Link Power™ LPS840-T1

Outdoor Industrial 4-Port PoE & 2-Port RJ45 Uplink Network Switch

USER MANUAL

Inscape Data Corporation
1620 Oakland Road, STE D101
San Jose, CA 95131
U.S.A.

Certification

Inscape Data Corporation certifies that this product met its published specifications at time of shipment from the factory.

FCC Statement

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

The user is cautioned that changes and modifications made to the equipment without approval of the manufacturer could void the user's authority to operate this equipment.

The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user’s authority to operate the equipment.

Industry Canada Statement

This Class A digital apparatus complies with Canadian ICES-003.

CE Statement

This product complies with the European Low Voltage Directive 73/23/EEC and EMC Directive 89/336/EEC as amended by European Directive 93/68/EEC.

Warning: This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Safety Summary

The following general safety precautions must be observed during all phases of operation of this instrument. Failure to comply with these precautions or with specific warnings elsewhere in this manual violates safety standards of design, manufacture, and intended use of the instrument. Inscape Data Corporation assumes no liability for the customer's failure to comply with these requirements.

Before Applying Power

Verify that the product is set to match the available line voltage and all safety precautions are taken.

Over Temperature Warning

To prevent the switch from overheating, do not operate it in an area that exceeds the maximum recommended ambient temperature of (75°C). To prevent product cooling restriction, allow at least 3 inches (7.6 cm) of clearance around the product after installation.

Ground the Instrument

To minimize shock hazard, the instrument chassis and cabinet must be connected to an electrical ground. The instrument must be connected to the ac power supply mains through a three-conductor power cable, with the third wire firmly connected to an electrical ground (safety ground) at the power outlet. For instruments designed to be hard-wired to the ac power lines (supply mains), connect the protective earth terminal to a protective conductor before any other connection is made. Any interruption of the protective (grounding) conductor or disconnection of the protective earth terminal will cause a potential shock hazard that could result in personal injury.

When installing the unit, always make the ground connection first and disconnect it last.

Jewelry Removal Warning

Before working on equipment that is connected to power lines, remove jewelry (including rings, necklaces, and watches). Metal objects will heat up when connected to power and ground and can cause serious burns or weld the metal object to the terminals.

Do not Operate in Explosive Atmosphere

Do not operate the product in the presence of flammable gases or fumes.

Chassis Power Connection

Before connecting or disconnecting ground or power wires to the chassis, ensure that power is removed from the device. To ensure that all power is OFF, locate the circuit breaker on the panel board that services the device, switch the circuit breaker to the OFF position, and tape the switch handle of the circuit breaker in the OFF position.

Work During Lightning Activity

Do not work on the system or connect or disconnect cables during periods of lightning activity.

Comply with Local and National Electrical Codes

Installation of the equipment must comply with local and national electrical codes

Do Not Exceed Input and Output Ratings

Do not operate the product to exceed the power input and output ratings.

This product Conforms to the following safety standards

Specification	Description
Regulatory Compliance	Products with the CE Marking are compliant with the 89/336/EEC and 73/23/EEC directives, which include the safety and EMC standards listed.
Radiation	CE mark, commercial FCC Part 15 Class B VCCI Class B EN 55022 (CISPR 22), Class B
Safety	CE Mark Commercial CE/LVD EN60950 UL Recognized

Table of Contents

Packing List

Each package includes the following items:

- LPS840 (1)
- WM0001 Wall Mounting Kit (1)
- AC Power Cable with one 3-PIN AC Power Connector (1)
- User Manual (1)
- Warranty Sheet (1)

Product Description

LPS840-T1 Outdoor Industrial PoE Switch features with four PoE Ethernet ports and comply to 10/100BaseT(X), IEEE802.3af PoE and two Gigabit RJ45 interfaces. The power supply of single PoE port can be up to 15.4W. Additionally, the product also features with an anti-electromagnetic interference that is designed for harsh outdoor applications and the 3KV network port surge protection can adapt to harsh outdoor environment and ensure the reliability of the uninterrupted PoE operations. The outdoor enclosure is rated at IP68, and the system is able to operate under -30 ~ +70 ˚ C temperature range.

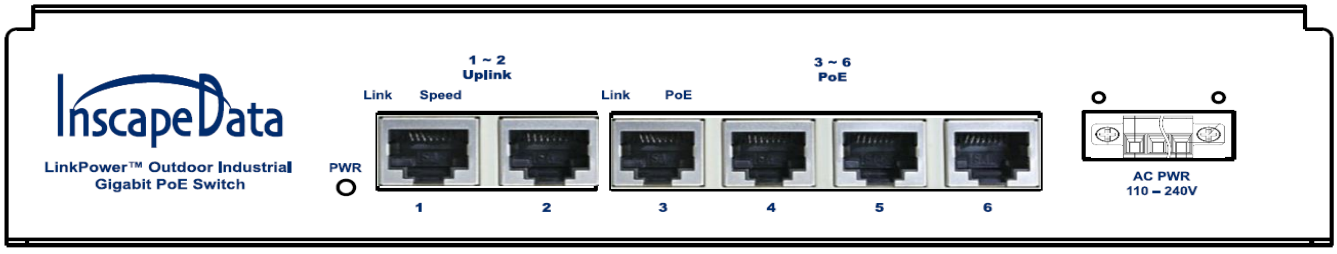
Product Features

1. Comply to IEEE 802.3, IEEE 802.3u, IEEE 802.3z, IEEE 802.3ab, IEEE 802.3x, IEEE 802.1D, IEEE 802.3at, IEEE 802.3af, IEEE 802.1p, IEEE 802.1x, IEEE 802.1Wstandards
2. 10/100M self-sensing RJ45 port, support PoE power supply function; All ports support auto-flip (Auto MDI/MDIX);
3. Each PoE port can provide power up to 15.4W per IEEE802.3af standard; Supply power for powered devices compatible with IEEE802.3af;
4. Support IEEE802.3x full duplex flow control and duplex backpressure flow control;
5. 8.8G backplane bandwidth;
6. 1K MAC address table;
7. Its 3KV network port surge protection can adapt to harsh outdoor environment; Under the temperature of -30 ~ +70 ˚ C, working at a full load 240W;
8. The 2 gigabit SFP fiber ports are capable of high bandwidth and for up to 120KM long distance transmission.
9. You **MUST** ground the device with the Grounding Wire on the back of the device to an earth ground point to ensure the safety of the device in order to prevent power surge caused by the lightning strikes

Installation

a. Before installation, please ensure the following:
b. All PD devices, i.e., PoE Clients, meet the power requirement of the connecting devices.
c. All PD devices, i.e., PoE Clients, match with the power receiving device power pinout specification (1/2+ & 3/6-)
d. Connect the power cable to a power source, 110 ~ 240V AC, then the switch will automatically initialize, and LED lights status will display as following:
e. Except the POE port lights, all the other lights will go through the process of “on-off-on-off”, which means the installation is successful.
f. Power LED remains ON
g. Connect the network devices with network cables to the POE switch port though the waterproof connectors, then secure the Top Cover with the four screws to the Bottom Case
h. After the Ethernet and/or fiber optics network devices are connected, please refer the LED Indicator Description Table Below on Page 6

Control Panel Diagram

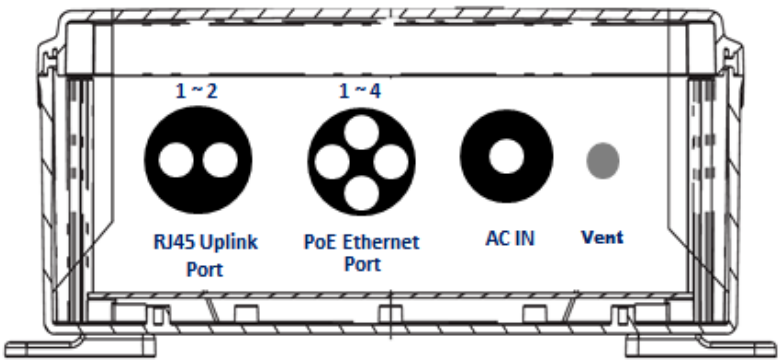


LED Indicator Description Table:

Indicator	Status	Description
PWR Indicator: POWER	Green LED ON	Power On, Normal
	LED OFF	Power OFF
PoE Indicator: PoE	Green LED ON	Connected PD Device, working properly
	Green LED Blink	Short circuit or current overload
	OFF	No Connected PD or Power OFF
10/1000 Indicator: Link	OFF	No Connected PD or Power OFF
	Yellow LED Blink	Data transmission properly
	Yellow LED ON	Connected with 1000Mbps network device
L/A Indicator: Link/Act	Green LED Blink	Data transmission properly
	Green LED ON	Connection is OK and data is being sent and received.
	OFF	No data connected

⚠ **NOTE:** All PoE ports of PD devices are complying with IEEE802.3af/at standards per specific model

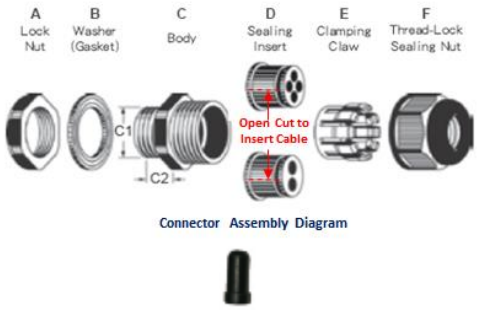
Connector Layout Diagram:



Support Cable Gland and Conduit Connectors

- The hole Size of RJ45 & PoE Connectors is 25 mm
- The Hole Size of AC Power Connector is 20 mm

Waterproof Ethernet, Fiber Optics, & Power Connector Assembly Diagram



Plastic Filler (Plug)

Note: The Sealing Insert comes with one, two, and four holes. The Plastic Filler (Plug) **MUST** be used to cover the Sealing Insert, if any of the hole is not used in order to maintain waterproof of the connector.

Grounding Protection:

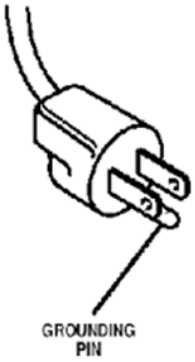
The system provides two following ways to ground the equipment for safety and protection of the system. It is highly recommended that you're to perform both grounding procedures for maximum safety and protection of your equipment. However, at least of the grounding MUST be performed, otherwise any product damage caused by improper or no grounding will not be covered under warranty.

Grounding the Switch by Using the AC Power Cord

If the installation site has no grounding strips or earth ground connection, then you must ground the switch through the AC wire of the power cord. Please make sure that:

1. The power cord extension has a PE (Protective Earth) terminal, Figure 6, Aka, Equipment Grounding Conductor.
2. The ground contact in the power outlet is securely connected to the ground in the power distribution room or on the AC transformer side.
3. The power cord is securely connected to the power outlet.
4. If the ground contact in the power outlet is not connected to the ground, report and resolve the problem and reconstruct the grounding system.

NOTE: PRODUCT DAMAGE CAUSED BY IMPROPER OR NO GROUNDING WILL NOT BE COVERED UNDER WARRANTY!



6 FT AC Power Cable:

- **White (W)** – AC/L
- **Green (G)** – Ground
- **Black (B)** – AC/N

NOTE: For a non-U.S. plug, please carefully identify the "Grounding Pin" based on your region's or country's electric code

Figure 6 Grounding through the AC power cord

Installation & Mounting:

You can mount the system with one of the two ways:

1. **Wall Mount**

Wall Mount Kit, Standard Accessory

2. **Pole Mount**

(Optional Accessory, MMK001 Pole Mount Kit)

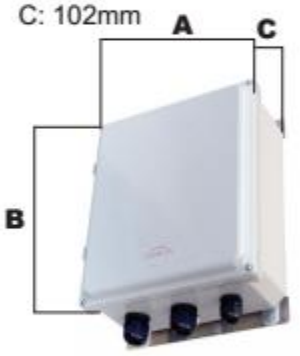
Optional Accessories

The following optional accessories can be order if required:

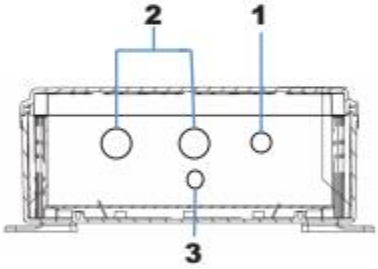
1. Mast/Pole Mounting Kit (Part No: MMK0001-S)
2. Ethernet Conduit Connector Kit (Part No: ECK0001)
3. Power Cable Conduit Connector Kit (Part No: PCC0001)
4. 30CM Plastic Ethernet cable conduit (2) (Part No. PECC0001)
5. 30CM Plastic Power cable conduit (1) (Part No. PPCC0001)

SYSTEM DIMENSIONS & INTERFACES

Dimensions
A: 254mm
B: 305mm
C: 102mm



Interfaces
1. Weatherproof Power Connector
2. Weatherproof PoE Connector
3. Vent Plug



Pole Mounting View

NOTE: Pole Mounting Kit, MMK0001, is an optional accessory.

OPTIONAL ACCESSORIES

MMK0001 Mast Mounting Kit
(For Pole Diameter from 2" to 4.5")

WMK0001 Wall Mounting Kit

ZMEC0001
Zinc Metal Ethernet Connector Kit

ZMPC0001
Zinc Metal Power Connector Kit

MCEC0001
Steel Flexible Metal Conduit for Ethernet Connector Kit

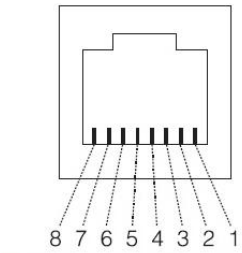
MCPC0001
Steel Flexible Metal Conduit for Power Connector Kit

PECK0001
Power & Ethernet Conduit Kit

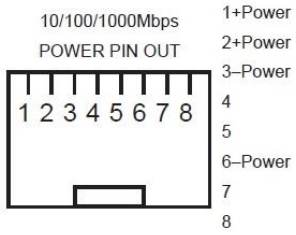
TECHNICAL SPECIFICATIONS

Product Model	LPS840AF-T1	LPS840AT-T1
Product Name	Outdoor Gigabit 4-Port 802.3af PoE Switch with 2 RJ45 Uplink Ports	Outdoor Gigabit 4-Port 802.3at PoE Switch with 2 RJ45 Uplink Ports
Connector	PoE Port: 4x10/100/1000BaseT(X) self-detect RJ45 Uplink Port: 8x10/100/1000BaseT(X) self-detect, 1 Uplink10/100/1000BaseT(X) port	
Forwarding Mode	Store-and-forward architecture, 192K forwarding memory	
Network ! edium	10BASE-T: Cat3/ 4/ 5 UTP (≤100m) 100BASE-TX: Cat5 or more UTP (≤100m) 1000BASE-TX: Cat5 or more UTP (<=100m)	
Performance Specifications	Bandwidth: 8.8Gbps (non-blocking) Network Latency (100 to 100M bps): Maximum delay less than 20μs Packet Buffer Memory: 96KB Address Database Size: 1,000 MTBF: 190,000 hours (about 21 years)	
Protocols and Standards	IEEE 802.3; IEEE 802.3u; IEEE 802.3ab; IEEE 802.3x Flow Control; IEEE 802.1af DTE Power via MDI IEEE 802.3af/ IEEE 802.3at	
LEDs Status	System: Power Every Port: connection status, PoE working status	
Power Supply	Input voltage: 120V ~ 240V AC Output voltage: 48V DC IEEE802.3af standard, each port power is 15.4W, total power is 65W for 4 ports IEEE802.3at standard, each port power is 25.5 W, total power is 120W for 4 ports Support OCP (Over-Current Protection) and electronic protection Connection: 3-pin pluggable connecting terminal	
Dimensions/ Weight	**Enclosure:** IP68 protection grade, shell Dimension (LxWxH): 254.0 x 203.2 x 50.8mm **Weight:** 3.0KG **Installation Method:** Wall mount / Mast mount	
Working Environment	Operating Temperature: -30˚C ~ 70˚C Storage Temperature: -20°C ~ 75°C	
Radition	FCC Part 15 Class B CE Mark, Commervial VCCI Class B EN 55022 (CISPR 22), Class B	
Safety	CE Mark ,commercial CE/LVD EN60950, RoHS	

ELECTRICAL PIN OUT DIAGRAM



PD and PSE Eight-Pin RJ45 Modular Jack



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