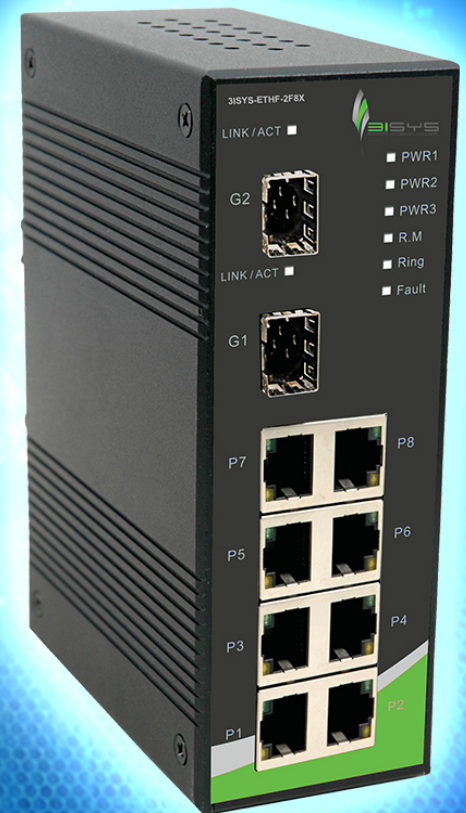


3ISYS-ETHF-8C2F

INDUSTRIAL 10-PORT MANAGED ETHERNET SWITCH WITH
2X100/1000BASE-X, SFP SOCKET AND 8X10/100BASE-T(X)

FEATURES

- Provides redundant backup feature and the recovery time less than 20ms
- Uni-Ring support the other vendor's ring technology in open architecture
- Sys-Chain allow multiple redundant network rings
- Rapid Ring, Dual Homing, Couple Ring Topology
- Support standard IEC 62439-2 MRP (Media Redundancy Protocol) function
- MSTP/RSTP/STP(IEEE 802.1s/w/D)
- Complies with the IEEE 802.3, IEEE 802.3u, IEEE 802.3ab, IEEE 802.3z Gigabit Ethernet standards
- Supports Spanning Tree Protocol
- STP, IEEE 802.1D Spanning Tree Protocol
- RSTP, IEEE 802.1w Rapid Spanning Tree Protocol
- Support PTP Client (Precision Time Protocol) clock synchronization
- Support Modbus/TCP protocol
- IGMP v2/v3 (IGMP snooping support) for filtering multicast traffic
- IGMP Query mode for Multicast Media application
- Port Trunking for easy of bandwidth management
- SNMP v1/v2c/v3 support for secured network management
- RMON for traffic monitoring
- Support LLDP protocol
- Event notification through Syslog, Email, SNMP trap, and Relay Output
- Port lock to prevent access from unauthorized MAC address
- Web-based, Telnet, Console Command Line management
- Support two SFP connectors for 100/1000Base-X SFP Fiber
- IP-30 metal case
- 12-48V DC, redundant power with polarity reverse protect function
- DIN-Rail and wall mounting enabled



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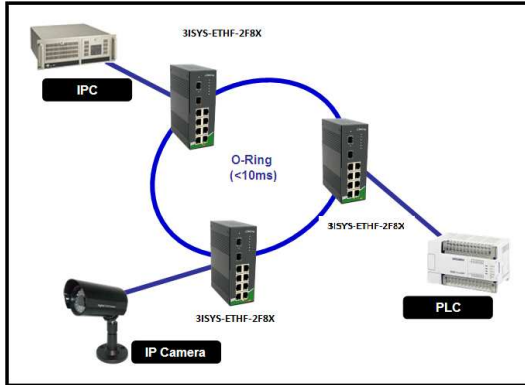
PRODUCT OVERVIEW

3ISYS-ETHF-8C2F is managed Redundant Ring Ethernet switch with 2x100/1000Base-X SFP ports and 8x10/100Base-T(X).3ISYS-ETHF-8C2F is equipped with the multiple redundant ring technology and provides 8 10/100Mbps Fast Ethernet and 2 Gigabit TP/SFP combo interfaces delivered in a rugged strong case. It is an industrial, (substation) hardened and fully-managed Ethernet Switch, specifically designed to operate reliably in electrically harsh, climatically demanding wide temperature range (-40°C to 75°C) and centralized power management environments. It incorporates advanced redundant data Ring technology, Rapid Spanning Protocol (IEEE 802.1w RSTP) and redundant power supply system into customer's industrial automation network to enhance system reliability and uptime in the harsh factory environments. It also protects customer's industrial network connectivity with switching recovery capability that is used for implementing fault tolerant ring and mesh

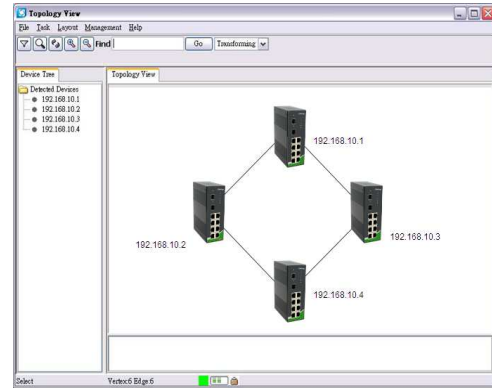
network architectures. If the industrial network was interrupted accidentally, the fault recovery times could be less than 10ms to quickly bring the network back to normal operation. Another Uni-Ring technology is also supported which can be applied for other vendor's proprietary ring. Sys-Chain is the revolutionary network redundancy technology that provides the add-on network redundancy topology for any backbone network, Sys-Chain allows multiple redundant network rings of different redundancy protocols to join and function together as a larger and more robust compound network topology. Sys-Chain providing ease-of-use while maximizing fault-recovery swiftness, flexibility, compatibility, and cost-effectiveness in one set of network redundancy topology. 3ISYS-ETHF-8C2F can be managed centralized and convenient by a powerful windows utility — System-Vision.

System-Vision

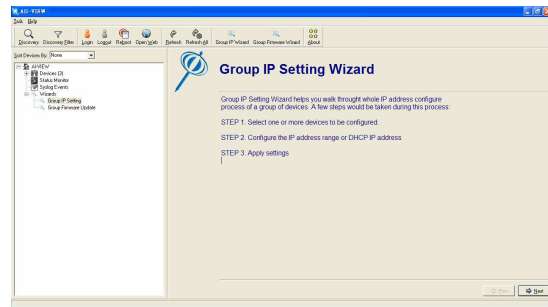
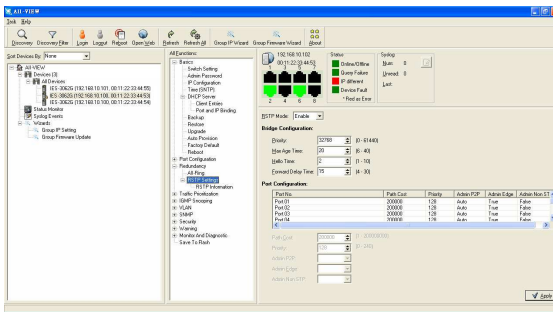
3ISYS switches are intelligent switches. Different from other traditional redundant switches, 3ISYS provides a set of Windows utility (System-Vision) for user to manage and monitor all of industrial Ethernet switches on the industrial network.



Network

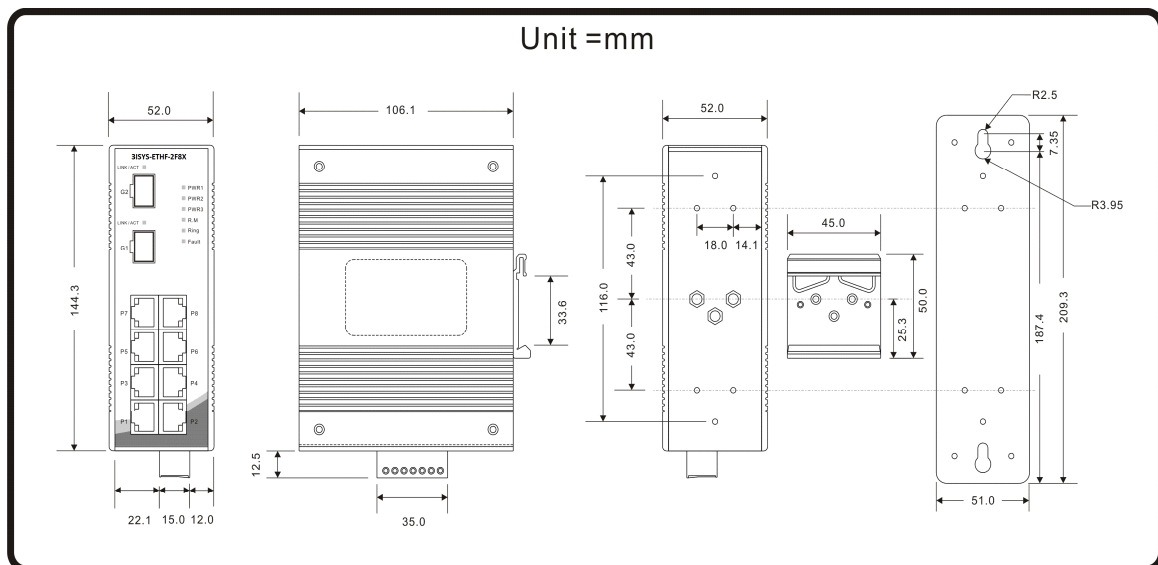


Topology



Monitoring and Configuration interface

Dimension



Technical Specifications

3ISYS Switch Model	3ISYS-ETHF-8C2F
Physical Ports	
100/1000Base-X SFP Ports	2
10/100 Base-T(X) Ports in RJ45 Auto MDI/MDIX	8
Technology	
Ethernet Standards	<ul style="list-style-type: none"> §IEEE 802.3 for 10Base-T §IEEE 802.3u for 100Base-TX and 100Base-FX §IEEE 802.3z for 1000Base-X §IEEE 802.3x for Flow control §IEEE 802.3ad for LACP (Link Aggregation Control Protocol) §IEEE 802.1D for STP (Spanning Tree Protocol) §IEEE 802.1p for COS (Class of Service) §IEEE 802.1Q for VLAN Tagging §IEEE 802.1w for RSTP (Rapid Spanning Tree Protocol) §IEEE 802.1s for MSTP (Multiple Spanning Tree Protocol) §IEEE 802.1x for Authentication §IEEE 802.1AB for LLDP (Link Layer Discovery Protocol)
MAC Table	8192 MAC addresses
Priority Queues	4
Processing	Store-and-Forward
Switch Properties	<ul style="list-style-type: none"> §Switching latency: 7 us §Switching bandwidth: 5.6Gbps §Max. Number of Available VLANs: 4096 §IGMP multicast groups: 1024 §Port rate limiting: User Define
Security Features	<ul style="list-style-type: none"> §Enable/disable ports, MAC based port security §Port based network access control (802.1x) §VLAN (802.1Q) to segregate and secure network traffic §Supports Q-in-Q VLAN for performance & security to expand the VLAN space §Radius centralized password management

	<ul style="list-style-type: none"> §SNMP v1/v2c/v3 encrypted authentication and access security
Software Features	<ul style="list-style-type: none"> §STP/RSTP/MSTP (IEEE 802.1D/w/s) §Redundant Ring (Sys-Ring) with recovery time less than 10ms over 250 units §TOS/Diffserv supported §Quality of Service (802.1p) for real-time traffic §VLAN (802.1Q) with VLAN tagging and GVRP supported §IGMP Snooping for multicast filtering §Port configuration, status, statistics, monitoring, security §SNTP for synchronizing of clocks over network §Support PTP Client (Precision Time Protocol) clock synchronization §DHCP Server / Client support §Port Trunk support §MVR (Multicast VLAN Registration) support §Modbus TCP
Network Redundancy	<ul style="list-style-type: none"> §3ISYS-Ring §Uni-Ring §Sys-Chain §MRP §STP / RSTP / MSTP
Warning / Monitoring System	<ul style="list-style-type: none"> §Relay output for fault event alarming §Syslog server / client to record and view events §Include SMTP for event warning notification via email §Event selection support
RS-232 Serial Console Port	RS-232 in RJ45 connector with console cable. 9600bps, 8, N, 1
LED Indicators	
Power Indicator	Green : Power LED x 3
R.M. Indicator	Green : Indicate system operated in Sys-Ring Master mode
Sys-Ring Indicator	Green : Indicate system operated in Sys-Ring mode
Fault Indicator	Amber : Indicate unexpected event occurred
10/100Base-T(X) RJ45 Port Indicator	Green for port Link/Act. Amber for Duplex/Collision
100/1000Base-X SFP Port Indicator	Green for port Link/Act

Fault Contact	
Relay	Relay output to carry capacity of 1A at 24VDC
Power	
Redundant Input Power	Triple DC inputs. 12~48VDC on 7-pin terminal block, 12~45VDC on power jack
Power Consumption (Typ.)	9 Watts
Overload Current Protection	Present
Reverse Polarity Protection	Present on terminal block
Physical Characteristic	
Enclosure	IP-30
Dimension (W x D x H)	52(W) x106.1 (D) x144.3 (H) mm (2.05x4.18x5.68 inch.)
Weight (g)	730 g
Environmental	
Storage Temperature	-40 to 85°C (-40 to 185°F)
Operating Temperature	-40 to 70°C (-40 to 158°F)
Operating Humidity	5% to 95% Non-condensing
Regulatory approvals	
EMI	FCC Part 15, CISPR (EN55022) class A
EMS	EN61000-4-2 (ESD), EN61000-4-3 (RS), EN61000-4-4 (EFT), EN61000-4-5 (Surge), EN61000-4-6 (CS), EN61000-4-8, EN61000-4-11
Shock	IEC60068-2-27
Free Fall	IEC60068-2-32
Vibration	IEC60068-2-6
Safety	EN60950-1
MTBF	294,689 hours
Warranty	1 year

Ordering Information

3ISYS-AAAA-C-F

Module Identifier	Number of 10/100Base-T(X) Ports	Number of 100/1000Base-X, SFP sockets
Gigabit Fast Ethernet, ETHF	8	2

Packing List

1	3ISYS-ETHF-8C2F x 1	1	3ISYS Tool CD x 1	1	Quick Installation Guide x 1
1	DIN-Rail Kit x 1	1	Wall-mount Kit x 1	1	Console Cable x 1

Optional Accessories

1	System-Vision S5C : Powerful Network Management Windows Utility Suit, 500 IP devices	1	3ISYS-SFP-100 series : 100Mbps SFP optical transceiver
1	3ISYS-PWR-45 series : 45 Watts DIN-Rail power supply	1	3ISYS-SFP-1G series : 1Gbps SFP optical transceiver
1	3ISYS-PWR-75 series : 75 Watts DIN-Rail power supply	1	3ISYS-PWR-120 series : 120 Watts DIN-Rail power supply
1	3ISYS-PWR-121000, 12VDC/1000mA 12W Power Adapter with universal 100 to 240VAC input, EU plug	1	3ISYS-PWR-121000, 12VDC/1000mA 12W Power Adapter with universal 100 to 240VAC input, US plug



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All specifications are subject to change without further notice. All features with * mark will be available by firmware upgrade.