

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

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.

The TPD-AVR is an energy efficient AC automatic 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).

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 pf 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 standard.

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



TPD-AVR120
TPD-AVR240



TPD-AVR1S240

VARIOUS APPLICATIONS

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

**Corrects Voltage
20,000 times per
second!**

AVR 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.

TPD-AVR MODEL NUMBERS

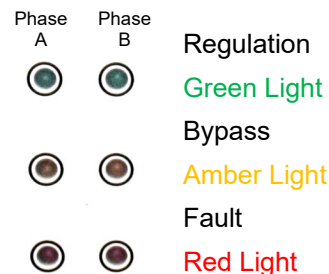
Model Number	Capacity / (VA)	Input Circuit Breaker Rating	AC Input Connector	Maximum Rated Output Current	Output Connector	Dimensions	Weight	Wall / Floor Mounting Kit
TPD-AVR120-15A-P*	1440	15 A	NEMA 5-15P	12.0 A	4x NEMA 5-15R	12" W x 6.2" H x 15" D	32 lbs	MK-4000C
TPD-AVR120-20A-P*	1920	20 A	NEMA 5-20P	16.0 A	4x NEMA 5-20R	12" W x 6.2" H x 15" D	32 lbs	MK-4000C
TPD-AVR120-30A-P*	2880	30 A	NEMA 5-30P	24.0 A	NEMA 5-30R	12" W x 6.2" H x 15" D	32 lbs	MK-4000C
TPD-AVR120-50A-HW	4800	50 A	Hardwired	40.0 A	Hardwired	12" W x 6.2" H x 15" D	32 lbs	MK-4000C
TPD-AVR120-80A-HW	7680	80 A	Hardwired	64.0 A	Hardwired	14.5" W x 8.9" H x 19.8" D	86 lbs	MK-8000C
TPD-AVR240-15A-P*	2880	15 A	NEMA 6-15P	12.0 A	NEMA 6-15R	12" W x 6.2" H x 15" D	40 lbs	MK-4000C
TPD-AVR240-20A-P*	3840	20 A	NEMA 6-20P	16.0 A	NEMA 6-20P	12" W x 6.2" H x 15" D	47 lbs	MK-4000C
TPD-AVR240-30A-P*	5760	30 A	NEMA 6-30P	24.0 A	NEMA 6-30R	12" W x 6.2" H x 15" D	49 lbs	MK-4000C
TPD-AVR240-50A-HW	9600	50 A	Hardwired	40.0 A	Hardwired	14.5" W x 8.9" H x 19.8" D	104 lbs	MK-8000C
TPD-AVR240-100A-HW	19200	100 A	Hardwired	80.0 A	Hardwired	14.5" W x 8.9" H x 19.8" D	127 lbs	MK-8000C
TPD-AVR1S240-50A-HW	9600	50 A	Hardwired	40.0 A	Hardwired	24" W x 19.31" H x 24" D *H including casters is 24.6"	200 lbs	Optional C-Channel
TPD-AVR1S240-80A-HW	15360	80 A	Hardwired	64.0 A	Hardwired	24" W x 19.31" H x 24" D *H including casters is 24.6"	210 lbs	Optional C-Channel
TPD-AVR1S240-100A-HW	19200	100 A	Hardwired	80.0 A	Hardwired	24" W x 19.31" H x 24" D *H including casters is 24.6"	255 lbs	Optional C-Channel
TPD-AVR1S240-150A-HW	36096	N/A	Hardwired	150.0 A	Hardwired	32" W x 27.78" H x 32" D *H including casters is 33.06"	500 lbs	Optional C-Channel
TPD-AVR1S240-200A-HW	49920	N/A	Hardwired	208.0 A	Hardwired	32" W x 27.78" H x 32" D *H including casters is 33.06"	500 lbs	Optional C-Channel

*unit can be plug-in or hardwired (replace -P with -HW for hardwired)

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.

Note: 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.



Example of Display Circuit Board Monitors