



**HMG-828**

**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 8 x 10/100Base-TX 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 24 to 48VDC redundant power with polarity reverse protection
  - ✓ Removable terminal block



**Overview**

The Husky series HMG-828 is a highly reliable and fault-tolerant Industrial 10-port Gigabit Managed Ethernet Switch. It supports state of the art design with eight 10/100 Mbps Ethernet ports and two small form pluggable (SFP) ports that supports Gigabit SX or LX 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-828 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-828 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-828 is equipped with a terminal block to provide dual power inputs with reverse polarity protection. Its IP-31 housing protection, wide operating temperature of -10 to 70°C and DIN-Rail mounting issuitable for an industrial environment. The E version extends the temperature rating to -40 to 80°C . The HMG-828 is a plug-and-play solution for your Industrial Ethernet applications.

**Hardware Specifications**

**Interface**

**RJ-45 Ports:** 8 10/100Base-TX auto-negotiation speed, Full/Half duplex, auto MDI/MDI-X

**Fiber Ports:** 2 combo 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 24-48V  
 Redundant power with removable terminal block

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

**Power Consumption:** 11.28 watts

**Dimensions:** IP-31 standard, 72 mm (W) x 152 mm (H) x 105 mm (D)

**Installation:** DIN-Rail, panel mounting or desktop

**Environmental**

**Operating Temp:** Regular: -10 to 70°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 SNMP, 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

## 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

### 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

## 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, SNTP,  
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:

4 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