $6 \times 10 / 100$ Base-TX, $3 \times$ FE SFP slot |
| 942141028 | SPIDER-PL-20-08T1M29999TY9HHHH | $8 \times 10 / 100 B a s e-T X, 1 \times 100$ Base-FX, MM-SC |
| 942141029 | SPIDER-PL-20-08T1S29999TY9HHHH | $8 \times 10 / 100 B a s e-T X, 1 \times 100 B a s e-F X$, SM-SC |
| 942141030 | SPIDER-PL-20-07T1M2M299TY9HHHH | $7 \times 10 / 100$ Base-TX, $2 \times 100$ Base-FX, MM-SC |
| 942141031 | SPIDER-PL-20-07T1S2S299TY9HHHH | $7 \times 10 / 100 B a s e-T X, 2 \times 100 B a s e-F X$, SM-SC |
| 942141033 | SPIDER-PL-40-01T1069999TY9HHHH | $1 \times 10 / 100 / 1000$ Base-T, $1 \times \mathrm{FE} / \mathrm{GE}$ SFP slot |
| 942141034 | SPIDER-PL-40-04T1069999TY9HHHH | $4 \times 10 / 100 / 1000$ Base-T, $1 \times$ FE/GE SFP slot |

[^1]
[^0]:    * 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

[^1]:    * $=$ Extended temperature range

