



HMG-428

Features

- ✓ **High Performance Network Switching Technology**
- ✓ Complies with IEEE 802.3, IEEE 802.3u, IEEE 802.3x, IEEE 802.1p, IEEE 802.1q, IEEE 802.1d, IEEE 802.1w, IEEE 802.1x, IEEE 802.3ad, IEEE 802.3z
- ✓ Provides 4 x 10/100 Mbps Ethernet ports with RJ-45 connector
- ✓ Provides 2 combo ports
- ✓ RJ-45 Port support auto MDI/MDI-X crossover
- ✓ Provides broadcast storm protection
- ✓ Redundant X-Ring recovery time < 10 ms on full load
- ✓ Supports Dual Homing – RSTP over X-ring
- ✓ Supports Ring coupling
- ✓ SNMP for network management
- ✓ IGMP snooping for multicast traffic
- ✓ QoS / ToS to increase network packet determinism
- ✓ VLAN for easy network planning
- ✓ Event notification by e-mail, SNMP trap, Syslog & Relay output
- ✓ Online Port Mirroring for online debugging
- ✓ Supports IP security
- ✓ Configurable by WEB browser
- ✓ IntraVUE Network Management software compatible
- ✓ **Robust Industrial Design**
- ✓ Robust Aluminum case complying to IP-30 housing standard
- ✓ Supports operating temperature -10 to 70°C
Extended temperature -40 to 80°C
- ✓ DIN-Rail, Panel mount or desktop installation
High level of immunity to electromagnetic interference
power supply surges typically found in industrial plant environments or external curb side enclosures
- ✓ **Reliable Power Design**
- ✓ Wide range redundant power design
- ✓ Equipped with Redundant power inputs
- ✓ Supports 12 to 48VDC redundant power with polarity reverse protection
- ✓ Removable terminal block



Overview

The Husky series HMG-428 is a highly reliable and fault-tolerant Industrial 6-port Gigabit Managed Ethernet Switch. It supports state of the art design with four 10/100 Mbps Ethernet ports and two small form pluggable (SFP) ports that supports Gigabit SX or LC depending on your existing network structure. The innovative SFP fiber slot design provides user the flexibility to insert different fiber modules, either multi-mode or single-mode at various distances, whether you require typical 10km or overhaul 40 km, 80 km and 120 km distances. With its high performance switching device, HMG-428 provides redundant self-recovery mechanism in less than 10ms on full load which allows you to establish a redundant Ethernet network to build a back-up ring topology. Dual homing and Ring coupling are supported to add reliability by allowing a device to be connected to be network by way of two independent connection points. HMG-428 offers powerful network management functions including SNMP, SMTP, STMP, Quality of Service, Class of Service, IGMP, Snooping, LACP, DHCP, VLAN, RMON, Port Trunk, Port Mirror, User Authentication (Radius) and IP Security. The HMG-428 is equipped with a terminal block to provide dual power inputs with reverse polarity protection. Its IP-30 housing protection, wide operating temperature of -10 to 70°C and DIN-Rail mounting is suitable for an industrial environment. The E version extends the temperature rating to -40 to 80°C. The HMG-428 is a plug-and-play solution for your Industrial Ethernet applications.

Hardware Specifications

Interface

RJ-45 Ports: 4 10/100Base-TX auto-negotiation speed, Full/Half duplex, auto MDI/MDI-X, RS-232 connector (RJ-45)

Fiber Ports: 2 comb ports

LEDs: Per unit: Power (Green), Power 1 (Green), Power 2 (Green), Fault (Yellow), Master (Green)
8 port 10/100: Link/Activity (Green), Full duplex/Collision (Yellow)
Mini GBIC: Link/Activity (Green)
Giga Copper: Link/Activity (Green), speed (1000 Green)

Alarm: Relay output for port break and power failure
Current carry ability (1A at DC 24V)

Power Input: VDC 12-48V
Redundant power with removable terminal block

Power Protection: ESD (Ethernet) : 4000VDC
Surge : 1500VDC
Power Reverse Polarity

Power Consumption: 6.96 watts

Dimensions: IP-30 standard, 72 mm (W) x 152 mm (H) x 105 mm (D)

Installation: DIN-Rail, Panel mount or desktop

Environmental

Operating Temp: Regular: -10 to 70°C
Extended: -40 to 80°C

Storage Temp: -40 to 85°C (-40 to 185°F)

Operating Humidity: 5% to 90% RH (non-condensing)

Technical Specifications

Standard:

IEEE802.3 10BASE-T, IEEE802.3u 100BASE-TX/100BASE-FX
IEEE802.3x Flow Control and Back Pressure
IEEE802.3ad Port trunk with LACP
IEEE802.1d Spanning Tree Protocol
IEEE802.1w Rapid Spanning tree
IEEE802.1p Class of Service
IEEE802.1q VLAN Tagging
IEEE 802.1x User Authentication (Radius)

RFC Standard:

RFC2030 SMTP, RFC 2821 SMTP, RFC 1215 Trap, RFC2233 MIBII,
RFC 1157 SNMP MIB, RFC 1493 Bridge MIB, RFC 2674 VLAN MIB,
RFC 2665 Ethernet like MIB, RFC 2819 RMON MIB, Private MIB

Network Media:

10Base-T: 2-pair UTP/STP Cat. 3, 4, 5 cable EIA/TIA-568 100-ohm (100m)
100Base-TX: 2-pair UTP/STP Cat. 5/5e cable EIA/TIA-568 100-ohm (100m)

Packet Filter:

Broadcast packet filtering
-Number of MAC (50 Tables)
-IP Address Security (10 Sections)

Protocol Technology: CSMA/CD

Switching Architecture: Store and Forward

Performance

Data Transfer Rate:

14,880 pps for Ethernet port
148,800 pps for Fast Ethernet port
1,488,000pps for Gigabit Fiber Ethernet port

MAC Address: 8k

Memory Buffer: 4Mbytes

System Log: 1000 records

Back-plane: 2.8 Gbps

Local Configuration: RJ-45 connector for RS-232 interface

Port Statistics: Supported

Flow Control: Full-duplex and Back Pressure for Half-duplex

Packet Filter: Broadcast/Multi-cast/Unknown Broadcast storm packet filter

Transfer Packet Throughput: 3.87Mpps @ 64 bytes

Regulatory Approvals

EMI: FCC Class A

EMS:

EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5,
EN61000-4-6, EN61000-4-8, EN61000-4-11

Safety: UL, cUL, CE/EN60950

Shock: IEC60068-2-27

Vibration: IEC60068-2-6

Free Fall: IEC60068-2-32

Class 1 DIV 2: Pending*

DNV: Pending*

Environmental: WEEE, RoHS

MTBF: 325,000 hrs based on Mil-Hdbk-217F, GB

Warranty: 5 years

Management Specifications

Redundancy:

STP, RSTP
Dual Homing, Ring Coupling, Dual Ring*
X-Ring with recovery time < 10 ms

Management Protocols:

SNMP v1/v2c/v3, RMON, SMTP, SNTTP,
IGMP v1/v2 & Query mode, DHCP/Client, TFTP

MIB: MIB-II, Bridge MIB, Ethernet like MIB, VLAN MIB, Private MIB

Configuration:

Web interface management

VLAN:

Port-based VLAN/Tag VLAN (256 entries)
VLAN ID (Up to 4K)
GVRP (256 Groups)
Static VLAN groups up to 256, the VLAN ID can be assigned from 1 to 4094

LLDP*: Supports LLDP to allow switch to advise its identification and capability on the LAN

Quality of Service: Hardware supports 4 queues per port

Port Mirroring: Online traffic monitoring on selected ports

MAC IP Security:

Ingress and egress MAC address filter and static source MAC address lock,
Dumping MAC address Table, Ingress/Egress MAC address security,

IP Security:

10 IP address accounts for system management security for Web, SNMP and Telnet management security to prevent intruder

IGMP Snooping: v1 and v2, query mode, multicast group with 256 entries

LACP Port Trunk: 3 Trunk groups/Maximum 4 trunk members

Port Mirror:

Global system supports 3 mirroring types: "RX, TX and Both packet".
Maximum of 8 entries

Class of Service: Per port 4 queues

Email Warning: Pre-defined events

SNMP Trap: Cold start, link down, link up, authorization fail,
X-Ring topology Change, Power alarm trap, Trap station up to 3

SMTP: Up to 6 e-mail accounts

Firmware Upgrade: By TFTP