

# Stride SE2 Series Unmanaged Industrial Ethernet Switches and Media Converters

## SE2 Series DIN Rail mounted switches



### Features

- Broadcast storm protection
- Wide temp range option
- Optional panel mounting accessory
- 12, 24, 48 VDC & 18-30 VAC redundant input
- GbE models
- Haz Loc
- IP30 metal cases
- 5-year warranty



RoHS Compliant

### Stride SE2 Unmanaged Models

Part Number	Price	RJ45 10/100	RJ45 GbE	Fiber	Input power (max.)	Operating Temp	Agency Approvals
<a href="#">SE2-MC2U-C1-T</a>		1	–	1 SC	3.4 W	-40 to +75°C [-40 to +167°F]	UL/cUL 61010-1 and 61010-2-201, Haz Loc, CE
<a href="#">SE2-MC2U-T1-T</a>		1	–	1 ST			
<a href="#">SE2-SW5U</a>		5	–	–	4.5 W	-10 to +60°C [+14 to +140°F]	
<a href="#">SE2-SW5UG-T</a>		–	5	–			
<a href="#">SE2-SW5U-1C1-T</a>		4	–	1 SC	3.4 W	-40 to +75°C [-40 to +167°F]	
<a href="#">SE2-SW5U-1T1-T</a>		4	–	1 ST			
<a href="#">SE2-SW8U</a>		8	–	–	4.6 W	-10 to +60°C [+14 to +140°F]	
<a href="#">SE2-SW8U-T</a>			–	–			
<a href="#">SE2-SW8U-2C1-T</a>		6	–	2 SC	10W	-40 to +75°C [-40 to +167°F]	
<a href="#">SE2-SW8UG-T</a>		–	8	–			
<a href="#">SE2-SW18U-2G-T</a>		16	2	–	8W		

\* Optional SFP modules sold separately. Use only Gigabit speed SFPs with SE2-SW10UG-2P-T.

### Panel Mounting Brackets

Stride SE2 series DIN-rail mounted switches can be panel mounted with the addition of the optional panel mounting brackets [SE2-PM1](#) or [SE2-PM3](#).

### SE2-Series Panel Mounting Brackets

Part Number	Price	For use with switch model
<a href="#">SE2-PM1</a>		SE2-SW5Ux, SE2-SW8U-x, and SE2-MCx
<a href="#">SE2-PM3</a>		SE2-SWPx, SE2-SW8UG-T, SE2-SW18U-2G-T and all SE2 managed switches

[SE2-PM1](#)[SE2-PM3](#)

# Stride SE2 Series Unmanaged Industrial Ethernet Switches and Media Converters

## SE2 Series DIN Rail mounted switches

General Specifications	
<b>Operating Mode</b>	Store and forward wire speed switching, non-blocking
<b>Devices Supported</b>	All IEEE 802.3 compliant devices are supported
<b>MAC Addresses</b>	8K for SE2-SWxG-T, SE2-SW18U-2G-T 2K
<b>Packet Forwarding Rate</b>	0.75 Mpps - SE2-MC2U-x, SE2-SW5U & SE2-SW5U-x 1.2 Mpps - SE2-SW8U-x 7.4 Mpps - SE2-SW5UG-T 14.9 Mpps - SE2-SW8UG-T & 5.7 Mpps - SE2-SW18U-2G-T
<b>Broadcast Storm Protection*</b>	DIP switch enabled (DIP switch I ON)
<b>Jumbo Frame Support</b>	DIP switch enabled for SE2-SW5UG-T, SE2-SW8UG-T and SE2-SW18U-2G-T only (DIP switch II ON)**
<b>Latency</b>	< 10 µs
<b>Storage Temperature Range</b>	-40 to +85 °C [-40 to +185 °F]
<b>Humidity (non-condensing)</b>	5 to 95% RH
<b>Environmental Air</b>	No corrosive gases permitted
<b>Vibration, Shock &amp; Freefall</b>	IEC60068-2-6, -27, -32
<b>EMI Emissions</b>	FCC CFR47 Part 15, EN55032/CISPR32, Class A
<b>EMS</b>	IEC61000-4-2 (ESD): +/- 6kV (contact), +/- 8kV (air) IEC61000-4-3 (RS): 10V/m (80MHz ~ 2GHz) IEC61000-4-4 (EFT): Power Port +/- 2kV; Data Port: +/- 1kV IEC61000-4-5 (Surge): Power Port: +/- 1kV/DM, +/- 2kV/CM; Data Port +/- 1kV (+/- 2kV for 16 and 18 port models) IEC61000-4-6 (CS): 10V (150kHz ~ 80MHz)
<b>RoHS and WEEE</b>	RoHS (Pb free) and WEEE compliant
<b>Packaging and Protection</b>	Metal case, IP30
<b>Hazardous Locations</b>	ANSI/ISA 12.12.01-2015 & CSA 22.2 No. 213-15 (Class I, Div.2) (file #E200031); UL/cUL 61010-1 and 61010-2-201, Class 1, Div. 2, Groups A, B, C, D, (UL file #E200031) CE
<b>Agency Approvals</b>	

\* Broadcast storm threshold value is 2 packets/100ms for 10 Mbps port or 2 packets/10ms for 100 Mbps and 1000 Mbps ports.

\*\* DIP switch II is unused on the 10/100 models.

Front Panel LEDs		
LED	State	Description
<b>PWR1 LED</b>	On	Power 1 connected and operational
	Off	Power 1 no voltage
<b>PWR2 LED</b>	On	Power 2 connected and operational
	Off	Power 2 no voltage
<b>ACT/LNK LED</b>	On	Indicates that there is a proper Ethernet connection (Link) between the port and another Ethernet device, but no communications activity is detected.
	Blinking	Indicates that there is a proper Ethernet connection (Link) between the port and another Ethernet device, and that there is communications activity.
	Off	Indicates that there is not a proper Ethernet connection (Link) between the port and another Ethernet device. Make sure the cable has been plugged securely into the ports at both ends.
<b>Speed LED 10/100 Models</b>	On	A 100 Mbps (100BaseT) connection is detected.
	Off	A 10 Mbps (10BaseT) connection is detected.
<b>Speed LED 10/100/1000 Models</b>	On	A 1000 Mbps (1000BaseT) connection is detected
	Off	A 100 or 10 Mbps (100BaseT or 10BaseT) connection is detected

SC/ST Fiber Port: (100BaseFX multimode)	
<b>Optimal Fiber Cable</b>	50/125 or 62.5/125 µm
<b>Center Wavelength</b>	1300 nm
<b>Multimode</b>	Links up to 4 km typ. > Transmitter power (dBm): -21 min, -17 typ, -14 max > Receiver sensitivity (dBm): -34 typ, -31 max
<b>Nominal Max. Distance</b>	4 km
<b>Eye Safety (laser)</b>	IEC 60825-1, Class 1; FDA 21 CFR 1040.10 and 1040.11

RJ45 Ports	
<b>Port Type</b>	Shielded RJ45
<b>Ethernet Compliance</b>	IEEE 802.3i, 802.3u, 802.3x for 10/100 Ethernet IEEE 802.3ab, 802.3z for Gigabit Ethernet
<b>Auto-Crossover</b>	Yes, allows you to use straight-through or crossover wired cables
<b>Auto-Sensing Operation</b>	Yes, full and half duplex
<b>Auto-Negotiating Speed</b>	Yes
<b>Flow Control</b>	Automatic
<b>Cable Requirements</b>	Twisted pair (Cat5e or better) (shielded recommended)
<b>Max. Cable Distance</b>	100 meters

Power Details	
<b>Power Input</b>	Redundant Input Terminals
<b>Input Voltage</b>	Class 2 Power Supply: 12-48 VDC, 18-30VAC 50/60 Hz
<b>Reverse Power Protection</b>	Yes
<b>Power Consumption</b>	Refer to Stride SE2 Series Unmanaged Models table

SFP Ports	
SFP (pluggable) ports accept 1000Mbps Mini-GBIC (SFP) transceivers	
See SFP datasheet for optional fiber transceiver specification	

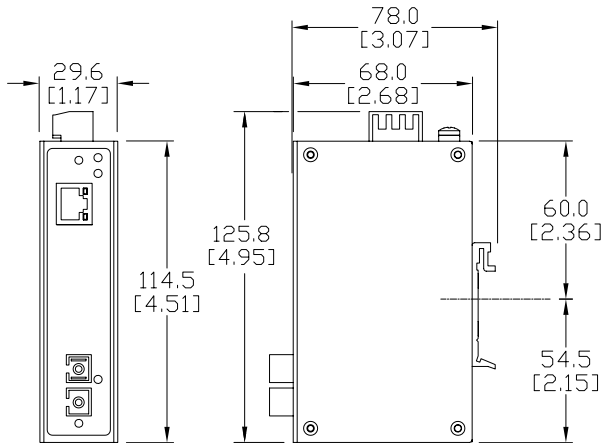
# Stride SE2 Series Unmanaged Industrial Ethernet Switches and Media Converters

## SE2 Series DIN Rail mounted switches

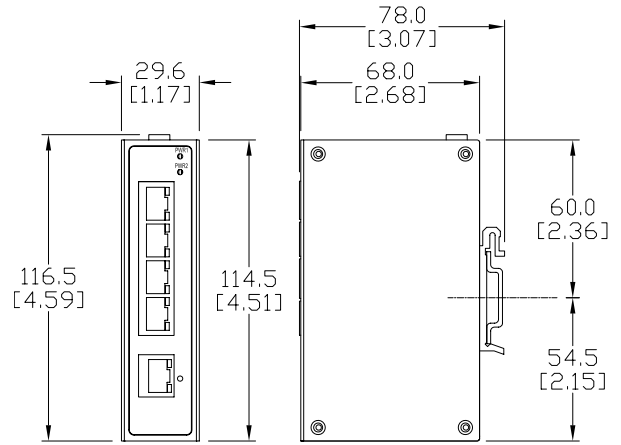
## Dimensions

Allow 20mm [0.79"] clearance around the switch for cooling

mm [Inches]

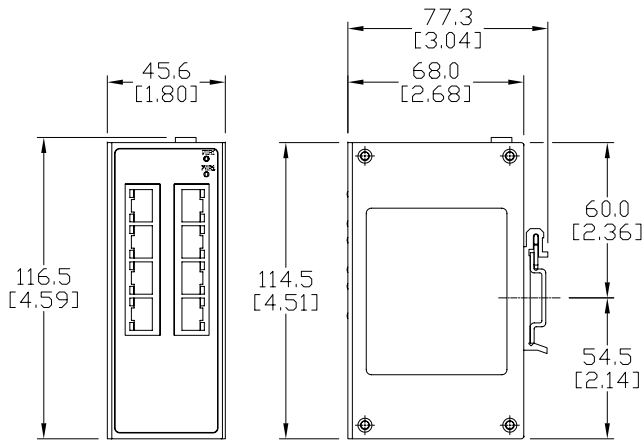


**SE2-MC2U-C1-T**  
**SE2-MC2U-T1-T**

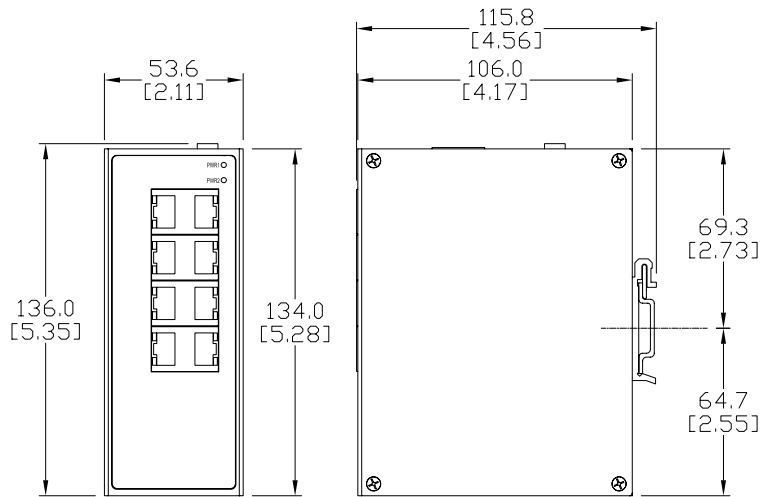


**SE2-SW5U-1C1-T**  
**SE2-SW5U-1T1-T**

**SE2-SW5U**  
**SE2-SW5UG-T**



**SE2-SW8U**  
**SE2-SW8U-T**



**SE2-SW8UG-T**

See our website: [www.AutomationDirect.com](http://www.AutomationDirect.com) for complete engineering drawings.

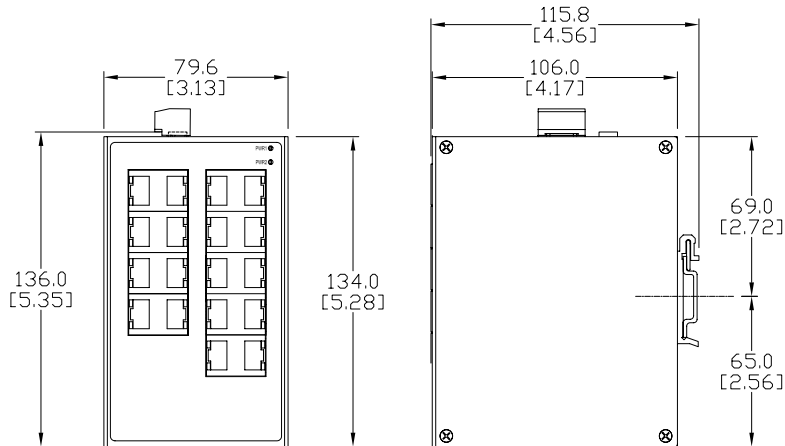
# Stride SE2 Series Unmanaged Industrial Ethernet Switches

## SE2 Series DIN Rail mounted switches

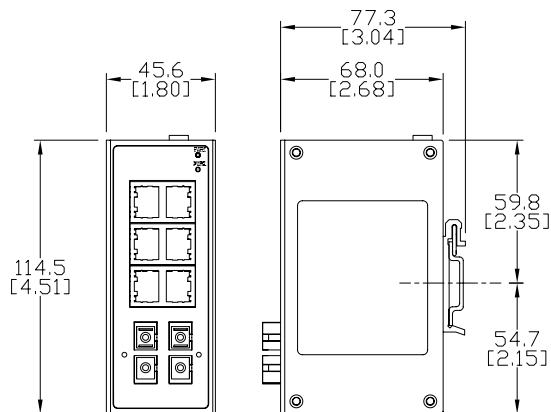
Allow 20mm [0.79"] clearance around the switch for cooling

## Dimensions

mm [Inches]



**SE2-SW18U-2G-T**



**SE2-SW8U-2C1-T**

See our website: [www.AutomationDirect.com](http://www.AutomationDirect.com) for complete engineering drawings.

Stride

SE2 Series Unmanaged Industrial Ethernet Switches

SE2 Series IP65 Rated



Features

- Rugged IP65 rating
- Tight M12 connections
- Wide temp range
- Panel mount
- 12, 24, 48 VDC and 18-30 VAC redundant input
- Complies with EN50155 and EN50121 industrial standards
- 5-year warranty



Stride SE2 Series IP65 Rated Models					
Part Number	Price	M12, IP65 10/100 ports	Input power (max.)	Operating Temp	Agency Approvals
<a href="#">SE2-SW5U-N65-T</a>		5	4.6 W	-40 to +75°C [-40 to +167°F]	UL/cUL 61010-1, UL/cUL 6010-2-201 CE, EN50155, EN50121

# Stride SE2 Series Unmanaged Industrial Ethernet Switches

## SE2 Series IP65 Rated

General Specifications	
<b>Operating Mode</b>	Store and forward wire speed switching, non-blocking
<b>Devices Supported</b>	All IEEE 802.3 compliant devices are supported
<b>MAC Addresses</b>	2K
<b>Packet Buffer</b>	1Mbit
<b>Packet Forwarding Rate</b>	1.2 Mpps
<b>Latency</b>	< 10 $\mu$ s
<b>Storage Temperature Range</b>	-40 to +85 °C [-40 to +185 °F]
<b>Humidity (non-condensing)</b>	5 to 95% RH
<b>Pollution Degree</b>	2
<b>Vibration and Shock</b>	IEC60068-2-6, -27, -32
<b>Freefall</b>	IEC60068-2-32
<b>Safety</b>	EN60950-1
<b>EMI Emissions</b>	FCC CFR47 Part 15, EN55032/CISPR32, Class A
<b>EMS</b>	IEC61000-4-2 (ESD): $\pm$ 6kV (contact), $\pm$ 8kV (air) IEC61000-4-3 (RS): 20V/m (80MHz ~ 2 GHz) IEC61000-4-4 (EFT): Power Port $\pm$ 2kV; Data Port: $\pm$ 2kV IEC61000-4-5 (Surge): Power Port: $\pm$ 1kV/DM, $\pm$ 2kV/CM IEC61000-4-6 (CS): 10V (150 kHz ~ 80 MHz) IEC61000-4-8 (Power frequency magnetic field) :50 Hz 100A/m IEC61000-4-9 (Pulsed magnetic field) :300A/m IEC61000-4-29 (Voltage short interruptions) :10ms 100%
<b>RoHS and WEEE</b>	RoHS (Pb free) and WEEE compliant
<b>Packaging and Protection</b>	Metal case, IP65
<b>Agency Approvals</b>	UL/cUL 61010-1 UL/cUL 61010-2-201, (UL file #E157382), CE, EN50155, EN50121

Power Details	
<b>Power Input</b>	Redundant Input M12 connector
<b>Input Voltage</b>	Class 2 Power Supply: 12-48 VDC, 18-30VAC 50/60 Hz
<b>Power Input Ports</b>	M12, male, A-coding, 4-pin
<b>Reverse Power Protection</b>	Yes

M12 Ports	
<b>10/100BaseT ports</b>	M12, female, D-coding, 4-pin
<b>Ethernet Compliance</b>	IEEE 802.3i, 802.3u, 802.3x
<b>Auto-Crossover</b>	Yes, allows you to use straight-through or crossover wired cables
<b>Auto-Sensing Operation</b>	Yes, full and half duplex
<b>Auto-Negotiating Speed</b>	Yes
<b>Flow Control</b>	Automatic
<b>Cable Requirements</b>	Twisted pair (Cat5 or better) (shielded recommended)
<b>Max. Cable Distance</b>	100 meters

\*Note-M12 caps (ZP-JBH-CAP) need to be used on open (disconnect) ports.

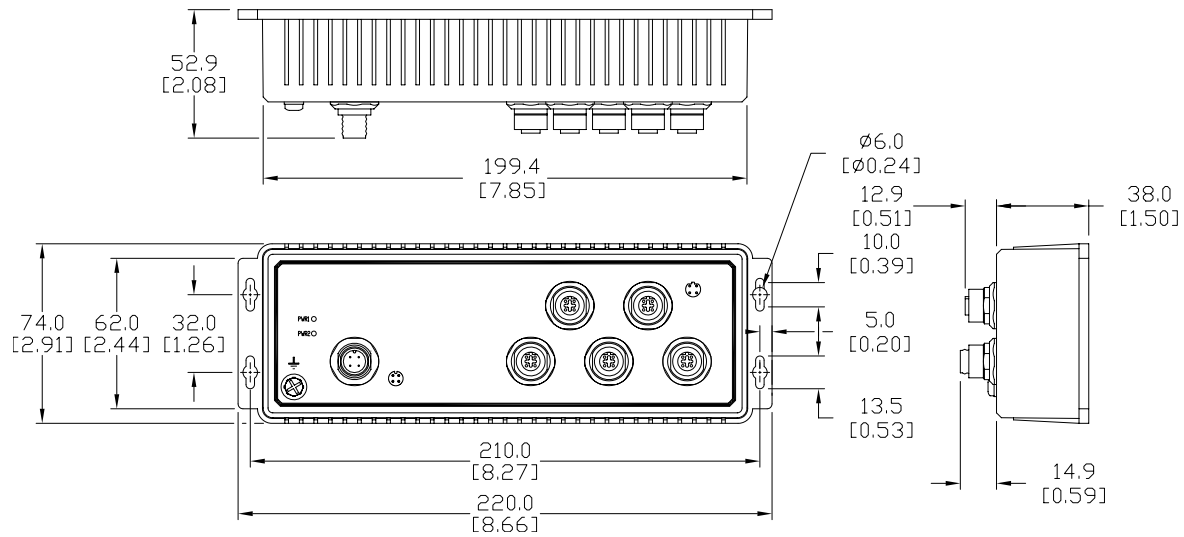
Front Panel LEDs		
LED	State	Description
<b>Power 1 LED</b>	On	Power 1 connected and operational
	Off	Power 1 no voltage
<b>Power 2 LED</b>	On	Power 2 connected and operational
	Off	Power 2 no voltage
<b>Ethernet Port Connection Status LED</b>	On	Ethernet port connected
	Blinking	Ethernet port active
	Off	Ethernet port no connection

# Stride SE2 Series Unmanaged Industrial Ethernet Switches

SE2 Series IP65 Rated

## Dimensions

mm [Inches]



**SE2-SW5U-N65-T**

See our website: [www.AutomationDirect.com](http://www.AutomationDirect.com) for complete engineering drawings.

# Stride<sup>®</sup> Unmanaged Industrial Ethernet Switches

## Features

- Reliable connectivity
  - Industrially hardened
  - Simple installation
- For detailed specifications on all models, see following pages



		SE Series	SE2 Series DIN Rail	SE2 Series IP65	SE3 Series DIN Rail	SE3 Series IP67
<b>Price</b>						
<b>Broadcast Storm Protection</b>						
		—	✓	—	—	—
<b>Industrial Temperature Ranges</b>						
	<b>Standard Temp</b>	-10 to +60°C	-10 to +60°C	—	-10 to +65°C	—
	<b>Wide Temp</b>	-40 to +85°C	-40 to +75°C	-40 to +75°C	-40 to +75°C	-40 to +75°C
<b>Port Connectivity</b>						
	<b>Port Count</b>	2 to 9	2 to 18	5	5 to 16	5
	<b>RJ45 Port Speed</b>	up to 100 Mbps	up to 1000 Mbps	—	up to 1000 Mbps	—
	<b>M12 Port Speed</b>	—	—	up to 100 Mbps	—	up to 100 Mbps
	<b>Fiber Optic Ports</b>	✓	✓	—	✓	—
	<b>PoE+ Ports</b>	—	✓	—	✓	—
	<b>SFP Ports</b>	—	✓	—	✓	—
<b>Mounting</b>						
	<b>DIN Rail Mount</b>	✓	✓	—	✓	✓
	<b>Panel Mount</b>	✓	✓	✓	✓	✓
<b>Input Power</b>						
	<b>Redundant Power Inputs</b>	✓	✓	✓	✓	✓
	<b>Reverse Polarity Protection</b>	✓	✓	✓	✓	✓
	<b>Power LED</b>	✓	✓	✓	✓	✓
<b>Agency Approvals</b>						
	<b>UL508 or UL61010</b>	✓	✓	✓	✓	✓
	<b>Haz Loc—Class 1 Div 2</b>	✓	✓	—	✓	—
	<b>IECEX</b>	✓	—	—	—	—
	<b>ATEX Zone 2</b>	✓	—	—	—	—
	<b>CE</b>	✓	✓	✓	✓	✓
	<b>EN50155 &amp; EN50121</b>	—	—	✓	—	—
<b>Warranty</b>						
		5 years	5 years	5 years	5 years	5 years
<b>Activity, Link &amp; Speed LEDs</b>						
		✓	✓	✓	✓	✓



# Stride Industrial Ethernet Fiber Transceivers

## Fast Ethernet

### Description:

STRIDE 100Mb Small Form Factor Pluggable (SFP) transceiver modules (Transmit/Receive). Hot Swappable. 1310nm wavelength. Data transmission up to 4km multimode fiber (SFP-4K-FMF) or 30km singlemode fiber (SFP-30K-FSF). LC duplex receptacle, SFP Multi-Source Agreement compliant.



**NOTE:** Port speed settings for the Stride switch must be manually set to 100 Mbps.

Part Number	Mode	Light Source	Max Trans. Distance	Price
<b>SFP-4K-FMF</b>	Multi-mode	1310 nm, FP	4km	
<b>SFP-30K-FSF</b>	Single-mode		30 km	

**Note:** Use only Gigabit speed SFPs with SE2-SW10UG-2P-T

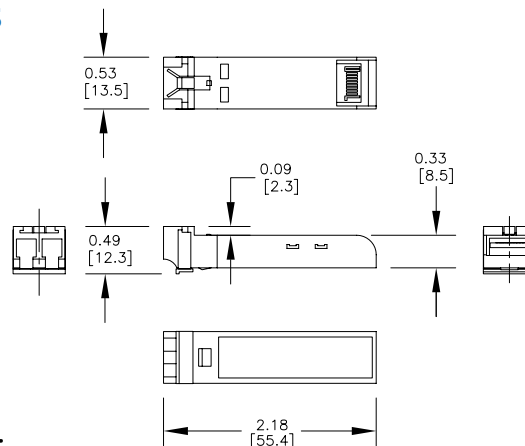
Transmitter Optical characteristics				
Parameter (unit)		Minimum	Typical	Maximum
Output optical power (dBm)	SFP-4K-FMF	-9		0
	SFP-30K-FSF	-15		-8
Extinction Ratio (dB)	SFP-4K-FMF	8.2		
	SFP-30K-FSF			
Center Wavelength (nm)	SFP-4K-FMF	1261	1310	1360
	SFP-30K-FSF			
Spectral width - RMS (nm)	SFP-4K-FMF			7
	SFP-30K-FSF			4
Rise / Fall Time - 10% - 90% (ns)	SFP-4K-FMF			2
	SFP-30K-FSF			

Receiver Optical characteristics			
Parameter (unit)		Minimum	Maximum
Sensitivity (dBm)	SFP-4K-FMF		-30
	SFP-30K-FSF		-34
Operating Wavelength (nm)	SFP-4K-FMF	1260	1620
Loss of Signal - Deasserted (dBm)	SFP-4K-FMF		-30
	SFP-30K-FSF		-35
Loss of Signal - Asserted (dBm)	SFP-4K-FMF	-45	
	SFP-30K-FSF		
Loss of Signal - Hysteresis (dB)	SFP-4K-FMF	0.5	
	SFP-30K-FSF		

General Specifications		
Connector Type		Type LC connector with bail latch
Operating Temperature range		-40 to +85 °C [-40 to +185 °F]
Storage temperature range		-40 to +85 °C [-40 to +185 °F]
Humidity (non-condensing)		5 to 95% RH
Link Speed		Gigabit Ethernet
Laser Type		FP laser diode (Class 1 laser safety standard IEC 60825 compliant)
Media	SFP-4K-FMF	Multi-mode Fiber
	SFP-30K-FSF	Single-mode Fiber
Fiber	SFP-4K-FMF	62.5 / 125 µm
	SFP-30K-FSF	9 / 125 µm
Code	SFP-4K-FMF	FX5
	SFP-30K-FSF	100LX
Distance	SFP-4K-FMF	4km
	SFP-30K-FSF	30 km
Compliances	SFP-4K-FMF	125Mbps IEEE802.3u 100BASE-FX compliant 125Mbps FDDI ISO/IEC 9314-1 compliant
	SFP-30K-FSF	125Mbps IEEE802.3ah 100BASE-LX10 compliant 155Mbps ITU-T G957 STM S-1.1/L-1.1 compliant 155Mbps SONET OC-3 IR-1/LR-1 compliant
Inputs / Outputs		AC-coupled differential inputs and outputs

### Dimensions

Inches [mm]



### Safety Standards:



# Stride Industrial Ethernet Fiber Transceivers

## Gigabit Ethernet

### Description:

STRIDE Gigabit (1.25GB) Small Form Factor Pluggable (SFP) transceiver module (Transmit/Receive). Hot Swappable. Short or long wavelength of 850nm or 1310nm, dependant on model. Supports data transmission up to 550 meters, 2km, 10 km, or 30 km on a single-mode or multi-mode fiber, dependant on model. LC duplex receptacle, SFP Multi-Source Agreement compliant.



Part Number	Mode	Light Source	Max Trans. Distance	Price
<b>SFP-500-GMF</b>	Multi-mode	850 nm, VCSEL	550m	
<b>SFP-2K-GMF</b>				
<b>SFP-10K-GSF</b>	Single-mode	1310 nm, FP	10 km	
<b>SFP-30K-GSF</b>				
		1310 nm, DFB	30 km	

Note: Use only Gigabit speed SFPs with SE2-SW10UG-2P-T

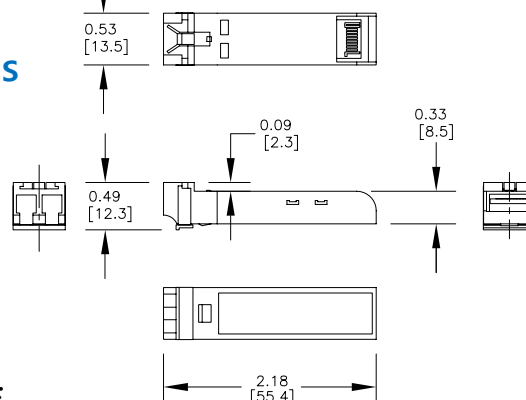
Transmitter Optical characteristics				
Parameter (unit)		Minimum	Typical	Maximum
Output optical power (dBm)	SFP-500-GMF	-9.5		-4
	SFP-2K-GMF	-9		-1
	SFP-10K-GSF	-9.5		-3
	SFP-30K-GSF	-2	1	3
Extinction Ratio (dB)	SFP-500-GMF	9		
	SFP-2K-GMF			
	SFP-10K-GSF			
	SFP-30K-GSF			
Center Wavelength (nm)	SFP-500-GMF	830	850	860
	SFP-2K-GMF	1270		1355
	SFP-10K-GSF	1285		1343
	SFP-30K-GSF	1270		1355
Spectral width - RMS (nm)	SFP-500-GMF			0.85
	SFP-2K-GMF			4
	SFP-10K-GSF			2.8
	SFP-30K-GSF			1
Rise / Fall Time - 20% - 80% (ps)	SFP-500-GMF			260
	SFP-2K-GMF			
	SFP-10K-GSF			
	SFP-30K-GSF			

Receiver Optical characteristics			
Parameter (unit)		Minimum	Maximum
Sensitivity (dBm)	SFP-500-GMF		-17
	SFP-2K-GMF		-19
	SFP-10K-GSF		-20
	SFP-30K-GSF		-23
Operating Wavelength (nm)	SFP-500-GMF	770	860
	SFP-2K-GMF	1260	1610
	SFP-10K-GSF	1270	1355
	SFP-30K-GSF		1580
Return Loss (dB)	SFP-500-GMF	12	
	SFP-2K-GMF		
	SFP-10K-GSF		
	SFP-30K-GSF		
Loss of Signal - Deasserted (dBm)	SFP-500-GMF		-17.5
	SFP-2K-GMF		-19
	SFP-10K-GSF		-20
	SFP-30K-GSF		-23
Loss of Signal - Asserted (dBm)	SFP-500-GMF	-35	
	SFP-2K-GMF		
	SFP-10K-GSF		
	SFP-30K-GSF		
Loss of Signal - Hysteresis (dB)	SFP-500-GMF	0.5	
	SFP-2K-GMF		
	SFP-10K-GSF		
	SFP-30K-GSF		

General Specifications	
<b>Connector Type</b>	Type LC connector with bail latch
<b>Operating Temperature range</b>	-40 to +85 °C [-40 to +185 °F]
<b>Storage temperature range</b>	-40 to +85 °C [-40 to +185 °F]
<b>Humidity (non-condensing)</b>	5 to 95% RH
<b>Link Speed</b>	Gigabit Ethernet
<b>Laser Type</b>	SFP-500-GMF VCSEL laser diode (Class 1 laser safety standard IEC 60825 compliant)
	SFP-2K-GMF FP laser diode (Class 1 laser safety standard IEC 60825 compliant)
	SFP-10K-GSF DFB laser diode (Class 1 laser safety standard IEC 60825 compliant)
	SFP-30K-GSF DFB laser diode (Class 1 laser safety standard IEC 60825 compliant)
<b>Media</b>	SFP-500-GMF Multi-mode Fiber
	SFP-2K-GMF Single-mode Fiber
	SFP-10K-GSF Single-mode Fiber
	SFP-30K-GSF Single-mode Fiber
<b>Fiber</b>	SFP-500-GMF 50 / 125 µm and 62.5 / 125 µm
	SFP-2K-GMF 50 / 125 µm and 62.5 / 125 µm
	SFP-10K-GSF 9 / 125 µm
	SFP-30K-GSF 9 / 125 µm
<b>Code</b>	SFP-500-GMF SX
	SFP-2K-GMF SX2
	SFP-10K-GSF LX
	SFP-30K-GSF Lhx
<b>Distance</b>	SFP-500-GMF 550m
	SFP-2K-GMF 2km
	SFP-10K-GSF 10 km
	SFP-30K-GSF 40 km
<b>Compliances</b>	SFP-500-GMF 1.0625Gbps Fiber Channel FC-PI 100-M5-SN-I compliant 1.0625Gbps Fiber Channel FC-PI 100-M6-SN-I compliant 1.25Gbps IEEE 802.3z 1000BASE-SX compliant 1.25Gbps IEEE 802.3ah 1000BASE-SX compliant
	SFP-2K-GMF IEEE 802.3 1000BASE-SX+ compliant
	SFP-10K-GSF 1.0625Gbps Fiber Channel FC-PI 100-SM-LC-L compliant 1.25Gbps IEEE 802.3 1000BASE-LX compliant
	SFP-30K-GSF 1.25Gbps Gigabit Ethernet compliant
<b>Inputs / Outputs</b>	AC-coupled differential inputs and outputs

### Dimensions

Inches [mm]



### Safety Standards:

