AUTOMATIONDIRECT.com

Communications

Stride® · Stride*Linx* · Stride® pocket portal™ · Achieve™ · **WAGO**

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Located in USA

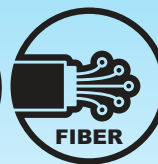FREE Downloadable Software
for many products
see website for details

IP67 · PoE+ · FIBER

Practical Control and Data Communications

STRIDE and WAGO communication products provide reliable connectivity to your industrial controllers and field devices. Whether it's providing Ethernet connectivity through STRIDE unmanaged switches, segmenting and/or encrypting network traffic through WAGO MAC Security switches, or protocol…. gateways, you'll find the industrial performance you can count on.

StrideLinx

Remote Access Solution

IIoT Solutions
- Secure VPN
- Remote Access
- Cloud Data Logging

Industrial Ethernet Switches

Ethernet Media Converters and PoE++ Injectors

Protocol Gateways

Communication Cables & Accessories

Coordinated control

Communication links between controllers can be used to create robust, modular control systems. Sharing data between separate operations enables each local controller to better contribute to the system's overall performance. Whether separated by feet or by miles, your controllers can access what's going on in the world around them.

Data sharing

Run a more effective business by making use of the valuable information within your process controllers. The business needs to know what manufacturing is doing whether you call it ERP, MES, SCM, or just plain common sense.

Remote support

Remotely access machine or process controllers for troubleshooting, configuring, updating or monitoring the system. Whether it's your production facility or your controller in a customer's facility, having convenient and secure remote access ensures maximum production with minimal support costs.

Commercial Grade vs. Industrial Grade

Before you take a risk with commercial-grade products to save a few bucks, ask yourself how much just one field failure will cost you in service time, reputation, and money. Communication products not designed to operate in the heat, cold, or humidity of an industrial site or products not ruggedized for power spikes and vibration don't have to completely quit working to cause headaches. Communication products, along with cables and connectors, are notorious for causing those irritating intermittent control system bugs that inevitably absorb loads of troubleshooting man hours over a few dollars in parts. Neither your customer nor your family wants you onsite resolving a late night or weekend communication link issue.

Sometimes commercial grade will do, but for those times when you and your customer need rock-solid reliability, AutomationDirect has the best values in industrial communication products.

INDUSTRY IIoT 4.0

Stride pocket portal™

StrideLinx wired only router **$400.00** (SE-SL3001)

StrideLinx wired and WiFi **$621.00** (SE-SL3011-WF)

StrideLinx wired and 4G **$727.00** (SE-SL3011-4G6)

STRIDE Pocket Portal **$90.00** (SE-PB100)

Service, monitor and troubleshoot remotely from multiple devices

Cloud connect any of your Ethernet-ready devices at a price even the smallest OEM, machine builder or system integrator can afford! With StrideLinx you get secure, reliable access over the "industrial internet" to your field devices for the remote visibility needed to compete in today's connected world.
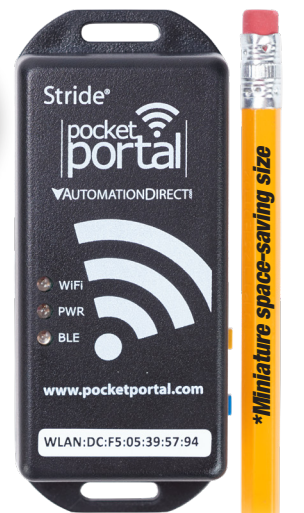
**Optional subscriptions including data logging and alarming are available.

Make any device an edge device

The STRIDE Pocket Portal is a simple, low-cost cloud data logging and storage solution that will gather and store data directly to the cloud from any device including analog sensors, actuators, and Modbus-capable controllers.

Miniature space-saving size

WiFi
PWR
BLE
www.pocketportal.com
WLAN:DC:F5:05:39:57:94

Industrial Ethernet Patch Cables
(starting at $6.75/3 ft.)

Industrial-grade Ethernet cables are designed to reduce the effects of (EMI) electromagnetic interference which can cause delays or complete communication loss in extremely noisy environments.

Cat6a Ethernet Patch Cables
- RJ45 male connectors on both ends, with lengths up to 14 ft.
- STP - shielded twisted pair (with overall foil shield)
- Blue PVC cable jacket
- 30W Power over Ethernet (PoE+)
- Support transmission speeds up to 10 Gbps full duplex

Cat5e Ethernet Patch and Crossover Cables
- RJ45 male connectors on both ends, with lengths up to 50 ft.
- STP - shielded twisted pair (with overall foil shield)
- PVC cable jacket in 9 colors (crossover cables in orange only)
- Support transmission speeds of 10 / 100 / 1000 Mbps

M12 Ethernet Cables
- High-flex industrial shielded Ethernet cables
- Cat5e D-coded cables support 10 / 100 Mbps full duplex
- Cat6a X-coded cables support up to 10 Gbps full duplex
- TPE (thermoplastic elastomer) jacket for harsh industrial applications
- M12 Q/D connector to a variety of termination styles, including pigtail, RJ45, and M12
- Lengths from 0.6m (1.9ft) to 15m (49.2ft)

Fiber Optic Patch Cables
(starting at $7.25/3.2 ft.)

AchieVe brand fiber optic patch cables provide reliable multi-mode fiber connections for way less than the competition. With fiber optic connections you get faster transmission speeds than copper plus no detrimental effects from electrical noise.

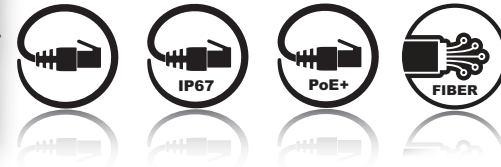- 250μm multi-mode fiber cables in lengths up to 10m (32.8 ft.)
- OM1, OM2, OM3, and OM4 fiber types available
- Numerous connector options including: LC duplex to LC duplex, SC duplex to LC duplex, ST duplex to ST duplex, and LC duplex to ST duplex
- LSZH jacket material complies with UL 94V-0

SCADA CONSOLE

FIBER OPTIC CONNECTION

PLC

MESSAGE DISPLAY

COPPER CONNECTION

PROGRAMMING STATION

HMI
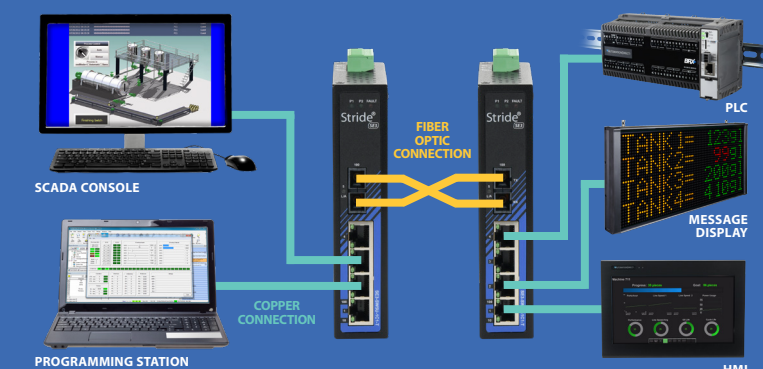
Stride® Industrial Unmanaged Switches

Stride®

IP67 · PoE+ · FIBER

STRIDE Unmanaged Ethernet Switches starting at:
$72.00
(SE3-SW5U)

Industrial Strength Ethernet

STRIDE is our line of industrial-grade Ethernet switches and media converters. Designed with our PLC, HMI, and drive customers in mind, STRIDE Ethernet switches are specifically built for industrial environments. With a STRIDE industrial Ethernet switch on an isolated control LAN, you can reduce data collisions that slow down your network. Install STRIDE switches and your Ethernet control network will maintain more consistent cycle times even under heavy I/O and data exchange.

Extreme Environments

For industrial applications where temperatures change from freezing to sweltering heat, the STRIDE line offers Ethernet switches designed for standard industrial environments, as well as the most extreme industrial environments. The rugged metal housings offer superior EMC performance and corrosion-resistance while also allowing you to choose various mounting methods for your application.

PoE+/PoE++ and Fiber Optic Support

STRIDE offers models with a variety of fiber optic connections and models with PoE+/PoE++ capability. PoE+/PoE++ models provide both power and Ethernet communication to connected devices allowing even more savings in your network design. The STRIDE PoE+ switches will auto-detect the presence of a PoE enabled device and provide up to 120W of DC power along with Fast or Gigabit Ethernet communication speeds to the powered device. The PoE++ versions provide even more power - up to a whopping 240W!

Fiber optic cables are immune to electrical and magnetic interference and cannot be damaged by induced voltage transients. Fiber optic cabling not only enhances reliability, it also greatly increases network distances. Select STRIDE Ethernet switches provide ST, SC, or SFP fiber port options.

Washdown Applications

STRIDE IP67-rated unmanaged switches provide dependable communication and protection from water intrusion. Perfect for food and beverage or any other application that requires regular washdown of equipment.
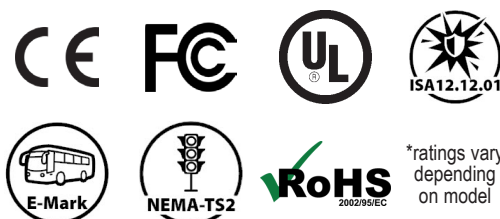
Features

Advanced Hardware
- All copper ports are auto-detecting, auto-crossover and auto-polarity
- Redundant power inputs with industrial surge, spike, and reverse power protection
- Fiber optic ports available on certain models
- SFP transceiver modules for selected models offer additional fiber options
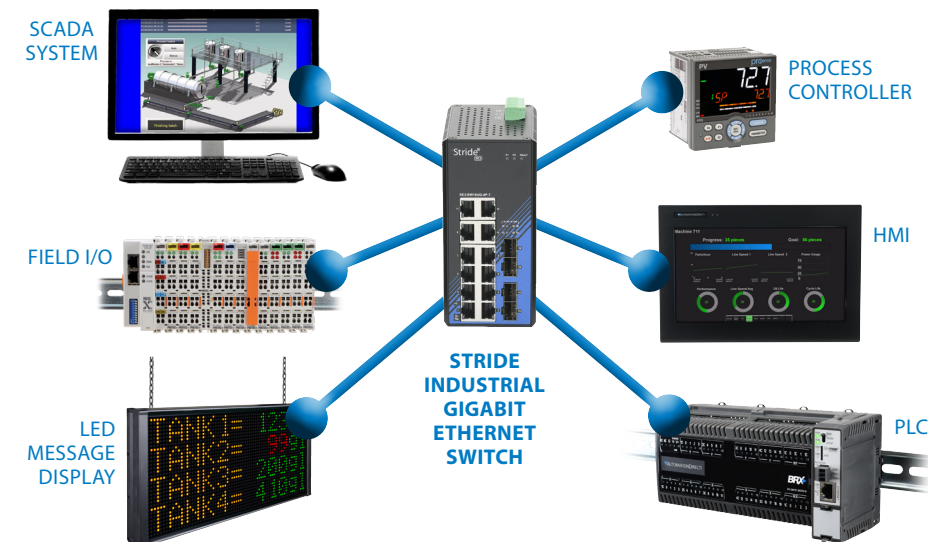
Real-time Performance
- PoE+, PoE++, & Gigabit Ethernet options available
- Models with up to 16 ports
- Store and Forward wire speed switching
- Full-duplex operation with flow control (no collisions!)

True Industrial Design
- UL, cUL, CE
- Hazloc rated for Class 1, Div 2
- DIN rail or panel mount options
- 12, 24, or 48 VDC input power
- 5 year warranty on SE3 series
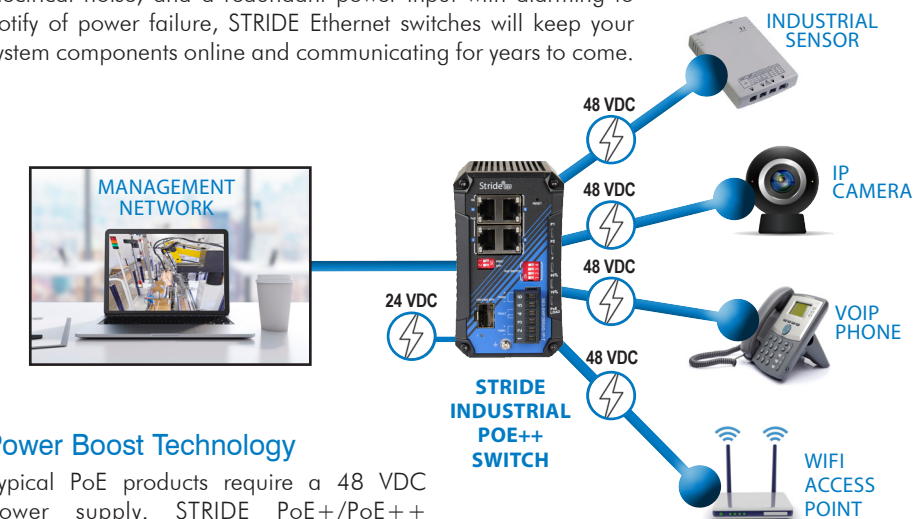- IP67 (washdown) rating available with EN50155 & EN50121 approvals

CE · FC · UL · ISA12.12.01

E-Mark · NEMA-TS2 · RoHS 2002/95/EC · *ratings vary depending on model

Gigabit speed @ Megabit prices

Stride® SE3
SE3-SW16UG-4P-T

Connections you can rely on

STRIDE unmanaged switches deliver reliable Ethernet connections between various control devices including PLCs, HMIs, VFDs, and many others. Featuring 10/100/1000 Mbps speeds, a small form factor, low power consumption, supreme port resilience to electrical noise, and a redundant power input with alarming to notify of power failure, STRIDE Ethernet switches will keep your system components online and communicating for years to come.

SCADA SYSTEM · PROCESS CONTROLLER · FIELD I/O · HMI · STRIDE INDUSTRIAL GIGABIT ETHERNET SWITCH · PLC · LED MESSAGE DISPLAY

Power over Ethernet with POWER BOOST technology

MANAGEMENT NETWORK · 24 VDC · STRIDE INDUSTRIAL POE++ SWITCH · INDUSTRIAL SENSOR 48 VDC · IP CAMERA 48 VDC · VOIP PHONE 48 VDC · WIFI ACCESS POINT 48 VDC
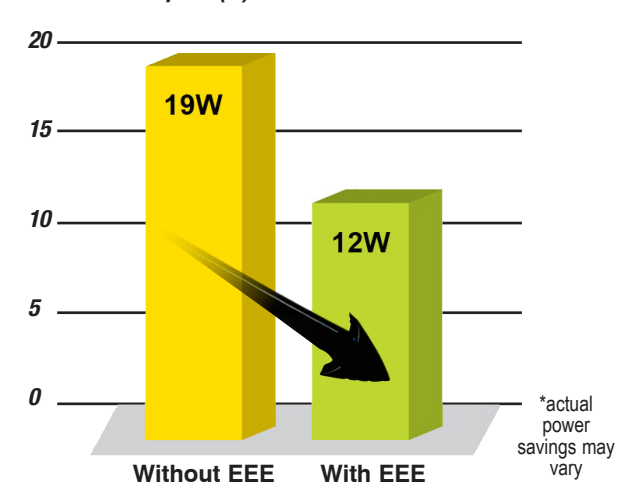
Power Boost Technology

Typical PoE products require a 48 VDC power supply. STRIDE PoE+/PoE++ switches include Power Boost Technology that allows the switch to be powered by 24 VDC but still power devices at standard PoE voltages. This removes the need to have multiple power supplies, resulting in more cost savings.

Energy Efficient Ethernet (EEE)

The STRIDE **SE3-SW5UG-1P-T** switch has been designed to meet the IEEE 802.3az Ethernet standard. This standard's primary objective is to curtail power usage during periods of reduced data activity or idleness. Established in 2010, the IEEE 802.3az standard has been seamlessly integrated into diverse Ethernet hardware components, including network interface cards, switches, routers, and other integral networking equipment.

By dynamically adapting power consumption according to actual data traffic demands, EEE can enhance the energy efficiency of network devices, resulting in notable energy savings and lowered operational expenses.

Power Consumption (W)

Without EEE	With EEE
19W	12W

20 / 15 / 10 / 5 / 0

*actual power savings may vary

WAGO Lean Managed Industrial Switches

Stride® Protocol Gateways

What is a Lean Managed Switch?

A lean managed switch is a cost-effective managed network switch that bridges the gap between unmanaged switches (plug-and-play devices with no configuration) and fully managed switches.

WAGO Lean Managed Industrial Switches

WAGO lean managed managed industrial switches integrate the principles of lean manufacturing into their design and functionality, offering several advantages for industrial networks:

Waste Reduction:
- Minimizes unnecessary functionalities that can lead to configuration overhead and potential failure, eliminates non-value-added processes
- The web-based interface and easy-to-use diagnostic tools reduce configuration, monitoring, and troubleshooting time and operational waste
- Ports that support several communication protocols, allow switch to meet diverse network requirements, eliminating need for specialized switches, thus minimizing inventory waste

Improved Efficiency:
- Features such as topology mapping, clear status LEDs, and port statistics, helps maximize operational efficiency
- VLAN support allows logical segmentation of the network, improves traffic management, leading to better performance and efficient bandwidth utilization
- QoS (Quality of Service) enables critical industrial protocols and data prioritization ensuring timely/reliable communication of essential processes

Enhanced Reliability and Usability:
- Redundant power supplies prevent network interruptions due to a single power supply failure
- Robust industrial-grade hardware with IP30 metal cases withstands harsh industrial environments, minimizing potential downtime
- MAC security features limit unauthorized access to the network; provide essential security without the need for expensive and complex hardware; help isolate traffic and improve overall network security and performance

WAGO Lean Managed Switches starting at $713.00 (852-1812)

Features

Advanced Hardware
- Managed switch features with simple setup
- MAC Security encryption available
- Network topology dashboard
- VLAN and Rapid Spanning Tree protocol
- QoS (port prioritization)
- Modbus monitoring for control system
- Port mirroring for advanced system troubleshooting
- IGMP for EtherNet/IP network optimization
- 10/100/1000 Mbps auto-detect speeds
- Redundant DC power inputs
- SFP combo GbE models
- Power over Ethernet model
- 2-year warranty

Real-time Performance
- Gigabit Ethernet, Modbus TCP/SNMP, SFP combo Gigabit ports, and PoE+ 10/100/1000Base-T options available
- Models with up to 16 RJ45 ports, or up to 2 SFP ports (SFP modules sold separately)

True Industrial Design
- UL, cUL, CE, FCC, RoHS
- IP30 metal case withstands harsh industrial conditions

STRIDE MQTT Gateway

STRIDE wired MQTT Gateway $275.00 (SGW-MQ1611)

STRIDE wireless MQTT Gateway $279.00 (SGW-MQ1611-WF)

The MQTT protocol is ideal for applications where bandwidth and available power are a concern. It's highly efficient with minimal overhead and performs well in unreliable networks making it a primary protocol for the Industrial IoT. The STRIDE MQTT gateway converts Modbus RTU/TCP signals to MQTT in order for Modbus devices to easily communicate with MQTT/IIoT capable networks.

Features:
- Wired or Wi-Fi models available
- Ideal for IIoT/cloud-based data collection systems
- Compatible with various MQTT brokers including AWS, Mosquitto and more
- Provides bidirectional communication between Modbus-capable field equipment and Cloud software platforms
- Converts Modbus RTU on RS485 or Modbus TCP over Ethernet to MQTT with SSL / TLS client certificate authentication

CUSTOM HMI/ WEB APP

Modbus®

MQTT

CLOUD
- MQTT BROKER
- DATABASE
- CUSTOM HMI
- ETC...
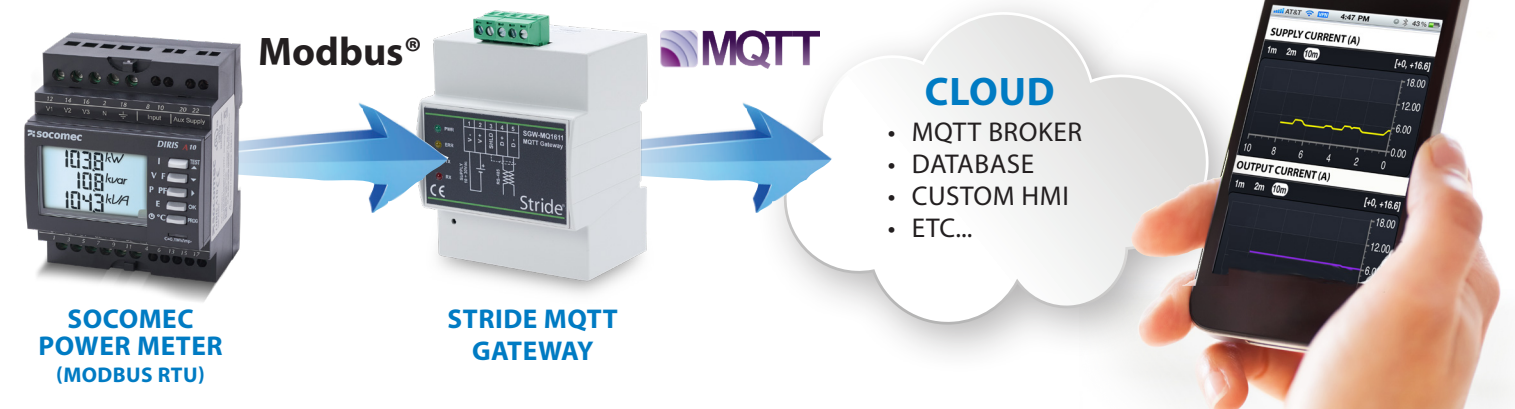
SOCOMEC POWER METER (MODBUS RTU)

STRIDE MQTT GATEWAY

STRIDE Modbus Gateway

The MB-GATEWAY is a single port Modbus gateway module that converts Modbus TCP to Modbus RTU. It supports up to 12 simultaneous Modbus TCP Client (master) Ethernet connections, and up to 128 RTU Server (slaves) serial connections.

Features:
- Automatic read function
- RJ45 10/100 Mbps Ethernet port
- RS-422/485 2 or 4 wire serial port
- Supports NetEdit* and Web browser configuration tools
- Auto detects Ethernet cable types (MDI/MDX)
- 35 mm DIN rail mount

Configurable through the convenient web interface!

LED MESSAGE DISPLAY

SCADA SYSTEM

IP CAMERA

HMI

PLC

INDUSTRIAL SENSOR
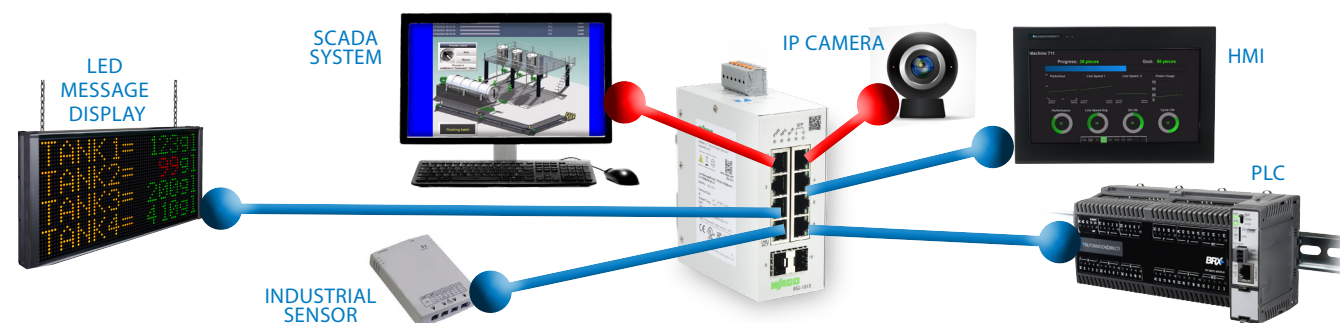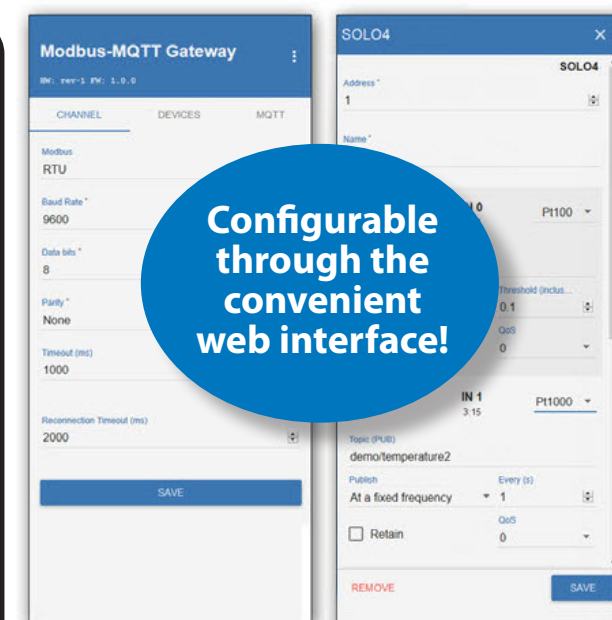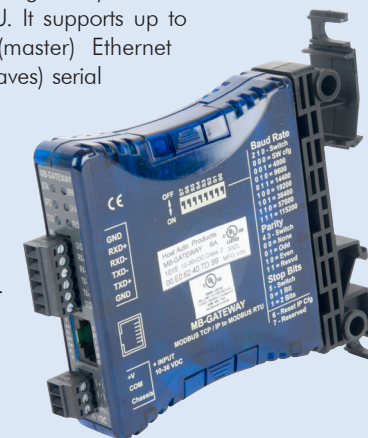
Stride® Ethernet Media Converters and Injectors

10/100/1000Base-T RJ45

Gigabit SFP

(ST 100FX & SC 100FX options available)

STRIDE Media Converters starting at: $141.00 *(SE3-MC2U-C1-T)*

STRIDE Ethernet/Fiber Media Converters

STRIDE Ethernet media converters easily convert signals transmitted using Ethernet-over-copper to/from signals transmitted over fiber optic cabling. Fiber cabling offers many benefits including immunity to electrical noise interference and greatly increased transmission distances due to minimal signal attenuation.
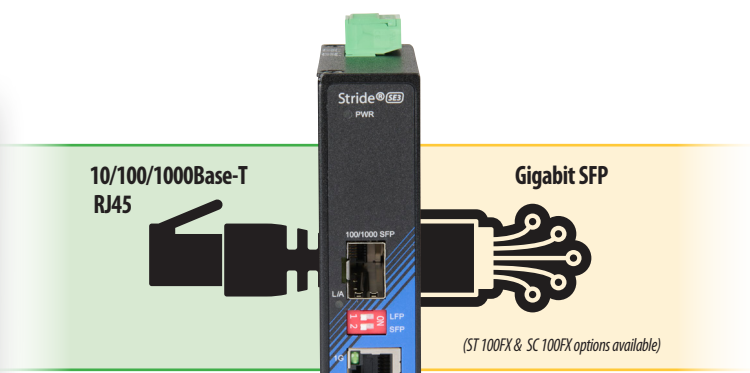
Ethernet media conversion is done using the built-in fiber ports or with optional SFP plug-in transceiver modules.

Features:

- Multi-mode SC 100FX, ST 100FX, or Gigabit SFP fiber optic connections available
- 10/100Base-T or 10/100/1000Base-T RJ45 connections
- Redundant power inputs with surge and spike protection
- Supports Store & Forward wire speed switching and full-duplex with flow control
- DIN rail or panel mounting
- Link Fault Pass (LFP) technology will detect a loss of connection and automatically shut down the fiber port, in turn making the receiving end of the fiber signal aware of the communication fault with the copper side

STRIDE SFP Modules starting at: $44.00 *(SFP-30K-FSF)*

STRIDE SFP transceivers can be used to add fiber connectivity (at Fast Ethernet or Gigabit Ethernet speeds) to select STRIDE Ethernet switches and converters. A Cat6A RJ45 Gigabit copper version is also available.

Feature	Ethernet	Fiber Optic
Speed	Most commonly 10/100/1000 Mbps	Average speed is around 1000 Mbps but much higher speeds possible
Distance	Up to 100 meters (328 feet) without a repeater	Up to 2 kilometers (1.2 miles) without a repeater
Immunity to interference	Susceptible to electromagnetic interference (EMI) and radio frequency interference (RFI)	Immune to EMI and RFI
Cost	Less expensive	More expensive
Installation	Easier to install	More difficult to install
Durability	More durable	Less durable
Compatibility	Compatible with most devices	Not compatible with all devices
Construction	Copper wires	Glass or plastic fibers
Security	Less secure	More secure since it's difficult to tap into

Media Converter Comparison	AutomationDirect STRIDE SE3-MC2U-T1-T	vs.	MOXA IMC-21A-M-ST-T	vs.	Weidmuller IE-MC-VL-1TX-1ST	vs.	Perle SR-1110-ST05-XT
Redundant Power Inputs	Yes		No		Yes		Yes
Power Redundancy Failure Warning	Yes		No		Yes		No
Selectable Link Fault Pass Function	Yes		Yes		Yes		Yes
Dimensions	3.74in x 1.02in x 2.95in		4.92in x 1.19in x 3.11in		5.315in x 2.11in x 4.13in		4.5in x 3.9in x 0.88
DIN-Rail Mounting and Wall Mounting Included	Both		DIN-rail only		DIN-rail only		DIN-rail only
Metal, IP30 Protection	Yes		Yes		Yes		No
Voltage	12-48 VDC		12-48 VDC		12-24 VDC		9.6-60 VDC
Total Price	$141.00		$372.00		$553.92		$736.00

STRIDE PoE++ Injectors

STRIDE PoE++ injectors provide a convenient way to add power to your Ethernet network where it's needed. Injectors are great for adding PoE enabled devices, including web cameras and Wi-Fi access points, to an existing standard Ethernet network.

These injectors supply up to 100W of power and utilize Gigabit transmission speeds. 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.

Features:

- Inject power into Gigabit Ethernet link
- IEEE 802.3af/at/bt compliant PoE
- Up to 100W PoE++
- IP30 metal cases
- DIN rail mounting

Benefits of PoE:

- Cost and time savings - Less power cabling and power adapters needed for component installation
- Flexibility of network layout - No need to design network layouts around power outlet locations; allows components to be easily relocated even to areas without power readily available
- Network scalability - Adding new components to a network is much easier when you aren't limited by available power outlets. Just plug in your Ethernet cable and the device is ready to play - no power cord needed

STRIDE PoE++ Injectors starting at: $259.00 *(SE3-LJ2B2UG-T)*

Easily add PoE to a standard Ethernet network with STRIDE PoE injectors

PoE Injector Comparison	AutomationDirect STRIDE SE3-LJ2A2UG-T	vs.	MOXA INJ-24A	vs.	Weidmuller IE-INJ-EL02-2GTPOE	vs.	Phoenix Contact INJ 1010-T
Redundant Power Inputs	Yes		Yes		No		Yes
Power Booster Technology	Yes		Yes		Yes		Yes
Enhanced PoE Mode	100W		No		No		No
Power Redundancy Failure Warning	Yes		No		No		No
DIN-Rail Mounting and Wall Mounting Included	Both		DIN-rail only		DIN-rail only		DIN-rail only
Metal, IP30 Protection	Yes		Yes		Yes		No
Voltage	12-55 VDC		22-57 VDC		12-55 VDC		18-57 VDC
Total Price	$279.00		$557.00		$359.00		$541.00

NEW POE DEVICE ADDITIONS

EXISTING STANDARD ETHERNET CONTROL NETWORK

IP CAMERA

48 VDC

24 VDC

STRIDE POE++ INJECTOR

WIFI ACCESS POINT

48 VDC

24 VDC

STRIDE POE++ INJECTOR

STRIDE INDUSTRIAL GIGABIT ETHERNET SWITCH

PROCESS CONTROLLER

HMI

PLC

FIELD I/O