WESTERMO

WeOS | ▶ LYNX

DIN-rail Substation Automation Switch
Lynx-5612

- **Ideal for substations and their communication networks**
  - Supporting various substation topologies
  - Dedicated IEEE 1588v2 PTP hardware
  - Multiple network resilience solutions
- **Uncompromising performance at class-leading compactness**
  - Markets most compact high performance IEC 61850-3 switch
  - Bandwidth for today and the futures network expansions
  - An evolving platform providing maximum service life
  - Featuring 5th generation WeOS including an array of cybersecurity features
- **Proven robustness and reliability**
  - Designed for demanding mission critical applications
  - High EMI immunity with comprehensive approvals
  - Diminishing risk for downtime and maintenance-free operation for years

CE   DNV·GL MARITIME

IEC 61850-3
Substation Automation

EN 50121-4
Railway Trackside

EN 61000-6-1
Residential Immunity

EN 61000-6-2
Industrial Immunity

EN 61000-6-3
Residential Emission

EN 61000-6-4
Industrial Emission

EN 61000-6-5
Immunity Power Station &
Substation Environments

EN 61010-1
Safety Industrial Equipment

Product Description

The Lynx 5612 is a high-performance substation automation-approved Ethernet switch ideal for energy and substation automation applications.

It is the most compact high-performance switch for energy systems on the market. It has been developed with the needs of current and future networks in mind. Combining outstanding performance, durability and reliability, it is ideal switch for handling big data and high bandwidth requirements.

Critical energy infrastructure cannot tolerate interruptions of service which is why the switch is engineered to maintain uninterrupted data communication even in exceptionally harsh environments. Lynx-5612 has been tested and verified to withstand extreme temperatures, vibrations and EMI aligned with IEC 61850-3 Ed.2

Furthermore only industrial grade components are used which contributes towards a market leading mean time between failure (MTBF), maximized service life and reduced operational and life cycle costs.

By providing full gigabit speed on all 12 ports, four flexible SFP ports and layer 2 and layer 3 functionality, a broad range of applications are possible. Powered by the next generation WeOS operating system, which ensures robust operation and support for an expanding range of protocols and features. In addition, recognizing the growing sophistication of cyberattacks, an extensive suite of cyber security tools is available.

The switch is also prepared for routing acceleration, extended cybersecurity and time synchronization IEEE 1588v2 applications, making it the ideal solution to meet future security and bandwidth requirements.

Specifications - Lynx-5612

Dimensional drawing
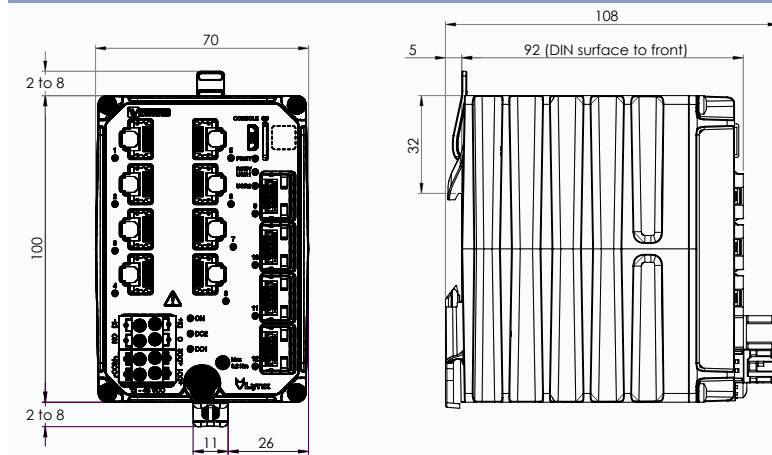
Housing

Housing	
Dimensions (W x H x D)	70 x 100 x 100 mm (2.7 x 3.9 x 3.9 inches)
Housing	Full metal
Weight	690 gr

Power parameters

Power parameters	
Rated voltage LV	12 to 48 VDC
Operating voltage LV	9.6 to 60 VDC
Rated current	1.7 A at 12 VDC 0.67 A at 24 VDC 0.35 A at 48 VDC
Hold up time	5 periods (combined with PS-60)
Isolation	1.5 kVrms galvanic isolation to all ports

Environmental

Environmental	
Operating temperature	-40 to +74°C (-40 to +165°F)
Storage and transport temperatures	-50 to +85°C (-58 to +185°F)
Ingress protection	IP40
Humidity (operating)	5-95% relative humidity
Corrosive gases	IEC 60068-2-60
Altitude	2000 mA/70 kPa
MTBF Telcordia	955,000 hours
MTBF MIL-HBDK-217F	506,000 hours

Interface

Interface	Ports	Fibre SFP	Copper RJ-45
Lynx-5612-F4G-T8G-LV Lynx-5612-E-F4G-T8G-LV	12 12	4 4	8 8
Console	Micro USB		
Micro SD	Secure Digital 2.0		
Digital I/O	1 x 4-ports detachable screw terminal (SELV)		
Ethernet	12 x 10/100/1000 Mbit/s, Ethernet TX, RJ-45 4 x 100/1000 Mbit/s, SFP		

Approvals	
EMC	IEC 61850-3, 2nd Ed, Class 1, Communication networks and systems for power utility automation[a] EN 50121-4/IEC 62236-4, Railway and telecommunications apparatus EN/IEC 61000-6-1, Immunity residential environments EN/IEC 61000-6-2, Immunity industrial environments EN/IEC 61000-6-3, Emission residential environments EN/IEC 61000-6-4, Emission industrial environments EN/IEC 61000-6-5, Immunity power & substation environments
Safety	EN/IEC/UL 61010-1, -2-201, Safety requirements for electrical equipment for measurement, control, and laboratory use
Trackside	EN 50121-4/IEC 62236-4, Railway signalling and telecommunications apparatus
Marine	DNV GL rules for classification - Ships and offshore units

[a]Applicable for Power Stations and MV-substation combined with PS-60. Applicable for shielded area without PS-60.

Switch properties	
Number of VLAN	64
Priority queues	8

Software	
WeOS documentation	https://www.westermo.com/products/software/weos
WeConfig	https://www.westermo.com/products/software/weconfig

Warranty	
Validity	5 years

Ordering information	
Art. no.	Description
3643-0400	Lynx 5612-F4G-T8G-LV
3643-0405	Lynx 5612-E-F4G-T8G-LV[a]

[a]Lynx-5612-E is the same as Lynx-5612, with addition of layer 3 WeOS Extended functionality.

Accessories	
3125-0150	PS-60, power supply

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 ring topologies (rings, ring coupling and horseshoe topologies), IEEE 802.1D/802.1w (RSTP), IEEE 802.1AX/802.3ad Link Aggregation (LACP and Static), IEC 62439-2 Media Redundancy Protocol (MRP)[a]
Layer 2 Switching
IEEE 802.1D MAC Bridges, IEEE 802.1Q Static VLAN and VLAN Tagging, IEEE 802.1AB LLDP, IGMPv1/v2/v3 Snooping, Static Multicast MAC filters
Layer 2 QoS
IEEE 802.1p Class of Service with flexible classification (VLAN tag priority, IP DSCP/ToS, Port ID), Ingress and Egress Rate limiting
IP Host Services
Static IP Address, DHCP Client, DNS Client, DDNS, ZeroConf (mDNS and SSDP), NTP Client (NTPv4), IP Interfaces (Ethernet, VLAN, Loopback and Blackhole)
Network Servers
DHCP Server (including options 1, 3, 6, 7, 12, 15, 42, 61 and 82), DHCP Relay Agent (including options 54 and 82), DNS Proxy Server (DNS forwarder and Host records), NTP server (NTPv4)
Management Tools
Westermo configuration tool WeConfig, Web interface (HTTP and HTTPS), Command Line Interface (CLI) via console port, SSHv2 and Telnet, SNMPv2c/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, Configuration and Deployment using external memory, 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, RFC4363 Q-BRIDGE MIB, RFC 4836 MAU MIB, IEEE 802.1AB LLDP MIB, IEEE 802.1AX LAG MIB, WESTERMO-DDM MIB (SFP), WESTERMO-EVENT MIB, WESTERMO-FRNT MIB, WESTERMO-INTERFACE MIB

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

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, Static Multicast Routing, Stateful Inspection Firewall, IP Masquerading (NAT/NAPT), Port Forwarding, Stateless NAT (1-1 NAT), 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)
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