

OWNERS MANUAL

Data Bus Clutch Pump Throttle for GM 2024 2500/3500* Vehicles DBT-GMB-CP

For other years of Vehicles see:

http://www.inpowerelectronics.com/throttle_selector



1. Product Description

InPower's DBT-GMB-CP Data Bus Clutch Pump throttle control provides Engine RPM Control to prevent Overspeed of a Clutch Pump. The control module connects to the vehicle's OBD-II diagnostic connector and provides blunt cut wires for the adjustment of RPM settings, and control of the Clutch Pump.

Note: Modules are programmed to prevent high idle unless the Chassis Ready Conditions are satisfied. (See Section 4)

LED diagnostic indicators are provided to aid system troubleshooting. These indicators are located on the top of the module. (See Sections 5 and 6)

*To support our customers in selecting a throttle that is compatible with their specific chassis we provide a Throttle Selector Guide on our web site (www.InPowerLLC.com). Simply select the chassis and model year, and it will display the minimum software revision. The DBT-GMB-CP throttle is reprogrammable, so that software may be updated as necessary.

1.1 Presets

When a RPM setting is activated, the engine idle is raised to the RPM programmed into that setting. The default RPM setting for RPM1 is 1500. The default RPM setting for RPM2 is 1200. The default RPM setting for RPM3 is 900. All three of these may be adjusted by the user with a maximum RPM setting of 2000 RPM. (See Section 4.)

RPM Setting	RPM
RPM1	1500 RPM
RPM2	1200 RPM
RPM3	900 RPM

2. Vehicle Applications

InPower designs the Data Bus Throttle Clutch Pump software to support GM 2024 2500/3500 models*.

*To verify that your model is supported, please visit our Throttle Selector Guide on our web site (www.InPowerLLC.com). Enter the chassis and model year, and it will display the minimum software revision required for your chassis.

3. Installation Procedures

3.1 Safety Precautions



WARNING



This Clutch Pump Throttle control product has been designed and manufactured to meet the intended application requirements and specifications. Any modifications to the product or to the installation procedure can be dangerous and will void InPower's warranty.

- Read and understand the instructions in this manual and other manuals before starting the installation.
- Make sure that the vehicle battery power is disconnected during installation of the throttle module.
- Reconnect the battery when the system installation is complete.
- Wear appropriate safety equipment, such as protective eyeglasses, face shield and clothing when installing equipment.
- Be careful when working near a battery. Make sure that the area is well ventilated and that there are no flames near the battery. Never lay objects on the battery that can short the terminals together. If battery acid gets in your eyes, immediately seek first aid. If acid gets on your skin, immediately wash it off with soap and water.

3.2 Getting Started

3.2.1. The recommended location for the DBT-GMB-CP module is under the dash due to the proximity of the wiring connections and cable length. **Do not locate the unit in the engine compartment or any location that is not protected.** You will need a crimping tool and terminals to terminate wires to the blunt-cut wires provided for interface.

3.2.2. Mount the DBT-GMB-CP under the dash using two #6-32 screws. Ensure that you have sufficient distance to install the supplied data bus cable. **Do not extend the length of or otherwise alter this cable or the warranty will be void!**

3.2.3. Install the data bus cable. One end plugs into the 12-pin connector on the DBT-GMB-CP module. This 12 pin connector is wired to the OBD-II connector, and also provides blunt cut wires for selection of Engine RPM, adjustment of these RPM settings, and an output for enabling the Clutch Pump. Secure the cable with tie wraps and/or cable clamps.

3.2.4. Wire the customer-supplied speed mode inputs. These may be switches or wiring from circuits that supply +12 volts when the desired RPM is to be activated. See System Diagram for wiring the mode switches. Be sure that the switches are wired to +12 volts per the diagram.

3.2.5. If needed, wire the Clutch Pump Output for control of the Clutch Pump (Blue Wire). The Clutch Pump Output supplies +12 volts @ 3 amps when:

A) A RPM speed input is set (RPM1, RPM2, RPM3 selected),

B) All Chassis Ready Conditions are satisfied (Shown Below),

C) The elevated idle speed request has been sent to the engine controller and the Engine Controller has changed the RPM to the commanded RPM. **Make sure you do not overload this output. If more current is necessary, use an interface relay to supply the added current.**

Chassis Ready Conditions:

- No vehicle speed
- Parking brake set
- Shift selector in Park
- Accelerator not depressed
- Service brake not depressed
- Engine running and below 1,000 RPM
- No Diagnostic Trouble Code (DTC). Check Engine light must be off.

3.2.6. The installation is now complete. Start the engine and activate the RPM speed switches to verify proper operation, making certain that all Chassis Ready Conditions are met (shown above). If the elevated RPM default values need to be changed, see Section 4 for *Preset RPM Adjustment* instructions. If the system does not operate properly refer to Sections 5 and 6 for Troubleshooting and LED Diagnostic Indicators.

4. Operation

The DBT-GMB-CP features three RPM settings:

Note: None of the settings will activate if the **Chassis Ready Conditions** (*Shown in Section 3.2.5*) are not met.

Preset Modes - The engine speed increases to one of three pre-adjusted RPM speed values; RPM1, RPM2, or RPM3.

RPM1 - When activated, raises the engine idle speed to 1500 RPM.

RPM2 - When activated, raises the engine idle speed to 1200 RPM.

RPM3 - When activated, raises the engine idle speed to 900 RPM.

Preset RPM Adjustment: To change the Preset speed RPM value, activate the desired RPM mode (RPM1, RPM2, or RPM3). When the engine speed needs adjustment from the preset value, apply either **+12** volts or **Ground** to the **Speed Adjust Mode** blunt-cut cable wire. The RPM n engine speed can be adjusted in any of the RPM Presets up to a **maximum of 2000 RPM**

To change the setting of the currently selected RPM apply to the **Adjust** wire

+12V to Increase the Set Speed
Ground to Decrease Set Speed

The engine speed will change at a rate of 40 RPM per second. Remove the +12 volt or ground when the desired speed is obtained.

Once desired RPM is set, tape the gray wire to the wiring harness to prevent accidental speed changes if wire should make contact with a ground.

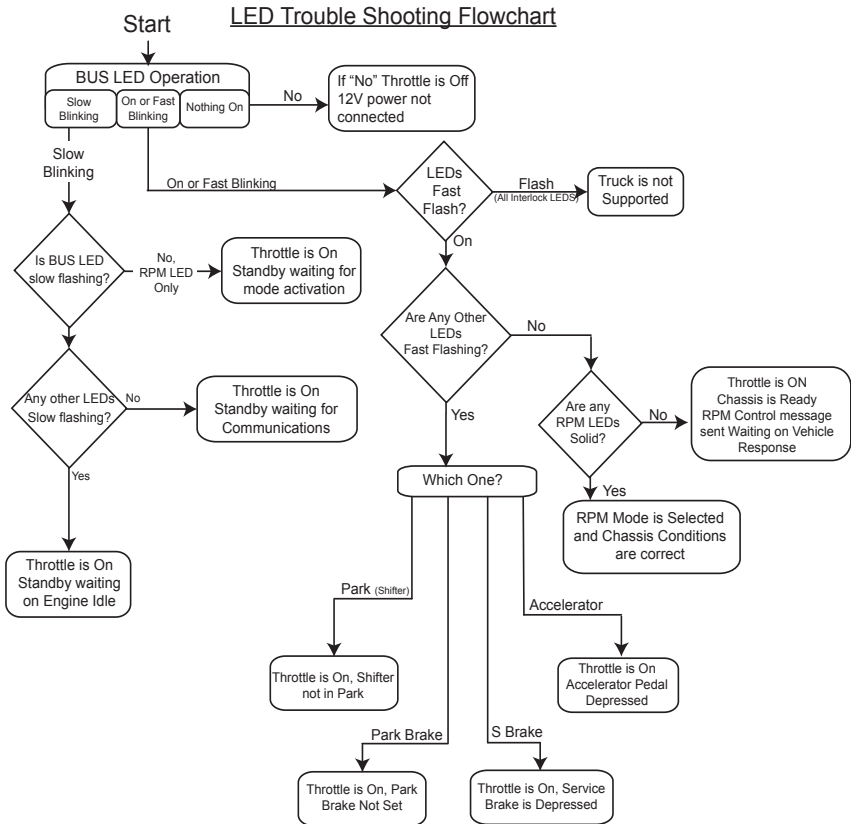
5. Troubleshooting

5.1. Check all wiring and make sure all connectors are plugged in firmly.

5.2. Check the LED diagnostic indicators. Refer to the LED Diagnostic Indicator table or the flow chart (Section 6) to determine where the fault is. The chart shows the various combinations of status indicator states and what they indicate about the throttle operation. Note that each LED can be Off, On Solid, Blinking at a slow rate or Flashing at a fast rate.

If you are referring to the table, find the row of the chart that matches and look under the 'Throttle Operation' column to determine the fault condition. If you are referring to the flowchart, start where indicated and follow the paths corresponding to your answers to the various questions to determine the fault condition. We have provided both methods to aid both those who prefer tables and those who prefer a more visual approach.

6. LED Diagnostic Indicators



LED states:
 Off - LED off On - LED on solid
 Blink - LED flashing slowly Flash - LED flashing quickly

BUS	RPM1	RPM2	RPM3	PARK	PARK BRAKE	SERV BRAKE	ACCEL	THROTTLE OPERATION	ENGINE RPM
OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	Off, 12 V power not connected	unknown
Blink	OFF	OFF	OFF	OFF	OFF	OFF	OFF	Standby, waiting for communications	unknown
ON	Flash	OFF	OFF	ON	ON	ON	ON	RPM1 On, Chassis Ready Condition OK, RPM control message sent, waiting on vehicle response	Idle
ON	Flash	OFF	OFF	Flash	ON	ON	ON	RPM1 On, shifter not in Park	Idle
ON	Flash	OFF	OFF	ON	Flash	ON	ON	RPM1 On, park brake not set	Idle
ON	Flash	OFF	OFF	ON	ON	Flash	ON	RPM1 On, service brake not set	Idle
ON	Flash	OFF	OFF	ON	ON	ON	Flash	RPM1 On, accelerator pressed	Idle
ON	ON	OFF	OFF	ON	ON	ON	ON	RPM1 On, All Interlocks OK	RPM1
ON	OFF	Flash	OFF	ON	ON	ON	ON	RPM2 On, Chassis Ready Conditions OK, RPM control message sent, waiting on vehicle response	Idle
ON	OFF	Flash	OFF	Flash	ON	ON	ON	RPM2 On, shifter not in Park	Idle
ON	OFF	Flash	OFF	ON	Flash	ON	ON	RPM2 On, park brake not set	Idle
ON	OFF	Flash	OFF	ON	ON	Flash	ON	RPM2 On, service brake not set	Idle
ON	OFF	Flash	OFF	ON	ON	ON	Flash	RPM2 On, accelerator pressed	Idle
ON	OFF	ON	OFF	ON	ON	ON	ON	RPM2 On, All Interlocks OK	RPM2
ON	OFF	Flash	OFF	ON	ON	ON	ON	RPM3 On, Chassis Ready Conditions OK, RPM control message sent, waiting on vehicle response	Idle
ON	OFF	OFF	Flash	Flash	ON	ON	ON	RPM3 On, shifter not in Park	Idle
ON	OFF	OFF	Flash	ON	Flash	ON	ON	RPM3 On, park brake not set	Idle
ON	OFF	OFF	Flash	ON	ON	Flash	ON	RPM3 On, service brake not set	Idle
ON	OFF	OFF	Flash	ON	ON	ON	Flash	RPM3 On, accelerator pressed	Idle
ON	OFF	OFF	ON	ON	ON	ON	ON	RPM3 On, All Interlocks OK	RPM3

7. System Specifications

Module Inputs

Power Input: (Red) +12 volts is sourced from Pin 7 on the OBD-II connector

RPM1 Input: (Green) +12 Volts to activate on DBT-GMB-CP

RPM2 Input: (Violet) +12 Volts to activate on DBT-GMB-CP

RPM3 Input: (White) +12 Volts to activate on DBT-GMB-CP

Speed Adjust Input: **+12 volts to increase speed.**
Ground to decrease speed.

The engine speed will change at a rate of around 40 RPM per second if the connection is continuous. A single brief connection will change the RPM by 8 RPM.

The maximum programmable RPM is factory limited to 2000RPM.

Module Outputs

Clutch Pump Active Output: (Blue) +12 volts @ 3 amps. Set to ON when Chassis Ready Conditions are met, the mode input is activated, and the speed request was sent to the changed by the engine controller.

Engine RPM Ramp Rates:
GM: 350 RPM per second

Mechanical

Dimensions: 3.165 x 1.94 x 0.798 inches

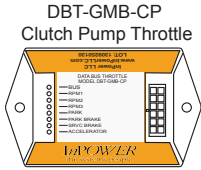
Weight: 0.046 lb

Operating Temp: -40° C to +85° C

Factory Settings:

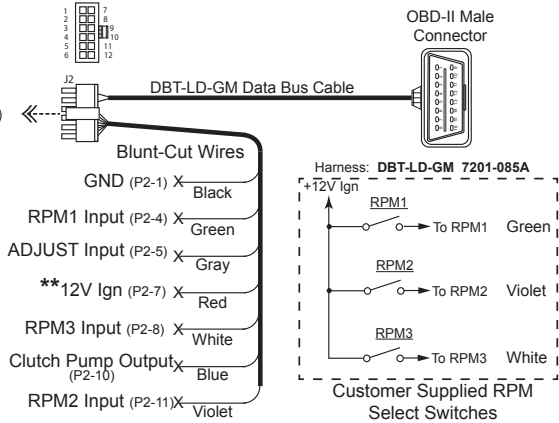
RPM1	1500 RPM
RPM2	1200 RPM
RPM3	900 RPM

8. System Diagram

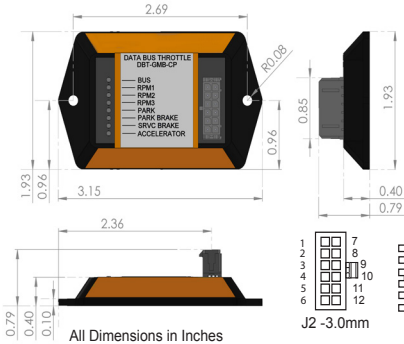


****Caution:** If "12V Ign" is removed while a selected RPM is in process (before deactivating or selecting a lower RPM) the Engine will continue to stay at the preset High Idle for at least 5 seconds before going back to standard Idle.

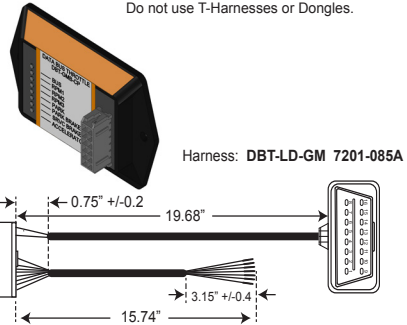
It is highly recommended that "P2-7 12V Ign" is switched off with the vehicle Ignition and not a battery sourced switch...



9. Mechanical Drawing



Caution: The Design of the New GM Global B OBDII Bus precludes the use of T-Harnesses or Dongles. Do not use T-Harnesses or Dongles.



Contact Us

InPower LLC
8311 Green Meadows Drive
Lewis Center, Ohio 43035
740-548-0965
www.InPowerLLC.com