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## FCC Warning

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 standards are designed to provide reasonable protection against harmful interference when these devices are operated in a commercial environment. These devices generate, use, and can radiate radio frequency energy and may cause harmful interference to radio communications unless installed in accordance with this User's Guide. Operation of these devices in a residential area is likely to cause harmful interference which will make the user responsible for the appropriate remedial action at his / her own expense.

## CE Mark Warning

These are Class A products. In a domestic environment these products may cause radio interference in which case the user will need to consider adequate preventative methods.

## 1. Checklist

The package should contain the following items:

- One set of PLR-2012-TX
- One set of PLR-2012-RX
- DIN-Rail Kit and Wall-Mount Kit
- This User's Guide

Please notify your sales representative immediately if any items are missing or damaged.

## 2. Overview

PLR-2012-Kit, an Ethernet PoE and data Extender, contains PLR-2012-TX and PLR-2012-RX. The former is a long reach transceiver with one PoE PD Ethernet port and one PoE Long Reach Injector port, and the latter is a long reach receiver with one PoE Long Reach Extender port and one PoE PSE Ethernet port.

PLR-2012-Kit is greatly beyond 100 meters distance limitation of RJ45 cable. Up to 1Km the data and power can be transmitted simultaneously over the UTP cable. This Kit is fully compliant with IEEE 802.3, 802.3u, 802.3af/at standards. Operation status can be locally monitored through a set of Diagnostic LEDs located in the front and rear panels.

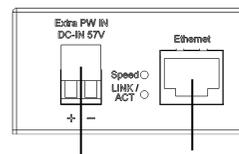
### Major Features:

- PLR-2012-RX supports standard IEEE 802.3af/at PoE output
- Provide IEEE 802.3af/at for the remote PD (powered device) (See Section 9 for more details on PoE Output.)
- Support MDI/MDI-X Auto-Crossover
- Support Auto-Negotiation
- Dual Power Input Design for either PoE (IEEE 802.3af/at), PoE++(60W), or DC power supply input (54~57V)
- Support both DIN-rail and wall-mounting installation methods
- Support Auto & Manual mode configuration for the Ethernet port
- Provide the 7-segment digital LED to display current PoE output and diagnostic ID (See Section 8.)

## 3. Installation

Please follow the steps described below and refer to Figure 1 and 2 to complete the network installation.

- Attach a UTP cable from a PoE switch to the Ethernet port on PLR-2012-TX. (if you connect to a non-PoE switch, the external DC power supply is also required to connect to the terminal block for power supply of PLR-2012-TX.)
- Attach the other UTP cable from the Long Reach port of PLR-2012-TX to the Long Reach port on PLR-2012-RX.
- Connect the DC power supply to PLR-2012-RX if PoE output is insufficient. The Speed and Link/Act LEDs will light up when all the cable connections are satisfactory.
- Connect the 802.3af/at PD to the Ethernet port on PLR-2012-RX.



Terminal Block for Power Supply Ethernet Port

Fig 1. Front Panel of PLR-2012-TX/RX

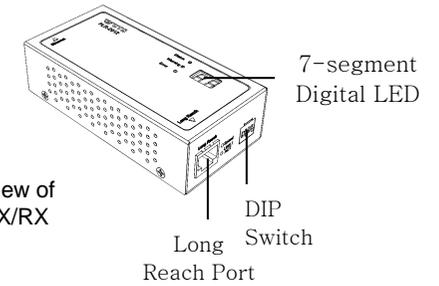


Fig 2. Side View of PLR-2012-TX/RX

## 4. Terminal Block

**Terminal Block for Power Supply:** One set of power input ranging from DC 54V~57V. Please refer to the following figure to insert the negative/positive DC wires into the V-/V+ terminals as indicated. (ATTENTION: For high power input devices, please use the 16AWG or better power wire to connect to the power input contact.)

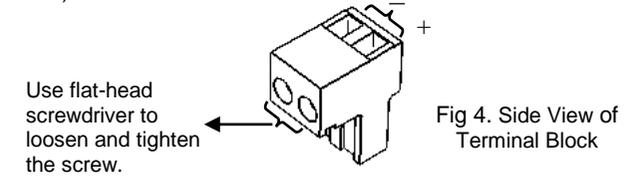


Fig 4. Side View of Terminal Block

## 5. DIN-Rail/Wall-Mounting

Three mounting holes at the bottom of PLR-2012-TX/RX are offered for DIN-Rail or wall-mounting installation. Just follow the Step1~Step2 below to complete these installation respectively for PLR-2012-TX/RX if needed.

**STEP1:** Attach the DIN-Rail kit to PLR-2012, and insert the screws through this kit and into the DIN-rail mounting holes. And then tighten the screws with the screwdriver.

**STEP2:** Insert the top of the DIN-Rail into the slot just below the metal spring and lightly slide the DIN-Rail into the track. The DIN-Rail will be snapped into place as shown below.



**STEP1:** Attach the wall-mount bracket to PLR-2012, and insert the screws through the bracket and into the bracket mounting holes. And then tighten the screws with the screwdriver.

**STEP2:** Insert the screws through the wall-mount bracket and into the holes on the wall. Tighten the screws with the screwdriver to secure mounting brackets to the wall.



## 6. LED Description

LED	Color	Function
Link/Act (for Ethernet Port & Long Reach Port)	Green	Lit when the port link is up. Blinks when the PLR is receiving and transmitting data and power over that port. OFF when the port link is down.
Speed (for Ethernet Port & Long Reach Port)	Green	Lit when the 100M port link is up. OFF when the 10Mbps port link is up or the port link is down.

## 7. DIP SWITCH Setting

The default setting for PIN 1 is ON, and PIN 2 through PIN 4 is OFF.

PIN NO.	Function	OFF	ON
1	Auto Speed of Ethernet Port	Disable	Enable
2	Manual Speed of Ethernet Port	10Mbps	100Mbps
3	Reserved	N/A	N/A
4	PSE Mode	Semi-Auto	Injector

### NOTE:

- Before adjusting the configuration of the DIP Switch, the power should be unplugged.
- When PIN1 is set to ON, the speed of Ethernet port will follow Long Reach port.
- The maximum current for Semi-Auto mode is 600mA; the maximum current for Injector mode is 1200mA.

## 8. 7-segment Digital LED Display Definition

LED Display	LED	Function
0~99	Status	Lit when PoE power output is less than 80% loading.
	Warning	Lit when PoE power output is 80%~ 90% loading.
	Error	Lit when PoE power output is over 90% loading.
n2	Warning	Lit when the link performance may be less than 100% due to cable length, quality or condition.
P1	Error	Lit when PoE output port is shut down due to overloading, the device needs to be rebooted manually.
P2	Error	Lit when PoE power input is over 57.3V DC voltage.
P3	Error	Lit when PoE port is disconnected due to the short circuit.
L1	Warning	Lit when power input voltage is too low:

		- PLR-2012-TX side : < 51V - PLR-2012-RX side (DIP Switch 4/Semi-Auto mode) : < 40V - PLR-2012-RX side (DIP Switch 4/Injector mode) : < 33V
L3	Error	Lit when Long Reach port is disconnected due to the short circuit.
H1	Error	Lit when operating temperature is over 60 degrees centigrade.
H2	Error	Lit when operating temperature is less than -20 degrees centigrade.

## 9. Performance of PoE Output

Distance (Meters)	Data Rate	Power Input @ PLR-2012-TX	Power Output @ PLR-2012-RX
500	10/100Mbps	44W (Semi-Auto)	24W
		60W (Injector)	29W
1,000	10Mbps	25W (Semi-Auto)	13W
		36W (Injector)	16W

NOTE: The cables used for this PoE output test are Cat. 6/23AWG.

## 10. Technical Specifications

<b>Standards:</b>	IEEE 802.3, 802.3u, 802.3af/at
<b>Interfaces:</b>	1x Ethernet In(for PLR-2012-TX):10/100Base-T RJ-45 with PoE power received 1x Long Reach Out(for PLR-2012-TX):RJ-45 with PoE power transmitted 1x Ethernet Out(for PLR-2012-RX): 10/100Base-T RJ-45 with PoE power transmitted 1x Long Reach In (for PLR-2012-RX):RJ-45 with PoE power received
<b>LEDs:</b>	Link/Act, Speed, Status, Warning, Error, and 7-segment Digital Display
<b>Power:</b>	IEEE 802.3af/at, PoE++(60W), and 54~57VDC
<b>Power Consumption:</b>	2.5W
<b>Weight:</b>	0.29Kg
<b>Dimensions:</b>	60mm(W)X120mm(D)X32mm(H)
<b>Temperature:</b>	Operating: 0°~60°C Storage: -20°~60°C
<b>Humidity:</b>	5%~90% RH
<b>Certification:</b>	FCC/CE Class A
	*Please contact us for further reports and updates.
<b>NOTE:</b>	Specifications may change without prior notice.

## Contact Information

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## PLR-2012-Kit

### 1-kilometer 10/100Mbps Ethernet PoE Extender

## User's Guide

### Version 1.3