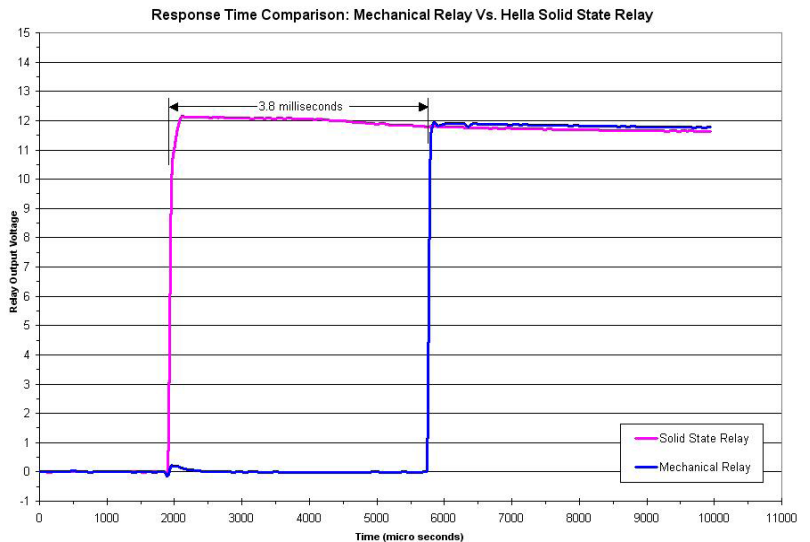


Hella Solid State Relay (PN: HELLAH41773001)



The Hella solid state relay offers faster switching speeds than a standard mechanical relay as well as significantly reduced vibration sensitivity. The graph above illustrates the difference in switching response time between this solid state relay and a mechanical relay. This solid state relay also features built-in over-current protection and heat sink. This relay is rated at 20 amp continuous and can be used at higher current loads for short periods of time (drag racing etc.). Overload protection occurs at 80 amps. Lingenfelter Performance Engineering recommends this relay for use with our NCC-001 & NCC-002 Nitrous Control Center, as well as most other nitrous controllers on the market, when you need an external relay to control high current nitrous or fuel solenoids and need to switch those outputs at high frequencies (up 1000 Hz). This solid state relay can also be used in applications where high g-loads and/or vibration may cause intermittent activation of conventional relays.

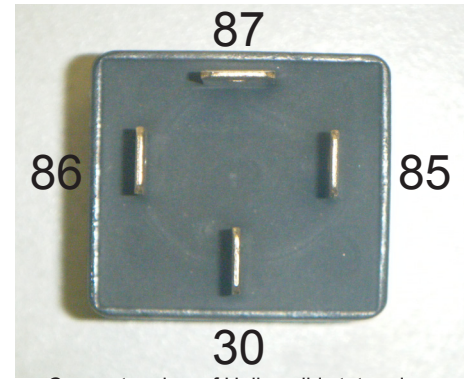
Hella Solid State Relay Specifications:

Nominal voltage	12V
Operating temperature	-40°C to 125°C
Rated continuous load	N/O 20A at 23°C
Contact	Single pull, single throw (SPST) - Normally Open (N/O)
Switching frequency	0 Hz-1000 Hz
Duty cycle percentage range	10%-90%
Max inrush current	Overload protected at 80A

Optional Item: TVS Diode Kit PN: L450080000

Installation:

- **WARNING - this relay will fit in a standard automotive relay connector but the pins are NOT the same wiring configuration. If you are switching from a standard relay to this relay you will have to change your wiring.**
- Pin 30 should be connected to a key-on switched 12 volt source.
- Pin 85 should be connected to a vehicle ground source.
- Pin 86 should be connected to the control signal output from the controlling device. This should be a ground output from the controller.
- Pin 87 should be connected to the 12 volt side of the device that you are activating.

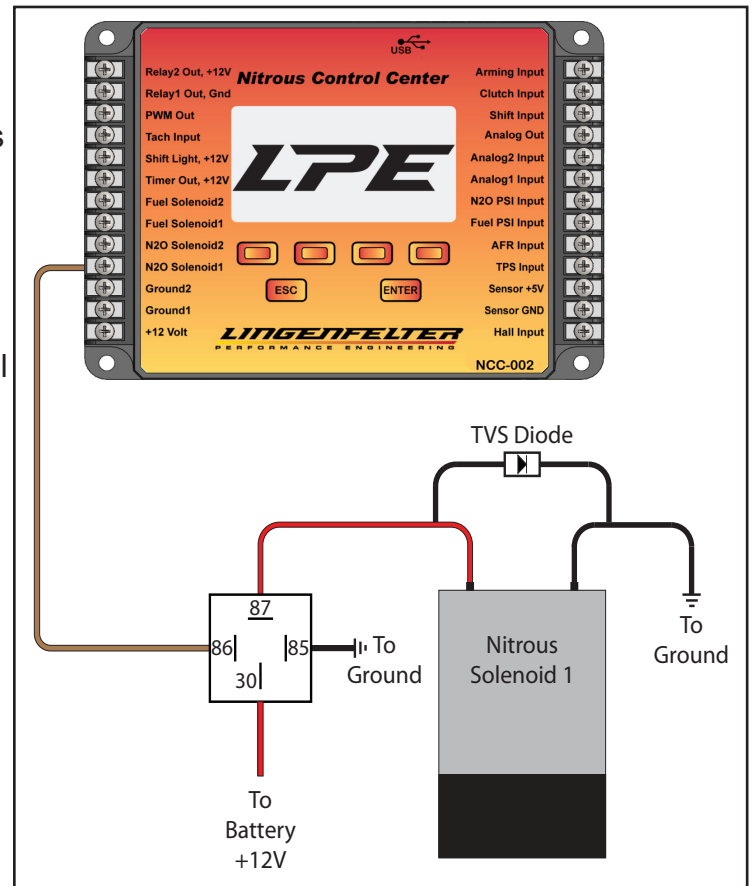


Connector view of Hella solid state relay.

Lingenfelter NCC-002 Controlling a Nitrous Solenoid

Notes:

- Lingenfelter Performance Engineering does not recommend using a solid state relay to control devices that impart high inductive loads (such as fans, pumps, or motors) unless it is an application where fast on/off response time or pulse width modulation (PWM) is required. For inductive load applications the maximum current capacity is reduced. LPE has done testing with the Hella solid state relay to control most fuel, nitrous, line-lock and trans-brake solenoids and the Hella relay is well suited to these applications.
- When using a solid state relay to control a device that may have significant fly-back voltage such as most solenoids, LPE recommends connecting a Transient Voltage Suppression (TVS) Diode across the device. This wiring configuration can be seen in the adjacent wiring diagram. This TVS diode will prevent the fly-back voltage of the device from damaging other components in the circuit. The LPE TVS Diode kit (PN: L450080000) is designed for most fuel, nitrous, line-lock, and trans-brake solenoids. Electric motors and other similar devices will likely need a different specification for the TVS diode.
- When selecting a TVS diode, make sure to select a diode that is rated to handle the amount of fly-back voltage that may occur when switching the device you are working with.



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