

VCM-13 Series

Vehicle Control Module Clutch Pump Limiter



VCM-13-Series Clutch Pump Limiter

InPower's VCM Series *Vehicle Control Modules* are a set of tools for the designers of vehicle electrical control systems. Made to withstand the environments typically found on trucks, emergency vehicles, buses, coaches and speciality vehicles, these modules are available in a variety of standard and custom configurations and functions.

Application Technical Description

The Model VCM-13 is a smart power relay with three inputs and two outputs that can be logically controlled by programming to suit your needs.

In the Clutch Pump Limiter application it is designed to protect your clutch pump from damage so it will not be exposed to excessive RPM speeds. The design takes the Clutch Pump Drive signal and Engine RPM from sources like the Clean Tach Out from Ford, or the VSIM in the case of Dodge. The RPM is calculated and these Signals then are logically combined to create Output 1. Output 1 will turn on when the Current RPM greater than RPM_Minimum and less than RPM_Max as long as the original Clutch Pump Coil Voltage is on. When the RPM_Max is reached, Output1 will turn off and then will not turn back on until RPM_Current is less than RPM_Restart.

Since different vehicles have different methodologies of presenting their Engine RPMs, different programs will be required for different manufacturers.

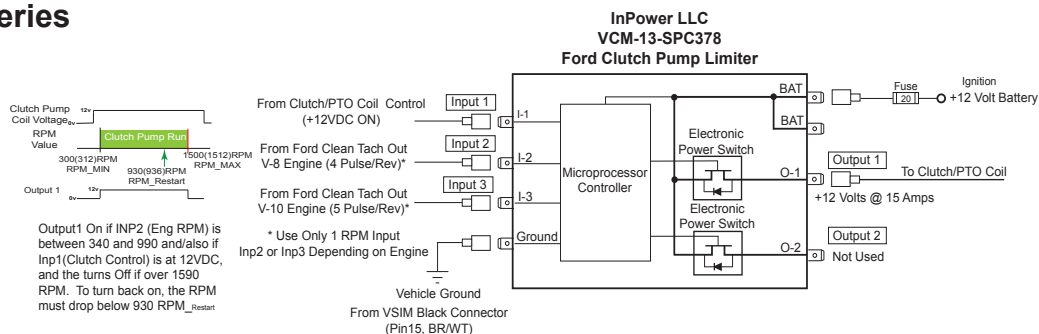
Key Features

- Three Digital Inputs
- Two 12 Volt 15 Amp Solid State Outputs
- Over Current Fault Shutdown Protection
- Compact Size
- Durable Metal Case
- Programmable Flexibility for a wide variety of truck applications

Example System Diagrams

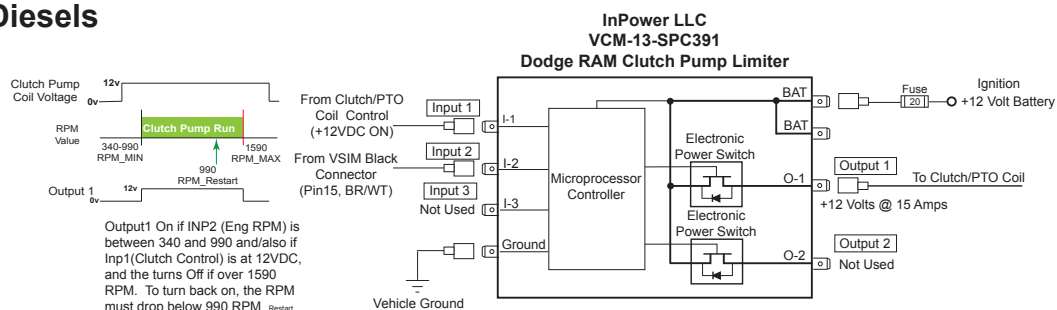
Ford E and F series

SPC378



Dodge RAM Diesels

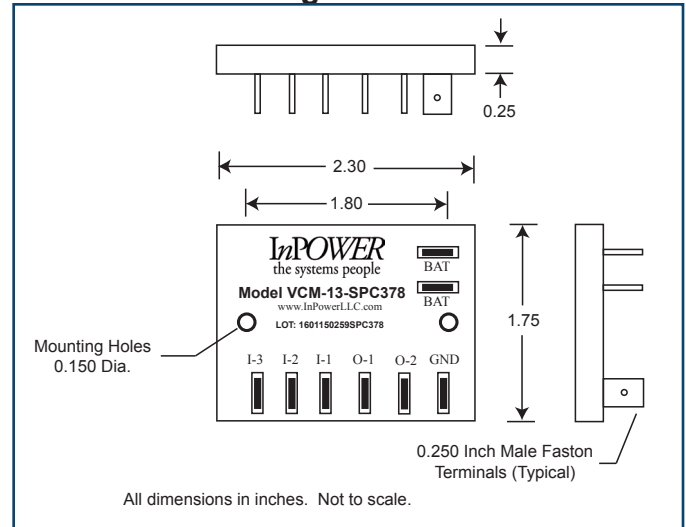
SPC391



Base VCM-13 Specification

Power Input	
BAT Terminal 1:	+8.0 to 16.0 Vdc @ 20 amps
BAT Terminal 2:	Not Used
Inputs	
Input I-1:	Programmable, external contact closures to +12 volts or to ground.
Input I-2:	Programmable, external contact closures to +12 volts or to ground
Input I-3:	Programmable, external contact closures to +12 volts or to ground
Power Outputs	
Output O-1:	+12 volts @ 15 amps
Output O-2:	+12 volts @ 15 amps
Mechanical	
Dimensions:	12.30 x 1.75 x 0.57 inches
Case Material:	Anodized aluminum
Operating Temperature:	-40° C to +85° C

Mechanical Drawing



Installation

1. We recommend that the module be installed by a person trained and skilled in vehicle electrical systems. The installation should comply with SAE (Society of Automotive Engineers) and the vehicle manufacturer's electrical wiring procedures (e.g. Ford, General Motors, etc.).
2. The module should be installed on the inside of the vehicle in a dry and protected environment.
3. For optimum power output performance the product should be mounted to a metal surface.
4. Do not connect loads to the output that will exceed the output current rating of the module.
5. The two power inputs (BAT terminals) must be wired to two separately fused +12 volt power sources. Note that the two BAT terminals are connected together inside the module. One of these is used.
6. Wiring must be of the proper gage and type to handle the intended load currents.
7. We recommend the use of insulated 1/4 inch female blade terminals that connect to the terminals on the module. Be sure to properly crimp these terminals. Do not solder wires directly to the module terminals.
8. If you are experiencing problems with the installation or need troubleshooting assistance, contact InPower Customer Service at 740-548-0965.

Custom Program Examples

Program Number	Description
SPC378	<p>Clutch Pump Limiter for Ford 200802009 E and F Series.</p> <ul style="list-style-type: none"> • Inputs consist of Clutch/PTO Coil (12V True) and an RPM input from either V8 or V10 Diesel Clean Tach Out depending on the engine. • (V8) Output 1 will provide 12Vdc @15 Amps if INP1 (4 pulses per Rev) is over 300RPM and Inp1 is 12VDC, then turning off if over 1500 RPM. Engine RPMs must drop below 930RPM before output restarts. • (V10) Output 1 will provide 12Vdc @15 Amps if INP2 (5 pulses per Rev) is over 312 RPM then turning off if over 1512 RPM. Engine RPMs must drop below 936 RPM to restart. <p>Use the appropriate Input for the applicable engine.</p>
SPC391	<p>Clutch Pump Limiter for Dodge RAM trucks.</p> <ul style="list-style-type: none"> • Inputs consist of Clutch/PTO Coil (12V True) and an RPM input the Dodge VSIM black connector (Pin 15, BR/WT) 0.2Hz/RPM 12 Pulses per Minute. • Output 1 will provide 12Vdc @15 Amps if INP1 (0.2Hz/RPM or 12 pulses per Minute) is over 300RPM and INP1 is 12V True, then turning off if over 1500 RPM. Engine RPMs must drop below 930RPM before output restarts.