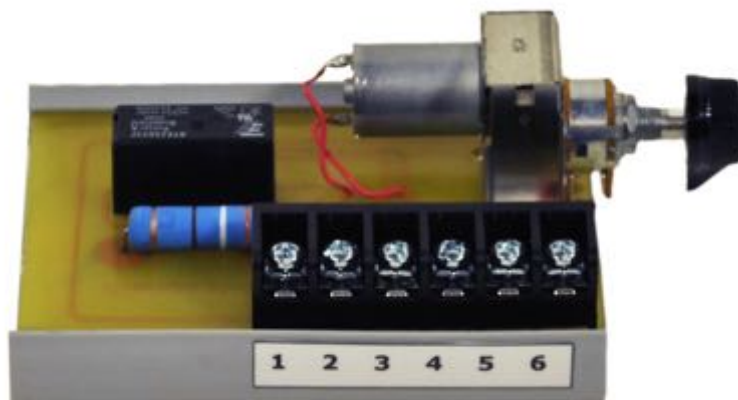




# MP12

## Motorized Potentiometer



The Power-Tronics MP12 Motorized Potentiometer is an optional add-on module for Power-Tronics voltage regulating systems designed to allow the voltage regulator to receive control signals from a Genset or VAR controller or other remote computerized control system that relies on a set of dry contacts or a motorized potentiometer for control.

The MP12 is the latest upgrade to the Power-Tronics MP product line and replaces previous MP12 series Motorized Potentiometers. The MP12 is a very rugged and reliable interface module designed to last a lifetime.

The MP12 offers 2 different modes of operation: Fully Automatic, and Automatic/Manual selectable for the convenience of the system operator.

The Power-Tronics MP12 is mounted to a snap-trak rail to facilitate mounting in a control panel or cubicle and to facilitate maintenance should the need ever arise.

The MP12 is compatible with all UVR and XR series Power-Tronics Universal Voltage Regulators, PC500, XR, and UVR series Phase Controllers, and most Power-Tronics full Static Exciters.

### Specifications

Input Voltage*:	MP12: 12VDC
Potentiometer Resistance:	0-100K $\Omega$ @ 1/2W
Physical Size:	3 x 4 x 1.75 in.
Weight:	6 oz





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## Introduction and Functional Description

# Caution: Read This Installation Manual Carefully and Entirely!

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**Warning:** Do not use digital equipment to read voltage, Hz, or amperage during this installation. Use only Analog sensing equipment! Failure to do so may result in damage to equipment or in personal injury!

**ALWAYS** perform all setup procedures off-line

**ALWAYS** wear eye protection

**ALWAYS** strip wire insulation properly or use insulated connectors

**ALWAYS** use analog metering equipment when setting up the regulator

**ALWAYS** ensure the regulator receives ample airflow

**NEVER** hold the regulator in your hand when energized

**NEVER** install the regulator in a place it can get wet or is exposed to the elements

**NEVER** mount the regulator over a screw, bolt, rivet, welding seam, or other fastener

**NEVER** remove the regulator cover while the unit is in operation

**NEVER** insert a screwdriver or other object under the regulator cover

**NEVER** install a switch in the DC portion of the regulator's wiring

**NEVER** touch any exposed portion of the MP12 when in operation

**NEVER USE A DIGITAL FREQUENCY METER** (It can give a false reading!)

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## Functional Description

The Power-Tronics MP12 is an optional add-on module for UVR and XR series voltage regulating systems and UVR, XR, and PC500 series phase controllers designed to allow the voltage regulator (or phase controller) to be controlled by an external Genset or VAR controller utilizing dry contacts for switching or relying on a motorized potentiometer for control.

The MP12 operates by using a 12VDC signal from an external controller such as a Genset controller, Var, or Power-Factor controller. Signal voltage on the Raise terminal will turn the potentiometer clockwise while signal voltage on the Lower terminal will turn the potentiometer counterclockwise.

The MP12 is completely isolated from the voltage regulating circuitry to increase reliability and reduce potential damage in the case of a fault situation.

Due to its reliable design and simple construction, the MP12 is designed to provide reliable service for a lifetime when properly installed.





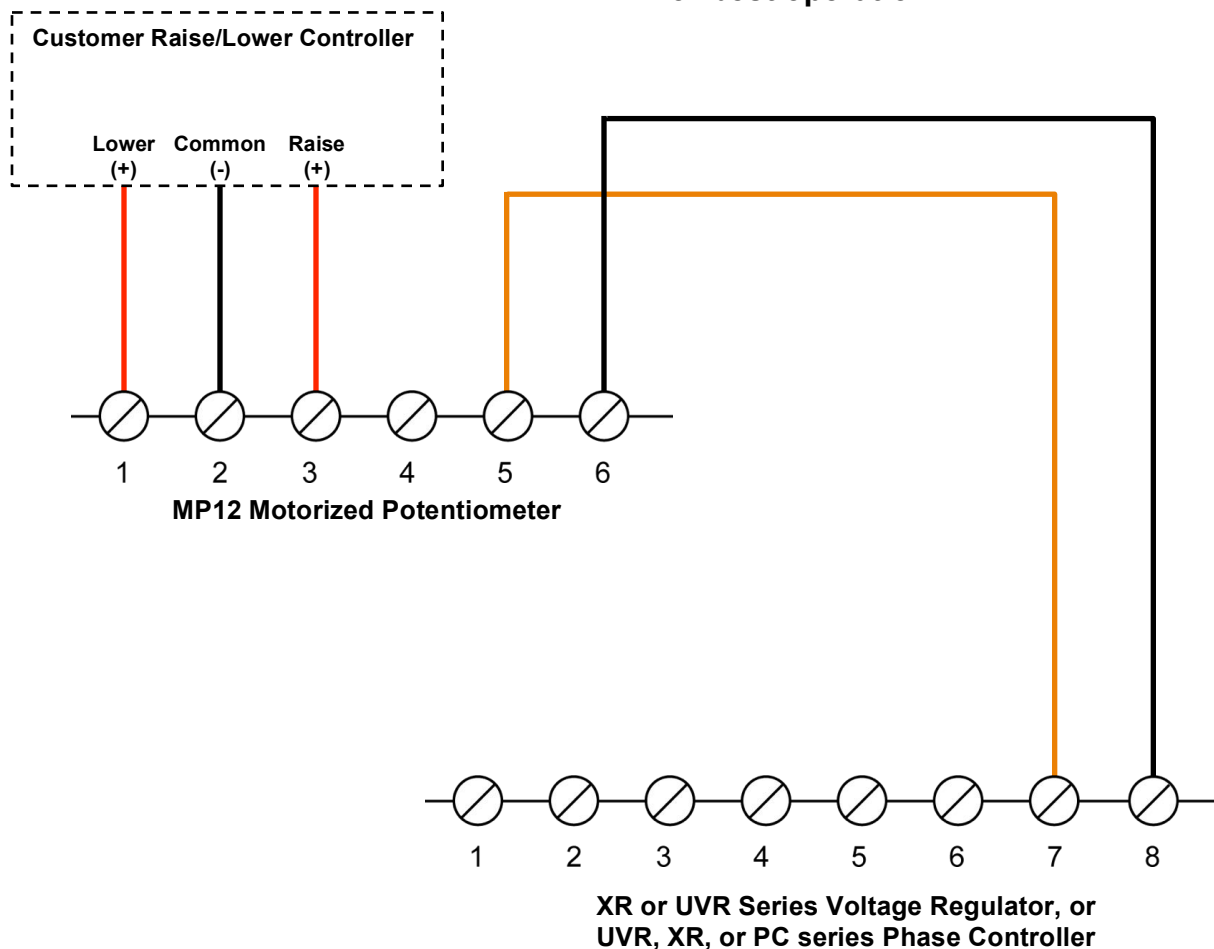
## Fully Automatic Operation

This configuration should be used if the MP12 is to be used in an unattended application, or if manual voltage control is not needed on your application.

**NOTE:** This instruction manual only contains instructions for your MP12's connection to the voltage regulator or phase controller. For wiring details regarding your voltage regulator or phase controller, see the instructions that came with your model.

**NOTE:**

All wiring to and from the MP12 should be in shielded cable with the shield **UNGROUND**ED for best operation!



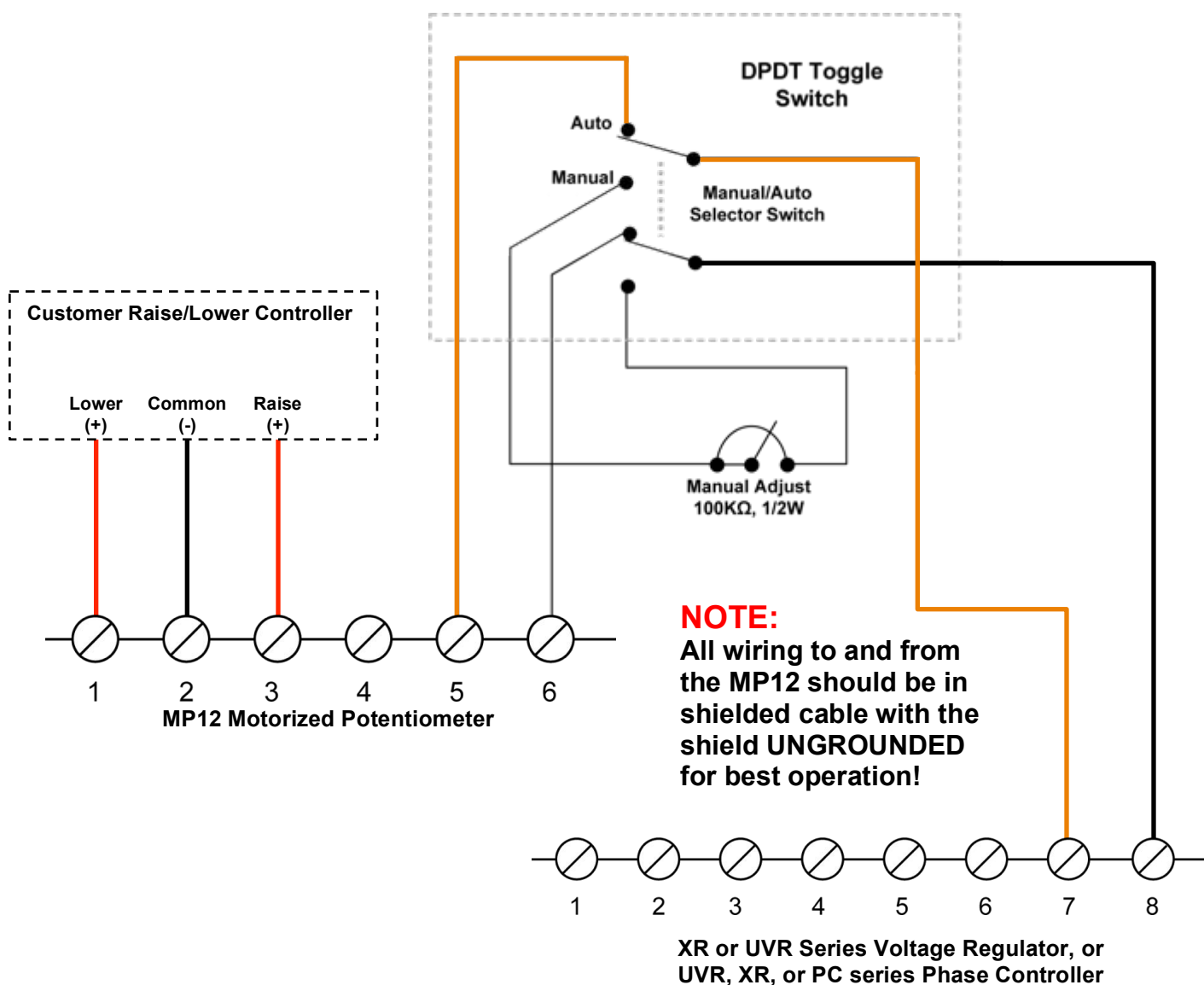




## Automatic/Manual Selectable Operation

This configuration should be used if the MP12 is to be used in an installation where manual voltage adjustment is required or is important for redundancy.

**NOTE:** This instruction manual only contains instructions for your MP12's connection to the voltage regulator or phase controller. For wiring details regarding your voltage regulator or phase controller, see the instructions that came with your model.







## Initial Setup and Commissioning

1. Install the MP12 and wire up to the correct wiring diagram (Fully Automatic, or Selectable Automatic/Manual). Leave the Raise and Lower wires disconnected from Terminals 1 and 3 for the time being.
2. Set the adjustment knob pointer on the MP12 to the mid position (12 o'clock).
3. Place the Manual/Automatic switch in the Automatic position if used.
4. Start up the generator and bring the engine up to design speed, then manually adjust the voltage regulator as shown in the instructions supplied with it. (See the manual that came with your voltage regulator for this information).
5. Turn off the voltage regulator and connect your Raise and Lower wires to the appropriate terminals on the MP12.
6. If you are using the Manual/Automatic connection place the Manual/Automatic switch in the Manual position. Otherwise skip to step 9.
7. Turn on the regulator and use the external potentiometer to return the generator to its original voltage from step 4.
8. Switch the Manual/Automatic switch into the Automatic position.
9. Run the generator and turn on the voltage regulator, then verify control with your raise/lower control. DO NOT Adjust the voltage with the MP12 control knob!
10. Place the generator online and observe its operation. If control is satisfactory, the installation is complete.





## **Installation Warranty Form**

It is very important that you fill out this form completely when installing a voltage regulator. This form serves as a history record on the application. This form also contains the information needed by Power-Tronics, Inc., for repair and troubleshooting of any product you may be having problems with.

**Failure to fill out this form during installation will result in a cancellation of your warranty coverage! Filling out this form takes only minutes but will save hours or days later on if your product should require service!**

Product		Other options			
Serial Number					
Date of Installation					
Type of Generator				Model #	
	Brush type	[ ]			
	Brushless	[ ]			
AC Stator Information					
Wired for	Volts	Phase	Hz		
Generator Configuration: Lead					
Exciter/Rotor Information					
Exciter field resistance	$\Omega$		@	F+ / F-	$\Omega$
Exciter field volts	vdc		@	Slip Rings	$\Omega$
Description of problem with product or generator					
Your phone number			Name:		
Your fax number			Ship to Address:		
Your email address			Ship to City, State, Zip:		





## PRODUCT WARRANTY

**Power-Tronics, Inc.**, assumes no liability for damages due to incorrect voltage or other voltage related damages resulting from either output of the generator or input to the generator exciter system. These problems should be protected with external devices provided by the customer such as ***fuses, surge suppressors, over/under voltage and frequency controls.***

**Power-Tronics, Inc.**, warranties **only parts and workmanship** of this product for a **period of 2 years from the original date of purchase from Power-Tronics, Inc.** Under warranty, Power-Tronics, Inc. will replace, exchange or repair the defective product **without labor or parts cost to the customer.** Remaining warranty of the original product will be transferred to the replaced or repaired product. To obtain warranty, a copy of the original Installation Warranty Form must be sent in with the defective product, which clearly shows the purchase date and serial number of the defective part. A repair request form must be sent in with the product before repairs will begin. You can obtain this form by contacting Power-Tronics, Inc.

**Send repairs to: Power-Tronics, Inc., 2802 Cobbler Ln., Kerrville Texas USA 78028.**

***Send in repairs only by UPS or FedEx. USPS will NOT deliver to our facility!***

**Any one of the following conditions will void the warranty:**

- ❖ Overheating of the power supply resistor on the printed circuit card.
- ❖ Overheating of the SCR or freewheeling diode.
- ❖ Physical damage to the printed circuit card, housing or components.
- ❖ Unauthorized repair or alteration of printed circuit card.
- ❖ Installation by anyone other than a qualified professional generator service technician.
- ❖ Conductive or corrosive contamination of the circuit card.
- ❖ Removal of our company identification from the product.
- ❖ Removal of any conformal coating of the printed circuit card or components.
- ❖ Overheating of foil on the printed circuit card.
- ❖ Inappropriate or infeasible application.
- ❖ Use with any external device other than manufactured by Power-Tronics, Inc.
- ❖ Failure to fill out the attached warranty card during installation

**No other warranty is expressed or implied.**