

Lantech

# IPES-3408GSFP

# 8 10/100TX + 4 1000 SFP L2+ PoE at/af Industrial Managed Ethernet

# Switch w/ enhanced G.8032 Ring & LTDP\*\*

- 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 16MSTI /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 and DDM threshold monitoring with dB values\*\*\*; 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/EGRESS ACL L2/L3,TACACS+\*, QinQ\*\*, SMS\*\*
- Protocol based VLAN\*\*; IPv4/IPv6 Subnet based VLAN\*\*
- Optional Environmental Monitoring\*\* for temp., voltage, total PoE load and current. (-M model)

















# **OVERVIEW**

Lantech IPES-3408GSFP is a high performance L2+ (Gigabit uplink) switch with 8 10/100TX + 4 1000M SFP w/8 PoE 802.3af/at 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/EGRESS 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 EN50155 switch series in single ring 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.

### Up to 8 PoE at/af ports w/advanced PoE management

Compliant with 802.3af/at standard, the Lantech IPES-3408GSFP is able to feed each PoE port up to 30 Watts@54 VDC providing the connected PD devices. Lantech IPES-3408GSFP supports advanced PoE management including PoE detection and scheduling. PoE detection can detect if the connected PD hangs then restart the PD; PoE scheduling is to

allow pre-set power feeding schedule upon routine time table. Each PoE ports can be Enabled/disabled, get the voltage, current, Watt, and temperature info displayed on WebUI.

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

The IPES-3408GSFP 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 IPES-3408GSFP 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.

# 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.

### User friendly GUI, Auto topology drawing

The user friendly UI, innovative auto topology drawing and topology demo makes IPES-3408GSFP much easier to get



hands-on. The complete CLI enables professional engineer to configure setting by command line.

#### Enhanced G.8032 ring, 16 MSTI MSTP; Optional MRP ring

Lantech IPES-3408GSFP 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 topologIPES that covers double ring, 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 16 MSTI.

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

#### Editable configuration file

The configuration file of Lantech IPES-3408GSFP can be exported and edited with word processor for the other switches configuration with ease. The 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.

#### 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.

### Event log & message; 2DI / 2DO

In case of event, the IPES-3408GSFP is able to send 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.

# Optional environmental monitoring\*\* for switch inside information (-M model)

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

# Wide range dual DC powered; Relay contact alarm , High ESD protection

The Lantech IPES-3408GSFP is designed with dual power supply at 48VDC. The 12V model is built with Booster technology that can accept input voltage from 12V  $\sim$  54V and deliver PoE power at 48V to feed the PD. Featured with relay contact alarm function, the IPES-3408GSFP is able to connect with alarm system in case of power failure. The IPES-3408GSFP also provides  $\pm 2000V$  EFT and  $\pm 4000$  VDC (Contact) /  $\pm 8000$  VDC (Air) Ethernet ESD protection, which can reduce unstable situation caused by power line and Ethernet.

# Industrial hardened design for extended temperature operation

Lantech IPES-3408GSFP features 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.

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

## **FEATURES & BENEFITS**

- 8 10/100TX + 4 1000M SFP w/8 PoE 802.3af/at Injectors (Total 12 Ports Switch)
- Embedded 8 PoE Injectors IEEE802.3af/at function to feed power up to 30W@54V; 15W @ 48V per port for active operation
- PoE voltage boost from 12V to 54V (12V model)
- PoE management including PoE detection and scheduling for PD (power devices)
- Back-plane (Switching Fabric): 9.6Gbps
- 16K MAC address table
- DDM to support SFP diagnostic function\*\*\*
  - Automatically convert the raw data into dB values for TX power/RX power, making it easier to measure the fiber distance
- 10KB Jumbo frame
- User friendly UI, auto topology drawing, topology

- demo, complete CLI for professional setting
   Enhanced G.8032 Ring protection in 20ms < 256</li>
   switches
  - 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
- Dual DC input from 9.5V~60VDC, HV model with single 90~305VAC or 120~430VDC power input
- Provides EFT protection ±2000 VDC for power line.



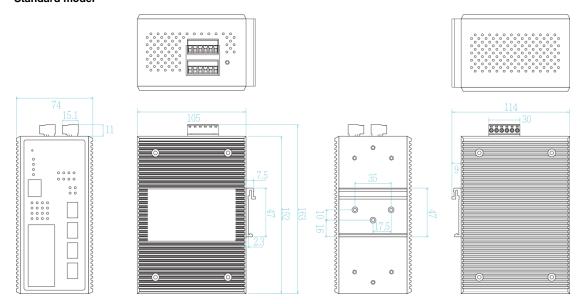
- Supports ±4000 VDC (Contact) and ±8000 VDC (Air)
   Ethernet ESD protection
- Supports IEEE 802.1p Class of Service, per port provides 8 priority queues Port base, Tag Base and Type of Service Priority
- IEEE 802.1d STP, IEEE 802.1w RSTP,802.1s MSTP VLAN redundancy with 16 MSTI
- 4K 802.1Q VLAN, Port 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\*\*
- Mac based DHCP server to assign IP address that includes dumb switches in DHCP network
- Bandwidth Control
  - Ingress packet filter and egress rate limit
  - 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
- System Event Log, SMTP Email alert, SMS mobile (text) and SNMP Trap for alarm support; 32 RMON counters

### Security

- SSL/SSH/INGRESS/EGRESS 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
- IGMP router port to assign query in ring for reversed multicast video flow
- Multicast VLAN registration\* for metro video
- IGMPv1,v2,v3 with Query mode for multimedia; GMRP\*\*
- Factory reset button to restore setting to factory default
- Watchdog design to auto reboot switch CPU is found dead
- Environmental monitoring for system input voltage, current, total PoE load and ambient temperature (-M model)
- Supports 2DI / 2DO (Digital Input/Digital Output)
- Configuration backup and restoration
  - Supports editable configuration file for system quick installation
- Fanless IP30 metal housing with DIN rail and Wallmount\*\* design

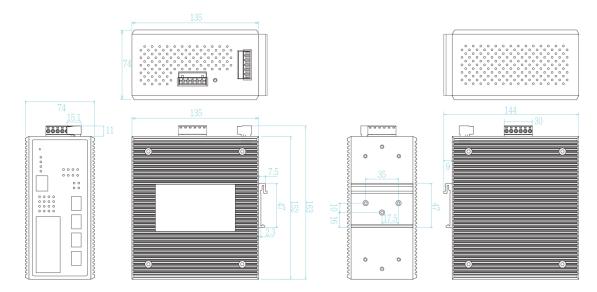
### **DIMENSIONS** (unit=mm)

### Standard model





### 12V model



## SPECIFICATION

SPECIFICATION			
Hardware Spe	cification		μm); 0 to 2 km, 1310 nm (50/125 μm)
Standards	IEEE802.3 10Base-T Ethernet		Single mode: 0 to 10 km/ 30 km/ 40 km,
	IEEE802.3u 100Base-TX		1310 nm (9/125 μm); 0 to 50 km/ 60 km/
	IEEE802.3z Gigabit fiber		80km/ 120 km, 1550 nm (9/125 μm)
	IEEE802.3x Flow Control and Back		WDM 1.25Gbps:
	Pressure		Single mode: 0 to 10 km/ 20 km/ 40 km/
	IEEE802.3ad Port trunk with LACP		60 km, 1310 nm (9/125 μm); 0 to 80 km,
	IEEE802.1d Spanning Tree		1490 nm (9/125 μm); 0 to 10 km/ 20 km/
	IEEE802.1w Rapid Spanning Tree		40 km/ 60 km/ 80 km, 1550 nm (9/125 μm)
	IEEE802.1s Multiple Spanning Tree	LED	Per unit: Power 1 (Green), Power 2
	IEEE802.3ad Link Aggregation Control		(Green),
	Protocol (LACP)		FAULT (Red)
	IEEE802.1AB Link Layer Discovery		Ethernet port: Link/Activity (Green),
	Protocol (LLDP)		Speed (Green);
	IEEE802.1X User Authentication (Radius)		Mini-GBIC: Link/Activity (Green)
	IEEE802.1p Class of Service		R.M. indicator (Green)
	IEEE802.1Q VLAN Tag		PoE : (Green)
	IEEE802.3at/af Power over Ethernet	DI/DO	2 Digital Input (DI) :
Switch Architecture	Back-plane (Switching Fabric): 9.6Gbps		Level 0: -30~2V / Level 1: 10~30V
Transfer Rate	14,880pps for Ethernet port		Max. input current:8mA
	148,800pps for Fast Ethernet port		2 Digital Output(DO): Open collector to 40
	1,488,000pps for Gigabit Fiber Ethernet		VDC, 200mA
	port	Operating Humidity	5% ~ 95% (Non-condensing)
Mac Address	16K MAC address table	Operating	-20°C~60°C / -4°F~140°F (Standard
Jumbo frame	10KB	Temperature	model)
Connectors	10/100TX: 8 x ports RJ-45 PoE with Auto		-40°C~75°C / -40°F~167°F(-E model)
	MDI/MDI-X function	Storage Temperature	-40°C~85°C / -40°F~185°F
	4 x 1000 SFP socket with DDM	Power Supply	Dual 45~56VDC (48V model)
	RS-232 connector: RJ-45 type		Dual 9.5~57VDC (12V model)
	Power & Relay connector: 1 x 6-pole	PoE Budget	240W for 45~56V input
	terminal block		(54V input is recommended for PTZ or
	DIDO : 1 x 6-pole terminal block		heater applications) 120W for 24V input
Network Cable	10Base-T: 2-pair UTP/STP Cat. 3, 4, 5/		80W for 12V input
	5E/ 6 cable	PoE pin assignment	RJ-45 port # 1~ # 8 support IEEE
	EIA/TIA-568 100-ohm (100m)	r oz pin assignment	802.3at/af End-point. Per port provides up
	100Base-TX: 2-pair UTP/STP Cat. 5/ 5E/		to 30W
	6 cable		Positive (VCC+): RJ-45 pin 1,2.
	EIA/TIA-568 100-ohm (100m)		Negative (VCC-): RJ-45 pin 3,6.
Optical Cable	1.25Gbps:	Power Consumption	10W
	Multi mode: 0 to 550 m, 850 nm (50/125	Case Dimension	Metal case, IP-30.
		- Case Dimension	



	74 ((A)) 405 (D) 450 (U) (O) dd	
	74 (W) x 105 (D) x 152 (H) mm (Standard	
	model) 74 (W) x 135 (D) x 152 (H) mm (12V	
	model)	
Weight	·	
	900 g	
Installation EMI & EMS	DIN Rail and Wall Mount** Design FCC Class A,	
EIVII & EIVIO	CE EN55032 Class A, CE EN55024,	
	CE EN61000-4-2, CE EN61000-4-3,	
	CE EN61000-4-4, CE EN61000-4-5,	
	CE EN61000-4-6, CE EN61000-4-8,	
	CE EN61000-6-2	
Stability Testing	IEC60068-2-32 (Free fall),	
	IEC60068-2-27 (Shock),	
	IEC60068-2-64 (Vibration)	
MTBF	938,222 hours	
	(standards: IEC62830)	
Warranty	5 years	
Software Spec	cification	
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	
ITU G.8032	Support ITU G.8032 v2/2012 for Ring	
110 0.0002	protection in less than 20ms for self-heal	
	recovery (basic 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. Protect multicast & unicast data.	
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.	
User friendly UI	<ul> <li>Auto topology drawing</li> </ul>	
	■ Topology demo	
	<ul><li>Auto configuration for</li></ul>	
	G.8032(auto mode) for single	
	ring	
	■ DDM threshold monitoring with	
	dB values***	
	■ Complete CLI for professional	
Port Trumbouith LAGO	setting	
Port Trunk with LACP	LACP Port Trunk: 8 Trunk groups	
LLDP	Supports LLDP to allow switch to advise	
CDD	its identification and capability on the LAN	
CDP	Cisco Discovery Protocol for topology	
Environmental	mapping System status for input voltage, current	
Monitoring**	and ambient temperature to be shown in	
	GUI and sent alerting if any abnormal	
\(\alpha\)	status(-M model)	
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	

ID-C/4	VLAN**
IPv6/4	Present
Spanning Tree	Supports IEEE802.1d Spanning Tree and
	IEEE802.1w Rapid Spanning Tree, IEEE802.1s Multiple Spanning Tree with
	16 MSTI
Quality of Service	The quality of service determined by port,
Quanty of Corrido	Tag and IPv4 Type of service, IPv4
	Differentiated Services Code Points -
	DSCP
Class of Service	Support IEEE802.1p class of service, per
	port provides 8 priority queues
QoS by VLAN	Tagged QoS by VLAN for all devices in the
	network
IP Security	Supports 10 IP addresses that have
	permission to access the switch
	management and to prevent unauthorized
	intruder.
Login Security	Supports IEEE802.1X
	Authentication/RADIUS
Port Mirror	Support 3 mirroring types: "RX, TX and
Natural 6	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/MAC-Port
	binding
	Management access control with priority
	Ingress/Egress ACL L2/L3
	SSL/ SSH for Management
	HTTPS for secure access to the web
	interface
	TACACS+* for Authentication
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 and egress
	packet limit.
	The egress rate control supports all of
	packet type.
	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 and the
	egress packet limit.
Flow Control	Supports Flow Control for Full-duplex and
	Back Pressure for Half-duplex
System Log	Supports System log record and remote
	system log server
SMTP/Text SMS	Supports SMTP Server and 8 e-mail
	accounts for receiving event alert; can
Polay Norm	send SMS text alert via mobile
Relay Alarm	Provides one relay output for port breakdown, power fail and alarm.
	Alarm Relay current carry ability: 1A @
	DC24V
	- '



Protection	<ul><li>Miss-wiring avoidance</li><li>Repowered auto ring restore</li><li>Loop protection</li></ul>
SNMP Trap	Up to 10 trap stations; trap types including:
DHCP	Provide DHCP Client/ DHCP Server/DHCP Option 82/Port based DHCP; DHCP Option 66; IPv6 address resolution for DHCP server**
Mac based DHCP Server	Assign IP address by Mac that can include dumb switch in DHCP network

DNS	Provide DNS client feature and support Primary and Secondary DNS server.
SNTP	Supports SNTP to synchronize system clock in Internet
Firmware Update	Supports TFTP/SFTP** firmware update, TFTP backup and restore; HTTP firmware upgrade
Configuration upload and download	Supports text configuration file for system quick installation; Support factory reset button to restore all settings back to factory default.

- \*Future release
- \*\*Optional
- \*\*\*Optional DDM SFP required

# **ORDERING INFORMATION**

■ IPES-3408GSFP-48V......P/N: 8350-550

8 10/100TX PoE at/af up to 30W + 4 1000M SFP L2+ Industrial PoE Managed Ethernet Switch; -20°C to 60°C; Dual 45~56VDC

■ IPES-3408GSFP-48V-E.....P/N: 8350-551

8 10/100TX PoE at/af up to 30W + 4 1000M SFP L2+ Industrial PoE Managed Ethernet Switch; -40°C to 75°C; Dual 45~56VDC

■ IPES-3408GSFP-48V-M......P/N: 8350-552

8 10/100TX PoE at/af up to 30W + 4 1000M SFP L2+ Industrial PoE Managed Ethernet Switch w/Environmental monitoring; -20°C to 60°C; Dual 45~56VDC

■ IPES-3408GSFP-48V-M-E......P/N: 8350-553

8 10/100TX PoE at/af up to 30W + 4 1000M SFP L2+ Industrial PoE Managed Ethernet Switch w/Environmental monitoring; -40°C to 75°C: Dual 45~56VDC

■ IPES-3408GSFP-12V......P/N: 8350-558

8 10/100TX PoE at/af up to 30W + 4 1000M SFP L2+ Industrial PoE Managed Ethernet Switch; -20°C to 60°C; Dual  $9.5\sim57VDC$ 

■ IPES-3408GSFP-12V-E......P/N: 8350-559

8 10/100TX PoE at/af up to 30W + 4 1000M SFP L2+ Industrial PoE Managed Ethernet Switch; -40°C to 75°C; Dual  $9.5\sim57VDC$ 

■ IPES-3408GSFP-12V-M......P/N: 8350-5581

8 10/100TX PoE at/af up to 30W + 4 1000M SFP L2+ Industrial PoE Managed Ethernet Switch w/Environmental monitoring; -20°C to 60°C: Dual 9.5~57VDC

■ IPES-3408GSFP-12V-M-E......P/N: 8350-5591

8 10/100TX PoE at/af up to 30W + 4 1000M SFP L2+ Industrial PoE Managed Ethernet Switch w/Environmental monitoring; - 40°C to 75°C: Dual 9.5~57VDC

### **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  $50^{\circ}$ C ~  $70^{\circ}$ C)

■ NDR-120 Series 120W Single Output Industrial Din Rail Power; 90-264VAC / 127-370VDC Input Range; Cooling by free air convection; RoHS2;

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)

### Mini GBIC (SFP)

■ 8330-162X	MINI GBIC 1000SX (LC/MM/0.5KM) Transceiver	<b>8340-0591</b>	MINI GBIC 1000LHX (LC/SM/40KM) Transceiver
■ 8330-163X	MINI GBIC 1000SX2 (LC/MM/2KM) Transceiver	<b>8330-166</b>	MINI GBIC 1000XD (LC/SM/50KM) Transceiver
■ 8330-165X	MINI GBIC 1000LX (LC/SM/10KM) Transceiver	<b>8330-169</b>	MINI GBIC 1000XD (LC/SM/60KM) Transceiver

## **Industrial PoE Managed Ethernet Switches**



8330-167	MINI GBIC 1000ZX (LC/SM/80KM) Transceiver	<b>8330-186</b>	1.25Gbps BiDi SFP 20KM Transceiver (WDM 1310)
<b>8330-170</b>	MINI GBIC 1000EZX (LC/SM/120KM) Transceiver	<b>8330-187</b>	1.25Gbps BiDi SFP 20KM Transceiver (WDM 1550)
<b>8330-168</b>	MINI GBIC 10/100/1000T (100m) Transceiver	<b>8330-180</b>	1.25Gbps BiDi SFP 40KM Transceiver (WDM 1310)
<b>8330-197</b>	1.25Gbps BiDi SFP 0.5KM Transceiver (WDM 1310)	<b>8330-182</b>	1.25Gbps BiDi SFP 40KM Transceiver (WDM 1550)
<b>8330-198</b>	1.25Gbps BiDi SFP 0.5KM Transceiver (WDM 1550)	<b>8330-181</b>	1.25Gbps BiDi SFP 60KM Transceiver (WDM 1310)
<b>8330-195</b>	1.25Gbps BiDi SFP 2KM Transceiver (WDM 1310)	<b>8330-183</b>	1.25Gbps BiDi SFP 60KM Transceiver (WDM 1550)
<b>8330-196</b>	1.25Gbps BiDi SFP 2KM Transceiver (WDM 1550)	<b>8330-184</b>	1.25Gbps BiDi SFP 80KM Transceiver (WDM 1490)
<b>8330-188</b>	1.25Gbps BiDi SFP 10KM Transceiver (WDM 1310)	<b>8330-185</b>	1.25Gbps BiDi SFP 80KM Transceiver (WDM 1550)
8330-189	1.25Gbps BiDi SFP 10KM Transceiver (WDM 1550)	All SFP# end	ded with D are with DDM function

### **Wall Mount Bracket**

MBAK19003 Wall mount bracket for 74(W) x 105 (D) x 152 (H) mm / 74 (W) x 135 (D) x 152 (H) mm Industrial switches

MBAK19004 19" Rack Mounting Kit for 74x105x152mm/74x135x152mm Industrial Switch

### Lantech Communications Global Inc.