EDR-810 Series

8 FE copper + 2 GbE SFP multiport industrial secure routers
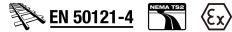
Features and Benefits

- 8+2G all-in-one firewall/NAT/VPN/router/switch
- Secure remote access tunnel with VPN
- Stateful firewall protects critical assets
- Inspect industrial protocols with PacketGuard technology
- Easy network setup with Network Address Translation (NAT)
- RSTP/Turbo Ring redundant protocol enhances network redundancy
- -40 to 75°C operating temperature range (-T model)
- Security features based on IEC 62443/NERC CIP
- Compliant with the IEC 61162-460 marine cybersecurity standard
- Check firewall settings with the intelligent SettingCheck feature

Certifications

DNV-GL MARITIME   EN 50121-4   NEMA TS2   〈Ex〉

Introduction

The EDR-810 is a highly integrated industrial multiport secure router with firewall/NAT/VPN and managed Layer 2 switch functions. It is designed for Ethernet-based security applications on critical remote control or monitoring networks, and it provides an electronic security perimeter for the protection of critical cyber assets including pump-and-treat systems in water stations, DCS systems in oil and gas applications, and PLC/SCADA systems in factory automation. The EDR-810 Series includes the following cybersecurity features:

- Firewall/NAT: Firewall policies control network traffic between different trust zones, and Network Address Translation (NAT) shields the internal LAN from unauthorized activity by outside hosts.
- VPN: Virtual Private Networking (VPN) is designed to provide users with secure communication tunnels when accessing a private network from the public Internet. VPNs use IPsec (IP Security) server or client mode for encryption and authentication of all IP packets at the network layer to ensure confidentiality and sender authentication.

The EDR-810's "WAN Routing Quick Setting" provides an easy way for users to set up WAN and LAN ports to create a routing function in four steps. In addition, the EDR-810's "Quick Automation Profile" gives engineers a simple way to configure the firewall filtering function with general automation protocols, including EtherNet/IP, Modbus TCP, EtherCAT, FOUNDATION Fieldbus, and PROFINET. Users can easily create a secure Ethernet network from a user-friendly web UI with a single click, and the EDR-810 is capable of performing deep Modbus TCP packet inspection. Wide-temperature range models that operate reliably in hazardous, -40 to 75°C environments are also available.

Specifications

Input/Output Interface

Alarm Contact Channels	Resistive load: 1 A @ 24 VDC
Buttons	Reset button
Digital Input Channels	+13 to +30 V for state 1 -30 to +3 V for state 0 Max. input current: 8 mA

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Ethernet Interface

10/100BaseT(X) Ports (RJ45 connector)	8
100/1000BaseSFP Slots	2
Standards	IEEE 802.1Q for VLAN Tagging IEEE 802.3 for 10BaseT IEEE 802.3ab for 1000BaseT(X) Static Port Trunk IEEE 802.3u for 100BaseT(X) IEEE 802.3x for flow control IEEE 802.3z for 1000BaseSX/LX/LHX/ZX

Ethernet Software Features

Broadcast Forwarding	IP directed broadcast, broadcast forwarding
Management	Back Pressure Flow Control DDNS DHCP Server/Client Web Console (HTTP/HTTPS) LLDP QoS/CoS/ToS SNMPv1/v2c/v3 Telnet TFTP
Multicast Routing	DVMRP PIM-SM PIM-SSM
Redundancy Protocols	RSTP STP Turbo Ring v2
Routing	Throughput: 10,000 packets per second (max. 100 Mbps)
Routing Redundancy	VRRP
Security	All models: HTTPS/SSL, SSH, L2TP (server), RADIUS EDR-810-VPN-2GSFP Series: HTTPS/SSL, SSH, IPsec, OpenVPN (client and server), UDP and TCP Tunnel mode (routing) and TAP mode (bridge), L2TP (server), RADIUS L2TP (server) RADIUS
Time Management	NTP Server/Client SNTP
Unicast Routing	OSPF RIPV1/V2 Static Route
Filter	IGMP v1/v2/v3

Switch Properties

VLAN ID Range	VID 1 to 4094
IGMP Groups	256
Max. No. of VLANs	16

LED Interface

LED Indicators	STATE, PWR1, PWR2, FAULT, 10/100/1000M

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DoS and DDoS Protection

Technology	ARP-Flood
	FIN Scan
	ICMP-Death
	NEWWithout-SYN Scan
	NMAP-ID Scan
	NMAP-Xmas Scan
	Null Scan
	SYN/FIN Scan
	SYN/RST Scan
	SYN-Flood
	Xmas Scan

Firewall

Deep Packet Inspection	Modbus TCP
	Modbus UDP

Filter	DDoS
	Ethernet protocols
	ICMP
	IP address
	MAC address
	Ports

Quick Automation Profiles	DNP
	EtherCAT
	EtherNet/IP
	FOUNDATION Fieldbus
	FTP
	HTTP
	IEC 60870-104
	IPsec
	L2TP
	LonWorks
	Modbus TCP
	PPTP
	PROFINET
	RADIUS
	SSH
	Telnet

Stateful Inspection	Router firewall
	Transparent (bridge) firewall

Throughput	Max. 10,000 packets per second (max. 100 Mbps)

IPsec VPN

Authentication	EDR-810-VPN-2GSFP Series: MD5 and SHA (SHA-256), RSA (key size: 1024-bit, 2048-bit), X.509 v3 certificate
Concurrent VPN Tunnels	EDR-810-VPN-2GSFP Series: Max. 10 IPsec VPN tunnels
Encryption	EDR-810-VPN-2GSFP Series: DES, 3DES, AES-128, AES-192, AES-256
Protocols	EDR-810-VPN-2GSFP Series: IPsec, L2TP (server), PPTP (client)
Throughput	EDR-810-VPN-2GSFP Series: Max. 17 Mbps (Conditions: AES-256, SHA-256)

NAT

Features	1-to-1
	N-to-1
	Port forwarding

OpenVPN

Authentication	EDR-810-VPN-2GSFP Series: User password by MD5 and SHA1
Concurrent VPN Tunnels	EDR-810-VPN-2GSFP Series:
	Client Mode: max. 2 external servers

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	Server Mode: max. 5 external clients
Encryption	EDR-810-VPN-2GSFP Series: AES-128/192/256 CBC, Blowfish CBC, DES CBC, DES-EDE3 CBC
Protocols	EDR-810-VPN-2GSFP Series: OpenVPN (client and server), UDP, and TCP Tunnel mode (routing) and TAP mode (bridge)
Throughput	EDR-810-VPN-2GSFP Series: Max. 5 Mbps

Real-Time Firewall / VPN Event Log

Event Type	All models: Firewall event EDR-810-VPN-2GSFP Series: VPN event
Media	Local storage SNMP Trap Syslog server

Serial Interface

Console Port	RS-232 (TxD, RxD, GND), 3-pin (115200, n, 8, 1)

Power Parameters

Connection	Removable terminal block
Input Voltage	12 to 48 VDC
Input Current	0.706 A @ 12 VDC, 0.353 A @ 24 VDC, 0.187 A @ 48 VDC
Reverse Polarity Protection	Supported

Physical Characteristics

Housing	Metal
Dimensions	53.6 x 135 x 105 mm (2.11 x 5.31 x 4.13 in)
Weight	830 g (2.10 lb)
Installation	DIN-rail mounting Wall mounting (with optional kit)

Environmental Limits

Operating Temperature	Standard Models: -10 to 60°C (14 to 140°F) Wide Temp. Models: -40 to 75°C (-40 to 167°F)
Storage Temperature (package included)	-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95% (non-condensing)

Standards and Certifications

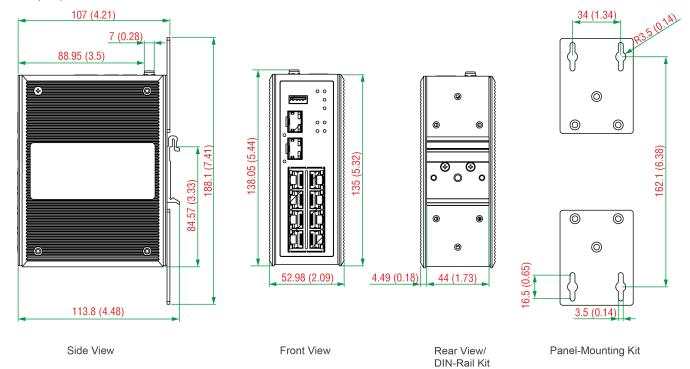|	
Safety	UL 508
EMC	EN 55032/24
EMI	CISPR 32, FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV IEC 61000-4-6 CS: 10 V IEC 61000-4-8 PFMF
Hazardous Locations	ATEX

	Class I Division 2
Maritime	DNV
Traffic Control	NEMA TS2
Railway	EN 50121-4
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Vibration	IEC 60068-2-6
Industrial Cybersecurity	IEC 61162-460

MTBF

Time	981,954 hrs
Standards	Telcordia (Bellcore), GB

Warranty

Warranty Period	5 years
Details	See www.moxa.com/warranty

Package Contents

Device	1 x EDR-810 Series secure router
Cable	1 x DB9 female to RJ45 10-pin
Installation Kit	4 x cap, plastic, for RJ45 port 2 x cap, plastic, for SFP slot
Documentation	1 x document and software CD 1 x quick installation guide 1 x warranty card
Note	SFP modules need to be purchased separately for use with this product.

Dimensions

Unit: mm (inch)

Side View

Front View

Rear View/
DIN-Rail Kit

Panel-Mounting Kit

Ordering Information

Model Name	10/100BaseT(X) Ports RJ45 Connector	100/1000Base SFP Slots	Firewall	NAT	VPN	Operating Temp.
EDR-810-2GSFP	8	2	✓	✓	–	-10 to 60°C
EDR-810-2GSFP-T	8	2	✓	✓	–	-40 to 75°C
EDR-810-VPN-2GSFP	8	2	✓	✓	✓	-10 to 60°C
EDR-810-VPN-2GSFP-T	8	2	✓	✓	✓	-40 to 75°C

Accessories (sold separately)

Storage Kits

ABC-02-USB	Configuration backup and restoration tool, firmware upgrade, and log file storage tool for managed Ethernet switches and routers, 0 to 60°C operating temperature
ABC-02-USB-T	Configuration backup and restoration tool, firmware upgrade, and log file storage tool for managed Ethernet switches and routers, -40 to 75°C operating temperature

SFP Modules

SFP-1FELLC-T	SFP module with 1 100Base single-mode with LC connector for 80 km transmission, -40 to 85°C operating temperature
SFP-1FEMLC-T	SFP module with 1 100Base multi-mode, LC connector for 2/4 km transmission, -40 to 85°C operating temperature
SFP-1FESLC-T	SFP module with 1 100Base single-mode with LC connector for 40 km transmission, -40 to 85°C operating temperature
SFP-1G10ALC	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 10 km transmission; TX 1310 nm, RX 1550 nm, 0 to 60°C operating temperature
SFP-1G10ALC-T	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 10 km transmission; TX 1310 nm, RX 1550 nm, -40 to 85°C operating temperature
SFP-1G10BLC	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 10 km transmission; TX 1550 nm, RX 1310 nm, 0 to 60°C operating temperature

SFP-1G10BLC-T	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 10 km transmission; TX 1550 nm, RX 1310 nm, -40 to 85°C operating temperature
SFP-1G20ALC	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 20 km transmission; TX 1310 nm, RX 1550 nm, 0 to 60°C operating temperature
SFP-1G20ALC-T	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 20 km transmission; TX 1310 nm, RX 1550 nm, -40 to 85°C operating temperature
SFP-1G20BLC	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 20 km transmission; TX 1550 nm, RX 1310 nm, 0 to 60°C operating temperature
SFP-1G20BLC-T	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 20 km transmission; TX 1550 nm, RX 1310 nm, -40 to 85°C operating temperature
SFP-1G40ALC	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 40 km transmission; TX 1310 nm, RX 1550 nm, 0 to 60°C operating temperature
SFP-1G40ALC-T	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 40 km transmission; TX 1310 nm, RX 1550 nm, -40 to 85°C operating temperature
SFP-1G40BLC	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 40 km transmission; TX 1550 nm, RX 1310 nm, 0 to 60°C operating temperature
SFP-1G40BLC-T	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 40 km transmission; TX 1550 nm, RX 1310 nm, -40 to 85°C operating temperature
SFP-1GEZXLC	SFP module with 1 1000BaseEZX port with LC connector for 110 km transmission, 0 to 60°C operating temperature
SFP-1GEZXLC-120	SFP module with 1 1000BaseEZX port with LC connector for 120 km transmission, 0 to 60°C operating temperature
SFP-1GLHLC	SFP module with 1 1000BaseLH port with LC connector for 30 km transmission, 0 to 60°C operating temperature
SFP-1GLHLC-T	SFP module with 1 1000BaseLH port with LC connector for 30 km transmission, -40 to 85°C operating temperature
SFP-1GLHXLC	SFP module with 1 1000BaseLHX port with LC connector for 40 km transmission, 0 to 60°C operating temperature
SFP-1GLHXLC-T	SFP module with 1 1000BaseLHX port with LC connector for 40 km transmission, -40 to 85°C operating temperature
SFP-1GLSXLC	SFP module with 1 1000BaseLSX port with LC connector for 1km/2km transmission, 0 to 60°C operating temperature
SFP-1GLSXLC-T	SFP module with 1 1000BaseLSX port with LC connector for 1km/2km transmission, -40 to 85°C operating temperature
SFP-1GLXLC	SFP module with 1 1000BaseLX port with LC connector for 10 km transmission, 0 to 60°C operating temperature
SFP-1GLXLC-T	SFP module with 1 1000BaseLX port with LC connector for 10 km transmission, -40 to 85°C operating temperature
SFP-1GSXLC	SFP module with 1 1000BaseSX port with LC connector for 300m/550m transmission, 0 to 60°C operating temperature
SFP-1GSXLC-T	SFP module with 1 1000BaseSX port with LC connector for 300m/550m transmission, -40 to 85°C operating temperature
SFP-1GZXLC	SFP module with 1 1000BaseZX port with LC connector for 80 km transmission, 0 to 60°C operating temperature
SFP-1GZXLC-T	SFP module with 1 1000BaseZX port with LC connector for 80 km transmission, -40 to 85°C operating temperature
SFP-1GTXRJ45-T	SFP module with 1 1000BaseT port with RJ45 connector for 100 m transmission, -40 to 75°C operating temperature

Power Supplies

DR-120-24	120W/2.5A DIN-rail 24 VDC power supply with universal 88 to 132 VAC or 176 to 264 VAC input by switch, or 248 to 370 VDC input, -10 to 60°C operating temperature
DR-4524	45W/2A DIN-rail 24 VDC power supply with universal 85 to 264 VAC or 120 to 370 VDC input, -10 to 50°C operating temperature
DR-75-24	75W/3.2A DIN-rail 24 VDC power supply with universal 85 to 264 VAC or 120 to 370 VDC input, -10 to 60°C operating temperature

MDR-40-24	DIN-rail 24 VDC power supply with 40W/1.7A, 85 to 264 VAC, or 120 to 370 VDC input, -20 to 70°C operating temperature
MDR-60-24	DIN-rail 24 VDC power supply with 60W/2.5A, 85 to 264 VAC, or 120 to 370 VDC input, -20 to 70°C operating temperature

Rack-Mounting Kits

RK-4U	19-inch rack-mounting kit

Wall-Mounting Kits

WK-51-01	Wall mounting kit with 2 plates (51.6 x 67 x 2 mm) and 6 screws

Software

MXview-50	Industrial network management software with a license for 50 nodes (by IP address)
MXview-100	Industrial network management software with a license for 100 nodes (by IP address)
MXview-250	Industrial network management software with a license for 250 nodes (by IP address)
MXview-500	Industrial network management software with a license for 500 nodes (by IP address)
MXview-1000	Industrial network management software with a license for 1000 nodes (by IP address)
MXview-2000	Industrial network management software with a license for 2000 nodes (by IP address)
MXview Upgrade-50	License expansion of MXview industrial network management software by 50 nodes (by IP address)

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