visual engineering
LIGHTWARE

Quick Start Guide

TPS-PI-1P1

Front and Rear Views

REQUIRED POWER OVER 20W
12V DC OUT ACTIVE
REMOTE POWER OUT ACTIVE
48V DC IN PRESENT

①

Typical: 0.5A
Max.: 1.25A

Max.: 2.5A
PIN: 2mm

48V DC IN — **TPS** — **TPS + PoE** — **12V DC OUT**

② **③** **④** **⑤**
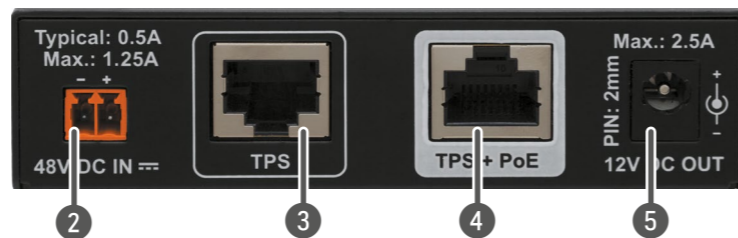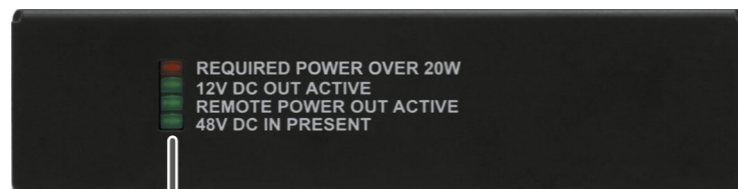
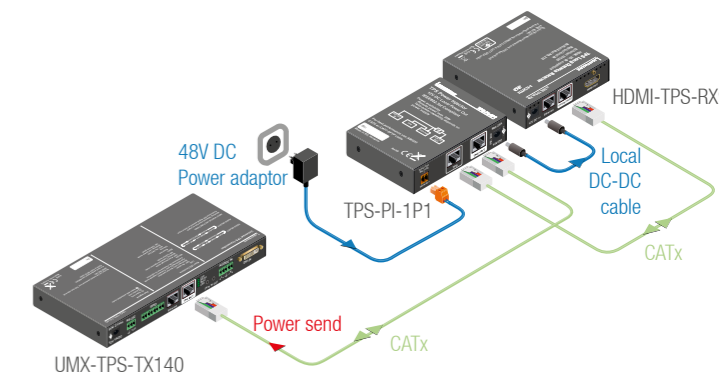|			
①	Status LEDs	**④**	TPS port (powered)
②	48V DC in	**⑤**	12V DC out
③	TPS port (not powered)		

Typical Application - Remote Powering

48V DC Power adaptor
12V DC Power adaptor
HDMI-TPS-RX95
TPS-PI-1P1
CATx
Power send
CATx
UMX-TPS-TX140
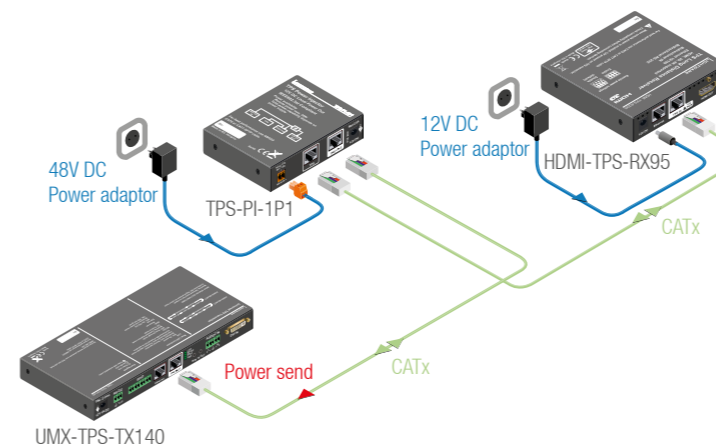
Typical Application - Local- and Remote Powering

HDMI-TPS-RX97
48V DC Power adaptor
Local DC-DC cable
TPS-PI-1P1
CATx
Power send
CATx
UMX-TPS-TX140

Important Safety Instructions

Please read and keep the information in the attached safety instructions supplied with the product before you start using the device.

Introduction

TPS-PI-1P1 is an IEEE 802.3at compatible high end remote Power Injector (PI) unit providing power to a remote Powered Device (PD) e.g. TPS transmitter or receiver. The TPS-PI-1P1 placed in the TPS transmission chain, anywhere between the transmitter and the receiver unit via the CATx* cable is able to power a TPS device. The incoming data stays untouched, but a 48V DC remote power is added to the signal by this PI.

* CAT7 AWG 23 SFTP cable is always recommended.

ℹ️ *Comparing to the details of the powered device's extension distance chart the usage of the TPS-PI-1P1 may cause approximately 20% distance decrease depending on the powering mode (local or remote) and cable quality.*

Compatible Devices

The power injector can be used to supply power any PoE-compatible Lightware extenders which are based on TPS-technology, except the TPS-90- and TPS-95-series.

⚠️ *The TPS-TX/RX90 and TPS-TX/RX95 extenders are not PoE-compatible thus not able to send/receive power to/from TPS-PI-1P1 power injector.*

Installation

1. Switch off (disconnect) all units, even the video, audio or data devices. Make sure there are no powered units during the installation.
2. Connect the TPS device to be remote powered (e.g. UMX-TPS-TX140) to the TPS+PoE connector ② of the TPS-PI-1P1 Power Injector with a CATx cable.
3. Connect the TPS device to be local powered (e.g. HDMI-TPS-RX95) to the TPS connector ③ of the TPS-PI-1P1 Power Injector with a CATx cable.
4. Connect the desired video, audio and data devices (e.g. Blu-ray players, amplifiers, Ethernet switch, RS-232 controller, IR transmitter) to the TPS units. Please read the user manuals of all devices to get help during the installation process.
5. Switch on the devices according to the following sequence:
   a. The Power Injector with connecting firstly the 48V DC adaptor to the 48 DC IN connector ④ secondly to the socket. The remote device gets power immediately.
   b. The local powered device
      ▪ with connecting its adaptor or
      ▪ with connecting the supplied patch cable* to the 12V DC OUT ⑤ of the Power Injector.
   c. Switch on the other devices.

* CAB-12V-U16U (Part No: 13730013)

ℹ️ *The maximum distance of the TPS units will not expand by using TPS-PI-1P1.*

⚠️ *Warning! Always use the supplied power adaptors. Warranty void if damage occurs due to use of a different power source.*

Powering Options

This unit provides a uni-directional remote power only, but thanks to the 12V DC local output option the other device (e.g. HDMI-TPS-RX95) can be powered with the TPS-PI-1P1 if they are placed close to each other while the injector itself is powered by the supplied adaptor.
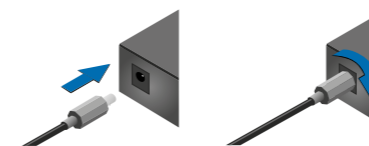
The Power Scheme

⚠️ *Warning! The sum of the power of the two outputs must be under 30W.*

48V DC in		TPS+PoE
12V DC out	DC/DC	TPS
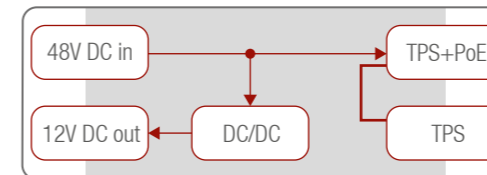
Locking DC Plug

DC cables from Lightware contain locking DC connector that establishes robust and safe power connection. After plugging it in, turn the plug clockwise as you can see on the following figure.

Twist 90°clockwise to lock.

Status LEDs

POWER OVERLOAD

▪ OFF: the delivered power of the wall adaptor is less than 75% of the maximum value.
▪ ON: the delivered power of the wall adaptor exceeds 75% of the maximum value.

ℹ️ *TPS-PI-1P1 does not apply current limitation but only indicates the overload.*

12V DC OUT ACTIVE

▪ OFF: the 12V DC out is out of order.
▪ ON: device is connected to the 12V DC output connector.

ℹ️ *The 12V DC out cannot be disabled in normal operation. If it is not working please contact support@lightware.com.*

REMOTE POWER OUT ACTIVE

▪ OFF: there is no PoE compliant device at the remote side or the identification process was unsuccessful. The Power Injector does not send power over the CATx cable.
▪ ON: the remote unit is a valid PoE device and gets the power via the TPS line in this case.

48V DC IN PRESENT

▪ OFF: the 48V DC input is not connected. If it is connected, the voltage level is not enough for the proper operation (it is lower than 40V DC).
▪ ON: the 48V DC input is connected and the voltage level is proper (it is lower than 40V DC).

Box contents

Power Injector unit	48V DC power adaptor with interchangable plugs	12V patch cable for local power option

Safety and Warranty Info — Quick Start Guide

Safety and warranty info, Quick Start Guide

Mounting Options

To mount the device Lightware supplies optional accessories for different usage. There are three kinds of mounting kits with similar fixing method:

▪ Under-desk mounting kit
▪ Under-desk double mounting kit
▪ 1U high rack shelf

To order mounting accessory kits please contact sales@lightware.com.

Mounting by Using the Under-desk Mounting Kit
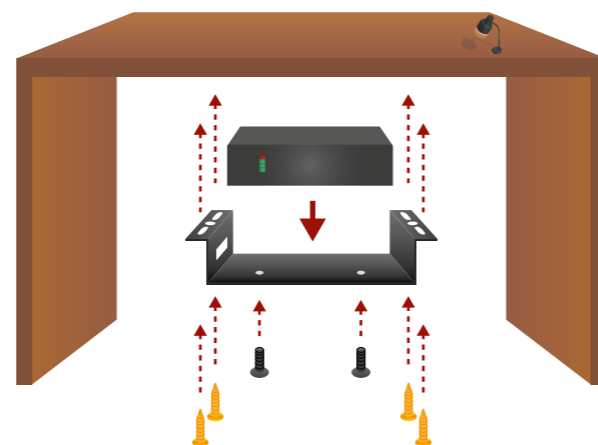
Ventilation

The enclosure of the TPS-PI-1P1 has vent holes on the left and the right side, as well. These holes provide the cooling by convection.

⚠️ *Warning! Do not block the vent holes otherwise the unit can be overheated.*

ℹ️ *The appropriate operation of the unit is not guaranteed with 40V DC or lower input voltage. In this case if the identification and the classification were successful, the TPS-PI-1P1 switches the inadequate voltage to the TPS line, but the remote powering can be failed. Always use the supplied power adaptors of the devices.*

Further Information

The Product brief and further information of this appliance is available at www.lightware.com. See the Downloads section on the website of the product.

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Specifications

General

Compliance .... CE

Electrical safety.. EN 62368-1:2014

EMC (emission) .... IEC/EN 55032:2015

EMC (immunity).. IEC/EN 55035:2017

RoHS ....EN 63000:2018

Warranty .... 3 years

Operating temperature ....0° to +50°C (+32° to +122°F)

Operating humidity .... 10% to 90%, non-condensing

Cooling...passive

Power

Power supply option .... Power adaptor

Power consumption.. 4 W (typ.) / 8 W (max.)

Heat dissipation .... 14 BTU/h (typ.), 28 BTU/h (max.)

Power over Ethernet (PoE) .... via 'TPS+PoE' port (IEEE802.3at)

Power adaptor

Supported power source ....100-240 V AC; 50/60 Hz

Supplied power...48V DC, 500 mA

AC power plug .... Interchangable (EU, UK, JP/US, AUS/NZ)

DC power plug...2-pole Phoenix plug

Enclosure

Enclosure material... 1 mm steel

Dimensions in mm .... 100.4 W x 67.6 D x 26 H

Dimensions in inch .... 3.96 W x 2.67 D x 1.03 H

Weight...224 g (0.5 lb)