Marine Industry
Robust Ethernet Solutions

WESTERMO
*Robust Industrial Data Communications
– Made Easy*

Westermo
Worldwide...

Westermo was established in the early 1970s. The head office is located 150 km (93.2 miles) southwest of Stockholm in Sweden. Over the past three decades Westermo has grown with subsidiaries being established in Sweden, UK, US, Germany, France, Singapore, Taiwan and sales partners appointed in over 30 countries worldwide.

Today the Westermo brand name is synonymous with Robust Industrial Data Communications.

Our 35 years of experience in the industrial marketplace goes far beyond our own products. We understand the problems that can occur in applications installed in the toughest industrial environments and therefore we can offer you the most effective and economical solutions.

All our products are specifically designed to operate reliably in harsh industrial environments and in applications requiring the highest levels of reliability and availability.

Let Westermo be your first choice for robust industrial data communication solutions.

Ethernet Switches
Certified for Marine Sector

Modern shipboard solutions are becoming increasingly automated. In order to provide centralised control and monitoring it is necessary to be able to collect data from the vessels many subsystems. Today, the Ethernet network has become the industry norm offering simplicity and reliability of connection.

Westermo have a comprehensive range of Ethernet switches approved for maritime use. All of these products have been fully tested and certified by DNV (Det Norske Veritas) allowing them to be used within many shipboard systems like propulsion, dynamic positioning, bridge control, alarm management and observation systems.

Westermo's long experience of designing data communications devices for the harshest environments has led to products that are perfect for use on modern ships. Long and reliable operation is clearly vital. Westermo products are designed and manufactured in Sweden. Our production facility uses the latest equipment and we carry out rigorous testing of the products at all stages of the manufacturing process to ensure delivered quality.

Our designs ensure that our products can operate across a wide temperature band, from -40°C cold starts to +70°C operation without the use of cooling fans or air holes. To confirm this we employ the toughest MTBF calculation method – MIL –HDBK-217F which demonstrates levels exceeding 500,000 hours for all products.

Industrial Ethernet FX/TX Converter

The MCW-211 converts data between Ethernet 10/100 Base-TX and 100 Base-FX. The unit is easy to use and install due to speed and duplex auto-negotiation as well as auto-crossover and auto-polarity support. The media converter is transparent to large frame formats (VLAN or QoS) and supports link fault forwarding.

MCW-211   1 x 10/100BaseTX, 1 x FX LC Duplex

Unmanaged plug and play switch

The SDW-5xx series is a family of 5 port unmanaged Ethernet switches.
Fibre optic versions are available for both single and multimode applications. A number of unique features make these switches real problem solvers. The screen of each TX port is individually isolated to help prevent earth loop problems within a network.

SDW-550   5 x 10/100BaseTX
SDW-541   4 x 10/100BaseTX, 1 x 100BaseFX
SDW-532   3 x 10/100BaseTX, 2 x 100BaseFX

Compact high performance switch

The Lynx series includes two compact Ethernet switches featuring eight fast Ethernet ports and two SFP slots with support for a wide range of fibre and or copper transceivers. The devices are designed for managing complex networks in extreme environments that may include redundant rings and long distances. Depending on model, the Lynx has layer 3 routing capabilities.

L110-F2G   8 x 10/100BaseTX, 2 x SFP (Layer 2)
L210-F2G   8 x 10/100BaseTX, 2 x SFP (Layer 3)

Robust routing switch

The RedFox is a high performance industrial Ethernet switch with enhanced routing functionality, in a single robust box.
A single RedFox allows you to build cost effective, secure and reliable networks that would previously have required several different units. The feature-rich firmware and highly specified hardware provide flexibility and enhanced performance when building complex networks.

RFI-10   10 x 10/100BaseTX
RFI-14-F4G   10 x 10/100 TX, 4 x Giga SFP
RFI-18-F4G-T4G   10 x 10/100 TX, 4 x 10/100/1000 TX, 4 x Giga SFP
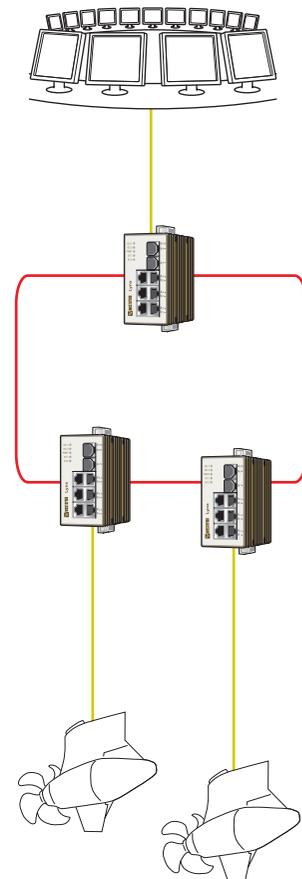
© ABB

Ethernet Switches in Action

Westermo has supplied the robust managed switch, Lynx, as part of the ABB "electrotechnical solution for the world fleet". The solutions are based on ABB's industry-leading technology within the electric power, drives and automation sectors. For decades, these have been proven to meet the high demands of marine and offshore applications.

The Lynx has a robust compact metal housing and is manufactured using only the best components, giving these units a high MTBF figure and tolerance to shock, vibration and electrical interference. Our unique FRNT (Fast Recovery of Network Topology) technology is the fastest protocol on the market to re-configure a large network in the event of any link or hardware failure, making the Lynx invaluable in mission critical applications. The switches also support QoS (Quality of Service) with four priority queues and strict priority scheduling, as well as HoL (Head of Line Blocking Prevention) helping to ensure that the data network is deterministic.

The Westermo switches are used to create a resilient Ethernet solution based on a fibre optic ring onboard the ship. The network allows there to be centralised control for the electric power and variable speed propulsion systems on liquefied natural gas vessels, floating production storage vessels and even motor torpedo boats.
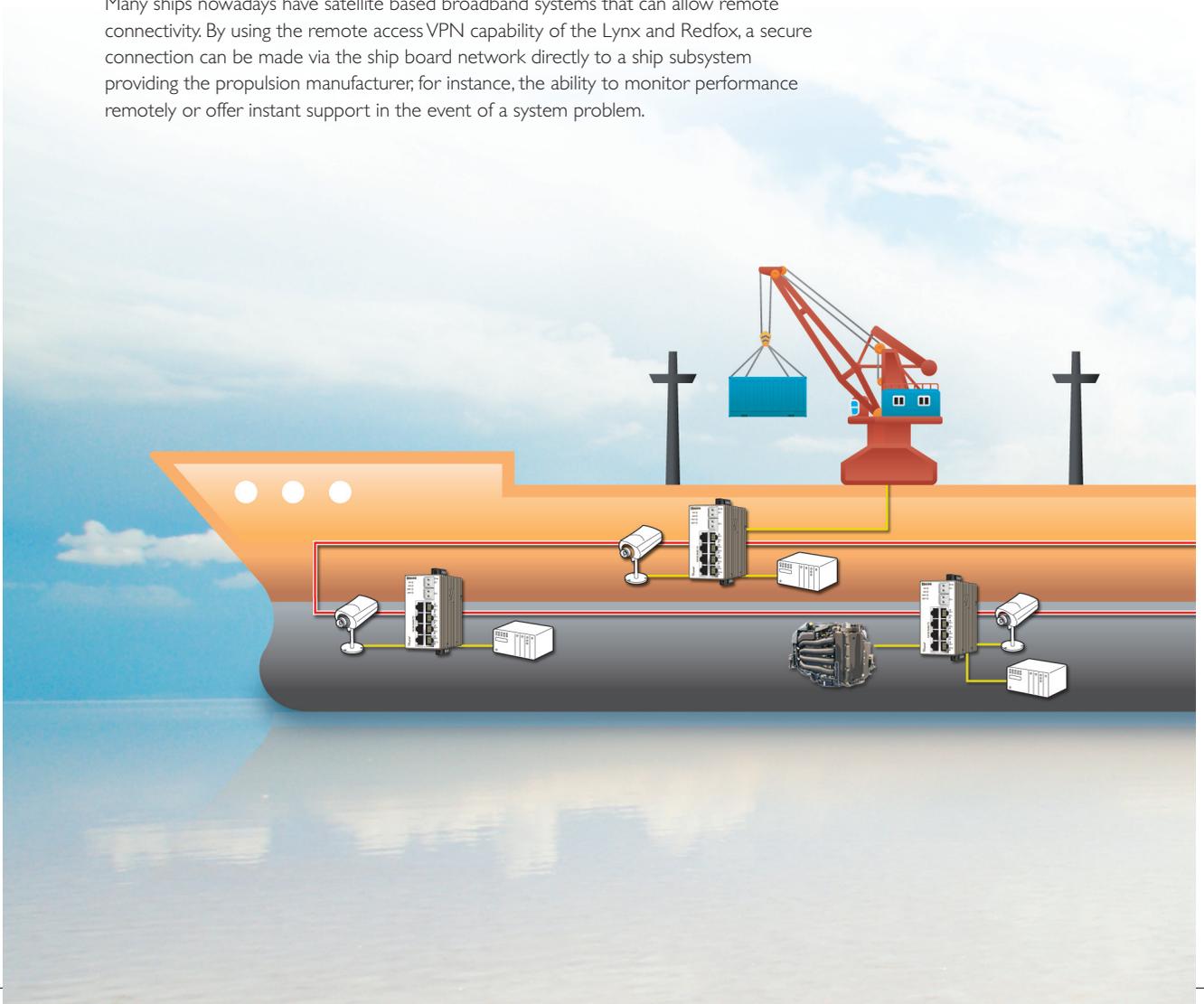
Secure ship-wide Ethernet solutions

The Lynx and Redfox switches are powered by the Westermo WeOS operating system. This can provide some revolutionary networking capabilities. With more and more subsystems relying on Ethernet connectivity, there will be more need to connect subsystem networks. Despite the obvious advantages of sharing networking resources, care should be taken to ensure that data from one network does not affect another system. If, for instance, IP cameras are used on a network to provide visual monitoring of unmanned areas, large amounts of data from cameras can flood the network and inhibit the function of other systems. By using VLANs or IGMP snooping, this data can be controlled or totally segregated. Westermo's port based firewall solution can also be employed to create secure zones and ensure only the required information passes between different subsystems.

Many ships nowadays have satellite based broadband systems that can allow remote connectivity. By using the remote access VPN capability of the Lynx and Redfox, a secure connection can be made via the ship board network directly to a ship subsystem providing the propulsion manufacturer, for instance, the ability to monitor performance remotely or offer instant support in the event of a system problem.

Range of Ethernet switches for diverse ship board applications

- All DNV certified including IEC 60945
- Unmanaged 5 port switches and fibre optic media converter
- Managed layer 2 & 3 Ethernet switches

Designed for long and maintenance free service life

- Extreme MTBFs calculated to MIL–HDBK-217F
- Wide operating temperatures with no forced air cooling requirement
- Fast reconnect redundant ring technology (20ms)

Easy to use

- Small compact housing
- Simple configuration options
- Configurable fault I/O

Secure solutions for ship-wide Ethernet solution

- Subsystem segregation via VLAN
- Controlled data exchange with port based firewalls
- Secure VPN remote access to subsystems

WESTERMO®

Sales Units
Westermo Data Communications

*For complete contact information, please visit our website at www.westermo.com/contact
or scan the QR code with your mobile phone.*