

Lynx+, Managed Ethernet Switch with Routing Functionality



- > Made Easy and secure configuration – Web config and CLI
- > Future-proof feature rich software platform – WeOS
- > Extensive routing support – OSPF, RIP, VRRP, Firewall
- > IPsec VPN, SNMPv3, VLAN, IGMP Snooping
- > Interoperability with Redfox and Wolverine series
- > True industrial specification



Overview

Lynx+ is an Ethernet switch with an enhanced set of functions for advanced layer 2 switching as well as layer 3 routing. Static and dynamic routing is possible and the most widely used routing protocols, OSPFv2 and RIPv1/v2 are supported. OSPFv2 and RIPv1/v2. Lynx+ has a wide range of Layer 3 network features for improved security such as VRRP, NAT, Port Forward, Firewall, IPsec VPN etc.

Features for complex networks

Our unique FRNT technology is the fastest protocol on the market to re-configure a large network in the event of any link or hardware failure. Lynx+ also supports STP/RSTP in case of need for standard protocol. STP/RSTP and FRNT can also be combined meaning that the Lynx+ can be integrated with products from other vendors in redundant network solutions. IGMPv2/v3 with stop filter and the unique Westermo protocol 'Fast Reconnect' allow a video stream to reconfigure very fast (20 ms) (20 ms). Advanced functionality for VLANs with support for up to 64 virtual network, combined with Layer 3 Protocols allows unprecedented levels of network security.

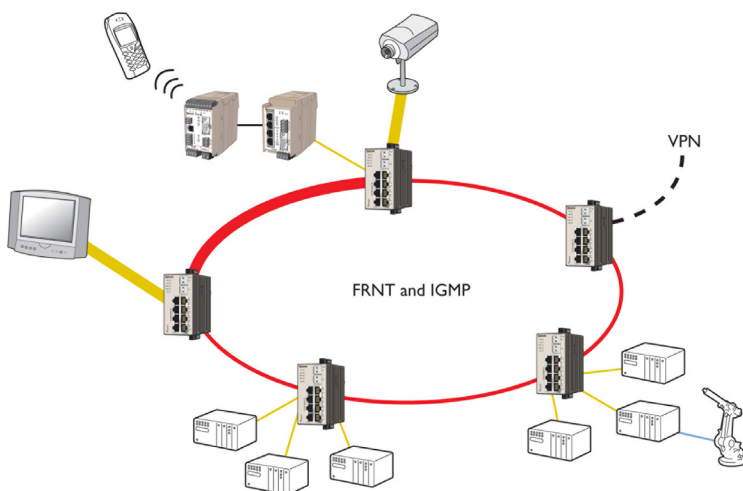
Made easy and secure configuration

You can safely access your switch from anywhere in the network, or directly to the product via a console port. The HTTPS secured web configuration interface has been designed 'Made Easy', setting up a redundant ring or a VLAN is just a few clicks away. For more advanced configuration, you will find an SSH encrypted industry standard CLI which allows extremely detailed settings. For safe handling and MIB readout the switch is also equipped with SNMPv3.

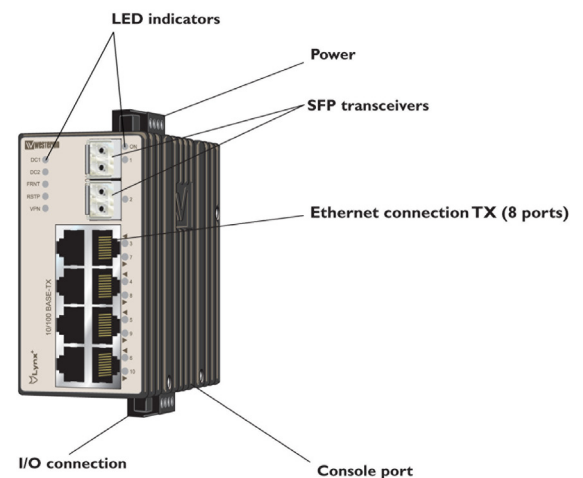
Designed for harsh industrial environments

Lynx+ is designed for use in industrial environments. No fans or other moving parts and only industrial grade components are used. The product is type-tested and approved according to a variety of industrial standards. Lynx+ can handle a wide input range from 24 to 48 VDC and can operate in temperatures from -40° to +70°C degrees.

Application



Interfaces



Specifications

Power

Operating voltage	Rated: 24 to 48 VDC Operating: 19 to 60 VDC
Rated current	240 mA @ 24 VDC 120 mA @ 48 VDC
Rated frequency	DC
Inrush current, I _{2t}	6.4 · 10 ⁻³ A2s @ 48 VDC
Startup current*	2 * Rated current * External supply current capability for proper start-up
Polarity	Reverse polarity protected
Redundant power input	Yes
Isolation to	All other
Connection	Detachable screw terminal
Connector size	0.2 – 2.5 mm ² (AWG 24 – 12)
Shielded cable	Not required

Ethernet TX

Electrical specification	IEEE std 802.3. 2005 Edition
Data rate	10 Mbit/s or 100 Mbit/s, manual or auto
Duplex	Full or half, manual or auto
Circuit type	TNV-1
Transmission range	Up to 150 m (492 ft) with CAT5e cable or better
Isolation to	All other
Connection	RJ-45 auto MDI/MDI-X
Shielded cable	Not required, except when installed in Railway applications as signalling and tel-ecomunications apparatus and located close to rails.*
Conductive housing	Yes
Number of ports	8

Ethernet SFP pluggable connections (FX or TX)

Electrical specification	IEEE std 802.3. 2005 Edition
Data rate	100 Mbit/s or 1000 Mbit/s transceivers supported
Duplex	Full or Auto, depending on transceiver
Transmission range	Depending on transceiver
Connection	SFP slot holding fibre transceiver or copper transceiver
Number of Ports	1 or 2

* To minimise the risk of interference, a shielded cable is recommended when the cable is located inside 3 m boundary or the cable is longer than 30 m and inside 10 m boundary to the rails and connected to this port.

I/O / Relay output

Maximum voltage/current	60 VDC / 80 mA
Connect resistance	Max 30 Ω
Isolation to	All other
Connection	Detachable screw terminal
Connector size	0.2 – 2.5 mm ² (AWG 24 – 12)

I/O / Digital input

Maximum voltage/load current	60 VDC / 2 mA
Voltage levels	Logic one >12V Logic zero <1V
Isolation to	All other
Connection	Detachable screw terminal
Connector size	0.2 – 2.5 mm ² (AWG 24 – 12)

Console

Electrical specification	TTL-level
Data rate	115.2 kbit/s
Protocol	8 data bits, no parity, 1 stop bit, no flow control
Circuit type	SELV
Isolation to	All other
Connection	2.5 mm jack, use only Westermo cable 1211-2027

Protocols and Functionality

Ethernet Technologies	IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseTX and 100Base FX IEEE 802.3ab for 1000BaseT IEEE 802.3z for 1000BaseX
Resiliency and High Availability	Fast Reconfiguration of Network Topology (FRNT) FRNT Link Health Protocol (FLHP) IEEE 802.1D Spanning Tree Protocol (STP) IEEE 802.1w Rapid STP (RSTP)
Layer-2 Switching	IEEE 802.1Q Static VLAN and VLAN Tagging IEEE 802.3x Flow Control IGMPv2/v3 snooping AVT Dynamic VLAN (Westermo Adaptive VLAN Trunking) Management VLAN (Westermo Management Interface concept)
Layer-2 QoS	IEEE 802.1p Class of Service Flexible classification VLAN tag,VLAN ID, IP DSCP/ToS, Port ID)
IP Routing, Firewall and VPN	Static IP routing Dynamic IP routing <ul style="list-style-type: none"> • OSPFv2 • RIPv1/v2 VRRP Firewall, NAT, Port Forwarding IPsec VPN
Manageability	Management tools <ul style="list-style-type: none"> • Web interface (HTTP and HTTPS) • Command Line Interface (CLI) via console port and SSHv2 • Westermo IPConfig tool • SNMPv1/v2c/v3 • Flexible management of configuration and log files • Secure Copy (SCP) for remote file upload and download • Local file management via HTTP, FTP,TFTP and SCP • Load/save files from/to USB memory stick Syslog (log files and remote syslog server) Digital I/O Port Monitoring SNTP (NTP client) DHCP client DHCP server DDNS
SNMP MIB support	RFC1213 MIB-2 RFC2863 Interface MIB (ifXTable) RFC2819 RMON MIB (etherStatsTable) RFC4188 Bridge MIB RFC4318 RSTP MIB RFC4363 Q-BRIDGE MIB (dot1qVlan and dot1qVlanStaticTable) RFC4836 MAU MIB (dot3IfMauBasicGroup and dot3IfMauAutoNegGroup) RFC4133 Entity MIB (entityPhysical) RFC3433 Entity Sensor MIB WESTERMO PRIVATE MIB

Type tests and environmental conditions

Environmental Phenomena	Test	Description	Test levels
ESD	EN 61000-4-2	Enclosure contact	± 6 kV
		Enclosure air	± 8 kV
Fast transient	EN 61000-4-4	Signal ports	± 2 kV
		Power ports	± 2 kV
		Earth ports	± 1 kV
Surge	EN 61000-4-5	Power port	L-E: ±0.5 kV, 12 Ω, 9 μF L-L: ±0.5 kV, 2 Ω, 18 μF L-E: ±2 kV, 42 Ω, 0.5 μF L-L: ±2 kV, 42 Ω, 0.5 μF L-E: ±2 kV, 12 Ω, 9 μF L-L: ±1 kV, 12 Ω, 9 μF
		Signal ports	L-E: ±1 kV, 2 Ω L-E: ±2 kV, 42Ω, 0.5 μF
Power frequency magnetic field	EN 61000-4-8	Enclosure	300 A/m; 0, 16.7, 50 Hz
Pulse magnetic field	EN 61000-4-9	Enclosure	300 A/m
Radiated RF immunity	EN 61000-4-3	Enclosure	10 V/m @ (80 – 800) MHz 20 V/m @ (800 – 1000) MHz 10 V/m @ (1400 – 2100) MHz 5 V/m @ (2100 – 2500) MHz 1 V/m @ (2500 – 2700) MHz 1 kHz sine, 80% AM
Conducted RF immunity	EN 61000-4-6	Power port	10 V, 80% AM, 1 kHz; (0.15 – 80) MHz
		Signal ports	10 V, 80% AM, 1 kHz; (0.15 – 80) MHz
		Earth ports	10 V, 80% AM, 1 kHz; (0.15 – 80) MHz
Radiated emission	EN 55022	Enclosure	Class A
	FCC Part 15		Class A
Conducted emission	EN 55022	Power port	Class B
		Signal ports	Class B
Dielectric strength	EN 60950-1	Signal port to other isolated ports	1.5 kVrms, 50 Hz, 1 min
		Power port to other isolated ports	1.5 kVrms, 50 Hz, 1 min
Environmental			
Temperature		Operating	–40 to +70°C
		Storage & Transport	–40 to +85°C
Humidity		Operating	5 to 95% relative humidity
		Storage & Transport	5 to 95% relative humidity
Altitude		Operating	2 000 m / 70 kPa
Service life		Operating	10 year
Vibration	IEC 60068-2-6 (sine)	Operating	3 – 13.2 Hz: 1mm 13.2 – 100 Hz: 0.7 g 5.5 – 30 Hz: 1.5 g 30 – 50 Hz: 0.42 mm 50 – 500 Hz: 4.2 g*
	IEC 60068-64 (random)	Operating	5 – 20 Hz: 2 m2/s3 20 – 2000 Hz: –3 dB/oct
Shock	IEC 60068-2-27	Operating	30 g, 11 ms 100 g, 6 ms*
Bump	IEC 60068-2-27	Operating	10 g, 11 ms
Packaging			
Enclosure	EN 60950-1	Zinc	Fire enclosure
Dimension W x H x D with connectors			52.5 x 100 x 101 mm 52.5 x 119 x 101 mm
Weight			0.7 kg
Degree of protection	EN 60529	Enclosure	IP 40
Cooling			Convection

* Might require Ethernet cables to be fastened close to the unit.

Ordering Information

Part Numbers	Description
Lynx+	Managed Ethernet Switch with Routing Functionality