

EDS-828 Series

24+4G-Port Layer 3 Gigabit Modular Managed Ethernet Switch



Features

- Layer 3 switch, static routing and RIP V1/V2 supported
- 4 Gigabit plus 24 fast Ethernet ports for copper and fiber
- Gigabit Turbo Ring and RSTP/STP (IEEE802.1W/D) for Ethernet redundancy
- QoS, IGMP snooping/GMRP, VLAN, LACP, SNMP V1/V2c/V3, RMON supported
- IEEE802.1X and https/SSL enhance network security
- ABC-01 (Automatic Backup Configurator) for system configuration backup



Features

High Performance Network Switching Technology

- Static routing, RIP V1/V2 to move data and information across networks
- Redundant Gigabit Ethernet Ring and RSTP/STP (IEEE802.1W/D)
- IGMP Snooping and GMRP for filtering multicast traffic from industrial Ethernet Protocols
- Port-based VLAN, IEEE802.1Q VLAN and GVRP protocol to ease network planning
- QoS-IEEE802.1p/1Q and TOS/DiffServ to increase determinism
- 802.3ad, LACP for optimum bandwidth utilization
- 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

- Modular Managed Switch with up to 28 ports. Choose from the following modules:
 - Two 2-port Gigabit Ethernet modules, with 10/100/1000BaseT(X) (RJ45 connector), or 1000BaseSX/LX/LHX/ZX (LC connector)
 - Eight 4-port fast Ethernet modules with a combination of 10/100BaseT(X) (RJ45 connectors) and 100BaseFX (Single/Multi mode, SC/ST connectors)

- ABC-01 (Automatic Backup Configurator) for system configuration backup
- Bandwidth management prevents unpredictable network status
- Lock port for only authorized MAC address access
- Port mirroring for online debugging
- Automatic warning by exception through email, relay output
- Digital inputs integrates **sensors and alarms with IP networks**
- Automatic recovery of connected device's IP addresses
- Line-swap fast recovery
- Redundant, dual DC power inputs
- IP30, rugged high-strength case
- Long-haul transmit distance of 40 km or 80 km
- DIN-Rail or panel mounting capability
- Configurable by web browser, Telnet/Serial console, Windows utility, and ABC-01
- Send ping commands to identify network segment integrity

Recommended Software and Accessories

- ABC-01 RS-232 RJ45-based Automatic Backup Configurator
- EDS-SNMP OPC Server Pro
- DR series DIN-Rail 24 VDC power supplies

Introduction

The EDS-828 makes network planning boundless by giving you not only layer 2 but also routing capabilities. The modular design allows you install up to 4 Gigabit ports and 24 fast Ethernet ports with rich combination of copper or fiber connectors flexibly. The EDS-828, which is designed with the user in mind, meets the demands of any industrial application, and also leaves room for future expansion. Features include a tilted LED display for

convenient viewing from any vertical angle, pluggable ABC-01 (Automatic Backup Configurator) for configuration backup, redundant intelligent network management. The EDS-828 provides more flexible, reliable and application-oriented functions to meet the demands of any harsh industrial application.

Specifications

Modular Managed Layer 3 Switch System, EDS-82810G



Technology

Standards: IEEE802.3, 802.3u, 802.3ab, 802.3z, 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, DHCP Option 82, BootP, TFTP, SNTP, SMTP, RARP, RMON and RIP V1/V2

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

Fast Ethernet: 6 slots for any combination of 4-port Interface Module with 10/100BaseT(X) or 100BaseFX

Gigabit Ethernet: 2 slots for any combination of 2-port Interface Module with 10/100/1000BaseT(X), or 1000BaseSX/LX/LHX/ZX (LC connector)

Console: RS-232 (RJ45)

System LED Indicators: STAT, PWR1, PWR2, FAULT, MASTER, COUPLER

Module LED Indicators: LNK/ACT, FDX/HDX, RING PORT, COUPLER, PORT, SPEED

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

Power

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

Power Consumption:

IM-4TX:	2.5W	IM-2MSC/2TX:	5W
IM-2MST/2TX:	5W	IM-2SSC/2TX:	5W
IM-4MSC:	7.2W	IM-4MST:	7.2W
IM-4SSC:	7.2W	IM-1LSC/3TX:	4W

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): 362 x 146 x 128 mm
14.25 x 5.75 x 5.04 in.

Weight: 1950 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: UL508, UL60950-1, CSA C22.2 No. 60950-1, EN60950-1(Pending)

Hazardous location:

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

Maritime: DNV, GL (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 3
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

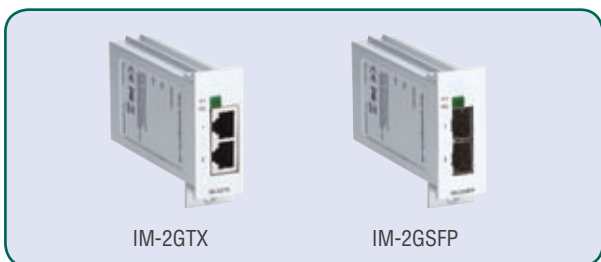
Vibration: IEC60068-2-6

*Please check MOXA's website for the most up-to-date certification status.

Warranty

5 years

Gigabit Ethernet Interface Modules, IM-2G series



Interface

LED Indicators: Port status

RJ45 Ports: 10/100/1000BaseT(X) auto negotiation speed, and auto MDI/MDI-X connection

Fiber Ports: 1000BaseSX/LX/LHX/ZX (LC Connector)

Optical Fiber

Distance:

Multi mode:

1000BaseSX 0 to 500 m, 850 nm (50/125 μm, 400 MHz*km)
0 to 275 m, 850 nm (62.5/125 μm, 200 MHz*km)

1000BaseLX 0 to 1100 m, 1310 nm (50/125 μm, 800 MHz*km)
0 to 550 m, 1310 nm (62.5/125 μm, 500 MHz*km)

Single mode:

1000BaseLX 0 to 10 km, 1310 nm (9/125 μm, 3.5 PS/(nm*km))
1000BaseLHX 0 to 40 km, 1310 nm (9/125 μm, 3.5 PS/(nm*km))
1000BaseZX 0 to 80 km, 1550 nm (9/125 μm, 19 PS/(nm*km))

TX Output power: SFP-1GSXLC -9.5(Min.) to -4(Max.) dBm
SFP-1GLXLC -9.5(Min.) to -3(Max.) dBm
SFP-1GLHXL 4(Min.) to +1(Max.) dBm
SFP-1GZXLC 0(Min.) to +5(Max.) dBm

RX Sensitivity: SFP-1GSXLC 0 to -18 dBm
 SFP-1GLXLC -3 to -20 dBm
 SFP-1GLHXLC -3 to -24 dBm
 SFP-1GZXLC -3 to -24 dBm

Mechanical
Dimensions (W x H x D): 24 x 66 x 101 mm
 0.94 x 2.60 x 3.98 in.

Fast Ethernet Interface Modules, IM series



Interface

RJ45 Ports: 10/100BaseT(X) auto negotiation speed, F/H duplex mode, and auto MDI/MDI-X connection

Fiber Ports: 100BaseFX ports (SC/ST connector)

LED Indicators: PWR, P1, P2, P3, P4 port status

Optical Fiber

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)

Single mode: 0 to 40 km, 1310 nm (9/125 μm, 3.5 PS/(nm*km))
 0 to 80 km, 1550 nm (9/125 μm, 19 PS/(nm*km))

Min. TX Output:

Multi mode: -20 dBm

Single mode: 0 to 40 km, -5 dBm; 0 to 80 km, -5 dBm

Max. TX Output:

Multi mode: -14 dBm

Single mode: 0 to 40 km, 0 dBm; 0 to 80 km, 0 dBm

RX Sensitivity: -34 to -30 dBm (Multi), -36 to -32 dBm (Single)

Mechanical

Casing: IP30 protection

Dimensions (W x H x D): 40 x 130 x 100 mm
 1.54 x 5.12 x 3.94 in.

Weight (Gross Weight):	IM-4TX	215 g
	IM-2MSC/2TX	245 g
	IM-2MST/2TX	250 g
	IM-2SSC/2TX	245 g
	IM-1LSC/3TX	235 g
	IM-4MSC	250 g
	IM-4MST	270 g
	IM-4SSC	270 g

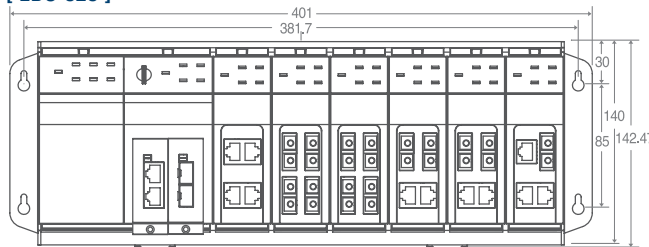
MTBF

620,000 hrs

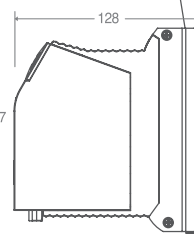
Database: MIL-HDBK-217F, GB 25°C

Dimensions (unit = mm)

[EDS-828]

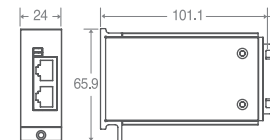


Front View



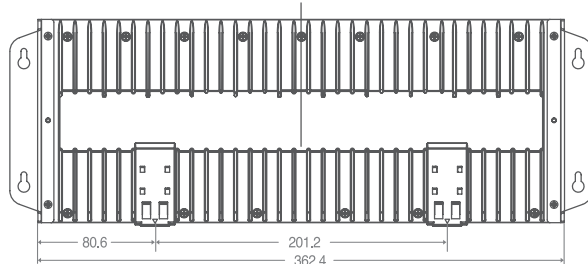
Side View

Gigabit Ethernet Interface Modules



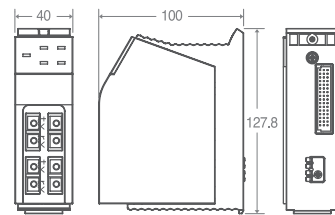
Front View

Side View



Rear View

Fast Ethernet Interface Modules



Front View

Side View

Rear View

Ordering Information

Modular Managed Layer 3 Switch System, EDS-82810G

Modular Managed Layer 3 Switch System with 6 slots for 4-port 100 Mbps modules, and 2 slots for 2-port Gbps modules, for a total of 24+4G ports.

Gigabit Ethernet Modules for EDS-828, IM-2G Series

IM-~~A~~G~~B~~B~~B~~B

Ordering Code Definition	Number of Ports	Copper/Fiber Ports
	2: two copper or fiber ports	TX: 10/100/1000BaseT(X) port SFP: 1000BaseSX/LX/LHX/ZX port
Available Models	Standard: <ul style="list-style-type: none"> IM-2GTX IM-2GSFP 	
<p>* IM-2GSFP Gigabit Ethernet Module supports two SFP slots. See page 1-25 to select the SFP-1G series Gigabit Ethernet Modules for your application.</p>		

Fast Ethernet Modules for EDS-828, IM Series

IM-~~A~~B~~B~~C~~C~~/D~~E~~E

Ordering Code Definition	Number of Ports	Copper/Fiber Ports	FO Connector	Number of Remaining Ports	Type of Remaining Ports
	4: Four ports 2: Two ports 1: One port	TX: 10/100BaseT(X) port M: Multi mode, 100BaseFX port S: Single mode, 100BaseFX port, 40 km L: Single mode, 100BaseFX port, 80 km	SC: SC connector ST: ST connector	- : None 2: Two ports 3: Three ports	TX: 10/100BaseT(X) port
Available Models	Standard: <ul style="list-style-type: none"> IM-4TX IM-4MSC IM-4MST IM-2MSC/2TX IM-2MST/2TX 			Long-Haul (80 km): <ul style="list-style-type: none"> IM-1LSC/3TX 	

Optional Accessories

- **ABC-01:** Industrial RS-232, RJ45-based, Automatic Backup Configurator
- **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
- **EDS-SNMP OPC Server Pro:** CD with EDS-SNMP OPC Server Software and Manual
- **WK-32:** Wall Mounting Kit for EDS-800/700 series