

DeLorean Idle ECU

This is a microprocessor controlled idle system for the DeLorean engine. Program switches can be user selected to select idle RPM and delay for user preferred operation.

New enhancements turn the idle motor power off when the engine is not running or RPM is above 1500. This keeps the idle motor cool and saves some electrical load.

There is more range of control in this new ECU, it can run closed loop down to the idle motor fully closed.

You can also remove the idle switch (must also remove the diode in the harness) so there is less force required to close your throttle plates. For those that like a light throttle pressure.

Above 1500 RPM the idle motor is held fully closed. This should result in a minor MPG improvement due to more engine braking with your foot off the accelerator.

Another enhancement is an air conditioning idle bump. If you wire up a signal wire to indicate the AC is on, then the selected idle will be bumped up 100 RPM.

Switch settings

Set idle RPM is only read from the switches on power up. Hence you can not change the set RPM when the engine is running.

The “TEST” mode will slowly swing the idle motor from full closed to full open and keep repeating. This allows the user to visually check the motor for sticky operation.

RPM	S1	S2	S3	S4
775	OFF	OFF	OFF	OFF
800	ON	OFF	OFF	OFF
825	OFF	ON	OFF	OFF
850	ON	ON	OFF	OFF
875	OFF	OFF	ON	OFF
900	ON	OFF	ON	OFF
925	OFF	ON	ON	OFF
950	ON	ON	ON	OFF
975	OFF	OFF	OFF	ON
1000	ON	OFF	OFF	ON
TEST	ON	ON	ON	ON

DELAY is only read from the switches on power up. Hence you can not change the DELAY when the engine is running.

The Delay can be configured for longer delays to smooth out an idle that may be hunting. However the longer delays will slow down how fast the idle will compensate for changing loads.

DELAY	S5	S6
8	OFF	OFF
10	ON	OFF
14	OFF	ON
16	ON	ON

Switch 8 will turn off the closed loop idle control when switched on. This could be useful for troubleshooting “hunting” problems. This switch can be changed without turning the engine off.

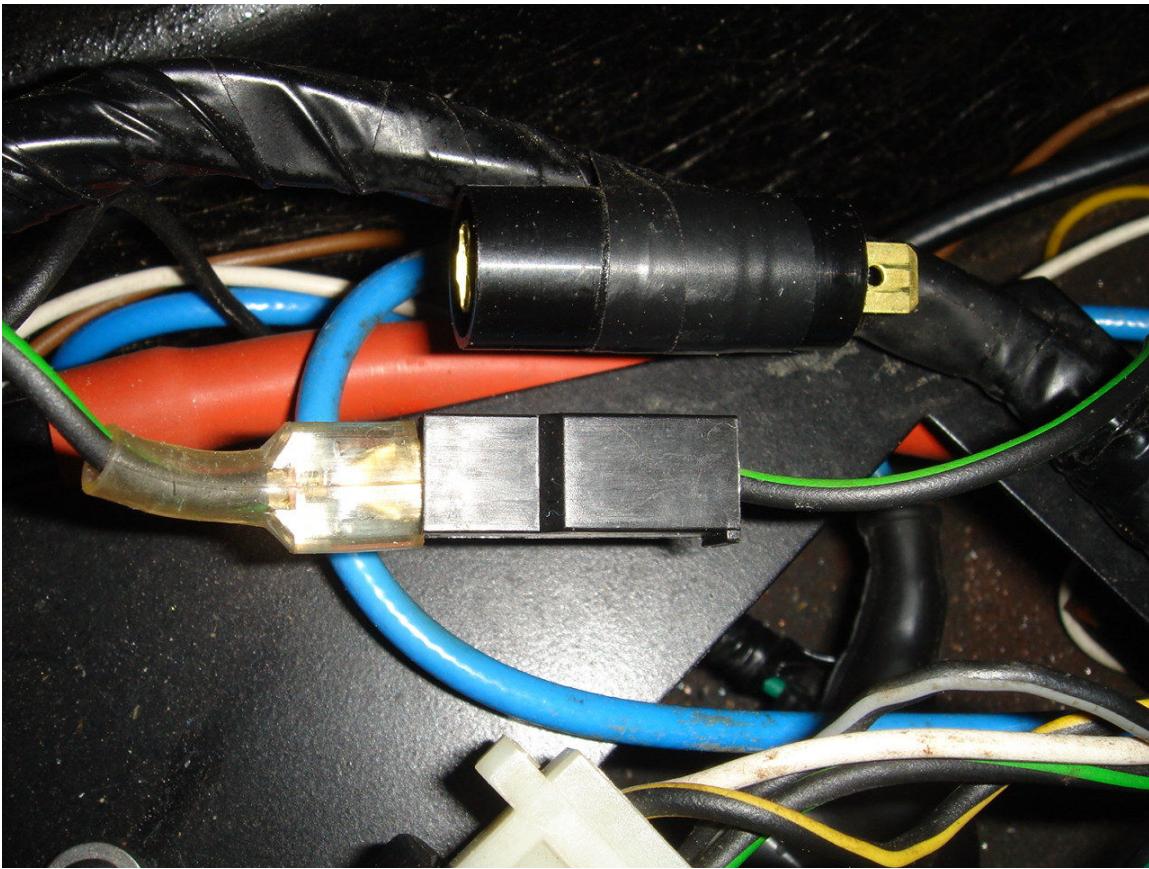
Switch 7 will fully close the idle motor. This could be useful setting curb idle. This switch can be changed without turning the engine off.

Opening unit

The unit has been modified by removing 2 of the 6 latch clips on the case. The two at the sides have been removed. You lift the top center edge of the case and press down on the connectors.

Removing the idle switch

You don't really need to remove the idle switch. You can just back out the idle switch screw so it does not touch the idle switch. Remember you have to remove (disconnect and jumper the two wires) the diode in the harness near the idle ECU when you do this.



Diode removed

RPM output signal

The filtered RPM signal is available for external use on connector pin #6. You cannot load this signal to much or it will prevent the idle ECU from working. The signal is TTL level and positive logic (rises with the coil negative pin rising).

Setting the curb idle screw

The best way I've found to set the curb idle screw is to adjust it with your hot engine idling in neutral and all electrical and AC off. This condition is when the engine requires the least amount of fuel and your idle motor should almost be closed. Turn the screw clockwise until your idle RPM is not holding the set idle speed. If you look at the LED on the ECU it should be on, indicating the idle motor is fully closed. Now back the screw out (CCW) a little to bring the idle speed back into the set RPM. The LED should now be off. This setting will give you the fastest reaction time for the idle ECU. Remember if you change your preset RPM value you may have to readjust the curb idle for the new setting.

Air Conditioning input signal

If used, this signal is input into connector pin #7. Apply +12 volts to this pin when you want the RPM to bump up 100 RPM higher than your normal RPM. The pin can be floated or grounded to turn off the “bump” RPM function.

Pin key removal

If you have an 11 pin Volvo unit then you will need to remove the two white connector keys in the plug. I found the only way to remove them is carefully using an exacto knife to shave the little clips on the white keys off.

LED

There is a green LED on the board. Currently that LED will illuminate if your idle motor is holding at a full closed position. This can help you tracking down a problem if your RPM does not hold with a hot engine. If your curb idle is set to high you would need to turn the curb idle screw CCW to fix the problem. Vacuum leaks can also cause the idle motor to run to close to fully closed.