ATX LED
100% DC low voltage

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PL-AT-TW1E-W
Alexa / Google / WiFi / BMS
Constant Current Tunable White
LED driver with PoE
802.3at with
802.3af Emergency mode

Product Description - PL-AT-TW1E-W – PoE powered WiFi LED driver and Emergency mode

This LED driver in a compact module can be installed 328 ft away from a PoE injector or switch using Cat-5e cable. In most areas PoE installations do not require licensed electricians   The PL-AT-TW1E is installed between a PoE switch and a LED panel light. The PL-AT-TW1E has low standby power, and is configurable for 300ma, 700 or 1000 ma LED current requirements.   The wide output voltage range of 9 to 50 volts fits the NEC / NFPA codes for low voltage wiring and allows almost any LED fixture to be used.   Use a fixed CCT or dual string tunable white LED fixture

Intended for use with any 802.3at or 802.3bt Poe injector or switch, the 'E' version supports UL924 operation.   If the PSE changes from 802.3at to 802.3af, the output current, and therefore the power to the LEDs is cut from what ever the present setting is, (0 to 100%) and is forced to 5% (or some other programmable level).

When used with a 802.3bt switch – two devices can be connected in series to use all 4 pairs of the Ethernet cable and double the wattage on one PoE port.   Boost jumper allows 1000 mA output. Another jumper allows 35 watts passive mode.

The attached LED can be turned on/off remotely by a SNMP/API/DALI controlled PoE switch or injector, or locally via a momentary switch like the AL-WS-M. WiFi and Bluetooth control by Wiz Pro Connected lighting is supported. Use an App or Alexa or Google to control brightness, schedule and Color temperature.

Fully Automated monthly testing is supported by the PoE switch reporting the current flowing during a system test, when switching to 802.3af mode – the attached LED current is measured at the PSE source, the profile of the load is clearly indicated as short, open or functioning within the acceptable range, this greatly reduces the cost of ownership.

Specifications for PL-AT-TW1E-W

Power input	44 to 56 volts 802.3af or 802.3at or Passive PoE
RJ45 Input Connector	RJ45 standard connector mode A power used. Mode B passthru
RJ45 LED status	Green means PoE active, Amber means 802.3at
On/Off/Dim switch	The output RJ45 connector also has the connection to a RH-253 or AL-WS-M switch for On/Off/Dim. Connect pins 7&8 to your switch
LED Output Voltage	9v to 50v 35 watts max
Output Power	a) with 802.3af max current 360 ma = 12 watts b) with 802.3at max current 660ma = 23 watts c) jumper selection for 1000 mA
Auto power switching	Current reduced to 35 mA if 802.3af switch detected increases to 660 or 1000 ma if 802.3at
RJ45 Output Connector	802.3at passthru. RJ45 input pairs 4&5 and 7&8 are connected to pairs 3&6 and 1&2 on this output connector to allow two devices on one CAT-5e cable
Inrush limiter	Built in – automatic
Hot Swap	LED load can be disconnected under power
802.3af keep alive	25% duty cycle 10mA load keeps the PoE port live
Output current	36 ma , 660 / 1000 ma auto or manual selection
LED output connector	TE 3 pin connector with spring load Common +, Warm White, Cool White
Pinout 802.3af / 802.3at	Pins 1,2 and 3,6 provide power either polarity Automatic power detection feature:
Protection	Reverse, short and static protection
Operating Temperature	0°C ~ 50°C

Keep Alive

Keep Alive is the current needed to keep a PoE switch port from shutting down.   Simple keep alive burns 500 mW when the LED is off.   Smart Keep Alive reduces this to 100 mW.   An internal jumper allows this to be set to 10 mW for 802.3bt applications.

RJ45 pinout

Pin	In	Out
1	PoE 1	PoE 2
2	PoE 1	PoE 2
3	PoE 1	PoE 2
4	PoE 2	Dim / Switch
5	PoE 2	PIR +
6	PoE 1	PoE 2
7	PoE 2	Signal
8	PoE 2	Ground

PoE Power Input for 2 devices

Use a PoE switch or injector to supply power.   It can be mode A 802.3af, 802.3at or 4 pair 802.3bt, one device will connect using Mode A for up to 25 watts, allowing a second downstream device to accept power on Mode B.   Any 8 wire cat-5e cable can carry 2 separate PoE power sources. A PL-AT-TW1E accepts power from PoE Mode A and passes PoE Mode B to the output connector on Mode A.

PoE Mode A Power Input

PoE mode A is the power for the LED attached to this device.   It can be mode A 802.3af, 802.3at.

PoE Mode A Power Output

PoE Mode B is the optional power FROM an 802.3bt switch. It is passed thru the device to the next device in the chain to provide power to a second PL-AT-TW1E attached to the output connector. The output RJ45 moves the mode B input to Mode A output so no crossover is required, this fully utilizes PoE switch ports.   The two PoE devices can operate independently, and a modern PoE switch can select mode A or mode B on the PSE independently.

Dimmer / Switch In

The device has a Switch input. If a momentary switch is used (Legrande RH-253 or ATX LED AL-WS-M), then each press will toggle the light on/off.   Or, if a standard On/Off switch is used, then when open the LED is ON, when closed the LED is OFF. If a PWM signal is applied (For example from a AL-WS-010v) then the LED can be dimmed using a DALI control system. Connect the switch between pins 7&8 of the output connector to create a On/Off/Dim switching ability.   If PoE power is cut and then started again – the Light will return to the previous On/Off state.   Hold the switch to cause the light to dim.
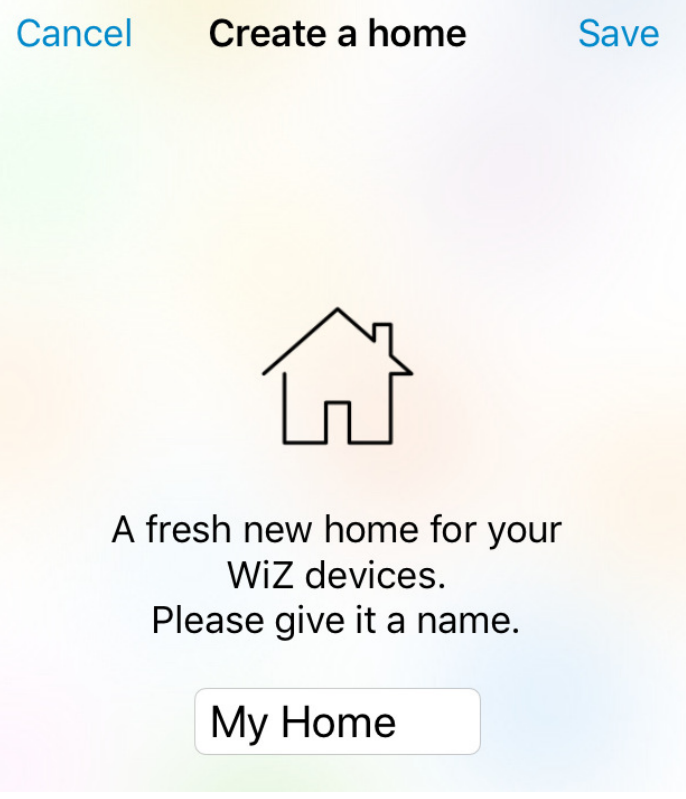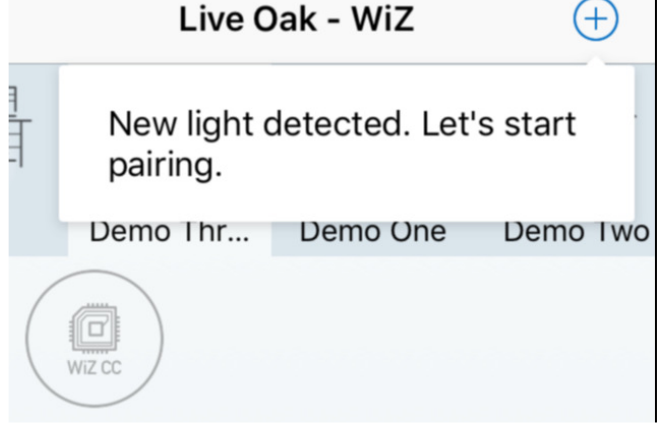
If two PL-AT-TW1E are connected onto one CAT-5e cable to the power source, see our application note for how to have one wall switch control 2 PL-AT-TW1E in unison.
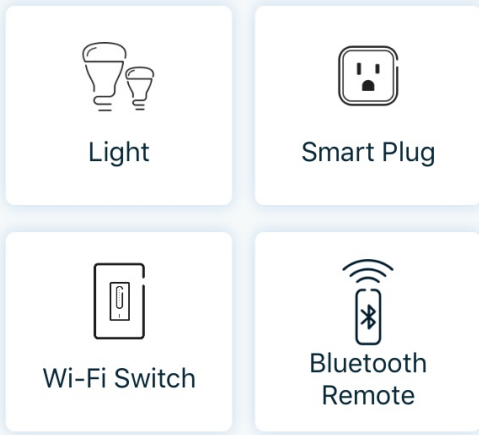
Tunable White applications

With a suitable attached LED (like the P023R11-1440-27/50K) you can provide circadian rhythm controlled light.   The device will respond to Cloud based or Building Management commands to change the color temperature of the attached LED. For example a range of 2500 to 6500 is possible.

Wiz Connected Light App Setup

Install the Wiz app on your phone. Create a home, create a room, and then click to add a light.   Enter pairing mode using the method above. Note – if the device has been paired before – you will have to enter pairing mode twice for this to work.   Once in pairing mode – it will take up to 2 minutes to complete. Note – you will need at least one operating SSID (wifi network) on 2.4ghz for this device to work. Also note – in step 4 – wifi network name – click on the "eye" icon to see your SSID Password and insure that it is correct. Advanced users can use the Wiz Pro building management solution.

WiZ App 4+
TAOlight Company Limit... >

★★★★☆ (8)   + OPEN

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iPhone

Search for Wiz Connected
in the App store – install it

Cancel   **Create a home**   Save

A fresh new home for your
WiZ devices.
Please give it a name.

My Home

< Rooms   **Room type**

Attic   >
Balcony   >
Bar   >
Basement   >
Bathroom   >

Live Oak - WiZ   ⊕

New light detected. Let's start pairing.

Demo Thr...   Demo One   Demo Two

WiZ CC

Use the + button connect
(this this does not appear –
try a 2.4 ghz network)

Click on the (+) symbol

Cancel **Add devices** Which type of device do you want to install? **Light** **Smart Plug** **Wi-Fi Switch** **Bluetooth Remote** Click on the "WiFi-Switch" tab	**< Back Connect to Wi-Fi** **My_WiFi** Please enter your Wi-Fi password. Make sure it is a 2.4GHz network. Password 👁 Continue Enter your WiFI Password
< Back Add new light Adding lights to Demo Three 1 Turn OFF your lights 2 Turn ON your light 3 Tap on "Start" Start Power off/on then click start	Cancel **Searching lights** Searching for lights. Please don't power them off. Wait for the search to finish
Searching lights WiZ CC Finish New device found	**Live Oak - WiZ** Demo Thr... Demo One WiZ CC You can now control the light. Next step is in the Amazon Alexa App to add this light to voice control