



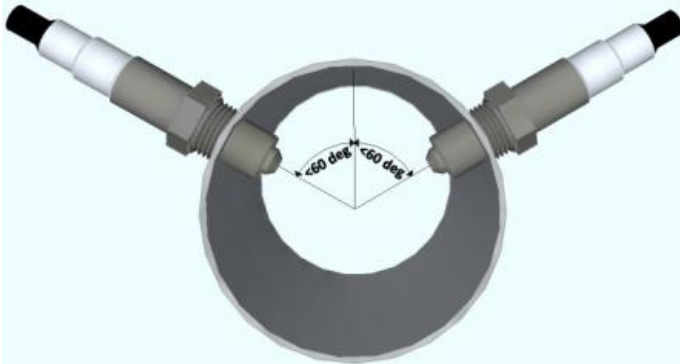
## Warning

- Do not connect or disconnect the Lambda Sensor while Spartan Lambda Controller 2 is powered, only do so when Spartan Lambda Controller is unpowered.
- The Lambda Sensor gets very hot during normal operation, be careful when handling it.
- Do not install the Lambda Sensor in such a manner that the unit is powered before your engine is running. An engine start can move condensation in your exhaust system to the sensor, if the sensor is already heated this can cause thermal shock and cause the ceramic internals inside the sensor to crack and deform.
- While the Lambda Sensor is in an active exhaust stream, it must be controlled by Spartan Lambda Controller 2. Carbon from an active exhaust can easily build up on an unpowered sensor and ruin it.
- Lambda sensor life when used with leaded fuels is between 100-500 hrs.
- Spartan 2 is water resistant, not waterproof, so please try your best to locate Spartan 2 away from sources of water and heat.

## Package Contents

1x Spartan Lambda Controller 2, 1x LED, 1x Fuse holder, 2x 5amp Fuse (only need 1, other is for replacement if needed)

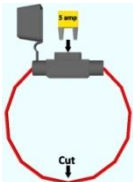
## Exhaust Installation



- The Lambda Sensor should be installed between the 10 o'clock and the 2 o'clock position, less than 60 degrees from vertical, this will allow gravity to remove water condensation from the sensor.
- For all Oxygen sensor installations the sensor must be installed before the catalytic converter.

For normally aspirated engines the sensor should be installed about 2ft from the engine exhaust port. For Turbocharged engines the sensor should be installed after the turbocharger. For Supercharged engines the sensor should be installed 3ft from the engine exhaust port. If you notice the temperature LED consistently blinking slowly, the sensor is installed too far from the exhaust port, you should install the sensor closer to

the exhaust port. If you notice the temperature LED consistently blinking quickly, the sensor is installed too close to the exhaust port, you should install the sensor farther from the exhaust port. When the temperature LED is solid, the sensor is in a location that is suitable.



## Fuse

Insert 5 amp fuse into fuse holder, cut wire at midpoint, and secure lid. One end of the fuse holder connects to the red wire on the grey cable, the other end of the fuse holder connects to a switched 12[v] source.

## Wiring

Wire Color	Name	Connects to	Note
Red	Power	Switched 12[v]	Use fuse holder, 12[v] should be live only when engine is running
Black	Electronics Ground	Ground	Ground where interfacing device is grounded
White	Heater Ground	Ground	Ground to chassis or engine block
Green	Linear Output	Interfacing device; ECU/Gauge/datalogger/etc...	0[v] @ 0.68 [Lambda] Linear to 5[v] @ 1.36 [Lambda], equivalent to 10-20 [AFR] for gasoline fuel
Brown	Simulated Narrowband Output	Stock ECU if Lambda sensor replaces stock Narrowband sensor	Stops Stock ECU from throwing out a Check Engine Light when Narrowband sensor is not detected. Switch point @ 1 [Lambda], equivalent to 14.7 [AFR] for gasoline fuel
Blue or Orange	Sensor Temperature LED Output	Long lead on LED to Blue wire. Short lead on LED to ground.	Slow blink = sensor too cool Solid light = sensor temperature ok Fast Blink = sensor too hot

## Warranty

14Point7 warrants Spartan 2 to be free from defects for 2 years.

## Disclaimer

14Point7 is liable for damages only up to the purchase price of its products. 14Point7 products should not be used on public roads.