光普森科
GPSENKE

# 4+8 10Gbps Industrial L2+ Managed Switch

## GPEM2000G-R 4+8 10G Series




INDUSTRIAL NETWORK SOLUTION SPECIALIST
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# Introduction

The GPEM2000G-R 4+8 10G series is a high-performance, fully managed industrial Ethernet switch, offering 8 x 10/100/1000Base-TX Ethernet ports and 4 x 1G/2.5G/10G Base-X SFP/SFP+ fiber slot. The ERPS self-healing time ≤ 20ms, and it not only support VLAN/Port Mirroring/ IGMP/ QoS/ LLDP/ 802.1X/ Fiber DDM/ IPV6 management/ Web/SNMP /Telnet/TFTP/Web upgrading LAY-2 managed function, but also support IPv4/IPv6 static router and DHCP server function.

The GPEM2000G-R 4+8 10G series support DC 12~58v dual-power, operates in -40° C ~ 85° C temperatures , and it supports 6KV surge protection, 8KV contact electrostatic protection and 15KV air electrostatic protection, has high EMC/EMI level, and can work stably in complex electromagnetic environments.

With its rugged design and high reliability, the GPEM2000G-R 4+8 10G series is ideal for use in demanding environments for new energy energy, electrical power plant, intelligent transportation, and video surveillance, offering a secure and dependable solution for large LAN deployments.

# Main Feature

- Support 8 * 10/100/1000Base-TX RJ45 ETH + 4*1G/2.5G/10G Base-X SFP/SFP+ Slot
- Support edundant power supply with polarity reverse/over-current protection
- Support G.8032 ERPS protocol, recovery time ≤20ms@260pcs
- Support VLAN/VLAN Classification/QinQ/STP/RSTP/MSTP/Port Mirroring/DHCP/ Multicast/ ACL / IGMP/QoS/LLDP/802.1X/Dying Gasp/SFP DDM/IPV6 management/ Web/SNMP/ Telnet/ TFTP/Web upgrading
- Support IPv4/IPv6 Static Router & DHCP Server
- Support 6KV surge Protection, 8kV Contact Protection, and 15kV Air ESD Protection
- Support IP40 fan-less and Din-rail hardware design
- Support Class A EMI Protection
- Support -40 ° C ~+85° C operation temperature

## Technical Parameter

| | |
|---|---|
| IEEE Standard | EEE 802.3 10Base-T Ethernet<br>IEEE 802.3u 100Base-TX Ethernet<br>IEEE 802.3ab 1000Base-T Ethernet<br>IEEE 802.3z 1000Base-X Ethernet<br>IEEE 802.3ae 10GBase-X Ethernet<br>IEEE 802.3x Flow Control and Back Pressure<br>IEEE 802.1D Spanning Tree Protocol<br>IEEE 802.1w Rapid Spanning Tree Protocol<br>IEEE 802.1Q VLAN<br>ITU-T G.8032 ERPS<br>IEEE 802.1X Port Authentication Network Control<br>IEEE 802.1ab LLDP<br>IEEE 802.3ad LACP |
| Switch Capacity | 96Gbps |
| Backplane Bandwidth | 142.848Mpps |
| MAC | 16K |
| Packet Buffer | 12M bit |
| Jumbo Frame | Support 10Kbytes |
| VLAN | 4K |
| MDX/MIDX | Support |
| Watchdog | Support |
| Forward Delay | <5μs |

## Hardware Parameter

| | | |
|---|---|---|
| Size | | 54mmx158mmx115mm |
| Weight | | 1.22 KG |
| Port | Ethernet | 8*10/100/1000Base-TX RJ45 Ethernet MDI/MDI-X Adaptive |
| | Fiber | 4*1G/2.5G/10G Base-X SFP/SFP+ Slot (Optional) |
| | CONLOSE | 1* RJ45-568B Port |
| Power Port | | 1*4 Pin Phoenix Terminal 5.08mm |
| Power Input | | DC12~58 V Range Dual Power Supply Redundancy |
| Current Input | | 1.4A Max |
| Consumption | | ≤15 W |
| Power Protection | | Support dual power supply redundancy<br>Support reverse connection& over current protection |
| LED Indicator | | Power Indicator： PWR<br>Port Indicator：RJ45 Port（Link/ACT） |
| Protection level | | IP40 Protection Metal Shell |
| Heat Dissipation | | Fanless with natural cooling |
| Installation | | DIN rail mounting / Wall mounting |
| Working Environment | | Working Temperature：-40～85 ° C<br>Storage Temperature：-40～85 ° C<br>Humidity：5%～95%(Non-Condensation) |

# Software Parameter

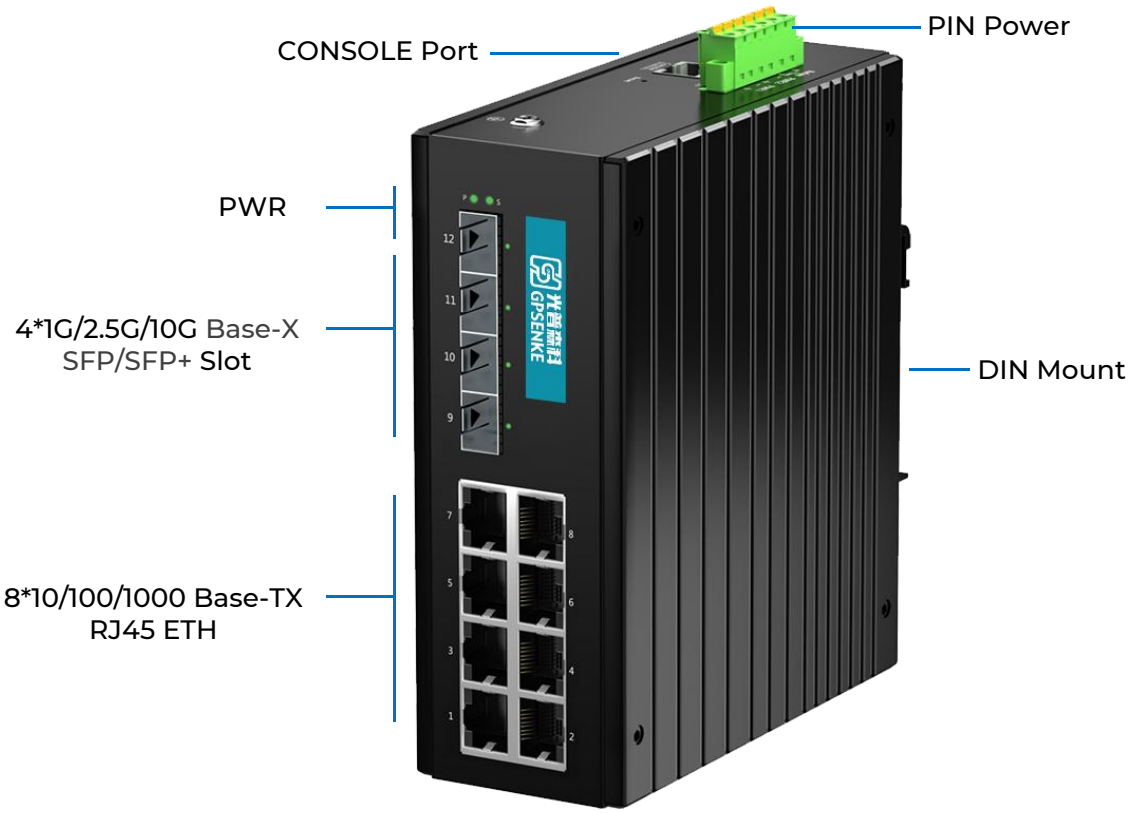
| | |
|---|---|
| Port aggregation | Support 1G Port Aggregation<br>Support 2.5GE Port Aggregation<br>Support 10GE Port Aggregation<br>Support Static aggregation<br>Support dynamic aggregation |
| Port features | Support IEEE802.3x flow control,<br>Support Port traffic statistics<br>Support port isolation<br>Support network storm suppression based on port bandwidth |
| MAC Address | Support Static MAC-Address Management<br>Support Dynamic MAC-Address Management<br>Support Filtering Mac-Address<br>Suppory MAC Limit & Mac Flapping based on Port & VALN |
| VLAN | Support Access mode,Trunk mode, Hybrid mode |
| VLAN Type | Mac Based VLAN；IP Based VLAN；Protocal Based VLAN |
| GVRP | Support Normal Mode, Fixed mode, Forbidden mode |
| QinQ | Support Port-Based QinQ,VLAN-Based QinQ,Flow-Based QinQ |
| Port mirroring | Support Multi to one port mirroring |
| Ring network protocol | Support IEEE802.1w RSTP protocal, STP,RSTP, MSTP<br>Support G.8032 ERPS protocol,<br>Support single ring, sub Ring and associated Sub ring<br>Support Loop-detect based on port and VLAN |
| Multicast | IGMP snooping |
| DHCP | Support DHCP Client, Server, Snooping , Remote-ID,Circuit-ID<br>Support Setup for trust-port |
| ARP | Support Aging of table entries |
| IPv4 | Static Router |
| IPv6 | Static Router |
| ACL | Support IP Standard ACL<br>Support MAC Extend ACL<br>Support IP Extend ACL<br>Support L2,L3,L4 Match<br>Support IPv6 ACL |
| QoS | Support QoS Class, Remarking<br>Support SP,WRP Queue Scheduling<br>Support Ingress Port-based Rate-limit<br>Support Egress Port-based Rate-limit<br>Support Policy Based QoS |

| | |
|---|---|
| Security features | Support 802.1X, Port & MAC authentication, RADIUS services<br>Support Port Security<br>Support IP source guard with binding functions for IP /Port/MAC<br>Supports ARP checking (filtering of illegal user ARP packets)<br>Supports user access control for Telnet, SSH, HTTP, and HTTPS<br>Supports port isolation |
| Management and maintenance | Support LLDP<br>Support user management and login authentication<br>Support SNMPV1/V2C/V3<br>Support web management, HTTP1.1, HTTPS<br>Support Syslog and alarm grading<br>Support RMON(Remote Monitoring) alarm<br>Support NTP<br>Support Ping , Tracert, Dying Gasp<br>Support optical transceiver DDM function<br>Support Ethernet Port cable detection function<br>Support FTP/TFTP Client<br>Support USB Disk Local configuration import & export<br>Support Telnet Server/Client, SSH Server<br>Support dual partition switching<br>Support TACACS<br>SUpport Sflow<br>Support IPv6 Management<br>Support TFTP, TFTP Client, web upgrading<br>Support IPv6 Management |

## Standard Protocol

| | |
|---|---|
| Standard | EMI：<br>FCC Part 15 Subpart B Class A，EN 55022 Class A<br>EMS：<br>IEC (EN) 61000-4-2 (ESD): IEC 61000-4-2 8KV/15KV<br>IEC (EN) 61000-4-5 (Surge-Power): IEC 61000-4-5 6KV/4KV ( 8/20us)<br>IEC (EN) 61000-4-5 (Surge-Ethernet): IEC 61000-4-5 6KV/4KV(10/700us)<br>IEC 61000-4-3(RS): 80 MHz-1 GHz： 10 V/m<br>IEC 61000-4-4(EFT): 6KV/4KV<br>IEC 61000-4-6(CS): 10V<br><br>Shock： IEC 60068-2-27<br>Freefall： IEC 60068-2-32<br>Vibration： IEC 60068-2-6 |
| MTBF | 554,412 Hour (Telcordia (Bellcore),GB Standard) |
| Warranty | 5 - Year |

## Appearance & Accessories





Packing*1


Device*1


Warranty Card*1

Note: - Power adapter (Optional)
- Default DIN rail mount, wall mounting bracket is optional.

## Accessories Selection(Optional)

| | |
|---|---|
| SFP Module | 10G single-mode single-fiber LC(SC) port: 10Km, 20Km, 40Km or above<br>10G single-mode dual-fiber LC port: 10Km, 20Km, 40Km or above<br>10G multi-mode dual-fiber LC port: 300m<br>1000M single-mode single-fiber LC(SC) port: 20Km, 40Km, 60Km or above<br>1000M single-mode dual-fiber LC port: 20Km, 40Km, 60Km or above<br>1000M multi-mode dual-fiber LC port: 550m |
| Power Adapter | Desktop, Rail Type (Optional) |

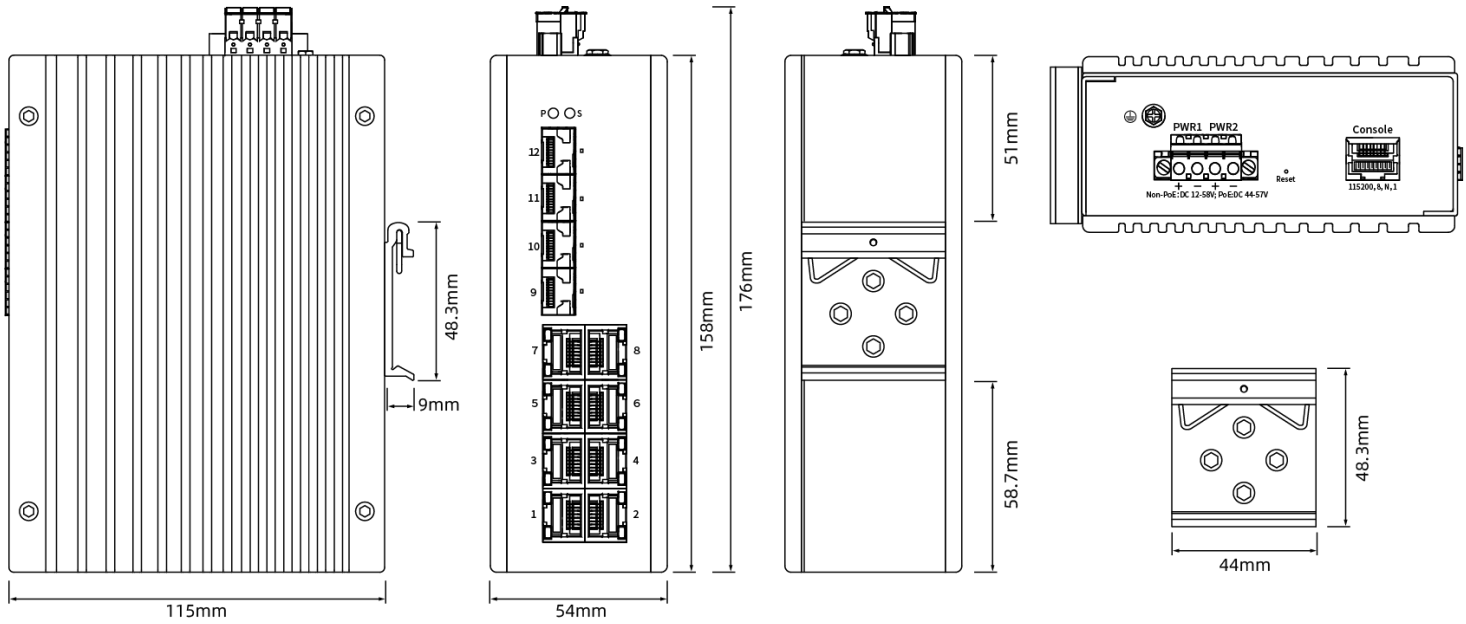
## Model Selection

| Model | Ethernet & Fiber | Power |
|---|---|---|
| GPEM2000G-R-4GW8GT-2D2 | 8*10/100/1000Base-TX RJ45<br>4*1G/2.5G/10G Base-X SFP/SFP+ | 12~58VDC<br>Dual Power |

## LED Indicators

| | | | |
|---|---|---|---|
| P: Power | On: Device on Power Supply | | Off: Power off or Failed |
| S: SYS | On:Device on operation | Blinking: Device Initializing | Off: Without Power/Failure |
| 9-12 : Fiber | On: Ports Link Up | Blinking： Data on TX/RX | Off: Ports don't Link |
| 1-8: Ethernet | Yellow (Speed) | | Green（Link/act） |
| | On： Ports speed on 1000M<br>Off： Ports speed on 10/100 M | | On--Ports Link Up<br>Off--Ports Link Down<br>Blinking--Data on TX/RX |

## Product Design



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