BLUECORAL

28-PORT L3 MANAGED 10G INDUSTRIAL ETHERNET SWITCH
IES-HF828N SERIES

| 10G Switch | Advanced QoS | L3 Switch | Multiple Fiber Ports | Flexible Port Combination |

BLUECORAL IES-HF828N series are rack-mount Industrial Ethernet switches, equipped with 4 10G ports & 24 Gigabit Ethernet ports, operated in harsh industrial environment. With flexible combination of copper and fiber port options, IES-HF828 series delivers high quality, wire-speed L3 switching performance, advanced features such as powerful VLAN operation, policy-based traffic manage & security, and intelligent management. IES-HF828 series comply with various industrial standards, can meet the most stringent technical requirements in applications such as power grid, railway transport and out-door industrial field. These switches can be equipped with redundant power supplier, DC or AC. These switched are designed to operate in -10 to 60°C.

Features

- Up to 24 100/1000BaseSFP slots plus 4 10G SFP+ slots.
- Gigabit ports options: 24 10/1000Base SFP slots, or 8 Gigabit Copper ports plus 16 100/1000BaseSFP slots, or 16 Gigabit Copper ports plus 8 100/1000BaseSFP slots, or 24 10/100/1000BaseT copper ports.
- 9K Jumbo frames
- L3 wire-speed switching
- Network redundant LACP, Spanning tree STP, RSTP & MSTP, fast Ring fail-over protection (< 20ms)
- Support single & multiple rings and G.8032 ERPS
- Advanced VLAN operations: IEEE 802.1ad/QinQ VLAN, VLAN tag add/remove/replace
- Private VLAN, port-based /tag-based/protocol-based VLAN
- Multicasting support IGMP v1/v2/v3, proxy & snooping
- Security: IEEE 802.1x authentication, RADIUS & TACACS+ AAA (pending)
- Policy-based traffic control engine for actions of Deny, Allow, Queue mapping, rate limit, mirror, or CoS remark on any combination of specific Layer-2/ Layer-3/ Layer-4 patterns
- QoS (SPQ, WRR, SPQ+ WRR): Hierarchical per-port, per queue shaping & scheduling with bandwidth management

Technical Specifications

ETHERNET

Ethernet Interface	100/1000BaseSFP slots or 10/100/1000BaseT(X) for 24 gigabit ports 10G SFP+ slots (1G SFP backward compatible)
Operating mode	Store and forward, L2 wire-speed/non-blocking switching engine
MAC addresses	16K
Jumbo frames	9K Bytes

Copper RJ45 Ports

Speed	10/100/1000 Mbps
MDI/MDIX Auto-crossover	Support straight or cross wired cables
Auto-negotiating	10/100/1000 Mbps speed auto-negotiation; Full and half duplex

SFP/SFP+ (pluggable) Ports

Port types supported	Gigabit fiber multimode, fiber single mode, fiber long-haul single mode 100/1000BaseF (SX/LX/LH)
Fiber port connector	LC typically for fiber (depends on module)
10G SFP+	1G/2.5G/10G SFP+ slots

Network Redundancy

Fast failover protection rings	Link loss recovery < 20ms
	Single & Multiple rings
G.8032 ERPS	Ethernet Ring Protection Switching
Spanning Tree Protocol	IEEE 802.1D STP, IEEE 802.1w RSTP, IEEE 802.1s MSTP
	BPDU forwarding and filtering
IEEE 802.3ad Port Trunk	Static trunk or Dynamic via LACP (Link Aggregation Control Protocol)

Bridge, Virtual Local Area Networks (VLANs) & Protocols

Flow control	IEEE 802.3x (Full Duplex) and Back-Pressure(Half Duplex)
Max VLANs	2048 VLANs (VID range 1~4094)
VLAN Types	Port-based VLANs, IEEE 802.1Q tag-based VLANs, IEEE 802.1v protocol-based VLANs, IEEE 802.1ad Double Tagging (Q in Q) Private VLAN
VLAN operations	Attach/Remove/Replacement VLAN tag
MVR (Multicast VLAN Registration)	Yes
Multicast protocols	IGMP v1, v2 and v3 with 512 multicast groups
	IGMP snooping and querying
	Immediate leave and leave proxy

Technical Specifications

TRAFFIC MANAGEMENT ENGINE & QOS
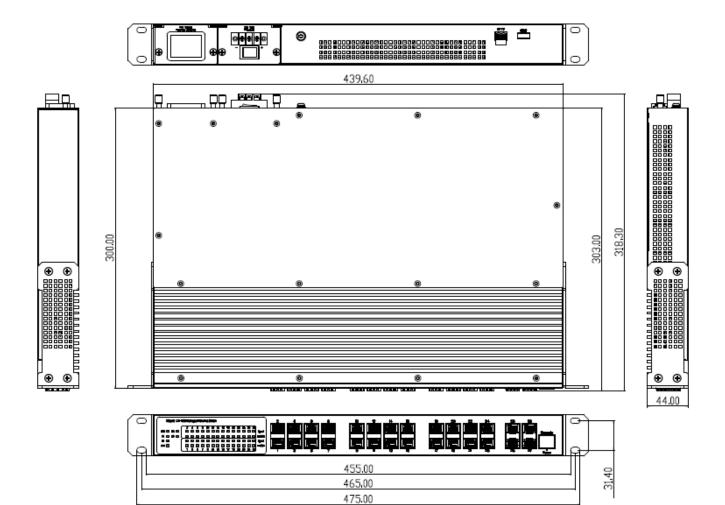
Policy-based access control engine	Policy/profile-based Access Control List (ACL)
	Multi-layer ACL support;
	Flexible combination of well-known fixed Layer 2/3/4 fields: - VLAN ID, Source/Destination MAC address, EtherType - Source/Destination IP address, IP protocol number - UDP or TCP, Source/Destination port number of TCP/UDP - DSCP or ToS value
	Actions per rule: Deny, Allow, Queue mapping, rate limit, mirror, CoS remark
	20 profiles per switch: 20, Max 32 entries per profile.
Number of queues per port	8
Scheduling schemes	SPQ, WRR, SPQ + WRR
Traffic Shaper	Hierarchical per port and per queue shaping & scheduling with bandwidth management
Traffic Policer	Ingress rate limit in 1K bps granularity
Traffic Policer	TrTCM (Two Rate Three Color Marker) policer engine
Class of Server	802.1p CoS

Security

Port security	IP and MAC-based Access control; Policy-based Access control
	IEEE 802.1X authentication Network Access Control
	RADIUS Client for IEEE 802.1X
Storm Control	Multicast/Broadcast/Flooding Storm Control on per port and per VLAN basis

Management

User Management interfaces	Cisco-like CLI (command line interface); Telnet (5 sessions)
	WEB-based Management
	SNMP v1, v2c, v3
	Stacking Management by Single IP (up to 8 switches)
Management Security	HTTPS, SSHv2
	Radius Client for Management
	TACACS+ Client for Management
Upgrade & Restore	HTTP/FTP/TFTP for Configuration import/export & Firmware Upgrade
Diagnostic	Syslog
	Policy-based stream mirroring
	Ethernet Copper connection diagnostic tool
SNTP	Yes

Layer3

L3 routing	Static routing, RIPv1/RIPv2, OSPF, VRRPv2
	DVMRP, PIM-DM

Power

Power input options	DC input: DC Redundant Input Terminals & Reverse power protection Single/dual AC inputs DC & AC dual inputs
Input voltage range	20-58 VDC or 100/240 VAC, 50Hz ~ 60Hz

Indicators

Power Status indication	Indication of power input status
Ethernet port indication	Link & Speed

Environmental and Compliances

Operating temperature range	-10 to +60°C
Storage temperature range	-10 to +70°C
Humidity (non-condensing)	5 to 95% RH
Vibration, shock & freefall	Vibration: IEC60068-2-6; Shock: IEC60068-2-27; Free Fall: IEC60068-2-32
Certification compliance	CE/FCC;
EMI	Radiated Emission: CISPR 22, EN55022 Class A
	Conducted Emission: EN55022 Class A
EMS	ESD: IEC61000-4-2
	Radiated RF (RS): IEC61000-4-3
	EFT: IEC61000-4-4
	Surge: IEC61000-4-5
	Conducted RF (CS): IEC61000-4-6
RoHS and WEEE	RoHS (Pb free) and WEEE compliant
MTBF	> 25 years

Mechanical

Ingress protection	IP30
Dimensions	439.6 (W) x 44 (H) x 318.3 (D) mm (maximum)
Weight	4.5 kg (maximum, IES-HF828N-24F4X)
Installation option	19'' rack mounting

Order Information

Models	Description	Total Port#	Gigabit Ethernet Port 10/100/1000 BaseT(X)	Gigabit Ethernet Port 100/1000 BaseSFP	10G SFP+ port
IES-HF828N-24F4X-D	28 port L3 10G Managed Ethernet Switch, Single DC input	28		24	4
IES-HF828N-24F4X-A	28 port L3 10G Managed Ethernet Switch, Single AC input	28		24	4
IES-HF828N-24F4X-2D	28 port L3 10G Managed Ethernet Switch, Dual DC inputs	28		24	4
IES-HF828N-24F4X-2A	28 port L3 10G Managed Ethernet Switch, Dual AC inputs	28		24	4
IES-HF828N-24F4X-AD	28 port L3 10G Managed Ethernet Switch, AC + DC inputs	28		24	4
IES-HF828N-16F4X-D	28 port L3 10G Managed Ethernet Switch, Single DC input	28	8	16	4
IES-HF828N-16F4X-A	28 port L3 10G Managed Ethernet Switch, Single AC input	28	8	16	4
IES-HF828N-16F4X-2D	28 port L3 10G Managed Ethernet Switch, Dual DC inputs	28	8	16	4
IES-HF828N-16F4X-2A	28 port L3 10G Managed Ethernet Switch, Dual AC inputs	28	8	16	4
IES-HF828N-16F4X-AD	28 port L3 10G Managed Ethernet Switch, AC + DC inputs	28	8	16	4
IES-HF828N-8F4X-D	28 port L3 10G Managed Ethernet Switch, Single DC input	28	16	8	4
IES-HF828N-8F4X-A	28 port L3 10G Managed Ethernet Switch, Single AC input	28	16	8	4
IES-HF828N-8F4X-2D	28 port L3 10G Managed Ethernet Switch, Dual DC inputs	28	16	8	4
IES-HF828N-8F4X-2A	28 port L3 10G Managed Ethernet Switch, Dual AC inputs	28	16	8	4
IES-HF828N-8F4X-AD	28 port L3 10G Managed Ethernet Switch, AC + DC inputs	28	16	8	4
IES-HF828N-4X-D	28 port L3 10G Managed Ethernet Switch, Single DC input	28	24		4
IES-HF828N-4X-A	28 port L3 10G Managed Ethernet Switch, Single AC input	28	24		4
IES-HF828N-4X-2D	28 port L3 10G Managed Ethernet Switch, Dual DC inputs	28	24		4
IES-HF828N-4X-2A	28 port L3 10G Managed Ethernet Switch, Dual AC inputs	28	24		4
IES-HF828N-4X-AD	28 port L3 10G Managed Ethernet Switch, AC + DC inputs	28	24		4

Dimension (unit: mm)