光普森科
GPSENKE

4+16 Gigabit Industrial L2+ Managed Switch

GPEM2000G-R 4+16 Series



INDUSTRIAL NETWORK SOLUTION SPECIALIST
WWW.GPSENKE.COM

Introduction

The GPEM2000G-R 4+16 series is a high-performance, fully managed industrial Ethernet switch, offering 16 x 10/100/1000Base-TX Ethernet ports and 4 x 1000Base-X SFP fiber ports. 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+16 series support DC 12~75v 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+16 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 16 * 10/100/1000Base-TX RJ45 Ethernet + 4*1000Base-X SFP Slot
- Support USB zero-configuration startup and upgrade
- Support DI/DO/RS485/Modbus （Optional）
- Support DC12~75v power input
- 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	IEEE 802.3 10Base-T Ethernet IEEE 802.3u 100Base-TX Ethernet IEEE 802.3ab 1000Base-T Ethernet IEEE 802.3z 1000Base-X Ethernet IEEE 802.3x Flow Control and Back Pressure IEEE 802.1D Spanning Tree Protocol IEEE 802.1w Rapid Spanning Tree Protocol IEEE 802.1Q VLAN ITU-T G.8032 ERPS IEEE 802.1X Port Authentication Network Control IEEE 802.1ab LLDP IEEE 802.3ad LACP
Switch Capacity	52Gbps
Backplane Bandwidth	77.376Mpps
MAC	16K
Packet Buffer	12M bit
Jumbo Frame	Support 10Kbytes
VLAN	4K
MDX/MIDX	Support
Watchdog	Support
Forward Delay	<5μs

Hardware Parameter

Size		110mmx158mmx115mm
Weight		1.7 KG
Port	Ethernet	16*10/100/1000Base-TX RJ45 Ethernet MDI/MDI-X Adaptive
	Fiber	4*1G/2.5G Base-X SFP
	CONLOSE	1* RJ45-568B Port
	USB	1* USB2.0 Type A
	Serial (Optional)	1* RS485 Serial Port
Power Port		1*2 Pin Phoenix Terminal 5.08mm
Power Input		DC12~75 V Range Dual Power Supply Redundancy
Current Input		1.8 A Max
Consumption		≤20 W
Power Protection		Support dual power supply redundancy Support reverse connection& over current protection
LED Indicator		Power Indicator： PWR 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 Storage Temperature：-40～85 ° C Humidity：5%～95%(Non-Condensation)

Software Parameter

Port aggregation	Support 1/2.5GE Port Aggregation Support Static / dynamic aggregation
Port features	Support IEEE802.3x flow control, Support Port traffic statistics Support port isolation Support network storm suppression based on port bandwidth
MAC Address	Support Static MAC-Address Management Support Dynamic MAC-Address Management Support Filtering Mac-Address 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 Support G.8032 ERPS protocol, Support single ring, sub Ring and associated Sub ring Support Loop-detect based on port and VLAN
Multicast	IGMP snooping
DHCP	Support DHCP Client, Server, Snooping , Remote-ID,Circuit-ID Support Setup for trust-port
ARP	Support Aging of table entries
IPv4	Static Router
IPv6	Static Router
ACL	Support IP Standard ACL Support MAC Extend ACL Support IP Extend ACL Support L2,L3,L4 Match Support IPv6 ACL
QoS	Support QoS Class, Remarking Support SP,WRP Queue Scheduling Support Ingress Port-based Rate-limit Support Egress Port-based Rate-limit Support Policy Based QoS
Security features	Support 802.1X, Port & MAC authentication, RADIUS services Support Port Security Support IP source guard with binding functions for IP /Port/MAC Supports ARP checking (filtering of illegal user ARP packets) Supports user access control for Telnet, SSH, HTTP, and HTTPS Supports port isolation

Management and maintenance	Support LLDP Support user management and login authentication Support SNMPV1/V2C/V3 Support web management, HTTP1.1, HTTPS Support Syslog and alarm grading Support RMON(Remote Monitoring) alarm Support NTP Support Ping , Tracert, Dying Gasp Support optical transceiver DDM function Support Ethernet Port cable detection function Support FTP/TFTP Client Support USB Disk Local configuration import & export Support Telnet Server/Client, SSH Server Support dual partition switching Support TACACS SUpport Sflow Support IPv6 Management Support TFTP, TFTP Client, web upgrading Support IPv6 Management

Standard Protocol

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

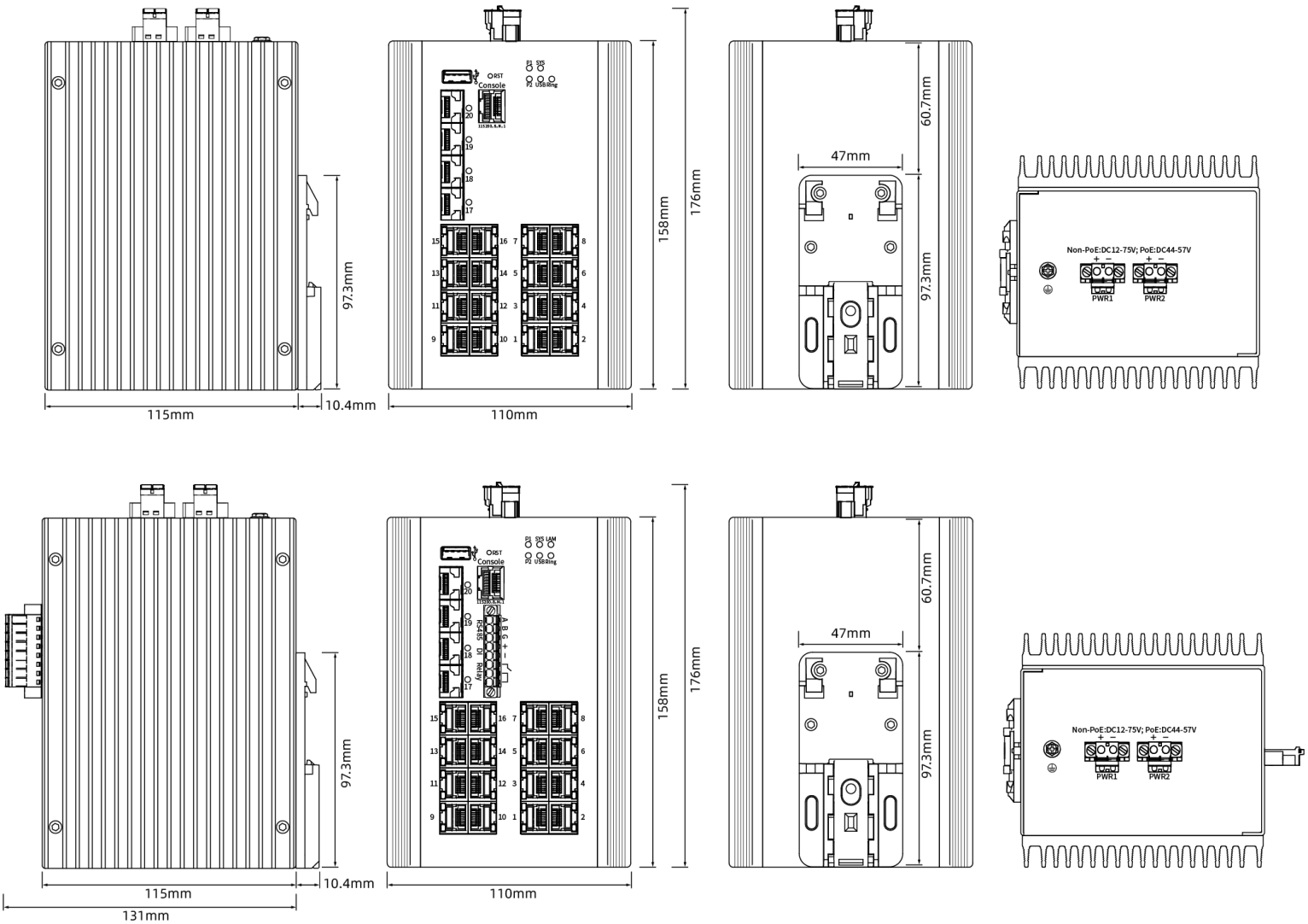
Serial Data Port (Optional)

Data Port (1*8PIN Phoenix Terminal 3.81mm)	1*RS485	A: Positive data line B: Negative data line	Serial server: Support Modbus protocol pass-through Network side: Support TCP protocol, support client & server modes Serial side: Supports RTU communication mode, supports serial transmission parameter settings
	Ground	G：Ground wire	
	1*DI	+ : Data input signal+ (Status "1": Open or -30V ~ +1V) Max input current: 8mA - : Data input signal- (Status "0": +12V ~ +30V)	
	1*DO	Normally open (NO)	Normally closed (NC)

LED Indicators

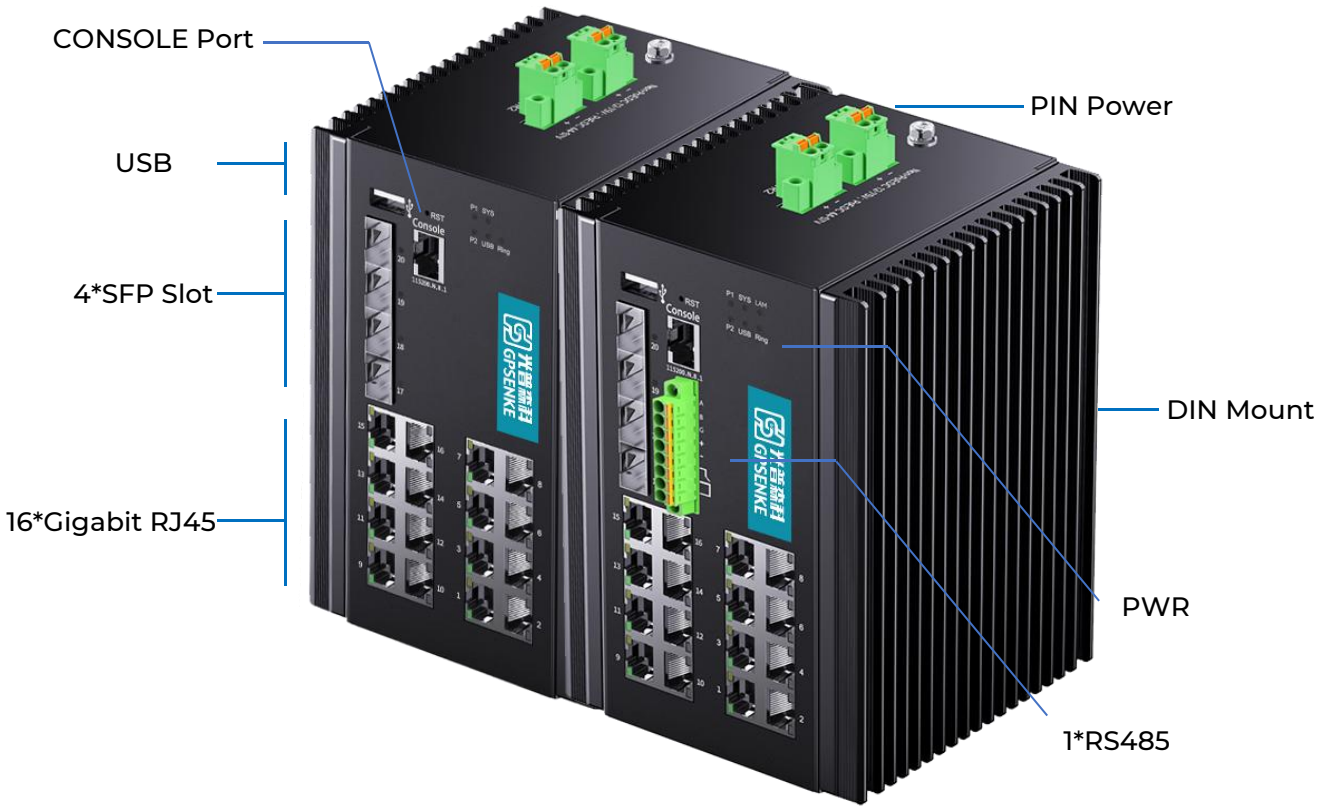
P: Power	On: Device on Power Supply		Off: Power off or Failed
S: SYS	On:Device on operation	Blinking: Device Initializing	Off: Without Power/Failure
USB	On:Detected the USB	Blinking: Reading USB Data	Off: Unconnected or unread USB
RING: ERPS	On: ERPS Deploy Effective		Off: None ERPS Deploy
ALM(Optional)	On: Relay Alarm Output		Off: Device is in normal operating status
17-20 : Fiber	On: Ports Link Up	Blinking： Data on TX/RX	Off: Ports don't Link
1-16: Ethernet	Yellow (Speed)		Green（Link/act）
	On： Ports speed on 1000M Off： Ports speed on 10/100 M		On--Ports Link Up Off--Ports Link Down Blinking--Data on TX/RX

Product Design



*RS485 Serial Port

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	1000M single-mode single-fiber LC(SC) port: 20Km, 40Km, 60Km or above 1000M single-mode dual-fiber LC port: 20Km, 40Km, 60Km or above 1000M multi-mode dual-fiber LC port: 550m
Power Adapter	Desktop, Rail Type (Optional)

Model Selection

Model	Ethernet & Fiber	USB & RS485	Power
GPEM2000G-R-4GX16GT-2D2	16*10/100/1000Base-TX RJ45 4*1000Base-X SFP	1*USB	12~75VDC Dual Power
GPEM2000G-RD-4GX16GT-2D2	16*10/100/1000Base-TX RJ45 4*1000Base-X SFP	1*USB + 1* RS485	12~75VDC Dual Power

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Update Time: 2026.2.1

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