LinkPower™ PIS6095

2.5Mbps 2-Port Gigabit 802.3bt High-Power PoE Injector

USER MANUAL

Inscape Data Corporation
2012 Hartog Drive
San Jose, CA 95131
U.S.A.

Updated 08/01/2019

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.

UL Recognized Statement

The power supply of this product has been investigated using applicable construction and performance requirements by UL, and when installed in accordance with the manufacturer’s installation instructions, should provide a safe, code-compliant installation.

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.
Safety & EMC	CE mark, commercial, FCC Part 15 Class B, RoHS UL60950-1, TUV EN60950-1 Approved

Packing List

Each package includes the following items:

- PIS2060 or PIS2095 (1)
- WECK0001 Waterproof Ethernet Connector Kit (2)
- WPCK0001-3 - AC Power Cable with one 3-PIN AC Power Connector (1)
- User Manual (1)
- Warranty Sheet (1)

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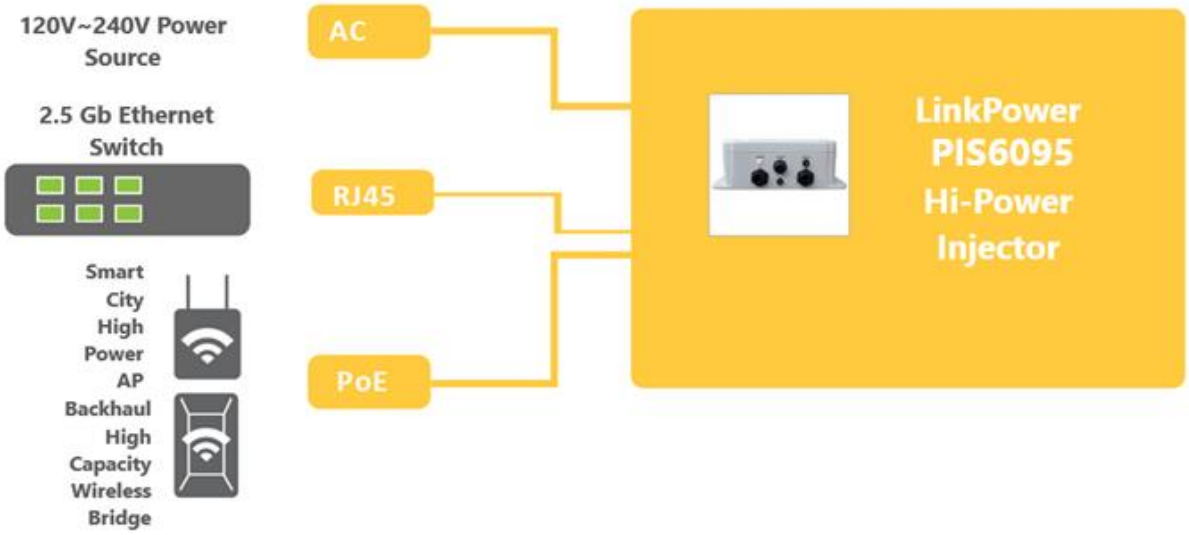
1 Introduction

Inscape Data's LinkPower™ PIS6095 2-port 10/100/1000/2500M PoE (Power over Ethernet) Injector is a Gigabit high power high-power DC PoE injector, and it supports IEEE802.3bt PoE++ standard and is backward compatible with IEEE 802.3af/IEEE802.3at standards. The maximum output power is 90W for PIS6095. There are two RJ45 network ports, and one of which is used as an uplink port to a switch or to another network device. Another network port is the PoE port that integrated PoE power output and network data. The high power DC output simplifies the overall installation by eliminating the need for a power cord, such as, high power network dome cameras or other high power IP devices.



2 Product Overview

2.1 PIS6095 System View

2.2 Connector System Interface

The PIS6095 system is housed in a 7.63x4.63x3.09 Inch IP67 weatherproof enclosure. The Connector System Interface consists of two Waterproof RJ45 PoE Connectors, and an Waterproof AC Connector. Each of the RJ45 PoE Connector and AC Connector has an LED Indicator. The functions of the switch and LED status is summarized in a table and the picture below.

PIS6095 Front Panel View

User Buttons and Ports

Item No.	Function	Description
1	AC PWR & LED	100 ~ 240V AC Power Input Port LED in ON (Green), when Power is connected
2	PoE Out Port & LED	PoE is Active, when LED is ON (Green)

2.3 System Power Inputs

The PIS6095 model accepts 100 ~ 240V AC power input. The industrial power termination block provides secure and installation flexibility.

2.4 Earth Ground

The system provides the grounding by using the Ground Wire (see Section 2.6) 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.

2.5 Grounding the Switch by Using WPCK0002 AC Power Cord

If the installation site has no grounding strips or earth ground connection, then you must ground the Injector through the AC wire of the power cord.

Please make sure that: Please make sure that:

1. There are two ways to ground the injector, namely grounding lug and power cord grounding pin.
2. First, to use the grounding lug for grounding, please see the Figure 1-B
3. Next, the power cord has a ground pin, Aka, PE (Protective Earth) terminal, Figure 1-A.
4. The ground contact in the power outlet is securely connected to the ground in the power distribution room or on the AC transformer side.
5. The power cord is securely connected to the power source.
6. 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!

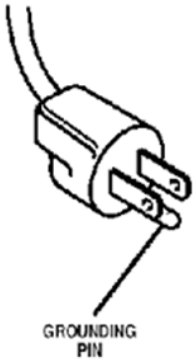


Figure 1-A

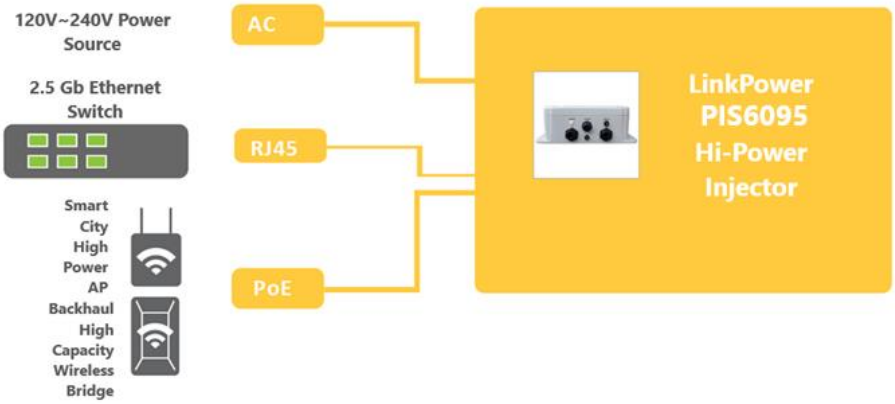
Figure 1-B

WPCK0002 Waterproof Power Cord

NOTE: Grounding through the AC power cord's Grounding Pin

2.6 PIS6095 Installation and Configuration

The PIS6095 Gigabit Outdoor PoE Injector supports most popular brands of IP physical security and IT networking equipment.



To connect powered devices like PoE enabled IP video camera and wireless bridges to the PIS6095, follow the power device manufacturer's voltage and current recommendation. Using the wrong voltage to power your device will render your device inoperable. The PIS6095 System Includes Conduit Piping and Plain Cable weatherproof Connector Kit.

2.6.1 PoE Power Rating and Forwarding Specification

The PIS6095 90W Gigabit Outdoor PoE Injector is designed to support high power output, up to 90 watts based on the IEEE802.3bt PoE++ high power standard, compatible with IEEE802.3af/ IEEE802.3at standard . The following information reflects important PoE power forwarding capabilities of the PIS6095.

Maximum Power Forwarding Specification per Port

Power Input	PoE/AC Port Output Voltage (DC)	Voltage Tolerance	Max PoE/AC Port Output Current	Max PoE/AC Port Output Power (Watt)
AC PWR: 100~250V AC 50/60Hz	50.0	+/- 5%	1.8 Amp	90W

****** DO NOT EXCEEDE MAXIMUM TOTAL POE OUTPUT POWER ******

WARNING

- THE PIS6095 IS DESIGNED TO SUPPLY UP TO 30 WATTS OF TOTAL POWER AT THE RATED 70ºC TEMPERATURE SPECIFICATION. OPERATING THE PIS6095 OUTSIDE OF THE TOTAL POWER AND TEMPERATURE MAY HINDER THE POWER DEVICE OPERATING AND/OR DAMAGE THE PIS6095 DEVICE.
- POWER OVER ETHERNET DEVICES NOT RATED TO BE POWERED OVER CAT5, 5E, OR 6 CABLES SHALL NOT BE USED WITH THE PIS6095.
- PLEASE USE CAT5 OR HIGHER RATED CABLES TO ENSURE POWER RATED POWER LEVELS ARE DELIVERED TO THE POWERED DEVICE.
- DO NOT EXCEED THE POWER FORWARDING CAPABILITY OF THE PIS6095. DOING SO MAY RISK OPERATING THE PIS6095, POWERED DEVICE, AND POE CABLES AT HAZARDOUS LEVEL. IT MAY ALSO CAUSE FIRE DANGER. INSCAPE DATA IS NOT RESPONSIBLE FOR DAMAGES CAUSED TO THE POWERED DEVICE OR THE PIS6095 BY ABNORMAL USE OF THE PRODUCT.
- PLEASE FOLLOW THE TIA/EIA 568B TELECOMMUNICATION CABLING STANDARD

FOR RJ45 TERMINATION REFERENCE. INCORRECT TERMINATION WILL CAUSE POWER DAMAGE TO THE PIS6095 AND/OR THE POWERED DEVICE.

LIMITED WARRANTY

IMPORTANT: PLEASE READ THIS LIMITED WARRANTY AND ENCLOSED LIMITED WARRANTY AND END USER LICENSE AGREEMENT CAREFULLY. INSTALLING OR USING INSCAPE DATA-SUPPLIED PRODUCT AND SOFTWARE CONSTITUTES ACCEPTANCE OF THIS AGREEMENT.

IN NO EVENT SHALL INSCAPE DATA BE LIABLE TO YOU OR ANY OTHER PARTY FOR ANY DIRECT, INDIRECT, GENERAL, SPECIAL, INCIDENTAL, CONSEQUENTIAL, EXEMPLARY OR OTHER DAMAGE ARISING OUT OF THE USE OR INABILITY TO USE THE PRODUCT (INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOSS OF BUSINESS PROFITS, BUSINESS INTERRUPTION, LOSS OF BUSINESS INFORMATION OR ANY OTHER PECUNIARY LOSS, OR FROM ANY BREACH OF WARRANTY, EVEN IF INSCAPE DATA HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. (SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE EXCLUSION OR LIMITATION MAY NOT APPLY TO YOU.) IN NO CASE SHALL INSCAPE DATA'S LIABILITY EXCEED THE AMOUNT YOU PAID FOR THE PRODUCT.

2.6.2 Before You Start

Review the package contents, system requirements, and application example before proceeding with Section 2.7.3 Installation Procedure.

Package Contents

- Link Power PIS2060 or PIS2095 Outdoor High-Power Gigabit PoE Injector
- WECK0001 Waterproof Ethernet Connector Kit (2)
- WPCK0001-3 - AC Power Cable with one 3-PIN AC Power Connector (1)
- User Manual (1)
- WMK0002-S Wall Mounting Kit (Optional Accessory)

Required Accessories

Items	Specification	Notes
Ground Wire	14 AWG Copper Wire (Minimum)	Attached to backside of the PIS6095 and appropriate common Earth Ground. Product damage caused by improper grounding is not covered under warranty!
Torque Wrench	20kgf-cm or 1.44 lbf-ft.	All nuts and bolts shall not be tightened beyond specified torque setting
CAT5/5e/6 Cable Termination	TIA-568B Standard	Improper termination will damage the device and void your warranty

Recommended Accessories

Items	Specification	Notes
Shielded PoE Cable	Outdoor rated Cat5/5e STP, FTP	The use of shielded twisted pair cable (1 to 100 meter) is recommended
Shielded RJ-45 Jack	Shielded	The use of shielded RJ-45 connectors used for both ends is recommended
Weatherproof Sealing Tape	Rubber Mastic or equivalent (i.e. Coax-Seal)	Sealing of electrical and PoE connector at both end is recommended to ensure installation and equipment longevity.

2.6.3 Installation Procedure

The PIS6095 product quick install guide offers quick and easy steps to start using your PIS6095 series with the common PoE pin configuration of 1(+), 2(+), 3(-), 6(-). Once you unpack the PIS6095 from the product box, it is recommended to be familiar with the connector system interface. Below is a reference of the connector system interface.

PIS6095 Connector System Interface View

User Buttons and Ports

Item No.	Function	Description
1	AC PWR In & LED	100 ~ 240V AC Power Input Port LED in ON (Green), when Power is connected
2	PoE Out Port & LED	PoE is Active, When LED is On (Green)
3	Data IN	Data Input

2.6.4 Hardware Installation

The PIS6095 package provides two Weatherproof Cable Connectors.

Step 1: Feed the AC Input Power Cable Through the Waterproof Connector 1 and Plug It Into the AC Input PWR and AC Power Port Accordingly. The AC Power Wire Color Code is as Follows: E= Green, N = White, L = Black. Please follow your regional electrical power code. (if already preinstall, then go to Step 2)

Step 2: Connect a first the PoE device to the PoE Port 1 using WECK0001 Waterproof Ethernet Connector Kit, shown below:

WECK0001 Waterproof Ethernet Connector Kit Assembly Diagram

Step 3: Connect a Second Device, optionally a LAN device, to the PoE Port 2 and Used as a LAN port with WECK0001. Or, Connect a Second PoE device to the PoE Port 2 if Connecting to Two Power Devices is Desired.

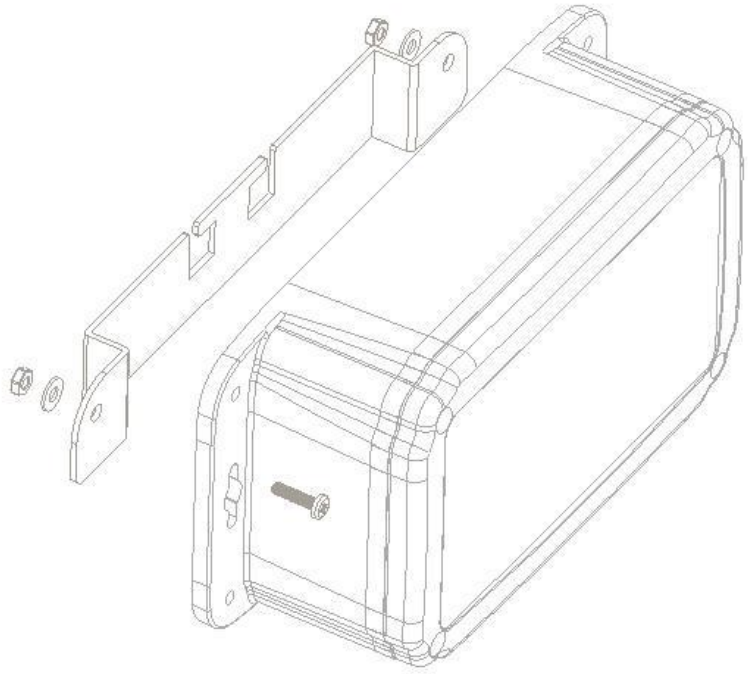
Step 4. Connect the AC and/or DC Power Devices (PD) to the Configured PIS6095 Port.

Step 5. Connect the AC power cable, WPCK0001-3 Waterproof Power Cable Kit, to the Main AC Power Source to power on the PIS6095. Please make sure you follow the power polarity based on the following color

Step 7. To verify the AC and/or DC PD is Receiving Power, please check if AC Power LED and PoE Out LED are ON. If the AC Power LED is not ON, please check the power source.

After you connect the power device with the Injector, PoE LED will turn ON. **IF THE PoE OUT LED IS NOT ON, PLEASE CHECK IF THE POWER DEVICE IS BASED ON THE POE PIN CONFIGURATION, I.E., 1(+), 2(+), 3(-), 6(-).**

2.6.5 Pole Mounting the PIS6095 Outdoor PoE Injector



The Pole Mount Kit, MMK0001-XS, is an optional accessory.

2.7 PoE Injector and Cable Length Consideration

It is recommended to check the PoE equipment PoE cable length specification prior to installation to ensure correct power is delivered to the PoE equipment. Using the wrong voltage and/or exceeding PoE cable length may lower the products performance or in most cases damage the product. When making your PoE cables, please adhere to TIA/EIA 568B telecommunication cabling standard.

Ethernet network cables utilize pins 1, 2, 3, and 6 of an 8-pin RJ-45 connector. Equivalent PoE cables should be utilized for reliable operation. STP type cables should always be used in high EMI environment to minimize noise and maximize performance.

Network Type	Cable Type
10Base-T	4 Pair UTP/STP Cat 3, 5e, 6 cable, EIA/TIA-568-B.2 100-ohm (up to 100m)
100Base-TX	4 Pair UTP/STP Cat. 5e, 6 cable, EIA/TIA-568-B.2 100-ohm (up to 100m)
1000Base-TX	4 Pair UTP/STP Cat. 5e, 6 cable, EIA/TIA-568-B.2 100-ohm (up to 100m)

10Base-T and 100Base-TX standard specifies the cable length support up to 100 meters or 330 feet. Power delivery on the other hand limits the cable length according to your PoE device specification. When utilizing proprietary PoE power scheme, check the voltage tolerance of your PoE equipment. When in doubt, use 3VDC voltage attenuation per 25 meter of Cat 3, 5, 5e, or 6 cables. Using longer cable than the PoE equipment specified limit may cause PoE equipment instability. Contact your PoE equipment manufacture for cable length specifications.

Appendix I. Technical Specifications

Product Name	2.5Gbps 2-Port High-Power Port PoE Injector
Product Model	PIS6095
Connector Type	2x 2.5Gbps copper cable RJ45 ports
PoE Power Supply Type	PoE power supply is four line pairs of twisted pair, the positive power supply side is 1/2 or 4/5 line pair, the negative power supply side is 3/6 or 7/8 line pair
Network Medium	10BASE-T: 5 class UTP(≤100m）
	100BASE-TX: 5 class or more UTP(≤100m）
	1000BASE-TX: 5 class or more UTP (≤100m）
	2.5GBASE-T ： Cat6 or later UTP(≤100 meter)
Performance Specifications	PoE output voltage: 48.0~50.4V
	Working Speed:10/100/1000Mbps
	Network Port Protection: meet the IEC61000-4-2(ESD)
	MTBF: 100,000 hours
Network Protocols and Standards	IEEE 802.3i 10BASET
	IEEE 802.3u 100BASETX
	IEEE 802.3x Flow Control
	IEEE 802.1ab 1000BASET
	IEEE802.3bz 2.5GBASE-T
	IEEE 802.3bt DTE Power via MDI
	Support 802.3bt PoE++ high power PoE standard, backward compatible with IEEE 802.3af / IEEE 802.3at standard
LEDs Indicator	PoE working status
Power	Total system power: 100.8W
	PIS6095 PoE output power: 90W
	Input Voltage: 120V ~240V, Output Voltage: 48.0 - 50.4V
Dimension/Weight	LxWxH: 193.80mm x 117.60mm x 78.49mm (7.63x4.63x3.09 inch) / 4LB / 1.8kg
Working	Working Temperature: -30°～70°C, Storage Temperature: -20°～ 75°C
	Working Humidity: 10% ～ 90%, non-condensing, Storage humidity:10% ～95%, non-condensing, Weatherproof to IP67 Compliance

Environment	
Safety & EMC	CE mark, commercial, FCC Class A, RoHS UL60950-1, TUV EN60950-1 Approved
Warranty	3 year warranty

Appendix II. Inscape Data Sales & Support Offices

For more information about Inscape Data Corporation products, applications, support, and for a current sales office listing, visit our web site: http://www.inscapedata.com

U.S. Headquarters

Here's how to reach us if you'd like to place an order or if you have questions or concerns

Telephone	Postal Mail
North and South America Customer Service and Orders: Main: +1-408-392-9800 Fax: +1-408-392-9812 Monday - Friday 9:00 AM - 5:00 PM Pacific Time UTC -7:00	Inscape Data Corporation 2012 Hartog Dr. San Jose, CA 95131, U.S.A.