Industrial Ethernet Switch

Lynx 3000 Series

- **High performance and flexibility**
  - Available both as layer 2 and layer 3 models
  - Support for up to 2.5 gigabit speeds
  - Advanced WeOS support
- **Robust for long service life**
  - -40 to +70 °C without ventilation holes[a]
  - Industrial, marine and trackside type tested
  - Ultra-robust IP40 metal housing
- **Compact industrial Ethernet switch**
  - Many integrated mounting options
  - Flexible SFP transceiver design
  - Low power consumption
- **Best-in-class cybersecurity**
  - Cybersecurity suite with 802.1x, stateful firewall and more
  - Design based on 62443 demands



EN 50121-4 Railway Trackside | EN 61000-6-2 Industrial Immunity | EN 61000-6-4 Industrial Emission | NEMA TS 2 Traffic Controller Assemblies

Product Description

The Lynx 3000 is a series of compact high performance industrial managed switches and routers developed with the needs of current and future industrial data networks in mind. The switches are designed for the harshest industrial environments and can withstand extreme temperatures, vibrations, humidity and electrical environments. The use of only industrial grade components ensures market leading mean time between failure (MTBF), maximized service life, and reduced operational and life cycle costs.

The series provides layer 2 and layer 3 functionality, enabling complex ring networks and routing solutions. It features a rich assortment of variants for various use cases, including applications requiring true high performance. With models supporting up to 2.5 gigabit speeds, as well as entry-level models optimised for Fast Ethernet applications, the series is ideal for handling big data, high bandwidth, and mission-critical applications.

Power over Ethernet (PoE) versions provide up to 30 W output per port and a total budget of 240 W of total budget. The possibility of lean, simple installations is ideal, as both connectivity and power can be provided by a single cable. These switches have advanced PoE management features for connecting HD IP CCTV cameras in industrial settings, as well as other power-hungry applications.

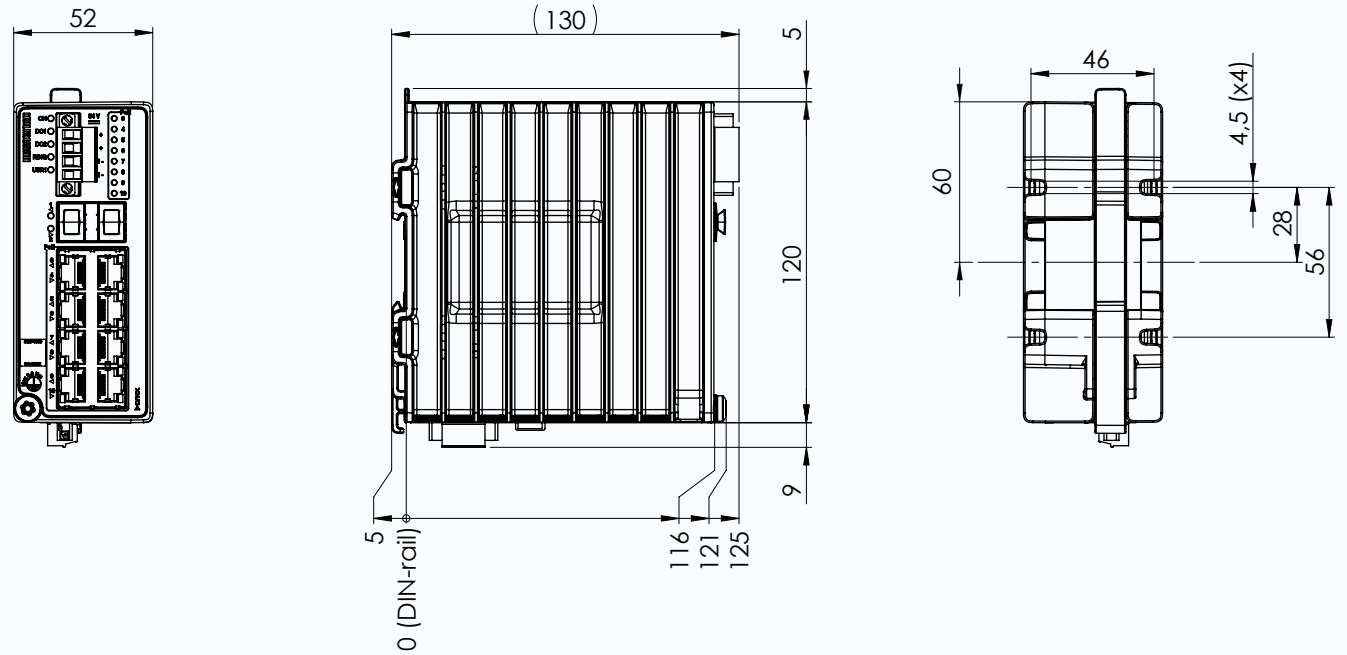
The series is powered by the WeOS operating system, providing robust operation and support for a broad and growing set of industrial networking protocols and features. The switches are designed for the harshest industrial environments and can withstand extreme temperatures, vibrations, humidity and electrical environments. The use of only industrial grade components ensures market leading mean time between failure (MTBF), maximized service life, and reduced operational and life cycle costs.

Cybersecurity is built into the platform from the start. Secure Boot and TPM provide hardware-anchored integrity protection from startup, while integrated security functions such as VPN, stateful firewall and IEEE 802.1X support secure operation in demanding industrial environments. The Lynx 3000 series is designed with IEC 62443 requirements in mind, which makes them ideal for mission-critical applications in transportation, manufacturing, energy, smart cities and other industries where reliability, long service life and secure communication are essential.

[a]See user guide for limitation

Specifications - Lynx 3000 Series

Dimensional drawing



Housing	
Dimensions (W x H x D)[a.]	52 x 134 x 130 mm (2.05 x 5.28 x 5.19 inches)
Housing	Full metal
Weight	1100 gr

[a.] Including contact and DIN-rail fastener

Power parameters	
Rated voltage	12 to 48 VDC (non PoE models) 54 VDC (PoE models)
Operating voltage	9.6 to 60 VDC (non-PoE models) PoE models: 802.3at (PoE+): 53 to 57 VDC 802.3af: 48 to 57 VDC No PoE usage: 12 to 57 VDC
Rated current	Max 0.6 A at 12 VDC, max 0.16 A at 48 VDC
Power budget (PoE models)	Max. 240 W total PD consumption Max. 30 W per PoE port

Environmental	
Operating temperature	-40 to +70°C (-40 to +158°F)
Storage and transport temperatures	-40 to +85°C (-40 to +185°F)
Ingress protection	IP40
Humidity (operating)	5-95% relative humidity
Corrosive gases	IEC 60068-2-60
Altitude	2000 m/80 kPa
MTBF Telcordia	Non-PoE models: Lynx-3310(-E)-F2G-T8-LV: 1,138,000 hours Lynx-3306(-E)-F2G-T4-LV: 1,122,000 hours All others: 1,035,000 hours PoE models: 638,000 hours
MTBF MIL-HBDK-217F	Non-PoE models: Lynx-3310(-E)-F2G-T8-LV: 974,000 hours Lynx-3306(-E)-F2G-T4-LV: 1,477,000 hours All others: 879,000 hours PoE models: 583,000 hours

Model[a.]	Total no. of ports	Copper ports			SFP ports		Slots
		No. of ports/Speed/PoE			No. of ports/Speed		
3306-F2G-T4-LV	6	4	100 Mbit/s	-	2	1 Gbit/s	-
3306-E-F2G-T4-LV							
3310-F2G-T8-LV	10	8	100 Mbit/s		2	1 Gbit/s	
3310-E-F2G-T8-LV							
3510-F2G-T8G-LV			1 Gbit/s				I/O and SD
3510-E-F2G-T8G-LV							
3510-F2G-P8G-LV				Yes			
3510-E-F2G-P8G-LV							
3510-F2G2.5-T8G-LV				-		2.5 Gbit/s	
3510-E-F2G2.5-T8G-LV							
3510-F2G2.5-P8G-LV				Yes			
3510-E-F2G2.5-P8G-LV							

[a.](E-) = layer 3 WeOS extended functionality, (none) = layer 2

Interface	
SFP ports	2 x 2.5 Gbit/s (2.5G models) 2 x 1 Gbit/s (all other models)
Ethernet ports	802.3at/af (PoE+/PoE): 4/8 x 10/100/(1000)[a.]BaseT(X), RJ45 connector[b.]
Console	USB-C (emulate serial port, 115200 bps)
Micro SD	Secure Digital 2.0
Digital input	1 pcs, screw terminal
Digital output	1 pcs, screw terminal

[a.]Only applicable for 3510 models

[b.]3306 models has only 4 Ethernet ports

Approvals	
EMC	EN/IEC 61000-6-2, Immunity industrial environments EN/IEC 61000-6-4, Emission industrial environments
Trackside	EN 50121-4/IEC 62236-4, Railway signalling and telecommunications apparatus
Environmental[a.]	NEMA TS2, Traffic Controller Assemblies with NTCIP Requirements
Marine	DNV rules for classification - Ships and offshore units
Safety	EN/IEC/UL 61010-1, Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1: General requirements EN/IEC/UL 61010-2-201, Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 2-201: Particular requirements

[a.]Applicable for non-PoE models only

Switch properties	
Number of VLAN	64
Priority queues	8

Software	
WeOS	WeOS 5; westermo.com/solutions/weos
WeConfig	westermo.com/solutions/weconfig

Warranty	
Validity	5 years

Ordering information	
Art. no.	**Description**
3627-0600	Lynx 3306-F2G-T4-LV
3627-0610	Lynx 3306-E-F2G-T4-LV
3627-0560	Lynx 3310-F2G-T8-LV
3627-0570	Lynx 3310-E-F2G-T8-LV
3627-0520	Lynx 3510-F2G-T8G-LV
3627-0530	Lynx 3510-E-F2G-T8G-LV
3627-0500	Lynx 3510-F2G-P8G-LV
3627-0510	Lynx 3510-E-F2G-P8G-LV
3627-0540	Lynx 3510-F2G2.5-T8G-LV
3627-0550	Lynx 3510-E-F2G2.5-T8G-LV
3627-0580	Lynx 3510-F2G2.5-P8G-LV
3627-0590	Lynx 3510-E-F2G2.5-P8G-LV

Accessories	
1 Gbit transceivers **2.5 Gbit transceivers**	https://www.westermo.com/products/accessories/sfp-transceivers
3125-0150	PS-60, power supply
3125-0160	PS-260, DIN-rail power supply unit

Specification WeOS 5

The WeOS operating system has been developed by Westermo for its current as well as future range of Ethernet hardware products. This layer 2 and layer 3 switching solution enables Westermo to create complex multimedia ring networks and routing solutions. WeOS not only provides solutions to many challenging industrial networking issues, but also helps to protect investments by ensuring the future availability of fully compatible solutions. WeOS is the core of our latest ranges of Ethernet hardware allowing complex multimedia ring networks and routing solutions to be created.

Westermo has many years of experience developing products for industrial applications. At the heart of all Westermo networking solutions is the need for ease of use. By standardising on a single operating system for all Westermo Ethernet products this helps to simplify the installation, operation and maintenance of individual devices and complete networks. Once a user is familiar with a Westermo product, that knowledge can be readily applied to all our other devices. A web screen simplifies the configuration of many functions, whilst a command line interface allows for fine tuning.

WeOS Standard - Layer 2 protocols and functionality
Resilience and High Availability
FRNTv0/v2 flexible ring topologies (multiring, subrings and ring coupling), IEEE 802.1D/802.1w (RSTP), IEEE 802.1AX/802.3ad Link Aggregation (LACP and Static), IEC 62439-2 Media Redundancy Protocol (MRP; single instance or dual instances at MRP master)[a.]
Layer 2 Switching
IEEE 802.1D MAC Bridges, IEEE 802.1Q Static VLAN and VLAN Tagging, Q-in-Q Tunnelling, IEEE 802.1AB LLDP, IGMPv1/v2/v3 Snooping, Static Multicast MAC filters, MLDv1/v2 Snooping
Layer 2 QoS
IEEE 802.1p Class of Service with flexible classification (VLAN tag priority, IP DSCP/ToS, Port ID), MAC Authentication, IEEE 802.1X Port Access Control, Ingress and Egress Rate limiting
IP Host Services
Static IPv4/v6 Address, DHCP Client, DNS Client, DDNS, ZeroConf (mDNS and SSDP), NTP Client (NTPv4), IPv4/v6 Interfaces (Ethernet, VLAN, Loopback and Blackhole)
Network Servers
DHCP Server (including options 1, 3, 6, 7, 12, 15, 42, 61, 66, 68 and 82), DHCP Relay Agent (including options 54 and 82), DNS Proxy Server (DNS forwarder and Host records), NTP client/server (NTPv4)
Management Tools
Westermo configuration tool WeConfig, Web interface (HTTP and HTTPS), Command Line Interface (CLI) via console port, SSHv2 and Telnet, Local and Central Authentication (RADIUS/TACACS+), Role Based Access Control (RBAC), Password Compliance Policy, SNMPv1/v2c/v3, Secure Copy (SCP) for remote file upload and download, Local file management (via HTTP, FTP, TFTP and SCP), Load/save files from/to external memory[b.], Configuration and Deployment using external memory[b.], Tech support button, Flexible alarm and event handling system, RFC5424/RFC3164 Syslog (log files and remote syslog server), Port monitoring
SNMP MIB Support (read-only)
RFC 1213 MIB-2, RFC 2819 RMON MIB, RFC 2863 Interface MIB, RFC 3433 Entity Sensor MIB, RFC 3635 Ether-like Interface MIB, RFC 4133 Entity MIB, RFC 4188 Bridge MIB, RFC 4318 RSTP MIB, RFC 4363 Q-BRIDGE MIB, RFC 4836 MAU MIB, IEEE 802.1AB LLDP MIB, IEEE 802.1AX LAG MIB, IEC 62439-2 MRP MIB, WESTERMO-DDM MIB (SFP), WESTERMO-EVENT MIB, WESTERMO-FRNT MIB, WESTERMO-INTERFACE MIB, WESTERMO-TCN MIB

[a.] Available as add-on-function. Please see your local Westermo sales contact to purchase a license for your product.

[b.] Only applicable for models with SD card slot

WeOS Extended - Layer 3 protocols and functionality[a.]
IP Host Services
IP Interfaces (SSL, VPN, GRE)
IP Routing and VPN
Static IP Routing, Floating Static Routes, Multinetting, Proxy ARP, Dynamic IP routing (OSPFv2, RIPv1/v2), VRRPv2/v3, Protocol Independent Multicast - Sparse-Mode (PIM-SM), Static Multicast Routing, Stateful Inspection Firewall, Firewall Hit Counters, IP Masquerading (NAT/NAPT), Port Forwarding, Stateless NAT (1-1 NAT), IPsec VPN (IKEv2 PSK), SSL VPN (Client and Server, Certificate Authentication, Pre-shared Key (PSK) Point-to-Point Mode, Layer-2 and Layer-3 VPN, Layer-2 VPN bridging, Address pool and address per CN, TLS Authentication), Generic Routing Encapsulation (GRE), Policy Based Routing, Equal-Cost Multi-Path (ECMP), OpenVPN Multipath TCP (MPTCP), Route monitor
SNMP MIB Support (read-only)
RFC 2787 VRRPv2 MIB, RFC 6527 VRRPv3 MIB

[a.] Products with software level WeOS Extended include all functionality listed for WeOS Standard