

Stride SE Series Managed Switches



Features

- Modbus TCP read capability
- Wide temp range
- DIN-rail mount with integrated panel mount option
- Metal housing
- 12, 24 VDC redundant input
- Gigabit Ethernet (GbE) models
- Haz Loc
- 5 -year warranty



RoHS Compliant



Stride SE Series Managed Models				
Part Number	Price	Ethernet Ports	Fiber Ports	Input Power (max)
<u>SE-SW5M</u>	\$581.00	5	–	3.6 W
<u>SE-SW5M-2SC</u>	\$953.00	3	2 SC	5.6 W
<u>SE-SW5M-2ST</u>	\$953.00		2 ST	
<u>SE-SW10MG-2P</u>	\$1,691.00	7, 1 GbE, 2 GbE combo	2 GbE SFP combo*	7W
<u>SE-SW16M</u>	\$1,449.00	16	–	

*Optional SFP modules sold separately.

Stride SE Series Managed Industrial Ethernet Switches

Specifications

General Specifications	
Ethernet Switch Type	Industrial Ethernet managed switch with 5 or 8 ports
Operating Mode	Store and forward wire speed switching, non-blocking. Broadcast and multicast storm protection
Devices Supported	All IEEE 802.3 compliant devices are supported
Ethernet Compliance	IEEE 802.3 (10Mbps Ethernet supports legacy devices) IEEE 802.3u (Fast Ethernet 100Mbps for newer devices) IEEE 802.3x (Full-Duplex with Flow Control) IEEE 802.1D/w (Rapid Spanning Tree for redundant rings and Spanning Tree for interoperability) IEEE 802.1p (Priority Queuing – QoS, CoS, ToS/DS) IEEE 802.1Q (VLAN for traffic segregation) IEEE 802.3ab
Ethernet Protocols Supported	SNMPv1 / v2 / v3, RMON, DHCP, SNTP, TFTP, STP, RSTP, QoS / CoS / ToS / DS, IGMPv1 / v2, VLAN (tag and port based), HTTP, HTTPS (SSL and TLS), Telnet, SSH and more
Industrial Protocols Supported	Modbus / TCP, EtherNet / IP, PROFINet, Foundation Fieldbus HSE and others
MAC Addresses	2048 addresses
Memory Bandwidth	3.2 Gbps
Latency (typical)	10M ports 16 μ s + frame time 100M & 1000M ports 5 μ s + frame time
Transient Protection	15,000 watts peak
Spike Protection	5,000 watts (10x for 10 μ s)
Ethernet Isolation	1500 VRMS 1 minute
Operating Temperature Range	-40 to +75°C (cold startup at -40°C), -40 to +167°F (cold startup at -40°F)
Storage Temperature Range	-40 to +85°C [-40 to +185°F]
Humidity (non-condensing)	5 to 95% RH
Environmental Air	For use in Pollution Degree 2 environment. No corrosive gases permitted
Vibration and shock	IEC60068-2-6 and -27
EMI Emissions	FCC part 15, ICES-003, EN61000-6-4
EMC Immunity	IEC61000-6-2, CE
Eye Safety (fiber models)	IEC60825-1, Class 1; FDA 21 CFR 1040.10 and 1040.11
RoHS and WEEE	RoHS and WEEE compliant
Packaging and Protection	Metal case; IP40
Agency Approvals	Electrical safety: UL Haz Loc (Class 1, Div 2, Group A, B, C, D) E200031 CSA C22.2/14; EN61010-1, CE, Marine and offshore rated per ABS

RJ45 Ports	
Port Type	Shielded RJ45
Ethernet Compliance	IEEE 802.3i, 802.3u, 802.3x for 10/100 Ethernet IEEE 802.3ab, 802.3z for Gigabit 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	Automatic
Cable Requirements	Twisted pair (Cat5e or better) (shielded recommended)
Max. Cable Distance	100 meters

SC or ST Fiber Port: (100BaseFX multimode)	
100BaseFX Ports	2
Fiber Port Connector	ST or SC, by model
Optimal Fiber Cable	50/125 or 62.5/125 μ m
Center Wavelength	1300 nm
Multimode	Links up to 4 km typ.; > Transmitter power (dBm): -21 min, -17 typ, -14 max > Receiver sensitivity (dBm): -34 typ, -31 max
Nominal Max. Distance (full duplex)	4 km
Eye Safety (laser)	IEC 60825-1, Class 1; FDA 21 CFR 1040.10 and 1040.11

SFP Ports	
SFP (pluggable) ports accept Mini-GBIC (SFP) transceivers with a speed of 1000Mbps or 100Mbps	
See SFP datasheet for optional fiber transceiver specification	

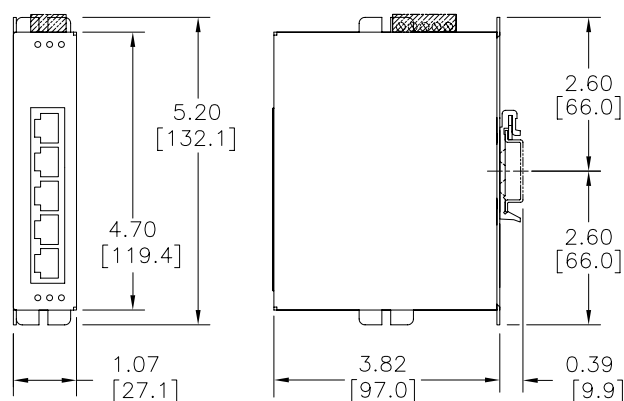
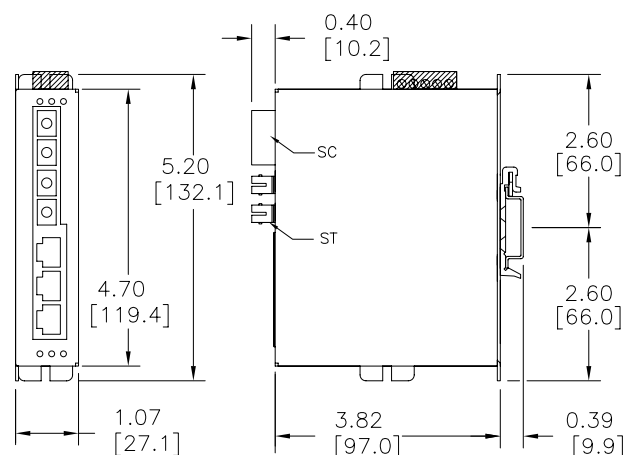
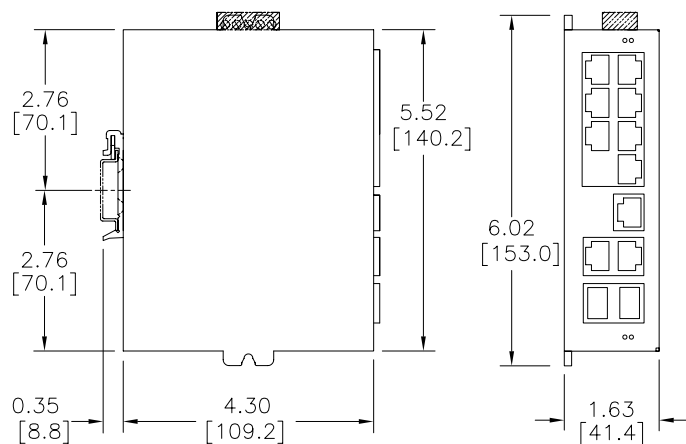
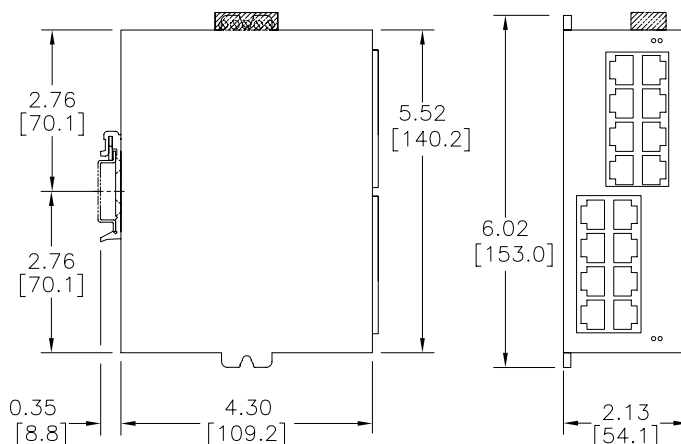
Management Interfaces	
Ethernet ports (RJ45)	Browser (Secure), Text (Telnet and SSH), CLI (command line interface) and SNMP (see the user manual for supported MIBs)
Console ports: USB and RS232 (RJ45)	Text (Telnet), CLI (command line interface)

Power Details	
Power Input	Redundant input terminals
Input Voltage	10-30 VDC (continuous)—Class 2 Power Supply
Reverse Power Protection	Yes
“OK” Output Indicates Power and Operational Status	Voltage same as switch input voltage Maximum current output 0.5 Amp
Power Consumption	Refer to Stride SE Series Managed Models table

Stride^{SE} Series Managed Industrial Ethernet Switches

Dimensions

Inches [mm]

**SE-SW5M****SE-SW5M-2SC**
SE-SW5M-2ST**SE-SW10MG-2P****SE-SW16M**See our website: www.AutomationDirect.com for complete engineering drawings.

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
SFP-4K-FMF	Multi-mode	1310 nm, FP	4km	\$49.00
SFP-30K-FSF	Single-mode		30 km	\$44.00

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			

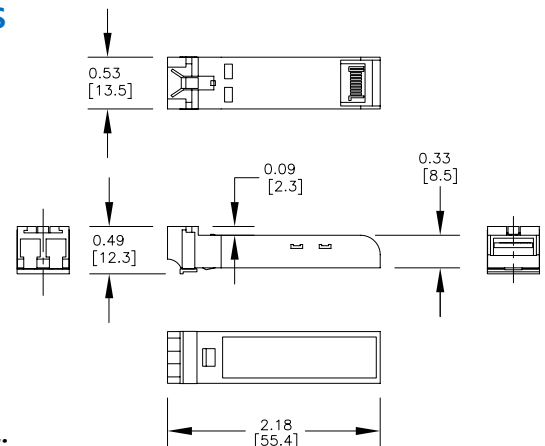
Receiver Optical characteristics			
Parameter (unit)		Minimum	Maximum
Sensitivity (dBm)	SFP-4K-FMF		-30
	SFP-30K-FSF		-34
Operating Wavelength (nm)	SFP-4K-FMF	1260	1620
Loss of Signal - Deasserted (dBm)	SFP-4K-FMF		-30
	SFP-30K-FSF		-35
Loss of Signal - Asserted (dBm)	SFP-4K-FMF	-45	
	SFP-30K-FSF		
Loss 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
SFP-500-GMF	Multi-mode	850 nm, VCSEL	550m	\$39.00
SFP-2K-GMF		1310 nm, FP	2km	\$69.00
SFP-10K-GSF	Single-mode	1310 nm, FP	10 km	\$39.00
SFP-30K-GSF		1310 nm, DFB	30 km	\$99.00

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

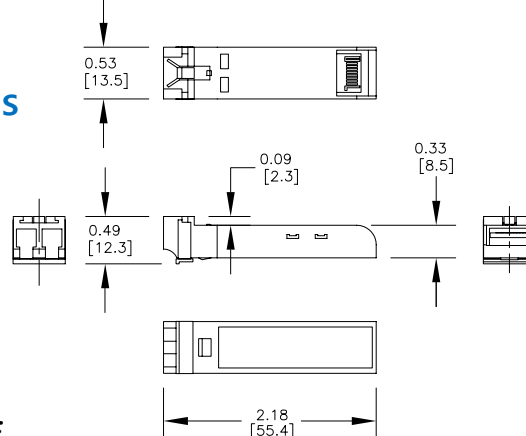
Transmitter Optical characteristics				
Parameter (unit)		Minimum	Typical	Maximum
Output optical power (dBm)	SFP-500-GMF	-9.5		-4
	SFP-2K-GMF	-9		-1
	SFP-10K-GSF	-9.5		-3
	SFP-30K-GSF	-2	1	3
Extinction Ratio (dB)	SFP-500-GMF			
	SFP-2K-GMF	9		
	SFP-10K-GSF			
	SFP-30K-GSF			
Center Wavelength (nm)	SFP-500-GMF	830	850	860
	SFP-2K-GMF	1270		1355
	SFP-10K-GSF	1285	1310	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		1355
	SFP-30K-GSF	1270	1580
Return Loss (dB)	SFP-500-GMF		
	SFP-2K-GMF	12	
	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		
	SFP-2K-GMF	-35	
	SFP-10K-GSF		
	SFP-30K-GSF		
Loss of Signal - Hysteresis (dB)	SFP-500-GMF		
	SFP-2K-GMF	0.5	
	SFP-10K-GSF		
	SFP-30K-GSF		

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	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)
Media	SFP-500-GMF Multi-mode Fiber
	SFP-2K-GMF Single-mode Fiber
	SFP-10K-GSF Single-mode Fiber
	SFP-30K-GSF Single-mode Fiber
Fiber	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
Code	SFP-500-GMF SX
	SFP-2K-GMF SX2
	SFP-10K-GSF LX
	SFP-30K-GSF Lhx
Distance	SFP-500-GMF 550m
	SFP-2K-GMF 2km
	SFP-10K-GSF 10 km
	SFP-30K-GSF 40 km
Compliances	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
Inputs / Outputs	AC-coupled differential inputs and outputs

Dimensions

Inches [mm]



Safety Standards:



Stride Industrial Ethernet Copper Transceivers

Gigabit Ethernet

Description:

The STRIDE SFP-1GC-T is a hot-pluggable Small Form Factor Pluggable (SFP) transceiver. It has an RJ-45 connector, and can send and receive data at 1.25 Gbps up to 100m distance over 4-pair Cat5e/6a cable. The module is compliant with the SFP Multi-Source Agreement (MSA) and IEEE802.3:2002.



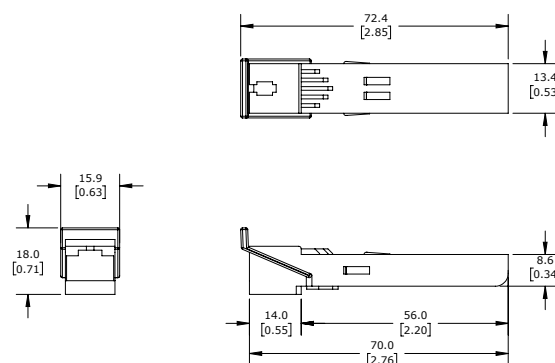
Part Number	Connector Type	Link Speed	Price
SFP-1GC-T	RJ-45	Gigabit Ethernet	\$69.00

RJ45 Ports	
Ethernet Compliance	IEEE 802.3ab (1000Base-T) Gigabit Ethernet
Auto-Crossover	Yes, allows use of straight-through or crossover cables
Auto-Sensing Operation	Yes, full and half duplex
Port Speed	1000Base-T only
Cable Requirements	4-pair UTP/STP Cat.5e/6a cable EIA/TIA-568 100-ohm
Max. Cable Distance	100m [328ft]

General Specifications	
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
Compliances	SFP Multi-Source Agreement (MSA)

Dimensions

Inches [mm]



Safety Standards:



Stride[®] Managed Industrial Ethernet Switches

Industrial Hardened Full Feature Layer 2 Switch



• For detailed specifications on all models, see following pages

<i>SE Series</i>		
Price		
starting at \$581.00 (5 port)		
Full Feature Layer 2 Switch		
✓		
Industrial Temperature Ranges		
	Wide Temp	-40 to +75°C
Ethernet Connectivity		
	RJ45 Ports	up to 1000 Mbps
	Fiber Optic Ports	✓
	SFP Ports	✓
Port Count		
5,8,10,16		
Industrial Protocol Management		
	Modbus TCP	Read
	EtherNet/IP	—
Network Redundancy		
	STP/RSTP	✓
	Proprietary Fast Recovery	Real-Time Ring
Mounting		
	DIN Rail Mount	✓
	Panel Mount	Integrated
Input Power		
	Redundant Power Inputs	✓
	Reverse Polarity Protection	✓
	Power LED	✓
	Power Alarm	✓
Agency Approvals		
	UL508 / 61010	✓
	Haz Loc—Class 1 Div 2	✓
	ATEX Zone 2	✓
	CE	✓
Warranty		
5 years		