Industrial 6-port Web Managed Redundant Switch

- Turbo Ring with Fast Recovery Time within 10 ms, RSTP/STP for Ethernet Redundancy
- QoS, IGMP Snooping, VLAN, SNMP v1/v2c, RMON
- Event Notification by E-mail
- Port Mirroring for Online Monitoring
- Web-based Configuration and Management
- Redundant DC Power Input
- Rigid Aluminum Case
- DIN-Rail Kit

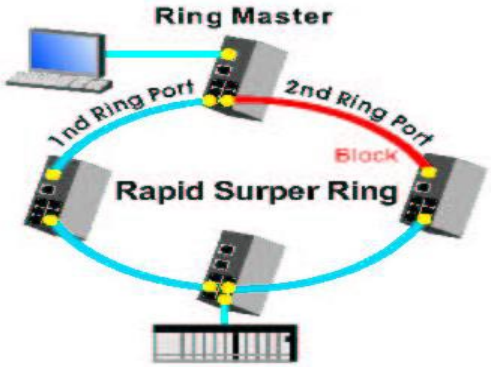
Part Number	Description
See order chart	**Industrial 6-port Web Managed Redundant Switch**

Description

Lanopia's family of 6-port Industrial Managed Ethernet Switches is designed for a demanding network environment, Ethernet connection and the built-in smart alarm function. The Switch series include three types and make it easy for you to master your automation Ethernet network. These products have many different management functions, like Turbo Ring, couple ring, VLAN, Qos, bandwidth management, and warning by e-mail or relay. All Switches can be remotely configured by web browser, and managed by SNMP and RMON. Security is enhanced with advanced features, like Port/Tag-based VLAN and IP security.

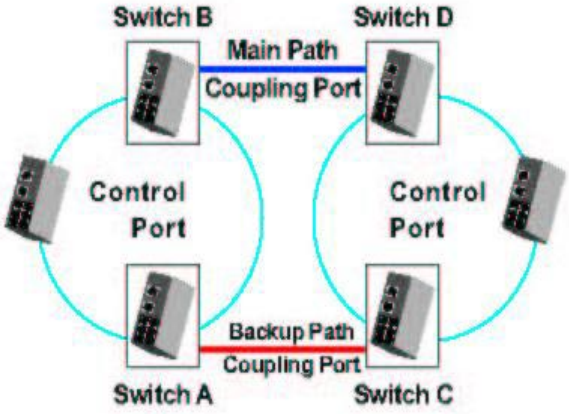
Fast Ethernet Redundant Ring Capability (< 10 ms)

Turbo Ring gives users an easy way to establish a redundant Ethernet network, and with its high-speed recovery time, once any segment of your network is disconnected, your automation system will be back to normal within 10 ms.



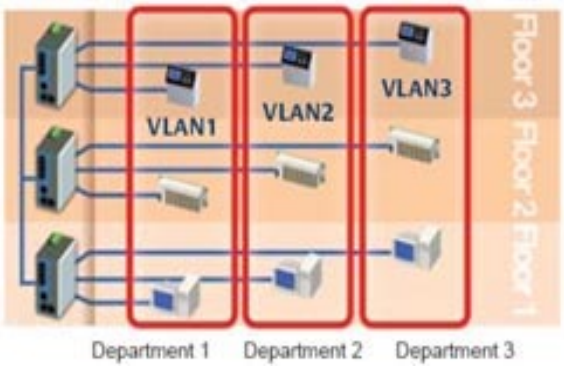
Couple Ring Provides Flexible Network

For some systems, it may not be convenient for network administrators to connect all switches in one BIG redundant ring, since some devices can be located at a remote site. Turbo Ring's "Couple Ring" can help you separate those devices into another redundant ring. In such way, they still can communicate with each other and have redundant paths between two rings.



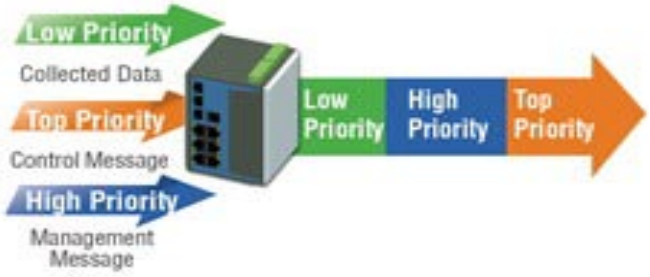
VLAN Eases Network Planning

VLANs can be used to segment your network without being restricted by physical connections—a limitation imposed by traditional network design. Since all automation systems incorporate sensitive devices that must be protected from unauthorized access, it is very important to have some type of authentication system set up that only allows authorized users to access the system. If devices belong to different VLANs, they can't communicate with each other, provide extra security and protection from unwanted invasion or traffic.



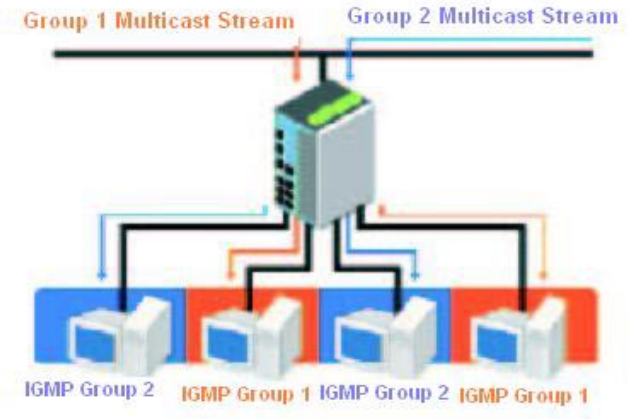
QoS Controls Traffic Priority

Quality of Service (QoS) provides a traffic prioritization capability to ensure that important data is transmitted firstly. QoS capability improves your industrial network's performance for mission critical applications.



IGMP Snooping for Filtering Multicast Traffic

IGMP snooping function receives the multicast stream and then only transmit to devices which replies an IGMP reporting message. It can reduce the amount of multicast traffic.

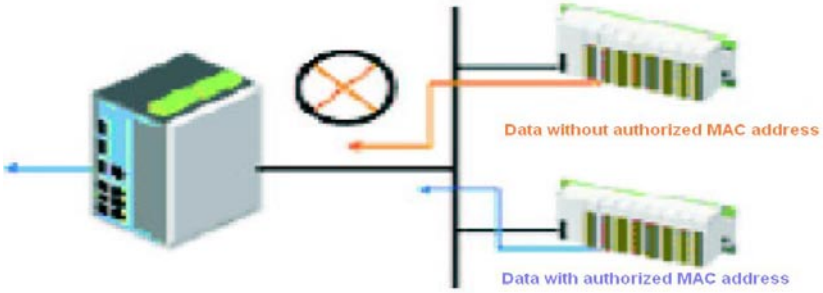


Port Trunk for Flexible Bandwidth Utilization

All Switches in the family provide Port Trunking to combine several physical links to a larger logical bandwidth link.

Port Security Allows Access by Specific MAC Address

The Switches can set static MAC address to a specific port. In this way, the specific port could only allow the traffic coming from the preset static MAC address. It helps block unwanted usage.



Port Mirroring for Online Monitoring

In some cases, a network is too large to achieve the expected communication. This means that controllers may need to use a second port to monitor the actual activity between their devices and computer host. All Switches support port mirroring function that helps ensure that the system behaves as expected.

Automatic Warning by Events

Since industrial Ethernet devices are often located at the endpoints of a system, such devices can't always know what happens on the network. This means that industrial switches must provide system maintainers with "real-time" alarm messages and record when the events occur. To take care of these requirements, industrial Ethernet switches need features below.

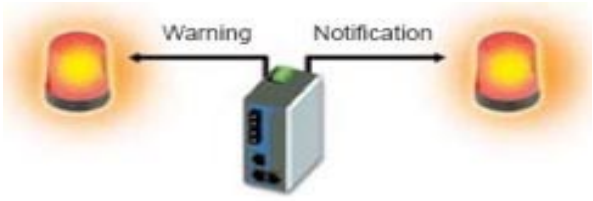
Warning by E-Mail

The Switches can send out a warning e-mail when an exception is detected and provide system maintainers with "real-time" alarm messages.

Switch Events		Port Events
Cold Start	~~WarmStarl~~	Link up
Power Status	Authenticstion failure	Link down
Topology Change	~~Configuration Change~~	Link up and down

Warning by Relay Output

Each Switch provides two relay outputs that could be set up to indicate events. That can notify or warn maintainers to take appropriate emergency to respond quickly as prior messages.



Easy Web Browser Base Configuration

All Switches are easily configured over the network by web browser. Besides, they also can be used to store and copy configuration parameters to multiple Switch units simultaneously.

Features

Network Switching Technology

- Redundant Ethernet Ring (recovery time < 10 ms) and RSTP/STP (IEEE 802.1W/D)
- Support port base VLAN
- Support QoS IEEE 802.1p/1Q and TOS/DiffServ to manage traffic
- RMON for efficient network monitoring and proactive capability
- SNMP V1/V2c/V3 for different levels of network management security

Industrial Reliability

- Power failure, port break alarm by relay output
- Redundant DC power inputs
- Bandwidth management prevents unpredictable network status
- Port mirroring for online monitoring
- Automatic warning by exception through e-mail, relay outputs
- Automatic recovery of connected device's IP addresses
- Configurable by web browser, telnet/serial console, Windows utility
- Long transmission distance of 30 km (on request)

Rigid Design

- Operating temperature from -10 to 70°C
- Storage temperature from -40 to 80°C
- IP 30, rigid metal case
- DIN-Rail / Wall-mounting / Desktop Installation

Technical Specification

Technology

Standards	IEEE802.3, 802.3u, 802.3x, 802.1D, 802.1W, 802.1p, 802.1Q
Protocols	SNMP V1/V2c/V3, DHCP Server/Client, BootP, RARP, IGMP, SNTP and RMON
MIB	MIB-II, Bridge MIB, Ethernet-like MIB, VLAN MIB, Private MIB
Packet Buffer Memory	64 to 1522 bytes (with VLAN tag)
Processing Type	Store and Forward
MAC Address	2K
Flow Control	IEEE802.3x flow control, back pressure flow control
Filtering/Forwarding Rates	100Mbps port - 148,800pps 10Mbps port - 14,880pps
Transmission Media	10BaseT Cat. 3, 4, 5 UTP/STP 100BaseTX Cat. 5 UTP/STP

Interface

10/100 RJ45 / Fiber Ports	6 10/100BaseT(X) auto-negotiation speed, F/H-Duplex mode, and auto-MDI/MDI-X connection 2 100BaseFX (Multi/Single Mode, SC/ST Connector)
Gigabit RJ45 / Fiber Ports	2 10/100/1000BaseTX 2 1000BaseSX/LX port (Multi/Single Mode, SC/ST Connector)
LED Indicators	Power, Faults, 10/100M, Link/Act and HDX/FDX
DIP Switch	Turbo Ring
Alarm Contact	One relay output with current carrying capacity of 1A @ 24 VDC

Optical Fiber

Fiber Distances	Multi mode fiber 2 km Single mode fiber 30 km

Power

Input Voltage	24VDC (12 to 48 VDC), redundant inputs
Connection	Removable 6-pin Terminal Block
Power Consumption	6.7 Watts
Reverse Polarity Protection	Present

Mechanical

Casing	IP30 protection, metal case
Dimensions	53 x 135 x 105 mm (W x H x D)
Weight	750 g
Installation	DIN-Rail, Wall-mounting, Desktop

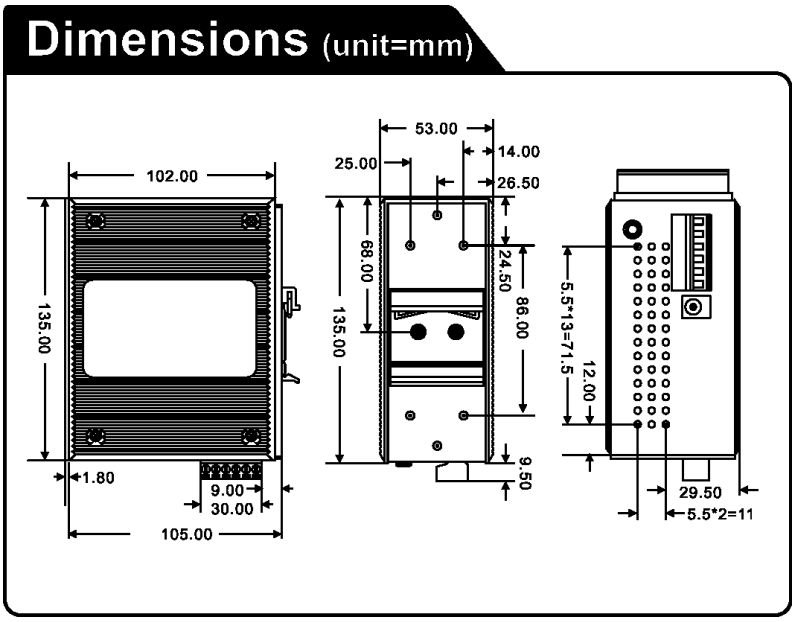
Environment

Operating Temperature	-10 to 70°C
Storage Temperature	-40 to 80°C
Humidity	5 to 95% RH (non-condensing)

Approvals

Safety	UL, CUL, CE, EN60950
EMI	FCC Part 15
EMS	EN61000-4-2 (ESD), EN61000-4-3 (RS), EN61000-4-4 (EFT), EN61000-4-5 (Surge), Level 3, EN61000-4-6 (CS), Level 3 EN61000-4-8 EN61000-4-11
Shock	IEC60068-2-27
Free Fall	IEC60068-2-32
Vibration	IEC60068-2-6

Dimensions



Order Configuration Chart

	SL-444F232 (MM) SL-444F233 (SM)	SL-443F211	SL-444F234 (MM) SL-444F235 (SM)
Numbers of Port 10/100BaseTX	6	6	6
Numbers of Port 100BaseFX	2		
Numbers of Port 10/100/1000BaseTX		2	
Numbers of Port 1000BaseSX/LX			2