KY-3028EMP+
Cyber-Secure Video

Layer 2, 10 Port, Managed, PoE+
Din-Rail IEC61850, Ethernet Switch,
IP40, **Hazardous Locations**



Multilingue
ESPANOLA
DYMEC
Multi-Lingual

IPv6

- 8 X 10/100Base(T)X PSE, RJ45 & 2 X 100/1000Base(X) SFP SLOTS (Supports UP 30 Watts on ALL 8 PSE Ports)
- Features STP /RSTP & Ring Protocols for Redundancy
- SNMP, HTTPS, SSH, TACACS+, ACL's ~ Security Features
- EMC performance Industrial Level 4, IP 40, Ruggedized
- Dual Power Inputs: 48 ~ 57 Volts DC for PoE+ (30 Watt)
- CE, FCC, Cyber-Secure Video Certified

RPS · ADVANCED QoS · SFP 100/1000

CLASS 1 Division 2 - Military Grade

Overview

The KY-3028EMP+ is a High Security & High Performance PoE+ Ethernet Switch. It is equipped with DDMI Fiber Diagnostics for Fiber Maintenance & Troubleshooting. Designed for ruggeded applications and harsh environments, the switch supports the IEEE 802.3 af/at specification. Up to 30 Watts on ALL 8 PSE ports. Designed as a rugged switch for critical networks the unit supports DHCP and IEEE 1588v2 Precision Timing Protocoll. Supports SHA2 SNMP Certificates and Extended Special Character Support for Secure SNMP operations. The switch operates in both the English and Spanish languages and can be changed with the push of a button. Extra long switch description & location labels. Each port can be fully labeled and described. This is a Class I Div 2 Hazardous location product.

Features & Benefits

1. Up to 30 Watts per port - ALL 8 PSE Ports (PoE+)
2. Redundancy - Supports STP / RSTP, MSTP, and FRP Ring Protocols for network reliability
3. Supports DHCP Server & Client
4. Supports Multicast Prococols for Video Support
5. Multicast Protocol Supports IGMP Snooping, GMRP, and Static Multicast
6. Network Partitioning: Supports VLAN and PVLAN
7. Network Management Supports CLI, Telnet, Web HTTP, and SNMP v1, v2, v3
8. Network Security Supports SSH, SSL, ACL, TACACS+, SHA2 Certificates & Extended Special Characters (SNMP)
9. Device Mangement: TFTP, FTP and SFTP Upgrades
10. Device Management supports Port Mirroring
11. Alarm Output: IP/MAC conflicts, power port & Ring Alarms
12. MVR- Multicast Vlan Registration, IEEE 802.1Q with GVRP

IP40 / Class I Div2 / Hazardous Location - Military Grade

Technical Specifications

Standards:

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
802.1X, IEEE 802.3x, IEEE 802.1AB, IEEE 802.3af, IEEE 802.3at
Fiber Diagnostics : DDM (Digital Diagnostic Monitoring)
UL 60950-1, EN 61000-4-2 (ESD), EN 61000-4-4 (EFT), EN 61000-4-6 (CS), EN 61000-4-3 (RS) Level 3, EN 61000-4-5 (Surge) Level 3
EN 61000-4-8 Level 3, IEC 60068-2-27 (Shock), IEC 60068-2-32 (Freefall), IEC 60068-2-6 (Vibration)

Protocols

FRP Ring, Ring+, VLAN, PVLAN, MSTP, DDMI, IEEE 1588v2,
IGMP Snooping, GMRP, MVR, Cyber-Secure Video
Telnet, HTTP, HTTPS, SNMPv1/v2/v3, RMON, LLDP, SNTP,
DHCP Server, DHCP Client
Sec, SSH, SSL, ACL, TACACS+, FTP, TFTP, SFTP, QinQ,
Cyber Secure Video, ARP, QOS, Syslog,
Clean Code Technology (CCT), American Certified Ethernet

Switch Properties

Priority Queues: 6, Security Queues: 6
Number of VLANS: 4094, VLAN ID: 1-4094
Number of Multicast Groups: 256
MAC Table 8 K, Packet Buffer: 8 Mb
Power over Ethernet Plus - 30 Watts - All 8 PSE Ports
Packet Forwarding Rate: 12.2 Gbps, Wire Speed All Ports
Switching Delay <5us, Secure Alarm <5us
Remote Temperature Sensing

Interfaces

8 X 10/100Base(T)X PSE - 30 Watt PoE+ Ports
IEEE 802.3 af and at compatible (48 Volt - PoE+)
2 X 100/1000Base(X) SFP Slots
Console Port: RS232 (RJ45 Connector)
Alarm Contact: 2 Pin / 250 VAC/ 350 VDC. 120 mA Max

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	KY-3028EMP+
Physical Ports	
10/100Base-T(X) RJ-45 PSE Ports (30 Watts)	8
100/1000Base-X SFP / RJ45	2
Technology	
Ethernet Standards	IEEE 802.3 for 10Base-T, IEEE 802.3 af/at 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 / Security Queues	6 / 6
Processing	Store-and-Forward
Switch Properties	Switching latency : 5 µs Switching bandwidth : 9.6Gbps Max. Number of Available VLANs : 4096 IGMP multicast groups : 256 Port rate limiting : User Defined, IEEE 1588v2 Precision Timing
Security Features	Enable/disable ports, MAC based port security // CYBER-SECURE Video 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 SNMP v1/v2c/v3 encrypted authentication and access security
Software Features	STP/RSTP/MSTP (IEEE 802.1D/w/s) Redundant Ring with recovery time less than 10ms over 300 switches TOS/Diffserv supported Quality of Service (802.1p) for real-time traffic VLAN (802.1Q) with VLAN tagging and GVRP supported IGMP v2/v3 (IGMP snooping support) for multicast filtering Port configuration, status, statistics, monitoring, security SNTP for synchronizing of clocks over network Supports PTP Client (Precision Time Protocol) clock synchronization DHCP Server / Client support Port Trunk support, Extended Special Character Support for SNMP, SHA2 Certificates MVR (Multicast VLAN Registration) support, Protocol 41 (IPv6 and IPv6 Secure)
Network Redundancy	Ring, Ring+. FTP Ring Dual Power Inputs, DDMI, Fiber Diagnostics RSTPe STP RSTP MSTP, MVR
Warning / Monitoring System	Relay output for fault event alarming / Fiber Diagnostic Monitoring // DDMI Syslog server / client to record and view events Include SMTP for event warning notification via email Event selection support, Remote Temperature Sensing
RS-232 Serial Console Port	RS-232 in RJ45 connector with console cable. Baud rate setting: 9600bps, 8, N, 1
LED Indicators	
Power Indicator	Green : Power LED x 2
R.M. Indicator	Green : Indicates that the system is operating in Ring Master mode
Ring Indicator	Green : Indicates that the system is operating in Ring mode
Fault Indicator	Amber : Indicates unexpected events occurred
10/100Base-T(X) RJ45 Port Indicator, PoE	Green for port Link/Activity Amber for Duplex/Collision
100/1000Base-X SFP Port Indicator	Green for port Link/Activity

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Fault Contact	
Relay	Relay output to carry capacity of 0.5 Amps @ 48 Volts DC
Power	
Redundant Input Power	Dual DC inputs. 48~72 Volts DC on 7 Pin Block
Power Consumption (Typ.)	9 Watts, without PoE+
Overload Current Protection	YES
Reverse Polarity Protection	Present on terminal block
Physical Characteristics	
Enclosure	IP40 / Military Grade / Aluminum / Class 1 Division 2 / Gas Certified
Dimensions (W x D x H)	60.2(W) x 115.5(D) x 138.5(H) mm (Small Form Factor)
Weight (g)	750 g
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), EN61000-4-11. EN61000-4-6 (CS), EN61000-4-8
Shock	IEC60068-2-27
Free Fall	IEC60068-2-32
Vibration	IEC60068-2-6
Safety	EN60950-1, UL 60950-1, NEMA TS-2
MTBF (Hours) (MIL-HDBK-217F2, GB, GC, 25°C)	294,689
Warranty	5 years
Cryptologic	
Cyber-Secure Video with Clean Code Technology	NSA / CSS Coding Guidelines / with Silicon Enhancements
Exceeds NEMA TS-2 for Traffic Control Equipment	

IPv6

RPS

ADVANCED QoS

SFP 100/1000

ORDER Model	Model	Description
	KY-3028EMP+	**Industrial 10-Port Managed Ethernet Switch with 7 x 10/100Base-T(X) / and 1 X 10/100/1000 Base(T)X & 2 X 100/1000Base(X) SFP Slots, IP40, Ruggedized**

Packing List

- KY-3028EMP+
- DIN-Rail Kit
- Wall-mount Kit
- Console Cable
-
-

Optional Accessories (Can be purchased separately)

- Gigabit SFP's - Single-Mode, Multi-Mode, Copper
- Fiber or Copper Cables
- KY-120-48 Power Supplies (Select Appropriate Wattage)

Optional DC Pig-Tail / Quick Power

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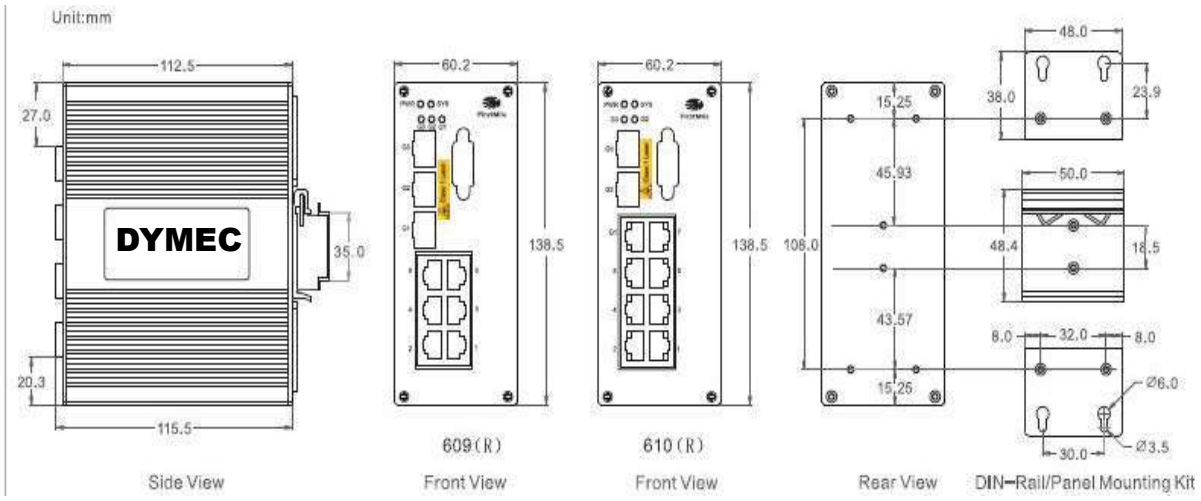
Dimensions:



KY-3028EMP+
Technical Specifications Addendum

Power Supply
- Power Consumption: < 9 Watts
- 48 ~72 Volts, DUAL DC Input
- Surge Protected

Critical Alarm Relay
- Contact relay: 1A@24Volts DC

Physical
- Height:115.5 mm
- Width: 60.2 mm
- Depth: 138.5 mm
- Weight: 750 g / 2.7lbs
- Ingress Protection: IP40
- Enclosure: Aluminum Military Grade
- Mounting: DIN rail or panel

Switch Properties
- Switching method: Cut Thru / Non-Blocking Fabric
- Switching latency: 5 us (100Mbps)
- Switching bandwidth: 9.6Gbps
- MAC addresses: 8192
- Priority Queues: 6 / Security Queues: 6
- Frame buffer memory: 8 Mbit
- Simultaneous VLANs: 255
- VLAN ID Range: 1 to 4094
- IGMP multicast groups: 256
- Port rate limiting: Yes
- Store & Forward with Security

Approvals
- Hazardous Locations: Class 1, Div 2
- ISO: Designed and manufactured using a ISO9001: 2008 certified quality program
- CE Marking
- Emissions: FCC Part 15 (Class A), EN55022 (CISPR22 Class A)
- UL 60950, EN60950) Safety Approved to 80 Degrees C
- Laser Eye Safety (FDA/CDRH): Complies with SFP specifications.

EMI Immunity and Environmental Compliance
- IEC 61000-6-2 Industrial (Generic)
- IEC 61800-3 Industrial (Variable Speed Drive Systems)
- IEC 61850-3 Electric Utility Substations
- IEEE 1613 Electric Utility Substations
- NEMA TS 2 Traffic Control Equipment

DYMEC Warranty
- 5 Years - Design or manufacturing / Can be extended to 6

Network Management
- HTTP graphical web-based, SSL (128-bit encryption)
- SNMP v1, v2c, v3 (56-bit encryption)
- Telnet, VT100, SSH/SFTP (128-bit encryption)
- Command Line Interface (CLI)
- IEEE PTP1588v2 PTP / Solar Winds Manageable
- Authentication and Accounting - TACACS+ (encrypted), RADIUS Client, SSH File Transfer Protocol (SFTP), PPP

IEEE Compliance
- 802.3-10BaseT, 802.3ab Gigabit Ethernet, 802.3af/at
- 802.3u-100BaseTX, 100BaseFX
- 802.3x-Flow Control, IEEE1588-2008- Precision Timing v2
- 802.3ad-Link Aggregation
- 802.1D-MAC Bridges
- 802.1D-Spanning Tree Protocol
- 802.1p-Class of Service
- 802.1Q-VLAN Tagging
- 802.1w-Rapid Spanning Tree Protocol
- 802.1x-Port Based Network Access Control
- 802.1Q-2005 (formerly 802.1s) MSTP

IETF RFC Compliance
- RFC768-UDP
- RFC783-TFTP
- RFC791-IP
- RFC792-ICMP
- RFC793-TCP
- RFC826-ARP
- RFC854-Telnet
- RFC894-IP over Ethernet
- RFC1112-IGMP v1
- RFC1519-CIDR
- RFC1541-DHCP (client)
- RFC2030-SNTP
- RFC2068-HTTP
- RFC2236-IGMP v2
- RFC2284-EAP
- RFC2475-Differentiated Services
- RFC2865-RADIUS
- RFC2460, 4291-IPv6
- RFC3415-SNMPv3-VACM
- RFC3414-SNMPv3-USM
- SNTP Server / Client
- Broadcast Storm Control
- DHCP Server
- SNMPv123
- Port / MAC Binding
- RMON
- Port Lock
- LLDP
- Port Based VLAN
- ASCII Configuration files
- HTML Configuration files
- 802.1Q VLAN
- RFC4254-SSH connection
- RFC4251-SSH Protocol
- RFC4432-SSH Transport
- RFC6668-SHA-2 Data

IETF SNMP MIBS
- RFC1493-BRIDGE-MIB
- RFC1907-SNMPv2-MIB
- RFC2012-TCP-MIB
- RFC2013-UDP-MIB
- RFC2578-SNMPv2-SMI
- RFC2579-SNMPv2-TC
- RFC2819-RMON-MIB
- RFC2863-IF-MIB
- DDMI - Digital Diagnostic Monitoring
- Port Mirroring
- TACACS+

- ITS
- Transportation
- Automation
- Scientific
- SCADA
- Telecommunications
- Robotics
- Railway
- Military
- Security
- Medical

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