

▶▶▶ Secure Industrial Router

Red Lion's RAM-6021 industrial routers provide secure network communication between local and wide area networks.

With a rugged design and flexible platform, the routers provide the ability to remotely connect, monitor and control assets across a variety of industrial applications. The RAM-6021's web based event engine can be customized to trigger I/O or email alerts, to quickly notify personnel of critical events based on operational data. Add in robust security features, which include a stateful firewall, NAT translations and VPN connections, and the RAM-6021 delivers a compact all-in-one solution that seamlessly connects to existing Ethernet infrastructures, including networks with Modbus and DNP3 enabled devices.



APPLICATIONS

- > Factory Automation
- > Oil & Gas
- > Water/Wastewater

PRODUCT HIGHLIGHTS

- > Secure network routing and communication
- > LAN-to-LAN or LAN-to-WAN connectivity
- > Intrusion protection through stateful firewall
- > NAT support for 1-to-1 and 1-to-many translations
- > 25 VPN connections for secure remote access
- > Built-in Modbus and DNP3 gateways
- > Event engine to trigger I/O or send email alerts
- > Rugged industrial design in a compact package

FEATURES & BENEFITS

- > Simple network setup
- > DHCP server/DHCP relay
- > Built-in security and routing protects against unwanted intrusion
 - IPsec and SSL VPN tunnels
 - Port forwarding
 - Stateful firewall
 - Packet filtering
 - Access control list (ACL)
- > Flexible all-in-one platform reduces complexity
 - Remote TCP/IP based capabilities
 - Integrated switching and routing
 - Serial-to-IP conversion
 - Access IP and serial devices simultaneously
 - SNMP v1, v2, v3
- > Rugged, compact design deploys easily in space-constrained locations
 - -40 to 70 °C operating temperature
 - DIN-rail mounting
- > Remote monitoring and control eliminates site visits
 - Instant access to SCADA data
 - Modbus and DNP3 (serial and IP) protocol support
 - Simple integration for complex configurations
- > Web-based management simplifies deployment and configuration
 - Remote diagnostics and troubleshooting
 - Key metric reporting
 - Built-in data capture for enhanced troubleshooting
 - RAMQTT for cloud connectivity
 - Syslog

RAM-6021 Specifications

TUNNELING

IPsec and SSL

IP

NAT, port forwarding, dynamic DNS, DHCP
Stateful inspection firewall, IP transparency
Routing Protocols
OSPF, BGP, RIP, VRRP
Encapsulation Protocols
GRE

PROTOCOL GATEWAY

Modbus RTU/TCP/ASCII/RTU
DNP3 - slave

ETHERNET INTERFACE (10/100 AUTO-SENSING)

Five (5) RJ45 (port 5 - WAN/LAN capability)

DATA THROUGHPUT

LAN ports: 100 Mbps
WAN port: 45 Mbps

SERIAL INTERFACE

One (1) RS-232 Serial DB9 115200 bps

USB INTERFACE

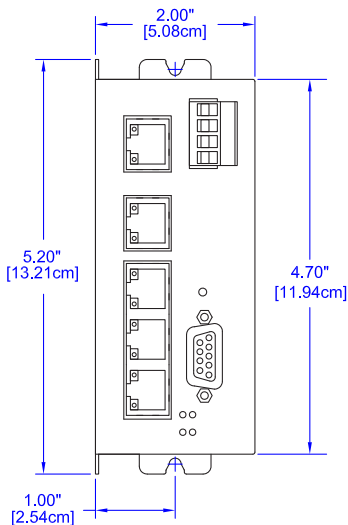
One (1) USB 2.0 mini configuration port

MECHANICAL

Dimensions: steel 120 x 96 x 51 mm (4.7" x 3.77" x 2.0")
Weight: 544g (1.2 lbs)

REDUNDANT POWER INPUT

4-pin screw terminal
Side-mounted 2.5mm barrel connector
8-30 VDC (12 VDC nominal)
Input current (max): 150 mA



All specifications are subject to change. Consult the company website for more information.

ENVIRONMENTAL

Operating temperature: -40 to 70 °C
Shock: IEC60068-2-27
Vibration: IEC60068-2-6
Humidity: 5 to 95% non-condensing

CERTIFICATION

EMI/EMC:

Emissions: FCC, Part 15 and Industry Canada, ICES-003; Class A;
EN55022, IEC61000-6-4
Immunity: IEC61000-6-2 (EN61000-4-2,3,4,5,6,8)
Hazardous Locations: Class I, Div. 2, Groups A, B, C, D, ISA 12.12.01
Electrical safety: UL508/CSA22.2/14 (CUL); IEC61010-1
RoHS compliant

INPUTS & OUTPUTS

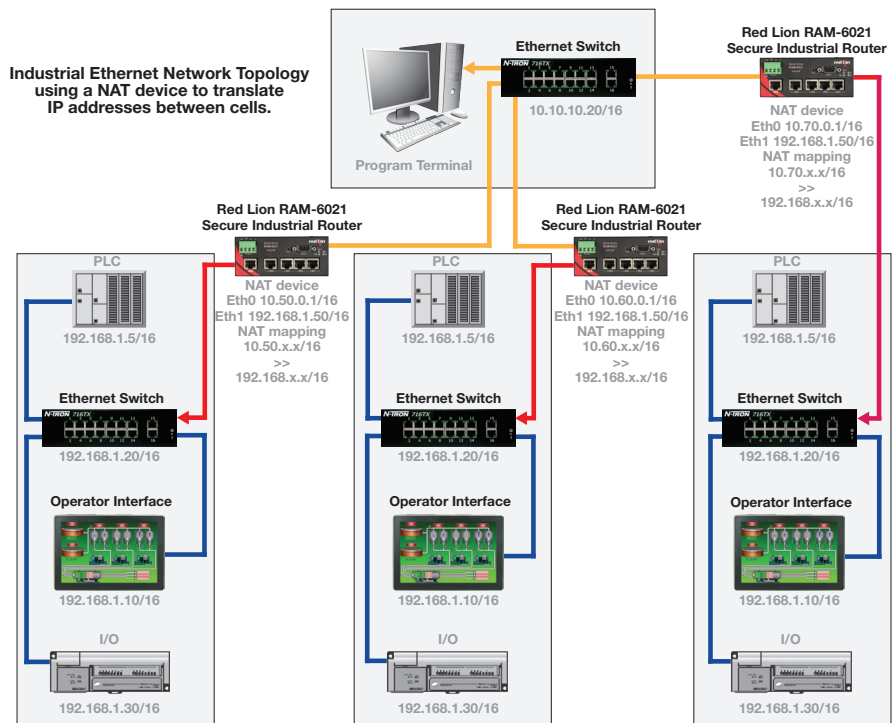
One (1) digital output
One (1) digital/analog input (one active)

WARRANTY

3 years on design and manufacturing defects

ORDERING GUIDE

PART NUMBER	DESCRIPTION
RAM-6021	Secure router with 5 ethernet ports, 1 serial port, Modbus/DNP3 gateway
ET-PS-024-02	DIN rail 2 amp power supply
FPSALACADAPTER2	2.5mm barrel power supply



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As the global experts in communication, monitoring and control for industrial automation and networking, Red Lion has been delivering innovative solutions for over forty years. Our automation, Ethernet and cellular M2M technology enables companies worldwide to gain real-time data visibility that drives productivity. Product brands include Red Lion, N-Tron and Sixnet. With headquarters in York, Pennsylvania, the company has offices across the Americas, Asia-Pacific and Europe. Red Lion is part of Spectris plc, the productivity-enhancing instrumentation and controls company. For more information, please visit www.redlion.net.

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▶▶▶ Secure IP67 Industrial Router

Red Lion's RAM-6021M12 IP67 industrial router provides secure network communication between local and wide area networks.

Housed in a rugged IP67, dustproof and water-resistant metal enclosure, the RAM-6021M12 is designed to withstand harsh industrial environments including temporary immersion in water, exposure to water jets, and extreme shock and vibration levels, making it ideal for industries where hardened products are required. The RAM-6021M12 platform provides the ability to remotely connect, monitor and control assets across a variety of industrial applications. The unit's event engine can be customized to trigger I/O or email alerts to quickly notify personnel of critical events based on operational data. Add in robust security features, which include a stateful firewall, NAT translation and VPN connections, and the RAM-6021M12 delivers a compact all-in-one solution that seamlessly connects to existing Ethernet infrastructures, including networks with Modbus and DNP3-enabled devices.



APPLICATIONS

- > Factory Automation
- > Food & Beverage
- > Transportation
- > Water/Wastewater
- > Oil & Gas
- > Utilities
- > Packaging

PRODUCT HIGHLIGHTS

- > Rugged IP67 industrial design
- > LAN-to-LAN or LAN-to-WAN connectivity
 - Intrusion protection through stateful firewall
 - NAT support for 1-to-1 and 1-to-many translations
 - 25 VPN connections for secure remote access
 - Built-in Modbus and DNP3 gateways
 - Event engine to trigger I/O or send email alerts
- > Secure network routing and communication

FEATURES & BENEFITS

- > Simple network setup
- > DHCP server/DHCP relay
- > Built-in security and routing protects against unwanted intrusion
- > IPsec and SSL VPN tunnels
- > Port forwarding
- > Stateful firewall
- > Packet filtering
- > Access control list (ACL)
- > Flexible all-in-one platform reduces complexity
 - Remote TCP/IP based capabilities
 - SNMP v1, v2, v3
 - Serial-to-IP conversion
 - Access IP and serial devices simultaneously
- > Compact IP67 hardened enclosure
- > -40 to 80 °C operating temperature
- > Bulkhead mounting
- > Remote monitoring and control eliminates site visits
 - Instant access to SCADA data
 - Modbus and DNP3 (serial and IP) protocol support
- > Intuitive web-based interface simplifies management and configuration
 - Remote diagnostics and troubleshooting
 - Key metric reporting
 - Built-in data capture for enhanced troubleshooting
 - RAMQTT for cloud connectivity
 - Syslog

RAM-6021M12 Specifications

FEATURES & BENEFITS (CONT.)

- > IEEE 802.3 compliance
- > Extended environmental specifications
 - -40 to 80 °C operating temperature
- > Redundant power inputs (8-49 VDC)
- > LED link/activity status indication
- > IP67 Protection
 - Dustproof
 - Protection against low/high pressure water jets
 - Temporary immersion in water
- > ESD protection diodes on all ports
- > Surge protection diodes on power inputs

SPECIFICATIONS

TUNNELING

IPsec and SSL

IP

NAT, port forwarding, dynamic DNS, DHCP
Stateful inspection firewall, IP transparency
Routing Protocols
OSPF, BGP, RIP, VRRP
Encapsulation protocols
GRE

PROTOCOL GATEWAY

Modbus RTU/TCP/ASCII/RTU
DNP3 - slave

ETHERNET INTERFACE (10/100 AUTO-SENSING)

Five (5) M12 D-Code Connectors (port 5 - WAN/LAN capability)

DATA THROUGHPUT

LAN ports: 100 Mbps
WAN port: 45 Mbps

Ethernet



SERIAL INTERFACE

One (1) M12 8-Pin A-Code
One (1) digital output
One (1) digital/analog input (one active)
Configuration Pinouts:
1. GND 2. SERIAL_RX 3. SERIAL_TX 4. DIGITAL_OUT
5. DIGITAL_IN/ANALOG_IN 6. GND 7. SERIAL_RTS 8. SERIAL_CTS

USB INTERFACE

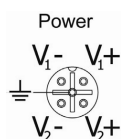
One (1) M12 USB Type B, Mini (Mini-B 5-pin)

MECHANICAL

Width: 4.32" (10.97 cm)
Height: 5" (12.70 cm)
Depth: 2.1" (5.33 cm)
Weight: 1.75 lbs (0.79 kg)

POWER INPUT

One (1) M12 A-Code Connector
Input Voltage: 8-49 VDC
BTU/hr: 12.25
Steady Input Current: 0.15 A @ 24 VDC
Inrush: 33.9 A/0.0287 ms @ 24 VDC



ENVIRONMENTAL

Shock: IEC 60068-2-27: 200 g @ 10 ms (bulkhead mounted)
Vibration: IEC 60068-2-6: 50 g, 5-200 hz (bulkhead mounted)

CERTIFICATION AND COMPLIANCES

Product Safety:

ANSI/ISA 12.12.01-2015 Class I and II, Div. 2 and Class III, Div. 1 and 2,
Groups A, B, C and D Hazardous Locations
UL508 17th Ed. Industrial Control Equipment
CAN/CSA-C22.2 No. 213-16 Class I Div. 2 Hazardous Locations
CAN/CSA-C22.2 No. 14-13 Industrial Control Equipment

Emissions:

FCC Title 47, Part 15, Radio Frequency Devices, Subpart B ANSI
C63.4-2014; Industry Canada ICES-003, EN 61000-6-4,
EN 61000-3-2, EN61000-3-3

Immunity:

EN 61000-6-2; IEC 61000-4-2 (ESD); IEC 61000-4-3 (RFAM); IEC
61000-4-4 (EFT); IEC 61000-4-5 (SURGE); IEC 61000-4-6 (RFCM);
IEC 61000-4-8 (PFMF); IEC 61000-4-11 (VDI)

Rail:

EN 50155, EN 50121, EN 61373 and EN 45545-2

Designed to Comply with:

IEEE 1613 (Electric Utility Substations), NEMA TS1/TS2 (Traffic Control)

Other:

EMC Directive 2014/30/EU; LV Directive 2014/35/EU, Restriction of
Hazardous Substance 2011/65/EU, RoHS Compliant
ABS Type Approval for Shipboard Applications

WARRANTY

3 years on design and manufacturing defects

ORDERING GUIDE

PART NUMBER	DESCRIPTION
RAM-6021M12	RAM-6021M12 IP67 secure industrial router
M12DRC-ISO	DIN-Rail kit, two isolated plastic clips
M12DRC-MTL	DIN-Rail kit, two metal clips
NTPS-24-1.3	DIN-Rail power supply 1.3 Amp @ 24 VDC

CABLE ACCESSORIES ORDERING GUIDE

PART NUMBER	DESCRIPTION
Ethernet Cables	
CAT5E-M12-M12-X	Straight M12 to straight. M12, shielded
CAT5E-M12-RJ45-X	Straight M12 to RJ-45, shielded
CAT5E-M12-X	Straight M12 to bare end, shielded
CAT5E-RM12-M12-X	90° M12 to straight. M12, shielded
CAT5E-RM12-RM12-X	90° M12 to 90° M12, shielded
CAT5E-RM12-RJ45-X	90° M12 to RJ-45, shielded
Serial Cables	
SERIAL-DB9-M12A	M12 A-Code 8-pin to DB9-F serial cable 5 ft
CBL-IO-M12A-5	M12 A-Code 8-pin to 3 WR 22 AWG cable 5 ft
CONN-M12A-1	A-Code M12 straight 8-pin connector pack of 1

Power Cables

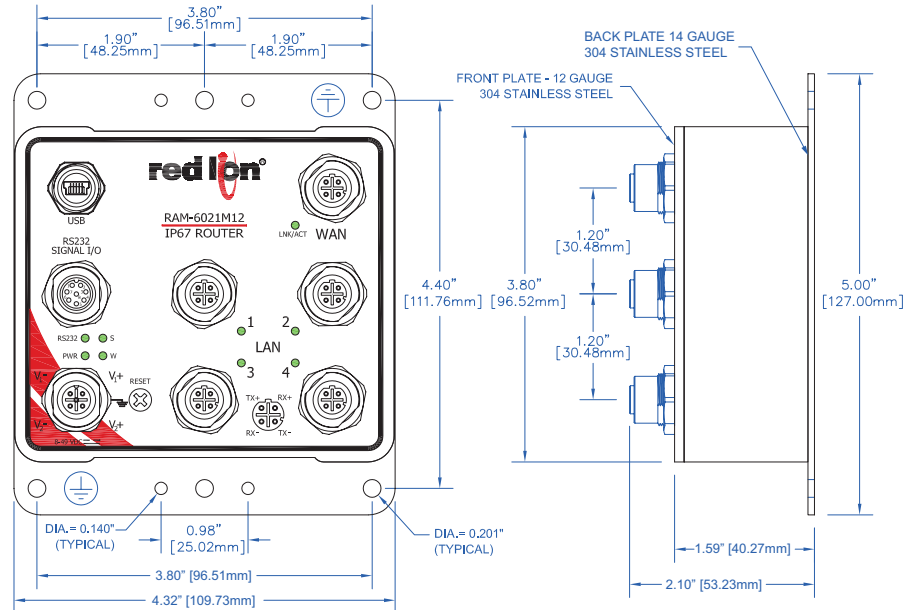
PWR-M12-A-X	Power cable, M12 A-Coded straight female to bare end, shielded
PWR-RM12-A-X	Power cable, M12 A-Coded 90° female to bare end, shielded

USB Cables

USBA-M12	6.5' USB Type A to M12 mini-USB type B cable
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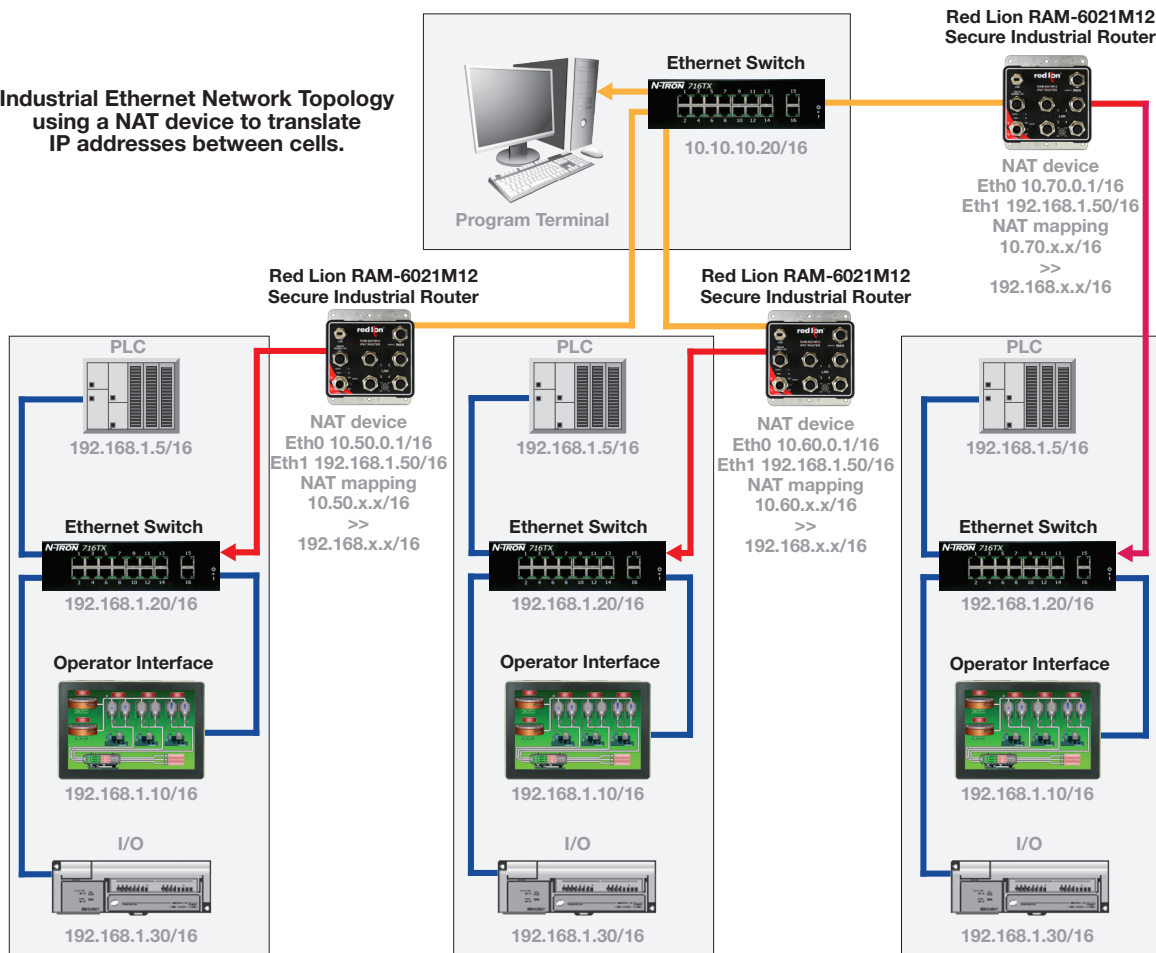
Where: X = length of cable

DIMENSIONS In inches (mm)



All specifications are subject to change. Consult the company website for more information.

Industrial Ethernet Network Topology using a NAT device to translate IP addresses between cells.



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