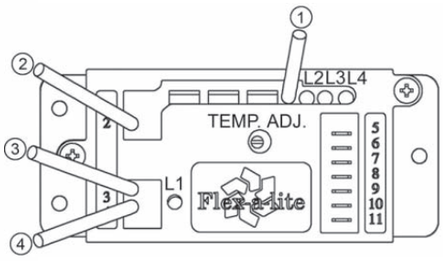
# Installation Instructions
## #31163 Variable Speed Control with Screw-in Temperature Sensor

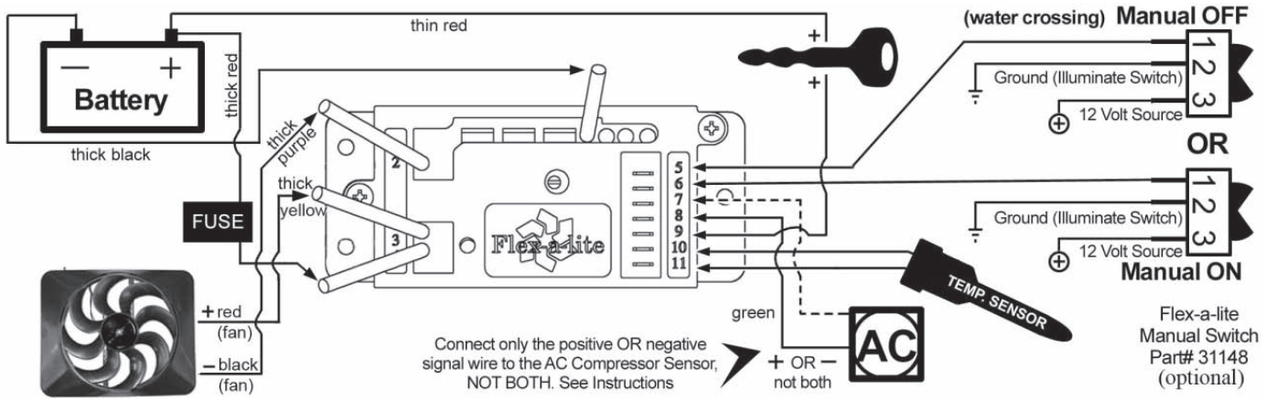
**FOLLOW THESE INSTRUCTIONS CAREFULLY TO AVOID DAMAGING THE CONTROL UNIT, FAN MOTORS, AND YOUR VEHICLE! WHEN CRIMPING WIRES, *ALWAYS* USE A QUALITY CRIMPING TOOL (DO NOT USE PLIERS).**

### WIRING CONNECTIONS

**#1 Battery Negative* (BLACK)**
**#2 Negative to Fan* (PURPLE)**
**#3 Positive to Fan* (YELLOW)**
**#4 Battery Positive* (RED)**
**#5 Negative Override Signal OFF**
**#6 Negative Override Signal ON**
**#7 A/C Compressor Negative Signal**
**#8 A/C Compressor Positive Signal**
**#9 Ignition Positive Signal***
**#10 Temp Sensor Wire***
**#11 Temp Sensor Wire***
**L1 Fan Output Indicator**
**L2 Override Condition Indicator**
**L3 A/C Signal Indicator**
**L4 Ignition Signal Indicator**

*** mandatory connections**

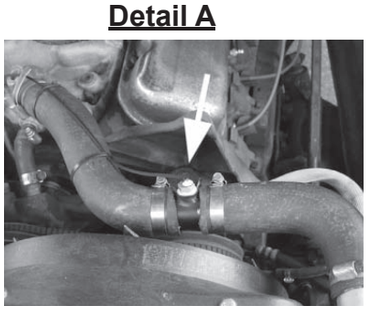


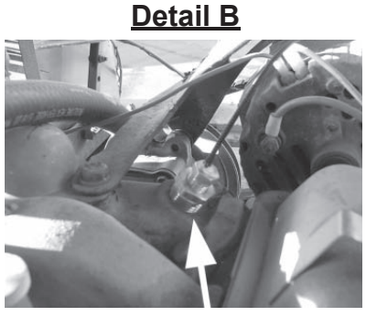

**Important:**
**Before beginning, be sure that the Variable Speed Control unit (VSC) is mounted close enough to the temperature sensor so that the wires will reach the control unit. The lead on the sensor is approximately 4 feet.**

1. Using threaded adapters if necessary (included), screw the sensor into the desired location using Teflon tape to seal the threads. Use Flex-a-lite part no. 32082 (1 ½" diameter) or 32084 (1 ¾" diameter) to mount sensor inline with radiator hose **(Preferred location - see Detail A).** Alternatively, the sensor can be mounted in the intake manifold **(see Detail B)** or cylinder head or block **(see Detail C)**. **DO NOT overtighten.**
2. Carefully strip the ends of the wires. Fold the wire back on itself to effectively double the thickness (**see Detail D**). Using a quality crimping tool, crimp the female connectors provided on the ends. Attach the wires to terminals 10 & 11 on the VSC (it doesn't matter which wire goes to which spade, but both wires must be connected). ***Make sure the temperature. sensor wires are at least 2-3" away from exhaust manifolds or other extreme heat sources.***
3. Start the vehicle and check for leaks. When the engine has reached desired operating temperature, adjust the VSC to turn the fan(s) on ***(see page 2)***.

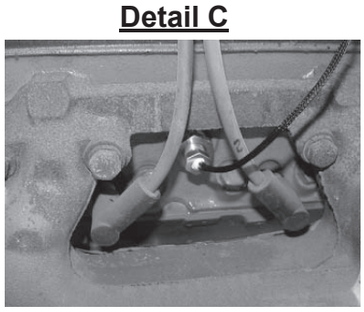
**Detail A**

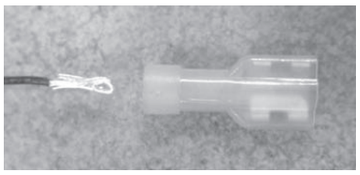


**Detail B**



**Detail C**





**Detail D**

# Initial Start-up and Adjustment Procedure

1. Turn ignition on. After 6 seconds, LED #L4 should light up. If not, check to make sure that there is 12 Volts at terminal #9 on VSC. The delay is to allow starter to start the vehicle without the fans drawing any power.

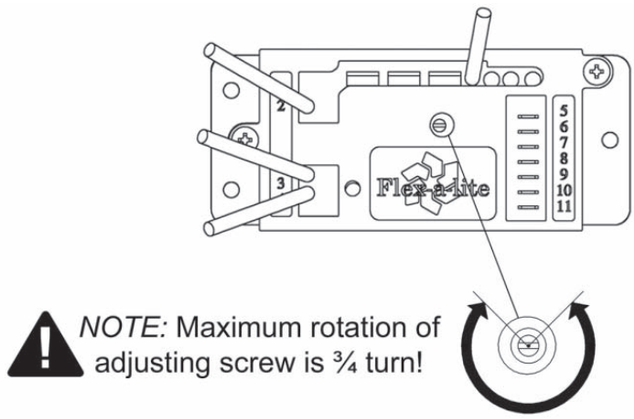
2. With your engine running, engage the A/C. The fans should come on and cycle with the A/C clutch. LED's #L1, L3 and L4 should be lit when fans are running. If they do not turn on, verify that the A/C clutch is engaged and make sure you have a positive signal when the clutch is engaged at terminal #8 (OR negative signal at terminal on #7 if A/C compressor is triggered by a negative signal) on the VSC. Shut off A/C and let engine continue to idle, or drive the vehicle a short distance to bring the engine to operating temperature ***(monitor the vehicle's temperature gauge)***.

3. Verify that the operating temperature has been reached by feeling the upper radiator hose. Hot water should be flowing through hose into the radiator. If the fans have not cycled on yet, slowly adjust the screw on the VSC until the fans cycle on. Turning the screw counterclockwise will keep the engine at a lower temperature, and turning in the opposite direction will keep the engine at a higher temperature. ***NOTE: THE TOTAL MOVEMENT OF THE ADJUSTMENT SCREW IS ABOUT ¾ OF A TURN. TURNING THE SCREW BEYOND THE LIMITS WILL DAMAGE THE UNIT!***

4. Once desired temperature is set, let the engine continue to idle and make sure the fans will cycle to maintain desired temperature. When fans are running, LED's #L1 and L4 should be lit. ***VERIFY THE DIRECTION OF BLADE ROTATION. IF THE FAN IS MOUNTED TO THE ENGINE SIDE OF THE RADIATOR, THE FAN SHOULD BE PULLING AIR THROUGH THE RADIATOR.***

**The Variable Speed Control has new features!**

**At the set temperature, the fans will come on at 60%; this reduces the load on your charging system. If the temperature rises, the fan speed will increase. If your set temperature is 195°F, then between 195° and 205° the fan speed will increase from 60% to 100%. So after a 10-degree rise from the set point, the fans will be running at 100%.**




Turning screw counterclockwise = cooler temp.
Turning screw clockwise = warmer temp.