



# ICF EE PRODUCTS WORKSHOP

August 2017





## ABOUT US

TrickleStar leads in the design and manufacturing of plug-load management solutions that save energy, improve lives, and minimize environmental impact.

over  
**3**  
million

With over three million APS products installed in the U.S., TrickleStar is the largest vendor in this category.

## OUR PHILOSOPHY

We understand that there is no one-size-fits-all product for energy savings. As such, we have developed a robust portfolio of plug-load management solutions that are affordable, easy-to-use, and help everyday people reduce energy consumption in their homes and workplaces.

As the only manufacturer of both Tier 1 APS and Tier 2 APS products, we know from experience that different customers have different needs.

*Energy savings can only be achieved if the products remained installed<sup>1</sup>!* For this reason, TrickleStar has incorporated superior sensing technologies to ensure that electronics are only switched off at the right time, resulting in increased persistence rates<sup>2</sup> and higher customer satisfaction<sup>2</sup>.

<sup>1</sup> EUL ranges from four to 10 years

<sup>2</sup> PG&E "ET13PGE1441" pages 63 ~ 67.



## FIREPROOF SURGE PROTECTION

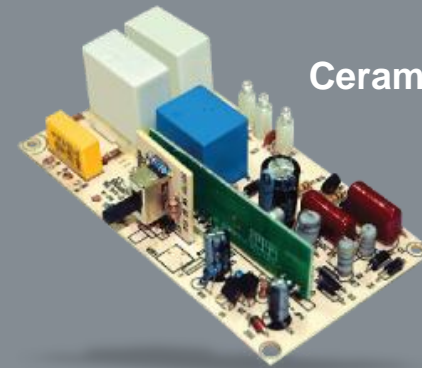
Traditional surge suppression products use standard MOV (Metal Oxide Varistor) components.

TrickleStar's Advanced PowerStrips use premium quality, fireproof surge protection technology where the Metal Oxide Varistors (MOVs) are encased in ceramic.

Our ceramic encased MOVs suppress more energy and dissipate heat faster than traditional MOVs.

In addition, the ceramic casing is fireproof and capable of preventing fire during abnormal surge conditions.

*Improved safety for your customer means reduced risk for your program.*



Ceramic Encased  
Fireproof MOV



The difference between a TrickleStar Advanced PowerStrip with fireproof surge protection and a powerstrip with standard surge protection

<https://youtu.be/0ri-kHAo-0Q>



TrickleStar Advanced PowerStrip MOVs

# The best way to save energy is to stop wasting it!

## Agenda

- Tier 1 Advanced PowerStrip (APS)
- Program Examples
- Tier 2 APS with Multi-Sensor
- Tier 2 Advanced PowerTap+ TAV-Link Multi-Sensor
- Tier 2 APS with ZigBee®, TAV-Link Multi-Sensor
- Wi-Fi® Power Measurement APS
- Video Resources





## Tier 1 Advanced PowerStrip

Provides premium quality surge protection while reducing the amount of standby power wasted by home theater and computer systems



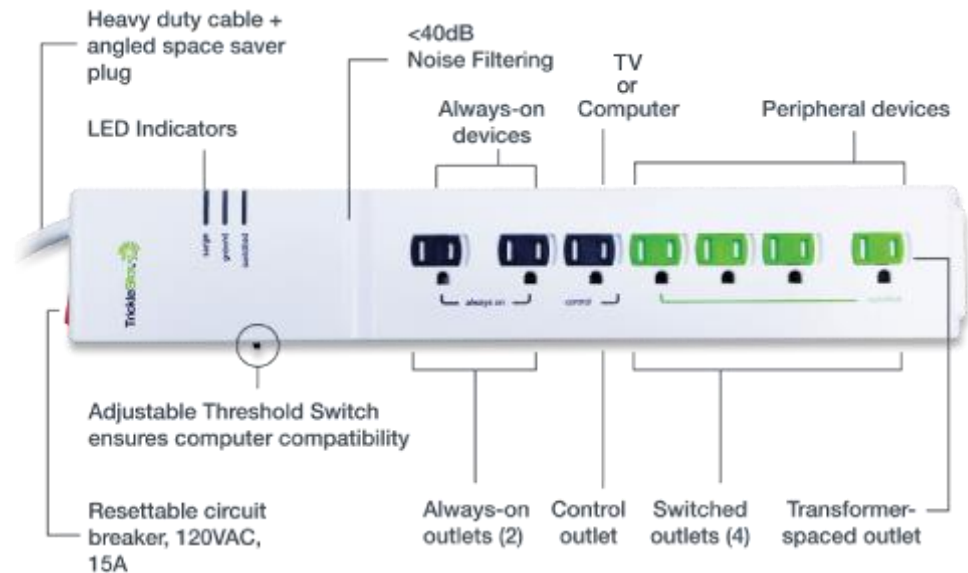


MODEL TS1104

## BENEFITS OF TIER 1 APS

- Eliminates standby power consumed by TV and PC peripherals
- Protects electronics with state-of-the-art, fireproof surge protection
- Provides simple automation to reduce plug load
- Simple and easy to install

*TrickleStar® Advanced PowerStrips are easy to install and provide simple automation to reduce wasteful standby energy consumption.*





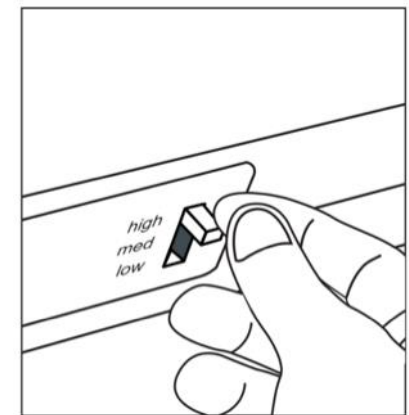
## TIER 1 APS: HOW IT WORKS

Once installed, the Tier 1 APS operates on a simple master/switched basis. If the TV or PC is on, then peripheral devices are powered on. If the TV or PC is switched off or placed in standby mode, the peripheral devices are automatically switched off thereby reducing power waste.

## ADJUSTABLE SWITCHING THRESHOLD

TrickleStar Tier 1 APS products use current sensing with an adjustable switching threshold. This allows the user to select the appropriate threshold depending on the type of control device being monitored.

The APS will sense how much power the control device (TV or PC) is drawing and then determine whether it is ON or OFF – thereby enabling the master/switched functionality.



The Tier 1 APS is a low-cost solution for energy savings in both commercial and residential programs.

Direct-install, energy savings kits, midstream/upstream, and direct distribution programs are examples of nationwide energy efficiency programs that include Tier 1 APS.



# Program Examples







Pilot program for Sacramento Municipal Utility District (SMUD) sold 1,000 units of Tier 2 APS at 15 events. Program administered by TechniArt®.



- EVENT MARKETING MEETS BRICK & MORTAR STORE
- ENGAGE CUSTOMERS IN OFFICE BUILDINGS, MALLS, EVENTS & MORE
- SELL ADVANCED POWER STRIPS, LED LIGHTING, WATER-SAVING PRODUCTS, EFFICIENCY KITS & MORE
- TRAINED SALES STAFF EDUCATE CUSTOMERS ON PRODUCT FEATURES, ENERGY EFFICIENCY BENEFITS, & UTILITY PROGRAMS

Pop-up Retail for SMUD by TechniArt.

Save Energy and Save Money. Get your Home Energy Kit Today!

**FREE**  
HOME ENERGY KIT  
(\$24 value)



**Kit Includes:**  
3 LED bulbs (A19)

**\$10**

HOME ENERGY KIT  
(\$53 value)



**Kit Includes:**  
"Smart" Power Strip  
3 LED (BR30) bulbs

BROUGHT TO YOU BY:  **Hawaii Energy**  
YOUR CONSERVATION & EFFICIENCY PROGRAM Offer valid while supplies last.

Your shopping cart contains the following:

Qty		Item	Price	Total
1	<a href="#">Remove</a>	FREE Home Energy Kit	\$0.00	\$0.00
1	<a href="#">Remove</a>	\$10 Home Energy Kit	\$10.00	\$10.00
<b>Subtotal:</b>			\$10.00	\$10.00

[Checkout](#)

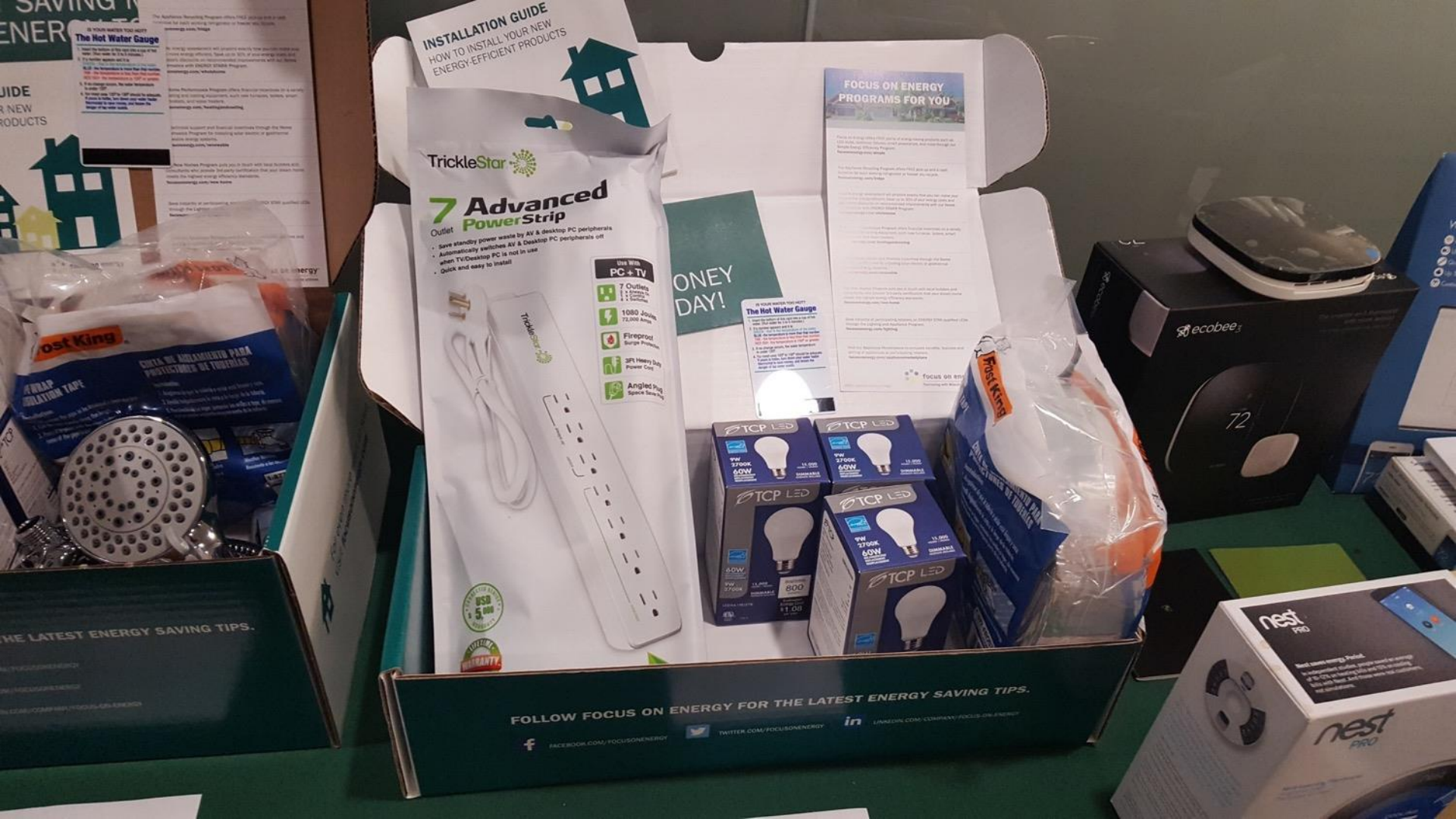
**Offer Information**

- Limit one (1) FREE home energy kit and one (1) \$10 home energy kit per residential address.



Program administered by TechniArt.  
<https://www.techniart.com>

# Online kit fulfillment for Hawaii Energy



Focus on Energy, WI - one of three kit options.





# Efficiency Vermont



## HOME DEPOT: TIER 1 APS

TrickleStar's Tier 1 APS is currently offered in over 200 Home Depot stores using the upstream incentive model.

Participating Home Depot stores receive four special 36 piece pop-up displays (four displays = 144 pieces) with the corresponding sponsored utility attribution label



### INCENTIVE: HOW IT WORKS

A \$15 upstream incentive is made payable to TrickleStar for each Tier 1 APS upon receipt of sales transaction summary data (net of returns).

- MSRP of APS: \$29.99
- Cost of APS to utility: \$15
- Cost to Home Depot: \$0.01
- Customer Price: \$8.88

#### Additional Costs:

- Funding to cover each pop-up display (≈ \$0.42 per APS)
- Cost of attribution label: \$2.00-\$6.50 per label per display (price varies depending on volume)



Entertainment and energy savings working together seamlessly!





## Tier 2 Advanced PowerStrip+ Multi-Sensor

Provides premium quality surge protection while reducing the amount of active & standby power wasted by home A/V systems





## Tier 2 Advanced PowerStrip+ Multi-Sensor



MODEL TS1810

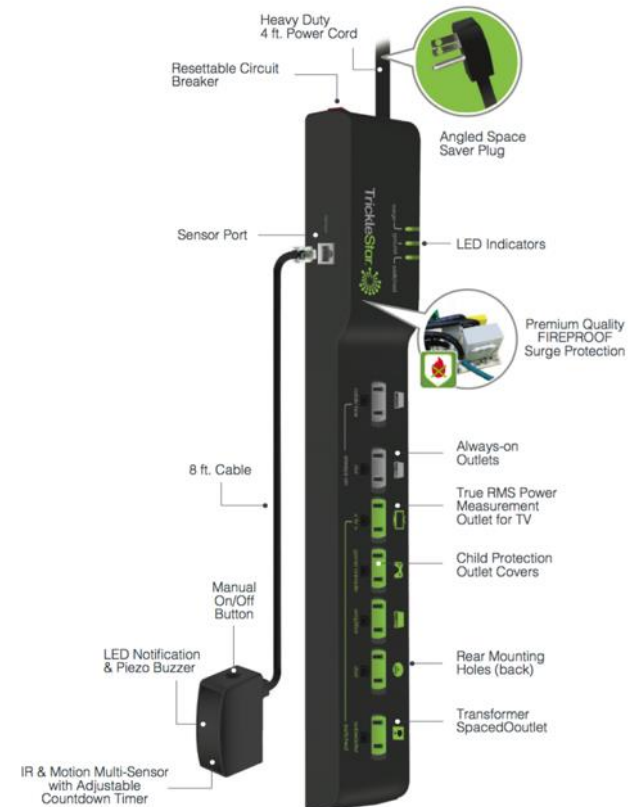


### TRICKLESTAR TIER 2 APS: HOW IT WORKS

The TrickleStar Tier 2 Advanced PowerStrip uses a patent pending multi-sensor with an adjustable countdown timer that senses for infrared remote control activity and motion to accurately determine user presence. If no activity is detected, the Tier 2 APS will switch off the TV and peripherals.

### BENEFITS OF TRICKLESTAR TIER 2 APS

- Reduces unnecessary energy waste from TV and peripherals
- Protects electronics with the highest quality, state-of-the-art fireproof surge protection the market has to offer
- Advanced multi-sensor works in ALL environments and ensures that the TV and connected devices are only switched off when applicable





## MULTI-SENSOR: IR + MOTION

Many new televisions, set-top boxes, streaming players and gaming consoles do not use IR-only remotes, but instead use Bluetooth, radio-frequency, and Wi-Fi enabled remotes or are controlled from a mobile app.

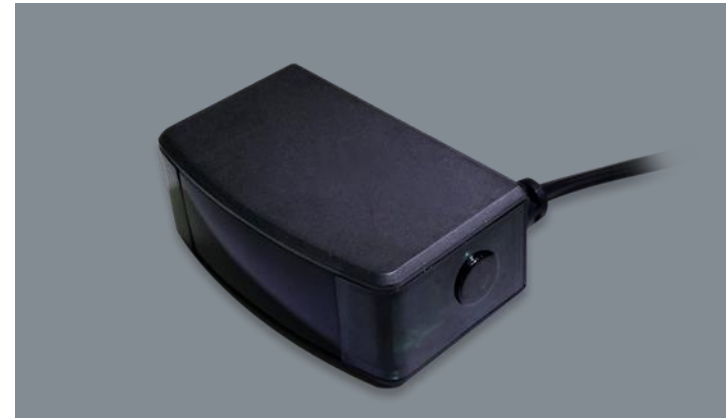
By adding the motion sensing capability to our multi-sensor, our Tier 2 APS+ product will still work in these applications, whereas IR-only sensing Tier 2 APS products will not.



*The devices pictured above do not use IR remote controls, but rather Bluetooth, Wi-Fi, or RF, therefore, they will not work correctly with an IR-only Tier 2 APS*

## DUAL NOTIFICATION SYSTEM

TrickleStar's multi-sensor uses a dual notification system to effectively alert the user of an approaching shutdown event. Ensuring the user recognizes the notification is essential to avoid an unwanted "active shutdown" event.





## Tier 2 Advanced PowerTap+ TAV-Link Multi-Sensor

Provides premium quality surge protection while reducing the amount of active & standby power wasted by home A/V systems





MODEL TS1814

Small packaging is ideal for kit distribution programs

Great solution for multi-family and college dorm applications

Features a receptacle mounting screw for a more permanent application

### NEW TAV-LINK SOFT-SWITCHING

TrickleStar-AV Link (TAV-LINK®) supports “soft switching” of connected equipment via high level HDMI CEC (Consumer Electronic Control) commands from the multi-sensor to an HDMI port on the TV (placing connected HDMI devices into a power-saving state).

TAV-Link functionality allows “smart” TVs to store their data and settings safely before powering down. TAV-Link also allows gaming consoles to enter an energy-saving mode earlier and without any corruption of data.

### IMPROVED SENSOR NOTIFICATIONS

- Features dual color visual LED notification – red & blue
- Features two audible piezo buzzers to alert user 10 minutes and 3 minutes prior to shutdown



TAV-LINK  
(CEC function)



TAV-Link  
Soft Switching



## Tier 2 Advanced PowerStrip+ ZigBee TAV-Link Multi-Sensor

Advanced Multi-Sensor Detects ZigBee RF4CE\* RF, IR remote control signals and motion



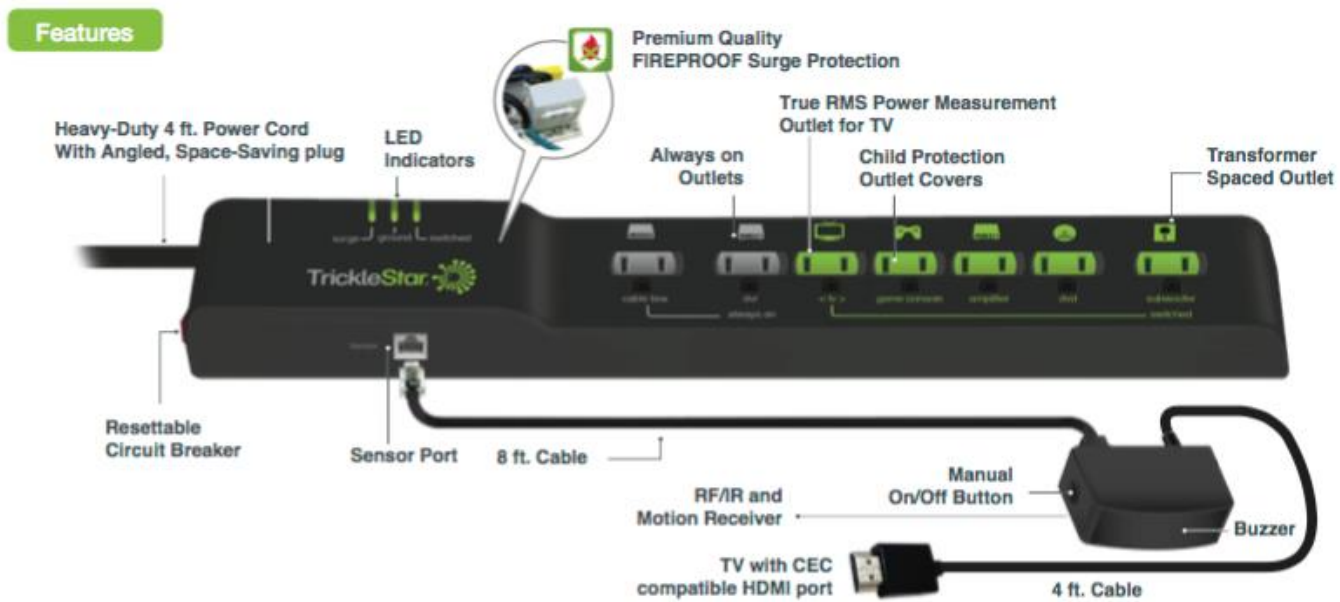


Detects ZigBee RF4CE\* Radio Frequency (RF) and Infrared (IR) remote control signals and motion (OS)

Intended for use with equipment that use radio-frequency remotes, for example DirecTV and Comcast's new set-top boxes

Supports "soft switching" via TAV-Link

## Tier 2 Advanced PowerStrip+ ZigBee TAV-Link Multi-Sensor





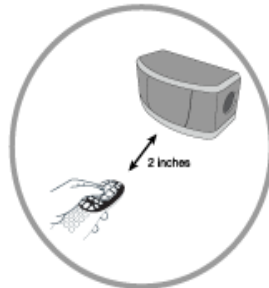
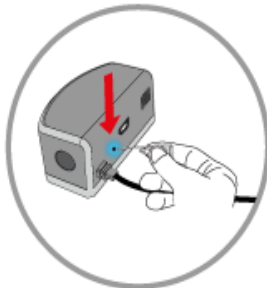
## PAY-TV PROVIDER DIRECT INSTALL MODEL

Pay-TV providers are perfectly positioned to install Tier 2 APS during service calls and new activations. A trained professional can educate the customer and directly install the Tier 2 APS on-site when setting up the peripheral devices.

### PAIRING THE SENSOR WITH RF REMOTES

Pairing the ZigBee Multi-Sensor is incredibly simple and similar to pairing a Bluetooth headset. It can be done in three simple steps.

1. Using a paperclip or pin, press the pinhole button on the back of the multi-sensor. A blue LED will flash indicating the multi-sensor is in pairing mode.
2. Place the remote control near the sensor (within two inches).
3. Press and hold the VOL or CHANNEL button on the remote until the flashing blue LED switches off and a red LED switches on.



MODEL TS1811

Gathering plug-load data has never been easier!





## Wi-Fi Power Measurement Advanced **PowerStrip**

A sophisticated, internet-enabled, plug-load energy and sensor measurement device





Footswitch



Motion sensor



Light level sensor



Multi-sensor

## OVERVIEW

A highly-sophisticated, feature-rich, power-sensing Advanced PowerStrip (APS) designed specifically for plug-load research and field trials. This APS can be used to gather data for Tier 2 APS evaluations and a range of other plug-load monitoring applications. The Wi-Fi Power Measurement APS supports a variety of TrickleStar® SensorClick™ sensors including:

- Motion sensor
- Timer/footswitch
- Multi-sensor
- Light level sensor



The APS connects to the TrickleStar Energy Portal™, a browser-based cloud platform that stores energy consumption and sensor activity data for analysis.



## FEATURES

- Connects to the TrickleStar Energy Portal™
- Supports up to 25,000 APS devices connected concurrently
- Auto-threshold detection that intelligently adjusts to control device
- 72,000 amps/1080 joules with fireproof ceramic surge protection
- Low-voltage, optically-isolated RJ11 SensorClick™ input
- LED status indication (ground, surge, switched, SD, Wi-Fi)
- 32GB removable SD memory card

## APPROVALS

- Solid-State Controls for Appliance UL 244A & CSA C22.2 No. 14-10, 3rd Revision
- Relocatable Power Taps, UL 1363, Fourth Edition
- Standard for Surge Protective Devices, UL 1449, Fourth Edition
- FCC Certified

## Wi-Fi & Internet Connectivity



Supports Wi-Fi 802.11 b/g/n for connection to Wi-Fi networks and provides secure, encrypted communications with the TrickleStar Energy Portal.

## SensorClick Enabled



Works with a range of different SensorClick sensors including motion, light level, timer/footswitch and multi-sensor(s).

## Data Storage



A removable SD card stores up to six months of data at full measurement resolution and streams unlimited data to the TrickleStar Energy Portal.

## Reduce Site Visits



Change power measurement settings remotely to “Pre” and “Post” field trial modes. Reduces site visits and lowers project costs.



## TRICKLESTAR ENERGY PORTAL™

The TrickleStar Energy Portal is a platform for administering users, creating projects, setting permissions, provisioning hardware and storing captured data.

Plug-load and sensor data is captured in raw format and can be exported for third-party statistical and data analysis.

Supports up to 25,000 concurrently connected APS devices per project.

Captured data can be streamed to an independent server for customers who require complete chain-of-custody data.



# Video Resources

Video Description	YouTube Address
Tier 1 APS Operation Video	<a href="https://youtu.be/ndLIfkiMNBE">https://youtu.be/ndLIfkiMNBE</a>
Tier 2 APS+ Multi-Sensor Operation Video	<a href="https://youtu.be/Cm2tNFp3I3I">https://youtu.be/Cm2tNFp3I3I</a>
Tier 2 APS+ Multi-Sensor Installation Video	<a href="https://youtu.be/oV9gys5Y_8U">https://youtu.be/oV9gys5Y_8U</a>
Tier 2 APS+ ZigBee Multi-Sensor Operation Video	<a href="https://youtu.be/ni7Gm8Rt4UE">https://youtu.be/ni7Gm8Rt4UE</a>
Tier 2 APS+ ZigBee Multi-Sensor Installation Video	<a href="https://youtu.be/rUHDTV7nE5s">https://youtu.be/rUHDTV7nE5s</a>
Fireproof Surge Protection Comparison Video	<a href="https://youtu.be/0ri-kHAo-0Q">https://youtu.be/0ri-kHAo-0Q</a>



**Tier 2 Advanced PowerStrip+ Multi-Sensor Installation**  
11 views • 5 days ago



**Tier 2 Advanced PowerStrip+ Multi-Sensor Operation**  
4 views • 5 days ago



**Tier 2 Advanced PowerStrip+ Zigbee Multi-Sensor Operation**  
149 views • 8 months ago



**Tier 2 Advanced PowerStrip+ Zigbee Multi-Sensor Installation**  
72 views • 8 months ago



**TrickleStar Tier 1 Advanced PowerStrip - How it Works**  
3,645 views • 1 year ago



**TrickleStar Fireproof Surge Protection Comparison**  
364 views • 1 year ago

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