

IPGS-3008

8 10/100/1000T L2+ 8 PoE at/af Industrial Managed Ethernet Switch w/ Enhanced G.8032 Ring & LTDP**; Optional 12V

- Support IEEE802.3at/af up to 30W per port
- PoE management incl. Detection and Scheduling
- Enhanced G.8032 ring protection < 20ms for single ring. Supports auto mode**, enhanced mode, train mode** multi-VLAN** and basic mode; Enhanced G.8032 ring covers multicast packets; MSTP 8/16**MSTI /RSTP ; support MRP ring**
- LTDP** (Link Train Discovery Protocol) to auto-assign IP as well as inherit the configuration in replaced switch
- Miss-wiring avoidance & node failure protection
- User friendly UI, including auto topology drawing; Complete CLI.
- Support LACP link aggregation, IGMP v3/router port, DHCP server & DHCP Option82; Port based DHCP distribution, Mac based DHCP server, QoS by VLAN**, SSH/SSL, HTTPS, INGRESS ACL L2/L3,TACACS+, QinQ**, SMS**
- Dual 9.5V~56VDC input(12V model) or Dual 44~56VDC input(48V model)
- Optional Environmental monitoring function to display inside switch info incl. temperature, voltage, current, power consumption



OVERVIEW

Lantech IPGS-3008 is a high performance L2+ all Gigabit switch with 8 10/100/1000T w/8 PoE 802.3at/af Injectors which provides L2 wire speed and advanced security function for network aggregation deployment. It delivers ITU G.8032 enhanced ring recovery less than 20ms in single ring while also supports train ring, enhanced mode, multiple VLAN model with easy configuration. The comprehensive QoS, QoS by VLAN**, advanced security including INGRESS ACL L2/L3, TACACS+, SSH/SSL, Mac based DHCP server, DHCP Option 82, DHCP server, IGMPv1/v2/v3/router port, QinQ** are supported and also required in large network. It also supports Cisco Discovery Protocol (CDP) for Ciscoworks to detect the switch info and show on L2 map topology.

Innovative LTDP (Link Train Discovery Protocol) to assign proper IP address as well as inherit configuration for replaced switch**

With port-based DHCP server, LTDP** allows Lantech Ethernet switch series in single ring to discover the current IP addresses and to assign the same IP address and configuration. Furthermore, LTDP** can inherit the same

configuration to new replaced switch for zero-touch maintenance.

Miss-wiring avoidance, Repowered auto ring restore, Loop protection

The IPGS-3008 also embedded several features for stronger and reliable network protection in an easy and intuitive way. When the pre-set ring configuration failed or looped by miss-wiring, Lantech IPGS-3008 is able to alert with the LED indicator and disable ring automatically. Repowered auto ring restore function (node failure protection) ensures the switches in a ring to survive after power breakout is back. The status can be shown in NMS when each switch is back. Loop protection is also available to prevent the generation of broadcast storm when a dumb switch is inserted in a closed loop connection.

Loop protection; Auto ring repowered restore; Alert by email, trap, SMS**

The IPGS-3008 also embedded several features for stronger and reliable network protection in an easy and intuitive way. When the pre-set ring configuration failed or looped by miss-wiring, Lantech IPGS-3008 is able to alert with the LED

indicator and send out an email, trap or a SMS** text. Repowered auto ring restore function (node failure protection) ensures the switches in a ring to survive after power breakout is back. The status can be shown in NMS when each switch is back. This feature prevents the broken ring and keep ring alive without any re-configuration needed. Loop protection is also available to prevent the generation of broadcast storm when a dumb switch is inserted in a closed loop connection.

User friendly GUI, Auto topology drawing

The user friendly UI, innovative auto topology drawing and topology demo makes IPGS-3008 much easier to get hands-on. The complete CLI enables professional engineer to configure setting by command line.

Enhanced G.8032 ring, 8/16 MSTI MSTP; Optional MRP ring****

Lantech IPGS-3008 features enhanced G.8032 ring which can be self-healed in less than 20ms for single ring topology protection covering multicast packets. It also supports various ring topologies that covers multi-chain (under enhanced ring), train ring**, basic ring, multiple-VLAN ring** and auto-ring** by easy setup than others. The innovative auto-Ring** configurator (auto mode) can calculate owner and neighbor in one step. It supports MSTP that allows each spanning tree for each VLAN for redundant links with 8/16** MSTI.

Optional MRP (Media Redundancy Protocol) can be supported for industrial automation networks.

DHCP option 82 & Port based, Mac based DHCP, Option66, IPv6 DHCP server****

DHCP server can assign dedicated IP address by MAC or by port (Port based for single switch), it also can assign IP address by port for multiple switches with single DHCP option82 server. For the ending device which need to download file from TFTP server, DHCP Option66 server can offer IP address of TFTP server to DHCP client. Optional IPv6 address resolution for DHCP service can be supported.

QoS by VLAN for legacy device**

QoS by VLAN** can allow switch to tag QoS by VLAN** regardless the devices acknowledge QoS or not in which greatly enhance the bandwidth management in a network.

QinQ, QoS QinQ** and GVRP supported**

It supports the QinQ**, QoS QinQ**, GVRP for large VLAN segmentation.

IGMPv3, GMRP, router port, static multicast forwarding and multicast Ring protection

The unique multicast protection under enhanced G.8032 ring can offer immediate self-recovery instead of waiting for IGMP table timeout. It also supports IGMPv3, GMRP, router port and static multicast forwarding binding by ports for video surveillance application.

Editable configuration text file; Factory reset button; CPU watchdog

The configuration file of Lantech IPGS-3204MGSFP can be exported in text file so that it can be edited and configured back

to switch with ease for mass deployment. Factory reset button can restore the setting back to factory default and built-in watchdog design can automatically reboot the switch when CPU is found dead. IPGS-3008 also supports dual image firmware function**

Event log & message; 2 DI + 2DO

In case of event, the IPGS-3008 is able to send an email & SMS** text message to pre-defined addresses as well as SNMP Traps out immediately. It provides 2DI and 2DO. When disconnection of the specific port was detected; DO will activate the signal LED to alarm. DI can integrate the sensors for events and DO will trigger the alarm while sending alert information to IP network with email and traps.

Relay alarm and email/trap/SMS alerting**

Featured with relay contact alarm function, the IPGS-3008 is able to connect with alarm system in case of power failure and port disconnection. In case of such event, it will send out email, SMS**, trap alerting to predefined users.

Dual 12V~48V input with boost technology to 54V PoE output for 12V model, PoE budget 80W

Lantech IPGS-3008-12V is designed with dual input power at 9.5V~56VDC while IPGS-3008-48V allows with 44~56VDC input. The PoE budget for 12V input is 80W and for 24V input is 120W.

Industrial hardened design for extended temperature operation

Lantech IPGS-3008 provides $\pm 2000V$ EFT/SURGE and ± 4000 VDC (Contact) / ± 8000 VDC (Air) Ethernet ESD protection, which can reduce unstable situation caused by power line and Ethernet. It has high reliability and robustness coping with extensive EMI/RFI phenomenon, environmental vibration and shocks usually found in factory, substation, steel automation, aviation, mining and process control. It is the best solution for Automation, transportation, surveillance, Wireless backhaul, Semi-conductor factory and assembly lines.

Environmental monitoring for switch inside information

The environmental monitoring can detect switch overall temperature, voltage and current where can send the SNMP traps, email and SMS** alert when abnormal.

The -E model can be used in extreme environments with an operating temperature range of -40°C to 75°C.

Editable configuration file

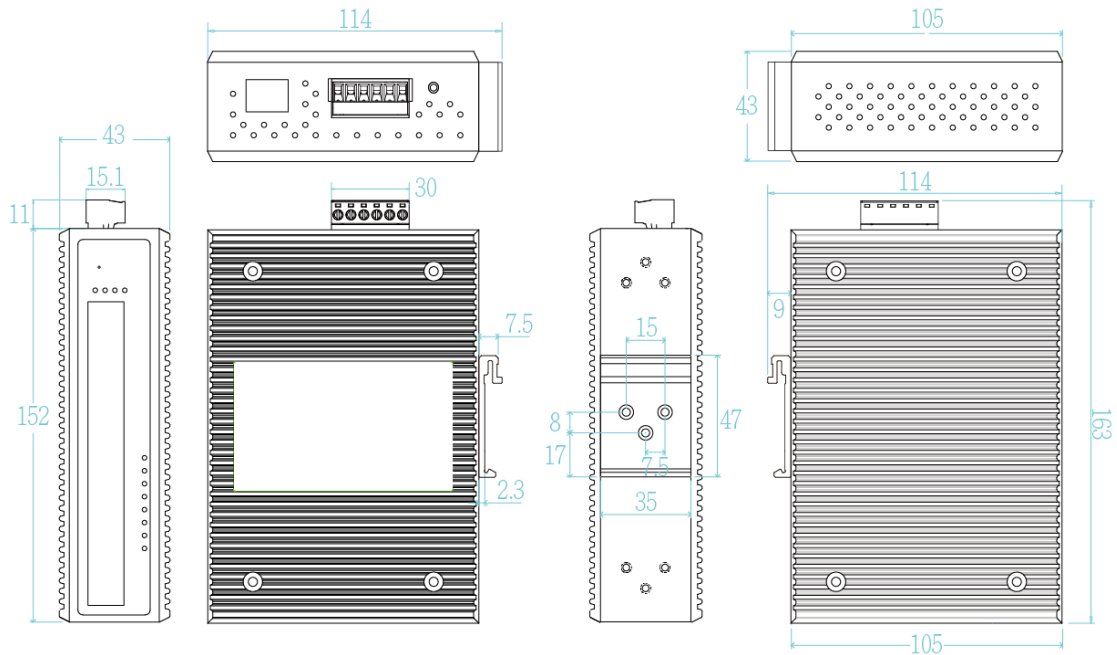
The configuration file of Lantech IPGS-3008 can be exported and edited with word processor for the other switches configuration with ease.

The built-in watchdog design can automatically reboot the switch when CPU is found dead.

FEATURES & BENEFITS

- 8 10/100/1000T w/8 PoE 802.3af/at Injectors (Total 8 Ports Switch)
- Embedded 8 PoE Injectors IEEE802.3af/at function to feed power up to 30W@54V; 15W @ 48V per port for active operation
- Dual 9.5V~56VDC power input for 12V model with PoE budget 80W at 12V input, 120W at 24V input
- Dual 45V~56VDC power input for 48V model with PoE budget 240W
- PoE management including PoE detection and scheduling for PD (power devices)
- Back-plane (Switching Fabric): 16Gbps
- 16K MAC address table
- 10KB Jumbo frame supported
- User friendly UI, auto topology drawing, topology demo, complete CLI for professional setting
- Enhanced G.8032 Ring protection in 20ms (single ring)
 - Support various ring/chain topologies, including train ring**, enhanced ring, basic ring, auto ring** & multiple VLAN ring**
 - Enhanced G.8032 ring configuration with ease
 - Auto ring** configuration(auto mode) for single ring
 - Cover multicast and data packets protection
- LTDP** (Link Train Discovery Protocol) with Port based DHCP can assign the same IP address and configuration to switch in single ring. It can also keep the config file when switches being swapped
- Provides EFT/SURGE protection ± 2000 VDC for power line
- Supports ± 4000 VDC (Contact) and ± 8000 VDC (Air) Ethernet ESD protection
- Built-in RTC (Real Time Clock) to keep track of time
- Supports IEEE 802.1p Class of Service, per port provides 8 priority queues Port base, Tag Base and Type of Service Priority
- IEEE 802.1d STP**, IEEE 802.1w RSTP, 802.1s MSTP VLAN redundancy with 8/16** MSTI
- 4K 802.1Q VLAN, Port based VLAN, GVRP, QinQ**, QoS QinQ**
- Supports IEEE 802.1ab LLDP, Cisco CDP; LLDP info can be viewed via Web/ Console
- DHCP server / client / DHCP Option 82 relay / DHCP Option 82 server; Port based DHCP server; DHCP Option 66**; IPv6 address resolution for DHCP server**
- **Bandwidth Control**
 - Ingress packet filter
 - Broadcast/multicast packet filter control
- **Relay alarm output system events**
- **Miss-wiring avoidance**
 - LED indicator
- **Repowered auto ring restore**
 - Ensure the switches in a ring to survive after power breakout is back
 - The status can be shown in NMS when each switch is back
- **TFTP/SFTP**/HTTP firmware upgrade**
- **Configuration backup and restoration**
 - Supports editable configuration file for system quick installation
- **System Event Log, SMTP Email alert, SMS** mobile (text) and SNMP Trap for alarm support; 32 RMON counters**
- **Security**
 - SSL/SSH/INGRESS ACL L2/L3
 - Port Security: MAC address entries/Filter/static MAC-Port binding
 - IP Security: IP address security management to prevent unauthorized intruder.
 - TACACS+
 - Login Security: IEEE802.1X/RADIUS
 - HTTPS for secure access to the web interface
- **Static multicast forwarding forward reversed IGMP flow with multicast packets binding with ports for IP surveillance application**
- **Multicast static forwarding for non- IGMP camera to prevent flooding; IGMP router port to assign query in ring and for reversed multicast video flow**
- **IGMPv1,v2,v3 with Query mode for multimedia; GMRP**
- **Dual image firmware support****
- **Factory reset button to restore setting to factory default**
- **Optional environmental monitoring for system input voltage, current, ambient temperature**
- **Watchdog design to auto reboot switch CPU is found dead**
- **IP30 metal housing with DIN rail and Wall-mount** design**

DIMENSIONS (unit=mm)



SPECIFICATION

Hardware Specification		
Standards	IEEE802.3 10Base-T Ethernet IEEE802.3u 100Base-TX IEEE802.3ab 1000Base-T Ethernet IEEE802.3z Gigabit fiber IEEE802.3x Flow Control and Back Pressure IEEE802.3ad Port trunk with LACP IEEE802.1d Spanning Tree IEEE802.1w Rapid Spanning Tree IEEE802.1s Multiple Spanning Tree IEEE802.3ad Link Aggregation Control Protocol (LACP) IEEE802.1AB Link Layer Discovery Protocol (LLDP) IEEE802.1X User Authentication (Radius) IEEE802.1p Class of Service IEEE802.1Q VLAN Tag IEEE802.3at/af Power over Ethernet	(54V input is recommended for PTZ or heater applications) 60W at 12V input; 80W at 24V input(12V model)
Switch Architecture	Back-plane (Switching Fabric): 16Gbps	PoE pin assignment
Transfer Rate	14,880pps for Ethernet port 148,800pps for Fast Ethernet port 1,488,000pps for Gigabit Fiber / Gigabit Ethernet port	RJ-45 port # 1~ # 8 support IEEE 802.3at/af End-point. Per port provides up to 30W Positive (VCC+): RJ-45 pin 1,2. Negative (VCC-): RJ-45 pin 3,6.
Flash	128M Byte	Power Consumption
Mac Address	16K MAC address table	10W
Jumbo frame	10KB	Case Dimension
Connectors	10/100/1000T: 8 x ports RJ-45 with Auto MDI/MDI-X function Power & Relay connector: 1 x 6-pole terminal block	660 g
Network Cable	10Base-T: 2-pair UTP/STP Cat. 3, 4, 5/ 5E/ 6 cable EIA/TIA-568 100-ohm (100m) 100Base-TX: 2-pair UTP/STP Cat. 5/ 5E/ 6 cable EIA/TIA-568 100-ohm (100m) 1000Base-TX: 2-pair UTP/STP Cat. 5/ 5E/ 6 cable EIA/TIA-568 100-ohm (100m)	Installation
LED	Per unit: Power 1 (Green), Power 2 (Green), FAULT (Red); RM(Green) Ethernet port: Link/Activity (Green), Speed (Amber); PoE: Link/Act (Green)	DIN Rail and Wall Mount** Design
Operating Humidity	5% ~ 95% (Non-condensing)	EMI & EMS
Operating Temperature	-20°C~60°C / -4°F~140°F (Standard model) -40°C~75°C / -40°F~167°F(-E model)	FCC Part 15 Class A IEC/EN61000-6-2 CE EN55032 Class A CE EN55024: CE EN61000-4-2 (ESD) Level 3 CE EN61000-4-3 (RS) Level 3 CE EN61000-4-4 (EFT) Level 3 CE EN61000-4-5 ED3 (Surge) Level 3 CE EN61000-4-6 (CS) Level 3 CE EN61000-4-8 (Magnetic field) Level 3
Storage Temperature	-40°C~85°C / -40°F~185°F	Verifications & Report
Power Supply	44~56VDC(48V model); 9.5V~56VDC(12V model)	EN50155/EN50121-3-2/EN50121-4 verification EN45545-2 R13/R22/R23/R24/R25 (EN ISO 4589-2, EN ISO 5659-2, NF X70-100-1 & 2) Fire & Smoke verification; E-mark certificate
Power Consumption	10W	Stability Testing
PoE Budget	120W for 44~56V input(48V model)	IEC60068-2-32 (Free fall), IEC60068-2-27 (Shock), IEC60068-2-6 (Vibration)
		MTBF
		791,695 Hrs Standards: IEC 62830
		Warranty
		5 years
		Software Specification
		Management
		SNMP v1 v2c, v3/ Web/Telnet/CLI
		SNMP MIB
		RFC 1215 Traps MIB**, RFC 1213 MIBII RFC 1158 MIBII RFC 1157 SNMP MIB, RFC 1493 Bridge MIB** RFC 1573 IF MIB RFC 2674 VLAN MIB**, Partial RFC 1757 RMON, RFC 2674 Q-Bridge MIB**, Bridge MIB, LLDP MIB RSTP MIB**

	Private MIB		TACACS+ for Authentication
Enhanced G.8032 ring	Support ITU G.8032 v2/2012 for Ring protection in less than 20ms for self-heal recovery (single ring enhanced mode) Support various ring/chain topologies Includes train ring**, auto ring**, basic single ring, enhanced ring, multiple-VLAN ring** Enhanced G.8032 ring configuration with ease Cover multicast & data packets protection	IGMP	Support IGMP snooping v1,v2,v3; 1024 multicast groups; IGMP router port ; IGMP query; GMRP
		Static MAC-Port bridge	Static multicast forwarding forward reversed IGMP flow with multicast packets binding with ports for IP surveillance application
		Bandwidth Control	Support ingress packet filter. Ingress filter packet type combination rules are Broadcast/Multicast/Flooded Unicast packet, Broadcast/Multicast packet, Broadcast packet only and all types of packet. The packet filter rate can be set an accurate value through the pull-down menu for the ingress packet filter.
LTDP**(optional)	Link Train Discovery Protocol with Port based DHCP server to assign the same IP address when any car changes. It can also keep the config file when switch is swapped.	Flow Control	Supports Flow Control for Full-duplex and Back Pressure for Half-duplex
PoE Management	1. PoE Detection to check if PD is hang up then restart the PD 2. PoE Scheduling to On/OFF PD upon routine time table	System Log	Supports System log record and remote system log server
Per Port PoE Status	On/ Off, voltage, current, watts, temperature	SMTP/Text SMS**	Supports SMTP Server and 8 e-mail accounts for receiving event alert; can send SMS** text alert via mobile
User friendly UI	<ul style="list-style-type: none"> ■ Auto topology drawing ■ Topology demo ■ Auto configuration for G.8032(auto mode)* for single ring ■ Complete CLI for professional setting 	Relay Alarm	Provides one relay output for port breakdown, power fail and alarm. Alarm Relay current carry ability: 1A @ DC24V
Port Trunk with LACP	LACP Port Trunk: 8 Trunk groups/Maximum 10 trunk members	Protection	<ul style="list-style-type: none"> ■ Miss-wiring avoidance ■ Repowered auto ring restore ■ Loop protection
LLDP	Supports LLDP to allow switch to advise its identification and capability on the LAN	SNMP Trap	Up to 10 trap stations; trap types including: <ul style="list-style-type: none"> ● Device cold start ● Authorization failure ● Port link up/link down ● DI/DO open/close ● Topology change(ITU ring) ● Power failure ● Environmental abnormal
CDP	Cisco Discovery Protocol for topology mapping	DHCP	Provide DHCP Client/ DHCP Server/DHCP Option 82 (Client & Server)/Port based DHCP; DHCP Option 66**; IPv6 address resolution for DHCP server**
VLAN	Port Based VLAN IEEE 802.1Q Tag VLAN (256 entries)/ VLAN ID (Up to 4K, VLAN ID can be assigned from 1 to 4096.) GVRP, QinQ**, QoS QinQ**, Protocol based VLAN** ; IPv4/IPv6 Subnet based VLAN**	Mac based DHCP Server	Assign IP address by Mac that can include dumb switch in DHCP network
IPv6/4	Present	DNS	Provide DNS Client feature and support Primary and Secondary DNS server.
RSTP/MSTP	Supports IEEE802.1d Spanning Tree and IEEE802.1w Rapid Spanning Tree, IEEE802.1s Multiple Spanning Tree with 8/16** MSTI	SNTP	Supports SNTP to synchronize system clock in Internet
Quality of Service	The quality of service determined by port, Tag and IPv4 Type of service, IPv4 Differentiated Services Code Points - DSCP	Environmental Monitoring**	System status for input voltage, current, consumption and ambient temperature to be shown in GUI and sent alerting if any abnormal status(-M models)
Class of Service	Support IEEE802.1p class of service, per port provides 8 priority queues	Firmware Update	Supports TFTP/SFTP** firmware update, TFTP backup and restore; HTTP firmware upgrade
IP Security	Supports 10 IP addresses that have permission to access the switch management and to prevent unauthorized intruder.	Configuration upload and download	Supports editable configuration file for system quick installation; Support factory reset button to restore all settings back to factory default; USB port for upload/download configuration by USB dongle
Login Security	Supports IEEE802.1X Authentication/RADIUS	Dual Image Firmware**	Support dual image firmware function
Port Mirror	Support 3 mirroring types: "RX, TX and Both packet"		
Network Security	Support 10 IP addresses that have permission to access the switch management and to prevent unauthorized intruder. 802.1X access control for port based and MAC based authentication/static MAC-Port binding Ingress ACL L2/L3 SSL/ SSH for Management HTTPS for secure access to the web interface		

*Future Release
** Optional Release

ORDERING INFORMATION

- **IPGS-3008-48V.....P/N: 8350-986**
8 10/100/1000T w/8 PoE Mode A 802.3at/af 30W L2+ Industrial Managed Ethernet Switch;
dual 44~56VDC input; -20°C to 60°C
- **IPGS-3008-48V-E.....P/N: 8350-987**
8 10/100/1000T w/8 PoE Mode A 802.3at/af 30W L2+ Industrial Managed Ethernet Switch;
dual 44~56VDC input; -40°C to 75°C
- **IPGS-3008-M-48V.....P/N: 8350-9861**
8 10/100/1000T w/8 PoE Mode A 802.3at/af 30W L2+ Industrial Managed Ethernet Switch;
dual 44~56VDC input w/environmental monitoring; -20°C to 60°C
- **IPGS-3008-M-48V-E.....P/N: 8350-9871**
8 10/100/1000T w/8 PoE Mode A 802.3at/af 30W L2+ Industrial Managed Ethernet Switch;

- dual 44~56VDC input w/environmental monitoring; -40°C to 75°C

■ **IPGS-3008-12V.....P/N: 8350-988**
8 10/100/1000T w/8 PoE Mode A 802.3at/af 30W L2+ Industrial Managed Ethernet Switch;
dual 9.5V~56VDC input; -20°C to 60°C
- **IPGS-3008-12V-E.....P/N: 8350-989**
8 10/100/1000T w/8 PoE Mode A 802.3at/af 30W L2+ Industrial Managed Ethernet Switch;
dual 9.5V~56VDC input, -40°C to 75°C
- **IPGS-3008-M-12V.....P/N: 8350-9884**
8 10/100/1000T w/8 PoE Mode A 802.3at/af 30W L2+ Industrial Managed Ethernet Switch;
dual 9.5V~56VDC input w/ environmental monitoring; -20°C to 60°C
- **IPGS-3008-M-12V-E.....P/N: 8350-9892**
8 10/100/1000T w/8 PoE Mode A 802.3at/af 30W L2+ Industrial Managed Ethernet Switch;
dual 9.5V~56VDC input w/ environmental monitoring, -40°C to 75°C

OPTIONAL ACCESSORIES

DIN Rail Power

- **NDR-480 Series** 480W Single Output Industrial Din Rail Power; 90-264VAC / 127-370VDC Input Range; Cooling by free air convection; RoHS2 ;
Operating Temp. -20°C~70°C (ambient, derating each output at 2.5% per degree from 50°C ~ 70°C)
- **NDR-240 Series** 240W Single Output Industrial Din Rail Power; 90-264VAC / 127-370VDC Input Range; Cooling by free air convection; RoHS2 ;
Operating Temp. -20°C~70°C (ambient, derating each output at 2.5% per degree from 50°C ~ 70°C)
- **NDR-120 Series** 120W Single Output Industrial Din Rail Power; 90-264VAC / 127-370VDC Input Range; Cooling by free air convection; RoHS2 ;
Operating Temp. -20°C~70°C (ambient, derating each output at 2.5% per degree from 50°C ~ 70°C; For 115VAC, please refer to
derating curve on NDR-120 Series datasheet)
- **NDR-75 Series** 75W Single Output Industrial Din Rail Power; 90-264VAC / 127-370VDC Input Range; Cooling by free air convection; RoHS2 ;
Operating Temp. -20°C~70°C (ambient, derating each output at 2.5% per degree from 50°C ~ 70°C; For 115VAC, please refer to
derating curve on NDR-120 Series datasheet)

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