Stride™

SE3 Series

Industrial Unmanaged Ethernet Switches

User Manual

#SE3-USER-M

AUTOMATIONDIRECT.com

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At a minimum, you should follow all applicable sections of the National Fire Code, National Electrical Code, and the codes of the National Electrical Manufacturer's Association (NEMA). There may be local regulatory or government offices that can also help determine which codes and standards are necessary for safe installation and operation.

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Vous devez, à tout le moins, respecter toutes les sections applicables du Code national de prévention des incendies, du Code national de l'électricité et des codes de la National Electrical Manufacturer's Association (NEMA). Des organismes de réglementation ou des services gouvernementaux locaux peuvent également vous aider à déterminer les codes ainsi que les normes à respecter pour assurer une installation et un fonctionnement sûrs.

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Stride SE3 Series
Industrial Unmanaged Ethernet Switches
User Manual

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Please include the Manual Number and the Manual Issue, both shown below, when communicating with Technical Support regarding this publication.

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Introduction

The Purpose of This User's Manual

Thank you for purchasing our Stride® SE3 series Industrial Ethernet Switches. This manual describes AutomationDirect.com's Stride industrial Ethernet switches, their specifications, included components, and provides you with important information for installation, connectivity and setup.

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Conventions Used

When you see the "notepad" icon in the left-hand margin, the paragraph to its immediate right will be a special note. The word **NOTE** in boldface will mark the beginning of the text.

WHEN YOU SEE THE "EXCLAMATION MARK" ICON IN THE LEFT-HAND MARGIN, THE PARAGRAPH TO ITS IMMEDIATE RIGHT WILL BE A WARNING OR A CAUTION. THIS INFORMATION COULD PREVENT INJURY, LOSS OF PROPERTY, OR EVEN DEATH (IN EXTREME CASES). THE WORDS ***WARNING*** *OR* ***CAUTION*** *IN BOLDFACE WILL MARK THE BEGINNING OF THE TEXT.*

General Information

Overview

This user manual will help you install and maintain the **Stride** industrial Ethernet switches. Installation of these devices is very easy, and they will begin to operate as soon as they are powered up.

Operation

Unlike an Ethernet hub that broadcasts all messages out all ports, these industrial Ethernet switches will intelligently route Ethernet messages only to the appropriate port. The major benefits of this are increased bandwidth and speed, reduction or elimination of message collisions, and deterministic performance when paired with real-time systems.

These industrial Ethernet switches can support 10BaseT (10 Mbps), 100BaseT (100 Mbps) or 1000BaseT (Gigabit Ethernet) on their RJ45 ports. Each of these ports will independently auto-sense the speed and duplex, MDI/MDIX-crossover and polarity, allowing you to use patch or crossover cables.

Some models include fiber optic ports or slots that accept SFP transceivers.

Security Considerations

When implementing any method of remote access to your equipment, you need to consider the security exposure in order to minimize the risks to your processes and your equipment. Security should always be carefully evaluated for each installation. Refer to "Appendix F: Security Considerations for Control Systems Networks" for more information.

Class I Division 2 Hazardous Location Installation and Operation

These are open-type devices. Units rated for hazardous locations are meant to be installed in an enclosure which is only accessible with the use of a tool and suitable for the environment when installed in Class 1, Division 2 Hazardous Locations.

WARNING: *THIS EQUIPMENT IS SUITABLE FOR USE IN CLASS I, DIVISION 2, GROUPS A, B, C, AND D OR NON-HAZARDOUS LOCATIONS ONLY.*

WARNING: *EXPLOSION HAZARD — DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN REMOVED OR THE AREA IS KNOWN TO BE NON-HAZARDOUS.*

WARNING: *EXPLOSION HAZARD — SUBSTITUTION OF ANY COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS I, DIVISION 2.*

Hazardous location rating applies only to the following models:

- SE3-SW5UG-T
- SE3-SW8UG-T
- SE3-SW5U-1C1-T
- SE3-SW5U-1T1-T
- SE3-SW5UG-1P-T
- SE3-SW6U-2C1-T
- SE3-SW6U-2T1-T
- SE3-SW7U-2P-T
- SE3-SWP1A5U-T
- SE3-SWP2A5U-T
- SE3-SWP2A5UG-T
- SE3-SWP2A7U-2P-T
- SE3-SW10UG-2P-T

Safety Precautions

CAUTION: *IF THE DC VOLTAGE IS SUPPLIED BY AN EXTERNAL CIRCUIT, PLEASE USE A PROTECTION DEVICE ON THE POWER SUPPLY INPUT. SUPPLY POWER FROM A UL LISTED INDUSTRIAL USE POWER SOURCE.*

Warning Labels

The caution label and hot surface warning label mean that you should check the certain information on user manual when working with the device.

Caution Label

Hot Surface Warning Label

FCC Statement

This equipment has been tested and found to comply with the limits for a Class-A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy. It may cause harmful interference to radio communications if the equipment is not installed and used in accordance with the instructions. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

NOTE: Modifications to this equipment will void the user's authority to operate the equipment.

CE Mark Warning

This is a Class-A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Product Overview

The SE3 series industrial unmanaged switches are rated at least IP30, with one model rated IP40 and one rated IP67, and can be DIN rail mounted or wall mounted. The series offers the following:

- 10/100Tx Fast Ethernet ports
- Up to twelve 10/100/1000Tx Gigabit Ethernet ports
- Power-over-Ethernet options, from IEEE 802.3at compliant 30W/port to 90W/port with IEEE 802.3bt
- 100Mbps SC and ST fiber ports with multi-mode support
- Up to four 100/1000Mbps SFP slots, suitable for high bandwidth and long-distance communication
- An IP67 rated model with 10/100Tx Fast Ethernet M12 ports
- Auto-detection of MDI or MDI-X on all copper ports (RJ45 or M12)
- High EFT and ESD protection
- Power redundancy with a dual power input design with reverse polarity protection
- Built-in relay warning function on most models to alert users of power failures
- Standard operating temperature of -10 to 65°C, and extended operating temperature of -40 to 75°C, for use in industrial automation applications or harsh environments.

SE3 Unmanaged Switches

Stride SE3 Non-PoE Unmanaged Switch Models							
Part Number	***RJ45 10/100***	***RJ45 GbE***	***M12 10/100***	***Fiber***	***Input Power (Maximum)***	***IP Rating***	***Operating Temperature***
SE3-SW5U	5	–		–	1.2 W	IP30	-10 to +65°C [14 to 149°F]
SE3-SW8U	8	–		–	2.2 W		
SE3-SW5U-T	5	–		–	1.2 W		-40 to +75°C [-40 to 167°F]
SE3-SW8U-T	8	–		–	2.2 W		
SE3-SW5UG-T	–	5		–	6.6 W		
SE3-SW8UG-T	–	8		–	9.2 W		
SE3-SW5U-1C1-T	4	–		1 SC	5W		
SE3-SW5U-1T1-T	4	–		1 ST	5W		
SE3-SW6U-2C1-T	4	–		2 SC	6W		
SE3-SW6U-2T1-T	4	–		2 ST	6W		
SE3-SW7U-2P-T	5	–		2 SFP*	8W		
SE3-SW5UG-1P-T	–	4		1 SFP*	5.6 W		
SE3-SW10UG-2P-T	–	8		2 SFP*	12W		
SE3-SW16UG-4P-T	–	12		4 SFP*	15.4 W		
SE3-SW5U-N67-T	–	–	5	–	1.2 W	IP67	

* Optional SFP modules sold separately.

SE3 Unmanaged Media Converters

Stride SE3 Non-PoE Unmanaged Media Converters						
Part Number	***RJ45 10/100***	***RJ45 GbE***	***Fiber***	***Input power (Maximum)***	***IP Rating***	***Operating Temp***
SE3-MC2U-C1-T	1	–	1 SC	1.92 W	IP30	-40 to +80°C [-40 to 176°F]
SE3-MC2U-T1-T			1 ST			
SE3-MC2UG-1P-T	–	1	1 SFP*	1.8 W		

* Optional SFP modules sold separately.

SE3 Unmanaged Power over Ethernet Switches

Stride SE3 Unmanaged PoE Switches							
Part Number	***RJ45 10/100 PoE+***	***RJ45 GbE PoE+***	***RJ45 10/100***	***RJ45 GbE***	***Fiber***	***System Power (Maximum)*****	***Operating Temperature***
SE3-SWP1A5U-T	4	–	1	–	–	4W	-40 to +75°C [-40 to 167°F]
SE3-SWP2A5U-T						5.5 W	
SE3-SWP2A5UG-T	–	4	–	1		6.3 W	
SE3-SWP2A7U-2P-T	4	–	1	–	2 SFP*	9W	
SE3-SWP2B5UG-1P-T	–	4	–	–	1 SFP*	6.3 W	

* Optional SFP modules sold separately.
** Does not include power supplied to PoE devices

SE3 Unmanaged Power over Ethernet Injectors

Stride SE3 Unmanaged PoE+ Injectors				
Part Number	***RJ45 GbE PoE+***	***RJ45 GbE Non-PoE***	***Maximum PoE Power Budget***	***Operating Temp***
SE3-IJ2A2UG-T	1	1	100W	-40 to +75°C [-40 to 167°F]
SE3-IJ2B2UG-T			90W	

SFP Transceivers

Stride SFP (small form-factor pluggable) modules, also called mini-GBIC, are compact, hot-swappable transceivers.

On models with SFP ports, optional Stride SFP transceivers can add LC fiber connectors for fiber connectivity at Fast Ethernet or Gigabit Ethernet speed or an RJ45 port for Gigabit Ethernet speed over Cat5e/6a cable.

SFP-2K-GMF

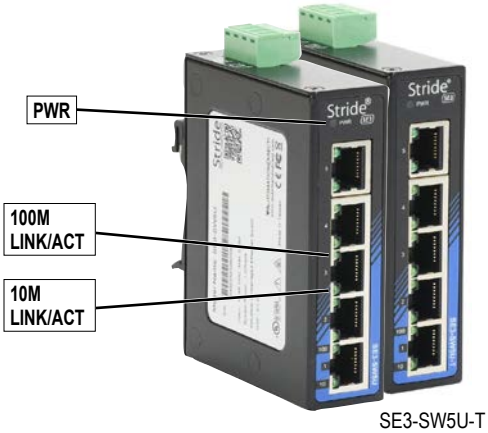
SFP Fiber Transceivers				
Part Number	***Mode***	***Data Rate***	***Light Source***	***Maximum Transmission Distance***
SFP-4K-FMF	Multi-mode	Fast Ethernet (155MB)	1310 nm, FP	4km
SFP-30K-FSF	Single-mode			30km
SFP-500-GMF	Multi-mode	Gigabit (1.25 GB)	850 nm, VCSEL	550m
SFP-2K-GMF			1310 nm, FP	2km
SFP-10K-GSF	Single-mode			10km
SFP-30K-GSF			1310 nm, DFB	30km

SFP-1GC-T

SFP Copper Transceiver				
Part Number	***Connector Type***	***Data Rate***	***Cable Type***	***Maximum Transmission Distance***
SFP-1GC-T	RJ-45	Gigabit Ethernet	Cat5e/6a	100m

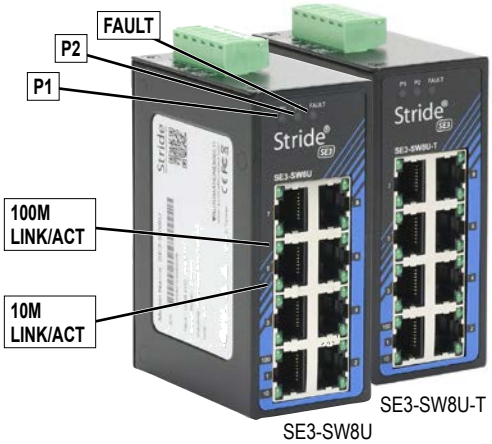
Hardware Features

LED Indicators



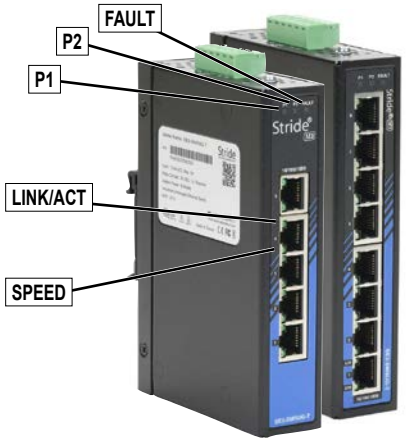
SE3-SW5U-T
SE3-SW5U

SE3-SW5U(-T) LED Indicators			
LED	***Color***	***Description***	
PWR	Green	ON	Power input 1 or 2 is active
		OFF	Power input 1 or 2 is inactive
100M (LAN Port)	Green	ON	Connected to network, 100Mbps
		Flashing	Network is active
		OFF	Not connected to network
10M (LAN Port)	Green	ON	Connected to network, 10Mbps
		Flashing	Network is active
		OFF	Not connected to network



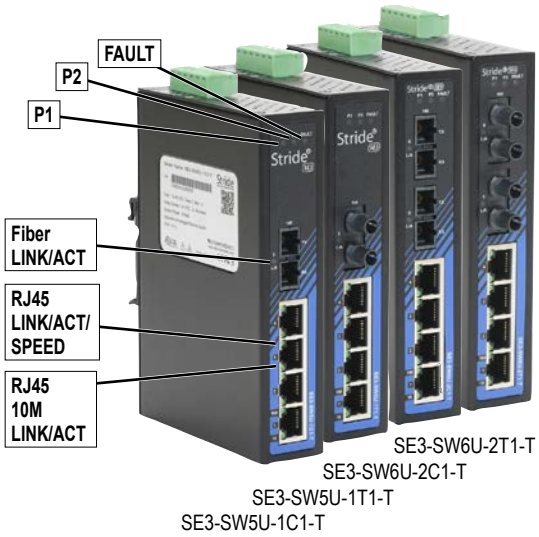
SE3-SW8U-T
SE3-SW8U

SE3-SW8U(-T) LED Indicators			
LED	***Color***	***Description***	
P1	Green	ON	Power input 1 is active
		OFF	Power input 1 is inactive
P2	Green	ON	Power input 2 is active
		OFF	Power input 2 is inactive
FAULT	Red	ON	Power input 1 or 2 is inactive
		OFF	Power input 1 and 2 are both functional, or no power inputs
100M (LAN Port)	Green	ON	Connected to network, 100Mbps
		Flashing	Network is active
		OFF	Not connected to network
10M (LAN Port)	Green	ON	Connected to network, 10Mbps
		Flashing	Network is active
		OFF	Not connected to network

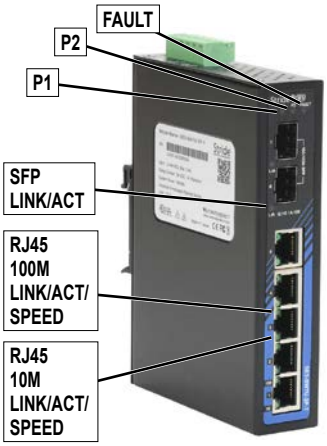


SE3-SW8UG-T
SE3-SW5UG-T

SE3-SW5UG-T, SE3-SW8UG-T LED Indicators			
LED	***Color***	***Description***	
P1	Green	ON	Power input 1 is active
		OFF	Power input 1 is inactive
P2	Green	ON	Power input 2 is active
		OFF	Power input 2 is inactive
FAULT	Red	ON	Power input 1 or 2 is inactive
		OFF	Power input 1 and 2 are both functional, or no power inputs
LAN Port LINK/ACT	Green	ON	Connected to network
		Flashing	Network is active
		OFF	Not connected to network
LAN Port SPEED	Green	ON	Connected to network, 1000Mbps
		OFF	Not connected to network, or connected at speed of 10/100 Mbps

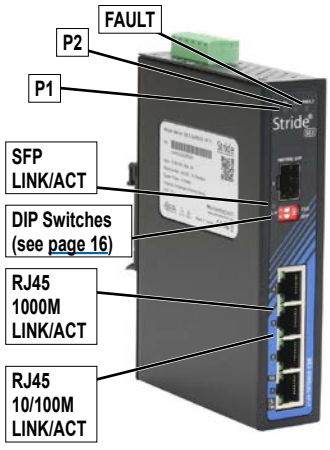


SE3-SW5U-1C1-T, SE3-SW5U-1T1-T, SE3-SW6U-2C1-T, SE3-SW6U-2T1-T LED Indicators			
LED	***Color***	***Description***	
P1	Green	ON	Power input 1 is active
		OFF	Power input 1 is inactive
P2	Green	ON	Power input 2 is active
		OFF	Power input 2 is inactive
FAULT	Red	ON	Power input 1 or 2 is inactive
		OFF	Power input 1 and 2 are both functional, or no power inputs
Fiber Port LINK/ACT	Green	ON	Connected to network
		Flashing	Network is active
		OFF	Not connected to network
LAN Port 100M LINK/ACT	Green	ON	Connected to network, 100Mbps
		Flashing	Network is active
		OFF	Not connected to network
LAN Port 10M LINK/ACT	Green	ON	Connected to network, 10Mbps
		Flashing	Network is active
		OFF	Not connected to network



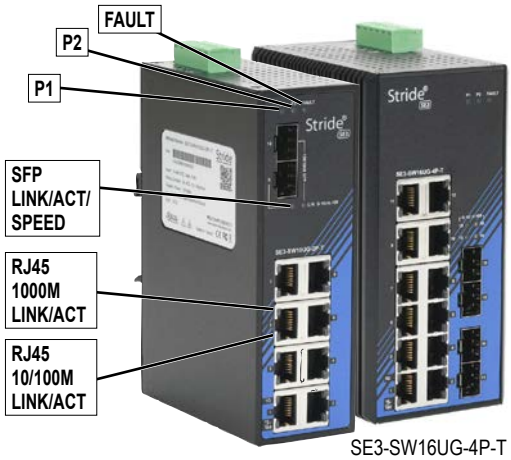
SE3-SW7U-2P-T

SE3-SW7U-2P-T LED Indicators			
LED	***Color***	***Description***	
P1	Green	ON	Power input 1 is active
		OFF	Power input 1 is inactive
P2	Green	ON	Power input 2 is active
		OFF	Power input 2 is inactive
FAULT	Red	ON	Power input 1 or 2 is inactive
		OFF	Power input 1 and 2 are both functional, or no power inputs
SFP Port LINK/ACT	Green	ON	Connected to network
		Flashing	Network is active
		OFF	Not connected to network
LAN Port 100M LINK/ACT	Green	ON	Connected to network, 100Mbps
		Flashing	Network is active
		OFF	Not connected to network
LAN Port 10M LINK/ACT	Green	ON	Connected to network, 10Mbps
		Flashing	Network is active
		OFF	Not connected to network



SE3-SW5UG-1P-T

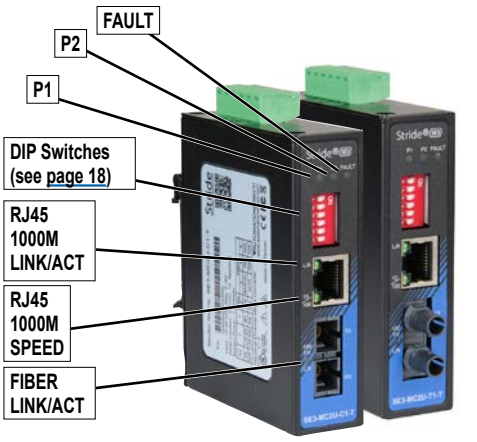
SE3-SW5UG-1P-T LED Indicators			
LED	***Color***	***Description***	
P1	Green	ON	Power input 1 is active
		OFF	Power input 1 is inactive
P2	Green	ON	Power input 2 is active
		OFF	Power input 2 is inactive
FAULT	Red	ON	Power input 1 or 2 is inactive
		OFF	Power input 1 and 2 are both functional, or no power inputs
SFP Port LINK/ACT	Green	ON	Connected to network
		Flashing	Network is active
		OFF	Not connected to network
LAN Port 1000M LINK/ACT	Green	ON	Connected to network, 1000Mbps
		Flashing	Network is active
		OFF	Not connected to network
LAN Port 10/100M LINK/ACT	Green	ON	Connected to network, 10/100Mbps
		Flashing	Network is active
		OFF	Not connected to network



SE3-SW16UG-4P-T

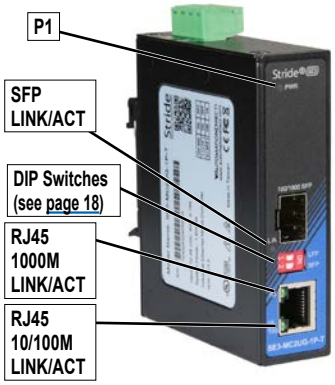
SE3-SW10UG-2P-T

SE3-SW10UG-2P-T, SE3-SW16UG-4P-T LED Indicators			
LED	***Color***	***Description***	
P1	Green	ON	Power input 1 is active
		OFF	Power input 1 is inactive
P2	Green	ON	Power input 2 is active
		OFF	Power input 2 is inactive
FAULT	Red	ON	Power input 1 or 2 is inactive
		OFF	Power input 1 and 2 are both functional, or no power inputs
SFP Port LINK/ACT/ SPEED	Green	ON	Connected to network, 1000Mbps
		Flashing	Network is active
		OFF	Not connected to network
	Amber	ON	Connected to network, 100Mbps
		Flashing	Network is active
		OFF	Not connected to network
LAN Port 1000M LINK/ACT	Green	ON	Connected to network, 1000Mbps
		Flashing	Network is active
		OFF	Not connected to network
LAN Port 10/100M LINK/ACT	Green	ON	Connected to network, 10/100Mbps
		Flashing	Network is active
		OFF	Not connected to network



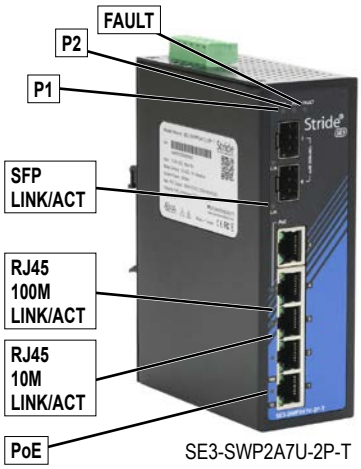
SE3-MC2U-T1-T
SE3-MC2U-C1-T

SE3-MC2U-C1-T, SE3-MC2U-T1-T LED Indicators			
LED	***Color***	***Description***	
P1	Green	ON	Power input 1 is active
		OFF	Power input 1 is inactive
P2	Green	ON	Power input 2 is active
		OFF	Power input 2 is inactive
FAULT	Red	ON	Power input 1 or 2 is inactive
		OFF	Power input 1 and 2 are both functional, or no power inputs
100FX Fiber Port LINK/ACT	Green	ON	Connected to network
		Flashing	Network is active
		OFF	Not connected to network
LAN Port 1000M LINK/ACT	Green	ON	Connected to network, 1000Mbps
		Flashing	Network is active
		OFF	Not connected to network
LAN Port SPEED	Green	ON	Connected to network, 100Mbps
		OFF	Not connected to network, or connected at speed of 10Mbps



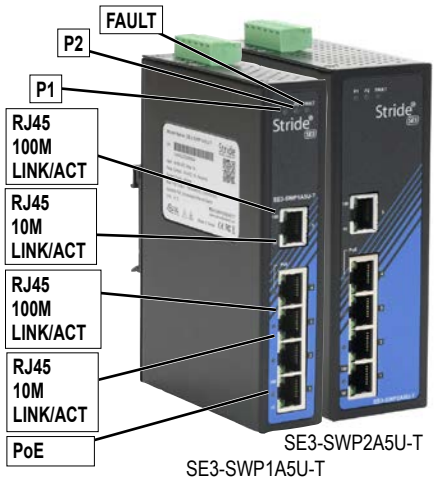
SE3-MC2UG-1P-T

SE3-MC2UG-1P-T LED Indicators			
LED	***Color***	***Description***	
P1	Green	ON	Power input 1 is active
		OFF	Power input 1 is inactive
P2	Green	ON	Power input 2 is active
		OFF	Power input 2 is inactive
SFP Port LINK/ACT	Green	ON	Connected to network
		Flashing	Network is active
		OFF	Not connected to network
LAN Port 1000M LINK/ACT	Green	ON	Connected to network, 1000Mbps
		Flashing	Network is active
		OFF	Not connected to network
LAN Port 10/100M LINK/ACT	Green	ON	Connected to network, 10/100Mbps
		Flashing	Network is active
		OFF	Not connected to network



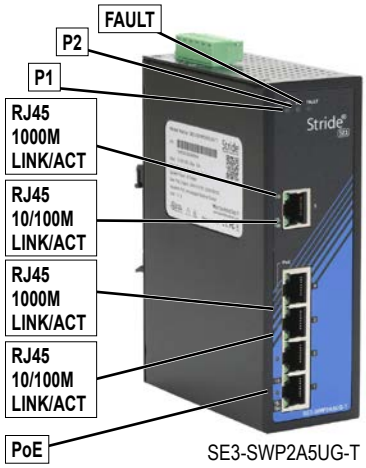
SE3-SWP2A7U-2P-T

SE3-SWP2A7U-2P-T LED Indicators			
LED	***Color***	***Description***	
P1	Green	ON	Power input 1 is active
		OFF	Power input 1 is inactive
P2	Green	ON	Power input 2 is active
		OFF	Power input 2 is inactive
FAULT	Red	ON	Power input 1 or 2 is inactive
		OFF	Power input 1 and 2 are both functional, or no power inputs
SFP Port LINK/ACT	Green	ON	Connected to network
		Flashing	Network is active
		OFF	Not connected to network
LAN Port 100M LINK/ACT	Green	ON	Connected to network, 100Mbps
		Flashing	Network is active
		OFF	Not connected to network
LAN Port 10M LINK/ACT	Green	ON	Connected to network, 10Mbps
		Flashing	Network is active
		OFF	Not connected to network
PoE	Green	ON	The port is supplying power to the powered device
		OFF	No powered device attached or failure to supply power



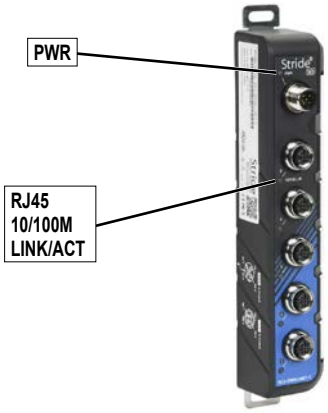
SE3-SWP2A5U-T
SE3-SWP1A5U-T

SE3-SWP1A5U-T, SE3-SWP2A5U-T LED Indicators			
LED	***Color***	***Description***	
P1	Green	ON	Power input 1 is active
		OFF	Power input 1 is inactive
P2	Green	ON	Power input 2 is active
		OFF	Power input 2 is inactive
FAULT	Red	ON	Power input 1 or 2 is inactive
		OFF	Power input 1 and 2 are both functional, or no power inputs
LAN Port 100M LINK/ACT	Green	ON	Connected to network, 100Mbps
		Flashing	Network is active
		OFF	Not connected to network
LAN Port 10M LINK/ACT	Green	ON	Connected to network, 10Mbps
		Flashing	Network is active
		OFF	Not connected to network
PoE (Port 1–4)	Green	ON	The port is supplying power to the powered device
		OFF	No powered device attached or failure to supply power



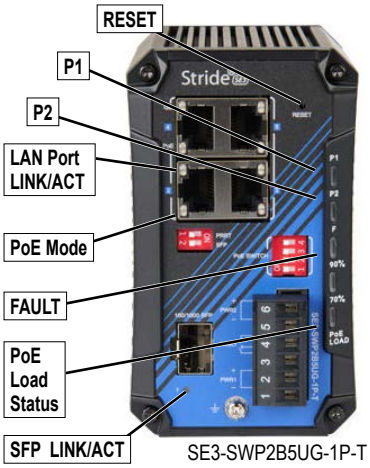
SE3-SWP2A5UG-T

SE3-SWP2A5UG-T LED Indicators			
LED	***Color***	***Description***	
P1	Green	ON	Power input 1 is active
		OFF	Power input 1 is inactive
P2	Green	ON	Power input 2 is active
		OFF	Power input 2 is inactive
FAULT	Red	ON	Power input 1 or 2 is inactive
		OFF	Power input 1 and 2 are both functional, or no power inputs
LAN Port 1000M LINK/ACT	Green	ON	Connected to network, 1000Mbps
		Flashing	Network is active
		OFF	Not connected to network
LAN Port 10/100M LINK/ACT	Green	ON	Connected to network, 10/100Mbps
		Flashing	Network is active
		OFF	Not connected to network
PoE (Port 1–4)	Green	ON	The port is supplying power to the powered device
		OFF	No powered device attached or failure to supply power



SE3-SW5U-N67-T

SE3-SW5U-N67-T LED Indicators			
LED	***Color***	***Description***	
PWR	Green	ON	Power input 1 or 2 is active
		OFF	Power input 1 and 2 are both inactive
Ethernet Port (1 to 5) Link/Act		ON	Connected to network, 10/100Mbps
		Flashing	Network is active
		OFF	Not connected to network



SE3-SWP2B5UG-1P-T

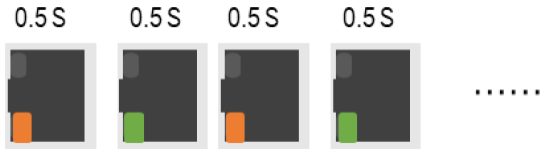
SE3-SWP2B5UG-1P-T LED Indicators			
LED	***Color***	***Description***	
LAN Port 10/100/1000M LINK/ACT	Green	ON	Connected to network, 10/100/1000Mbps
		Flashing	Network is active
		OFF	Not connected to network
PoE Mode (Port 2–5)	Green	ON	IEEE 802.3bt connection Single Signature PD Class 5–8 Dual Signature PD Channel Class 1–5
		OFF	No powered device attached or failure to supply power
	Amber	ON	IEEE 802.3af/at connection Single Signature PD Class 0–4
		OFF	No powered device attached or failure to supply power
SFP Port LINK/ACT	Green	ON	Connected to network, 100/1000Mbps
		Flashing	Network is active
		OFF	Not connected to network
P1	Green	ON	Power input 1 is active
		OFF	Power input 1 is inactive
P2	Green	ON	Power input 2 is active
		OFF	Power input 2 is inactive
FAULT	Red	ON	One or more of the following fault trigger events occured (triggers fault alarm relay) • Power input 1 or 2 is inactive • Total PoE load >100% PoE budget • PoE over current per port • Cable short per port in PD that has been normally powered • One of the channels in dual PD failed
		OFF	No fault condition
PoE Load	Red 90% Blue 70%	Flashing RED (1 flash/s)	PoE load is >90% and ≤100% of budget
		ON RED and BLUE	PoE load is >70% and ≤90% of budget
		ON BLUE	PoE load is >50% and ≤70% of budget
		OFF	PoE load is ≤50% of budget

SE3-SWP2B5UG-1P-T LED Indicators

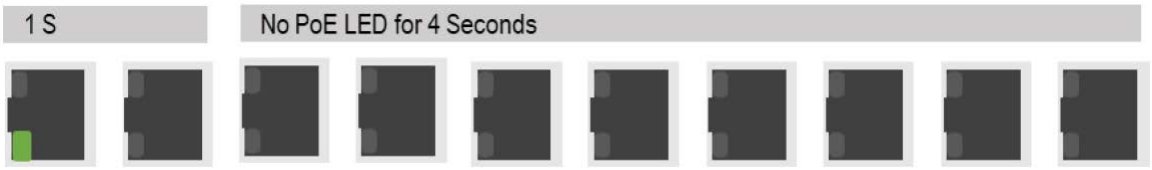
The PoE Mode LEDs flash in specific patterns to indicate ongoing or recovered fault conditions. The system will automatically retry every 20 seconds to recover from the event failure. To clear the warning indicator after event recovery, unplug the port cable for at least 2 seconds and reconnect it or disable the PoE function of the port via DIP Switch for at least 2 seconds then re-enable it.

- **PoE Budget Overload Event**

  When the total PoE budget is exceeded, PoE power to the lowest priority PoE port will be shut down. The PoE Mode LED of that port flash the following pattern until the port recovers from the event:



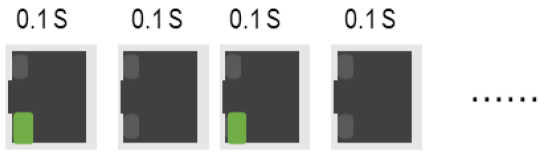
  After the PoE port recovers from the event, the LED will flash the following pattern until the event indicator is cleared manually:



  **AF/AT: Amber; BT: Green

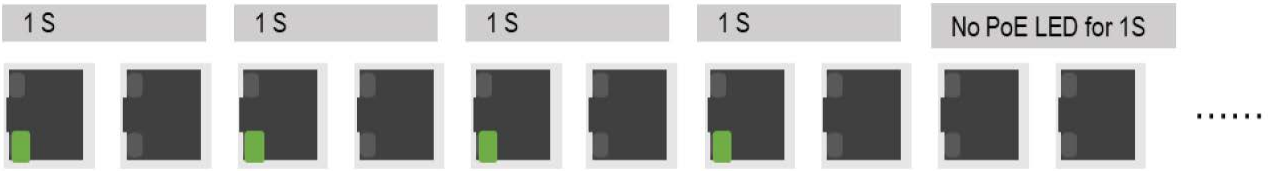
- **PoE Port Over-Current Event (Per Port)**

  When the current limit of a port is exceeded, PoE power to that port will be shut down. The PoE Mode LED of that port will flash the following pattern until the port recovers from the event:



  **AF/AT: Amber; BT: Green

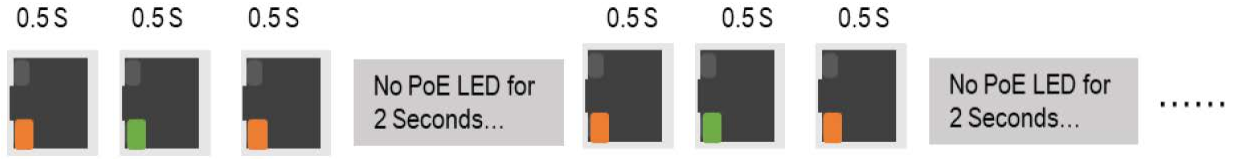
  After the PoE port recovers from the event, the LED will flash the following pattern until the event indicator is cleared manually:



  **AF/AT: Amber; BT: Green

- **Cable Short Event**

  When a working PD experiences a cable short event, PoE power to that port will be shut down. The PoE Mode LED of that port will flash the following pattern until the port recovers from the event:

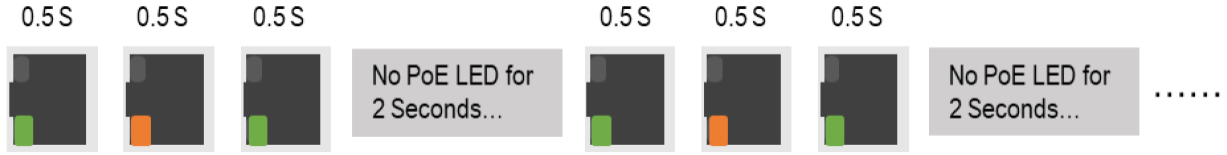


  After the PoE port recovers from the event, the LED will flash the following pattern until the event indicator is cleared manually:

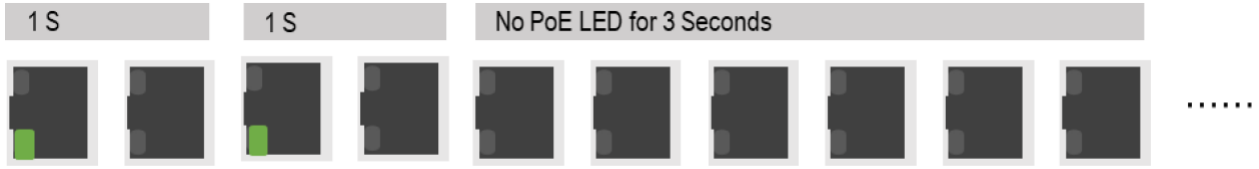
  **AF/AT: Amber; BT: Green

- **Dual PD Fail Event**

  When one channel of a connected dual PD fails, PoE power to that port will be shut down. The PoE Mode LED of that port will flash the following pattern until the port recovers from the event:



  After the PoE port recovers from the event, the LED will flash the following pattern until the event indicator is cleared manually:



  **AF/AT: Amber; BT: Green

Redundant Power Inputs

All SE3-series industrial Ethernet switches have dual redundant power inputs. Connecting two independent power sources reduces the risk of downtime resulting from power supply failure.

For information on wiring power to the industrial Ethernet switches, please see "Power Wiring" on page 21.

Fault Alarm

Most of the SE3-series industrial Ethernet switches offer a power fault alarm contact to signal loss of power. The alarm is a normally open contact that is held closed by the presence of power on both power inputs. On loss of one or both power sources, the alarm contact will open. For proper operation of the alarm contact when using a single power input, jumper the two power inputs together. For information on wiring the power fault alarm contact, please see "Alarm Wiring" on page 22.

On model SE3-SWP2B5UG-1P-T, the fault indicator and relay contact will also activate on the following events:

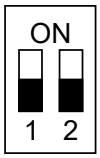
1. Power input 1 or 2 is inactive
2. Total PoE load >100% PoE budget
3. PoE over current per port
4. Cable short per port in PD that has been normally powered
5. One of the channels in dual PD failed

When Event 2, 3, 4 or 5 triggers the fault, the relay contact alarm will update its status every 30 seconds. If the fault event has been cleared for 30 seconds, the relay contact alarm will be turn off. If the user disables the failed PoE port by removing the cable or DIP switch manually, the relay will recover immediately.

DIP Switches (Specific Models Only)

Model SE3-SW5UG-1P-T

Model SE3-SW5UG-1P-T has two DIP switches, located on the front of the unit.



SE3-SW5UG-1P-T DIP Switch Settings			
DIP Switch	***Description***	***ON***	***OFF***
1	Enables or disables Energy Efficient Ethernet	Enable	Disable
2	SFP module port speed	100Mbps	Module Native Speed

NOTE: A change in the DIP switch settings will not take effect until the switch is power cycled. Thus, if a setting is changed while the device is powered, the old setting will remain active until power is removed and reapplied.

SFP module port speed:

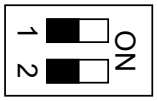
Model SE3-SW5UG-1P-T can optionally force a compatible Gigabit SFP module to operate at 100Mbps. The DIP switch should normally be in the OFF position for both 1Gbps and 100Mbps SFP modules to allow them to operate at their native speed. Set the switch to the ON position to force a 1Gbps module to operate at 100Mbps. This may be useful, for instance, in order to allow connection to legacy 100Mbps equipment without requiring purchase of an additional SFP module. This feature may not be compatible with all SFP modules, but it does work with the Gigabit SFP modules available at www.automationdirect.com.

Energy-Efficient Ethernet (EEE):

Energy-Efficient Ethernet (EEE) is a set of enhancements defined by the IEEE 802.3az standard. Its primary objective is to curtail power usage during periods of reduced data activity or idleness. By dynamically adapting power consumption according to actual data traffic demands, EEE reduces power consumption by up to 30%.

Model SE3-SWP2B5UG-1P-T

Model SE3-SWP2B5UG-1P-T has two sets of DIP switches, located on the front of the unit. The first set, consisting of two switches located on the left side of the front of the unit, controls overall PoE settings.

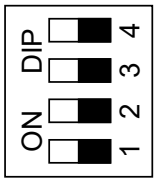


SE3-SWP2B5UG-1P-T SFP/PRRT DIP Switch Settings			
DIP Switch	***Description***	***ON***	***OFF***
1	PD Remote Reset Technology (PRRT)*	Enable	Disable
2	SFP module port speed	100Mbps	1Gbps

* Allows user to remotely reboot the PoE Ethernet switch by dropping the fiber link for 3 seconds.

NOTE: A change in the above DIP switch settings will not take effect until the switch is power cycled. In other words, if a setting is changed while the device is powered, the old setting will remain active until power is removed and reapplied.

The second set of DIP switches, consisting of four switches located on the right side of the front of the unit, controls PoE power on individual ports.

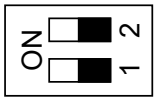


SE3-SWP2B5UG-1P-T Safe PoE Disable DIP Switch Settings			
DIP Switch	***Description***	***ON***	***OFF***
1	Port 2 PoE Function*	Enable	Disable
2	Port 3 PoE Function*	Enable	Disable
3	Port 4 PoE Function*	Enable	Disable
4	Port 5 PoE Function*	Enable	Disable

* Allows user to deactivate PoE power on a port before disconnecting the cable.

Model SE3-IJ2A2UG-T

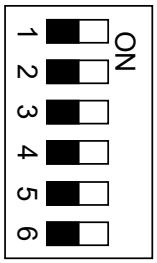
Model SE3-IJ2A2UG-T has two DIP switches, located on the front of the unit.



SE3-IJ2A2UG-T DIP Switch Settings			
DIP Switch	***Description***	***ON***	***OFF***
1	PoE Mode	Enhanced Mode 50W max PoE budget over 2 pairs 100W max PoE budget over 4 pairs	Standard Mode PoE output follows IEEE 802.3at/bt
2	Dual PD Check	Enabled Valid detection required on both channels for PoE classification and power	Disabled Valid detection required for operation of each channel independently

Models SE3-MC2U-C1-T, SE3-MC2U-T1-T

Models SE3-MC2U-C1-T, SE3-MC2U-T1-T have six DIP switches, located on the front of the unit.



SE3-MC2U-C1-T, SE3-MC2U-T1-T DIP Switch Settings				
DIP Switch	***Description***		***ON***	***OFF***
1	Link Fault Pass (LFP)*		Enable	Disable
2	Operating Mode**		Converter	Switch
3	Fiber Port Settings	Duplex Mode	Half-Duplex	Full-Duplex
4	Copper Port Settings	Auto-negotiation	Disable	Enable
5		Speed	10Mbps	100Mbps
6		Duplex Mode	Half-Duplex	Full-Duplex

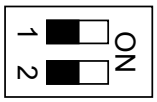
* The link fault pass technology allows for detection of a loss of connection as if there was no conversion from copper to fiber. If the media converter detects a loss of connection on the copper port, it will respond by automatically shutting down the fiber port. This allows the receiving end of the fiber signal to detect the loss of ability to communicate to the end device at the copper side.

** Converter mode forwards a frame immediately without storing the frame in memory. When you enable this mode, please make sure both Ethernet copper port and optic fiber port operate at 100Mbps and full duplex. Switch mode enables a “Store-and-Forward” function which buffers incoming packets from the fiber port when the copper port is operating at 10Mbps.

NOTE: A change in the above DIP switch settings will not take effect until the switch is power cycled. In other words, if a setting is changed while the device is powered, the old setting will remain active until power is removed and reapplied.

Model SE3-MC2UG-1P-T

Model SE3-MC2UG-1P-T has two DIP switches, located on the front of the unit.



SE3-MC2UG-1P-T DIP Switch Settings			
DIP Switch	***Description***	***ON***	***OFF***
1	Link Fault Pass (LFP)*	Enable	Disable
2	SFP Speed	100Mbps	1000Mbps

* The link fault pass technology allows for detection of a loss of connection as if there was no conversion from copper to fiber. If the media converter detects a loss of connection on the copper port, it will in response automatically shut down the fiber port. This allows the receiving end of the fiber signal to detect the loss of ability to communicate to the end device at the copper side.

NOTE: A change in the above DIP switch settings will not take effect until the switch is power cycled. In other words, if a setting is changed while the device is powered, the old setting will remain active until power is removed and reapplied.

Mounting

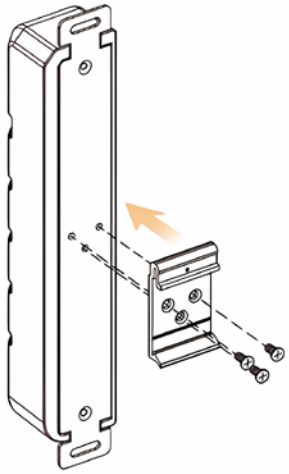
The SE3 series switches can be DIN rail mounted or panel wall mounted. Each switch is shipped with all necessary brackets for either mounting option.

DIN Rail Mounting

The SE3 switches can be mounted on a standard 35 x 7.5 mm height DIN rail (Standard: CENELEC EN50022) installed either vertically or horizontally.

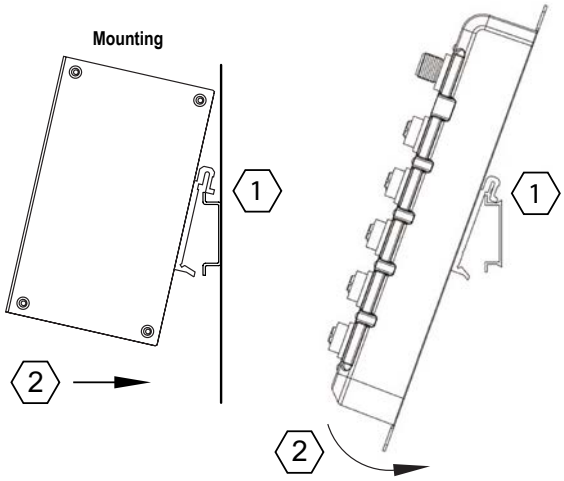
Installing DIN rail bracket:

Most SE3 switches are shipped with DIN rail brackets preinstalled. For the IP67 model, attach the DIN rail bracket to the switch using the supplied hardware, as shown in the figure to the right.



DIN rail mounting steps:

1. Hook top back of unit over the DIN rail.
2. Push bottom back onto the DIN rail until it snaps into place.

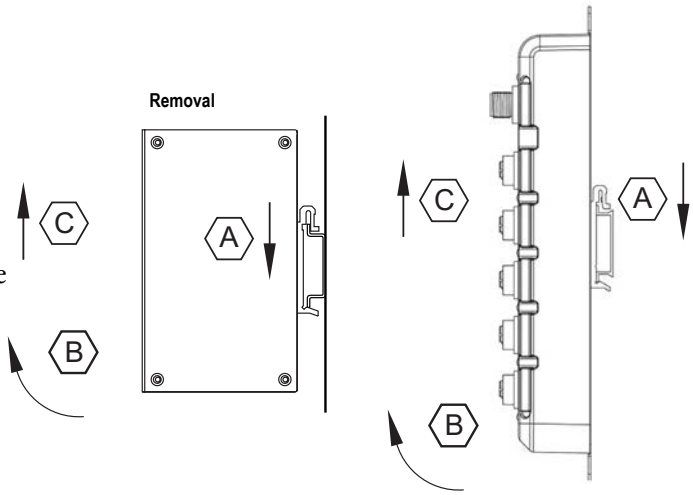


DIN rail removal steps:

A. Push the unit down to free the bottom of the DIN rail.

B. Rotate the bottom of the unit away from the DIN rail.

C. Unhook top of unit from DIN rail.



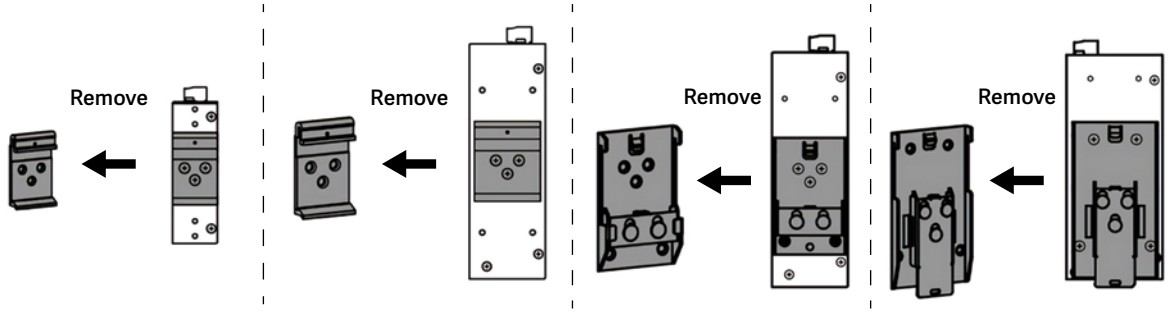
Wall Mounting

Follow the steps below to mount the switch using the wall mounting bracket. Bracket details and hole patterns differ between models.

Removing the DIN rail bracket

All SE3-series switches other than the IP67 model are shipped with DIN rail mounting brackets preinstalled. This bracket must be removed to mount the switch directly onto a panel wall.

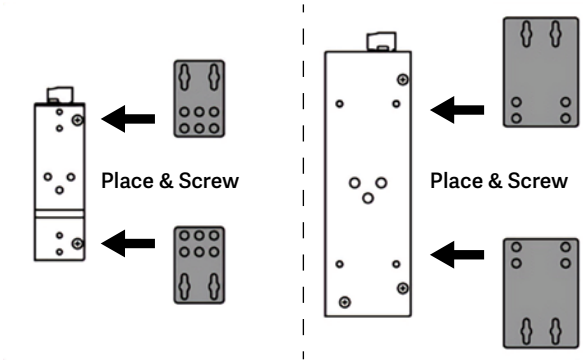
There are several styles of DIN rail bracket in use across the SE3 product line. In all cases, remove the DIN rail mounting bracket by loosening several easily accessible screws.



Attaching the wall mounting bracket

Attach the wall mounting brackets on the top and bottom of the switch using the supplied hardware. Specific mounting hole locations vary between models.

This step is unnecessary for Model # SE3-SW5U-N67-T, whose wall mounting brackets are an integral part of the housing.



Mounting the switch to panel wall

Place screws in the panel wall based on the positions of the slotted screw holes on the mounting brackets and attach the switch to the wall.

Power and Alarm Wiring

Power Wiring

WARNING: *BEFORE PERFORMING ANY WIRING TO THESE SWITCHES MAKE SURE...*

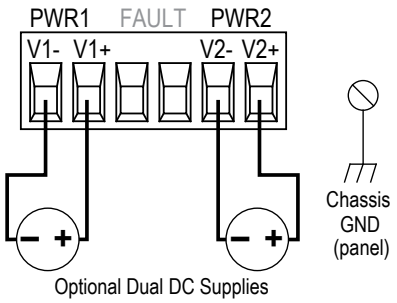
- *THE AREA IS CURRENTLY NONHAZARDOUS (ESPECIALLY WHEN WORKING IN CLASS 1, DIV 2 OR ZONE 2 HAZARDOUS LOCATIONS).*
- *POWER IS OFF TO THE SWITCH.*
- *THE SCREW TERMINAL BLOCK IS UNPLUGGED. THIS IS ESPECIALLY IMPORTANT ON THE METAL HOUSED UNITS. CONNECTING OR DISCONNECTING WIRES TO THE SCREW BLOCK WHEN IT'S IN PLACE AND POWER IS TURNED ON CAN ALLOW THE SCREWDRIVER TO SHORT THE POWER TO THE CASE.*

Terminal Block Power Inputs

The switch can be powered from the same source that is used to power your other devices. To maintain the UL listing, this must be a Class 2 power supply. Power needs to be applied between the V1+ terminal and the V1- terminal as shown below. The chassis screw terminal should be tied to panel or chassis ground. To reduce down time resulting from power loss, the switch can be powered redundantly with a second power supply as shown below. The switch is equipped with reverse power protection, but care should be taken to connect the positive and negative terminals correctly. For the non-PoE models, a recommended DC power supply is AutomationDirect.com part number PSL-24-030.

Power Details	
Power Input	Redundant input terminals, removable terminal block
Input Voltage	Refer to Technical Specifications tables on pages 26–29
Reverse Power Protection	Yes
Wire Size and Torque	20–18 AWG, copper conductors only,125°C; Wire strip length 7mm; Torque: 7 lb·in [0.79 N·m]
Power Consumption	Refer to Models tables on pages 4–5.
Relay Contact	24VDC, 1A resistive, open on fault (not present on SE3-SW5U, SE3-SW5U-T)

Redundant DC Power

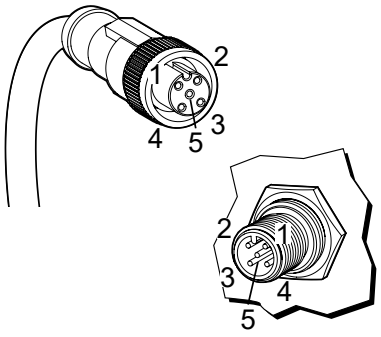


NOTE: If only one power supply is used, jumper V1+ to V2+ and V1- to V2- to eliminate power fault alarm.

M12 Power Inputs

The switch can be powered from the same source that is used to power your other devices. A DC voltage in the range of 12–48 VDC needs to be applied through an M12 connector as shown in the chart below. We recommended grounding the switch to the panel or chassis ground using an M3 or M4 ground screw and grounding wire, attached to either the top or bottom wall mounting hole. To reduce down time resulting from power loss, the switch can be powered redundantly with a second power supply as shown in the chart below. A recommended DC power supply is AutomationDirect.com part number PSL-24-030.

M12 Power Details	
Power Connection	Dual DC power inputs through M12 5-pin A-coded male connector
Input Voltage	Class 2 power supply: 12–48 VDC redundant power inputs
Reverse Power Protection	Yes
Wire Size	24–18 AWG
System Power Consumption	0.5 W
Relay Contact	No



Power Port Pin Definitions	
Pin	***Description***
1	Power Input 1 +
2	Power Input 2 +
3	Power Input 2 -
4	Power Input 1 -
5	Ground

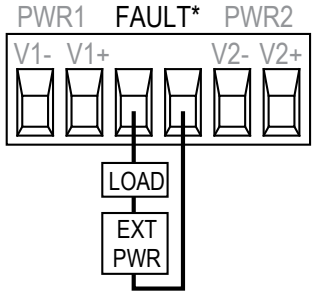
Alarm Wiring

All SE3 series switches, with the exception of Models SE3-SW5U, SE3-SW5U-T and SE3-SW5U-N67-T, have a Power Fault alarm contact. Terminals for the alarm are located between the power inputs on the removable terminal block, as shown below. The alarm is a normally open contact that is held closed by the presence of power on both power inputs. On loss of one or both power sources, the alarm contact will open.

Power Fault Alarm Details	
Relay Contact	24VDC, 1A resistive, open on fault (not present on SE3-SW5U, SE3-SW5U-T, SE3-SW5U-N67-T)

NOTE: If only one power supply is used, jumper V1+ to V2+ and V1- to V2- to eliminate power fault alarm.

Power Fault Alarm Wiring



*Fault Contact opens when in a faulted state (Not present on some models)

Grounding

Grounding and wire routing help limit the effects of noise due to electromagnetic interference (EMI). Run a ground connection from the ground screw on the switch (⏚) to the grounding surface prior to connecting devices.

On Model SE3-SW5U-N67-T, which does not have a designated ground screw, we recommend grounding the switch to the panel or chassis ground using an M3 or M4 ground screw and grounding wire, attached to either the top or bottom wall mounting hole.

Communications Wiring

The industrial Ethernet switches provide connections to standard Ethernet devices such as PLCs, Ethernet I/O, industrial computers and much more. RJ45 or M12 (for IP67 locations) Ethernet ports or fiber/SFP option ports are available depending on model.

Please see www.automationdirect.com for a wide range of cabling options.

RJ-45 Ethernet Connections

Use data-quality (not voice-quality) twisted pair cable rated category 5e (or better) with standard RJ45 or M12 (D-coded, male, 5-pin) connectors. Straight-through or crossover Ethernet cable can be used for all devices to which the switch is connected because all the ports are capable of auto-MDI/MDIX crossover detection. The maximum cable length for 10/100/1000BaseT is 100m [328ft].

The RJ45 Ethernet port connector bodies on these products are metallic and connected to the Chassis GND terminal. Therefore, shielded cables may be used to provide further protection. To prevent ground loops, the cable shield should be tied to the metal connector body at one end of the cable only. Electrical isolation is also provided on the Ethernet ports for increased reliability.

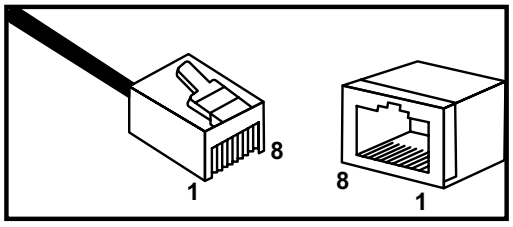
The RJ-45 ports are auto-sensing for 10Base-T, 100Base-TX or 1000Base-T devices connections. See the figures as below for straight-through and crossover cabling schematics.

10/100Base-T(X) RJ-45 Pin Assignments

Crossover Cable			*Straight-through Cable*	
Pin Number / Signal	*Pin Number / Signal*		*Pin Number / Signal*	*Pin Number / Signal*
1 / RX+	3 / TX+		1 / RX+	1 / TX+
2 / RX-	6 / TX-		2 / RX-	2 / TX-
3 / TX+	1 / RX+		3 / TX+	3 / RX+
6 / TX-	2 / RX-		6 / TX-	6 / RX-

1000Base-T RJ-45 Pin Assignments

Crossover Cable			*Straight-through Cable*	
Pin Number / Signal	*Pin Number / Signal*		*Pin Number / Signal*	*Pin Number / Signal*
1 / TP0+	3 / TP1+		1 / TP0+	1 / TP1+
2 / TP0-	6 / TP1-		2 / TP0-	2 / TP1-
3 / TP1+	1 / TP0+		3 / TP1+	3 / TP0+
4 / TP2+	7 / TP3+		4 / TP2+	4 / TP3+
5 / TP2-	8 / TP3-		5 / TP2-	5 / TP3-
6 / TP1-	2 / TP0-		6 / TP1-	6 / TP0-
7 / TP3+	4 / TP2+		7 / TP3+	7 / TP2+
8 / TP3-	5 / TP2-		8 / TP3-	8 / TP2-
Note: "+" and "-" signs represent the polarity of the wires that make up each wire pair.				

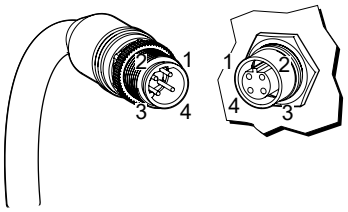


PoE Switch Ethernet Port Pin Definitions

Pin		*Pin*	
1	V -	5	TRD2 -
2	V +	6	V -
3	V -	7	TRD3 +
4	TRD2 + (transmit / receive data)	8	TRD3 -

M12 Ethernet Connections

Use data-quality (not voice-quality) twisted pair cable rated category 5e (or better) with standard M12 (D-coded, male, 4-pin) connectors. Straight-through or crossover Ethernet cable can be used for all devices to which the switch is connected because all the ports are capable of auto-MDI/MDIX crossover detection. The maximum cable length for 10/100/1000BaseT is 100m [328ft].



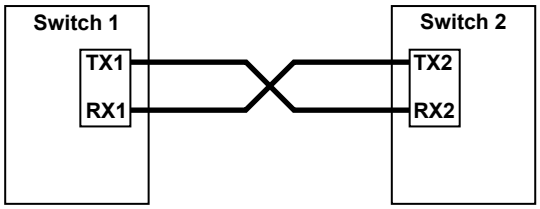
Communication Port Pin Definitions	
Pin	***MDI Signal***
1	Transmit Data + (TD+)
2	Receive Data + (RD+)
3	Transmit Data - (TD-)
4	Receive Data - (RD-)

NOTE: The supplied M12 caps need to be used on open (disconnected) ports. Replacement caps (Part # ZP-JBH-CAP) are available from AutomationDirect.com.

Ethernet Fiber Wiring Guidelines

Some switches include fiber ports, either SC or ST connector, or an SFP option. Refer to the switch specifications for details on the available connection types.

For each fiber port there is a transmit (TX) and receive (RX) signal. When making your fiber optic connections, make sure that the transmit (TX) port of the switch connects to the receive (RX) port of the other device, and the receive (RX) port of the switch connects to the transmit (TX) port of the other device. Use standard fiber optic wiring techniques (not covered by this manual) to make your connections.



It is important to consider the output power and the receiver sensitivity for each end of each fiber connection, especially when the distances that each fiber transceiver in each switch are specified to support differ or when the transceivers (switches) are separated at a distance different than that which the transceivers are specified to support.

SC and ST Fiber Connections

The SC and ST type fiber ports work in multi-mode at 1310nm wavelength, and are compatible with 50/125 or 62.5/125 µm fiber. When connecting the fiber port to another device, please follow the guidelines in the previous subsection.

CAUTION: *THIS IS A CLASS 1 LASER/LED PRODUCT. DON'T STARE INTO THE LASER/LED BEAM.*

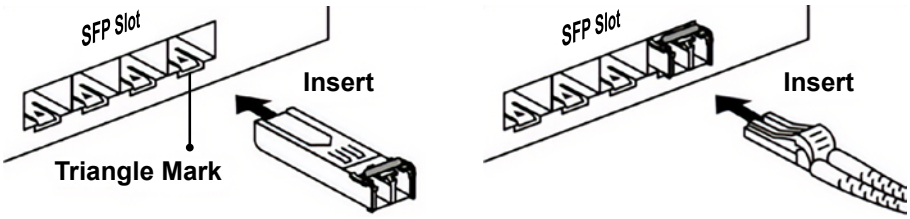
SFP Connections

The small form factor pluggable (SFP) is a compact transceiver used in telecommunication and data communication applications.

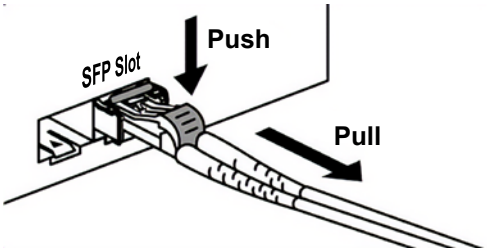
CAUTION: *FOR FIBER APPLICATIONS, PLEASE EMPLOY AN OPTIONAL OPTICAL TRANSCEIVER (SFP/FIXED FIBER) THAT COMPLIES WITH IEC 60825-1 AND IS CLASSIFIED AS A CLASS 1 LASER PRODUCT.*

NOTE: An SFP module with LC fiber connector is used here to illustrate the installation and removal procedures. The process is identical for RJ-45 copper transceivers.

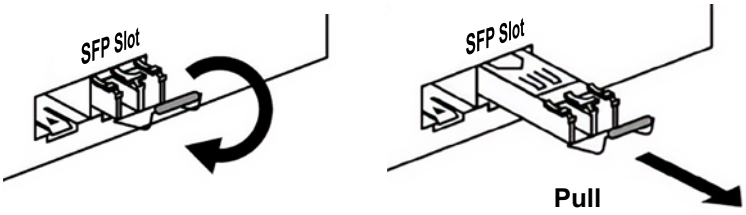
To connect the transceiver and cable, insert the SFP transceiver module into the SFP slot as shown below. Notice that the triangle mark is at the bottom of the SFP slot. Then insert the cable connector into the transceiver.



To remove a cable connector from the transceiver, press the retaining tab on the connector and pull the connector from the module as shown below.



To remove an SFP module from the switch, push down the metal clasp and pull the transceiver out by the lever as shown below.



Verifying Connectivity

After all Ethernet and/or fiber connections are made, check the LEDs corresponding to the ports to which each of the devices is connected. Ensure that the LED is on or blinking for active port. If a port LED is off, go back and check for connectivity problems between that port and the network device connected to that port (see prior section on LEDs).

Technical Specifications

General Specifications, Non-PoE Models																		
		SE3-SW5U	SE3-SW5U-T	SE3-SW8U	SE3-SW8U-T	SE3-SW5UG-T	SE3-SW8UG-T	SE3-SW5U-1C1-T	SE3-SW5U-1T1-T	SE3-SW6U-2C1-T	SE3-SW6U-2T1-T	SE3-SW7U-2P-T	SE3-SW5UG-1P-T	SE3-SW10UG-2P-T	SE3-SW16UG-4P-T	SE3-SW5U-N67-T	SE3-MC2U-C1-T	SE3-MC2U-T1-T	SE3-MC2UG-1P-T
Device Type		Unmanaged switch															Media converter		
Processing Type		Store and forward																	
Devices Supported		All IEEE 802.3 compliant devices are supported																	
MAC Addresses	**1K**	●	●	●	●											●			
	2K							●	●	●	●						NA		
	8K					●	●					●	●	●	●				●
Memory Buffer	**128Kbits**																●	●	
	448Kbits	●	●	●	●			●	●	●	●					●			
	1Mbit					●							●						●
	4Mbits						●					●		●	●				
Packet Forwarding Rate		14.88 Kpps for Ethernet ports 148.8 Kpps for Fast Ethernet ports 14,888 Kpps for Gigabit Ethernet ports																	
Jumbo Frame Support	**9.6 Kbytes**						●					●		●	●				
	10Kbytes					●							●						●
Operating Temperature Range																			
-10 to +65°C [14 to 149°F]		●		●															
-40 to +75°C [-40 to 167°F]			●		●	●	●	●	●	●	●	●	●	●	●	●			
-40 to +80°C [-40 to 176°F]																	●	●	●
Storage Temperature Range		-40 to +85 °C [-40 to +185 °F]																	
Humidity (Non-Condensing)		5 to 95% RH																	
Environmental Air		No corrosive gases permitted																	
Vibration, Shock & Freefall		IEC60068-2-6, -27, -32																	
EMI Emissions		FCC Part 15 Subpart B Class A, CE EN55032/EN61000-6-4 Class A																	
EMS		CE EN55035/EN61000-6-2 Class A: IEC61000-4-2 (ESD), IEC61000-4-3 (RS), IEC61000-4-4 (EFT), IEC61000-4-5 (Surge), IEC61000-4-6 (CS), IEC61000-4-8 (Magnetic Field)																	
RoHS		RoHS (Pb free) compliant																	
Packaging and Protection	**Metal case, IP30**	●	●	●	●	●	●	●	●	●	●	●	●	●	●				●
	Plastic case, IP67															●			
Hazardous Locations (Class I, Div.2)	**ANSI/ISA 12.12.01**					●	●	●	●	●	●	●	●	●					
Agency Approvals	**FCC, CE**	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			●
	UL 61010-1, 61010-2-201	●	●	●	●	●	●					●	●	●	●	●			●
	UL 508							●	●	●	●								

General Specifications, PoE Models							
	SE3-SWP1A5U-T	SE3-SWP2A5U-T	SE3-SWP2A5UG-T	SE3-SWP2A7U-2P-T	SE3-SWP2B5UG-1P-T	SE3-IJ2A2UG-T	SE3-IJ2B2UG-T
Device Type	Unmanaged PoE switch					PoE Power Injector	
Processing Type	Store and forward					NA	
Devices Supported	All IEEE 802.3 compliant devices are supported						
MAC Addresses	2K		8K			NA	
Memory Buffer	448Kbits		1Mbit	4Mbits	1Mbit		
Packet Forwarding Rate	14.88 Kpps for Ethernet ports 148.8 Kpps for Fast Ethernet ports 14,888 Kpps for Gigabit Ethernet ports						
Jumbo Frame Support	–		10Kbytes	9.6 Kbytes	10Kbytes		
Operating Temperature Range	-40 to +75°C [-40 to +167°F]						
Storage Temperature Range	-40 to +85°C [-40 to +185°F]						
Humidity (Non-Condensing)	5 to 95% RH						
Environmental Air	No corrosive gases permitted						
Vibration, Shock & Freefall	IEC60068-2-6, -27, -32						
EMI Emissions	FCC Part 15 Subpart B Class A, CE EN55032/EN61000-6-4 Class A						
EMS	CE EN55035/EN61000-6-2 Class A: IEC61000-4-2 (ESD), IEC61000-4-3 (RS), IEC61000-4-4 (EFT), IEC61000-4-5 (Surge), IEC61000-4-6 (CS), IEC61000-4-8 (Magnetic Field)						
RoHS	RoHS (Pb-free) compliant						
Packaging	Metal case						
Protection	IP30				IP40	IP30	
Hazardous Locations (Class I, Div.2)	ANSI/ISA 12.12.01				NA		
Agency Approvals	FCC, CE						
	UL 508		UL 61010-1, 61010-2-201				

Power Details, Non-PoE Models

		SE3-SW5U	SE3-SW5U-T	SE3-SW8U	SE3-SW8U-T	SE3-SW5UG-T	SE3-SW8UG-T	SE3-SW5U-1C1-T	SE3-SW5U-1T1-T	SE3-SW6U-2C1-T	SE3-SW6U-2T1-T	SE3-SW7U-2P-T	SE3-SW5UG-1P-T	SE3-SW10UG-2P-T	SE3-SW16UG-4P-T	SE3-SW5U-N67-T	SE3-MC2U-C1-T	SE3-MC2U-T1-T	SE3-MC2UG-1P-T
Power Inputs (Redundant)	Removable Terminal Block	●	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●	●
	M12 5-pin A-coded Male Connector															●			
Input Voltage (Class 2 Power Supply)		12-48 VDC																	
Reverse Power Protection		Yes																	
System Power Consumption (W)		1.2	1.2	2.2	2.2	6.6	9.2	5	5	6	6	8	5.6	12	15.4	0.5	1.92		1.8
Relay Contact (24VDC, 1A resistive, open on fault)				●	●	●	●	●	●	●	●	●	●	●	●		●	●	

Power Details, Power over Ethernet Models

		SE3-SWP1A5U-T	SE3-SWP2A5U-T	SE3-SWP2A5UG-T	SE3-SWP2A7U-2P-T	SE3-SWP2B5UG-1P-T	SE3-IJ2A2UG-T	SE3-IJ2B2UG-T
Power Inputs (Redundant)		Removable terminal block						
Input Voltage (Class 2 Power Supply)	48–55 VDC	●						
	12–36 VDC		●	●				
	9–55 VDC					●	●	●
	12–55 VDC				●			
Reverse Power Protection		Yes						
System Power Consumption (W)		4	5.5	6.3	9	6.3	1.6	
Relay Contact		24VDC, 1A resistive, open on fault						
Max PoE Power Output		30W per PoE port				90W per PoE port (bt PoE-PSE)	100W	90W
Max PoE Power Budget		120W	90–120W/ 12–36VDC	120W	60W/12VDC, 120W/ 36–55VDC	60W/9VDC, 90W/12VDC, 150W/24VDC, 240W/48–55 VDC with iPoE budget control	100W	90W
PoE Pinout		V+, V+, V-, V-, for pin 1, 2, 3, 6 (Endspan, MDI Alternative A)				V+, V+, V-, V-, for pin 1, 2, 3, 6, V+, V+, V-, V-, for pin 4, 5, 7, 8		
PD (Powered Device) Detection		Yes - the switch port will detect the presence of a PoE-enabled device before sending power. If a non-PoE device is detected, power will not be sourced on that port but Ethernet communications will be permitted.						
PoE Overload Protection		Yes						
PoE Reverse Protection		Yes						
PoE Redundancy Protection		Yes						

RJ45 Ports	
Ethernet Compliance	IEEE 802.3i, 802.3u, 802.3x for 10/100 Ethernet IEEE 802.3ab for Gigabit Ethernet IEEE 802.3af or 802.3at for PoE IEEE 802.3bt for PoE on SE3-SWP2B5UG-1P-T
Auto-Crossover	Yes, allows you to use straight-through or crossover wired cables
Auto-Sensing Operation	Yes, full and half duplex
Auto-Negotiating Speed	Yes
Flow Control	IEEE 802.3x flow control, back pressure flow control
Cable Requirements	10BaseT: 2-pair UTP/STP Cat. 3, 4, 5 cable EIA/TIA-568 100-ohm (100m) 100BaseTX: 2-pair UTP/STP Cat. 5 cable EIA/TIA-568 100-ohm (100m) 1000BaseTX: UTP/STP Cat.5e/6a cable; EIA/TIA-568 100-ohm (100m)
Max. Cable Distance	100m [328ft]

M12 Ethernet Ports	
10/100BaseT Ports	M12, female, D-coded, 4-pin
Ethernet Compliance	IEEE 802.3i, 802.3u, 802.3x for 10/100 Ethernet
Auto-Crossover	Yes, allows you to use straight-through or crossover wired cables
Auto-Sensing Operation	Yes, full and half duplex
Auto-Negotiating Speed	Yes
Flow Control	IEEE 802.3x flow control, back pressure flow control
Cable Requirements	Twisted pair (Cat5e or better, shielded recommended)
Max. Cable Distance	100m [328ft]

Note: M12 caps need to be used on open (disconnected) ports.
Replacement caps (Part # ZP-JBH-CAP) are available from AutomationDirect.com

SC/ST Fiber Port: (100BaseFX multimode)	
Optimal Fiber Cable	50/125 or 62.5/125 µm
Center Wavelength	1310nm
Multimode	Transmitter power into 50/125 cable (dBm): -20 min, -14 max Transmitter power into 62.5/125 cable (dBm): -23.5 min, -14 max Receiver sensitivity (dBm): -32
Nominal Max. Distance	2km [1.24 mi]
Eye Safety (laser)	IEC 60825-1, Class 1; FDA 21 CFR 1040.10 and 1040.11

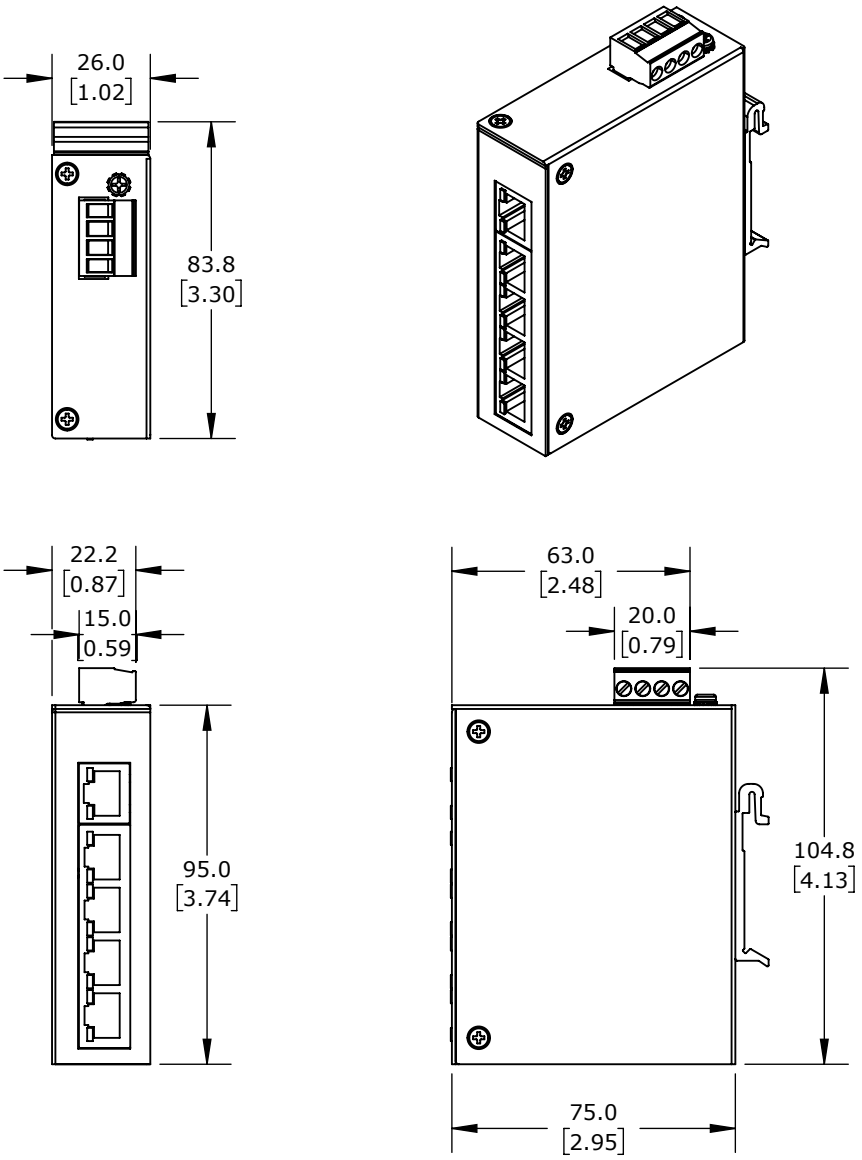
SFP Ports	
Ethernet Compliance	IEEE 802.3, 802.3u, 802.3x for 10/100 Ethernet IEEE 802.3ab, 802.3z for Gigabit Ethernet

SFP (pluggable) ports accept 100/1000 Mbps Mini-GBIC (SFP) transceivers.
See SFP module datasheet for optional transceiver specifications

Dimensional Drawings

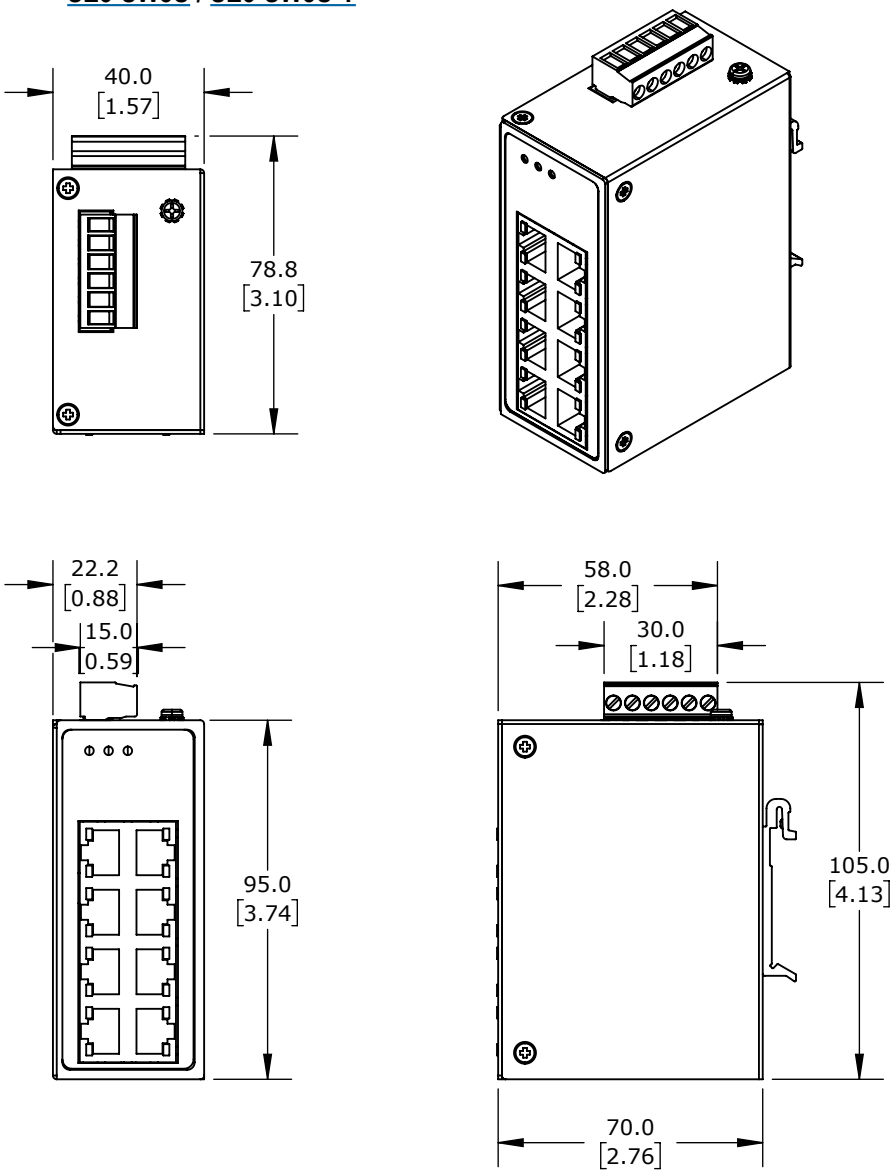
Dimensions (mm [in])

SE3-SW5U / SE3-SW5U-T



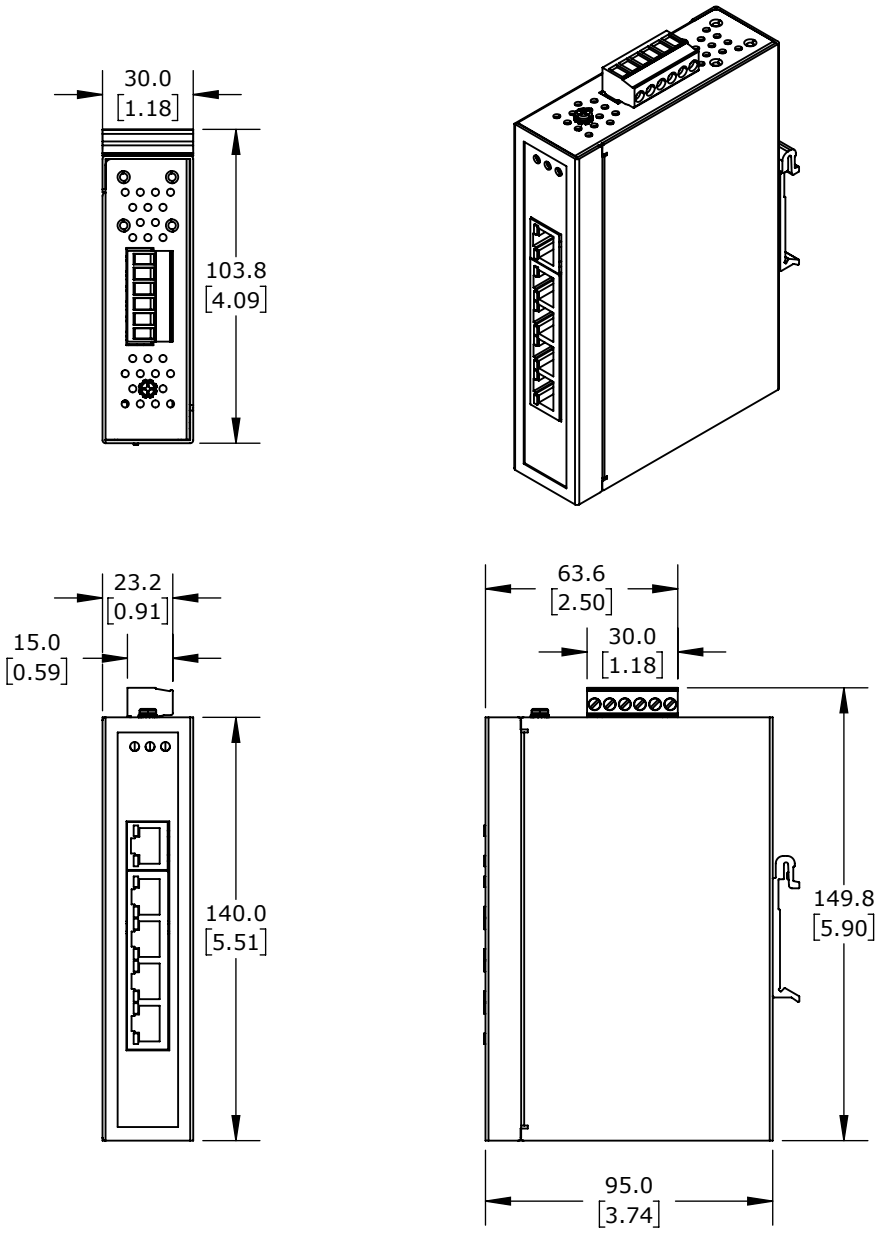
Dimensions (mm [in])

SE3-SW8U / SE3-SW8U-T



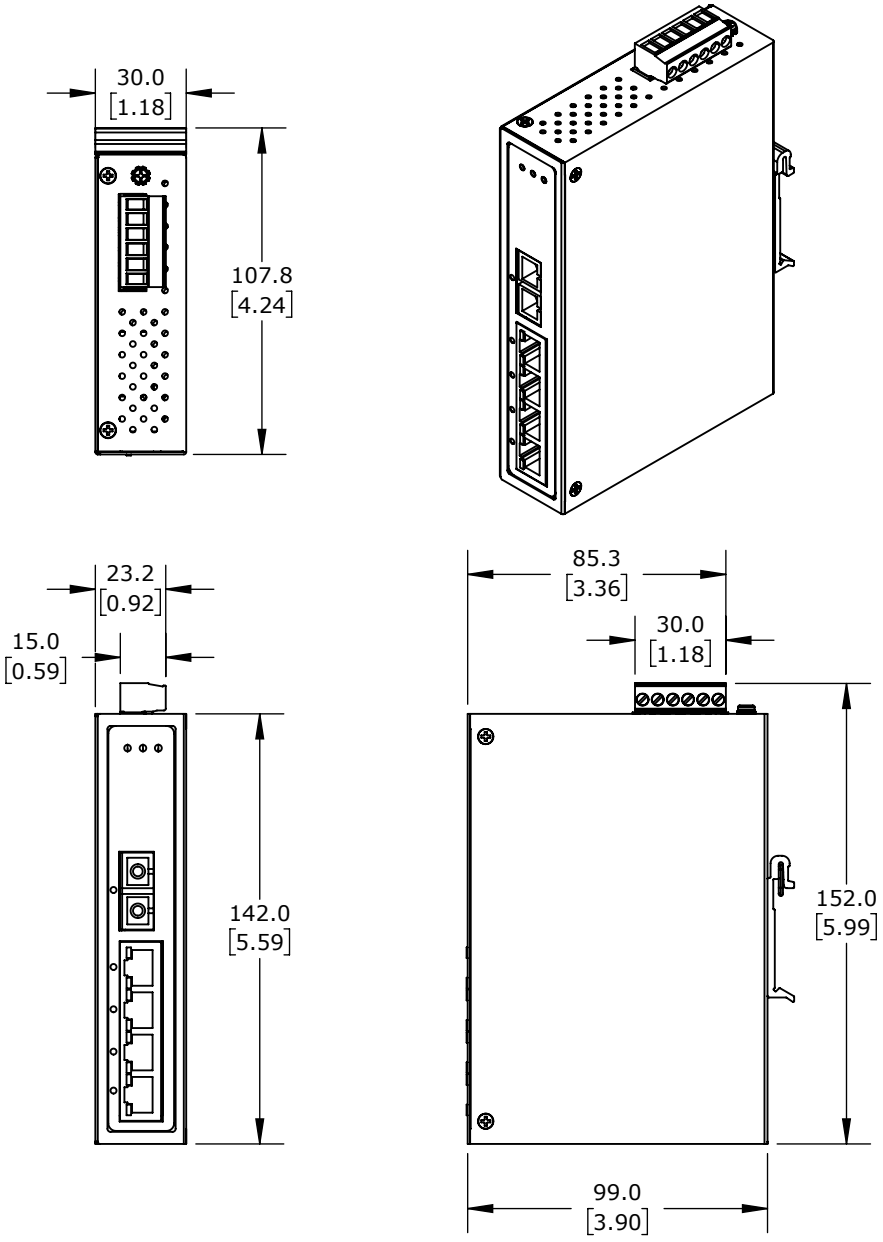
Dimensions (mm [in])

SE3-SW5UG-T



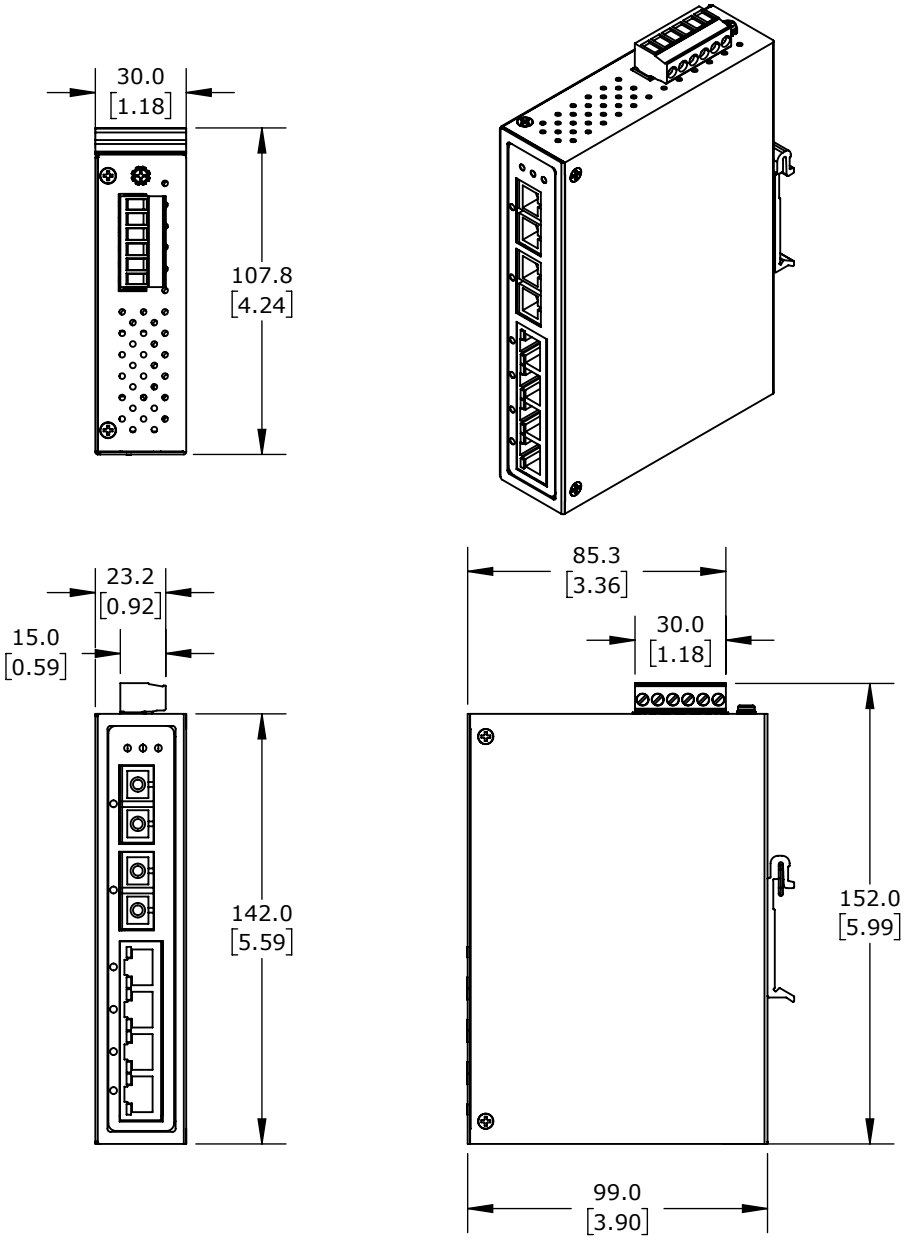
Dimensions (mm [in])

SE3-SW5U-1C1-T / SE3-SW5U-1T1-T



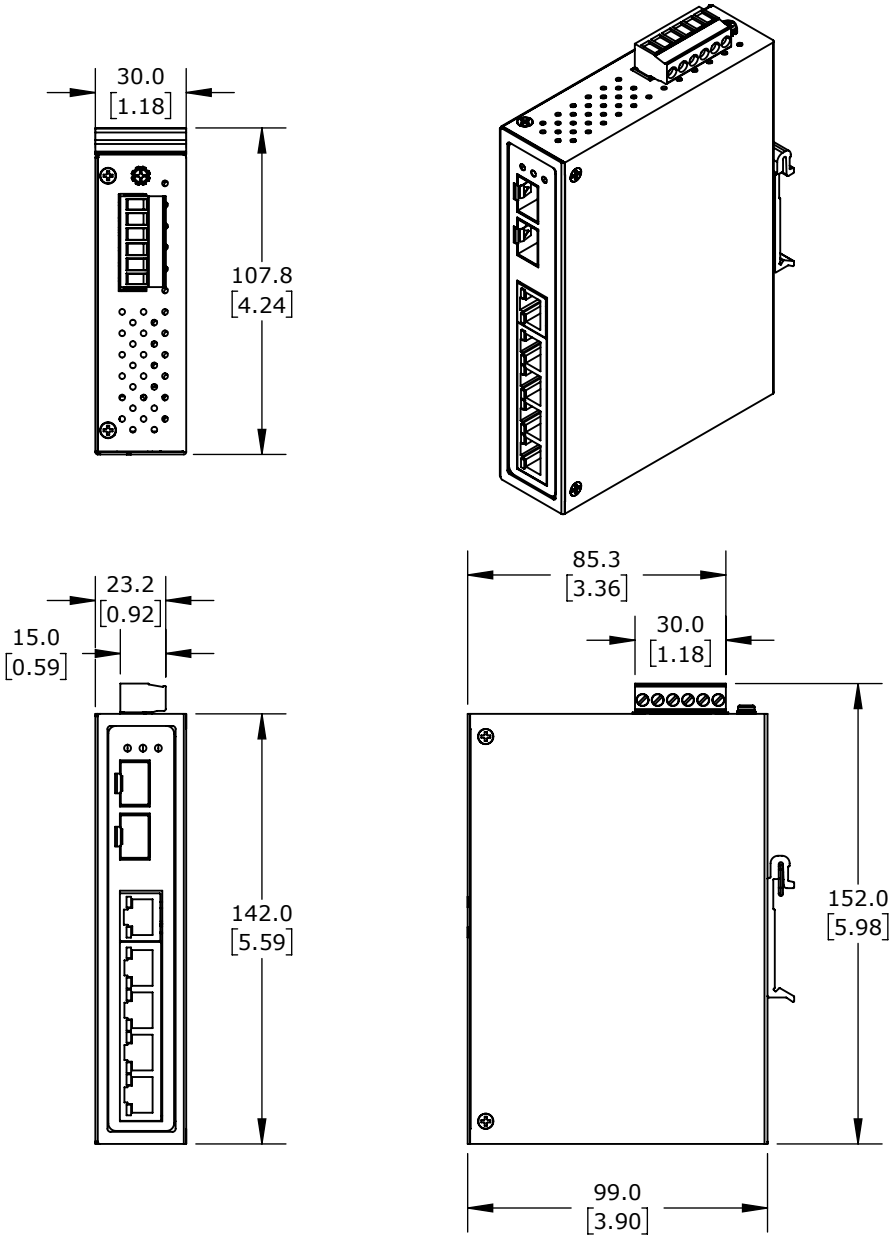
Dimensions (mm [in])

SE3-SW6U-2C1-T / SE3-SW6U-2T1-T



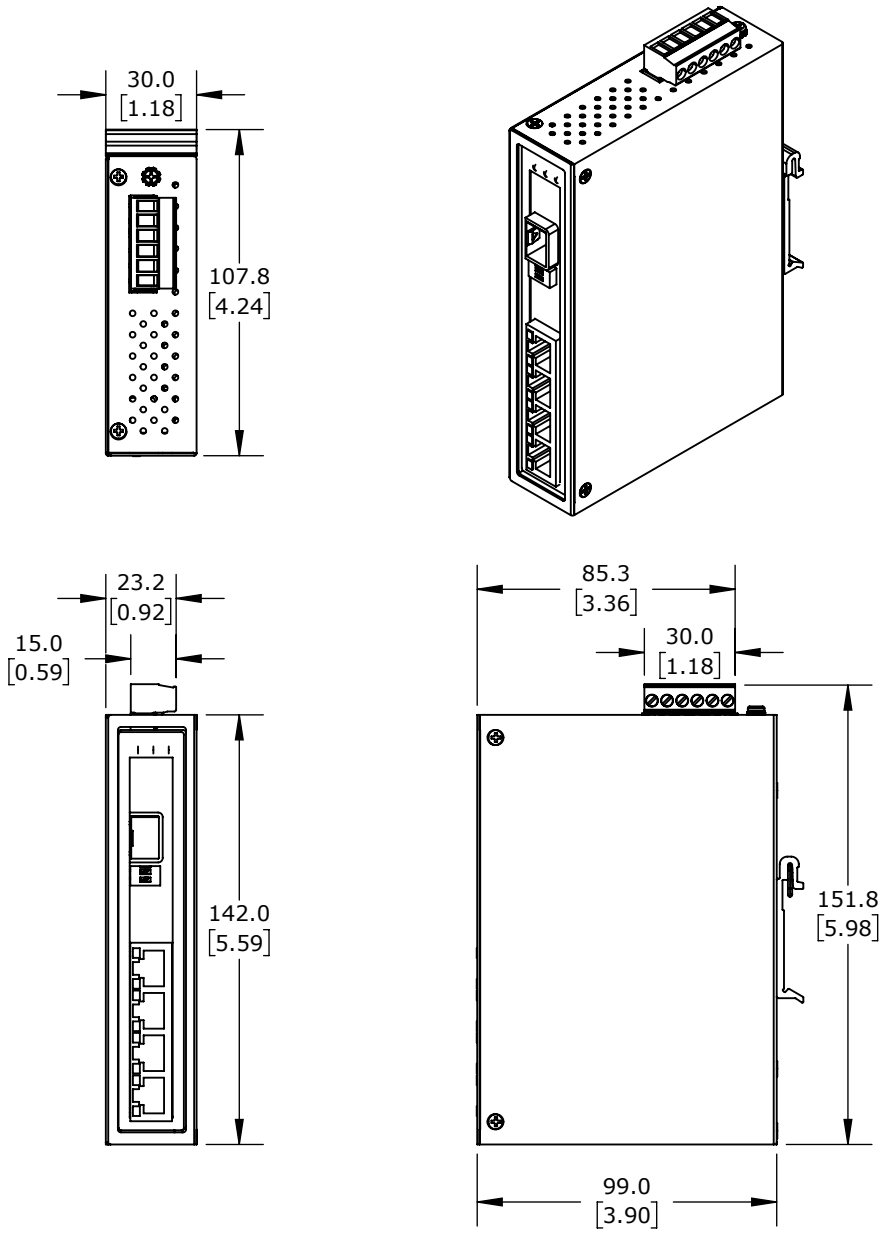
Dimensions (mm [in])

SE3-SW7U-2P-T



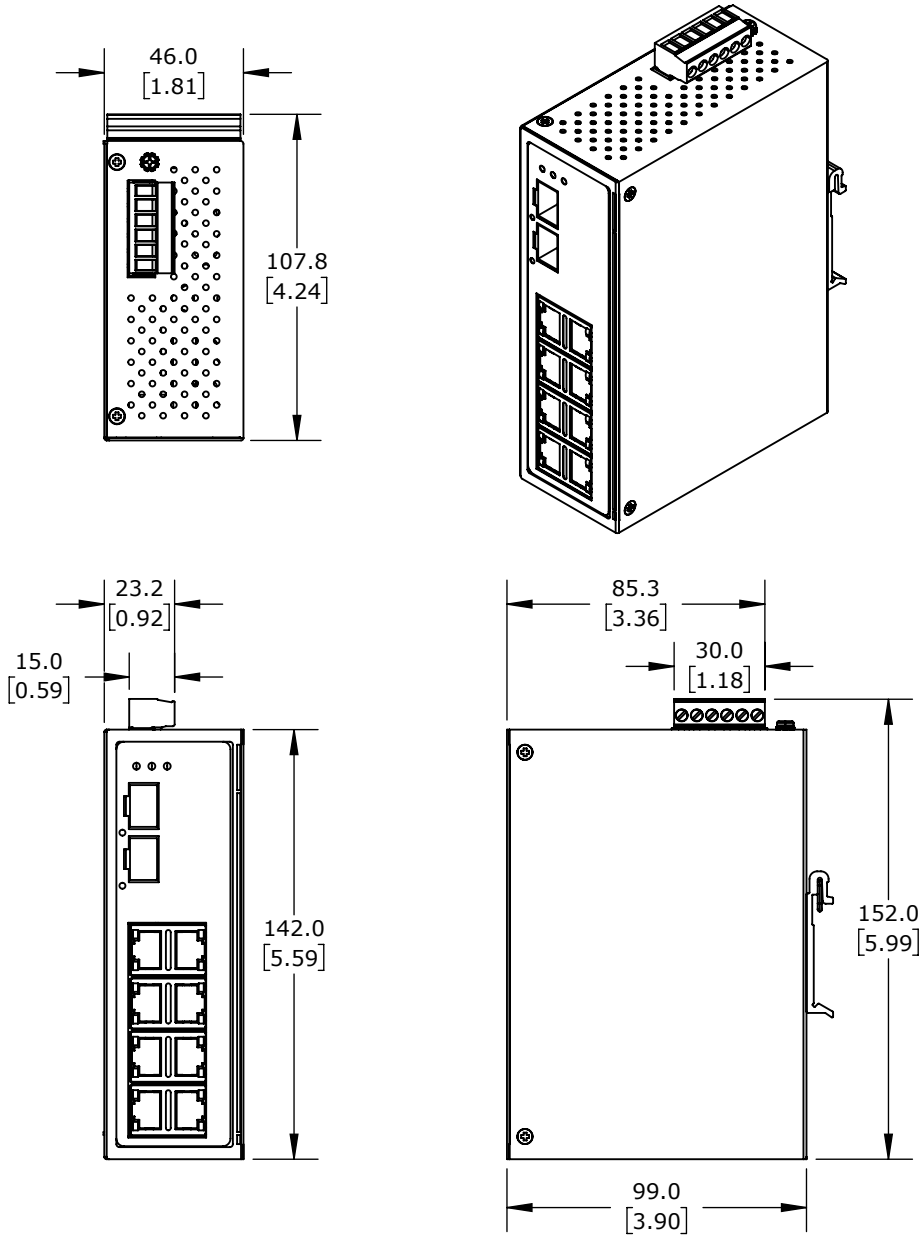
Dimensions (mm [in])

SE3-SW5UG-1P-T



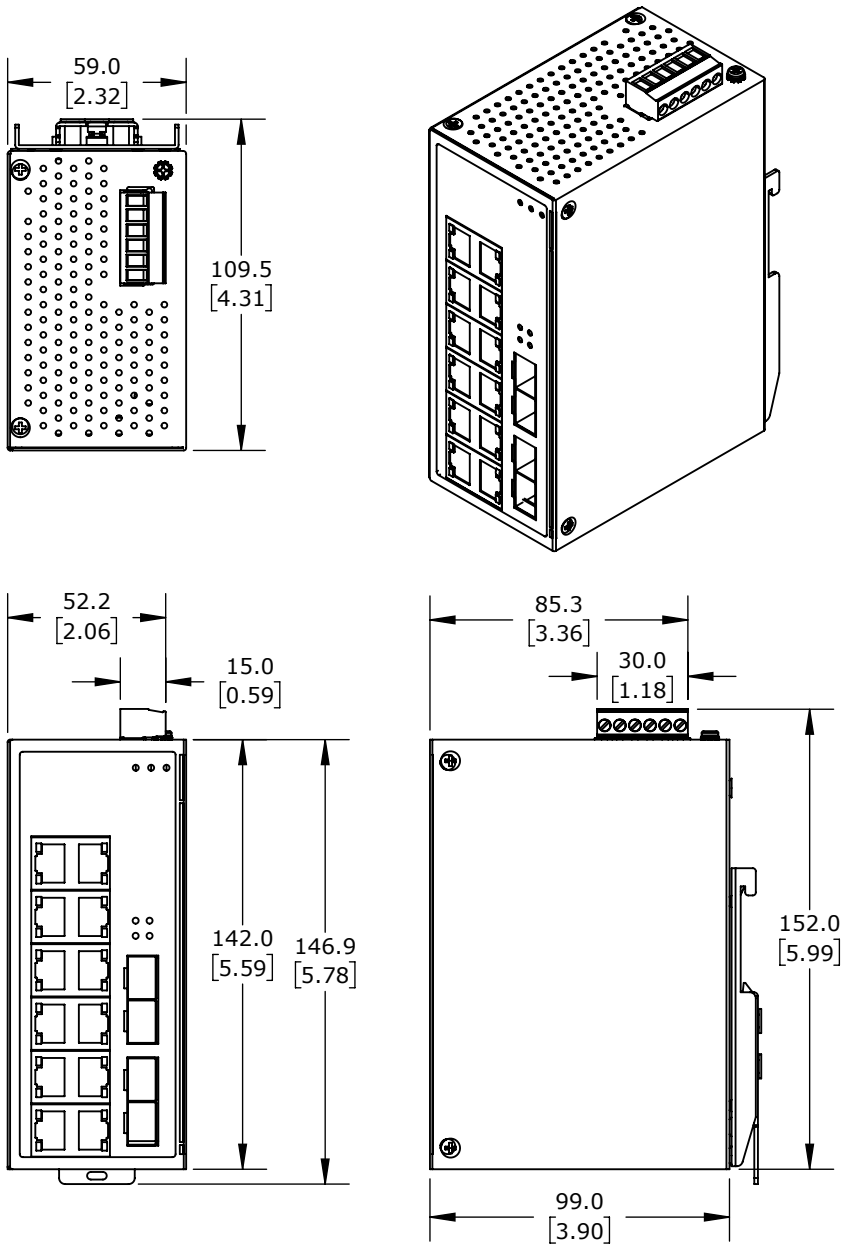
Dimensions (mm [in])

SE3-SW10UG-2P-T



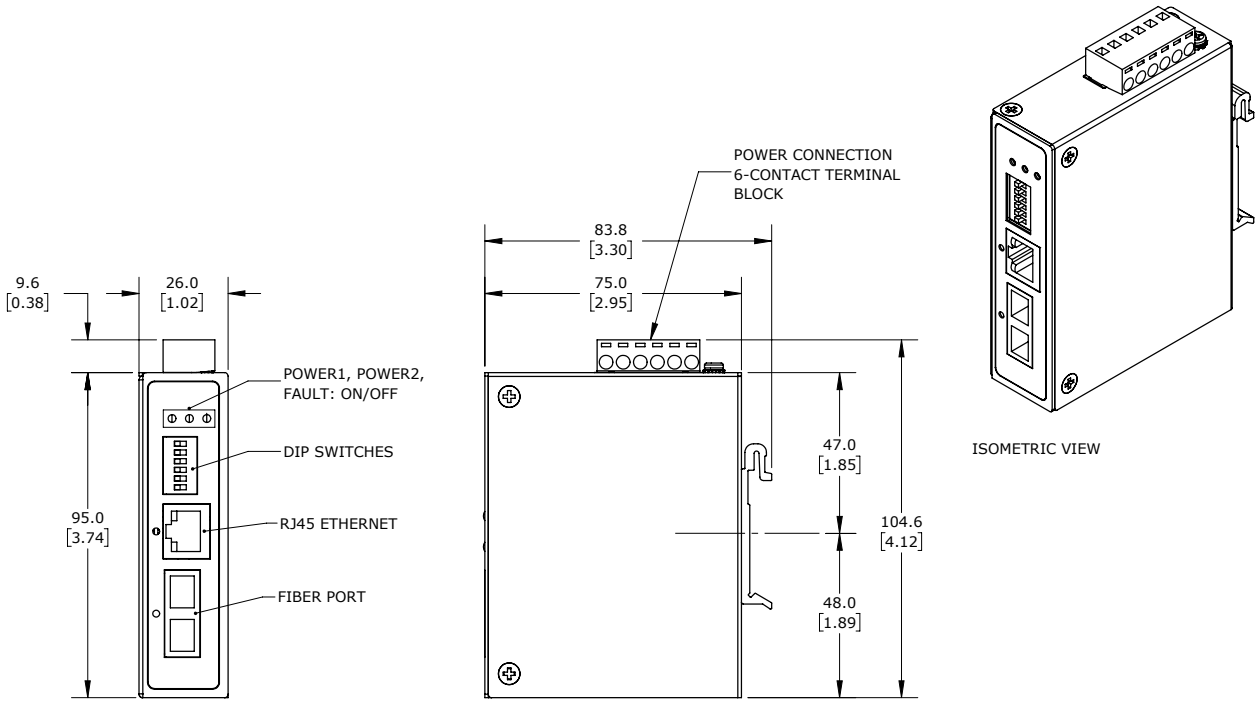
Dimensions (mm [in])

SE3-SW16UG-4P-T



Dimensions (mm [in])

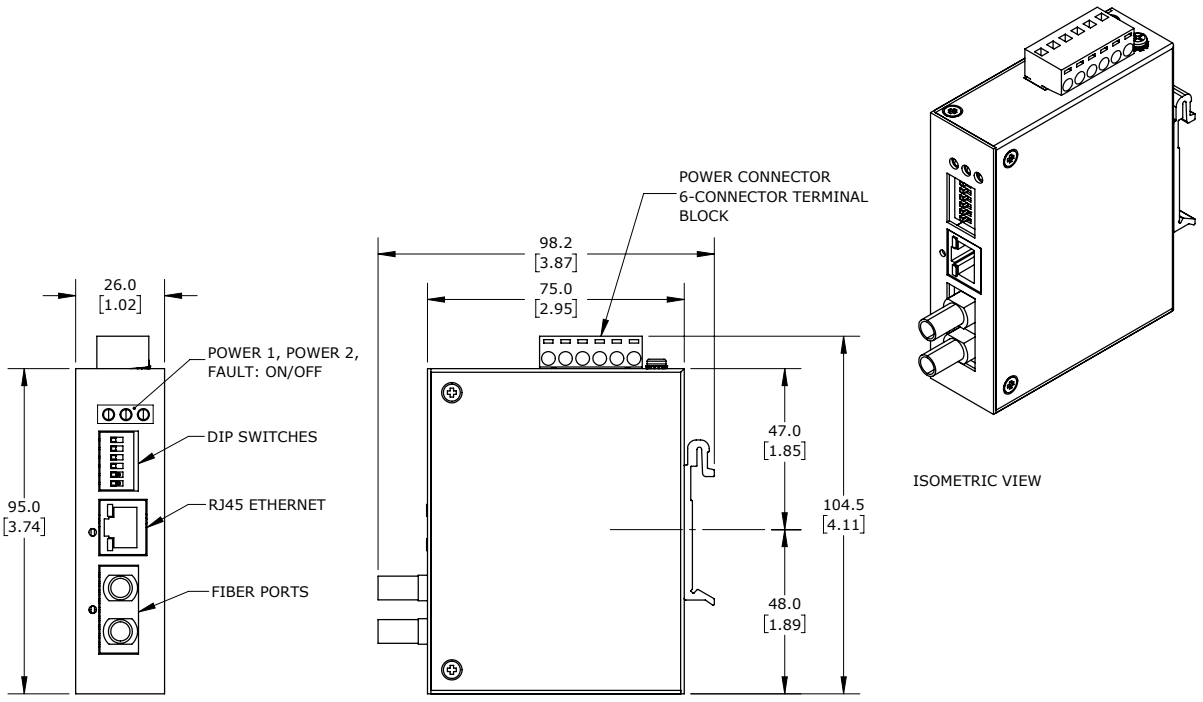
SE3-MC2U-C1-T



* RJ45, FIBER PORT LED'S = ON-LINK, FLASH-DATA TRANSMITTING

Dimensions (mm [in])

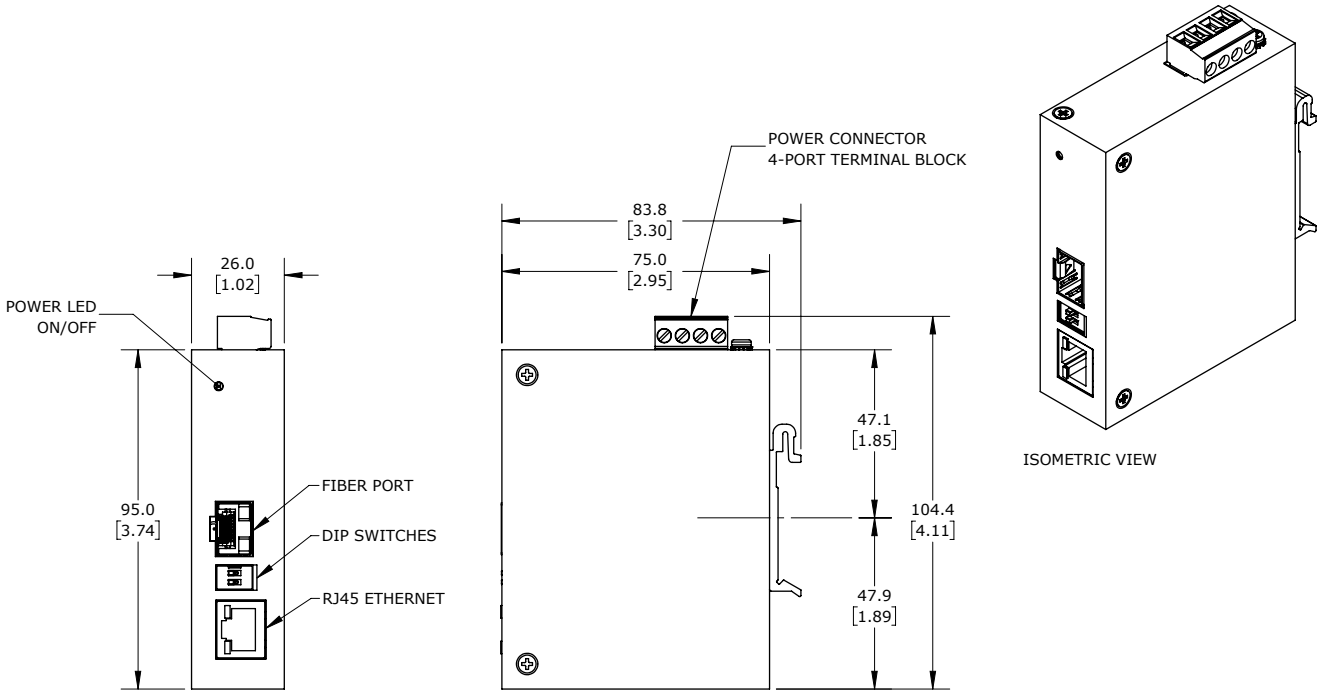
SE3-MC2U-T1-T



* RJ45, FIBER PORT LED'S = ON-LINK, FLASH-DATA TRANSMITTING

Dimensions (mm [in])

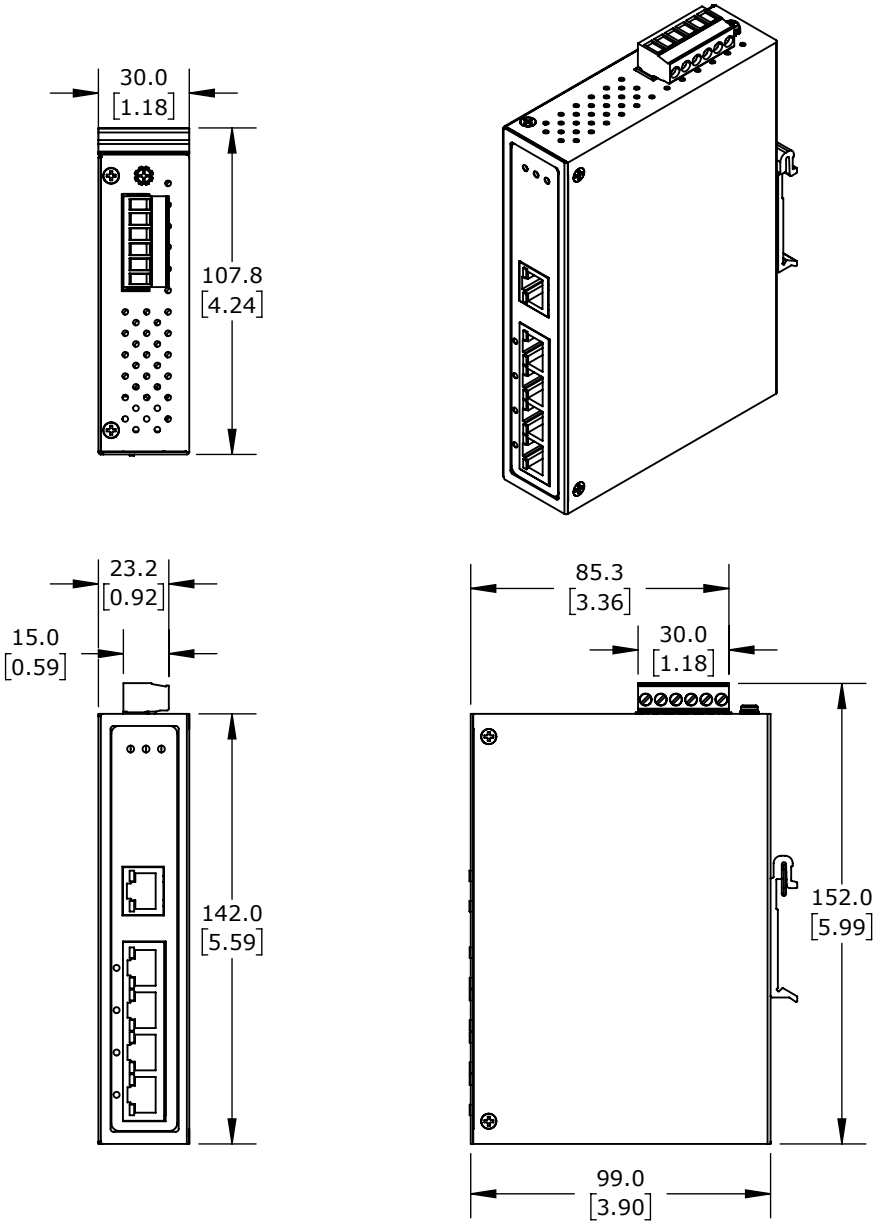
SE3-MC2UG-1P-T



FIBER PORT: 1*100/1000 SFP SLOT
DIP SWITCH 1: LINK-FAULT PASS THROUGH (LFP) ENABLE / DISABLE
DIP SWITCH 2: 1000MBPS / 100MBPS

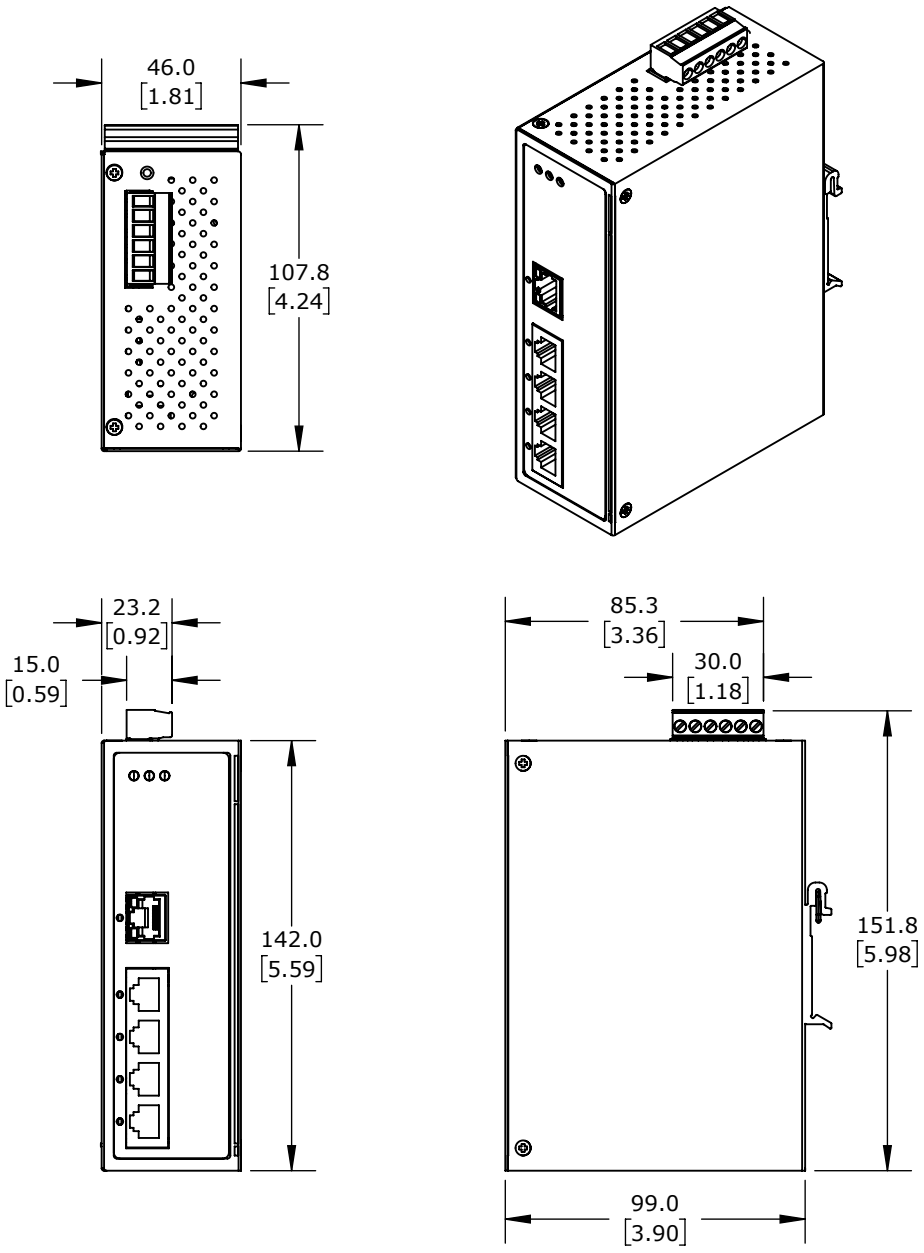
Dimensions (mm [in])

SE3-SWP1A5U-T



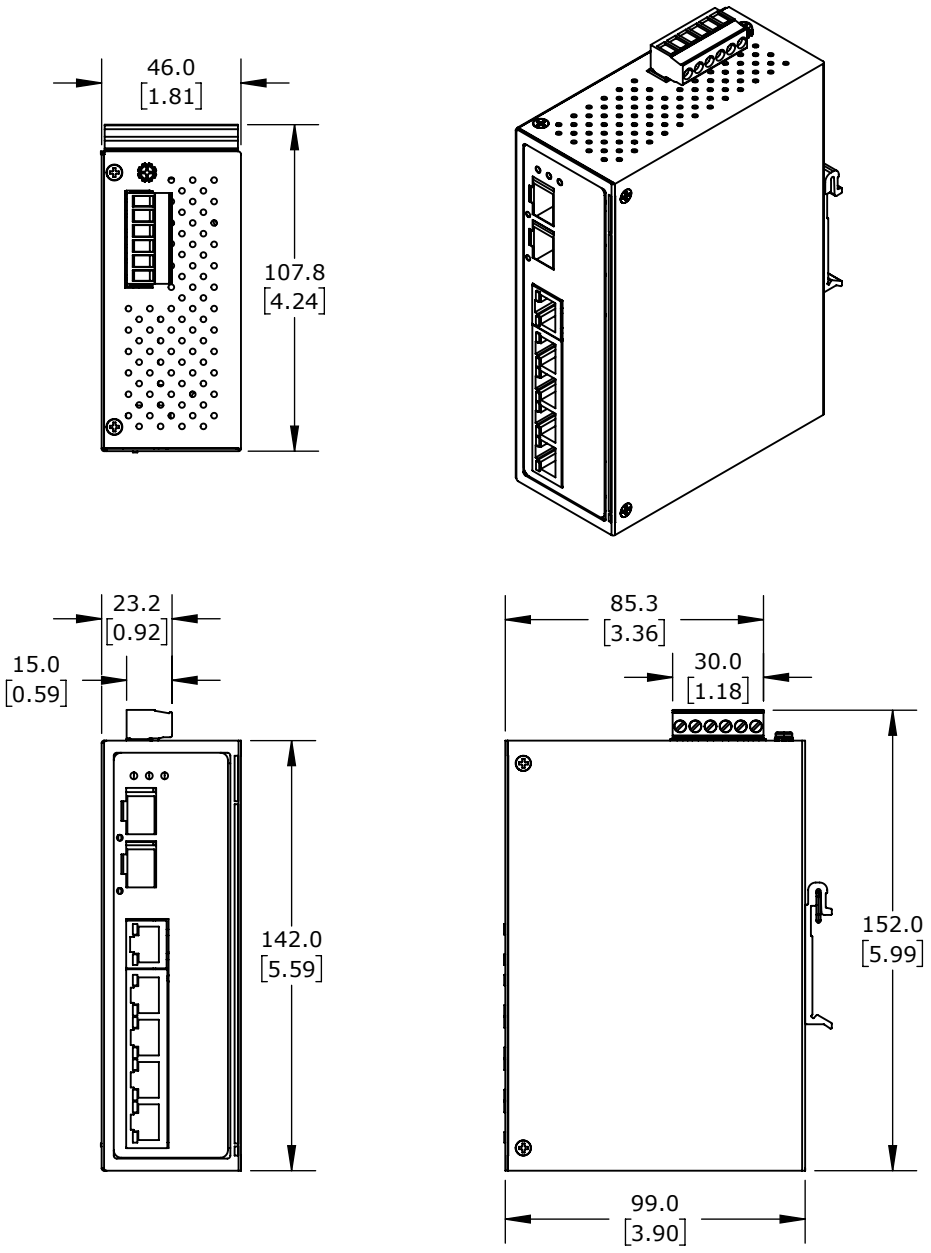
Dimensions (mm [in])

SE3-SWP2A5U-T / SE3-SWP2A5UG-T



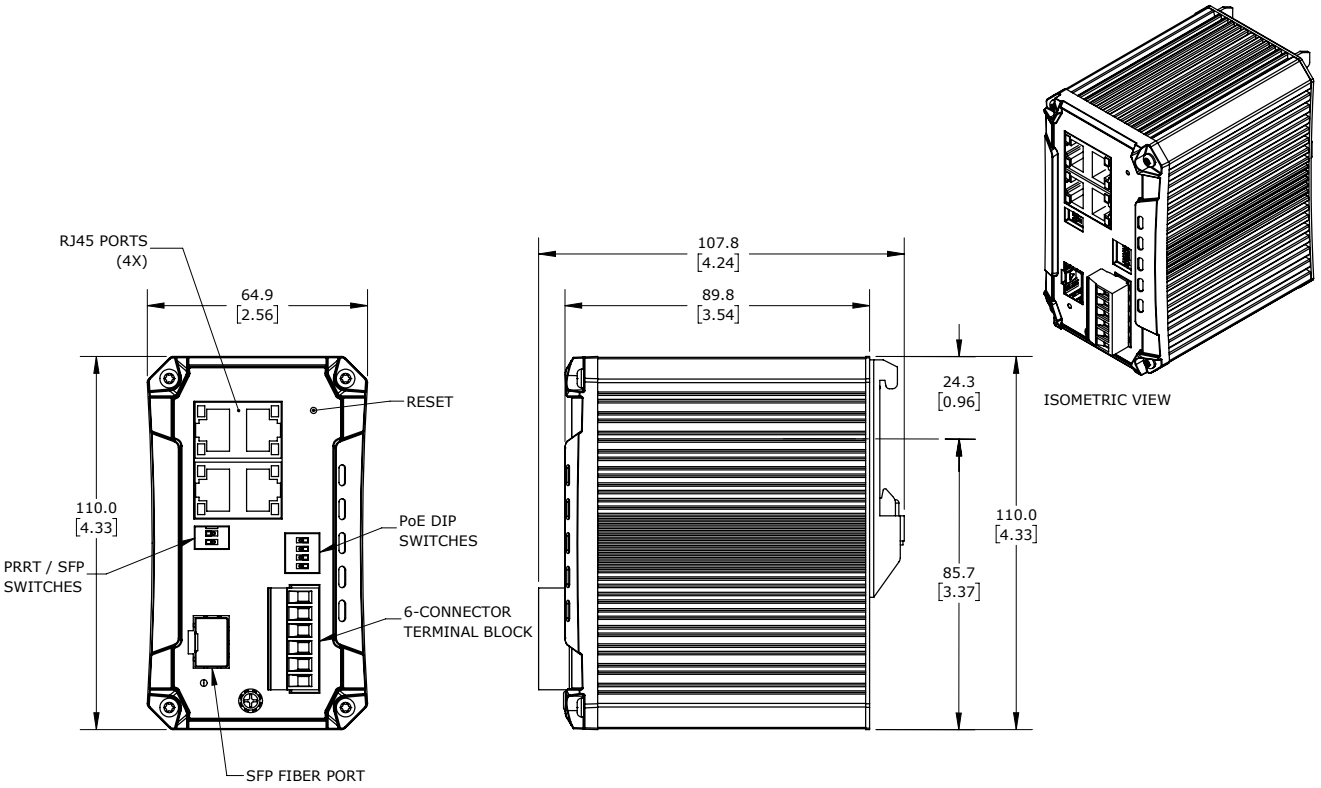
Dimensions (mm [in])

SE3-SWP2A7U-2P-T



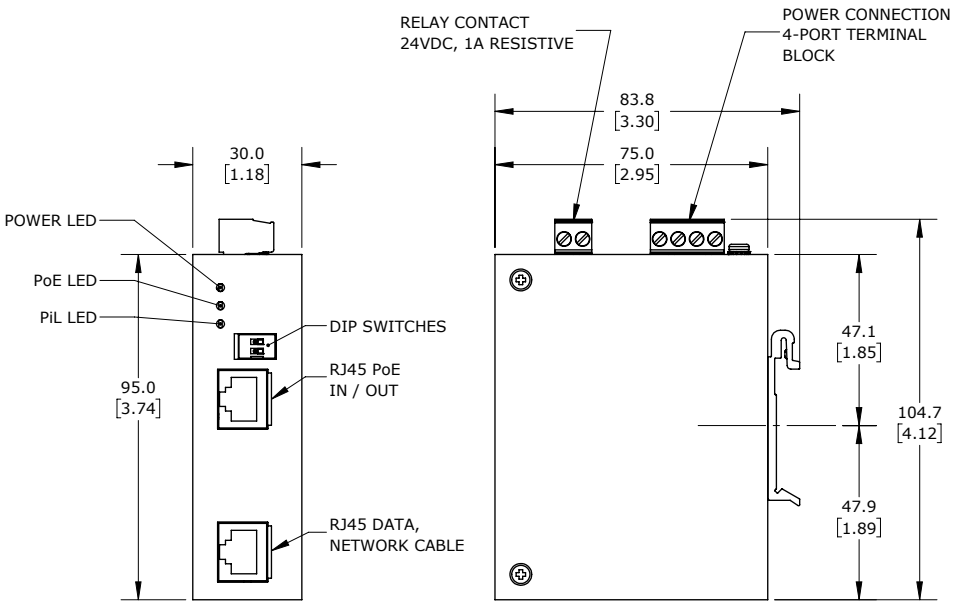
Dimensions (mm [in])

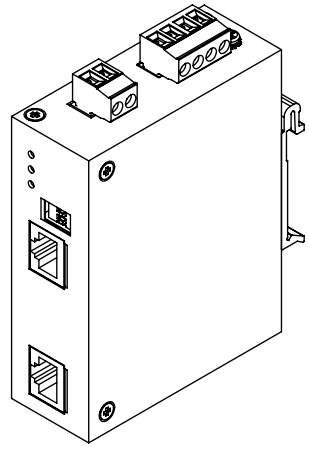
SE3-SWP2B5UG-1P-T



Dimensions (mm [in])

SE3-IJ2A2UG-T

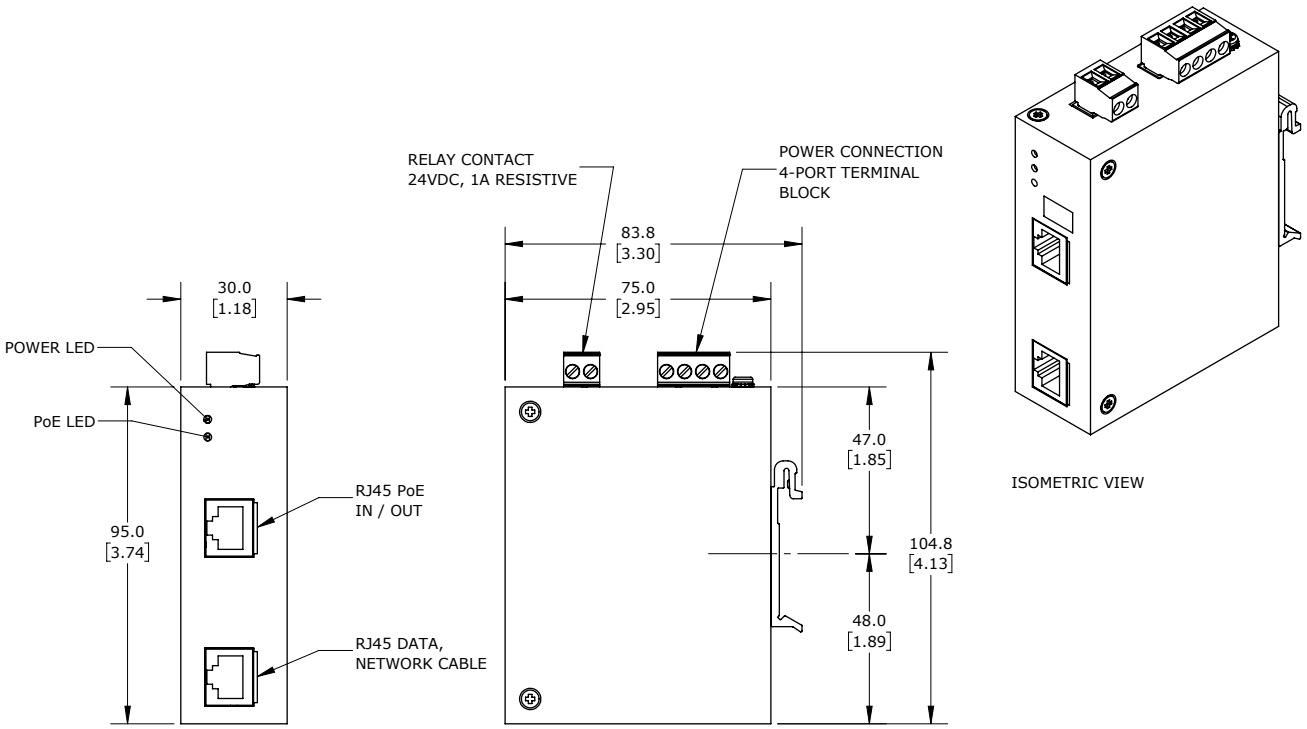




ISOMETRIC VIEW

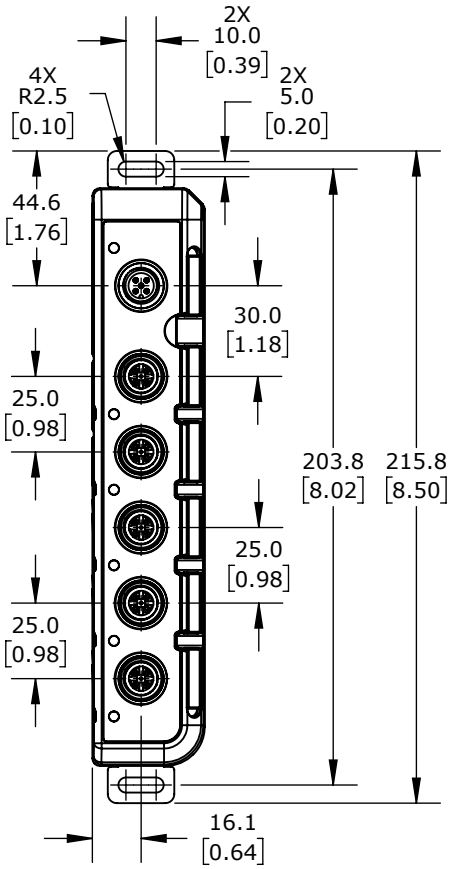
Dimensions (mm [in])

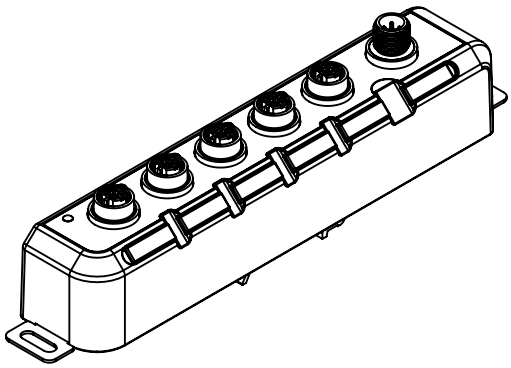
SE3-IJ2B2UG-T

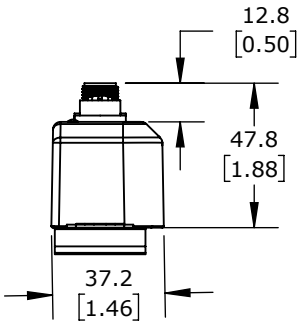


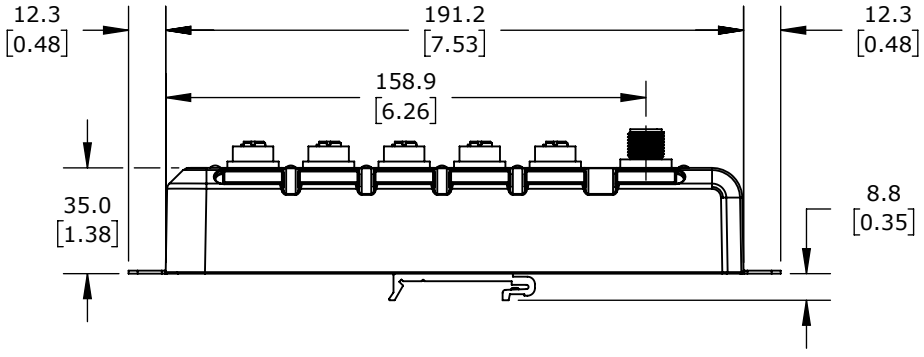
mm [in]

SE3-SW5U-N67-T









Troubleshooting

Power

- If the power indicator LED does not illuminate when power is applied, check for loose power connections.
- Verify that you have an appropriate power supply. Never use a power supply with a non-compliant DC output voltage.
- If the Fault LED is on and you have only one power supply connected, make sure to jumper the two power connections as described in the Installation section. If you have two power supplies connected, check the output voltage of each and check for loose power connections.

Copper Ethernet

- Use the proper UTP or STP cable when constructing the network. Use an unshielded twisted-pair (UTP) or shielded twisted-pair (STP) cable for RJ-45 connections: 100Ω Category 5e or better for 10M/100/1000Mbps. Also be sure that the length of any twisted-pair connection does not exceed 100m [328ft].
- If the industrial switch LED indicators are normal and the connected cables are correct but the packets still cannot transmit, please check the configuration or status of the system's Ethernet devices.
- The SFP-1GC-TGigabit copper transceiver can only be used in a Gigabit SFP port.

Fiber Ethernet

- If you are using an SE3-SW5UG-1P-T switch, make sure the SFP Speed DIP switch setting matches the speed of the network to which your switch is connected (i.e., 100Mbps or 1Gbps). If the DIP switch setting is changed, the switch must be power cycled for it to take affect.
- Make sure that the speeds of devices at both ends of a link match: a 100Mbps SFP on one switch must connect to a 100Mbps connection on the other switch or end device. Fiber ports do not negotiate speed.
- Ensure that the cable type you are using matches the transceiver type. That is, multi-mode cable requires multi-mode transceivers, and single-mode cable requires single-mode transceivers.
- Make sure that all of your connectors are clean. Even a tiny amount of dust, dirt or grease on a connector face can significantly degrade a fiber signal. This includes the main fiber optic link as well as any patch cables that you may be using. When cleaning, it is important to use lint free swabs or wipes, preferably of a clean room quality. These can be used dry or wet (with 99% isopropyl alcohol solutions). It is not necessary to scrub the end face, rather to just gently wipe it clean and then double-check the link. If additional cleaning is required, simply repeat this process

WARNING: *MAKE CERTAIN THAT YOU ARE NOT CLEANING AN ACTIVE FIBER, AS THE LASER CAN CAUSE PERMANENT DAMAGE TO YOUR EYES SHOULD YOU LOOK INTO THE END FACE.*

- Make sure that all connectors are plugged completely into their proper ports. If end faces are not lined up correctly with transceivers and/or mated fiber ends, the system may fail due to excess attenuation.
- Make sure that the transmit cable at the near end is the receive cable at the far end. There needs to be a crossover for a fiber link to work correctly. Be sure to factor in all patch cords that may be used.

NOTE: The physical connectors on the ends of a fiber cable do NOT need to match: a link may use an LC connector on one end and an SC connector on the other

- Evaluate the transmitter output power, fiber loss and receiver sensitivity of your fiber network link, and add an optical attenuator if necessary.

Please contact AutomationDirect for technical support service if the problem persists.

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