

## RPG5-2812-SFP8-10GSFP4 Series

28-Port Industrial Rack-mount Managed Gigabit Ethernet PoE+ Switch

### Interfaces

- 16-port 10/100/1000BASE-T Gigabit Ethernet with IEEE 802.3at compliant PoE, 30W/port
- 4-port 1G/2.5G/10GbE SFP+ slots
- 8-port 100/1000BASE-X SFP slots
- One console and USB interface

### High Reliability and Availability

- G.8032 ERPS v2
- STP/ RSTP/ MSTP
- iPoE Budget Control
- Redundant power inputs design
- Wide operating temperature from -40°C ~ 75°C

### L3 Routing Protocol

- Static Route
- RIP
- OSPF
- VRRP

### Versatile Management Capability

- HTTP, HTTPS
- CLI Command, Telnet and SSH
- SNMP v1/v2c/v3

### Robust Security

- RADIUS, TACACS+, 802.1X Authentication
- ACL, IP Source Guard, SNMPv3



## Introduction

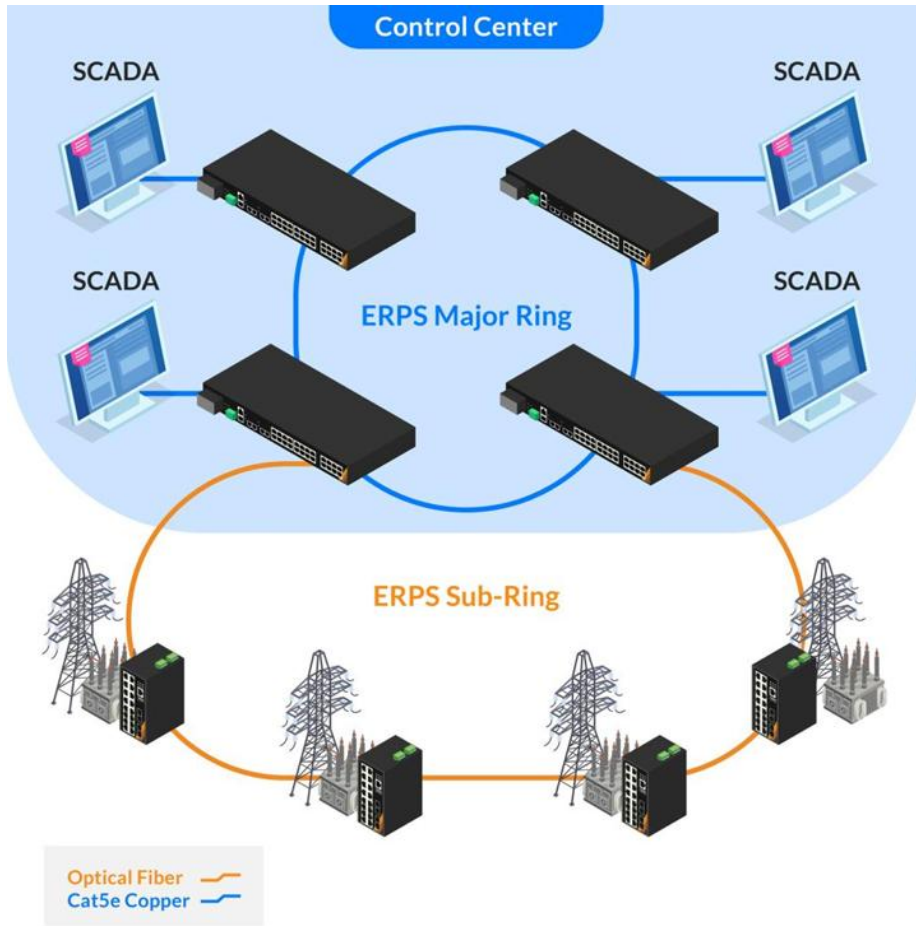
Leonton's RPG5-2812-SFP8-10GSFP4 Series is a 28-port Industrial Rack-mount Managed Gigabit Ethernet PoE+ Switch, which provides 16\*10/100/1000BASE-T Gigabit Ethernet, 8\*100/1000BASE-X SFP slots and 4\*1G/2.5G/10GbE SFP+ slots. RPG5-2812-SFP8-10GSFP4 Series is full manageable Layer-2 Ethernet switch series and supporting power inputs redundancy and PoE function with 30W per port output. RPG5-2812-SFP8-10GSFP4 Series offers standardized network redundancy ITU-T G.8032 ERPS v2 (Ethernet Ring Protection Switch) protocol, providing <50ms recovery time to the network, to give user the chance to choose your Ethernet switch but not tied up with particular brand's product.

RPG5-2812-SFP8-10GSFP4 Series provides comprehensive network security and management capability by supporting Multiusers account, IGMP, GVRP, VLAN, QoS, SNMP, RADIUS, TACACS+, Aggregation (Static, LACP), SSH, SSL, IP source guard to create a highly-secured network environment. For power saving purpose, assuring PD priority and enhancing security level of the network, RPG5-2812-SFP8-10GSFP4 Series also supports PoE scheduling and PoE output limit function to set up PoE output duration and watt at will.

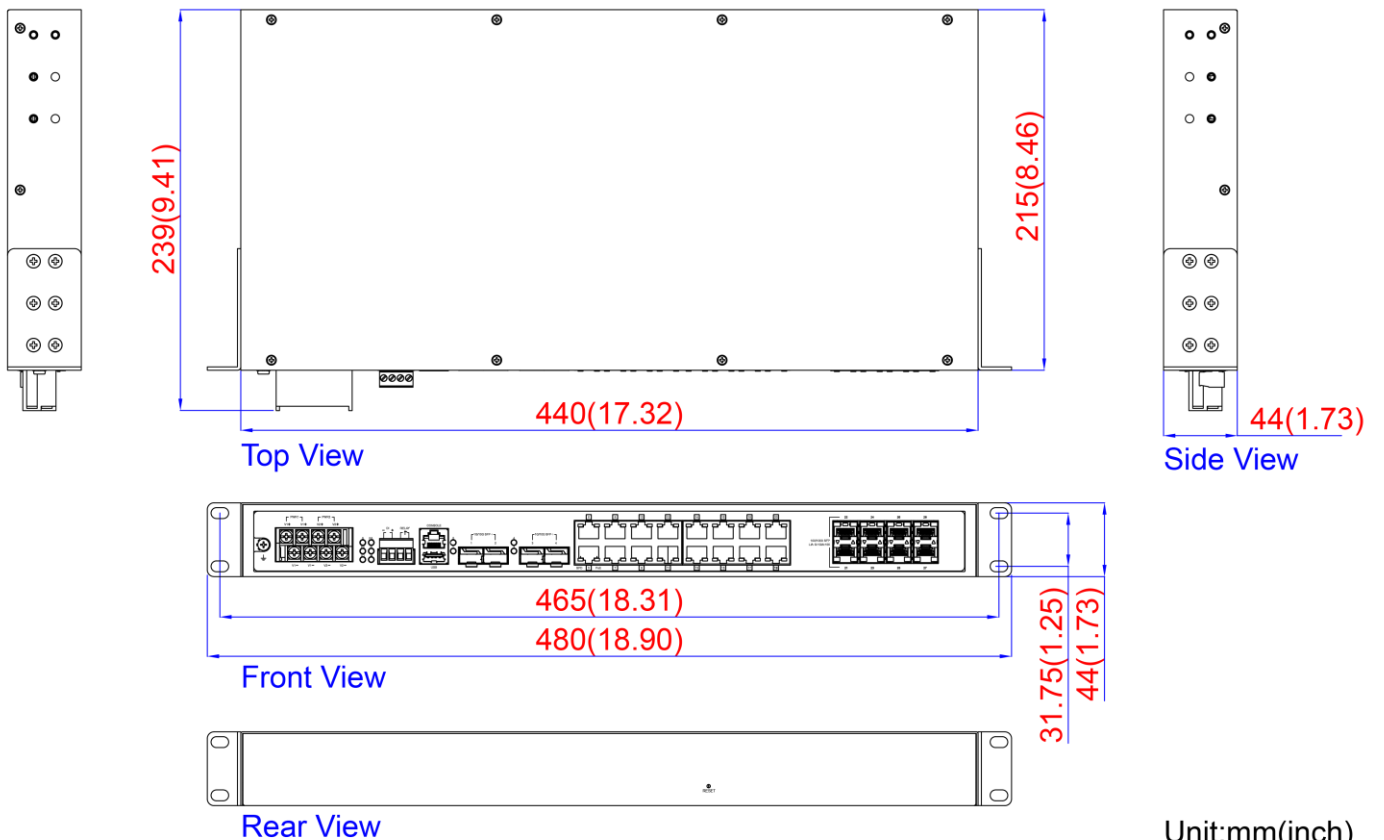
RPG5-2812-SFP8-10GSFP4 Series as an industrial Ethernet switch product line, is designed to withstand harsh and extreme environment conditions. With fan less design, RPG5-2812-SFP8-10GSFP4 Series still manages to be applied in extremely

polarized temperature, from -40°C to 75°C, making it the best choice in various industrial applications.

## Applications



## Dimension



Unit:mm(inch)

## Technical Specifications

### Interface

Copper Ports	16 x 10/100/1000 BASE-T Gigabit Ethernet with IEEE 802.3at compliant PoE, 30W/port Auto-Negotiation, Full/Half Duplex, Auto-MDI/MDI-X
Fiber Port	4 x 1G/2.5G/10GbE SFP+ slots 8 x 100/1000BASE-X SFP slots
Console Port	1 x RS232 in RJ45 connector, baud rate 115,200bps,8,N,1
LED Indicators	<ul style="list-style-type: none"><li>• System: Power 1, Power 2, Master (M), Ring (R), Status, PoE Load (P/L)</li><li>• Ethernet ports: Speed/Link/Active</li><li>• PoE: On-connected to PD devices</li><li>• SFP: Link/Active</li></ul>
PoE Pin Out	V-, V-, V+, V+, for pin 1, 2, 3, 6; V+, V+, V-, V-, for pin 4, 5, 7, 8 *Support Modes: Mode A, Mode B, 4-Pair Mode
Relay Contact	24 VDC, 1A resistive
DI	1 x Digital Input (DI): State 0: -30~8VDC / State 1: 10~30VDC, Max. input current: 8mA

### Switch Properties

Switching Capacity	128Gbps
Forwarding Rate	95.232 Mpps
MAC Table Size	32K
Packet Buffer	32Mbits
Jumbo Frame	10Kbytes
Max. VLAN Number	4095
VLAN ID	1 to 4095
IGMP Groups	1024
Transfer Rate	14,880pps for Ethernet port 148,800pps for Fast Ethernet port 1,488,000pps for Gigabit Ethernet Port 14,880,000pps for 10 Gigabit Ethernet Port

### Power Requirements

Input Voltage	RPG5-2812-SFP8-10GSFP4 Series: Dual 48-55VDC redundant power inputs RPG5-2812-SFP8-10GSFP4-24 Series: Dual 12-55VDC redundant power inputs
Power Connection	1 removable 8-contact terminal block
Overload Current Protection	Present (Slow-Blow Fuse)
Reverse Polarity Protection	Present
System Power Consumption	Max. 38.5W full loading
Max. PoE Power Budget	RPG5-2812-SFP8-10GSFP4 Series: 480W RPG5-2812-SFP8-10GSFP4-24 Series: 150W@12VDC, 300W@24VDC, 480W@48-55VDC with iPoE budget control
PoE Power Output	30W max. per PoE port

### Mechanical Characteristics

Housing	Metal, IP30 protection
Dimensions (W x H x D)	440 x 44 x 215 - mm (17.32 x 1.73 x 8.46 inch)
Weight	RPG5-2812-SFP8-10GSFP4 Series: Unit weight: 4.00 kg (8.82 lb), Shipping weight: 5.00 kg (11.02 lb) RPG5-2812-SFP8-10GSFP4-24 Series: Unit weight: 4.27 kg (9.41 lb), Shipping weight: 5.00kg (11.02 lb)
Mounting	Rack mounting

### Environmental Limits

Operating Temperature	<ul style="list-style-type: none"><li>• STD: -10°C ~ 65°C (14°F ~ 149°F)</li><li>• EOT: -40°C ~ 75°C (-40°F ~ 167°F)</li></ul>
Storage Temperature	-40°C ~ 85°C (-40°F ~ 185°F)
Ambient Relative Humidity	5 to 95%, (non-condensing)

### Software Features

VLAN	<ul style="list-style-type: none"><li>• Private VLAN</li><li>• Port-based VLAN</li><li>• IP Subnet-based VLAN</li><li>• Guest VLAN</li><li>• MAC-based VLAN</li><li>• Protocol-based VLAN</li></ul>
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L2 Features	<ul style="list-style-type: none"> <li>• GVRP</li> <li>• STP</li> <li>• MSTP</li> <li>• Port Mirror</li> <li>• Loop Guard</li> <li>• BPDU Guard</li> <li>• MEP</li> </ul>	<ul style="list-style-type: none"> <li>• VLAN Trunking</li> <li>• RSTP</li> <li>• G.8032 ERPS v1/v2</li> <li>• Loop Detection</li> <li>• LACP</li> <li>• Error Disable Recovery</li> </ul>
L2 Multicast	<ul style="list-style-type: none"> <li>• IGMPv1/v2/v3 Snooping</li> <li>• IGMP Filtering</li> <li>• IPMC Filtering Leave Proxy</li> </ul>	<ul style="list-style-type: none"> <li>• MLDv1/v2 Snooping</li> <li>• IPMC Throttling</li> </ul>
L3 Features	<ul style="list-style-type: none"> <li>• ARP</li> <li>• NAT</li> <li>• OSPFv2, OSPFv3</li> </ul>	<ul style="list-style-type: none"> <li>• Static Route</li> <li>• RIPv2, RIPng</li> <li>• VRRPv2, VRRPv3</li> </ul>
QoS	<ul style="list-style-type: none"> <li>• 802.1p</li> <li>• Port/Queue/ACL Policer</li> <li>• Queue Egress Shaper</li> <li>• Tag Remarking</li> </ul>	<ul style="list-style-type: none"> <li>• Input Priority Mapping</li> <li>• Port Egress Shaper</li> <li>• DiffServ (DSCP)</li> <li>• Scheduler Mode</li> </ul>
Power Saving	<ul style="list-style-type: none"> <li>• ActiPHY</li> <li>• 802.3az Energy Efficient Ethernet (EEE)</li> </ul>	<ul style="list-style-type: none"> <li>• PerfectReach</li> </ul>
PoE	<ul style="list-style-type: none"> <li>• Power Budget Protection</li> <li>• PoE Alive Check</li> </ul>	<ul style="list-style-type: none"> <li>• PoE Output Scheduling</li> </ul>
Security	<ul style="list-style-type: none"> <li>• SSHv2</li> <li>• Port-based 802.1X</li> <li>• MAC-based Authentication</li> <li>• QoS Assignment</li> <li>• TACACS+</li> <li>• Web/CLI Authentication</li> <li>• Port Security</li> <li>• IP Source Guard</li> <li>• DHCP Snooping</li> <li>• Secure Copy Protocol (SCP)</li> </ul>	<ul style="list-style-type: none"> <li>• IP Based Access Filter</li> <li>• Access Control List (ACL)</li> <li>• ACL for Filtering/Policing/Port Copy</li> <li>• VLAN Assignment</li> <li>• IP MAC Binding</li> <li>• User Privilege (15 levels)</li> <li>• RADIUS Authentication and Accounting</li> <li>• ARP Inspection</li> <li>• Broadcast/Multicast/Unicast Storm Control</li> <li>• Secure FTP</li> </ul>
Management	<ul style="list-style-type: none"> <li>• IPv4/IPv6</li> <li>• LLDP / LLDP-MED</li> <li>• DHCP Client</li> <li>• DHCP Server</li> <li>• DNS Proxy</li> <li>• Syslog</li> <li>• Daylight Saving</li> <li>• RMON</li> <li>• Command Line Interface (CLI)</li> <li>• Relay Trigger</li> <li>• Telnet Server and Client</li> <li>• Dual Image Protection</li> <li>• Ping6</li> <li>• DDMI</li> <li>• SMTP</li> </ul>	<ul style="list-style-type: none"> <li>• SNMP v1/v2c/v3</li> <li>• HTTP / HTTPS</li> <li>• DHCPv6 Client</li> <li>• DNS Client</li> <li>• ICMPv6</li> <li>• Time Zone</li> <li>• NTP Client</li> <li>• sFlow</li> <li>• Power Lost Warning</li> <li>• DHCP Option 82</li> <li>• TFTP</li> <li>• Ping</li> <li>• USB Configuration Backup/Restore</li> <li>• Modbus TCP</li> </ul>
Standards and MIBs	<ul style="list-style-type: none"> <li>• IEEE 802.3 10BASE-T Ethernet</li> <li>• IEEE 802.3ab 1000BASE-T</li> <li>• IEEE 802.3af/at Power over Ethernet</li> <li>• IEEE 802.3ae 10 Gigabit Ethernet</li> <li>• IEEE 802.3x Flow Control</li> <li>• IEEE 802.1w RSTP (Rapid Spanning Tree Protocol)</li> <li>• ITU-T G.8032 / Y.1344 ERPS v1/v2 (Ethernet Ring Protection Switch)</li> <li>• IEEE 802.1Q Virtual Local Area Network (VLAN)</li> <li>• IEEE 802.1X Network Authentication</li> <li>• IEEE 802.3ad Link Aggregation (LACP)</li> </ul>	<ul style="list-style-type: none"> <li>• IEEE 802.3u 100BASE-TX Fast Ethernet</li> <li>• IEEE 802.3z 1000BASE-X Gigabit Fiber</li> <li>• IEEE 802.1D STP (Spanning Tree Protocol)</li> <li>• IEEE 802.1s MSTP (Multiple Spanning Tree Protocol)</li> <li>• IEEE 802.1p QoS/CoS Protocol for Traffic Prioritization</li> <li>• IEEE 802.1AB Link Layer Discovery Protocol (LLDP)</li> <li>• IEEE 802.3x flow control, back pressure flow control</li> <li>• IEEE-802.1Q bridge MIB 2008</li> <li>• RFC 1213 MIB II</li> </ul>

- RFC 2674 VLAN MIB
- RFC 2819 RMON (group 1, 2, 3, and 9)
- RFC 1215 TRAPS
- RFC 4292 IP forwarding table
- RFC 5519 multicast group membership discovery
- RFC 4670 RADIUS accounting
- RFC 2863 interface group MIB using SMI v2
- RFC 4133 entity MIB v3
- RFC 3414 user-based security model for SNMPv3
- RFC 2613 SMON – PortCopy
- IEEE 802.3ad (LACP MIB included in a clause of the STD)
- TIA 1057 LLDP-MED (MIB is part of the STD)
- RFC 4188 bridge
- RFC 4293 management information base for the Internet Protocol (IP)
- RFC 4668 RADIUS auth. client
- RFC 3635 Ethernet-like
- RFC 3636 802.3 MAU
- RFC 3411 SNMP management frameworks
- RFC 3415 view-based access control model for SNMP
- IEEE 802.1AB LLDP-MIB (LLDP MIB included in a clause of the STD)
- IEEE 802.1X (PAE MIB included in a clause of the STD)

## Regulatory Approvals

EMI	<ul style="list-style-type: none"> <li>• FCC Part 15 Subpart B Class A,</li> <li>• EN61000-6-4 Class A</li> </ul>	<ul style="list-style-type: none"> <li>• CE EN55032</li> </ul>
EMS	<ul style="list-style-type: none"> <li>• CE EN55035</li> <li>• IEC61000-4-2 (ESD)</li> <li>• IEC61000-4-4 (EFT)</li> <li>• IEC61000-4-6 (CS)</li> </ul>	<ul style="list-style-type: none"> <li>• EN61000-6-2</li> <li>• IEC61000-4-3 (RS)</li> <li>• IEC61000-4-5 (Surge)</li> <li>• IEC61000-4-8 (Magnetic Field)</li> </ul>
Free Fall	<ul style="list-style-type: none"> <li>• IEC60068-2-32</li> </ul>	
Shock	<ul style="list-style-type: none"> <li>• IEC60068-2-27</li> </ul>	
Vibration	<ul style="list-style-type: none"> <li>• IEC60068-2-6</li> </ul>	
Green	<ul style="list-style-type: none"> <li>• RoHS Compliant</li> </ul>	
Safety	<ul style="list-style-type: none"> <li>• UL61010-1</li> <li>• UL61010-2-201</li> <li>• ISA 12.12.01</li> </ul>	
Compliance	<ul style="list-style-type: none"> <li>• IEC-61850-3 (Pending)</li> </ul>	
MTBF (Telcordia SR-332, Issue 3, GB, 25°C)	RPG5-2812-SFP8-10GSFP4 Series: 166,201 hrs. RPG5-2812-SFP8-10GSFP4 -24 Series: 162,280 hrs.	
Warranty	5 Years	

**NOTE: Due to continuous improvement, all product specifications are subject to change without further notice.**

## Packet Contents

- RPG5-2812-SFP8-10GSFP4(-24)(-T) Ethernet switch x 1
- RJ45 (Male) to DB-9 RS-232 (Female) serial console cable x 1
- Rack-mount installation kits x 1
- Quick installation guide (printed) x 1

## Comparison Table

Model Name	10/100/1000B ASE-T PoE+	1G/2.5G/10 GbE SFP+	100/1000B ASE-X SFP	Power Inputs	PoE Max. Power Budget	Operating Temperature
RPG5-2812-SFP8-10GSFP4	16	4	8	48-55VDC	480W	-10°C ~ 65°C
RPG5-2812-SFP8-10GSFP4-T	16	4	8	48-55VDC	480W	-40°C ~ 75°C
RPG5-2812-SFP8-10GSFP4-24	16	4	8	12-55VDC	150W@12VDC 300W@24VDC 480W@48-55VDC	-10°C ~ 65°C
RPG5-2812-SFP8-10GSFP4-24-T	16	4	8	12-55VDC	150W@12VDC 300W@24VDC 480W@48-55VDC	-40°C ~ 75°C

## Ordering Information

RPG5-2812-SFP8-10GSFP4	28-Port Industrial Rack-mount Managed Gigabit Ethernet PoE+ Switch - 16*10/100/1000BASE-T Ethernet with IEEE 802.3at compliant PoE, 30W/port + 4*1G/2.5G/10G SFP+ slots + 8*100/1000BASE-X SFP slots, 48-55VDC, -10°C to 65°C
RPG5-2812-SFP8-10GSFP4-T	28-Port Industrial Rack-mount Managed Gigabit Ethernet PoE+ Switch - 16*10/100/1000BASE-T Ethernet with IEEE 802.3at compliant PoE, 30W/port + 4*1G/2.5G/10G SFP+ slots + 8*100/1000BASE-X SFP slots, 48-55VDC, -40°C to 75°C
RPG5-2812-SFP8-10GSFP4-24	28-Port Industrial Rack-mount Managed Gigabit Ethernet PoE+ Switch - 16*10/100/1000BASE-T Ethernet with IEEE 802.3at compliant PoE, 30W/port + 4*1G/2.5G/10G SFP+ slots + 8*100/1000BASE-X SFP slots, 12-55VDC, -10°C to 65°C
RPG5-2812-SFP8-10GSFP4-24-T	28-Port Industrial Rack-mount Managed Gigabit Ethernet PoE+ Switch - 16*10/100/1000BASE-T Ethernet with IEEE 802.3at compliant PoE, 30W/port + 4*1G/2.5G/10G SFP+ slots + 8*100/1000BASE-X SFP slots, 12-55VDC, -40°C to 75°C

## Optional Accessories - Power Supply Series

### 30W Power Supply Series

HDR-30-24	36W Industrial DIN-Rail Power Supply, 24VDC/1.5A, Universal 85-264VAC/120-370VDC power input, Plastic, -30°C ~ 70°C
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### 60W Power Supply Series

HDR-60-24	60W Industrial DIN-Rail Power Supply, 24VDC/2.5A, Universal 88-264VAC/124-370VDC power input, Plastic, -30°C ~ 70°C
MDR-60-24	60W Industrial DIN-Rail Power Supply, 24VDC/2.5A, Universal 85-264VAC/120-370VDC power input, Plastic, -20°C ~ 70°C

### 75W Power Supply Series

EDR-75-48	75W Industrial DIN-Rail Power Supply, 48VDC/1.6A, Universal 90-264VAC/127-370VDC power input, Metal, -20°C ~ 60°C
NDR-75-48	75W Industrial DIN-Rail Power Supply, 48VDC/1.6A, Universal 90-264VAC/127-370VDC power input, Metal, -20°C ~ 70°C

### 120W Power Supply Series

EDR-120-48	120W Industrial DIN-Rail Power Supply, 48VDC/2.5A, Universal 90-264VAC/127-370VDC power input, Metal, -20°C ~ 60°C
NDR-120-24	120W Industrial DIN-Rail Power Supply, 24VDC/5A, Universal 90-264VAC/127-370VDC power input, Metal, -20°C ~ 70°C
NDR-120-48	120W Industrial DIN-Rail Power Supply, 48VDC/2.5A, Universal 90-264VAC/127-370VDC power input, Metal, -20°C ~ 70°C

### 240W Power Supply Series

NDR-240-48	240W Industrial DIN-Rail Power Supply w/ PFC, 48VDC/5A, Universal 90-264VAC/127-370VDC power input, Metal, -20°C ~ 70°C
SDR-240-24	240W Industrial DIN-Rail Power Supply w/ PFC, 24VDC/10A, Universal 88-264VAC/124-370VDC power input, Metal, -25°C ~ 70°C

### 480W Power Supply Series

NDR-480-48	480W Industrial DIN-Rail Power Supply w/ PFC, 48VDC/10A, Universal 90-264VAC/127-370VDC power input, Metal, -20°C ~ 70°C
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## OPTIONAL ACCESSORIES - SFP Transceiver Series

### 1Gbps Multi-mode SFP Transceiver Modules Series

SFP-GM00	1Gbps SFP Transceiver/LC, MMF, 550M, 850nm, 0°C ~ 70°C with UPC connector
SFP-GM00-T	1Gbps SFP Transceiver/LC, MMF, 550M, 850nm, -40°C ~ 85°C with UPC connector
SFP-GM02	1Gbps SFP Transceiver/LC, MMF, 2KM, 1310nm, 0°C ~ 70°C with UPC connector
SFP-GM02-T	1Gbps SFP Transceiver/LC, MMF, 2KM, 1310nm, -40°C ~ 85°C with UPC connector

### 1Gbps Single-mode SFP Transceiver Modules Series

SFP-GS10	1Gbps SFP Transceiver/LC, SMF, 10KM, 1310nm, 0°C ~ 70°C with UPC connector
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SFP-GS10-T	1Gbps SFP Transceiver/LC, SMF, 10KM, 1310nm, -40°C ~ 85°C with UPC connector
SFP-GS10-WA	1Gbps BiDi SFP Transceiver/LC, SMF, 10KM, TX: 1310nm/RX: 1550nm, 0°C ~ 70°C with UPC connector
SFP-GS10-WA-T	1Gbps BiDi SFP Transceiver/LC, SMF, 10KM, TX: 1310nm/RX: 1550nm, -40°C ~ 85°C with UPC connector
SFP-GS10-WB	1Gbps BiDi SFP Transceiver/LC, SMF, 10KM, TX: 1550nm/RX: 1310nm, 0°C ~ 70°C with UPC connector
SFP-GS10-WB-T	1Gbps BiDi SFP Transceiver/LC, SMF, 10KM, TX: 1550nm/RX: 1310nm, -40°C ~ 85°C with UPC connector
SFP-GS20	1Gbps SFP Transceiver/LC, SMF, 20KM, 1310nm, 0°C ~ 70°C with UPC connector
SFP-GS20-T	1Gbps SFP Transceiver/LC, SMF, 20KM, 1310nm, -40°C ~ 85°C with UPC connector
SFP-GS40	1Gbps SFP Transceiver/LC, SMF, 40KM, 1310nm, 0°C ~ 70°C with UPC connector
SFP-GS40-T	1Gbps SFP Transceiver/LC, SMF, 40KM, 1310nm, -40°C ~ 85°C with UPC connector
SFP-GS40-WA	1Gbps BiDi SFP Transceiver/LC, SMF, 40KM, TX: 1310nm/RX: 1550nm, 0°C ~ 70°C with UPC connector
SFP-GS40-WB	1Gbps BiDi SFP Transceiver/LC, SMF, 40KM, TX: 1550nm/RX: 1310nm, 0°C ~ 70°C with UPC connector
SFP-GS60	1Gbps SFP Transceiver/LC, SMF, 60KM, 1550nm, 0°C ~ 70°C with UPC connector
SFP-GS60-T	1Gbps SFP Transceiver/LC, SMF, 60KM, 1550nm, -40°C ~ 85°C with UPC connector
SFP-GS60-WA	1Gbps BiDi SFP Transceiver/LC, SMF, 60KM, TX: 1310nm/RX: 1550nm, 0°C ~ 70°C with UPC connector
SFP-GS60-WB	1Gbps BiDi SFP Transceiver/LC, SMF, 60KM, TX: 1550nm/RX: 1310nm, 0°C ~ 70°C with UPC connector
SFP-GS80	1Gbps SFP Transceiver/LC, SMF, 80KM, 1550nm, 0°C ~ 70°C with UPC connector
SFP-GS80-T	1Gbps SFP Transceiver/LC, SMF, 80KM, 1550nm, -40°C ~ 85°C with UPC connector
SFP-GSH2	1Gbps SFP Transceiver/LC, SMF, 120KM, 1550nm, 0°C ~ 70°C with UPC connector
SFP-GSH2-T	1Gbps SFP Transceiver/LC, SMF, 120KM, 1550nm, -40°C ~ 85°C with UPC connector
<b>10Gbps Multi-mode SFP+ Transceiver Modules Series</b>	
SFP-XM00	10Gbps SFP+ Transceiver/LC, MMF, 300M, 850nm, 0°C ~ 70°C
SFP-XM00-T	10Gbps SFP+ Transceiver/LC, MMF, 300M, 850nm, -40°C ~ 85°C
<b>10Gbps Single-mode SFP+ Transceiver Modules Series</b>	
SFP-XS10	10Gbps SFP+ Transceiver/LC, SMF, 10KM, 1310nm, 0°C ~ 70°C
SFP-XS10-T	10Gbps SFP+ Transceiver/LC, SMF, 10KM, 1310nm, -40°C ~ 85°C
<b>Copper SFP Transceiver Modules Series</b>	
SFP-GC00-SG	SFP to 10/100/1000BASE-T copper Module, 0°C ~ 70°C
SFP-GC00-SE	SFP to 1000BASE-T copper Module, 0°C ~ 70°C