

KY-3170EMx Device Binding



**Supports the New
KY-1-Button
Easy Backup /Restore**



Layer 2, 10 Port, Gigabit, MRP, Auto DOS /DDoS Protection High Security, Traffic Switch

- 8 X 10/100/1000Base-T(X) RJ-45 ports & 2 X 100/1000Base(X) SFP Slots
- Supports Cyber Secure Video, Device Binding, IP Source Guard & Clean Code Technology, ACL's
- SNMPv3, HTTPS, SSH security features, TACACS+, IEEE1588v2 Timing, 802.1x, Cyber-Locking & DDMI
- EMC performance: Industrial level 4 / JUMBO FRAME
- Supports: 9 ~ 36 Volts DC power input
- High Security Cyber-Lock Device - Qualified for Military ICS Applications.



Overview

The KY-3170EMx is a managed, redundant ring, high security Gigabit Ethernet Switch with 8 X 10/100/1000Base(T)X RJ and 2 X 100/1000Base(X) SFP slots. Built in DoS / DDoS Enhanced silicon Protection. Automatically protects the network before damage occurs. Built-in Auto-notification of events such as: (email / Text). High Security features such as Device Binding, IP Source Guard, MAC Locing / IP Locking and Hybrid locking. Supports Black List, Cyber-Lock, Cyber-Secure Video, Clean Code Technology, IP Flow Checking, Keep Alive Checking as well as 15 Levels of Authorization & Access. The switch is very power efficient using a fraction of the power that competitor switches use. Power savings alone pays for this switch. The security insure your network is NOT compromised. SAVINGS, SAFETY, and SECURITY!

Features & Benefits

1. Redundancy Technology: supports Ring / Routing protocols (recovery time < 25ms) and MSTP
2. Multicast Protocol: supports IGMP Snooping, GMRP and static multicast
3. Network Partition: supports VLAN, PVLAN
4. Service Quality: supports QoS
5. Bandwidth Management: supports port trunking, port speed limit, broadcast storm control
6. Network Management and Monitoring: supports CLI, Telnet, WEB management methods, SNMPv1/v2/v3, RMON, LLDP, STMP, DHCP, SSH, SFTP, editable Html / Ascii Files
7. Network Security: supports: SSH, SSL, ACL
8. Device Management: supports FTP upgrade
9. Device Maintenance: supports port mirroring
10. Alarm Output: supports IP/MAC conflicts, power, port and ring alarms
11. MVR - MultiCast VLAN Registration, IEEE 802.1Q with GVRP

Technical Specifications

Standards:

IEEE 802.3, IEEE 802.3i, IEEE 802.3u, IEEE 802.3x, IEEE 802.3z, IEEE 802.3ad, IEEE 802.1D, IEEE 802.1p, IEEE 802.1Q, IEEE 802.1s, IEEE 802.1w, IEEE 802.3x, IEEE 802.1AB, IEEE 802.z, Modbus TCP

Protocols:

IEEE 1588v2 Timing, Device Binding, TACACS+, MultiCast, PIM, SIM, Black List, IPv6, TACACS+, & Cyber-Lock

Ring, Ring+, VLAN, PVLAN, MSTP, IGMP Snooping, GMRP;

IEC 62439-2 MRP (Media Redundancy Protocol);

Telnet, HTTP, HTTPS, SNMPv1/v2/v3, RMON, LLDP, STMP, DHCP server; Sec, SSH, SSL, ACL, IP Source Guard, Authorization (15 Levels); FTP; Cyber-Secure Routing (CSR), LLDP, Jumbo Frame ARP, QoS, MVR, SysLog, Clean Code Technology (CCT), Cyber-Secure Video

Router Properties:

Priority Queues: 64

Number of VLANs: 512

VLAN ID: 1-4094

Number of Multicast Groups: 256

MAC Table: 16K

Packet Buffer: 16 Mb

Packet Forwarding Rate: 42 Gbps Fabric, Wire Speed -All Ports

Switching Delay: < 5µs

Interface:

Gigabit SFP Ethernet Ports: max: 2 X 100/1000Base(X) SFP Slots

Gigabit Ethernet RJ45 Ports: 8 X 10/100/1000Base-TX RJ45 ports

Console Port: RS232 (RJ45 connector)

Alarm Contact: 2-pin 3.81mm-spacing plug-in terminal block, 250VAC/350VDC Max, 120mA Max



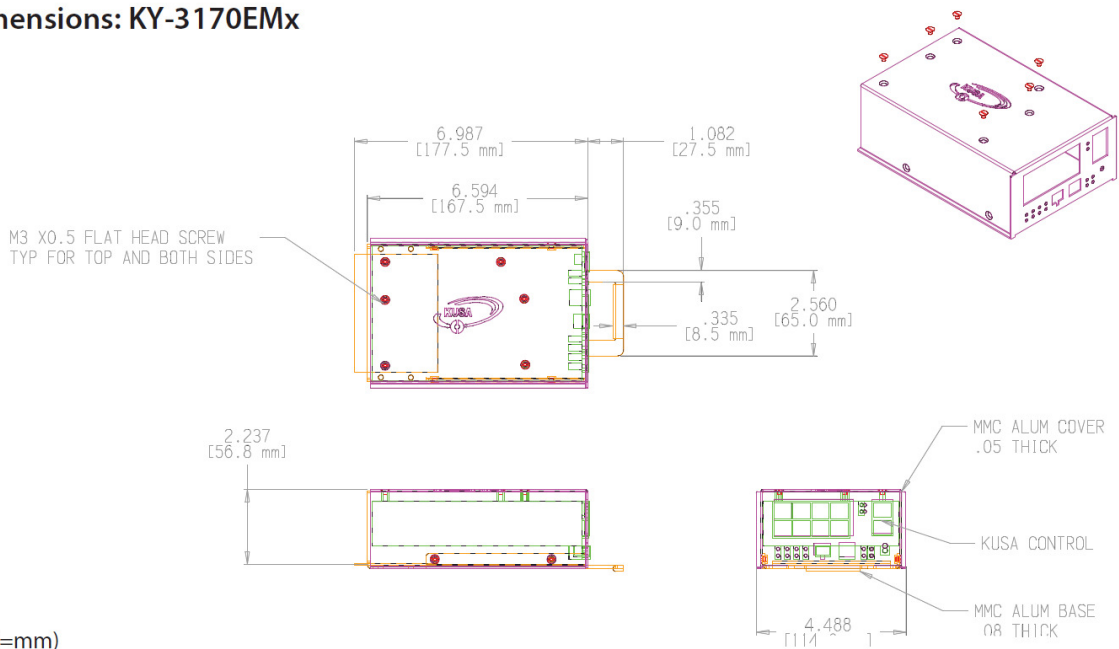
10/100/1000Base-T(X) Ports in RJ45 Auto MDI/MDIX	8
100/1000Base-X w th SFP port	2
Technology	
Ethernet Standards	<p>IEEE 802.3i for 10Base-T IEEE 802.3u for 100Base-TX and 100Base-FX IEEE 802.3ab for 1000Base-T IEEE 802.z for 1000Base-X IEEE 802.3x for Flow Control IEEE 802.3ad for LACP (Link Aggregation Control 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)</p> <p>RFC1887 - IPv6 Architecture RFC2460 - IPv6 Protocol Specification RFC2464 - IPv6 Transmission RFC2246 - SSH FTP RFC4250 - SSH PAN SFTPv4 SFTPv6 (soon to be released) RFC4253 - SSH Transport</p> <p>IEEE 802.1AE-2013 IEEE 802.1AEbn IEEE 802.1AEbw</p>
MAC Table	8k
Priority Queues	8
Processing	Store-and-Forward
Switch Properties	<p>Switching Latency: 5us Switching Bandwidth: 26 Gbps Maximum # of Available VLANs: 512 IGMP Multicast Groups: 128 for each VLAN Port Rate Limiting: User Defined Security Queues: 16 Per VLAN</p>
Jumbo frame	Up to 9.6K Bytes
Security Features	<p>Device Binding Security Feature with Silicon Enhancements Enable / Disable Ports, MAC Based Port Security Port Based Network Access Control (802.1x) Single 802.1x and Multiple 802.1x MAC Based Authentication IP Address Based Authentication QoS Assignment Flow-Check Guest VLAN MAC Address Limit TACACS+ Keep-Alive Check VLAN (802.1Q) Segregate and Secure Network Traffic Radius Centralized Password Management SNMPv3 Encrypted Authentication and Access Security WEB and CLI Authentication and Authorization Security (Access) Authorization (15 Levels) IP Source Guard HTTPS / SSH Enhanced Network Security SSH FTP / Advanced Encrypt on Selectable Backup Security Defaults</p>
Software Features	<p>DoS / DDoS Auto Prevention: Port & Flow Security IEEE 1588v2 Clock Synchronization IEEE 802.1D Bridge, Auto MAC Address learning / aging and MAC Address (Statistic) Multiple Registration Protocol (MRP) RSTP / MSTP (IEEE 802.1w/s) Per Port Power Saving Feature Redundant Ring (RING) with a recovery time of less than 20ms over 300 units. TOS / DiffServ Supported QoS Quality of Service (IEEE 802.1p) for real time traffic VLAN (IEEE 802.1Q) with VLAN Tagging Voice VLAN Guest VLAN IGMP v2 / v3 Snooping IP-Based Bandwidth Management Application Based QoS Management Port Configuration, Status Statistics, Monitoring & Security DHCP Server / Client / Snooping DHCP Relay ModBUS TCP DNS Client Proxy ARP Inspection SMTP Client IP Policing / Protocol 41 (IPv6 & IPv6 Secure) Clean Code Technology (CCT) Cyber-Secure Video (CSV) Media Redundancy Protocol (MRP: IEC 62439-2 Media Redundancy Protocol) Ultra-fast Ring Broadcast Storm Control SSH / FTP / AES / SHA2 Encryption</p>
Network Redundancy	<p>Ring and Ring+, Open Ring VRRP, Chain MRP MSTP (RSTP/STP compatible)</p>

RS-232 Serial Console Port	RS-232 in RJ45 connector with console cable. 115200bps, 8, N, 1
LED indicators	
Power Indicator (PWR)	Green : Power LED x 2
Ring Master Indicator (R.M.)	Green : Indicates that the system is operating in Ring Master mode
Ring Indicator (Ring)	Green : Indicates that the system operating Green Blinking : Indicates that the Ring is broken.
Fault Indicator (Fault)	Amber : Indicate unexpected event occurred
10/100/1000Base-T(X) RJ45 Port Indicator	Dual color LED : Green for 1000Mbps Link/Act indicator. Amber for 10/100Mbps Link/Act indicator
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	DC Input / Back Plane : Supports 9 ~36 Volts DC for NEMA and non-NEMA Cabinets
Power consumption (Typ.)	<10 Watts
Overload current protection	Yes
Reverse Polarity Protection	Yes
Physical Characteristic	
Enclosure	IP-30
Dimension (W x D x H)	58.0 (W) X 114 (D) X 205 (H) // mm
Weight (g)	1450g
Environmental	
Storage Temperature	-40 to 85°C (-40 to 185°F)
Operating Temperature	-40 to 85°C (-40 to 185°F)
Operating Humidity	5% to 97% 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
Warranty	5 years



**Supports: KY-1-Button
Easy Maintenance
Lowers Cost
Full Backup / Restore
(Optional)**

Dimensions: KY-3170EMx



(Unit=mm)

Network Security For The 21st Century

MTBF (Mean Time Between Failure)
35 years

Warranty
5 Years

Approvals & Certifications

NEMA TS 1 and TS 2 Certified Device
 IEC61000-4-2(ESD): ±8KV contact discharge, ±15KV air discharge
 IEC61000-4-3(RS): 10V/M (80-1000MHz)
 IEC61000-4-4(EFT): ±4KV power line, ±2KV data line
 IEC61000-4-5(Surge): power line ±4KV CM/ ±2KV DM, data line ±2KV IEC61000-4-6(CS): 3V(10KHZ-150KHZ), 10V(150KHz-80MHz)
 IEC61000-4-8(Power frequency magnetic field): 100A/m cont. 1000A/m, 1s to 3s
 IEC61000-4-12/18(Damped oscillatory wave): 2.5KV CM, 1KV DM
 IEC61000-4-10(Damped oscillatory): 30A/m
 IEC61000-4-16(Common mode conduct): 30V cont. 300V, 1s
 FCC CFR47 Part 15/EN55022: Class A&B
 IEC61000-6-2(Industrial Standards), IEC61850-3(Substations), IEEE1613(Electric Power Substations), EN50121-4(Railway Applications)
 Multi-Cast Certified for High Definition Video, Electro-Magnetic Pulse (EMP) Non-Nuclear Electro-Magnetic Pulse (NNEMP)



Ordering Information		
Model	Description	Power
KY-3170EMx	(2) 100/1000Base(X) SFP Ports (1) Console Management Port (8) 10/100/1000Base(T)X Ports	Powered by plugging into a standard detector rack/input file (12VDC, 24VDC)

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Optional Gigabit SFP Modules	
Model	Description
KY-SGSFP-LX550M	SFP module, 1 x 1000M Multi Mode, LC Connector, 1310nm, 550m
KY-SGSFP-LX10K	SFP module, 1 x 1000M Single Mode, LC Connector, 1310nm, 10km
KY-SGSFP-LX20K	SFP module, 1 x 1000M Single Mode, LC Connector, 1310nm, 20km
KY-SGSFP-LX40K	SFP module, 1 x 1000M Single Mode, LC Connector, 1550nm, 40km
KY-SGSFP-ZX80K	SFP module, 1 x 1000M Single Mode, LC Connector, 1550nm, 80km

Distributed By:



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