

OWNERS MANUAL

Model ETM65 Electronic Throttle Module for 2006 & 2007 Chevy/GMC 6.6 L *Duramax* Diesel Engines with Automatic Transmissions



A. Introduction

The InPower Model ETM65 electronic throttle module is designed for installation in 2006/07 Chevy/GMC 6.6 L Duramax Diesel with Automatic Transmission.

Three fast idle preset speeds are available that are user adjustable from 650 to 1,500 rpm.

The ETM65 electronic throttle installation requires customer supplied control wiring to select the required mode of operation. For example, a remote toggle switch or a relay contact from a compressor or aerial lift circuit could be wired to the RPM1 terminal on the ETM65 controller to activate the RPM1 fast idle mode. The RPM1 mode is then adjusted to the desired fast idle engine speed rpm. Likewise, the RPM2 and RPM3 mode inputs could be wired if you need additional fast idle engine speed functions.

The customer wiring connects to the ETM65 module via 0.25 inch Faston terminals. The ETM65 system is supplied with a three foot data cable. This cable contains a 16-pin connector at one end and 0.25 inch Faston terminals at the other end. The Faston terminals will connect at the ETM65 module and the 16-pin connector plug will attach to the vehicle's OBDII (On Board Diagnostic) data link connector (DLC). The DLC is usually located at the lower part of the dash on the driver's side.

B. Operation

When the vehicle is parked and **Chassis Ready Conditions** are satisfied, the engine speed may be controlled by one of the three available preset speed modes. The preset speed is adjusted by three calibration potentiometers on the top of the ETM65 module.

Chassis Ready Conditions:

1. Parking brake is set.
2. Gear shift in "Park"
3. Foot is off the service brake
4. Foot is off the accelerator pedal
5. Vehicle is stationary (no speed)
6. Engine is started and idling below 1000 RPM

Modes Of Operation:

1. Three Preset RPM High Idle Modes:

Function:	Increase idle to a preset rpm value
Terminals:	RPM1, RPM2, RPM3
Activation:	Apply +12 V to terminal
Range of Calibration:	650 to 1500 rpm
Type of Adjustment:	Internal potentiometers

2. Mode Priorities:

A mode priority selection scheme is provided that will eliminate conflicts if more than one mode is selected at a time.

In the case of one or more modes being selected, the following priorities will be established:

RPM1	Highest - Will override all other modes
RPM2	Second - Will override lower modes
RPM3	Third - Will override lower modes

B. Operation (Cont'd)

Status Indicators

A 10 segment LED provides status and problem detection information. Refer to the following table for coding of these functions. **NOTE - These LED indicators will only be powered when a Mode (RPM1, RPM2, RPM3) is selected.**

<u>LED</u>	<u>Status</u>	<u>Indication</u>
BUSS	On Solid	Module ON and functioning
BUSS	Flashing	Module ON, but a problem was detected with Data Buss
GEAR	On Solid	Transmission in PARK position
GEAR	Flashing	Transmission not in PARK position
PK BRK	On Solid	Park Brake set
PK BRK	Flashing	Park Brake not set
SR BRK	On Solid	Service Brake off
SR BRK	Flashing	Service Brake applied
VSPEED	On Solid	Vehicle is stationary
VSPEED	Flashing	Vehicle is moving
RPM1	On Solid	RPM1 mode selected, engine at fast idle
RPM1	Flashing	RPM1 mode selected, engine not at fast idle (Chassis Ready Conditions not satisfied*)
RPM2	On Solid	RPM2 mode selected, engine at fast idle
RPM2	Flashing	RPM2 mode selected, engine not at fast idle (Chassis Ready Conditions not satisfied*)
RPM3	On Solid	RPM3 mode selected, engine at fast idle
RPM3	Flashing	RPM3 mode selected, engine not at fast idle (Chassis Ready Conditions not satisfied*)
APDL	On Solid	Accelerator pedal at rest position
APDL	Flashing	Accelerator pedal actuated (not at rest position)

* See *Chassis Ready Conditions* on page 1 for required conditions to allow increased idle speed.

C. Installation

1. Getting Started

The recommended location for the ETM65 system is under the dash due to the proximity of the wiring connections and cable length. **The unit should not be located in the engine compartment, or any location that is not protected.** You will need a crimping tool for the 0.25 inch Faston (blade) terminals, and a wire stripping tool. Be sure to follow the crimping tool instructions for the proper wire size and terminals.

2. Mount the ETM65 Module

Mount the ETM65 module under the dash using the two mounting holes. Ensure that you have sufficient distance to install the 36 inch long DLC cable. **DO NOT EXTEND THE LENGTH OF THIS CABLE.**

3. Install the DLC Cable

Connect the two Faston terminals on the DLC cable to the ETM65 module terminals (Green wire to CANL terminal and Yellow wire to CANH terminal). Route the cable to the OBDII (On Board Diagnostic) Data Link Connector and plug it in. The OBDII connector will be located on the lower part of the dash on the driver's side. Using a cable tie, secure the plug to the OBDII connector so that it will not vibrate out. We recommend that you route the cable of the plug back across the bottom of the connector and loop the cable tie around the plug, socket and cable, thereby keeping the cable out of the way. Also ensure that the entire cable is routed and secured to keep it out of the way.

4. Wire the Parking Brake Switch Input

The ETM65 system requires an input to detect that the parking brake is set before it can go to fast idle. Install a wire from the PK BRK terminal on the ETM65 module to the chassis parking brake switch. Connect this wire on the side of the switch that is not grounded. Verify that the wiring is correct by measuring the voltage at the PK BRK terminal when the parking brake is operated. The terminal should be at ground when the brake is depressed and at + voltage when not depressed.

5. PTO Enable Wiring

For proper operation of the ETM65 electronic throttle it is necessary to activate the GM Electronic Control Module (ECM) *PTO Enable Switch Input*. This input activates certain ECM functions that enable the ETM65 to operate effectively. If this input is not activated when using the ETM65, unstable speed control over 1400 rpm and no fast idle operation in cold weather (15° F) will result.

Prior to wiring the ETM65 it is necessary to determine if the *PTO Enable Switch Input* is being activated from a control device such as a PTO Enable Switch or High Idle Switch. If so, you will need to install a wire from this switch to the RPM1 input terminal on the ETM65. This will activate the ETM65's RPM1 preset speed when the ECM's *PTO Enable Switch Input* is activated.

C. Installation

5. PTO Enable Wiring (Continued)

For applications that do not contain a PTO Enable Switch or High Idle Switch it is necessary to activate the ECM's *PTO Enable Switch Input* from the ETM65's PTO output terminal. For these applications you will need to install a remote device (e.g., toggle switch) to activate the ETM65's RPM1 input, and install a wire between the ETM65's PTO output terminal and the ECM's *PTO Enable Switch Input*. As the location of the ECM's *PTO Enable Switch Input* will vary with chassis type refer to Section H wiring diagrams for further details.

6. Wire the Mode Selection Controls

The following wiring is required by the customer to select the operating modes required to run the ETM65 system. You will need to supply contact closures such as a toggle switch or relay contact to supply +12 volts at the ETM65 terminals for the required preset rpm modes (RPM1, RPM2 or RPM3). **It is important that the +12 volts used to feed the mode select terminals is from the Ignition Switch power source, and it should be properly fused. That is, it must be +12 volts when the Ignition Switch is On, and zero volts when the Ignition Switch is Off.**

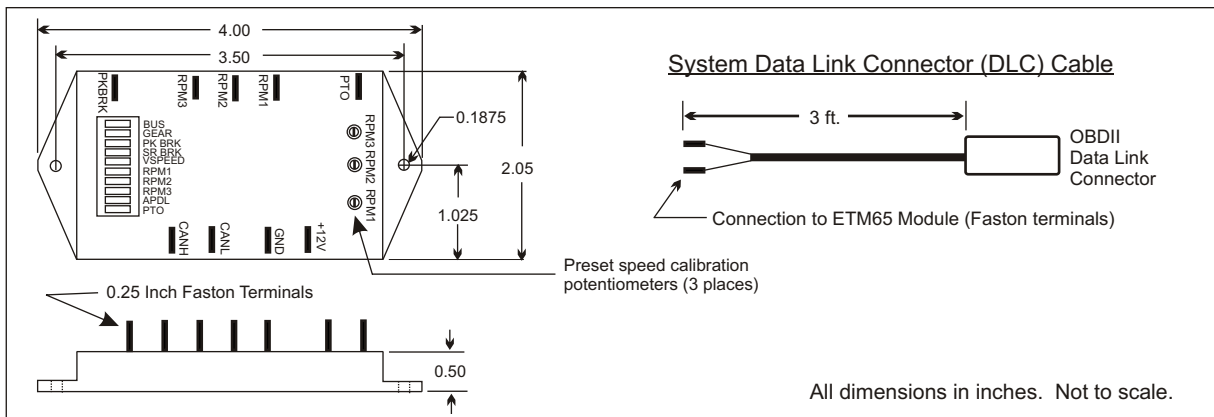
7. Wire the Power and Ground

Install a wire from a good ground (battery negative) to the GND terminal on the ETM65 module. Install a Fast Idle Switch (not supplied with ETM65 system) and wire one side of the switch to a source of +12 volts that is fused and only powered when the ignition switch is in the On position. Wire the other side of the switch to the +12V terminal on the ETM65 module and to the contacts that select the RPM1, RPM2 & RPM3 modes (see diagram on page 4).

D. Setup and Calibration

The only calibration required is the speed rpm setting for the three preset rpm modes (RPM1, RPM2 & RPM3). To perform the calibration activate the desired preset mode, then adjust the respective speed calibration potentiometer (RPM1, RPM2 or RPM3) for the required speed. **NOTE - The calibration potentiometers are located on the top of the module in recessed holes. Take care to use a proper size screwdriver (3/64" / 1.5mm) or damage to the potentiometers may result.**

E. Mechanical Drawing



F. Specifications

Electrical

Input Voltage (+12V Terminal): 8 to 16 volts
Input Current (+12V Terminal): 30 mA

Mechanical

Weight: 0.17 lbs
Connections: Faston 0.25 inch terminals
Case Material: Cyolac thermoplastic (UL 94VO)
Encapsulation Material: Epoxy potting compound, resistant to most fuels, oils, acids, and cleaning agents.

G. Customer Support

Technical Support

For product support, contact InPower at 740-548-0965 or 866-548-0965. Product bulletins and owner's manuals are available on our web site: www.InPowerDirect.com.

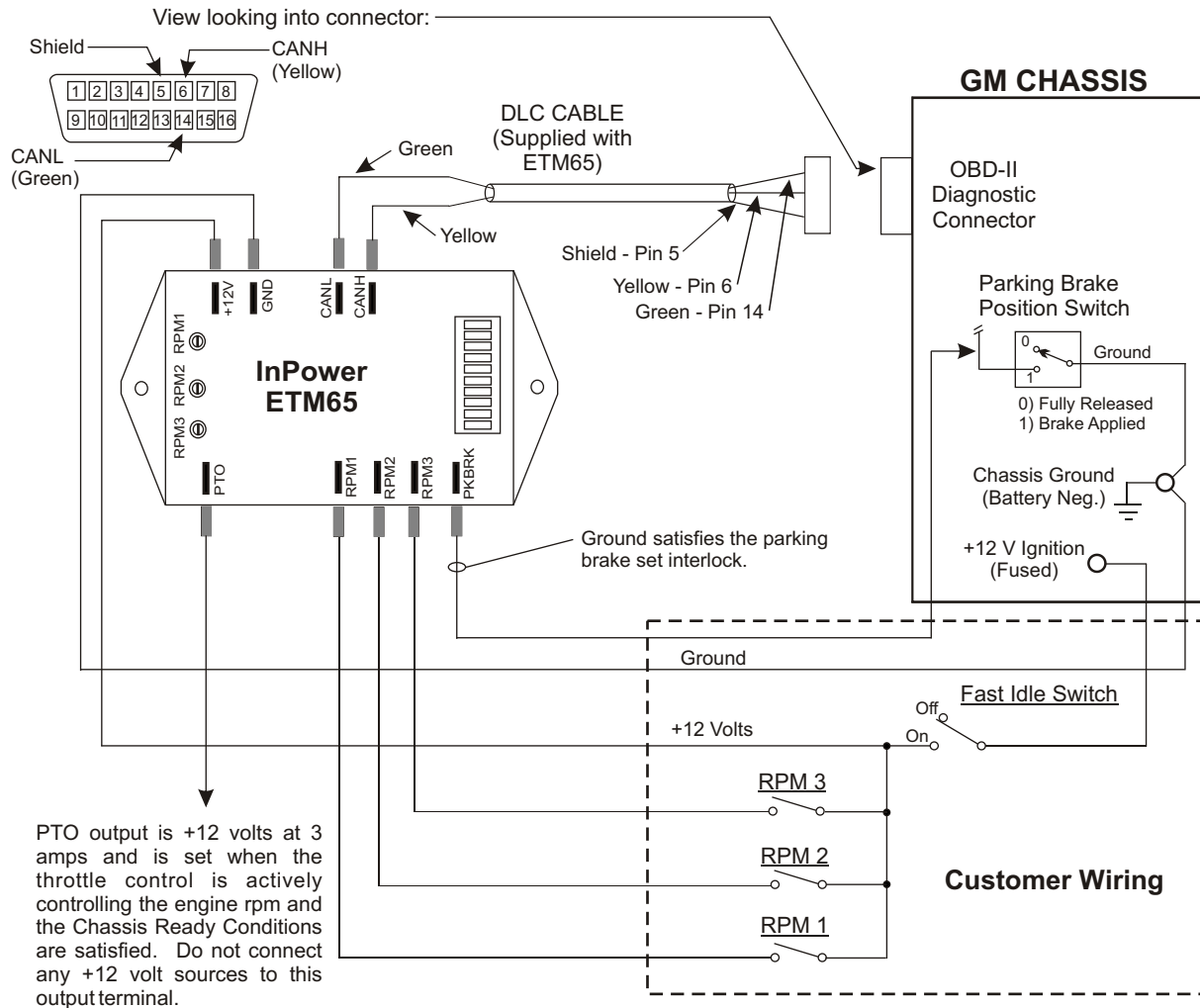
Warranty

InPOWER LLC warrants its products to be free from defects in material and workmanship under normal use, care and maintenance for a period of two (2) years from the date of shipment. Please see www.inpowerdirect.com/warranty.htm for specifics or call 866-548-0965 for a copy of our warranty policy.

H. Wiring Diagrams

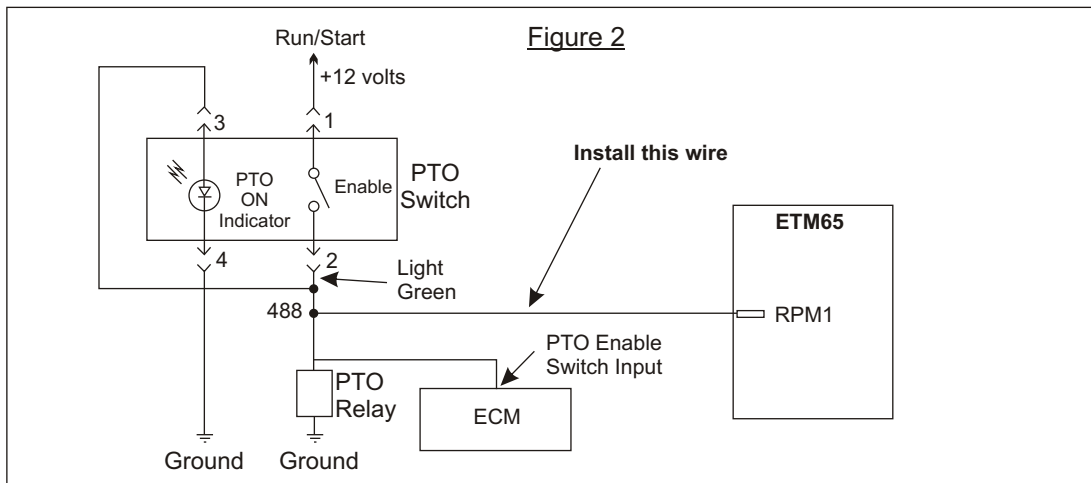
H.1 General Wiring

Figure 1



H.2 Wiring for C4500 and C5500 Chassis

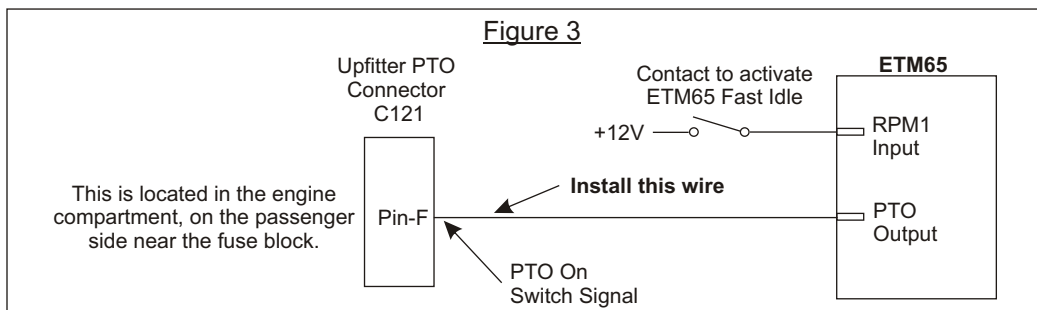
A. Follow this wiring diagram if a PTO Switch or High Idle Switch is installed in the vehicle.



H. Wiring Diagram

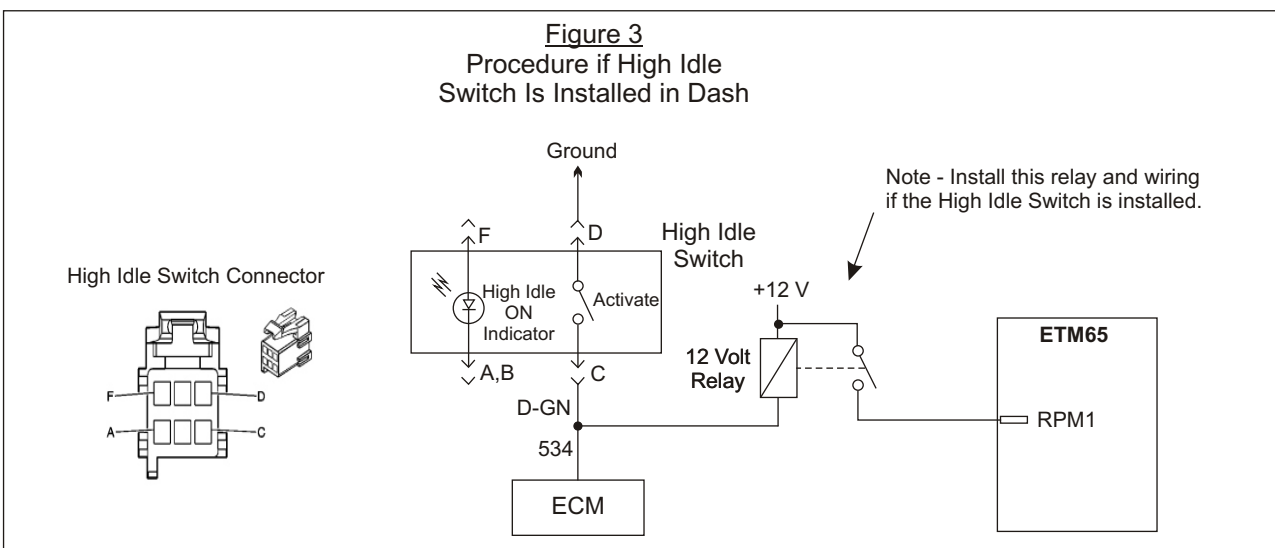
H.2 Wiring for C4500 and C5500 Chassis

B. Follow this wiring diagram if a PTO Switch or High Idle Switch is not installed in the vehicle.

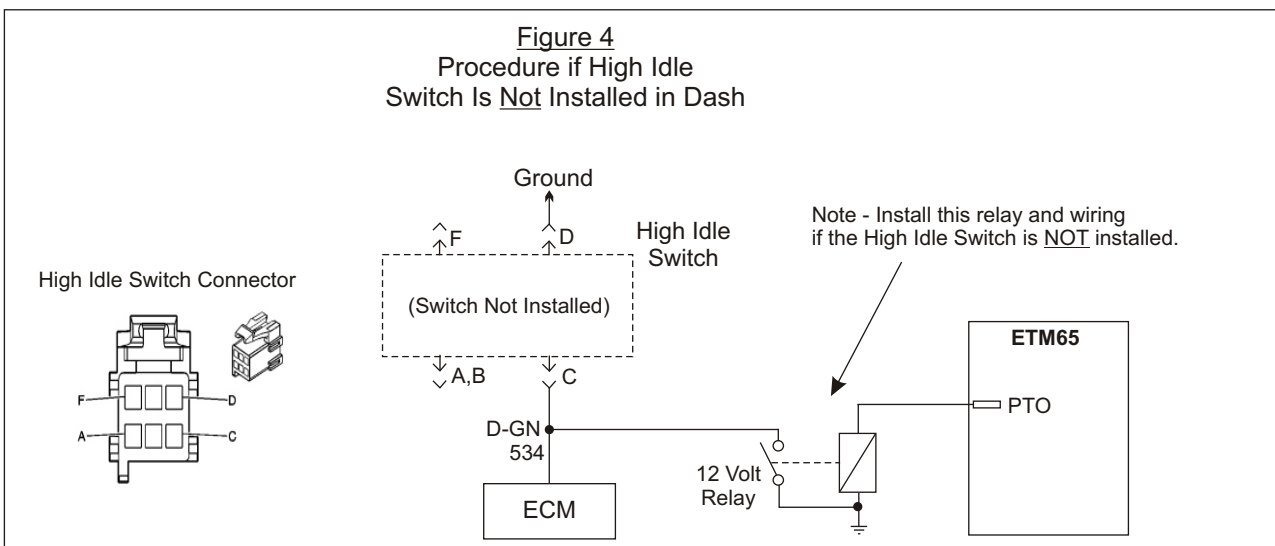


H.3 Wiring for 2006/2007 G/H Vans

A. Follow this wiring diagram if a High Idle Switch is installed in the vehicle.



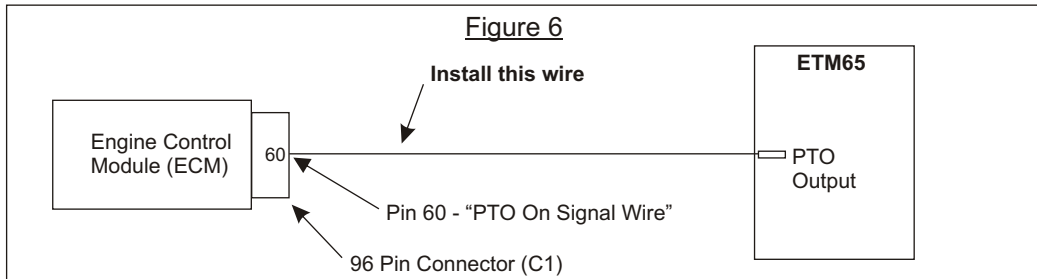
B. Follow this wiring diagram if a High Idle Switch is not installed in the vehicle.



H. Wiring Diagram

H.3 Wiring for C2500 and C3500 Chassis

This procedure requires installing a wire from the ETM65 PTO terminal to pin-60 on the GM Engine Control Module (ECM). Pin-60 is "PTO On Switch Signal" and is identified in the GM documents as wire #488 (LT-GRN). Most, if not all vehicle builds do not have this wire installed. Therefore it is necessary to install a wire with a crimped terminal that inserts into pin-60 of the ECM connector, with the other end connected to the ETM65 PTO output terminal. For a more detailed description of this wiring procedure see InPower Technical Bulletin TB-49.



If there is a wire installed you must determine if it is connected to a switch that powers this wire with +12 volts, such as a PTO Switch or High Idle Switch. In this case you must splice into the wire and connect it to the ETM65's RPM1 input. Note - 2500 and 3500 chassis do not have a PTO option. Only 3600 chassis have a PTO option.

Tools and Parts Required

Crimper: Bosch p/n 1 928 498 213

Terminal: Bosch p/n 1 928 498 135

GM p/n 12595687

Delphi p/n 15438364

Note - Located in the GM Terminal Repair Kit J-38125, Tray 19.

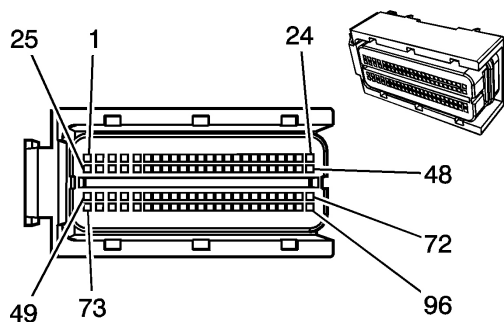
1/4 inch Female Blade Terminal

Wire rated for under-hood temperatures

Convoluted tubing or braided mesh wire covering

Small flat bladed tool

ECM 96-Pin Connector C1 (View looking into connector plug on harness)



11. Crimp terminal 1 928 498 135 to wire rated for under-hood temperatures using crimper 1 928 498 213 and insert terminal into connector C1 cavity #60.