

# IES-2224-PU

## 24 10/100TX + 2 1000 SFP Industrial Power Station

### L2 Plus Managed Switch

- High-density Ethernet hardened switch for power utility
- X-Ring provides ring recovery time of less than 10ms
- Wide operating temperature range from -40°C to 85°C



## OVERVIEW

Lantech IES-2224-PU Industrial power utility SNMP switch is a high-density Ethernet Hardened Switch for power utility, renewable power, and substation application, offering 100V-240V VAC/VDC redundant power input to increase the reliability of network.

Lantech IES-2224-PU features high reliability and robustness compliant with IEC-61850 & IEEE 1613 withstanding extensive EMI/RFI phenomenon, lighting surge, inductive load switching, high ESD, high fault current environment usually find in Power substation. Widely operational temperature capacity (-40°C~85°C) ensures IES-2224-PU runtime during the harsh environment. It also supports 6000VDC ESD and 3000VDC EFT protection.

Lantech IES-2224-PU builds in all the important software features required in large network like DHCP Option 82 (Relay agent), 256 Policy ACL for security, IGMP Query / Snooping and RSTP. The highly integrated Fast Ethernet switch is designed to be interconnecting with Gigabit backbone in core network.

IES-2224-PU Pro-Ring proprietary recovery protocol can resume network link down in less than 10ms time. It supports Couple Ring which can secure two X-Ring groups connection without failure. Dual Homing can redundantly back up the X-Ring groups to the upper layer core switch via RSTP. With X-Ring, Couple Ring and Dual Homing, IES-2224-PU offers network non-stop reliability in connection with other Lantech industrial edge switches.

## FEATURES & BENEFITS

### ■ System Interface/Performance

- IEC-61850 & IEEE1613 Ready
- 8K MAC Address Table
- Redundant Power Supply Design for AC or DC

### ■ VLAN

- Port Based VLAN
- Support 802.1 Q Tag VLAN
- GVRP

### ■ Port Trunk with LACP

### ■ QoS (Quality of Service)

- Supports IEEE 802.1p Class of Service,
- Per port provides 4 priority queues
- Port-base, Tag-base and TOS Priority

### ■ Security

- Port Security: MAC address entries/filter
- IP Security: IP address security management to prevent unauthorized intruder.
- Login Security: IEEE 802.1X/RADIUS

### ■ IGMP with Query mode for Multi Media Application

### ■ Provides EFT protection 3000 VDC for power line

### ■ Supports 6000 VDC Ethernet ESD protection

### ■ Pro-Ring

- Covers X-Ring, Dual Homing, Central Ring and Couple Ring Topology
- Provides redundant backup feature and the recovery time below 10ms for up to 250 switches in a ring

### ■ Supports up to 256 Policy base ACL

### ■ Supports IEEE802.1ab LLDP\*\*

### ■ Bandwidth Control

- Ingress Packet Filter and Egress Rate Limit
- Broadcast/Multicast Packet Filter Control

### ■ System Event Log

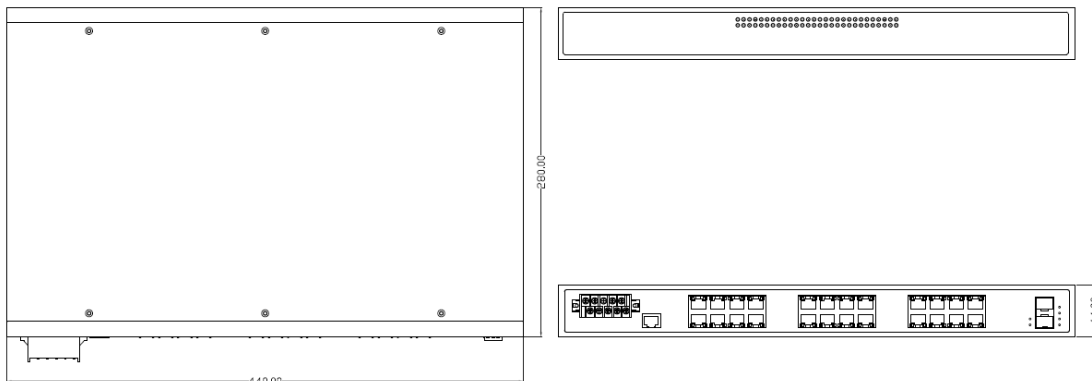
- System Log Server/Client
- SMTP e-mail Alert
- Relay Alarm Output System Events Security

### ■ SNMP Trap

- Device cold start
- Power status
- Authentication failure
- Port Link up/Link down

### ■ TFTP Firmware Update and System Configure Restore and Backup

**DIMENSIONS (unit=mm)**



**SPECIFICATION**

Hardware Specification		Software Specification	
IEEE Standards	IEEE 802.3 10Base-T Ethernet IEEE 802.3u 100Base-TX / 100Base-FX IEEE 802.3z Gigabit fiber IEEE 802.3ab 1000Base-T IEEE 802.3x Flow Control and Back Pressure IEEE 802.3ad Port trunk with LACP IEEE 802.1d Spanning Tree IEEE 802.1w Rapid Spanning Tree IEEE 802.1p Class of Service IEEE 802.1Q VLAN Tag IEEE 802.1x User Authentication (Radius) IEEE 802.1ab LLDP**	Humidity	
Switch Architecture	Back-plane (Switching Fabric): 8.8Gbps Packet throughput ability(Full-Duplex): 5.9Mpps @64bytes	Operating Temperature	Standard: -40°C ~85°C
Transfer Rate	14,880pps for Ethernet port 148,800pps for Fast Ethernet port 1,488,000pps for Gigabit Ethernet port	Storage Temperature	-40°C ~85°C
MAC Address	8K MAC address table	EMI	FCC Class A, CE EN61000-4-2 (ESD), CE EN61000-4-3 (RS), CE EN-61000-4-4 (EFT), CE EN61000-4-5 (Surge), CE EN61000-4-6 (CS), CE EN61000-4-8, CE EN61000-4-11, CE EN61000-4-12, CE EN61000-6-2, CE EN61000-6-4
Jumbo frame	9K (for Gigabit Ports)	Safety	UL, cUL, CE/EN60950-1
Connectors	SC (Multi-mode): 50/125um~62.5/125um SC (Single-mode): 9/125um Available distance: 2km (Multi-mode)/30km (Single-mode) Wavelength: 1310nm (Multi-mode/Single-mode) 10/100TX: 1 x RJ-45 with auto MDI/MDI-X function Mini-GBIC: 2 x SFP sockets	Stability Testing	IEC60068-2-32 (Free fall), IEC60068-2-27 (Shock), IEC60068-2-6 (Vibration), KEMA 61850-3, IEEE1613, Zero packet loss(240~480V) IEC60870-2-2, IEC60068-2-30
Network Cable	10Base-T: 2-pair UTP/STP Cat. 3, 4, 5 cable EIA/TIA-568 100-ohm (100m) 100Base-TX: 2-pair UTP/STP Cat. 5 cable EIA/TIA-568 100-ohm (100m)	Warranty	5 years
Protocol	CSMA/CD	<b>Software Specification</b>	
LED	Per unit: Power 1 (Green), Power 2 (Green), Alarm (Red) ,R.M (Green) Link/Activity (Green), Full duplex/collision(Yellow)), MINI GBIC (Link/Activity )(Green)	Management	SNMP v1 v2c, v3/ Web/Telnet/CLI Management
Power Supply	2 X VAC/VDC 100V~240V Redundancy,	SNMP MIB	RFC 3418 SNMP MIB RFC 1213 MIBII RFC 2011 MIB RFC 1493 Bridge MIB RFC 2674 VLAN MIB RFC 1215 Trap MIB RFC 1643 Ethernet like RFC 1757, RSTP MIB RMON1(1,2,3,9) LLDP MIB**, Private MIB
Power Consumption	17.5 W @VDC, 21.5W @VAC	VLAN	Port based VLAN, up to 24 groups IEEE802.1Q Tag VLAN Static VLAN groups up to 256, Dynamic VLAN group up to 2048, VLAN ID from 1 to 4096. GVRP up to 256 groups.
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: 13 Trunk groups/Maximum 4 trunk members
Case Dimension	19" Metal case,IP-30; 440mm(W)x280mm(D)x44mm(H)	LLDP**	Support LLDP to allow switch to advise its identification and capability on the LAN
Operating	5%~95% (Non-condensing)	Pro-Ring	Support X-Ring, Dual Homing, and Couple Ring Provide redundant backup feature and the recovery time below 10ms
		Spanning Tree	Support IEEE802.1d Spanning Tree,IEEE802.1w Rapid Spanning Tree,
		Quality of Service	The quality of service determined by port, Tag and IPv4 Type of service, IPv4 Different Service

**Industrial Managed Switches**

Class of Service	Support IEEE802.1p class of service, per port provides 4 priority queues
Port Security	Support 50 entries of MAC address for static MAC and another 50 for MAC filter
Port Mirror	Support 3 mirroring types: "RX, TX and Both packet"
IGMP	Support IGMP snooping v1,v2 256 multicast groups and IGMP query
IP Security	Support 10 IP addresses that have permission to access the switch management and to prevent unauthorized intruder.
Login Security	Support IEEE802.1X Authentication/RADIUS
Access Control List(ACL)	Support up to 256 Policy
Bandwidth Control	Support ingress packet filter and egress packet limit The egress rate control supports all of packet type and the limit rates are 0~100Mbps Ingress filter packet type combination rules are Broadcast/Multicast/Unknown Unicast packet, Broadcast/Multicast packet, Broadcast packet only and all of packet. The packet filter rate can be set from 0 to 100Mbps
Flow Control	Support Flow Control for Full-duplex and Back Pressure for Half-duplex
System Log	Support System log record and remote system log

	server
SMTP	Support 1 SMTP Server and 6 e-mail accounts for receiving event alert
SNMP Trap	Up to 3 Trap stations Cold start, Port link up, Port link down, Authentication Failure, Private Trap for power status, ,
DHCP	Provide DHCP Client/ DHCP Server/ IP Relay functions
DHCP Option 82/ DHCP Snooping*	DHCP Option 82(Relay agent) / DHCP Snooping*
DNS	Provide DNS client feature and support Primary and Secondary DNS server.
SNTP	Support SNTP to synchronize system clock in Internet
Firmware Update	Support TFTP firmware update.
Configuration backup and restore	Support TFTP backup and restore

\*Future Release  
\*\*Optional

**ORDERING INFORMATION**

- **IES-2224-PU .....P/N: 8350-715**  
24 10/100TX + 2 1000SFP Industrial Power Station L2 Plus Managed Switch; -40°C to 85°C

**OPTIONAL ACCESSORIES**

**Mini GBIC (SFP)**

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|--|--|
| ■ <b>8330-162</b> MINI GBIC 1000SX (LC/0.5km) Transceiver      | ■ <b>8330-188</b> LTSFP-1000BX-10KM Transceiver (WDM 1310) |
| ■ <b>8330-163</b> MINI GBIC 1000SX2 (LC/2km) Transceiver       | ■ <b>8330-189</b> LTSFP-1000BX-10KM Transceiver (WDM 1550) |
| ■ <b>8330-165</b> MINI GBIC 1000LX (LC/10km) Transceiver       | ■ <b>8330-186</b> LTSFP-1000BX-20KM Transceiver (WDM 1310) |
| ■ <b>8330-166</b> MINI GBIC 1000LHX (LC/40km) Transceiver      | ■ <b>8330-187</b> LTSFP-1000BX-20KM Transceiver (WDM 1550) |
| ■ <b>8330-169</b> MINI GBIC 1000XD (LC/60km) Transceiver       | ■ <b>8330-180</b> LTSFP-1000BX-40KM Transceiver (WDM 1310) |
| ■ <b>8330-167</b> MINI GBIC 1000ZX (LC/80km) Transceiver       | ■ <b>8330-182</b> LTSFP-1000BX-40KM Transceiver (WDM 1550) |
| ■ <b>8330-168</b> MINI GBIC 1000T (100m) Transceiver           | ■ <b>8330-181</b> LTSFP-1000BX-60KM Transceiver (WDM 1310) |
| ■ <b>8330-061</b> 100Base LX 30KM, Single-mode, LC Transceiver | ■ <b>8330-183</b> LTSFP-1000BX-60KM Transceiver (WDM 1550) |
| ■ <b>8330-060</b> 100Base FX 2KM, Multi-mode, LC Transceiver   | ■ <b>8330-184</b> LTSFP-1000BX-80KM Transceiver (WDM 1490) |
|  | ■ <b>8330-185</b> LTSFP-1000BX-80KM Transceiver (WDM 1550) |

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