EtherDevice™ Switch EDS-516A Series

Industrial 16-Port Advanced Managed Ethernet Switches

Highlights

- 16 fast Ethernet ports for copper and fiber
- Turbo Ring (Recovery time < 300 ms), RSTP/STP (IEEE802.1W/D) for Ethernet redundancy
- QoS, IGMP snooping/GMRP, VLAN, LACP, SNMP V1/V2c/V3, RMON supported
- Rate Limiting for bandwidth management, and broadcast storm protection
- IEEE802.1X and https/SSL to enhance network security

CE FC

Features

Industrial Networking Capability

- Redundant Ethernet Ring (recovery time < 300 ms at full load) and RSTP/STP (IEEE802.1W/D)
- IGMP Snooping and GMRP for filtering multicast traffic from industrial Ethernet Protocols
- Supports IEEE802.1Q VLAN and GVRP protocol to ease network planning
- Supports QoS-IEEE802.1p/1Q and TOS/DiffServ to increase determinism
- Supports 802.3ad, LACP for optimum bandwidth utilization
- Supports IEEE802.1X and https/SSL to enhance network security
- SNMP V1/V2c/V3 for different levels of network management
- RMON for efficient network monitoring and proactive capability

Designed for Industrial Applications

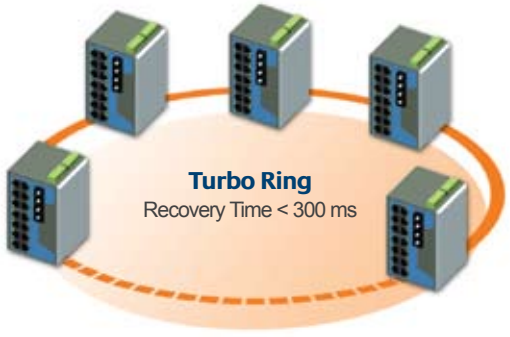
- Bandwidth management prevents unpredictable network status
- Supports ABC-01 (Automatic Backup Configurator) for system configuration back up
- Lock port for authorized only MAC address access
- Port mirroring for online debugging
- Automatic warning by exception through email, relay output
- Digital inputs to integrate sensors and alarms with IP networks
- Automatic recovery of connected device's IP addresses
- Line-swap fast recovery (Patented)
- Redundant, dual DC power inputs
- IP30, rugged high-strength case
- DIN-Rail or panel mounting capability
- Send ping commands to identify network segment integrity
- Redundant 12-45 VDC power inputs and over current protection

Recommended Software and Accessories

- EDS-SNMP OPC Server Pro
- DR-4524, DR-75-24, DR-120-24 DIN-Rail 24 VDC Power Supply Series

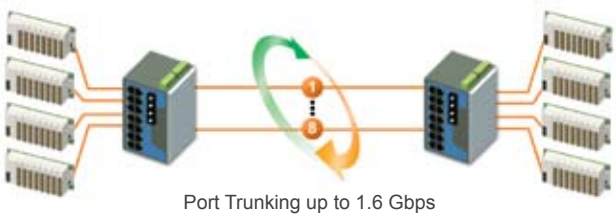
Redundant Ethernet Ring and Ring Coupling Capability (< 300 ms)

For industrial automation applications, redundancy is an important issue to help increase the reliability of your system. MOXA EtherDevice™ Redundant Switch EDS-516A comes equipped with a redundant network protocol called Turbo Ring that was developed by Moxa. Turbo Ring givesusers an easy way to establish a redundant Ethernet network, and with its ultra high-speed recovery time, once any segment of your network is disconnected, your automation system will be back to normal in less than 300 ms.



LACP for Flexible Network Connections

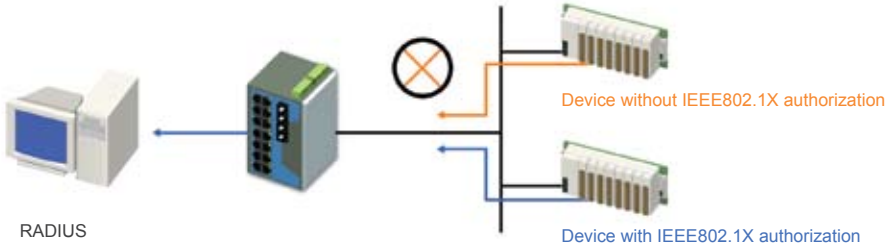
IEEE802.3ad (LACP, Link Aggregation Control Protocol), provides flexible network connections and a redundant path for critical devices. EDS-516A allows devices to communicate by aggregating up to two links in parallel, with a maximum of 8 ports for each link for an optimal and flexible network.



Port Trunking up to 1.6 Gbps

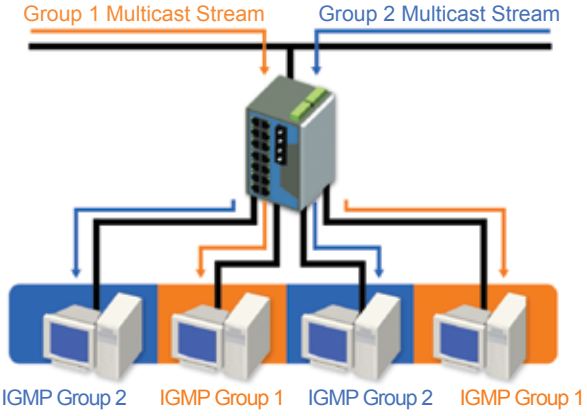
IEEE802.1X Enhances User Authentication

EDS-516A supports IEEE802.1X (Port-Based Network Access Control) to enhance user authentication. Only authorized users can access the port. Authentication is done using the local user database or an external RADIUS server.



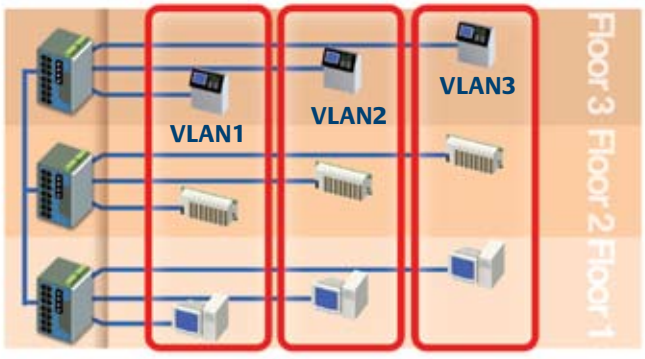
IGMP Snooping and GMRP for Filtering Multicast Traffic

EDS-516A supports IEEE802.1D-1998 GMRP (GARP Multicast Registration Protocol) and IGMP Snooping provides the ability to prune multicast traffic so that it travels only to those end destinations that require this kind of traffic, reducing the amount of traffic on the Ethernet LAN.



VLAN Eases Network Planning

VLANs can be used to segment your network without being restricted by physical connections, a limitation imposed by traditional network design. If devices belong to different VLANs, they cannot communicate with each other, providing extra security and protection from unwanted invasion or traffic. EDS-516A supports the IEEE802.1Q standard and GVRP protocol, which can exchange the same interoperable parameters to keep consistent VLAN settings over the entire network.



QoS Increases Determinism

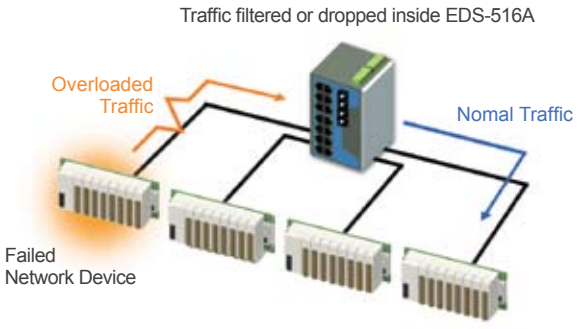
Quality of Service (QoS) provides a traffic prioritization capability to ensure that important data is delivered consistently and predictably. EDS-516A Series can inspect IEEE802.1p/1Q layer 2 CoS tags, and even layer 3 TOS information, to provide a consistent classification of the entire network. EDS-516A Series' QoS capability improves your industrial network's performance and determinism for mission critical applications.

RMON for Efficient Network Monitoring and Proactive Capability

RMON, Remote Network Monitoring, is an Internet Engineering Task Force (IETF) standard monitoring specification that allows various network agents and console systems to exchange network monitoring data. RMON provides you with comprehensive network-fault diagnosis, planning, and performance-tuning information. It helps you manage your network in a more proactive manner. If configured correctly, RMON probes deliver information before problems occur. This means that you can take action before the problems affect users.

Bandwidth Management Prevents Unpredictable Network Status

The EDS-516A series not only prevents broadcast storms, but also configures the ingress/egress rate of unicast/multicast/broadcast packets, and in this way gives administrators full control of limited bandwidth to prevent unpredictable faults.



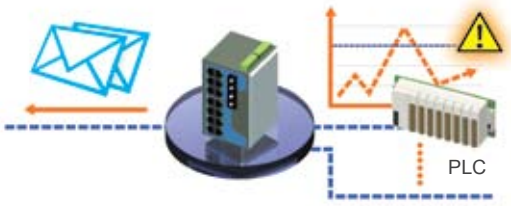
Port Mirroring for Online Monitoring

In some cases, a network is so large that it is difficult to achieve the expected communications level. Industrial communications applications use more of a command-response style than the file-transfer style used in office network environments. This means that when first setting up an industrial Ethernet network, control engineers may need to use a second port to monitor the actual activity between their devices and computer host. EDS-516A Series' mirroring port function helps to ensure that the system behaves as expected.

Automatic Warning by Event

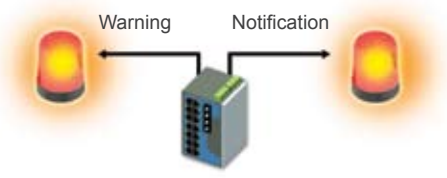
Warning by e-mail

The EDS-516A Series can send out a warning e-mail when an exception is detected, providing system managers with realtime alarm messages.



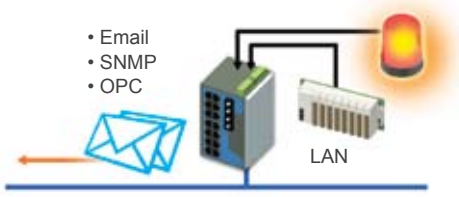
Warning by Relay Output

The EDS-516A Series provides two relay outputs that can be set up to indicate events with different importance to notify or warn engineers in the field, so the engineer can use the appropriate emergency maintenance procedures to respond quickly to higher priority messages.



DI to Integrate Other Important Sensors

With two digital inputs, the EDS-516A Series can integrate sensors into its automatic alarm mechanism, sending warning messages to an IP network by e-mail, SNMP trap, or OPC.



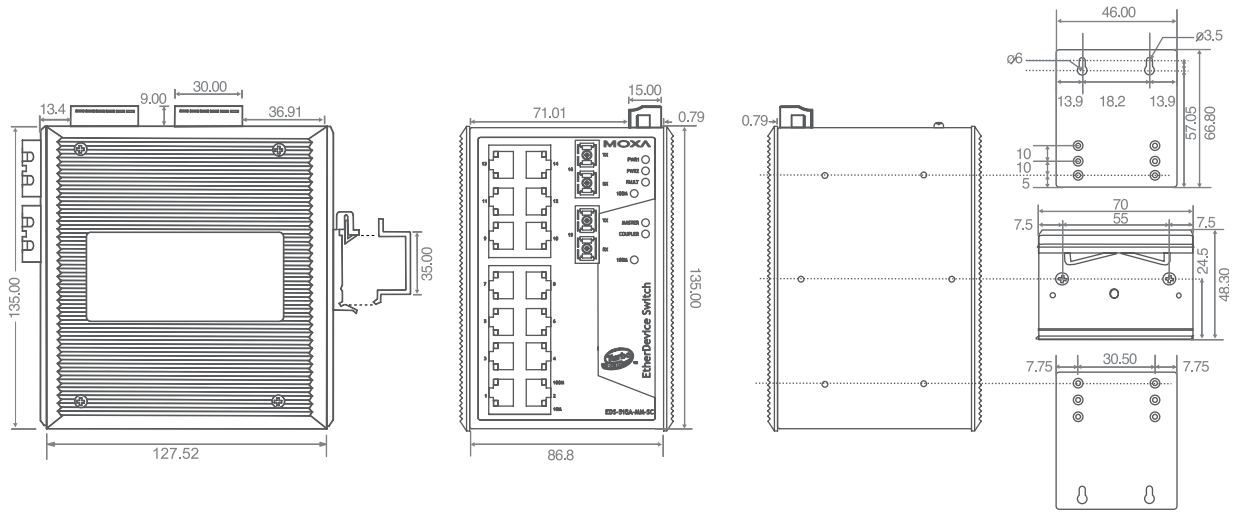
Easy Browser-based Configuration

The EDS-516A series is easily configured over the network by web browser, Telnet console, or a Moxa provided Windows utility. In addition, Moxa's Batch Configurator can also be used to store and copy configuration parameters to multiple EDS-516A units simultaneously.

Network Management with EDS-SNMP OPC Server Pro

The SNMP OPC Server Pro software package can convert SNMP into OPC format. The vertical integration of SNMPManagement Information into existing OPC-based SCADA packages gives the customer the ability to establish an Ethernet Network Management Application that is integrated with existing Visualization and Control applications.

Dimensions (unit = mm)



Side View | DIN-Rail Kit | Front View | Rear View | Panel Mounting Kit

Specifications

Technology

Standards: IEEE802.3, 802.3u, 802.3x, 802.1D, 802.1W, 802.1Q, 802.1p, 802.1X, 802.3ad

Protocols: IGMP V1/ V2/ V3 device, GMRP, GVRP, SNMP V1/V2c/V3, DHCP Server/Client, BootP, TFTP, SNTP, SMTP, RARP, RMON and EDS-SNMP OPC Server Pro (Optional)

MIB: MIB-II, Ethernet-Like MIB, P-BRIDGE MIB, Q-BRIDGE MIB, Bridge MIB, RSTP MIB, RMON MIB Group 1,2,3,9

Flow Control: IEEE802.3x flow control, back pressure flow control

Interface

RJ45 Ports: 10/100BaseT(X) auto negotiation speed

Fiber Ports: 100BaseFX(SC/ST connector)

Console: RS-232 (RJ45)

LED Indicators: PWR1, PWR2, FAULT, 10/100M (TP port), 100M (Fiber port), MASTER, COUPLER

Alarm Contact: Two relay outputs with current carrying capacity of 1A @ 24 VDC

Digital Inputs: Two inputs with the same ground, but electrically isolated from the electronics.

- +13 to +30V for state "1"
- -30 to +3V for state "0"
- Max. input current: 8 mA

Optical Fiber

100BaseFX

Distance:

Multi mode: 0 to 5 km, 1300 nm (50/125 µm, 800 MHz*km)
0 to 4 km, 1300 nm (62.5/125 µm, 500 MHz*km)

Min. TX Output:
Multi mode : -20 dBm

Max. TX Output:
Multi mode : -14 dBm

Sensitivity: -34 to -30 dBm (Multi mode)

Power

Input Voltage: 24 VDC (12 to 45 VDC), redundant dual inputs

Input Current (@24V): 0.31A: (EDS-516A), 0.39A: (EDS-516A-MM-SC/ST)

Connection: Two removable 6-pin terminal blocks

Overload Current Protection: Present

Reverse Polarity Protection: Present

Mechanical

Casing: IP30 protection

Dimensions (W x H x D): 95 x 135 x 140 mm
3.74 x 5.31 x 5.51 in.

Weight: 1586 g

Installation: DIN-Rail, Wall Mounting (optional kit)

Environmental

Operating Temperature: 0 to 60°C (32 to 140°F)

Storage Temperature: -40 to 85°C (-40 to 185°F)

Ambient Relative Humidity: 5 to 95% (non-condensing)

Regulatory Approvals

Safety: UL 508 (Pending), UL60950-1, CSA C22.2 No. 60950-1, EN60950-1

Hazardous location:

UL/cUL Class I, Division 2, Groups A, B, C and D
ATEX Class I, Zone 2, EEx nC IIC (Pending)

EMI: FCC Part 15, CISPR (EN55022) class A,

EMS: EN61000-4-2 (ESD), level 3
EN61000-4-3 (RS), level 3
EN61000-4-4 (EFT), level 2
EN61000-4-5 (Surge), level 3
EN61000-4-6 (CS), level 3
EN61000-4-8
EN61000-4-11
EN61000-4-12

Shock: IEC60068-2-27

Freefall: IEC60068-2-32

Vibration: IEC60068-2-6

Warranty

5 years

Ordering Information

EDS-516A-AA-BB-CC-E

	Fiber Port	FO Connector	Single Mode Distance	Operating Temperature
Ordering Code Definition	**MM:** Two Multi Mode	**SC:** SC Connector **ST:** ST Connector	**80:** 80 km	**T:** Operating Temp. -40 to 75˚C * Standard Models: 0 to 60˚C
Available Models	**Standard:** • EDS-516A • EDS-516A-MM-SC • EDS-516A-MM-ST			
	* For detailed information, check the above specifications.			
Optional Accessories	• **DR-4524:** 45W/2A DIN-Rail 24 VDC Power Supply, 85 to 264 VAC input • **DR-75-24:** 75W/3.2A DIN-Rail 24 VDC Power Supply, 85 to 264 VAC input • **DR-120-24:** 120W/5A DIN-Rail 24 VDC Power Supply, 88 to 132 VAC/176 to 264 VAC input by switch • **WK-46:** Wall Mounting Kit			