



TPD-AVR120  
TPD-AVR240



TPD-AVR1S240

## What is Voltage Regulation?

Voltage regulation refers to the process of maintaining a consistent voltage level to ensure the proper functioning of electronic devices and equipment. This is becoming increasingly important as the demand for stable power rises, utility power problems happen more frequently, and electronics become more complex and sensitive. Voltage regulation is different from an Uninterruptible Power Supply (UPS), which provides backup power in case of a power outage.

TPD's Automatic Voltage Regulators are designed to provide stable voltage to electronics, protecting them from voltage spikes, drops, and other fluctuations.

### Various Applications

- Home Theaters
- Home Automation
- Security systems
- HVAC Systems
- Lighting Systems
- LED Lighting
- Appliances
- EV Charging Stations
- Entertainment Systems
- Home Office
- Network equipment
- Audio Systems
- Home Medical Equipment

A UPS with alternative energy source must be used in applications where the loss of power or uncontrolled equipment shutdown is not acceptable, such as data center computers used for financial transactions and applications requiring very high system availability.

## VR Advantages and Cost Savings

### RELIABILITY

The TPD-AVR is a 100% solid-state device that does not require batteries, making it an inherently reliable system.

### EASY INSTALLATION AND SERVICE

TPD-AVR units can be installed and serviced by a local electrician.

### COST SAVINGS

HVAC systems, refrigerators, and other large appliances run more efficiently with stable voltage. Stable voltage reduces the strain on motors and other components, decreasing maintenance needs and operational costs.

### SEAMLESS OPERATION OF SENSITIVE EQUIPMENT

With stable voltage, devices operate more efficiently, reducing the risk of malfunctions or performance issues. Many smart home systems rely on consistent power for connectivity and operation. Voltage regulation helps maintain the reliability of these systems.

### ENHANCED POWER QUALITY

EV chargers can put a significant load on a home's electrical system. Voltage regulation ensures they receive consistent power, optimizing charging times and protecting both the charger and the vehicle's battery.

### CLEAN POWER FOR MODERN ELECTRICAL DEMANDS

VFDs in modern HVAC systems adjust motor speeds to enhance efficiency. Stable voltage is crucial for their optimal operation, ensuring comfort and energy savings.

### FUTURE-PROOFING

As homes incorporate more advanced technologies and higher power demands, voltage regulation systems can adapt to these changes, providing a stable foundation for future upgrades and innovations.

**Automatically regulate voltage and condition power to reduce electronic lockups, glitches and failures over a wide input of voltage ranges.**

## SPECIFICATIONS

**Design Topology:** High-performance PWM voltage regulator operating at 20 kHz

**Voltage Correction Time:** 8 ms (1/2 line cycle) typical

**Input Range & Output Regulation:** Wide input range 120V (+/-20%) and precise output regulation 120V (+/-2.5%) provides superior performance of all connected equipment.

**Frequency:** 60 Hz +/-5%

**Surge Protection:** Internal surge protector helps protect both the AVR and connected equipment from surges and spikes

**Power Efficiency:** 98% or higher typical (for load of 50 to 100%)

**System Status Indicator:** Green LED ON: Normal operation, Amber LED ON: Bypass operation, Red LED ON: Fault

**Operating Temperature Range:** 32° to +104° F (0° to +40° C)

**Operating Humidity Range:** 10 to 90% relative humidity (non-condensing)

**Operating Altitude Range:** 0 to 6,600 ft (2,000 meters) above sea level (without derating output power)

**Storage Temperature Range:** -4° to +140° F (-20° to +60° C)

**Agency Approvals:** Designed to meet UL 60950

**Warranty:** Two-year limited warranty on parts and labor

**Note:** For continuous product improvement, specifications are subject to change without notice.



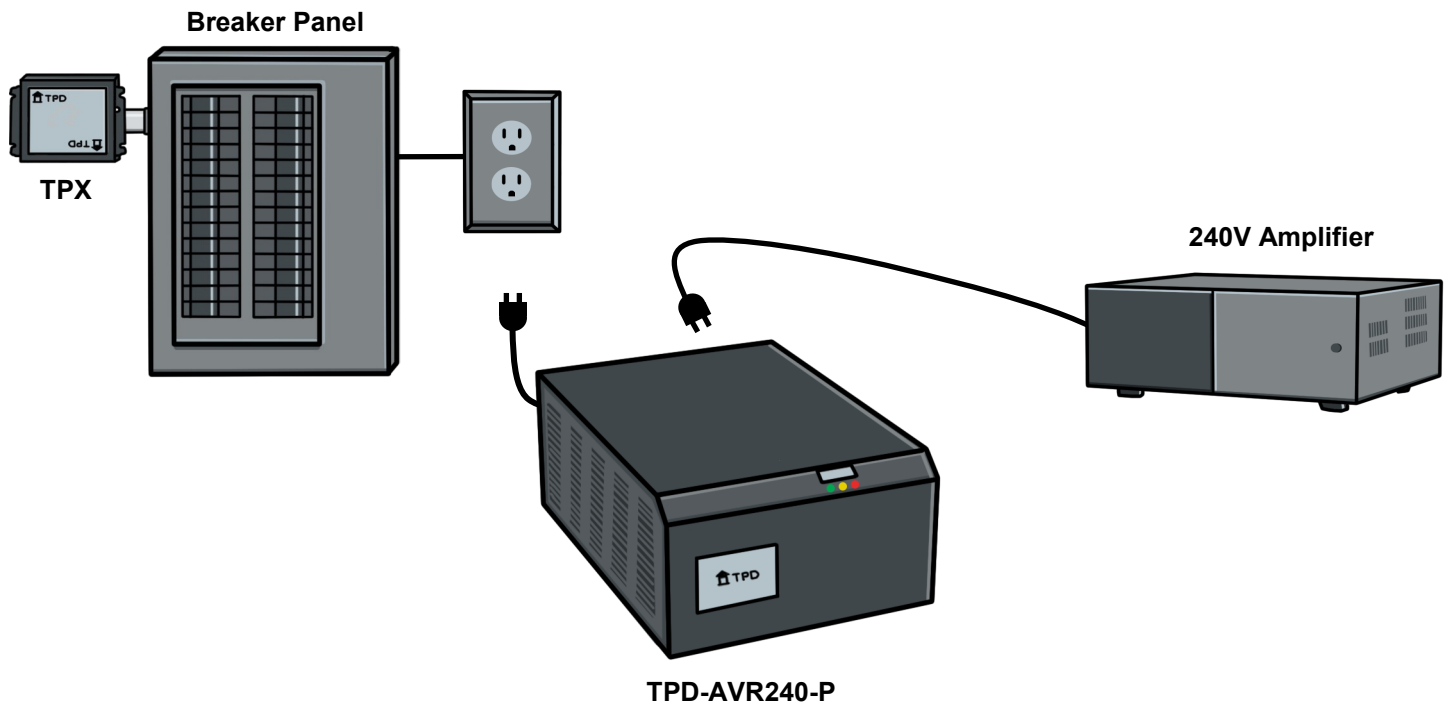
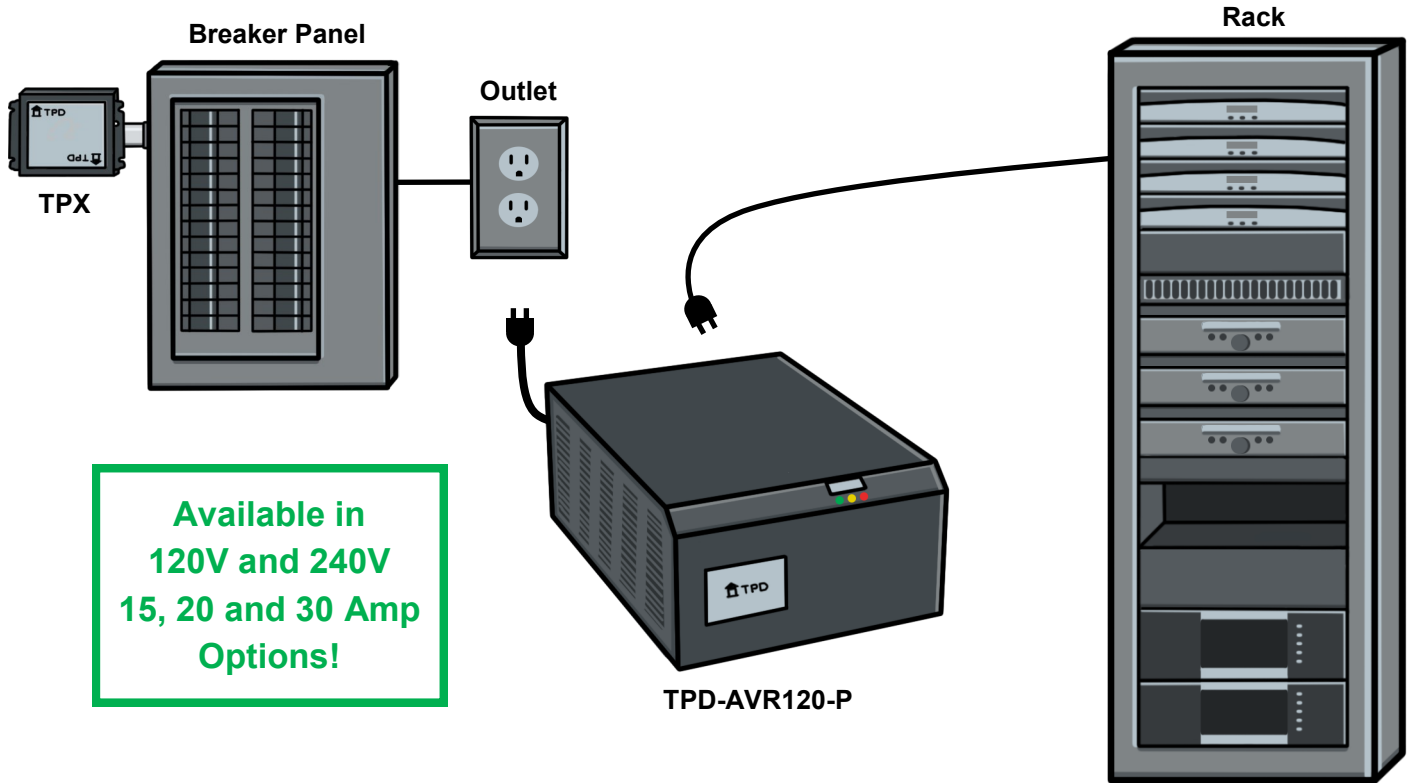
**The TPD-AVR is an energy efficient AC voltage regulator that ensures maintenance free operation of electronic equipment over a wide range of input voltages.** TPD's AVR series provides precision power with industry best response time of one-half line cycle (8 ms typical).

## HOW THE AVR WORKS

The high frequency Insulated Gate Bi-polar Transistor (IGBT) driven converter takes the incoming AC power, measures it against the nominal voltage reference and adds or subtracts voltage to achieve a precisely regulated output. The automatic bypass will be activated if amperage draw exceeds AVR's amperage limitation. Green LED is used to indicate normal (regulating mode) operation.

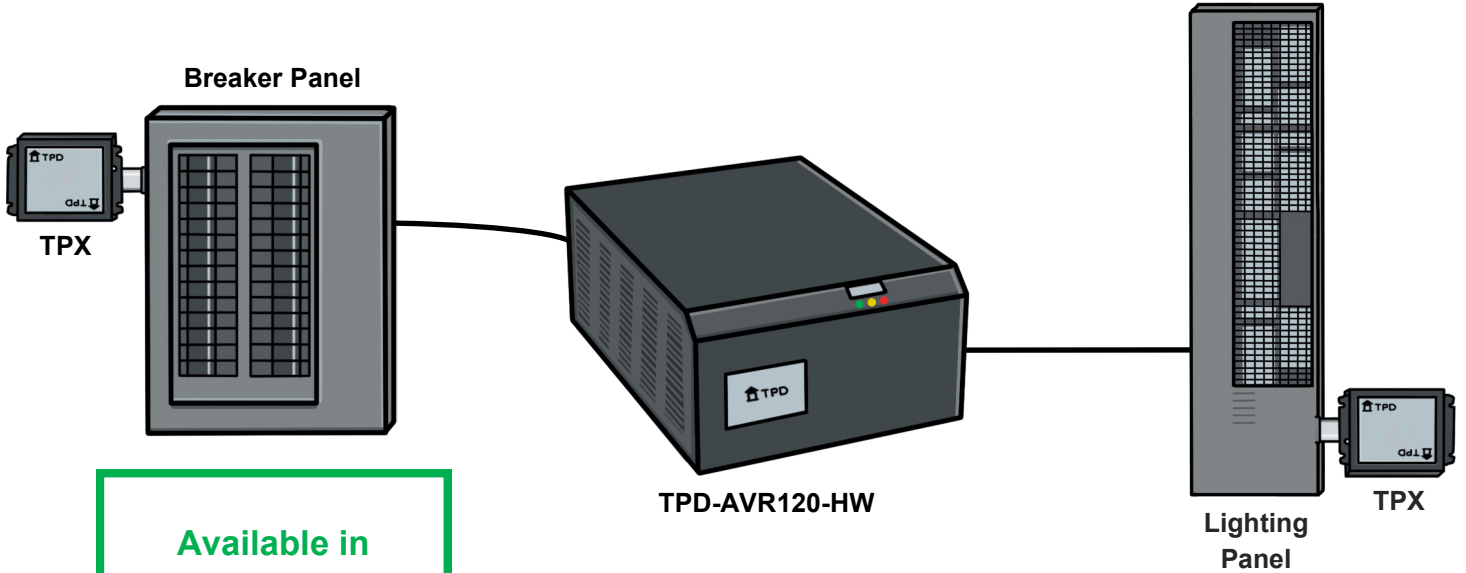
Model Number	Description	Capacity / (VA)	Input Circuit Breaker Rating	AC Input Connector	Maximum Rated Output Current	Output Connector	Dimensions	Weight
TPD-AVR120-15A-P	120V 15 Amp Plug In / Plug Out	1440	15 A	NEMA 5-15P	12.0 A	4x NEMA 5-15R	12" W x 6.2" H x 15" D	32 lbs (14.5 kg)
TPD-AVR120-20A-P	120V 20 Amp Plug In / Plug Out	1920	20 A	NEMA 5-20P	16.0 A	4x NEMA 5-20R	12" W x 6.2" H x 15" D	32 lbs (14.5 kg)
TPD-AVR120-30A-P	120V 30 Amp Plug In / Plug Out	2880	30 A	NEMA 5-30P	24.0 A	NEMA 5-30R	12" W x 6.2" H x 15" D	32 lbs (14.5 kg)
TPD-AVR240-30A-P	240V 30 Amp Plug In / Plug Out	5760	30 A	NEMA 6-30P	24.0 A	NEMA 6-30R	12" W x 6.2" H x 15" D	49 lbs (22.2 kg)
TPD-AVR1S240-80A	120/240V 80 Amp Hardwired In / Hardwired Out	15360	80 A	Hardwired	64.0 A	Hardwired	24" W x 24.6" H x 24" D Including Casters	210 lbs
TPD-AVR1S240-100A	120/240V 100 Amp Hardwired In / Hardwired Out	19200	100 A	Hardwired	80.0 A	Hardwired	24" W x 24.6" H x 24" D Including Casters	255 lbs
TPD-AVR1S240-150A	120/240V 150 Amp Hardwired In / Hardwired Out	36096	N/A	Hardwired	150.0 A	Hardwired	24" W x 24.6" H x 24" D Including Casters	500 lbs
TPD-AVR1S240-200A	120/240V 200 Amp Hardwired In / Hardwired Out	49920	N/A	Hardwired	208.0 A	Hardwired	24" W x 24.6" H x 24" D Including Casters	500 lbs

\*optional C-channel floor mounting kit available

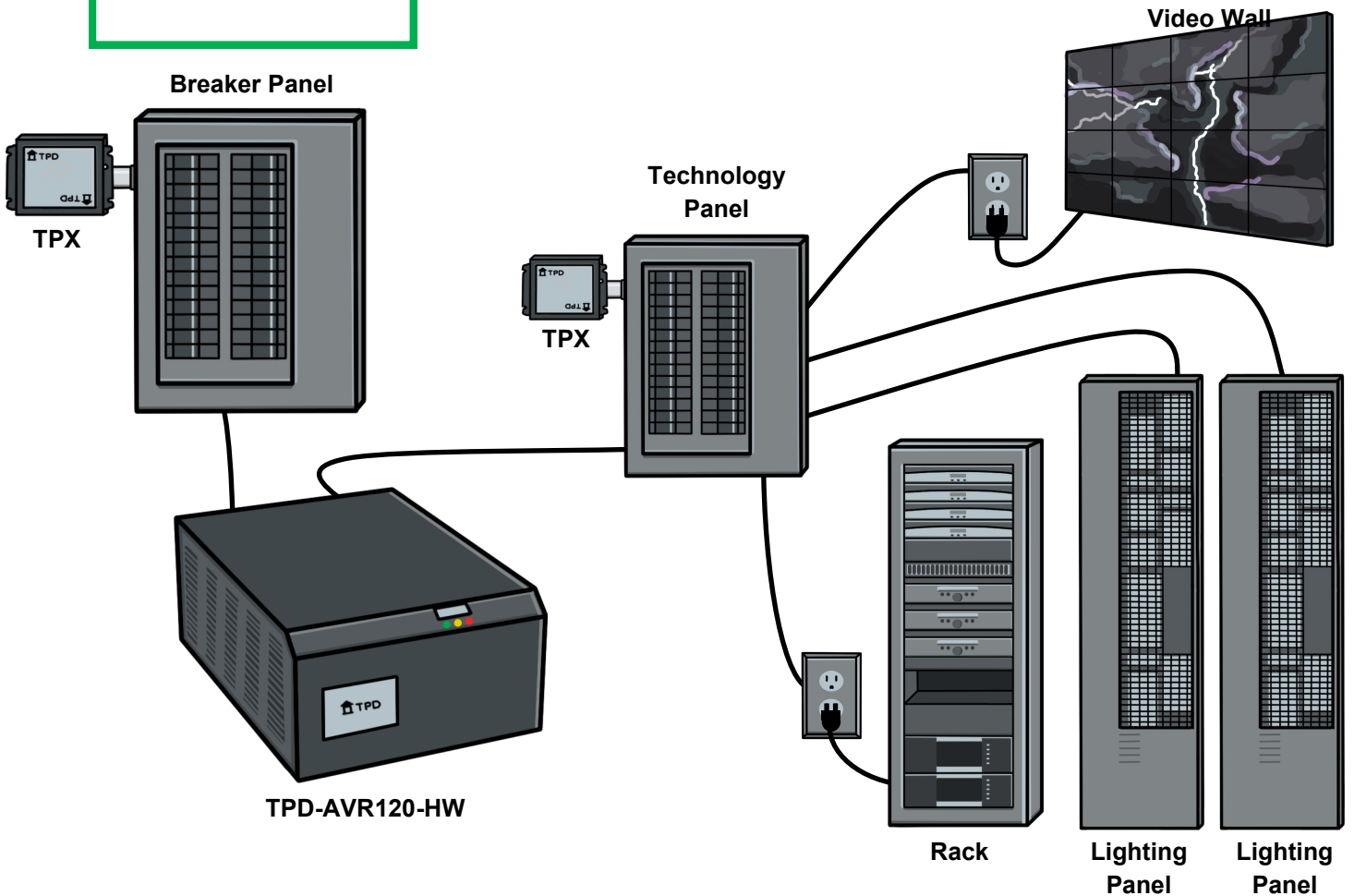


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# 120V Hardwired Voltage Regulation

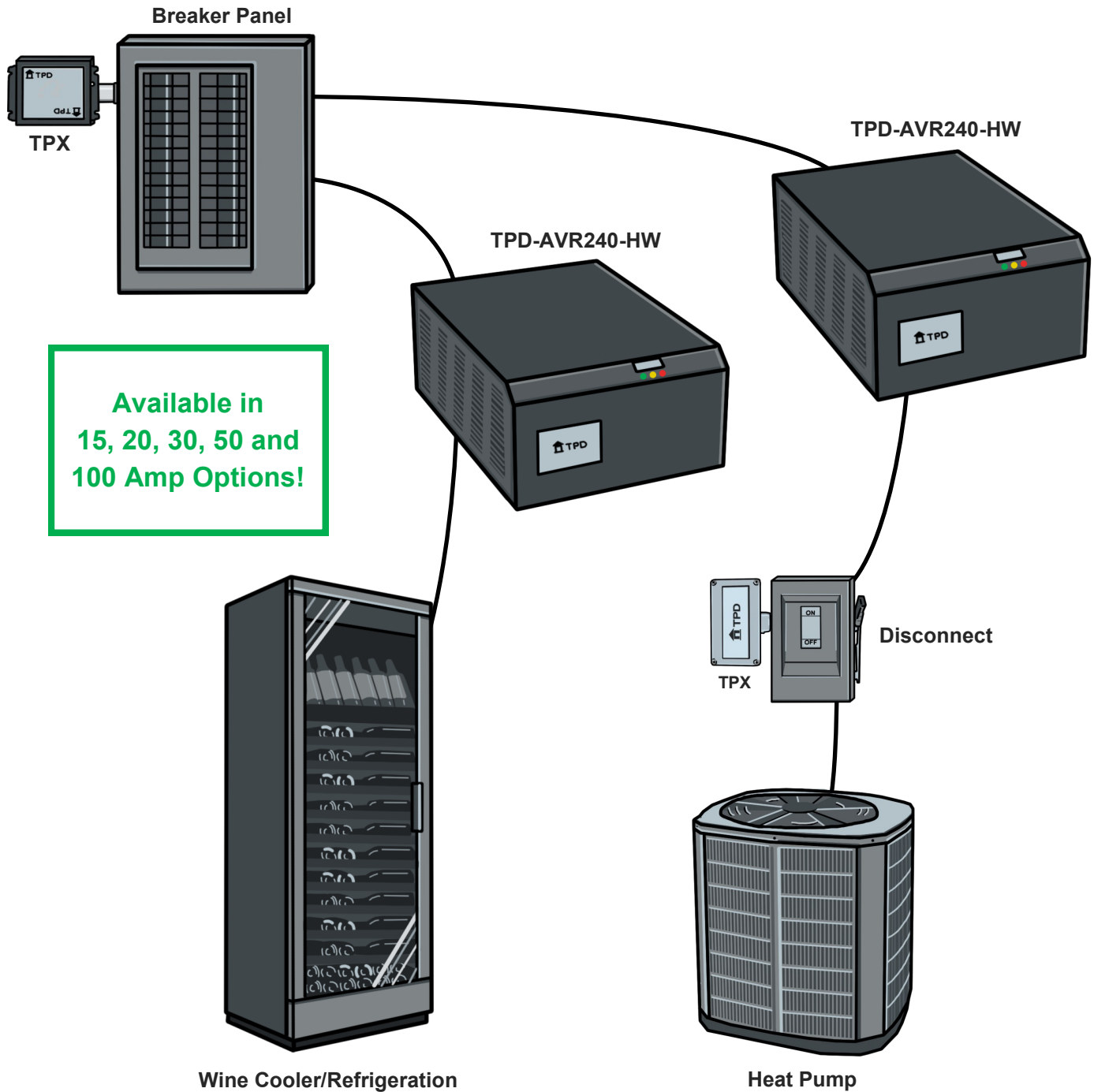


Available in  
15, 20, 30 and 50  
Amp Options!



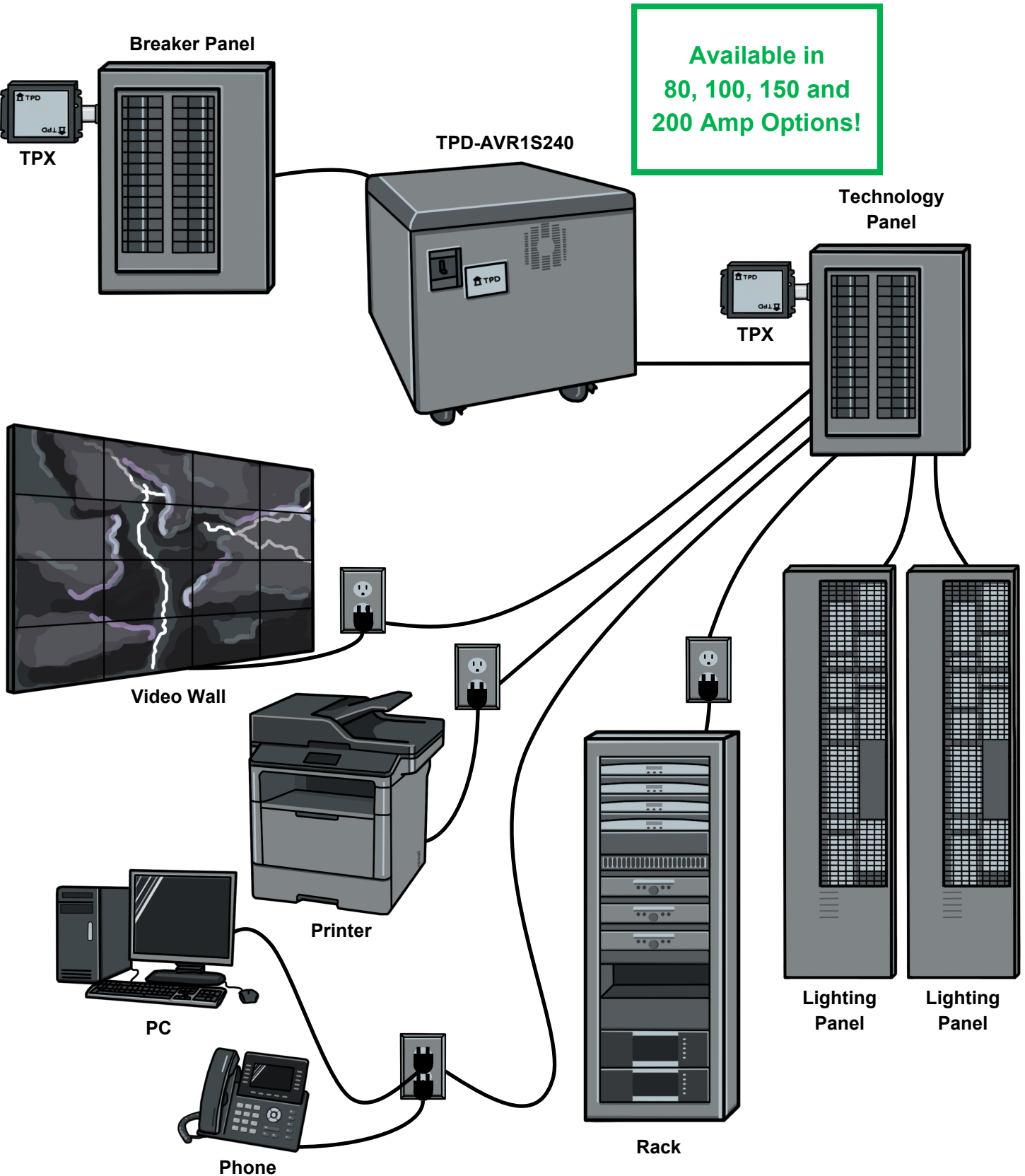
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# 240V Hardwired Voltage Regulation



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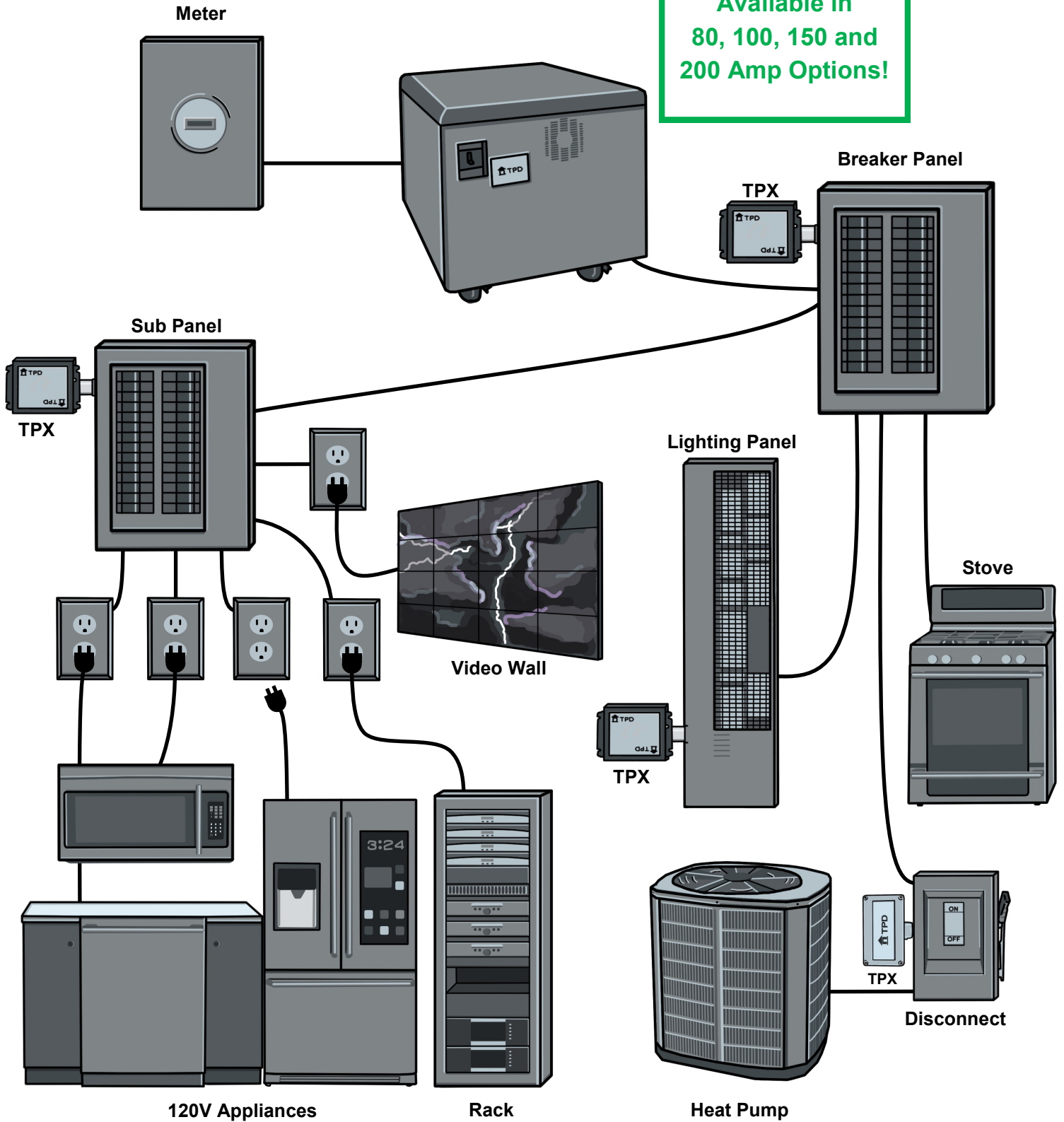
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80, 100, 150 and  
200 Amp Options!



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