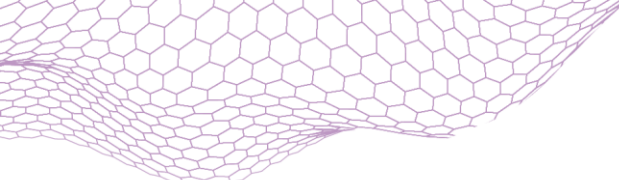




# 20 PORT LAYER 3 INDUSTRIAL GRADE MANAGED GIGA POE SWITCH-DIN TYPE

## DDPSMG SERIES





## SYNOPSIS

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- THE DDPSMG 4016-4S+ -BT WX SERIES ARE HIGH-PERFORMANCE, LAYER 3 MANAGED INDUSTRIAL POE SWITCHES DESIGNED FOR MISSION-CRITICAL NETWORK APPLICATIONS.
- THESE SWITCHES ARE EQUIPPED WITH 16 × 10/100/1000BASE-T RJ45 POE PORTS AND 4 × 1G/2.5G/10GBASE-X SFP+ UPLINK PORTS, ENABLING HIGH-SPEED DATA TRANSMISSION AND SCALABLE NETWORK ARCHITECTURE.
- THE SERIES COMPLIES WITH IEEE 802.3AF (POE), IEEE 802.3AT (POE+), AND IEEE 802.3BT (POE++) STANDARDS, DELIVERING UP TO 90W PER PORT (PORTS 1–4). THIS MAKES IT HIGHLY SUITABLE FOR POWERING HIGH-CONSUMPTION INDUSTRIAL PD DEVICES SUCH AS PTZ CAMERAS, WIRELESS APS, AND INDUSTRIAL IOT EQUIPMENT.
- WITH FULL GIGABIT ACCESS AND 10G UPLINK CAPABILITY, THE SWITCHES ENSURE HIGH BANDWIDTH AVAILABILITY AND LOW-LATENCY TRANSMISSION, SUPPORTING SEAMLESS TRANSFER OF VIDEO, VOICE, AND DATA ACROSS LARGE-SCALE NETWORKS.
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## FEATURES

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- **INTERFACES:** 16 × 10/100/1000BASE-T RJ45 POE PORTS AND 4 × 1G/2.5G/10GBASE-X SFP+ UPLINK PORTS
- **POWER SUPPLY:** REDUNDANT DC/DC POWER INPUT WITH PROTECTION AGAINST REVERSE POLARITY, OVER-VOLTAGE, AND OVER-CURRENT
- **POE STANDARDS COMPLIANCE:** FULLY COMPLIANT WITH IEEE 802.3AF (POE), IEEE 802.3AT (POE+), AND IEEE 802.3BT (POE++) STANDARDS
- SUPPORTS ONE-KEY CONFIGURATION BACKUP/RESTORE AND FIRMWARE UPGRADE VIA USB
- DIGITAL INPUT/OUTPUT (DI/DO) AND RS485 SUPPORT (OPTIONAL)
- **LAYER 3 FEATURES:** SUPPORTS STATIC AND DYNAMIC ROUTING, RIP, OSPF, BGP4, ECMP, VRRP
- **LAYER 2 FEATURES:** VLAN, ERPS, STP/RSTP/MSTP, LINK AGGREGATION, IGMP SNOOPING, PORT MIRRORING, QinQ, 802.1X, PORT ISOLATION, RMON, NTP CLIENT, DHCP SNOOPING/CLIENT, PING/TRACERT TEST, ACL, QOS AND SFP DDM FUNCTION
- **MANAGEMENT AND MAINTENANCE:** IPV4 AND IPV6 MANAGEMENT, POE MANAGEMENT, SUPPORT WEB, SNMP, CLI, TELNET/SSH MANAGEMENT METHOD, SUPPORT USER MANAGEMENT, SYSTEM LOG, CONFIGURATION UPLOAD/DOWNLOAD THROUGH WEB INTERFACE, FIRMWARE UPGRADE VIA HTTP/TFTP/USB
- SUPPORT G.8032 ERPS PROTOCOL, RECOVERY TIME ≤20MS
- SUPPORT 6KV SURGE PROTECTION AND ESD: AIR-15KV, CONTACT-8KV PROTECTION
- IP40 FAN-LESS AND RACK-MOUNT HARDWARE DESIGN
- OPERATION TEMPERATURE: -40 TO + 70°C

## TECHNICAL SPECIFICATIONS

|                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Interface</b>                               | 16*10/100/1000Base-T RJ45 PoE/PoE+<br>(1-4 ports support PoE++ 90W)<br>4*1G/2.5G/10GBase-X SFP+                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Management port</b>                         | 1*RJ45 Console port (115200,8, N,1)<br>1*USB 2.0 for configuration and firmware update                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Network Management Type</b>                 | L3                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Data &amp; Alarm channel<br/>(Optional)</b> | 1 channel RS485<br>1 channel DI (digital input)<br>1 channel DO (digital output)                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Standard</b>                                | IEEE 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>IEEE802.3x 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<br>IEEE 802.3af PoE<br>IEEE 802.3at PoE+<br>IEEE 802.3bt PoE++ |
| <b>MTBF</b>                                    | > 200,000 hours                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>LED Indicator</b>                           | Power, System status, USB, ALM, Copper ports, PoE status,<br>Fiber ports.                                                                                                                                                                                                                                                                                                                                                                                                  |

## SOFTWARE FEATURES

### LAYER 2 FUNCTIONS

|                                     |                                                                                                                                                                                                                                                                               |
|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Port aggregation</b>             | Support GE port aggregation<br>Support 2.5GE aggregation<br>Support 10GE aggregation<br>Support static aggregation<br>Support LACP Dynamic aggregation<br>Up to 64 aggregation groups and up to 8 ports per group                                                             |
| <b>Port features</b>                | Support IEEE802.3x Flow control<br>Support Interface counters<br>Support port isolation<br>Port mirroring (One-to-One, Many-to-One)<br>Support loop detection (Port-based; VLAN-based)<br>Support broadcast storm suppression (broadcast; unknown multicast; unknown unicast) |
| <b>Mac-address table Management</b> | Support static Mac-address management<br>Support dynamic Mac-address Management<br>Support filtering Mac-address<br>Support MAC limit based on port and VLAN<br>Support MAC flapping based on port and VLAN                                                                   |
| <b>VLAN</b>                         | Support Access Mode<br>Support Trunk Mode<br>Support Hybrid Mode.                                                                                                                                                                                                             |
| <b>VLAN classification</b>          | Mac Based VLAN<br>IP Based VLAN<br>Protocol Based VLAN                                                                                                                                                                                                                        |
| <b>GVRP</b>                         | Normal mode<br>Fixed mode<br>Forbidden mode                                                                                                                                                                                                                                   |
| <b>QinQ</b>                         | Port-based QinQ<br>VLAN-based QinQ<br>Flow-based QinQ                                                                                                                                                                                                                         |
| <b>LLDP</b>                         | LLDP (Link Layer Discovery Protocol)                                                                                                                                                                                                                                          |
| <b>Ring network protocol</b>        | Support IEEE802.1D-STP<br>Support IEEE802.1W-RSTP<br>Support IEEE802.1S-MSTP<br>Support G.8032 ERPS protocol Single ring, Sub Ring and Major ring<br>Recovery time $\leq 20\text{ms}$                                                                                         |

## LAYER 2 MULTICAST

|                      |                       |
|----------------------|-----------------------|
| <b>IGMP Snooping</b> | Support IGMP snooping |
| <b>Group address</b> | Support group address |

## SECURITY FUNCTIONS

|                        |                                                                                                                                                               |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>ACL</b>             | IP Standard ACL<br>MAC extend ACL<br>IP extend ACL<br>IPv6 ACL                                                                                                |
| <b>QoS</b>             | Support QoS Class, remarking<br>Support SP, WRR queue scheduling<br>Ingress port-based rate-limit<br>Egress port-based rate-limit<br>Support policy-based QoS |
| <b>802.1x</b>          | Port access control<br>Mac-address access control<br>RADIUS server                                                                                            |
| <b>Port-security</b>   | Support Port-security                                                                                                                                         |
| <b>IP source guard</b> | Support IP Port/MAC binding                                                                                                                                   |
| <b>ARP-check</b>       | Support ARP-check and ARP packet filtering for illegal users                                                                                                  |
| <b>Access control</b>  | Support Telnet/SSH/HTTP/HTTPS user access control                                                                                                             |

## MANAGEMENT AND MAINTAINANCE FUNCTIONS

|                         |                                                                           |
|-------------------------|---------------------------------------------------------------------------|
| <b>User Management</b>  | Support Password protection<br>Support User authorization management      |
| <b>SNMP</b>             | Supporting SNMP V1/V2C/V3 version                                         |
| <b>Web Management</b>   | Web Management<br>Support HTTP V1.1<br>Support HTTPS                      |
| <b>CLI Management</b>   | Console/Telnet command line management                                    |
| <b>RMON</b>             | Support RMON (Remote Monitoring) alarm                                    |
| <b>Firmware Upgrade</b> | Support Firmware upgrade                                                  |
| <b>Fault Detection</b>  | Ping/Traceroute<br>Dying gasp<br>Support optical transceiver DDM function |

|                                    |                                                                                                                                                                                                                                 |
|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Cable Detection</b>             | Support copper port cable detection                                                                                                                                                                                             |
| <b>PoE Management</b>              | Support 802.3af/802.3at/802.3bt<br>Support PD watchdog<br>Support PoE priority management<br>Support Max PoE power configuration for each port<br>Support alarm threshold configuration<br>Support reserved power configuration |
| <b>NTP</b>                         | Network Time Protocol                                                                                                                                                                                                           |
| <b>Syslog/Debug</b>                | Syslog/Debug<br>Syslog sends to three servers                                                                                                                                                                                   |
| <b>Configuration Import/Export</b> | Support FTP/TFTP remote import/export<br>Support USB import/export                                                                                                                                                              |
| <b>Dual Partition Management</b>   | Support Dual partition switching                                                                                                                                                                                                |

## APPLICATION PROTOCOL FUNCTIONS

|                      |                                                                                          |
|----------------------|------------------------------------------------------------------------------------------|
| <b>DHCP Snooping</b> | DHCP snooping trust port<br>Support remote-id/circuit-id configuration<br>DHCP option-82 |
| <b>DHCP client</b>   | Support                                                                                  |
| <b>Telnet server</b> | Support                                                                                  |
| <b>Telnet client</b> | Support                                                                                  |
| <b>SSH server</b>    | Support                                                                                  |
| <b>TACACS</b>        | Support                                                                                  |
| <b>sflow</b>         | Support network traffic analysis                                                         |
| <b>TFTP</b>          | Support TFTP Client                                                                      |

## LAYER 3 FUNCTIONS

|                     |                                                                                                                                           |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| <b>ARP</b>          | ARP table aging                                                                                                                           |
| <b>DHCP server</b>  |                                                                                                                                           |
| <b>IPv4 / IPv6</b>  | Static routing                                                                                                                            |
| <b>ECMP</b>         | Support ECMP (Equal-cost multi-path routing)<br>Support the configuration of ECMP Max next-hop<br>Support capacity balanced configuration |
| <b>Route policy</b> | IPv4 prefix-list                                                                                                                          |
| <b>VRRP</b>         | Virtual Router Redundancy Protocol                                                                                                        |

## ROUTING PROTOCOL SPECIFICATION

|                      |                                                                                                         |
|----------------------|---------------------------------------------------------------------------------------------------------|
| <b>RIP</b>           | RIPv1/v2                                                                                                |
| <b>OSPFv2</b>        | OSPFv2                                                                                                  |
| <b>BGP4</b>          | BGP4<br>BGP Support Routing Recursive ECMP<br>Support to view the number of neighbors and up/down state |
| <b>IS-IS</b>         | IS-ISv4                                                                                                 |
| <b>Routing entry</b> | 13K                                                                                                     |

## SWITCHING FEATURES

|                               |                  |
|-------------------------------|------------------|
| <b>Switching capacity</b>     | 112Gbps          |
| <b>Packet forwarding rate</b> | 166.6Mpps        |
| <b>MAC address table</b>      | 16K              |
| <b>VLAN</b>                   | 4K               |
| <b>Buffer</b>                 | 12Mbit           |
| <b>Forwarding delay</b>       | <5us             |
| <b>Jumbo Frame</b>            | Support 10Kbytes |
| <b>MDX/MIDX</b>               | Support          |
| <b>Watchdog</b>               | Support          |

## POWER

|                                    |                                                                                                                                                                                                          |
|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Input voltage</b>               | 44-57V DC (802.3af)<br>52-57V DC (802.3at/802.3bt))<br>Redundant power input.                                                                                                                            |
| <b>Input current</b>               | 6A DC input Max                                                                                                                                                                                          |
| <b>Total power consumption</b>     | Full loading without PoE ≤24W<br>Single power input: PoE power budget ≤ 240W (-40 to + 70)<br>Dual power input: PoE power budget ≤ 370W (-40 to + 60)<br>Dual power input must be the same as DC voltage |
| <b>Connector</b>                   | Removable 2*2-pin Terminal block                                                                                                                                                                         |
| <b>Reverse polarity protection</b> | Support                                                                                                                                                                                                  |
| <b>Over-voltage protection</b>     | Support                                                                                                                                                                                                  |
| <b>Over-current protection</b>     | Support                                                                                                                                                                                                  |

## PHYSICAL CHARACTERISTICS

|                            |               |
|----------------------------|---------------|
| <b>Dimension(W*D*H) mm</b> | 110*115*158mm |
| <b>Case protection</b>     | IP40          |
| <b>Installation</b>        | DIN rail      |
| <b>Weight</b>              | 2.1Kg         |

## ENVIRONMENTAL

|                            |                              |
|----------------------------|------------------------------|
| <b>Working Temperature</b> | -40 to +70°C                 |
| <b>Storage Temperature</b> | -40 to +85°C                 |
| <b>Operating Humidity</b>  | 10% to 90% RH Non-condensing |
| <b>Storage Humidity</b>    | 5% to 95% RH Non-condensing  |

## APPROVAL AND STANDARD TESTED FOR

|                             |                                                                                                   |
|-----------------------------|---------------------------------------------------------------------------------------------------|
| <b>IEC61000-4-2</b>         | (ESD): ±8kV (contact), ±15kV (air)                                                                |
| <b>IEC61000-4-3</b>         | (RS): 10V/m 80 MHz-1 GHz: 10 V/m                                                                  |
| <b>IEC61000-4-4</b>         | (EFT): Power Port: ±4kV; Data Port: ±2kV                                                          |
| <b>IEC61000-4-5</b>         | Surge protection of power: 6KV/4KV-8/20us<br>Surge protection of Ethernet ports: 6KV/2KV-10/700us |
| <b>IEC61000-4-6</b>         | (radio frequency transmission):10V(150kHz~80MHz)                                                  |
| <b>IEC 60068-2-27</b>       | Shock                                                                                             |
| <b>IEC 60068-2-32</b>       | Free fall                                                                                         |
| <b>IEC 60068-2-6</b>        | Vibration                                                                                         |
| <b>FCC Part 15B Class A</b> | EMI                                                                                               |

## ORDERING CODE

DDPSMG 4016-4S+ -bt WX

|               |                                                           |
|---------------|-----------------------------------------------------------|
| <b>DDPSMG</b> | Industrial Grade Layer 3 Giga Managed DIN Type PoE switch |
| <b>4016</b>   | 16 * 10/100/1000Base-T PoE ports                          |
| <b>4S+</b>    | 4 * 1000/2500/10GBase-X SFP+                              |
| <b>bt</b>     | Support 802.3af/802.3at/802.3bt                           |
| <b>WX</b>     | Fixed                                                     |