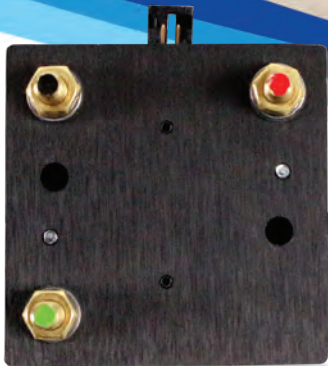
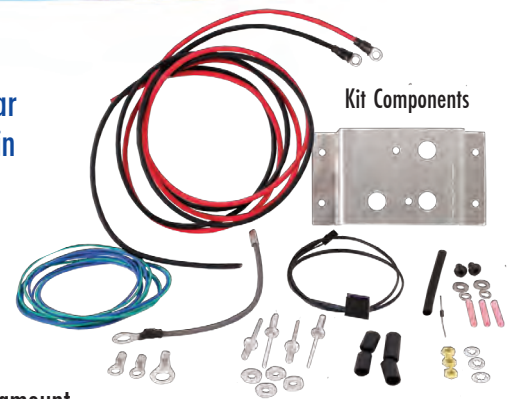


# Northern RADIATOR HIGH PERFORMANCE PULSE WIDTH MODULATOR



Our PWM will bring your project car into the 21st century for the best in cooling efficiency.



## CONTROL THE POWER!

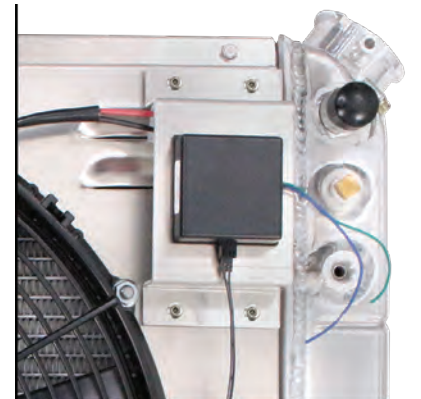
When you hear people talking about Pulse Width Modulators (PWMs) for their electric fan shrouds, it's highly likely you're asking yourself the same question as many people do, "What in the world are you talking about?" To make it simple, a PWM is a complete wiring harness that will control the amount of power that is supplied to your brushed fan motor or motors. Traditionally, a brushed fan has two speeds, ON and OFF. In other words, the fans are either not operating at all or going at 100% power. With a PWM, you have the advantage of a "soft start" and the fans operating at the speed needed to do the cooling that is required based on the reading of the temperature sensor. When we say, "soft start", we are avoiding any damaging amp spike that you get when starting up a fan. It eliminates the high current in-rush; hence, no idle pull down or overloaded connections. The PWM allows you to draw only the power necessary and will ramp up from zero amps to the required draw for cooling the engine.

## WHY PWM?

PWMs have been around for quite a while, so why get so excited about the Z18350 from Northern Radiator? The answer is when looking for a PWM you must research the features of the controller to be sure that it will not only function the way you want it to but be safe and reliable as well. Review the features listed below for the best PWM on the market.

## BENEFITS OF NORTHERN'S PULSE WIDTH MODULATOR

- Made in USA using top tier component suppliers, including circuit boards
- 40A standard current capability
- Short circuit and rotor lock protection without damage to the controller
- Overload protection limits output to 40A
- Overheating protection with automatic reset
- Under and over voltage shut down protects circuitry
- A/C override powers fan(s) at 50 percent speed when compressor clutch is activated
- Quiet operation for brushed fans at 99.6% efficiency
- Compact 2 1/8" square by 1 1/16" deep size allows for easy mounting
- 180° Temperature sensor included
- Ability to turn the controller off at key-off (optional)
- Hermetically sealed



**Pulse Width Modulation  
Cooling Fan Controller Z18350**

**⚠ WARNING:** This product can expose you to chemicals including Ethylbenzene, Toluene, and Carbon Black, which are known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

## Single or Dual Relay Switches for Fans

The fixed speed control method has a long history of proven operation at an economical up front cost. Relays protect your vehicle's sensitive electronic components from surges and high ampere draw by routing electrical draw directly from the battery to your fan. Think of the relay as a remote electric switch: small amounts of current from your ignition switch or mechanical Temperature Switch send a signal to the relay to activate. The relay then switches the heavy current from the battery to the fan. Remember to locate your fuse near the battery to protect all of the wiring downstream in the event of a short. In this setup, the system is either on or off — the fan speed is not variable.

In dual fan systems, a dual relay wiring harness is coupled with a Temperature Switch, which controls both fans. The relays regulate the fans startup to avoid voltage spikes. The fans' on and off operation will be controlled by the coolant temperature and the temp switch.

**Z40078** Relay and Temp Switch

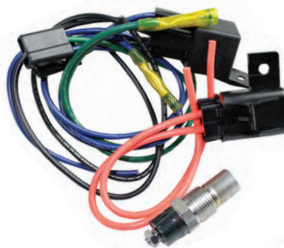
**Z40080** Relay Switch Only

**Z41032** Dual Fan Relay and Temp Switch

**Z41030** Dual Fan Relay Switch Only

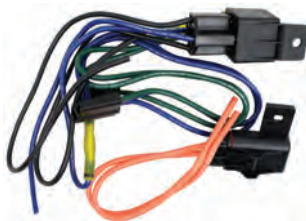
**Z40078**

Relay and Temp Switch



**Z41030**

Dual Fan Relay Switch Only



**Z40080**

Relay Switch Only



**Z41032**

Dual Fan Relay and Temp Switch

## Other Accessories:



### Single Wire Temperature Switch

Northern coolant temperature switch. Use with Northern fan relay kits Z40080 and Z41030.

**Z18346** 185°/165°

**Z18347** 195°/175°



### Adjustable Temperature Sensor

An optional control for either single or dual fan situations is an adjustable temperature sensor control.

**BM346932**



### Pad Style Temp Sensor for PWM Fan Controller

Works best when used with All Aluminum or Copper/Brass radiators.

**Z18351** 160° Pad Style Temp Sensor

**Z18352** 180° Pad Style Temp Sensor

**Z18353** 195° Pad Style Temp Sensor



### Probe Style Temp Sensor

For use with plastic tank radiators, probe should be placed in core near outlet connection.

**Z18354** 160° Probe Style Temp Sensor

**Z18355** 180° Probe Style Temp Sensor

**Z18356** 195° Probe Style Temp Sensor