

EDR-810 Series

8+2G multiport industrial secure router with switch/firewall/NAT/VPN



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
- Check firewall settings with intelligent SettingCheck feature

Certifications



EN 50121-4



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

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|------------------------|---|
| 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 |

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

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|----------------------|--|
| 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

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

LED Interface

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| LED Indicators | STATE, PWR1, PWR2, FAULT, 10/100/1000M |
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DoS and DDoS Protection

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|------------|---|
| 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

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|---------------------------|---|
| 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

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|------------------------|---|
| 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

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|----------|---------------------------------|
| Features | 1-to-1, N-to-1, Port forwarding |
|----------|---------------------------------|

OpenVPN

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|------------------------|---|
| 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 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

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

Serial Interface

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

Power Parameters

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| 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

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|--------------|--|
| 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

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| 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

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|---------------------|--|
| Safety | UL 508 |
| EMC | EN 55032/24 |
| Hazardous Locations | UL/cUL Class I Division 2 Groups A/B/C/D |
| 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 |
| Railway | EN 50121-4 |
| Traffic Control | NEMA TS2 |
| Shock | IEC 60068-2-27 |
| Freefall | IEC 60068-2-32 |
| Vibration | IEC 60068-2-6 |

MTBF

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

Warranty

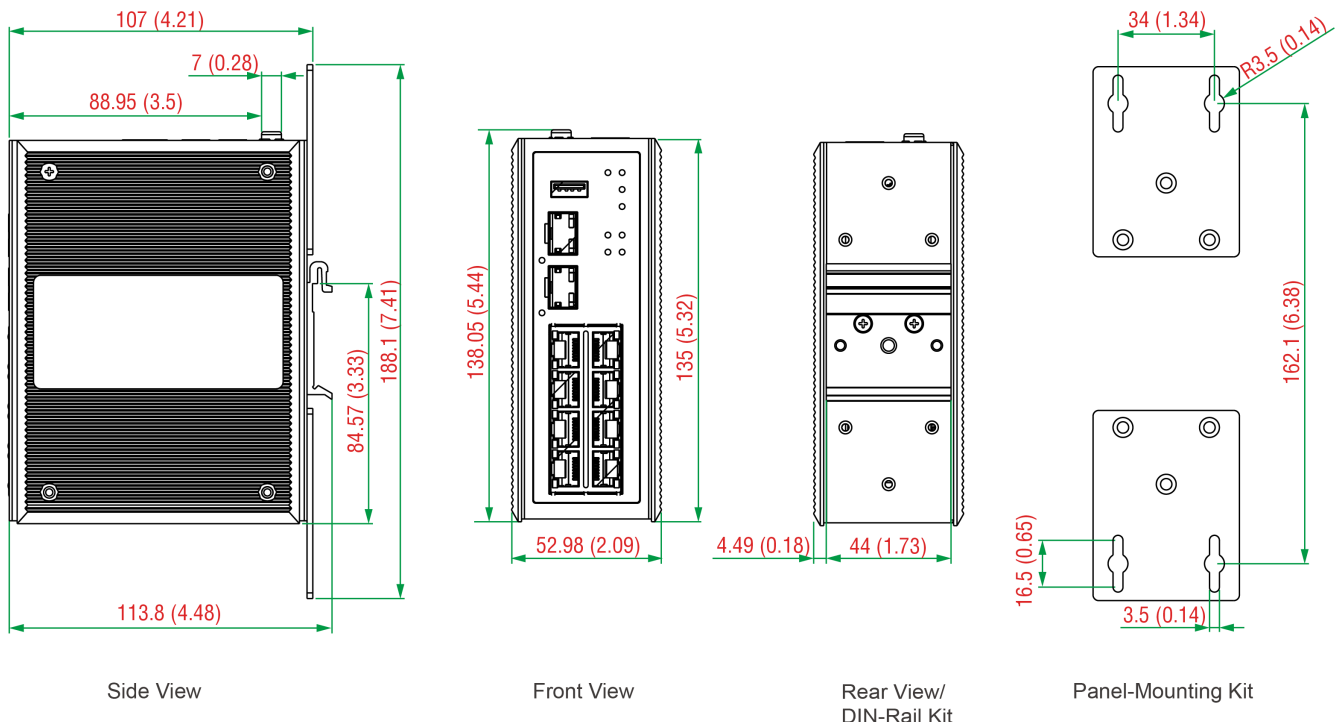
| | |
|-----------------|--|
| Warranty Period | 5 years |
| Details | See www.moxa.com/warranty |

Package Contents

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|------------------|---|
| 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)



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

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|--------------|---|
| 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

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|---------------|--|
| 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 with LC connector for 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-1GEZXC | SFP module with 1 1000BaseEZC port with LC connector for 110 km transmission, 0 to 60°C operating temperature |
| SFP-1GEZXC-120 | SFP module with 1 1000BaseEZC 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-1GLHXC | SFP module with 1 1000BaseLHX port with LC connector for 40 km transmission, 0 to 60°C operating temperature |
| SFP-1GLHXC-T | SFP module with 1 1000BaseLHX port with LC connector for 40 km transmission, -40 to 85°C operating temperature |
| SFP-1GLSXC | SFP module with 1 1000BaseLSX port with LC connector for 500 m transmission, 0 to 60°C operating temperature |
| SFP-1GLSXC-T | SFP module with 1 1000BaseLSX port with LC connector for 500 m 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-1GSXC | SFP module with 1 1000BaseSX port with LC connector for 300/550 m transmission, 0 to 60°C operating temperature |
| SFP-1GSXC-T | SFP module with 1 1000BaseSX port with LC connector for 300/550 m 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

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|-----------|---|
| 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 |

Wall-Mounting Kits

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|----------|---|
| WK-51-01 | Wall-mounting kit, 2 plates, 6 screws, 51.6 x 67 x 2 mm |
|----------|---|

Rack-Mounting Kits

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|-------|---------------------------|
| RK-4U | 19-inch rack-mounting kit |
|-------|---------------------------|

Software

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|-------------------|--|
| 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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