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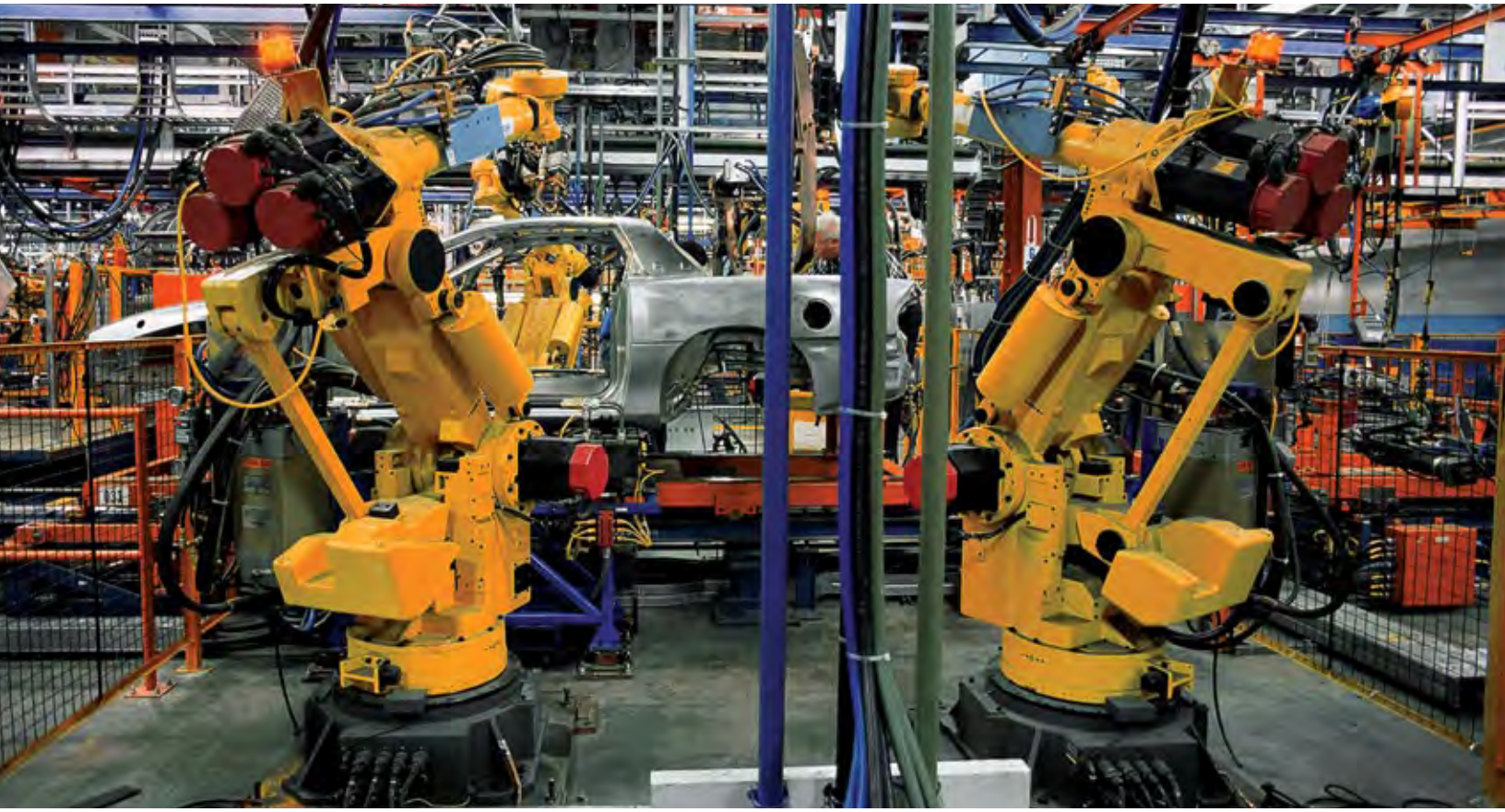
red lion®

Industrial Networking Product Guide



Ethernet Switches | Cellular M2M Routers & RTUs | Wi-Fi Radios | Communication Converters

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Managed Ethernet Switches

Red Lion's rugged, reliable managed industrial Ethernet switches support industry-standard applications. These hardened switches are ideally suited for harsh industrial environments where real-time performance under extreme operating conditions is required. Built-in redundancy and network management ensure communications stay up and running while providing tools for monitoring and tracking.

- Layer 2 managed industrial Ethernet switches
- Rugged enclosure supports deployment in extreme environments
- Powerful network management
- Gigabit copper, fiber and SFP options

Managed Ethernet Switch Comparison

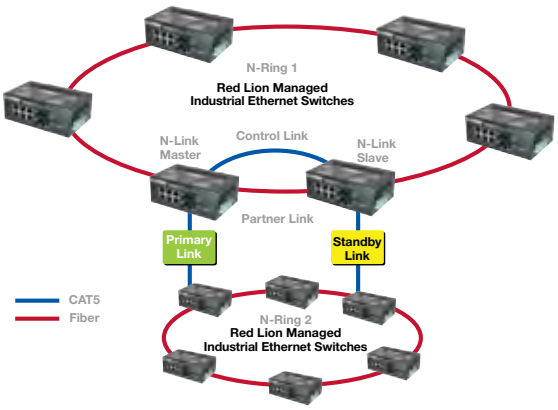
SWITCH MODELS	HAZARDOUS LOCATION		MARITIME	SUBSTATION	RAIL	MAX PORTS	NETWORK REDUNDANCY	CIP MESSAGING	16KV SURGE SUPPRESSION	MOUNTING
	UL CLASS 1, DIVISION 2	ATEX	ABS	IEC 61850 IEEE 1613	EN 50155					
NT24k® Managed	X		X		O	24	N-Ring™/N-Link™/ RSTP	X	X	DR & RM
700 Managed	X	O	X	O	O	16	N-Ring/N-Link/ RSTP	X	X	DR
7000 Managed	X	O	X	O	O	26	N-Ring/N-Link/ RSTP	X	X	DR & RM
SLX Managed	X		X			18	Real-Time Ring/ RSTP			DR & PM
EL Managed	X	X				26	Real-Time Ring/ RSTP			PM
Legend:	X - All models		O - Some models		DR - DIN-rail		PM - Panel Mount		RM - Rackmount	

Network Healing Technologies

N-Ring® is a proprietary high-speed ring technology that provides consistent healing times of ~20 milliseconds (ms) for up to 250 switches. **N-Link®** provides the ability to link two N-Rings for network redundancy.

Real-Time Ring is a highly-reliable, proprietary ring technology from Sixnet offering 30 ms healing time plus 5 ms per hop.

Rapid Spanning Tree Protocol (RSTP) IEEE 802.1w is an industry standard protocol providing ~2-3 second recovery time and offers a solution for multi-vendor Ethernet networks.



NT24k® Modular Managed Gigabit Ethernet Switches

- Hot swappable modules with Fast Ethernet and Gigabit configurations
- Robust remote monitoring with N-View™ monitoring technology
- Smart plug-and-play operation
- DIN-rail and rackmount options
- Extreme environment specifications

MODEL NUMBER	TYPE	POWER OPTIONS	TOTAL PORTS	FAST ETHERNET	GIGABIT ETHERNET			OPERATING TEMP
				100 FIBER	10/100/ 1000 COPPER	1000 FIBER	GIG SFP	
NT24k-DC1	Managed	Single 18-49VDC	Up to 24	Up to 24	Up to 24	Up to 24	Up to 24	-40˚ to 85˚C
NT24k-DC2	Managed	Dual 18-49VDC	Up to 24	Up to 24	Up to 24	Up to 24	Up to 24	-40˚ to 85˚C
NT24k-AC1	Managed	Single 90-264VAC/ 90-300VDC	Up to 24	Up to 24	Up to 24	Up to 24	Up to 24	-40˚ to 85˚C
NT24k-AC2	Managed	Dual 90-264VAC/ 90-300VDC	Up to 24	Up to 24	Up to 24	Up to 24	Up to 24	-40˚ to 85˚C
NT24k-AC1-DC1	Managed	Single 90-264VAC/ 90-300VDC & 18-49VDC	Up to 24	Up to 24	Up to 24	Up to 24	Up to 24	-40˚ to 85˚C
NT24k-DR16-DC	Managed	Redundant 18-49VDC	Up to 16	Up to 16	Up to 16	Up to 16	Up to 16	-40˚ to 75˚C
NT24k-DR16-AC	Managed	90-264VAC/ 90-300VDC	Up to 16	Up to 16	Up to 16	Up to 16	Up to 16	-40˚ to 75˚C
NT24k-DR24-DC	Managed	Redundant 18-49VDC	Up to 24	Up to 24	Up to 24	Up to 24	Up to 24	-40˚ to 75˚C
NT24k-DR24-AC	Managed	90-264VAC/ 90-300VDC	Up to 24	Up to 24	Up to 24	Up to 24	Up to 24	-40˚ to 75˚C

SFP ports support 100Base or 1000Base SFP transceivers, which are sold separately.
Low-voltage power supplies feature redundant power inputs.

Compact NT24k Managed Switches

- Fast Ethernet, Gigabit, fiber and SFP models
- Robust remote monitoring with N-View monitoring technology
- Smart plug-and-play operation
- Extreme environment specifications

MODEL NUMBER	TYPE	TOTAL PORTS	FAST ETHERNET	GIGABIT ETHERNET			MOUNTING & CASE	OPERATING TEMP
			100 FIBER	10/100/1000 COPPER	1000 FIBER	GIG SFP		
NT24k-8TX	Managed	8	-	8	-	-	DIN-Rail – Metal	-40˚ to 85˚C
NT24K-10FX2	Managed	10	2	8	-	-	DIN-Rail – Metal	-40˚ to 85˚C
NT24k-10GX2	Managed	10	-	8	2	-	DIN-Rail – Metal	-40˚ to 85˚C
NT24k-11FX3	Managed	11	3	8	-	-	DIN-Rail – Metal	-40˚ to 85˚C
NT24k-11GX3	Managed	11	-	8	3	-	DIN-Rail – Metal	-40˚ to 85˚C
NT24k-12FX4	Managed	12	4	8	-	-	DIN-Rail – Metal	-40˚ to 85˚C
NT24k-12GX4	Managed	12	-	8	4	-	DIN-Rail – Metal	-40˚ to 85˚C
NT24k-12SFP-DM4	Managed	12	-	8	-	4	DIN-Rail – Metal	-40˚ to 85˚C
NT24k-14FX6	Managed	14	6	8	-	-	DIN-Rail – Metal	-40˚ to 85˚C
NT24k-14GX6	Managed	14	-	8	6	-	DIN-Rail – Metal	-40˚ to 85˚C
NT24k-16TX	Managed	16	-	16	-	-	DIN-Rail – Metal	-40˚ to 85˚C

SFP ports support 100Base or 1000Base SFP transceivers, which are sold separately.
Multimode and singlemode options available. FX models available with SC or ST connectors; GX models available with SC style connectors.

700 & 7000 Managed Ethernet Switches

- Plug-and-play deployment with IGMP auto-configuration
- N-View monitoring provides real-time switch diagnostics
- Ideally suited to use as N-Ring or N-Link manager

	MODEL NUMBER	TYPE	TOTAL PORTS	FAST ETHERNET		GIGABIT ETHERNET		MOUNTING & CASE	OPERATING TEMP
				10/100 COPPER	100 FIBER	10/100/ 1000 COPPER	GIG SFP		
700	708TX	Managed	8	8	-	-	-	DIN-Rail – Metal	-40˚ to 85˚C
700	708FX2	Managed	8	6	2	-	-	DIN-Rail – Metal	-40˚ to 85˚C
700	709FX*	Managed	9	8	1	-	-	DIN-Rail – Metal	-40˚ to 70˚C
700	710FX2*	Managed	10	8	2	-	-	DIN-Rail – Metal	-40˚ to 70˚C
700	711FX3*	Managed	11	8	3	-	-	DIN-Rail – Metal	-40˚ to 70˚C
700	712FX4*	Managed	12	8	4	-	-	DIN-Rail – Metal	-40˚ to 70˚C
700	714FX6	Managed	14	8	6	-	-	DIN-Rail – Metal	-40˚ to 70˚C
700	716TX	Managed	16	16	-	-	-	DIN-Rail – Metal	-40˚ to 70˚C
700	716FX2	Managed	16	14	2	-	-	DIN-Rail – Metal	-40˚ to 70˚C
7000	7010TX	Managed	10	8	-	-	Up to 2	DIN-Rail – Metal	-40˚ to 70˚C
7000	7012FX2*	Managed	12	8	2	-	Up to 2	DIN-Rail – Metal	-40˚ to 70˚C
7000	7018TX	Managed	18	16	-	-	Up to 2	DIN-Rail – Metal	-40˚ to 70˚C
7000	7018FX2	Managed	18	14	2	-	Up to 2	DIN-Rail – Metal	-40˚ to 70˚C
7000	7026TX	Managed	26	24	-	-	Up to 2	Rackmount – Metal	-40˚ to 80˚C
7000	7026TX-AC	Managed	26	24	-	-	Up to 2	Rackmount – Metal	-40˚ to 80˚C
7000	7506GX2 (All Gigabit)	Managed	6	-	-	4	Up to 2	DIN-Rail – Metal	-40˚ to 80˚C
7000	7900 (Modular)	Managed	26	Up to 24	Up to 16	-	Up to 2	DIN-Rail – Metal	-20˚ to 70˚C

**KEMA approved IEC 61850-3 and IEEE 1613 HV models available.*
Fiber models available in multimode and singlemode configurations with SC or ST fiber connectors.
SFP ports support 1000Base SFP transceivers, which are sold separately.

SLX Managed Ethernet Switches

- Versatile networking solutions with copper and fiber models
- Real-time Modbus over Ethernet monitoring
- Fast Ethernet and Gigabit port options
- DIN-rail or panel mounting options

MODEL NUMBER	TYPE	TOTAL PORTS	FAST ETHERNET		GIGABIT ETHERNET		MOUNTING & CASE	OPERATING TEMP
			10/100 COPPER	100 FIBER	10/100/1000 COPPER	GIG SFP		
SLX-5MS-1	Managed	5	5	-	-	-	DIN-Rail – Metal	-40˚ to 75˚C
SLX-5MS-4/5	Managed	5	3	2	-	-	DIN-Rail – Metal	-40˚ to 75˚C
SLX-5MS-MDM-1	Managed	5	5	-	-	-	DIN-Rail – Metal	-40˚ to 75˚C
SLX-8MS-1	Managed	8	8	-	-	-	DIN-Rail – Metal	-40˚ to 75˚C
SLX-8MS-4/5/8/9	Managed	8	4 or 6	2 or 4	-	-	DIN-Rail – Metal	-40˚ to 75˚C
SLX-8MG-1 (All Gigabit)	Managed	8	-	-	8	Up to 4 Combo Ports	DIN-Rail – Metal	-40˚ to 75˚C
SLX-10MG-1	Managed	10	7	-	3	Up to 2 Combo Ports	DIN-Rail – Metal	-40˚ to 75˚C
SLX-16MS-1	Managed	16	16	-	-	-	DIN-Rail – Metal	-40˚ to 75˚C
SLX-18MG-1	Managed	18	16	-	2	Up to 2 Combo Ports	DIN-Rail – Metal	-40˚ to 75˚C

Fiber models available in multimode and singlemode configurations with SC or ST fiber connectors.
SFP ports support 100Base or 1000Base SFP transceivers, which are sold separately.

Advanced Managed Ethernet Switches

Red Lion's advanced managed industrial Ethernet switches offer powerful enterprise-class networking with security options that prevent unauthorized access and enable policy enforcement. These powerful switches provide QoS traffic classification and sophisticated multicast controls, reducing traffic and ensuring real-time message delivery. The flexible industrial design is built to support the harshest environments.

EL Advanced Management Ethernet Switches

- Layer 3 functionality with enterprise class networking features
- Hardened enclosure for harsh industrial applications
- Up to 10G ports for high-bandwidth backhaul
- Advanced security control

MODEL NUMBER	TYPE	POWER OPTIONS	TOTAL PORTS	GIGABIT ETHERNET		10 GIG	OPERATING TEMP
				10/100/1000 COPPER	GIGABIT SFP		
EL326-DO-1*	Managed – Layer 3	Single 18-59 VDC	26	24	Up to 4 SFP (4 Combo)	Up to 2	-35° to 75°C
EL326-DD-1*	Managed – Layer 3	Dual 18-59 VDC	26	24	Up to 4 SFP (4 Combo)	Up to 2	-35° to 75°C
EL326-AO-1*	Managed – Layer 3	Single 85-264 VAC or 90-300 VDC	26	24	Up to 4 SFP (4 Combo)	Up to 2	-35° to 80°C
EL326-AA-1*	Managed – Layer 3	Dual 85-264 VAC or 90-300 VDC	26	24	Up to 4 SFP (4 Combo)	Up to 2	-35° to 80°C

**Rackmount - Metal*
SFP ports support 100Base or 1000Base SFP transceivers, which are sold separately.

Monitored Ethernet Switches

Red Lion's monitored industrial Ethernet switches provide network performance monitoring with Modbus or N-View monitoring technology. These rugged, compact switches are built for mission-critical applications and provide cost-effective network monitoring options that can be integrated directly into any industrial control system.

- Layer 2 unmanaged industrial switches
- Network performance monitoring via Modbus or N-View technology
- Versatile networking solutions
- Copper and fiber port configurations
- Hardened for the toughest applications

Monitored Ethernet Switch Comparison

SWITCH MODELS	HAZARDOUS LOCATION		MARITIME	SUBSTATION	MONITORING	ADVANCED FEATURES	16KV SURGE SUPPRESSION	REDUNDANT POWER	HOUSING MATERIAL
	UL CLASS 1, DIVISION 2	ATEX	ABS	IEEE 1613					
500-A Process Control	X	X	X	X	N-View	Auto IGMP	X	X	Metal
500-N Monitored	X	X	X	X	N-View		X	X	Metal
300-N Monitored	X	X	X	O	N-View		X	X	Metal
SLX Monitored	X	X			Modbus	RTR		X	Metal
SL Monitored	X	X			Modbus	RTR		X	Lexan
Legend:	X - All models		O - Some models		RTR - Real-Time Ring				

500-A Monitored Process Control Switches

- Advanced management features include IGMP snooping, VLAN, QoS and Port Mirroring
- N-View monitoring provides real-time switch diagnostics
- Rugged industrial DIN-rail and rackmount options

MODEL NUMBER	TYPE	TOTAL PORTS	FAST ETHERNET		MOUNTING & CASE	OPERATING TEMP
			10/100 COPPER	100 FIBER		
508TX-A	Process Control	8	8	-	DIN-Rail – Metal	-40° to 85°C
508FX2-A	Process Control	8	6	2	DIN-Rail – Metal	-40° to 85°C
509FX-A	Process Control	9	8	1	DIN-Rail – Metal	-40° to 85°C
516TX-A	Process Control	16	16	-	DIN-Rail – Metal	-40° to 85°C
517FX-A	Process Control	17	16	1	DIN-Rail – Metal	-40° to 85°C
524TX-A	Process Control	24	24	-	Rackmount – Metal	-40° to 85°C
526FX2-A	Process Control	26	24	2	Rackmount – Metal	-40° to 85°C

Fiber models available in multimode and singlemode configurations with SC or ST fiber connectors.

300 & 500 Monitored Fast Ethernet Switches

- High reliability in industrial applications
- Plug-and-play operation
- N-View monitoring provides real-time switch diagnostics

	MODEL NUMBER	TYPE	TOTAL PORTS	FAST ETHERNET 10/100 COPPER	FAST ETHERNET 100 FIBER	MOUNTING & CASE	OPERATING TEMP
300	302MC-N	Monitored	2	1	1	DIN-Rail – Metal	-40˚ to 70˚C
300	304TX-N	Monitored	4	4	-	DIN-Rail – Metal	-40˚ to 70˚C
300	305FX-N	Monitored	5	4	1	DIN-Rail – Metal	-40˚ to 70˚C
300	306TX-N	Monitored	6	6	-	DIN-Rail – Metal	-40˚ to 70˚C
300	306FX2-N	Monitored	6	4	2	DIN-Rail – Metal	-40˚ to 70˚C
300	308TX-N	Monitored	8	8	-	DIN-Rail – Metal	-40˚ to 70˚C
300	308FX2-N	Monitored	8	6	2	DIN-Rail – Metal	-40˚ to 85˚C
300	309FX-N	Monitored	9	8	1	DIN-Rail – Metal	-40˚ to 85˚C
300	316TX-N	Monitored	16	16	-	DIN-Rail – Metal	-40˚ to 85˚C
300	317FX-N	Monitored	17	16	1	DIN-Rail – Metal	-40˚ to 85˚C
500	508TX-N	Monitored	8	8	-	DIN-Rail – Metal	-40˚ to 85˚C
500	508FX2-N	Monitored	8	6	2	DIN-Rail – Metal	-40˚ to 85˚C
500	509FX-N	Monitored	9	8	1	DIN-Rail – Metal	-40˚ to 85˚C
500	516TX-N	Monitored	16	16	-	DIN-Rail – Metal	-40˚ to 85˚C
500	517FX-N	Monitored	17	16	1	DIN-Rail – Metal	-40˚ to 85˚C
500	524TX-N	Monitored	24	24	-	Rackmount – Metal	-40˚ to 85˚C
500	526FX2-N	Monitored	26	24	2	Rackmount – Metal	-40˚ to 85˚C

Fiber models available in multimode and singlemode configurations with SC or ST fiber connectors.

SL & SLX Fast Ethernet Ring Switches

- Fast, fault-tolerant Real-Time Ring network redundancy
- Pre-configured for plug-and-play ring functionality
- Redundant power inputs
- Real-time Modbus over Ethernet monitoring

MODEL NUMBER	TYPE	TOTAL PORTS	FAST ETHERNET 10/100 COPPER	FAST ETHERNET 100 FIBER	MOUNTING & CASE	OPERATING TEMP
SL-6RS-1	Ring	6	6	-	DIN-Rail – Lexan	-40˚ to 60˚C
SL-6RS-4/5	Ring	6	4	2	DIN-Rail – Lexan	-40˚ to 60˚C
SLX-6RS-1	Ring	6	6	-	DIN-Rail – Metal	-40˚ to 85˚C
SLX-6RS-4/5	Ring	6	4	2	DIN-Rail – Metal	-40˚ to 85˚C

Fiber models available in multimode and singlemode configurations with SC or ST fiber connectors.

Unmanaged Ethernet Switches

Red Lion's industrial unmanaged Ethernet switches offer powerful network performance with plug-and-play functionality. With an endless range of port options, these unmanaged switches are set to tackle the demands of industrial data acquisition, control and Ethernet I/O applications.

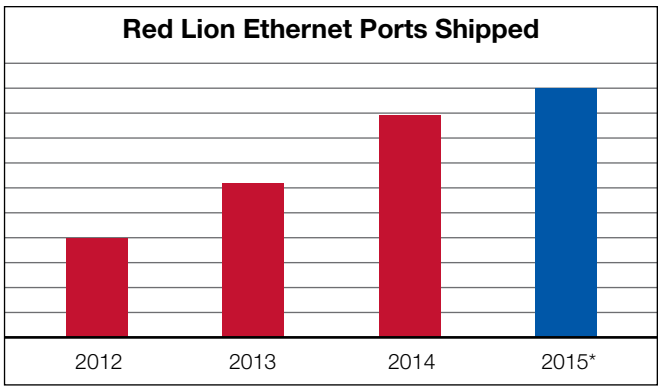
- Compact IEEE 802.3 Layer 2 industrial switches
- Automatic speed, duplex and cable sensing
- Designed for use in mission-critical applications
- Plug-and-play functionality

Unmanaged Ethernet Switch Comparison

	HAZARDOUS LOCATION		MARITIME		SUBSTATION	RAIL	TRAFFIC			
SWITCH MODELS	UL CLASS 1, DIVISION 2	ATEX	ABS	DNV	IEEE 1613	EN 50155	NEMA TS1/TS2	JUMBO FRAME	M12 CONNECTORS	HOUSING MATERIAL
100 Unmanaged	X	X	X	O		O			O	Metal
300 Unmanaged	X	X	X		O					Metal
500 Unmanaged	X	X	X		X					Metal
1000 Unmanaged	X	O	X	O	O	X	O	O		Metal
SLX Unmanaged	X	X	X					O		Metal
SL Unmanaged	X	X	X							Lexan
Legend:	X - All models		O - Some models							

Industrial Ethernet & the IIoT

Building on the foundation of the Internet of Things, the Industrial Internet of Things (IIoT) promises significant returns for businesses looking to better connect and share data between disparate devices. With potential returns achieved through greater efficiency, process improvements and preventative maintenance, Red Lion offers an array of rugged, reliable industrial Ethernet switches to meet varying IIoT requirements. And the number of Ethernet ports shipped continues to grow year over year as more and more organizations turn to Red Lion.



**2015 data is forecasted*

100, 300 & 500 Unmanaged Fast Ethernet Switches

- Compact, rugged, all-metal enclosure
- Wide operating temperature range
- Redundant power inputs

	MODEL NUMBER	TYPE	TOTAL PORTS	FAST ETHERNET 10/100 COPPER	FAST ETHERNET 100 FIBER	MOUNTING & CASE	OPERATING TEMP
100	102MC	Unmanaged	2	1	1	DIN-Rail – Metal	-40˚ to 80˚C
	104TX	Unmanaged	4	4	-	DIN-Rail – Metal	-40˚ to 80˚C
	105TX	Unmanaged	5	5	-	DIN-Rail – Metal	-40˚ to 80˚C
	105TX-SL	Unmanaged	5	5	-	DIN-Rail – Metal	-40˚ to 85˚C
	105FX	Unmanaged	5	4	1	DIN-Rail – Metal	-40˚ to 70˚C
	106FX2	Unmanaged	6	4	2	DIN-Rail – Metal	-40˚ to 70˚C
	108TX	Unmanaged	8	8	-	DIN-Rail – Metal	-40˚ to 70˚C
	110FX2	Unmanaged	10	8	2	DIN-Rail – Metal	-40˚ to 80˚C
	111FX3	Unmanaged	11	8	3	DIN-Rail – Metal	-40˚ to 80˚C
	112FX4	Unmanaged	12	8	4	DIN-Rail – Metal	-40˚ to 80˚C
	114FX6	Unmanaged	14	8	6	DIN-Rail – Metal	-40˚ to 80˚C
	116TX	Unmanaged	16	16	-	DIN-Rail – Metal	-40˚ to 85˚C
300	302MC	Unmanaged	2	1	1	DIN-Rail – Metal	-40˚ to 70˚C
	304TX	Unmanaged	4	4	-	DIN-Rail – Metal	-40˚ to 70˚C
	305FX	Unmanaged	5	4	1	DIN-Rail – Metal	-40˚ to 70˚C
	306TX	Unmanaged	6	6	-	DIN-Rail – Metal	-40˚ to 70˚C
	306FX2	Unmanaged	6	4	2	DIN-Rail – Metal	-40˚ to 70˚C
	308TX	Unmanaged	8	8	-	DIN-Rail – Metal	-40˚ to 70˚C
	308FX2	Unmanaged	8	6	2	DIN-Rail – Metal	-40˚ to 85˚C
	309FX	Unmanaged	9	8	1	DIN-Rail – Metal	-40˚ to 85˚C
	316TX	Unmanaged	16	16	-	DIN-Rail – Metal	-40˚ to 85˚C
	317FX	Unmanaged	17	16	1	DIN-Rail – Metal	-40˚ to 85˚C
500	508TX	Unmanaged	8	8	-	DIN-Rail – Metal	-40˚ to 85˚C
	508FX2	Unmanaged	8	6	2	DIN-Rail – Metal	-40˚ to 85˚C
	509FX	Unmanaged	9	8	1	DIN-Rail – Metal	-40˚ to 85˚C
	516TX	Unmanaged	16	16	-	DIN-Rail – Metal	-40˚ to 85˚C
	517FX	Unmanaged	17	16	1	DIN-Rail – Metal	-40˚ to 85˚C
	524TX	Unmanaged	24	24	-	Rackmount – Metal	-40˚ to 85˚C
	526FX2	Unmanaged	26	24	2	Rackmount – Metal	-40˚ to 85˚C

Fiber models available in multimode and singlemode configurations with SC or ST fiber connectors.

1000 & SLX Unmanaged Gigabit Ethernet Switches

- Plug-and-play unmanaged operation
- Gigabit-speed port options
- Compact, rugged, all-metal enclosures

MODEL NUMBER	TYPE	TOTAL PORTS	GIGABIT ETHERNET		MOUNTING & CASE	OPERATING TEMP
			10/100/1000 COPPER	GIG SFP		
1002MC	Unmanaged	2	1	1 SFP	DIN-Rail – Metal	-40˚ to 85˚C
1003GX2	Unmanaged	3	1	2 SFP	DIN-Rail – Metal	-40˚ to 85˚C
1005TX	Unmanaged	5	5	-	DIN-Rail – Metal	-40˚ to 85˚C
1008TX	Unmanaged	8	8	-	DIN-Rail – Metal	-40˚ to 85˚C
SLX-3EG-1SFP	Unmanaged	3	2	1 SFP	DIN-Rail – Metal	-40˚ to 85˚C
SLX-5EG-1	Unmanaged	5	5 (4 PoE)	-	DIN-Rail – Metal	-40˚ to 85˚C
SLX-5EG-2SFP	Unmanaged	5	3 PoE	2 SFP	DIN-Rail – Metal	-40˚ to 85˚C

SFP transceivers sold separately.

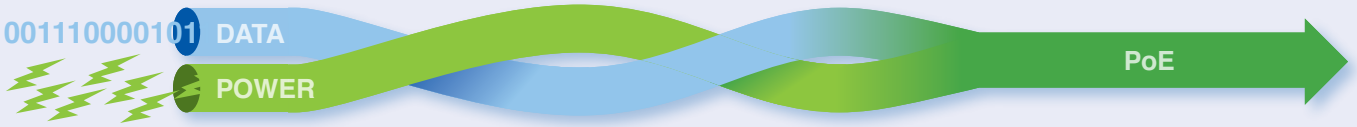
SL & SLX Unmanaged Fast Ethernet Switches

- Mixed copper and fiber port options
- Compact lightweight Lexan or all-metal housing
- Redundant power inputs

	MODEL NUMBER	TYPE	TOTAL PORTS	FAST ETHERNET		MOUNTING & CASE	OPERATING TEMP
				10/100 COPPER	100 FIBER		
SL	SL-2ES-2/3	Unmanaged	2	1	1	DIN-Rail – Lexan	-10˚ to 60˚C
SL	SL-5ES-1	Unmanaged	5	5	-	DIN-Rail – Lexan	-40˚ to 60˚C
SL	SL-5ES-2/3	Unmanaged	5	4	1	DIN-Rail – Lexan	-40˚ to 60˚C
SL	SL-6ES-4/5	Unmanaged	6	4	2	DIN-Rail – Lexan	-40˚ to 60˚C
SL	SL-8ES-1	Unmanaged	8	8	-	DIN-Rail – Lexan	-40˚ to 60˚C
SL	SL-9ES-2/3	Unmanaged	9	8	1	DIN-Rail – Lexan	-40˚ to 60˚C
SLX	SLX-3ES-2/3	Unmanaged	3	2	1	DIN-Rail – Metal	-40˚ to 85˚C
SLX	SLX-5ES-1	Unmanaged	5	5	-	DIN-Rail – Metal	-40˚ to 85˚C
SLX	SLX-5ES-2/3	Unmanaged	5	4	1	DIN-Rail – Metal	-40˚ to 85˚C
SLX	SLX-6ES-4/5	Unmanaged	6	4	2	DIN-Rail – Metal	-40˚ to 85˚C
SLX	SLX-8ES-1	Unmanaged	8	8	-	DIN-Rail – Metal	-40˚ to 85˚C
SLX	SLX-8ES-6/7	Unmanaged	8	5	3	DIN-Rail – Metal	-40˚ to 85˚C
SLX	SLX-9ES-2/3	Unmanaged	9	8	1	DIN-Rail – Metal	-40˚ to 85˚C

Fiber models available in multimode and singlemode configurations with SC or ST fiber connectors.

Power over Ethernet (PoE)



Power over Ethernet (PoE) is a method to transmit power and data, up to 100 meters, over a single Ethernet (CAT5e/CAT6/CAT6a) cable. The benefits of PoE include reduced wiring and installation costs and greater flexibility of device placement as equipment no longer needs to be located near power outlets. Red Lion offers a wide range of PoE products including Ethernet switches, midspan injectors and PoE splitters, that support industry-standard IEEE 802.3af (PoE) and/or IEEE 802.3at (PoE+).

PoE Details

	POE (IEEE 802.3af)	POE+ (IEEE 802.3at)
Max power delivered by PSE	15.40 W	34.20 W
Power Available at PD	12.95 W	25.5 W
Voltage Output Range	44-57 VDC	50-57 VDC
Max Output Current	350 mA	600 mA
Power Management	Three levels	Four levels

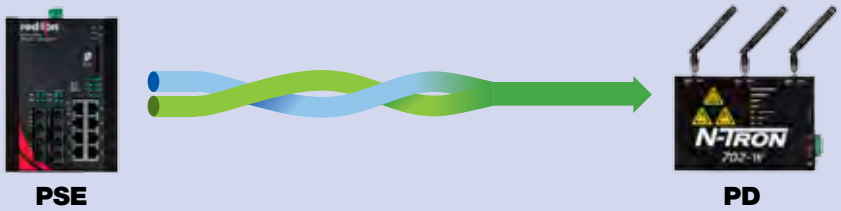
Common PoE Terminology

Power Sourcing Equipment (PSE) is any device that provides or injects power onto a copper Category Ethernet cable.

Powered Device (PD) is a device such as a Wi-Fi radio, camera, display or cellular router that is powered by PoE from a PSE device.

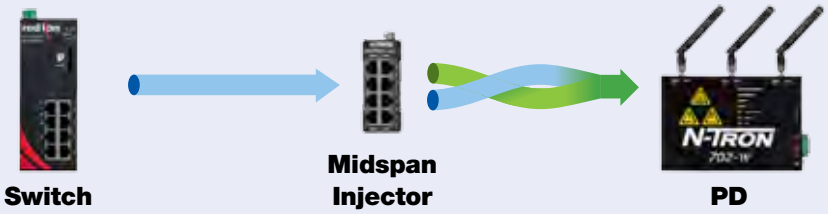
Endspan Switch

An Ethernet switch that combines data and power onto an Ethernet cable for PoE enabled devices.



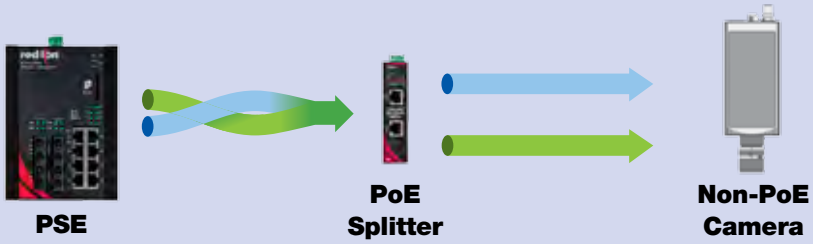
Midspan Injector

An intermediary device that injects PoE power onto an Ethernet cable for PoE enabled devices.



PoE Splitter

A PD device that removes PoE power from an Ethernet cable to power non-PoE enabled equipment.



Industrial PoE Solutions

Red Lion's industrial PoE solutions are designed to transmit power and data over an Ethernet network. PoE networks eliminate the need for running separate wires for power and are ideal in installations with devices such as IP surveillance cameras, wireless access points, IP phones and other PoE-enabled devices. These industrial PoE devices offer a compact, rugged design for harsh, remote locations.

- Compact, rugged design
- Switches, injectors and splitters
- Transmit power and data over Ethernet networks

Compact NT24k-POE Managed PoE Switches

- IEEE 802.3af/at PoE+ on all copper ports
- Redundant 22 to 49 VDC power inputs with power boost circuit to provide 240 watts of PoE+ output
- All copper ports support 10/100/1000Base speeds and IEEE 802.3af/at PoE+ output
- Available with FX or GX fiber ports, or SFP ports for optional SFP transceivers
- Extreme environment specifications

MODEL NUMBER	TYPE	TOTAL PORTS	FAST ETHERNET	GIGABIT ETHERNET			MOUNTING & CASE	OPERATING TEMP
			100 FIBER	10/100/1000 COPPER	1000 FIBER	GIG SFP		
NT24K-8TX-POE	Managed	8	-	8 (8 PoE+)	-	-	DIN-Rail – Metal	-40° to 80°C
NT24K-10FX2-POE	Managed	10	2	8 (8 PoE+)	-	-	DIN-Rail – Metal	-40° to 80°C
NT24k-10GX2-POE	Managed	10	-	8 (8 PoE+)	2	-	DIN-Rail – Metal	-40° to 80°C
NT24k-11FX3-POE	Managed	11	3	8 (8 PoE+)	-	-	DIN-Rail – Metal	-40° to 80°C
NT24k-11GX3-POE	Managed	11	-	8 (8 PoE+)	3	-	DIN-Rail – Metal	-40° to 80°C
NT24k-12FX4-POE	Managed	12	4	8 (8 PoE+)	-	-	DIN-Rail – Metal	-40° to 80°C
NT24k-12GX4-POE	Managed	12	-	8 (8 PoE+)	4	-	DIN-Rail – Metal	-40° to 80°C
NT24k-12SFP-DM4-POE	Managed	12	-	8 (8 PoE+)	-	4	DIN-Rail – Metal	-40° to 80°C
NT24k-14FX6-POE	Managed	14	6	8 (8 PoE+)	-	-	DIN-Rail – Metal	-40° to 80°C
NT24k-14GX6-POE	Managed	14	-	8 (8 PoE+)	6	-	DIN-Rail – Metal	-40° to 80°C

SFP ports support 100Base or 1000Base SFP transceivers, sold separately.
Multimode and singlemode options available. FX models available with SC or ST connectors; GX models available with SC style connectors.

SLX & EB PoE Switches, Injectors & Splitters

- IEEE 802.3af PoE support
- Easily integrates PoE equipment into existing networks
- Seamless plug-and-play operation

MODEL NUMBER	TYPE	TOTAL PORTS	FAST ETHERNET		GIGABIT ETHERNET		MOUNTING & CASE	OPERATING TEMP
			10/100 COPPER	100 FIBER	10/100/1000 COPPER	GIG SFP		
SLX-5EG-1	Unmanaged Switch	5	-	-	5 (4 PoE)	-	DIN-Rail – Metal	-40˚ to 85˚C
SLX-5EG-2SFP	Unmanaged Switch	5	-	-	3 PoE	2 SFP	DIN-Rail – Metal	-40˚ to 85˚C
EB-5ES-PSE-1	Unmanaged Switch	5	5 (4 PoE)	-	-	-	DIN-Rail – Lexan	-40˚ to 75˚C
EB-PSE-24V-1 (PoE Midspan Injector)	Midspan Injector	2	1 (1 PoE)	-	-	-	DIN-Rail – Lexan	-40˚ to 75˚C
EB-PSE-48V-2 (PoE Midspan Injector)	Midspan Injector	4	2 (2 PoE)	-	-	-	DIN-Rail – Lexan	-40˚ to 75˚C
EB-PD-24V-1 (PoE Splitter)	PoE Splitter	2	2 (1 PoE)	-	-	-	DIN-Rail – Lexan	-40˚ to 75˚C

SFP ports support 100Base or 1000Base SFP transceivers, sold separately. Fiber models available with SC or ST fiber connectors.

100 & 1000 PoE Switches, Injectors & Splitters

- IEEE 802.3af PoE support
- Rugged, all-metal enclosures
- Easy plug-and-play operation

MODEL NUMBER	TYPE	TOTAL PORTS	FAST ETHERNET		GIGABIT ETHERNET		MOUNTING & CASE	OPERATING TEMP
			10/100 COPPER	100 FIBER	10/100/1000 COPPER	POWER INPUT		
105TX-POE	Unmanaged Switch	5	5 (4 PoE)	-	-	46-49 VDC	DIN-Rail – Metal	-40˚ to 85˚C
100-POE4	Midspan Injector	8	4 (4 PoE)	-	-	46-49 VDC	DIN-Rail – Metal	-40˚ to 85˚C
105FX-POE	Unmanaged Switch	5	4 PoE	1	-	46-49 VDC	DIN-Rail – Metal	-40˚ to 85˚C
100-POE-SPL	PoE Splitter	2	2 (1 PoE)	-	-	46-54 VDC	DIN-Rail – Metal	-40˚ to 85˚C
1000-POE+	Midspan Injector	2	-	-	1(1 PoE+)*	10-30 VDC	DIN-Rail – Metal	-40˚ to 80˚C

**Redundant 10 to 30 VDC power inputs with power boost circuit to provide IEEE 802.3at output.*

PoE Switch Comparison

SWITCH MODELS	HAZARDOUS LOCATION	MARITIME	RAIL	TRAFFIC	MONITORING	NETWORK REDUNDANCY	POE STANDARD	POWER INPUT	MOUNTING
	UL CLASS 1, DIVISION 2	ABS	EN 50155	NEMA TS1/TS2					
NT24k	X	X	O		N-View/SNMP	N-Ring/N-Link/RSTP	PoE+	22-49 VDC	DR
1000-POE+	X	X	X	O			PoE+	10-30 VDC	DR
SLX	X	X			X		PoE	45-56 VDC	DR
100-POE	X	X	O		O		PoE	46-54 VDC*	DR
Legend:	X - All models	O - Some models		DR - DIN-rail		PM - Panel Mount		RSTP - Rapid Spanning Tree Protocol	

**Model specific*

Ultra-Rugged IP67 Switches

Red Lion's ultra-rugged IP67 switches are built to military standards, bringing advanced networking capabilities to the field. Thousands of today's deployed tanks, armored personnel carriers, unattended vehicles (UAVs), weapons control systems, naval vessels, helicopters, airplanes, drones and other assets depend on Red Lion IP67 switches.

- Ultra-rugged construction
- Superior performance in critical applications
- MIL standard compliant

Ultra-Rugged IP67 Switches

- IP67/NEMA 6 ingress protection for harsh environments
- Commercial Off-The-Shelf (COTS) military-grade solutions
- MIL-DTL-38999 series III connectors
- Up to 10Gig backhaul connectivity

MODEL NUMBER	TYPE	POWER OPTIONS	TOTAL PORTS	FAST ETHERNET	GIGABIT ETHERNET		10 GIG FIBER*	INGRESS PROTECT	OPERATING TEMP
				10/100 COPPER	10/100/1000 COPPER	1000 FIBER			
MIL312	L3 Managed	18-36 VDC	12	-	12	-	-	IP67	-40˚ to 75˚C
MIL314	L3 Managed	18-36 VDC	14	-	12	-	2	IP67	-40˚ to 70˚C
MIL316	L3 Managed	18-36 VDC	16	-	12	4	-	IP67	-40˚ to 75˚C
MIL318	L3 Managed	18-36 VDC	18	-	12	4	2	IP67	-40˚ to 70˚C
ET-8MS-MIL	L2 Managed	10-30 VDC	8	8	-	-	-	IP67	-40˚ to 75˚C
ET-8MG-MIL	L2 Managed	18-36 VDC	8	-	8	-	-	IP67	-40˚ to 75˚C
ET-8ES-MIL	L2 Unmanaged	10-30 VDC	8	8	-	-	-	IP67	-40˚ to 75˚C
ET-8EG-MIL	L2 Unmanaged	18-36 VDC	8	-	8	-	-	IP67	-40˚ to 75˚C

MIL31X switches available with Layer 2 or Layer 3 management functionality.
**Multimode and Singlemode fiber options available.*

IP67 Industrial Switches

- Rugged IP67/NEMA 6 enclosures
- Versatile unmanaged and managed solutions
- Hardened for the toughest applications

	MODEL NUMBER	TYPE	POWER OPTIONS	TOTAL PORTS	FAST ETHERNET 10/100 COPPER	INGRESS PROTECT	OPERATING TEMP
700	708M12*	Managed	10-30 VDC	8	8	IP67	-40˚ to 80˚C
	708M12-HV*	Managed	40-160 VDC	8	8	IP67	-40˚ to 80˚C
	716M12*	Managed	10-49 VDC	16	16	IP67	-40˚ to 80˚C
	716M12-HV*	Managed	40-160 VDC	16	16	IP67	-40˚ to 80˚C
100	105M12*	Unmanaged	10-30 VDC	5	5	IP67	-40˚ to 80˚C
	108M12*	Unmanaged	10-30 VDC	8	8	IP67	-40˚ to 70˚C
	108M12-HV*	Unmanaged	10-60 VDC	8	8	IP67	-40˚ to 70˚C
ET	ET-5ES-IP67	Unmanaged	10-30 VDC	5	5	IP67	-40˚ to 75˚C
	ET-5RS-IP67	Ring	10-30 VDC	5	5	IP67	-40˚ to 75˚C

**Ethernet ports have M12 connectors*

OEM Board-Level Switches

- Wide operating temperature range
- Ready for copper, fiber or SFP connectors
- Low power consumption

MODEL NUMBER	TYPE	TOTAL PORTS	FAST ETHERNET 10/100 COPPER	FAST ETHERNET 100 FIBER	GIGABIT ETHERNET 10/100/1000 COPPER	GIGABIT ETHERNET 1000 FIBER	SIZE
ET-5MS-OEM	Managed	6	Up to 6	Up to 1	-	-	Ultra-compact 2.5 x 3.5”
ET-8MS-OEM	Managed	10	8	Up to 2	Up to 2	Up to 2	Standard PC/104 3.6 x 3.8”
ET-8MG-OEM-F	Managed	8	Up to 8	Up to 8	Up to 8	Up to 8	Standard PC/104 3.6 x 3.8”

Wi-Fi Radios

Red Lion's family of IEEE 802.11a,b,g,n hardened products provide a powerful wireless solution for industrial applications. Data bandwidths up to 300 Mb/s can be attained using the 802.11n MIMO wireless technology. These wireless radios offer standard powerful transceivers to extend network ranges well beyond that of most commercial wireless products.

- IEEE 802.11a,b,g,n compliant
- Support data bandwidths up to 300Mb/s
- Configurable as Wireless Station, Station WDS, Access Point, Access Point WDS
- Operate in bridge or router mode
- IEEE 802.3af Powered Device

MODEL NUMBER	TYPE	TOTAL PORTS	10/100 COPPER	INGRESS PROTECT	MOUNTING & CASE	OPERATING TEMP
702-W	Managed	1	1	IP30	DIN-Rail – Metal	-40˚ to 80˚C
702M12-W*	Managed	1	1	IP67	DIN-Rail – Metal	-40˚ to 80˚C

**Ethernet port has M12 connector*

Wired Router

Red Lion's RAM® 6021 industrial wired routers offer secure and reliable communication to remotely deployed assets. Rugged RAM 6021 routers are ideal for connecting to Modbus or DNP3 devices such as SCADA servers, PLCs and other automation equipment located in harsh environments.

- Intrusion protection and secure data access
- IPsec and SSL VPN tunnels
- NAT translations

MODEL NUMBER	SERIAL RS-232	10/100 COPPER	POWER CONNECTOR
RAM-6021	1	5 (LAN/WAN)	Terminal block with redundant DC power inputs or 2.5 mm barrel connector

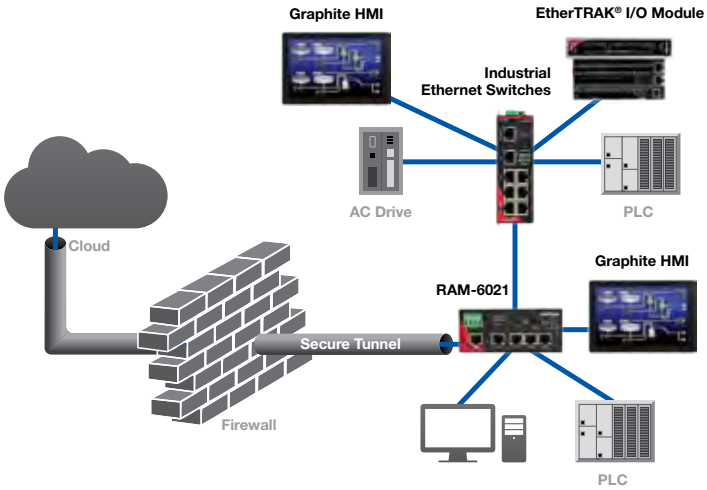
Security

Red Lion can help secure industrial networks to ensure sensitive data is protected. Common features of Red Lion security products include:

Virtual Private Networks (VPNs) securely extend private networks to remote locations using certificates to ensure security between two network points.

Stateful Packet Inspection (SPI) is a firewall process that scans individual packets of data and approves or denies each packet based on known services that are currently running.

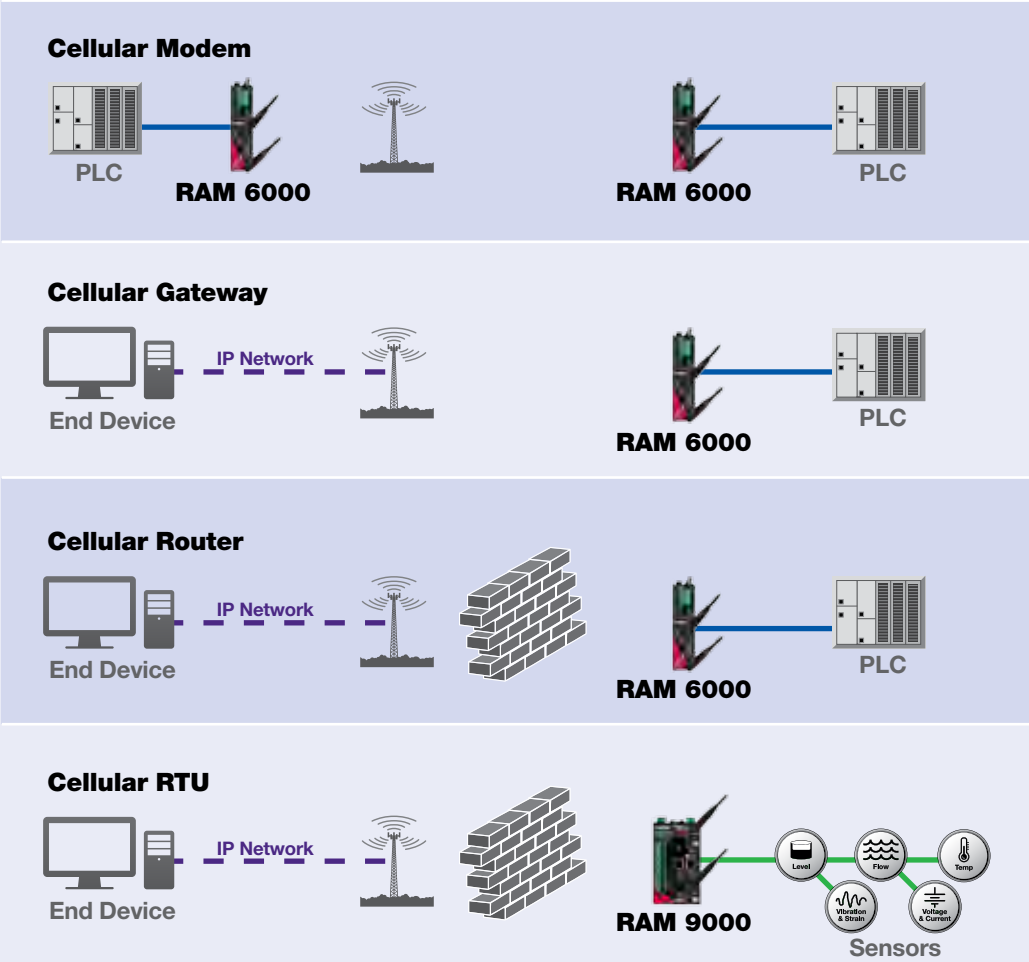
Access Control List (ACL) is a list of approved or denied user credentials that allow or deny users from accessing equipment. Coupling an ACL with user-level authentication adds security by only allowing certain services to be accessed by specified users.



Cellular Technology

Connecting, monitoring and controlling remote sites is easy when you leverage the power of cellular communication equipment. Cellular RTUs, routers and gateways provide high-speed reliable two-way data communication via 4G LTE or 3G cellular carrier networks. The benefits of deploying a cellular-based remote monitoring and control network include ease of deployment, security and reliability.

Cellular equipment connects new or existing field devices to a secure, high-speed IP network. By connecting I/O, serial, USB, Wi-Fi or Ethernet enabled equipment to a cellular router, organizations can remotely access equipment, monitor status or receive critical notifications when processes are not performing. This real-time communication helps to reduce costs by eliminating site visits and providing more actionable intelligence.



Common Industry Terminology

Cellular Modem is a device that transmits a native protocol across a cellular network to another cellular modem which outputs the native protocol.

Cellular Gateway is a device that converts a native protocol to TCP/IP for transmission across a cellular network. Cellular gateways are designed to simply pass data, with limited security capabilities.

Cellular Router is a device that includes cellular gateway functionality along with additional security and packet-level routing capabilities. Cellular routers often include firewalls, Access Control Lists and VPN capabilities to ensure critical data stays protected.

Cellular RTU is a device that encompasses RTU and I/O functionality with a cellular routers capability. Cellular RTUs combine the functionality of multiple devices into a single unit, which reduces remote equipment, power consumption and maintenance costs.

Monitoring cellular devices is easy with Red Lion's SixView Manager® software. An intuitive dashboard provides network equipment status to help troubleshoot connectivity issues. Managing and updating devices is quick with built-in mass-update and reporting tools.

Cellular M2M Solutions

Red Lion offers a broad range of cellular M2M RTUs and routers that feature standards-based, enterprise-class functionality to enable secure, reliable cellular data access – anywhere, anytime. These rugged industrial solutions provide the ability to remotely monitor sites across a range of applications.

RAM® 9000 Industrial Cellular RTUs

- High-density I/O reduces need for external equipment
- Supports 4G LTE multi-carrier operation with fallback to 3G
- Built-in active GPS mobile for semi-mobile applications
- Secure, reliable Modbus concentrator for remote site monitoring
- Event Engine that can send SMS messages or control I/O based upon operational data
- Wide -40° to 75°C operating temperature range

MODEL NUMBER	SERIAL		ETHERNET	WI-FI	GPS	CELLULAR	MULTI-CARRIER	DEFAULT CARRIER
	RS-232	RS-485	10/100 COPPER					
RAM-9911-(Default Carrier)	1	1	2 (LAN/WAN)	N	Y	4G LTE	Y	AT) AT&T; (VZ) Verizon; (AM) Generic; (EU) Europe/ Asia; (JP) Japan
RAM-9931-(Default Carrier)	1	1	2 (LAN/WAN)	Y	Y	4G LTE	Y	

AM (Generic) model includes Bell Mobility, TELUS and Rogers carriers or other North American carriers.
EU (Europe) model is not supported in North America. JP (Japan) model only supported in Japan.

SixView Manager®

This remote device management software is designed to increase productivity and reduce cost for organizations using Sixnet series cellular RTUs and routers. A web-based console and customized dashboard provide users the ability to remotely access, configure and manage critical device information for several, even thousands of RAM cellular RTUs and IndustrialPro® cellular routers from a central location.

RAM 6000 Industrial Cellular RTUs

- Supports 4G LTE with fallback to 3G
- LTE multi-carrier operation in single device
- Split WAN/LAN on multi-Ethernet port models
- Fully configurable router with firewall and built-in Modbus gateway
- Event Engine can trigger I/O or send SMS messages
- Optional PoE Powered Device (PD) support
- Wide -40° to 75°C operating temperature range
- Redundant 8 to 30 VDC power inputs

	MODEL NUMBER	RS-232	10/100 COPPER	POWER CONNECTOR	GPS	CELLULAR	MULTI CARRIER	DEFAULT CARRIER
69XX	RAM-6900-(Carrier Code)	1	1	Molex	Y	4G LTE	Y	(AT) AT&T; (VZ) Verizon; (AM) Generic; (EU) Europe/ Asia; (JP) Japan
	RAM-6901-(Carrier Code)	1	1	DC powered	Y	4G LTE	Y	
	RAM-6901EB-(Carrier Code)	1	1	PoE	Y	4G LTE	Y	
	RAM-6921-(Carrier Code)	1	5	DC powered	Y	4G LTE	Y	
66XX	RAM-6600-(Carrier Code)	1	1	Molex	N	3G/CDMA	N	(SP) Sprint; (VZ) Verizon
	RAM-6601-(Carrier Code)	1	1	DC powered	N	3G/CDMA	N	
	RAM-6601EB-(Carrier Code)	1	1	PoE	N	3G/CDMA	N	
	RAM-6621-(Carrier Code)	1	5	DC powered	N	3G/CDMA	N	
68XX	RAM-6800-(Carrier Code)	1	1	Molex	N	3G/GSM	N	(AT) AT&T;(BM) Bell Mobility; (GE) Generic*; (MTS) Manitoba; (RO) Rogers; (TE) TELUS
	RAM-6801-(Carrier Code)	1	1	DC powered	N	3G/GSM	N	
	RAM-6801EB-(Carrier Code)	1	1	PoE	N	3G/GSM	N	
	RAM-6821-(Carrier Code)	1	5	DC powered	N	3G/GSM	N	

AM (Generic) model includes Bell Mobility, TELUS and Rogers carriers or other North American carriers.
EU (Europe) model is not supported in North America. JP (Japan) model only supported in Japan.

IndustrialPro® SN 6000 Cellular Routers

- Supports 4G LTE multi-carrier operation with fallback to 3G
- Rugged, compact industrial design
- Secure Out-of-Band Management (OOBM) solution for remote assets
- Fully configurable router with firewall
- Wide -40° to 75°C operating temperature range

	MODEL NUMBER	RS-232	10/100 COPPER	POWER CONNECTOR	GPS	CELLULAR	MULTI CARRIER	DEFAULT CARRIER
69XX	SN-6900-(Carrier Code)	1	1	Molex	N	4G LTE	Y	(AT) AT&T; (VZ) Verizon; (AM) Generic; (JP) Japan
	SN-6901-(Carrier Code)	1	1	DC powered	N	4G LTE	Y	
	SN-6901EB-(Carrier Code)	1	1	PoE	N	4G LTE	Y	
	SN-6921-(Carrier Code)	1	5	DC powered	N	4G LTE	Y	
66XX	SN-6600-(Carrier Code)	1	1	Molex	N	3G/CDMA	N	(SP) Sprint; (VZ) Verizon
	SN-6601-(Carrier Code)	1	1	DC powered	N	3G/CDMA	N	
	SN-6601EB-(Carrier Code)	1	1	PoE	N	3G/CDMA	N	
	SN-6621-(Carrier Code)	1	5	DC powered	N	3G/CDMA	N	
68XX	SN-6800-(Carrier Code)	1	1	Molex	N	3G/GSM	N	(AT) AT&T;(BM) Bell Mobility; (GE) Generic*; (MTS) Manitoba; (RO) Rogers; (TE) TELUS
	SN-6801-(Carrier Code)	1	1	DC powered	N	3G/GSM	N	
	SN-6801EB-(Carrier Code)	1	1	PoE	N	3G/GSM	N	
	SN-6821-(Carrier Code)	1	5	DC powered	N	3G/GSM	N	

AM (Generic) model includes Bell Mobility, TELUS and Rogers carriers or other North American carriers. JP (Japan) model only supported in Japan.

Media Converters

Red Lion's suite of media and protocol converters are designed to bridge connectivity between diverse media types as well as legacy and Ethernet networks. Providing fast performance and rugged operating specifications, the series includes remote access servers, serial-to-fiber converters, isolators, repeaters, serial-to-Ethernet converters, along with Ethernet media converters.

> Fast Ethernet and Gigabit connectivity solutions
> Secure remote serial access servers
> Designed for harsh industrial applications

SER & ESERV Serial Media Converters

> Extended environmental specifications
> Data rates up to 115.2Kbps (SER), 230.4Kbps (ESERV)
> Hardened DIN-rail enclosure

MODEL NUMBER	TYPE	RS-232 PORT	RS-422/ 485	SERIAL FIBER	10/100 COPPER	OPERATING TEMP
SER-485-FXC	Serial to multimode fiber converter	1 - either RS-232 or RS-422/485 - Terminal Block	-	1	-	-40˚ to 80˚C
SER-485-IC	Isolated converter RS-232 to RS-422/485	1-DB9	1 - terminal block	-	-	-40˚ to 80˚C
SER-485-IR	Isolated repeater	-	2 - terminal block	-	-	-40˚ to 80˚C
ESERV-11T	Serial server – serial to Ethernet	1 - either RS-232 or RS-422/485 - Terminal Block	-	-	1	-34˚ to 80˚C

ET Serial-to-Ethernet Converters

- Wide environmental specifications
- Easy to configure and deploy
- Reliable data transfer rates

MODEL NUMBER	TYPE	RS-232 PORT	RS-422/485	10/100 COPPER	OPERATING TEMP
ET-GT-232-1	Ethernet to serial Modbus gateway	1 - RS-232 - DB9	-	1	-34˚ to 70˚C
ET-GT-485-1	Ethernet to serial Modbus gateway	-	1 - RS-485 - DB9	1	-34˚ to 70˚C

SL & SLX Fiber Media Converters

- Plug-and-play installation saves time and money
- Slim robust design for industrial applications
- Wide selection of fiber connectivity options

MODEL NUMBER	TYPE	TOTAL PORTS	FAST ETHERNET		GIGABIT ETHERNET		MOUNTING & CASE	OPERATING TEMP
			10/100 COPPER	100 FIBER	10/100/1000 COPPER	GIG SFP		
SL-2ES-2/3	Unmanaged	2	1	1	-	-	DIN-Rail – Lexan	-10˚ to 60˚C
SLX-3ES-2/3	Unmanaged	3	2	1	-	-	DIN-Rail – Metal	-40˚ to 85˚C
SLX-3EG-1SFP	Unmanaged	3	-	-	2	1 SFP	DIN-Rail – Metal	-40˚ to 85˚C

100, 300 & 1000 Fiber Media Converters

- Compact, hardened metal DIN-rail housing
- Convert copper to Fast Ethernet or Gigabit Fiber
- Available in SC and ST fiber connectors

MODEL NUMBER	TYPE	TOTAL PORTS	FAST ETHERNET		GIGABIT ETHERNET		MOUNTING & CASE	OPERATING TEMP
			10/100 COPPER	100 FIBER	10/100/1000 COPPER	GIG FIBER		
102MC	Unmanaged	2	1	1	-	-	DIN-Rail – Metal	-40˚ to 80˚C
302MC	Unmanaged	2	1	1	-	-	DIN-Rail – Metal	-40˚ to 70˚C
1002MC	Unmanaged	2	-	-	1	1 SFP	DIN-Rail – Metal	-40˚ to 85˚C

Accessories

Red Lion's rugged, reliable industrial Ethernet and wireless products demand the same level of performance as the applications that they are a part of. That's why the following power supplies, configuration and recovery devices, mounting kits and SFP transceivers are designed to provide years of trouble-free service in industrial applications.

> Industrial-grade accessories
> Designed to provide reliable performance in harsh environments

Power Supplies

MODEL NUMBER	DESCRIPTION	OUTPUT POWER
NTPS-24-1.3	DIN-rail power supply	1.3 Amp @ 24 VDC
NTPS-24-2.5	DIN-rail power supply, NEMA TS2 certified	2.5 Amp @ 24 VDC
NTPS-24-3	DIN-rail power supply	3 Amp @ 24 VDC
NTPS-24-5	DIN-rail power supply	5 Amp @ 24 VDC
NTPS-24-20	DIN-rail power supply	20 Amp @ 24 VDC
NTPS-48-2	DIN-rail power supply	2 Amp @ 48 VDC
NTPS-48-5	DIN-rail power supply	5 Amp @ 48 VDC
NTPS-48-10	DIN-rail power supply	10 Amp @ 48 VDC

Configuration & Recovery Devices

MODEL NUMBER	DESCRIPTION	COMPATIBLE MODELS
NTCD-CFG	SD card, configuration and recovery device	NT24k
NTCD-128	SD card, configuration and recovery device	700, 7000
700-NTCD-M12	M12 connector, configuration and recovery device	708M12, 716M12

Mounting Kits

MODEL NUMBER	DESCRIPTION	FACTORY OPTION
300-PMK	Panel mount kit for 300 switches; converts switch from DIN-rail to panel mount	
500-UTA89	Metal DIN-rail clip for 508TX, 508FX2 and 509FX	
700-PM	Panel mount kit for 700 and 7000 (Excludes 702-W and 708M12)	
702-W-PM	Panel mount kit for 702-W Wi-Fi radio	
702M12-PK	Pole mount kit for 702M12-W Wi-Fi radio	
900-PM	Panel mount kit for 300, 500 and 700 (Excludes 524TX and 526FX2)	
1000-PM	Panel mount kit for 105TX-SL, 1000 and 7506	
CPMA-1	Metal panel mount option for 709FX, 710FX2, 711FX3 and 7010TX	Y
CPMA-2	Metal panel mount option for 712FX4 and 714FX6	Y
M12DRC-ISO	DIN-rail kit for M12 products; two isolated plastic DIN-rail and mounting clips included	
M12DRC-MTL	DIN-rail kit for M12 products; two metal DIN-rail and mounting clips included	
URMK	19” Universal rackmount kit for 100	
NT24K-DR-PMK	Panel mount kit for NT24k-DR16 and NT24k-DR24	
NT24K-PMK	Panel mount kit for NT24k	
7026TX-PMK	Panel mount kit for 7026TX	

Wi-Fi Accessories

MODEL NUMBER	DESCRIPTION
ANT-LA6-NFF	2-6 GHz, quarter wave lightning arrestor
ANT-MD24-12	2.4 GHz, 12dBi mini directional antenna
ANT-PAD24-14	2.4 GHz, 14dBi panel directional antenna
ANT-PAD58-20	5.8 GHz, 20dBi panel directional antenna
ANT-PD58-32	5.8 GHz, 32dBi parabolic dish antenna

SFP Transceivers

MODEL NUMBER	SPEED	CONNECTOR	DISTANCE	TYPE	COMPATIBLE SERIES
NTSFP-TX	1000BaseT Copper	RJ45	100m	Copper	N-Tron
NTSFP-FX	100BaseFX	LC	2km	Multimode	N-Tron
NTSFP-FXE-15	100BaseFX	LC	15km	Singlemode	N-Tron
NTSFP-FXE-40	100BaseFX	LC	40km	Singlemode	N-Tron
NTSFP-FXE-80	100BaseFX	LC	80km	Singlemode	N-Tron
NTSFP-SX	1000BaseSX	LC	550m	Multimode	N-Tron
NTSFP-LX-10	1000BaseLX	LC	10km	Singlemode	N-Tron
NTSFP-LX-40	1000BaseLX	LC	40km	Singlemode	N-Tron
NTSFP-LX-80	1000BaseLX	LC	80km	Singlemode	N-Tron
FCOPPER-SFP-100	10/100Base-T(X)	RJ45	100m	Copper	Sixnet
FMFIBER-SFP-2K	100BaseFX	LC	2km	Multimode	Sixnet
FMFIBER-SFP-4K	100BaseFX	LC	4km	Multimode	Sixnet
FSFIBER-SFP-100	100BaseFX	LC	100km	Singlemode	Sixnet
FSFIBER-SFP-30K	100BaseFX	LC	30km	Singlemode	Sixnet
FSFIBER-SFP-60K	100BaseFX	LC	60km	Singlemode	Sixnet
GMFIBER-SFP-500	1000BaseSX	LC	550m	Multimode	Sixnet
GMFIBER-SFP-2K	1000BaseSX	LC	2km	Multimode	Sixnet
GSFIBER-SFP-10K	1000BaseLX	LC	10km	Singlemode	Sixnet
GSFIBER-SFP-30K	1000BaseLX	LC	30km	Singlemode	Sixnet
GSFIBER-SFP-50K	1000BaseLX	LC	50km	Singlemode	Sixnet
GSFIBER-SFP-80K	1000BaseLX	LC	80km	Singlemode	Sixnet

3G Antennas

- Support for 3G and 2G cellular frequencies
- Mounting options include magnetic or bolt-through options
- Available with GPS and/or Wi-Fi built-in
- Two antennas recommended for optimal performance

MODEL NUMBER	DESCRIPTION	CONNECTOR & CABLE TYPE	WHERE USED
ANT-TG090113	2G/3G 3" hinged antenna	SMA male, no cable	SN 6000, RAM 6000, RAM 9000
ANT-GA107201111	2G/3G 4.5" whip magnetic mount antenna, IP65 rated	SMA male, RG-174 (2 meter)	SN 6000, RAM 6000, RAM 9000
ANT-G21B301111	2G/3G low profile direct permanent mount antenna, IP65 rated	SMA male, RG-174 (3 meter)	SN 6000, RAM 6000, RAM 9000
ANT-MA301AAB001	2G/3G plus GPS, low profile magnetic mount antenna, IP67 rated	(2) SMA male, RG-174 (3 meter)	RAM 9000
ANT-MA104CAB015	2G/3G plus GPS, low profile direct permanent mount, IP67 rated	(2) SMA male, RG-174 (3 meter) both cables	RAM 9000
ANT-MA520ABC008	2G/3G low profile direct permanent mount, dual band Wi-Fi, IP67 rated	SMA male - cellular and RPSMA male - Wi-Fi both cables RG-316 (2 meter)	RAM 9000

4G Antennas

- Support for 4G LTE, 3G and 2G cellular frequencies
- Mounting options include direct, magnetic or bolt-through options
- Available with built-in GPS and/or Wi-Fi
- MIMO configuration requires two antennas for optimal performance

MODEL NUMBER	DESCRIPTION	CONNECTOR & CABLE TYPE	WHERE USED
FANWAND721SMA	2G/3G/4G LTE paddle antenna	SMA male, no cable	SN 6000, RAM 6000, RAM 9000
ANT-GA110101111	2G/3G/4G LTE 13" whip antenna, IP65 rated	SMA male, RG-174 (1 meter)	SN 6000, RAM 6000, RAM 9000
ANT-G30B108111	2G/3G/4G LTE low profile direct permanent mount antenna, IP67 rated	SMA male, RG-316 (1 meter)	SN 6000, RAM 6000, RAM 9000
ANT-MA741ABI001	2G/3G/4G LTE MIMO direct permanent mount antenna, IP67 rated	LTE + Cell (both lines) SMA male, CFD-200 Low loss cable (3 meters)	SN 6000, RAM 6000, RAM 9000
ANT-MA710AABI001	2G/3G/4G LTE MIMO plus GPS direct permanent mount antenna, IP67 rated	LTE and cellular (both lines) have SMA male, CFD-200 low loss cable (3 meters); GPS has SMA male RG-174 (3 meters)	RAM-69XX, RAM 9000
ANT-MA760AABIC003	2G/3G/4G LTE MIMO plus GPS and dual band Wi-Fi permanent mount antenna, IP67 rated	LTE and cellular (both lines) have SMA male, CFD-200 low loss cable (3 meters); GPS has SMA male RG-174 (3 meters); Wi-Fi has RPSMA male (3 meters)	RAM 9000

Cellular Wi-Fi Antennas

- 2.4 GHz band Wi-Fi
- RPSMA male antenna connector
- Small size for tight spaces
- High-gain models for longer distance connectivity

MODEL NUMBER	DESCRIPTION	CONNECTOR & CABLE TYPE	WHERE USED
ANT-GW11A153	Wi-Fi antenna, standard 2 dBi WLAN 2.4 GHz, 4" hinged	RPSMA male, no cable	RAM 9000
ANT-GW260152	Wi-Fi antenna, WLAN 2.4 GHz, 1" fixed right angle	RPSMA male, no cable	RAM 9000
ANT-GW715153	Wi-Fi antenna, high gain dual band, 7" hinged	RPSMA male, no cable	RAM 9000

Cellular Cables & Mounts

- Industrial-grade accessories
- Power adapters, cables and mounts

MODEL NUMBER	PRODUCT	DESCRIPTION	WHERE USED
FPSALACadapter	Power Supply AC/DC Adapter Molex	Power supply AC adapter (AC-DC), 4 pin Molex and 6 ft. cable	Cellular routers and RTUs with molex option
FPSALACadapter2	Power Supply AC/DC Adapter Barrel	Power supply AC adapter (AC-DC), AC adapter with 12mm barrel and 6 ft. cable	Cellular routers and RTUs with AC adapter barrel connector option
FCATAFUSEAUTO	Cigarette Lighter Adapter	Car adapter 6 ft. 12V DC 3 Amps, 250V fuse automobile adapter	Cellular routers and RTUs with DC power option
FCATAFUSECABLE	Direct Current Fused Power Cable	Direct current fused power cable 15ft. DC 2 Amps, 250V fuse power cable	BT-6600, BT-6800, BT 5000
FCASTMXT100	Serial Cable (RS-232-DB9)	Serial cable (RS-232-DB9), 6 ft. DB9 male to DB9 female	All cellular routers and RTUs with DB9 serial port
FCAALUSBAMBM	USB Cable	USB cable 3 ft. cable type A male/type B male	BT 5000
FCAALUSBMINI	USB Mini Cable	USB type A male/mini B male cable, 5 pin, black, 6ft.	All cellular routers and RTUs
FWH1010FTMolex	I/O Wire Harness	I/O wire harness 10 ft. wire harness 10-pin Molex	BT 5000
DIN-CLIP-1	DIN-Rail Clip 1”	1 inch aluminum DIN-rail clip with two screws	BT 6000, SN 6000, RAM 6000
DIN-CLIP-1.5	DIN-Rail Clip 1.5”	1.5 inch aluminum DIN-rail clip with three screws	BT 6000, SN 6000, RAM 6000 5 Ethernet port versions
DIN-CLIP-2.3	DIN-Rail Clip 2.3”	2.3 inch aluminum DIN-rail clip with three screws	RAM 9000
F-CO-ST-4pin	Screw Terminal	Connector terminal, 4-pin plug with screws	BT 6000, SN 6000, RAM 6000 DC input versions

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