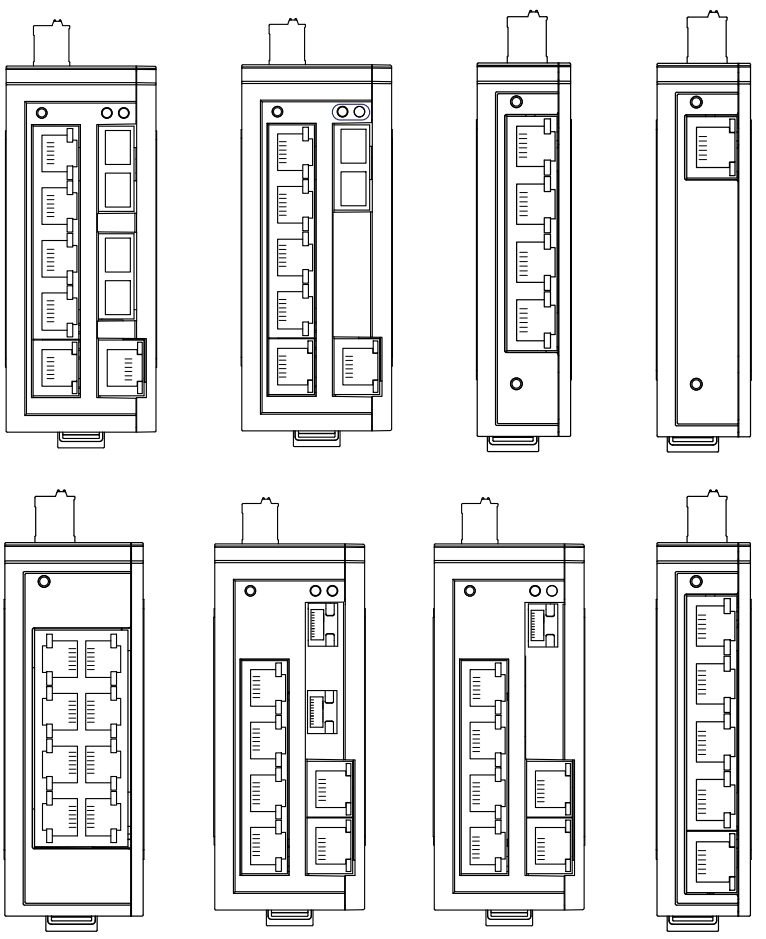
HIRSCHMANN
A BELDEN BRAND

User Manual

Installation
Industrial Ethernet Rail Switch
SPIDER Standard Line



The naming of copyrighted trademarks in this manual, even when not specially indicated, should not be taken to mean that these names may be considered as free in the sense of the trademark and tradename protection law and hence that they may be freely used by anyone.

The performance features described here are binding only if they have been expressly agreed when the contract was made. This document was produced by Hirschmann Automation and Control GmbH according to the best of the company's knowledge. Hirschmann reserves the right to change the contents of this document without prior notice. Hirschmann can give no guarantee in respect of the correctness or accuracy of the information in this document.

Hirschmann can accept no responsibility for damages, resulting from the use of the network components or the associated operating software. In addition, we refer to the conditions of use specified in the license contract.

You can get the latest version of this manual on the Internet at the Hirschmann product site (www.hirschmann.com).

Hirschmann Automation and Control GmbH
Stuttgarter Str. 45-51
72654 Neckartenzlingen
Germany

Contents

Safety instructions

General safety instructions

You operate this device with electricity. Improper usage of the device entails the risk of physical injury or significant property damage. The proper and safe operation of this device depends on proper handling during transportation, proper storage and installation, and careful operation and maintenance procedures.

- ☐ Before connecting any cable, read this document, and the safety instructions and warnings.
- ☐ Operate the device with undamaged components exclusively.
- ☐ The device is free of any service components. In case of a damaged or malfunctioning device, turn off the supply voltage and return the device to Hirschmann for inspection.

Certified usage

- ☐ Use the product only for the application cases described in the Hirschmann product information, including this manual.
- ☐ Operate the product only according to the technical specifications. See “Technical data” on page 32.
- ☐ Connect to the product only components suitable for the requirements of the specific application case.

Installation site requirements

- ☐ Install the device in a fire enclosure according to EN 60950-1.

Device casing

Only technicians authorized by the manufacturer are permitted to open the casing.

- ☐ Never insert pointed objects (narrow screwdrivers, wires, etc.) into the device or into the connection terminals for electric conductors. Do not touch the connection terminals.
- ☐ Keep the ventilation slits free to ensure good air circulation. See “General technical data” on page 32.
- ☐ Mount the device in the vertical position.

Qualification requirements for personnel

☐ Only allow qualified personnel to work on the device.

Qualified personnel have the following characteristics:

- Qualified personnel are properly trained. Training as well as practical knowledge and experience make up their qualifications. This is the prerequisite for grounding and labeling circuits, devices, and systems in accordance with current standards in safety technology.
- Qualified personnel are aware of the dangers that exist in their work.
- Qualified personnel are familiar with appropriate measures against these hazards in order to reduce the risk for themselves and others.
- Qualified personnel receive training on a regular basis.

National and international safety regulations

Verify that the electrical installation meets local or nationally applicable safety regulations.

Grounding the device

The device is grounded by a 3-pin terminal block.

☐ Use a wire diameter for the ground conductor that is no smaller than the diameter of the supply voltage connection, however of at least 0.5 mm² (AWG20).

Shielding ground

The shielding ground of the connectable twisted pair cables is connected to the ground connection as a conductor.

☐ Beware of possible short circuits when connecting a cable section with conductive shielding braiding.

Requirements for connecting electrical wires

Before connecting the electrical wires, **always** verify that the requirements listed are complied with.

General requirements for connecting electrical wires
The following requirements apply without restrictions:
▶ The electrical wires are voltage-free. ▶ The cables used are permitted for the temperature range of the application case. ▶ The voltage connected complies with the requirements for a safety extra-low voltage (SELV) as per IEC/EN 60950-1. ▶ Relevant for North America: Exclusively use 60/75 °C (140/167 °F) or 75 °C (167 °F) copper (Cu) wire.

Requirements for connecting the supply voltage	
The following requirements apply without restrictions:	
▶ The supply voltage corresponds to the voltage specified on the type plate of the device. ▶ The power supply conforms to overvoltage category I or II. ▶ The power supply has an easily accessible disconnecting device (for example a switch or a plug). This disconnecting device is clearly identified. So in the case of an emergency, it is clear which disconnecting device belongs to which power supply cable. ▶ The power supply cable is suitable for the voltage, the current and the physical load. Hirschmann recommends a wire diameter of 0.5 mm² (AWG20). ▶ The cross-section of the ground conductor is the same size as or bigger than the cross-section of the power supply cables.	
The following requirements apply alternatively:	
Alternative 1	The power supply complies with the requirements for a limited power source (LPS) as per EN 60950-1.
Alternative 2	**All** of the following requirements are complied with: ▶ The power supply complies with the requirements for a safety extra-low voltage (SELV) as per IEC/EN 60950-1. ▶ A fuse suitable for DC voltage is located in the plus conductor of the power supply. The minus conductor is on ground potential. Otherwise, a fuse is also located in the minus conductor. Regarding the properties of this fuse: See “General technical data” on page 32.
Alternative 3	Relevant for North America: The power supply complies with the requirements according to NEC Class 2.

Supply voltage

The supply voltage is only connected with the ground connection via protective elements.

CE marking

The labeled devices comply with the regulations contained in the following European directive(s):

2011/65/EU and 2015/863/EU (RoHS)
Directive of the European Parliament and of the Council on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

2014/30/EU (EMC)
Directive of the European Parliament and of the Council on the harmonisation of the laws of the Member States relating to electromagnetic compatibility.

In accordance with the above-named EU directive(s), the EU conformity declaration will be available to the relevant authorities at the following address:

Hirschmann Automation and Control GmbH
Stuttgarter Str. 45-51
72654 Neckartenzlingen
Germany
www.hirschmann.com

The device can be used in the industrial sector.

- Interference immunity: EN 61000-6-2
- Emitted interference: EN 55032

You find more information on technical standards here:
“Technical data” on page 32

Warning! This is a class A device. This device can cause interference in living areas, and in this case the operator may be required to take appropriate measures.

Note: The assembly guidelines provided in these instructions must be strictly adhered to in order to observe the EMC threshold values.

LED or laser components

LED or LASER components according to IEC 60825-1 (2014):
CLASS 1 LASER PRODUCT
CLASS 1 LED PRODUCT

FCC note

Supplier's Declaration of Conformity
47 CFR § 2.1077 Compliance Information

SPIDER-SL

U.S. Contact Information
Belden – St. Louis
1 N. Brentwood Blvd. 15th Floor
St. Louis, Missouri 63105, United States
Phone: 314.854.8000

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference; (2) this device must accept any interference received, including interference that may cause undesired operation.
Appropriate testing has established that this device fulfills the requirements of a class A digital device in line with part 15 of the FCC regulations.
These requirements are designed to provide sufficient protection against interference when the device is being used in a business environment. The device creates and uses high frequencies and can also radiate these frequencies. If it is not installed and used in accordance with this operating manual, it can cause radio transmission interference. The use of this device in a residential area can also cause interference, and in this case the user is obliged to cover the costs of removing the interference.

Recycling note

After usage, this device must be disposed of properly as electronic waste, in accordance with the current disposal regulations of your county, state, and country.

About this Manual

The “Installation” user manual contains a device description, safety instructions, a description of the display, and the other information that you need to install the device.

Documentation mentioned in the “User Manual Installation” that is not supplied with your device as a printout can be found as PDF files for downloading on the Internet at: https://www.doc.hirschmann.com

Legend

The symbols used in this manual have the following meanings:

▶	Listing
☐	Work step
■	Subheading

1 Description

1.1 General device description

The device is designed for the special requirements of industrial automation. The device meets the relevant industry standards, provides very high operational reliability, even under extreme conditions, and also long-term reliability and flexibility.

You have numerous options of combining the device characteristics. You can determine the possible combinations using the configurator which is available in the Belden Online Catalog https://catalog.belden.com on the web page of the device.

1.2 Device name and product code

The device name corresponds to the product code. The product code is made up of characteristics with defined positions. The characteristic values stand for specific product properties.

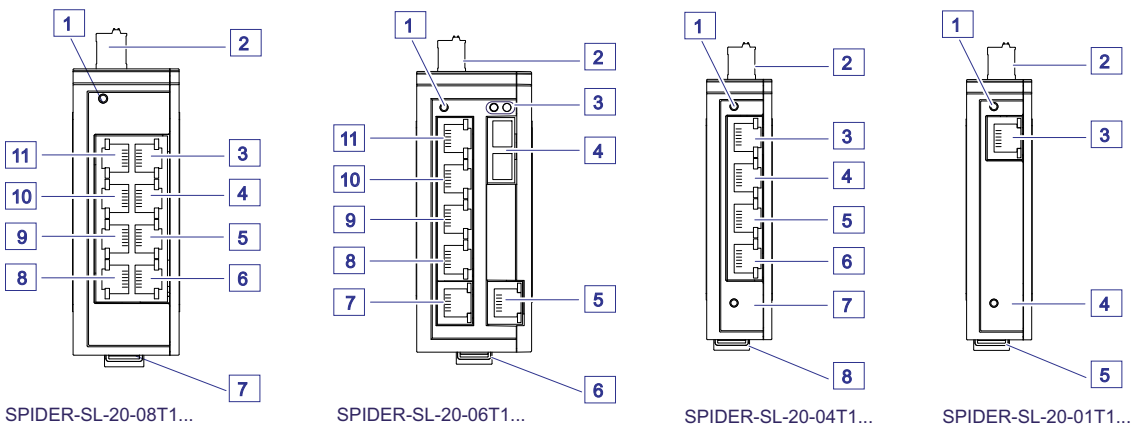
Item	Characteristic	Characteristic value	Description	
1 ... 9	Product	SPIDER-SL	SPIDER Standard Line	
10	(hyphen)	–		
11	Data rate	2	10/100 Mbit/s	
		4	10/100/1000 Mbit/s	
12	Power over Ethernet (PoE)	0	without PoE support	
13	(hyphen)	–		
14 ... 17	Number Twisted pair ports	01T1		
		04T1		
		05T1		
		06T1		
		08T1		
18 ... 19	Optical fiber port 1	M2	DSC multimode socket for 100 Mbit/s F/O connections	
		S2	DSC singlemode socket for 100 Mbit/s F/O connections	
		M4	ST multimode socket for 100 Mbit/s F/O connections	
		O6	SFP slot for 100/1000 Mbit/s F/O connections	
		99	without	
20 ... 21	Optical fiber port 2	M2	DSC multimode socket for 100 Mbit/s F/O connections	
		S2	DSC singlemode socket for 100 Mbit/s F/O connections	
		O6	SFP slot for 100/1000 Mbit/s F/O connections	
		99	without	
22 ... 23	Optical fiber port 3	99	without	
24	Temperature range	S	Standard	+32 °F ... +140 °F (0 °C ... +60 °C) Derating[a]
		T	Extended	-40 °F ... +158 °F (-40 °C ... +70 °C)
25 ... 26	Certificates and declarations	Z9	CE, FCC, EN61131, RCM	
		Y9	Z9 + cUL 61010	
		TY	Y9 + EN 50121-4	
27 ... 28	Customer-specific version	HH	Hirschmann standard	
		HK	Voltage terminal with spring	
29 ... 30	Configuration	HH	Hirschmann standard	

Table 1: Device name and product code

a. For device variant SPIDER SL-40-06T1O6O699SZ9HHHH, the maximum permitted ambient air temperature has to be reduced to 122 °F (50 °C).

1.3 Device view

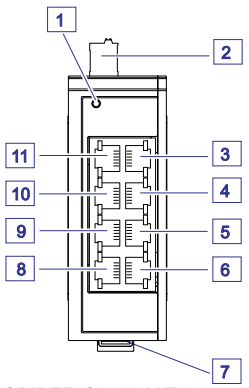
1.3.1 Front view



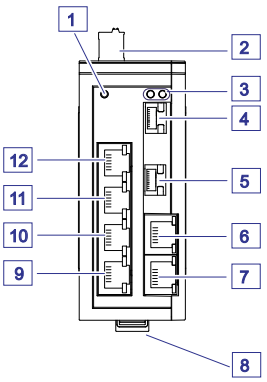
Front view using example of device variants SPIDER-SL-20...

SPIDER-SL-20-08T1...	
1	LED display elements for device status
2	3-pin, pluggable terminal block for power supply
3 ... 6	4 × RJ45 socket for 10/100 Mbit/s Twisted pair connections
7	Rail lock slide for DIN rail mounting
8 ... 11	4 × RJ45 socket for 10/100 Mbit/s Twisted pair connections
SPIDER-SL-20-06T1...	
1	LED display elements for device status
2	3-pin, pluggable terminal block for power supply
3	LED display elements for port status
4	depending on device variant ▶ DSC multimode socket for 100 Mbit/s F/O connections ▶ DSC singlemode socket for 100 Mbit/s F/O connections
5	RJ45 socket for 10/100 Mbit/s Twisted pair connections
6	Rail lock slide for DIN rail mounting
7 ... 11	5 × RJ45 socket for 10/100 Mbit/s Twisted pair connections
SPIDER-SL-20-04T1...	
1	LED display elements for device status
2	3-pin, pluggable terminal block for power supply
3 ... 6	4 × RJ45 socket for 10/100 Mbit/s Twisted pair connections
7	LED display elements for port status
8	Rail lock slide for DIN rail mounting
SPIDER-SL-20-01T1...	
1	LED display elements for device status
2	3-pin, pluggable terminal block for power supply
3	RJ45 socket for 10/100 Mbit/s Twisted pair connections

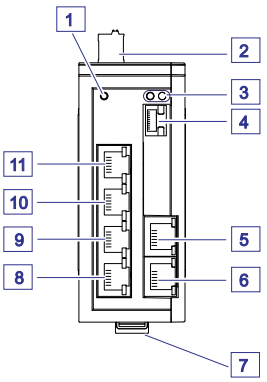
4	LED display elements for port status
5	Rail lock slide for DIN rail mounting



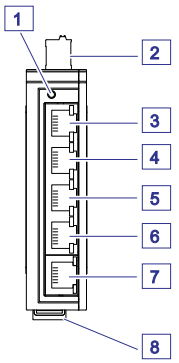
SPIDER-SL-40-08T1...



SPIDER-SL-40-06T1...



SPIDER-SL-40-06T1...



SPIDER-SL-40-05T1...

Front view using example of device variants SPIDER-SL-40...

SPIDER-SL-40-08T1...	
1	LED display elements for device status
2	3-pin, pluggable terminal block for power supply
3 ... 6	4 × RJ45 socket for 10/100/1000 Mbit/s Twisted Pair connections
7	Rail lock slide for DIN rail mounting
8 ... 11	4 × RJ45 socket for 10/100/1000 Mbit/s Twisted Pair connections
SPIDER-SL-40-06T1...	
1	LED display elements for device status
2	3-pin, pluggable terminal block for power supply
3	LED display elements for port status
4 ... 5	SFP slot for 100/1000 Mbit/s F/O connections
6 ... 7	2 × RJ45 socket for 10/100/1000 Mbit/s Twisted Pair connections
8	Rail lock slide for DIN rail mounting
9 ... 12	4 × RJ45 socket for 10/100/1000 Mbit/s Twisted Pair connections
SPIDER-SL-40-06T1...	
1	LED display elements for device status
2	3-pin, pluggable terminal block for power supply
3	LED display elements for port status
4	SFP slot for 100/1000 Mbit/s F/O connections
5 ... 6	2 × RJ45 socket for 10/100/1000 Mbit/s Twisted Pair connections
7	Rail lock slide for DIN rail mounting
8 ... 11	4 × RJ45 socket for 10/100/1000 Mbit/s Twisted Pair connections
SPIDER-SL-40-05T1...	
1	LED display elements for device status
2	3-pin, pluggable terminal block for power supply
3 ... 7	5 × RJ45 socket for 10/100/1000 Mbit/s Twisted Pair connections
8	Rail lock slide for DIN rail mounting

1.4 Power supply

1.4.1 Supply voltage with the characteristic value HH

The following options for power supply are available:

- 3-pin terminal block
  You will find information on connecting the supply voltage here:
  See “Connecting the 3-pin terminal block (device variants with characteristic value HH)” on page 25.

1.4.2 Supply voltage with characteristic value HK

The following options for power supply are available:

- 3-pin terminal block
  You will find information on connecting the supply voltage here:
  See “Connecting the 3-pin voltage terminal with spring (device variants with the characteristic value HK)” on page 26.

1.5 Ethernet ports

You can connect end devices and other segments to the device ports using twisted pair cables or optical fibers (F/O).
You find information on pin assignments for making patch cables here:
“Pin assignments” on page 18

1.5.1 10/100/1000 Mbit/s twisted pair port

This port is an RJ45 socket.
The 10/100/1000 Mbit/s twisted pair port allows you to connect network components according to the IEEE 802.3 10BASE-T/100BASE-TX/ 1000BASE-T standard.
This port supports:

- Autonegotiation
- Autopolarity
- Autocrossing
- 1000 Mbit/s full duplex
- 100 Mbit/s half-duplex mode, 100 Mbit/s full duplex mode
- 10 Mbit/s half-duplex mode, 10 Mbit/s full duplex mode

1.5.2 10/100 Mbit/s twisted pair port

This port is an RJ45 socket.
The 10/100 Mbit/s twisted pair port allows you to connect network components according to the IEEE 802.3 10BASE-T/100BASE-TX standard.
This port supports:

- Autonegotiation
- Autopolarity
- Autocrossing
- 100 Mbit/s half-duplex mode, 100 Mbit/s full duplex mode
- 10 Mbit/s half-duplex mode, 10 Mbit/s full duplex mode

1.5.3 100/1000 Mbit/s F/O port

This port is an SFP slot.
The 100/1000 Mbit/s F/O port allows you to connect network components according to the IEEE 802.3 100BASE-FX/1000BASE-SX/1000BASE-LX standard.
This port supports:

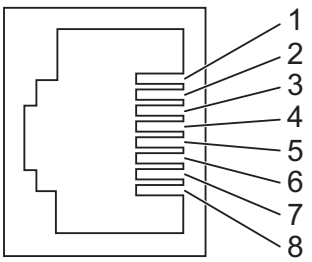
- 100 Mbit/s full duplex when using a Fast Ethernet SFP transceiver
- 1000 Mbit/s full duplex when using a Gigabit Ethernet SFP transceiver

1.5.4 100 Mbit/s F/O port

The 100 Mbit/s F/O port allows you to connect network components according to the IEEE 802.3 100BASE-FX standard.
This port supports:

- Full duplex mode

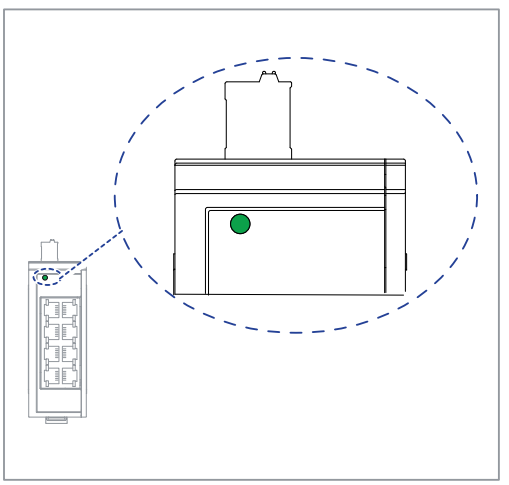
1.6 Pin assignments

RJ45	Pin	10/100 Mbit/s	1000 Mbit/s
	**MDI mode**		
	1	TX+	BI_DA+
	2	TX−	BI_DA−
	3	RX+	BI_DB+
	4	—	BI_DC+
	5	—	BI_DC−
	6	RX−	BI_DB−
	7	—	BI_DD+
	8	—	BI_DD−
	MDI-X mode		
	1	RX+	BI_DB+
	2	RX−	BI_DB−
	3	TX+	BI_DA+
	4	—	BI_DD+
	5	—	BI_DD−
	6	TX−	BI_DA−
	7	—	BI_DC+
	8	—	BI_DC−

1.7 Display elements

After the supply voltage is switched on, the device performs a self-test. During this process, various LEDs light up.

1.7.1 Device state

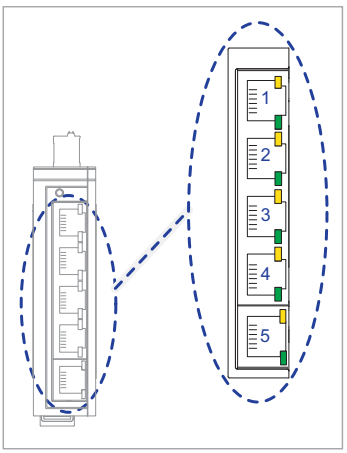


This LED provides information on the status of the power supply.

Color	Activity	Meaning
green	lights up	Supply voltage is on Device is ready for operation
	none	Supply voltage is too low Device is not ready for operation

1.7.2 Port status

These LEDs provide port-related information.



L/D (link status/data)	Color	Activity	Meaning
	green	lights up	Device detects a valid link
		flashing	Device is transmitting and/or receiving data
		none	Device detects an invalid or missing link

SP (data rate)	Color	Activity	Meaning
	yellow	flashes 1 time a period	10 Mbit/s connection
		flashes 2 times a period	100 Mbit/s connection
		flashes 3 times a period	1000 Mbit/s connection

100 Mbit/s	Color	Activity	Meaning
	yellow	lights up	100 Mbit/s connection
		none	Device detects an invalid or missing link

2 Installation

The devices have been developed for practical application in a harsh industrial environment.
On delivery, the device is ready for operation.

Perform the following steps to install the device:

- Checking the package contents
- Mounting the device
- Installing an SFP transceiver (optional)
- Wiring the terminal block for the supply voltage and the grounding
- Operating the device
- Connecting data cables

2.1 Checking the package contents

☐ Check whether the package includes all items named in the section “Scope of delivery” on page 35.
☐ Check the individual parts for transport damage.

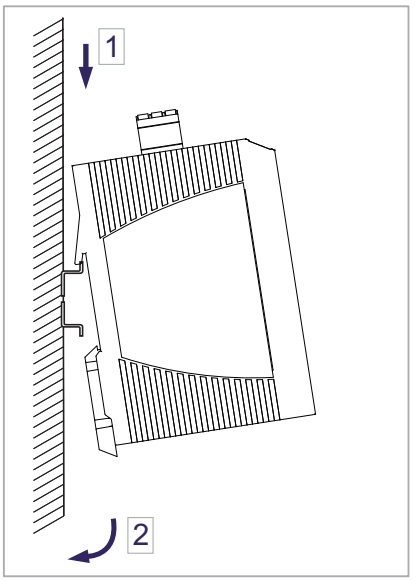
2.2 Mounting the device

You have the following options for mounting your device:

- Installing the device onto the DIN rail
- Mounting on a flat surface

2.2.1 Installing the device onto the DIN rail

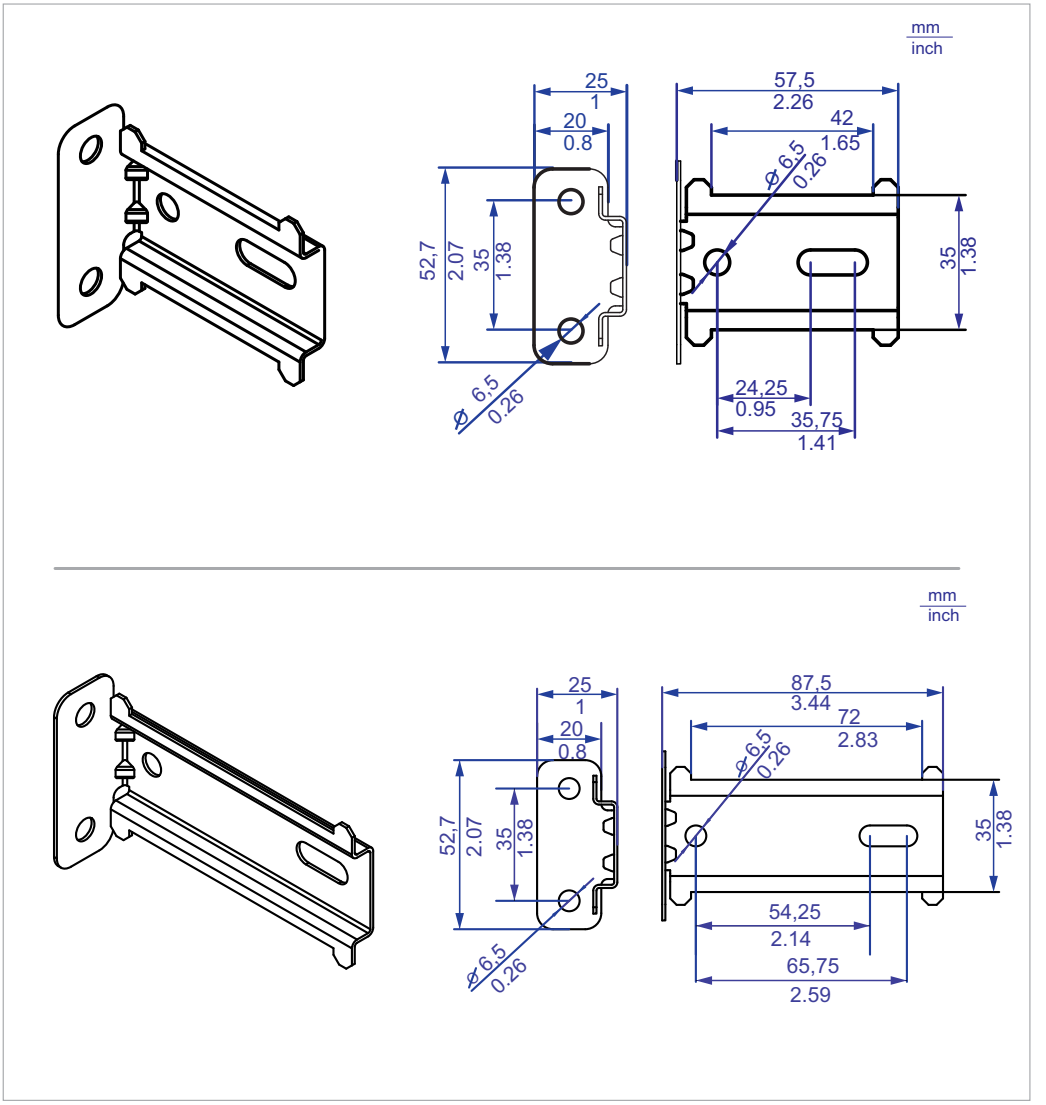
Prerequisite:
The device is for mounting on a 35 mm DIN rail in accordance with DIN EN 60715.



Proceed as follows:

☐ Slide the upper snap-in guide of the device into the DIN rail.
☐ Use a screwdriver to pull the rail lock slide downwards.
☐ Snap in the device by releasing the rail lock slide.

2.2.2 Mounting on a flat surface



Proceed as follows:

☐ Attach the wall mounting plate to a flat surface of the wall using screws. You will find the dimensions necessary for mounting the device in the illustration.

☐ Mount the device on the wall mounting plate. Insert the upper snap-in guide of the device into the rail and press it down against the rail until it snaps into place.

▶ Two models of wall mounting plates are available.
See “Accessories” on page 36.

2.3 Installing an SFP transceiver (optional)

Prerequisites:
Exclusively use Hirschmann SFP transceivers.
See “Accessories” on page 36.

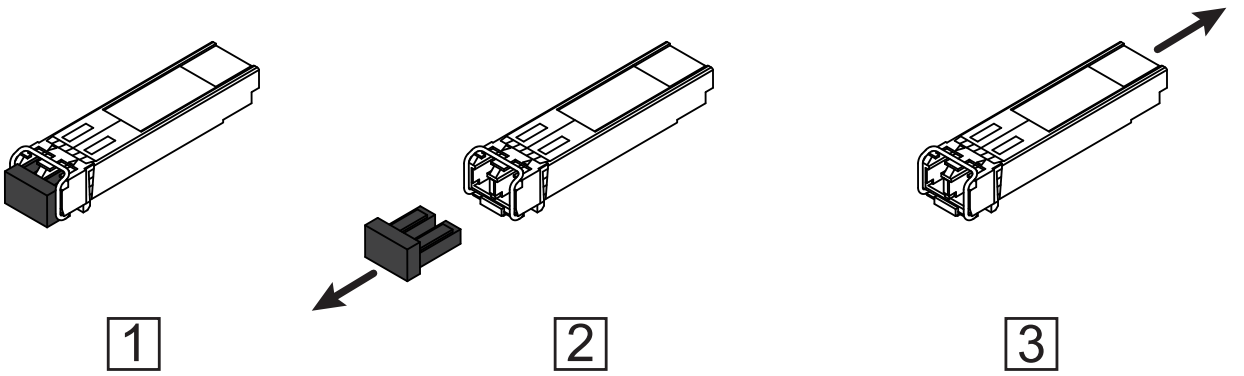


Figure 1: Installing SFP transceivers: Installation sequence

Proceed as follows:
- ☐ Take the SFP transceiver out of the transport packaging (1).
- ☐ Remove the protection cap from the SFP transceiver (2).
- ☐ Push the SFP transceiver with the lock closed into the slot until it latches in (3).

2.4 Wiring the terminal block for the supply voltage and the grounding

⚠ WARNING

ELECTRIC SHOCK

Exclusively connect a supply voltage that corresponds to the type plate of your device.
Never insert sharp objects (small screwdrivers, wires, etc.) into the connection terminals for the supply voltage, and do not touch the terminals.
Failure to follow this instruction can result in death, serious injury, or equipment damage.

A 3-pin terminal block is used for the grounding and for connecting the supply voltage.
The supply voltage is only connected with the ground connection via protective elements.
The shielding ground of the connectable twisted pair cables is connected to the ground connection as a conductor.

2.4.1 Connecting the 3-pin terminal block (device variants with characteristic value HH)

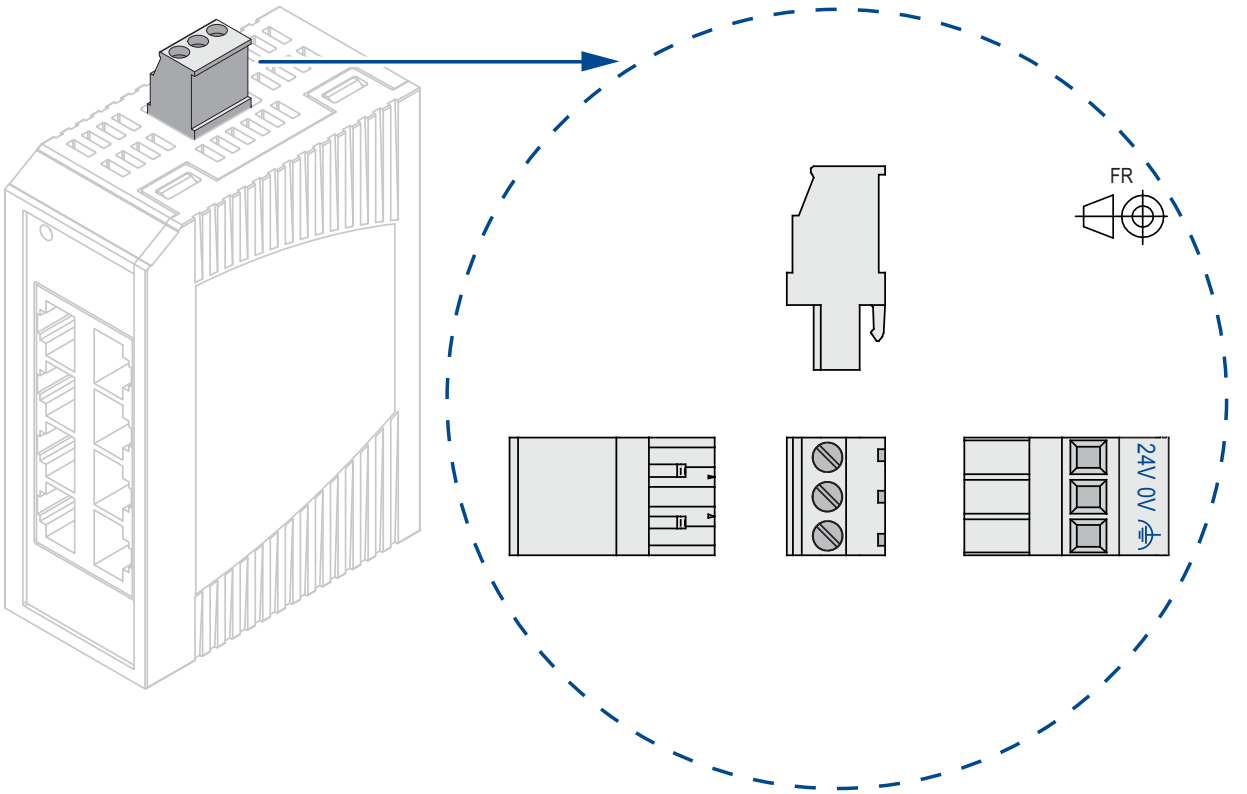


Figure 2: 3-pin terminal block, characteristic value HH

Type of the voltages that can be connected	Specification of the supply voltage	Pin assignment	
DC voltage	Rated voltage range 12 V DC ... 24 V DC Voltage range incl. maximum tolerances 9.6 V DC ... 32 V DC	24 V DC	Plus terminal of the supply voltage
		0 V	Minus terminal of the supply voltage
		⏚	Functional ground connection

Table 2: Type and specification of the supply voltage and pin assignment on the device

Proceed as follows:

- ☐ Verify the required conditions for connecting the voltage supply.
  See “Requirements for connecting electrical wires” on page 7.
- ☐ Remove the terminal connector from the device.
- ☐ Connect the wires according to the pin assignment on the device with the clamps.
- ☐ Fasten the wires in the terminal block by tightening the terminal screws.
- ☐ Mount the terminal block for the supply voltage and the ground by plugging them in.

2.4.2 Connecting the 3-pin voltage terminal with spring (device variants with the characteristic value HK)

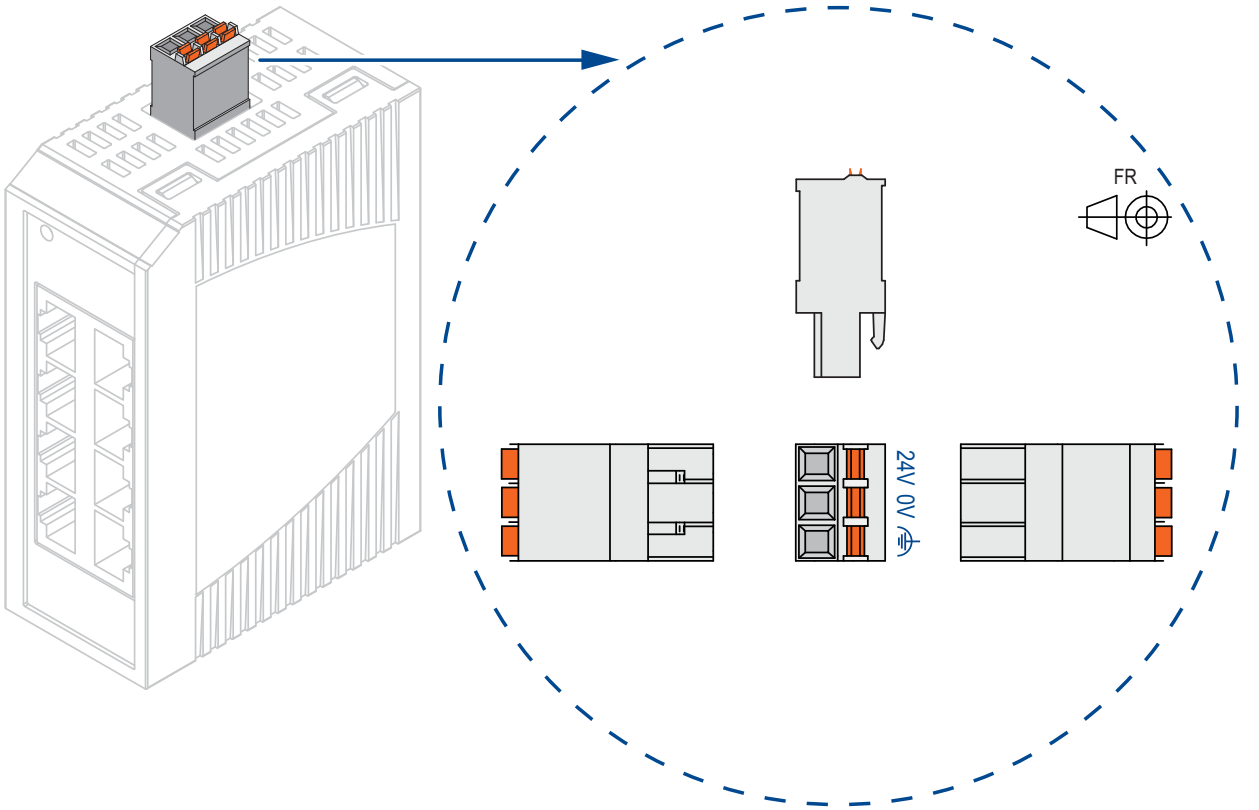


Figure 3: 3-pin voltage terminal with spring, characteristic value HK

Type of the voltages that can be connected	Specification of the supply voltage	Pin assignment	
DC voltage	Rated voltage range 12 V DC ... 24 V DC Voltage range incl. maximum tolerances 9.6 V DC ... 32 V DC	24 V DC	Plus terminal of the supply voltage
		0 V	Minus terminal of the supply voltage
		⏚	Functional ground connection

Table 3: Type and specification of the supply voltage and pin assignment on the device

Proceed as follows:

☐ Verify the required conditions for connecting the voltage supply.
See “Requirements for connecting electrical wires” on page 7.

☐ Remove the terminal connector from the device.

☐ Open the terminal lock by pressing the corresponding lever with a screwdriver.

☐ Connect the wires according to the pin assignment on the device with the clamps.
☐ Mount the terminal block for the supply voltage and the ground by plugging them in.

2.5 Operating the device

By connecting the supply voltage via the terminal block, you start the operation of the device.

2.6 Connecting data cables

Note the following general recommendations for data cable connections in environments with high electrical interference levels:
☐ Keep the length of the data cables as short as possible.
☐ Use optical data cables for the data transmission between the buildings.
☐ When using copper cables, provide a sufficient separation between the power supply cables and the data cables. Ideally, install the cables in separate cable channels.
☐ Verify that power supply cables and data cables do not run parallel over longer distances. If reducing the inductive coupling is necessary, verify that the power supply cables and data cables cross at a 90° angle.
☐ Use shielded data cables for gigabit transmission via copper cables. Only use shielded data cables to meet EMC requirements according to EN 50121-4 and marine applications.
See “EMC and immunity” on page 34.
☐ Connect the data cables according to your requirements.
See “Ethernet ports” on page 16.

3 Monitoring the ambient air temperature

Operate the device below the specified maximum ambient air temperature exclusively.
See “General technical data” on page 32.

The ambient air temperature is the temperature of the air at a distance of 2 in (5 cm) from the device. It depends on the installation conditions of the device, for example the distance from other devices or other objects, and the output of neighboring devices.

4 Maintenance and service

When designing this device, Hirschmann largely avoided using high-wear parts. The parts subject to wear and tear are dimensioned to last longer than the lifetime of the product when it is operated normally. Operate this device according to the specifications.
Depending on the degree of pollution in the operating environment, check at regular intervals that the ventilation slots in the device are not obstructed.

⚠ CAUTION

RISK OF TRANSIENTS OR ELECTROSTATIC DISCHARGES

Do not open the housing.

Failure to follow these instructions can result in injury or equipment damage.

Note: You find information on settling complaints on the Internet at http://www.beldensolutions.com/en/Service/Repairs/index.phtml.

5 Disassembly

5.1 Removing an SFP transceiver (optional)

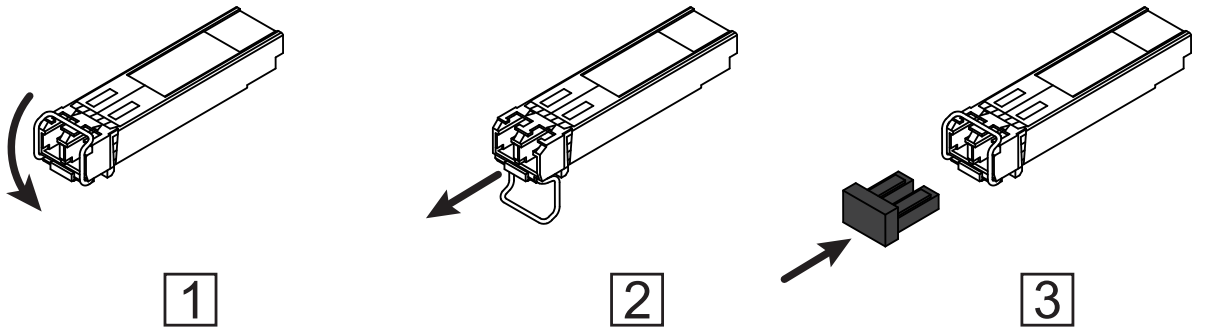
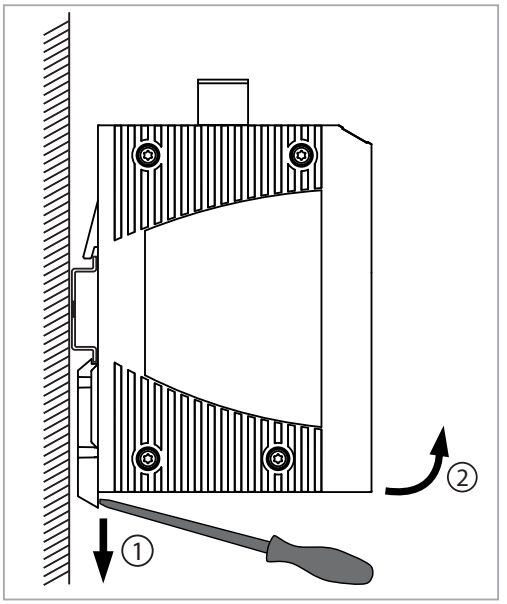


Figure 4: De-installing SFP transceivers: De-installation sequence

Proceed as follows:

☐ Open the locking mechanism of the SFP transceiver (1).
☐ Pull the SFP transceiver out of the slot via the open locking mechanism (2).
☐ Close the SFP transceiver with the protection cap (3).

5.2 Removing the device



Proceed as follows:

☐ Disconnect the data cables.
☐ Disable the supply voltage.
☐ Remove the terminal connector from the device.
☐ Use a screwdriver to pull the rail lock slide downwards.
☐ Pull the device downwards from the DIN rail module.

6 Technical data

General technical data

Dimensions W × H × D	SPIDER Standard Line	See “Dimension drawings” on page 33.
Power supply	▶ 1 voltage input ▶ 3-pin terminal block ▶ Safety extra-low voltage (SELV)	
	Rated voltage range	12 V DC ... 24 V DC Class 2
	Voltage range incl. maximum tolerances	9.6 V DC ... 32 V DC
	Power loss buffer	10 ms at 20.4 V DC
	Back-up fuse	2 A ... 4 A, slow blow
	Peak inrush current	4 A
Potential difference between input voltage and ground connection	Potential difference from incoming voltage +24 V DC	+32 V DC
	Potential difference from incoming voltage, ground	-32 V DC
Climatic conditions during operation	Ambient air temperature[a]	+32 °F ... +140 °F (0 °C ... +60 °C) Derating[b]
	Humidity	10 % ... 95 % (non-condensing)
	Air pressure	min. 795 hPa (+6562 ft; +2000 m)
Climatic conditions during storage	Ambient air temperature[a]	-40 °F ... +158 °F (-40 °C ... +70 °C)
	Humidity	10 % ... 95 % (non-condensing)
	Air pressure	min. 700 hPa (+9842 ft; +3000 m)
Pollution degree		2
Protection classes	Degree of protection	IP30

a. Temperature of the ambient air at a distance of 2 in (5 cm) from the device
b. For device variant SPIDER SL-40-06T1O6O699SZ9HHHH, the maximum permitted ambient air temperature has to be reduced to 122 °F (50 °C).

Dimension drawings

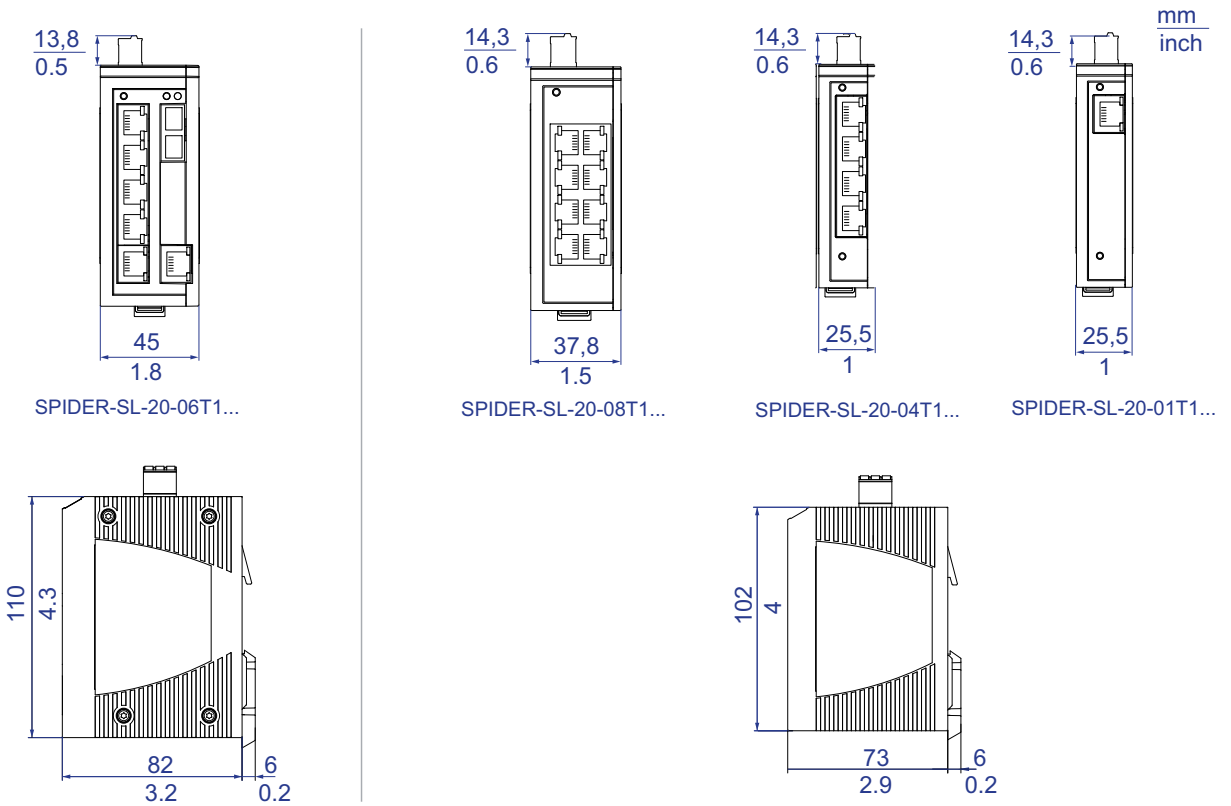


Figure 5: Dimensions of device variants SPIDER-SL-20...

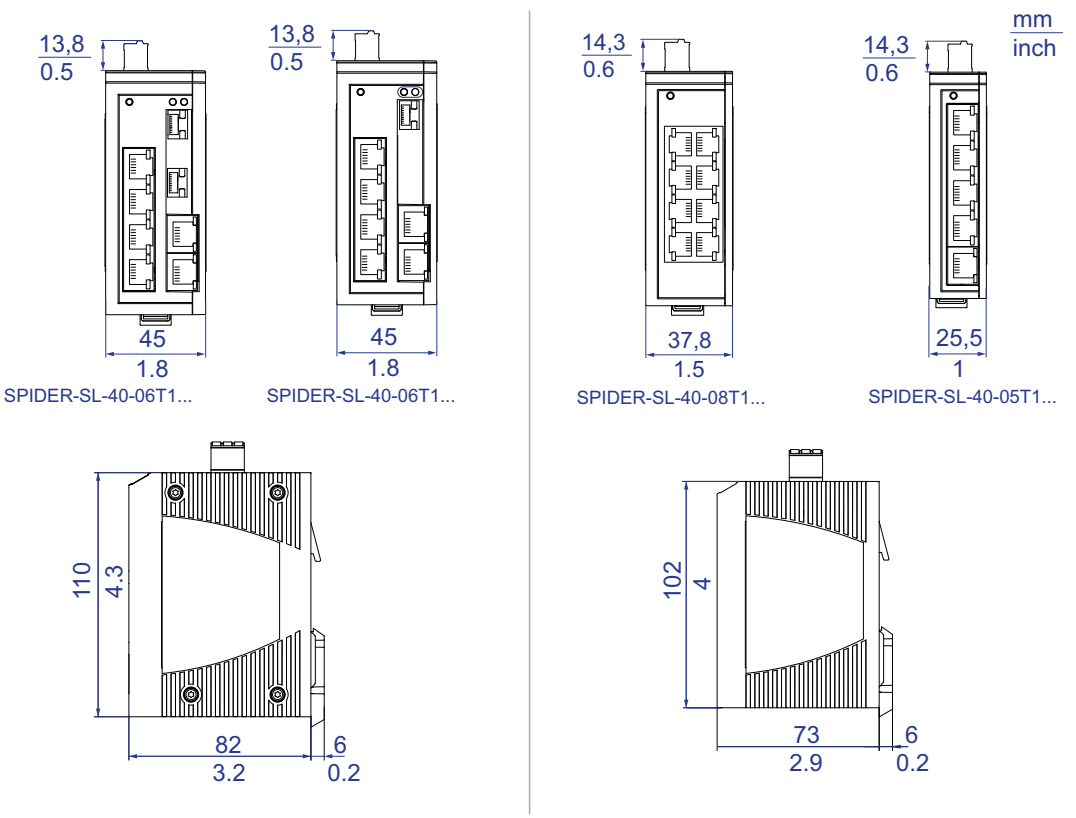


Figure 6: Dimensions of device variants SPIDER-SL-40...

EMC and immunity

Note: Use shielded data cables for gigabit transmission via copper cables. Use shielded data cables for all transmission rates to meet the requirements according to EN 50121-4 and marine applications.

EMC interference emission		
Radiated emission		
FCC 47 CFR Part 15		Class A
EN 55032		Class A
Conducted emission		
FCC 47 CFR Part 15		Class A
EN 55032		Class A

EMC interference immunity		
Electrostatic discharge		
EN 61000-4-2 IEEE C37.90.3	Contact discharge	±4 kV
EN 61000-4-2 IEEE C37.90.3	Air discharge	±8 kV
Electromagnetic field		
EN 61000-4-3	80 MHz ... 1000 MHz	max. 10 V/m
Fast transients (burst)		
EN 61000-4-4 IEEE C37.90.1	DC supply connection	2 kV
EN 61000-4-4 IEEE C37.90.1	Data line	4 kV
Voltage surges - DC supply connection		
EN 61000-4-5	line/ground	2 kV
EN 61000-4-5	line/line	1 kV
Voltage surges - data line		
EN 61000-4-5	line/ground	1 kV
Conducted disturbances		
EN 61000-4-6	150 kHz ... 80 MHz	10 V

Immunity		
IEC 60068-2-6, test Fc	Vibration	5 Hz ... 8.4 Hz with 3.5 mm amplitude
		8.4 Hz ... 150 Hz with 1 g
IEC 60068-2-27, test Ea	Shock	15 g at 11 ms

Network range

10/100/1000 Mbit/s twisted pair port	
Length of a twisted pair segment	max. 328 ft (100 m) (for Cat5e cable)

Table 4: Network range: 10/100/1000 Mbit/s twisted pair port

Power consumption/power output at 24 V DC

Device name	Max. power consumption	Power output
SPIDER-SL-20-01T1...	2.0 W	7.0 Btu(IT)/h
SPIDER-SL-20-04T1...	2.4 W	8.3 Btu(IT)/h
SPIDER-SL-20-05T1...	1.3 W	4.6 Btu(IT)/h
SPIDER-SL-20-06T1.....9...	2.8 W	9.5 Btu(IT)/h
SPIDER-SL-20-06T1.....2...	3.8 W	12.8 Btu(IT)/h
SPIDER-SL-20-08T1...	1.5 W	5.3 Btu(IT)/h
SPIDER-SL-40-05T1...	4.0 W	13.7 Btu(IT)/h
SPIDER-SL-40-06T1....99...	8.7 W	29.6 Btu(IT)/h
SPIDER-SL-40-06T1....O6...	13.3 W	45.4 Btu(IT)/h
SPIDER-SL-40-08T1...	5.0 W	17.1 Btu(IT)/h

Scope of delivery

Number	Article
1 ×	Device
1 ×	3-pin, pluggable terminal block for power supply
1 ×	Safety and general information sheet

Order number

Device	Order number
SPIDER-SL-20-01T1M29999SZ9HHHH	942-132-005
SPIDER-SL-20-01T1S29999SZ9HHHH	942-132-006
SPIDER-SL-20-04T1M29999SZ9HHHH	942-132-007
SPIDER-SL-20-04T1M49999SZ9HHHH	942-132-008
SPIDER-SL-20-04T1S29999SZ9HHHH	942-132-009
SPIDER-SL-20-06T1M29999SZ9HHHH	942-132-010
SPIDER-SL-20-06T1S29999SZ9HHHH	942-132-011
SPIDER-SL-20-06T1M2M299SZ9HHHH	942-132-012
SPIDER-SL-20-06T1S2S299SZ9HHHH	942-132-013
SPIDER-SL-20-05T1999999SZ9HHHH	942-132-001
SPIDER-SL-20-08T1999999SZ9HHHH	942-132-002
SPIDER-SL-40-05T1999999SZ9HHHH	942-132-003
SPIDER-SL-40-06T1O69999SZ9HHHH	942-132-014

Device	Order number
SPIDER-SL-40-06T1O6O699SZ9HHHH	942-132-015
SPIDER-SL-40-08T1999999SYZ9HHHH	942-132-004

Accessories

Note that products recommended as accessories may have different characteristics to those of the device, which may limit the application range of the overall system. For example, if you add an accessory with IP20 to a device with IP65, the degree of protection of the overall system is reduced to IP20.

Other accessories	Order number
3-pin Low Voltage Interlock terminal block (50 pcs.)	943 845-005
Rail Power Supply RPS 30	943 662-003
Rail Power Supply RPS 80 EEC	943 662-080
Rail Power Supply RPS 120 EEC (CC)	943 662-121
Wall mounting plate for DIN rail mounting, width 1.58 in (40 mm)	942 177-001
Wall mounting plate for DIN rail mounting, width 2.76 in (70 mm)	942 177-002

Fast-Ethernet-SFP-Transceiver	Order number
M-FAST SFP-TX/RJ45	942 098-001
M-FAST SFP-TX/RJ45 EEC	942 098-002
M-FAST SFP-MM/LC	943 865-001
M-FAST SFP-MM/LC EEC	943 945-001
M-FAST SFP-SM/LC	943 866-001
M-FAST SFP-SM/LC EEC	943 946-001
M-FAST SFP-SM+/LC	943 867-001
M-FAST SFP-SM+/LC EEC	943 947-001
M-FAST SFP-LH/LC	943 868-001
M-FAST SFP-LH/LC EEC	943 948-001
SFP-FAST-MM/LC[a]	942 194-001
SFP-FAST-MM/LC EEC[a]	942 194-002
SFP-FAST-SM/LC[a]	942 195-001
SFP-FAST-SM/LC EEC[a]	942 195-002

a. You find further information on certifications on the Internet at the Hirschmann product pages (www.hirschmann.com).

Bidirectional Gigabit Ethernet SFP transceiver	Order number
M-SFP-BIDI Type A LX/LC EEC	943 974-001
M-SFP-BIDI Type B LX/LC EEC	943 974-002
M-SFP-BIDI Type A LH/LC EEC	943 975-001
M-SFP-BIDI Type B LH/LC EEC	943 975-002
M-SFP-BIDI Bundle LX/LC EEC (Type A + B)	943 974-101
M-SFP-BIDI Bundle LH/LC EEC (Type A + B)	943 975-101

Table 5: Accessory: Bidirectional Gigabit Ethernet SFP transceiver

Gigabit Ethernet SFP transceiver	Order number
M-SFP-TX/RJ45	943 977-001
M-SFP-SX/LC	943 014-001
M-SFP-SX/LC EEC	943 896-001
M-SFP-MX/LC EEC	942 108-001
M-SFP-LX/LC	943 015-001
M-SFP-LX/LC EEC	943 897-001
M-SFP-LX+/LC	942 023-001
M-SFP-LX+/ LC EEC	942 024-001
M-SFP-LH/LC	943 042-001
M-SFP-LH/LC EEC	943 898-001
M-SFP-LH+/LC	943 049-001
SFP-GIG-LX/LC[a]	942 196-001
SFP-GIG-LX/LC EEC[a]	942 196-002

a. You find further information on certifications on the Internet at the Hirschmann product pages (www.hirschmann.com).

Underlying technical standards

Name	
CSA C22.2 No. 142	Canadian National Standard(s) – Process Control Equipment – Industrial Products
EN 50121-4	Railway applications – EMC – Emission and immunity of the signaling and telecommunications apparatus (Rail Trackside)
EN 55032	Electromagnetic compatibility of multimedia equipment – Emission Requirements
EN 60950-1	Information technology equipment – Safety – Part 1: General requirements
EN 61000-6-2	Electromagnetic compatibility (EMC) – Part 6-2: Generic standards – Immunity for industrial environments
EN 61131-2	Programmable controllers – Part 2: Equipment requirements and tests
FCC 47 CFR Part 15	Code of Federal Regulations
UL/IEC 61010-2-201	Safety for Control Equipment

Table 6: List of the technical standards

The device has an approval based on a specific standard exclusively if the approval indicator appears on the device casing.
The device generally fulfills the technical standards named in their current versions.

A Further support

Technical questions

For technical questions, please contact any Hirschmann dealer in your area or Hirschmann directly.

You find the addresses of our partners on the Internet at http://www.hirschmann.com.

A list of local telephone numbers and email addresses for technical support directly from Hirschmann is available at https://hirschmann-support.belden.com.

This site also includes a free of charge knowledge base and a software download section.

Hirschmann Competence Center

The Hirschmann Competence Center is ahead of its competitors on three counts with its complete range of innovative services:

- Consulting incorporates comprehensive technical advice, from system evaluation through network planning to project planning.
- Training offers you an introduction to the basics, product briefing and user training with certification.
  You find the training courses on technology and products currently available at http://www.hicomcenter.com.
- Support ranges from the first installation through the standby service to maintenance concepts.

With the Hirschmann Competence Center, you decided against making any compromises. Our client-customized package leaves you free to choose the service components you want to use.

Internet:
http://www.hicomcenter.com

HIRSCHMANN

A BELDEN BRAND