

C-AFIS733VSX-BP Fast Idle System 2022 Dodge ProMaster

System Operation

The C-AFIS733VSX-BP is a Fast Idle system that elevates engine idle RPM based on a number of “triggers.” The vehicle must be in Park for Fast Idle to engage. There are three different engine RPM settings which can be selected by grounding different control inputs. The three different RPM values can be independently set during installation.

IMPORTANT—READ BEFORE INSTALLATION

It is the installer’s responsibility to route and secure all wiring harnesses where they cannot be damaged by sharp objects, mechanical moving parts and high heat sources. Failure to do so could result in damage to the system or vehicle and create possible safety concerns for the operator and passengers. Avoid placing the module where it could encounter strong magnetic fields from high current cabling connected to motors, solenoids, etc. Avoid radio frequency energy from antennas or inverters next to the module. Avoid high voltage spikes in vehicle wiring by always using diode clamped relays when installing upfitter circuits.

Installation Instructions

Disconnect vehicle battery before proceeding with installation.



WARNING
Disconnect the battery to
prevent setting a check engine
light.

AFIS733VSX Module

Remove the lower dash panel below the steering column area and find a suitable location to mount the module so that the Diagnostic LED’s can be viewed with the lower dash panel removed. Secure using 2-sided foam tape, screws or wire ties. Locate the module in an area away from any high heat sources. Do not actually mount the module until all wire harnesses are routed and secure (last step of the installation is to mount the module).

Data Link Harness — 6 pin connector

The Promaster has an OEM Gateway module located behind the glovebox. Follow the steps below to access it:

1. Open the glovebox door.
2. Locate the 2 release tabs on the inside of the glovebox (one on the left and one on the right) and drop the door into the full down position.
3. Locate the two fasteners securing the glovebox assembly to the vehicle and remove them.
4. Locate the 4 fasteners on the outside of the glovebox assembly and remove them.
5. Remove the glove box assembly.
6. The Gateway module is located behind the glove box assembly as shown in the picture.
7. Remove the 12-pin connector from the Gateway module and plug in the 12-pin connector from the Intermotive C-AFIS733VSX-BP Data Link harness. Plug the OEM 12-pin connector into the mating connectors on the C-AFIS733VSX-BP Data-Link harness.
8. Plug the free end of the Data Link harness into the mating 6-pin connector on the C-AFIS733VSX-BP.



AFIS Harness (8-Pin Connector) Fast Idle Engage Inputs

Engage Input 1

Attach the AFIS Harness connector Pin #8 Green wire to any equipment that provides a ground signal when the fast idle needs to be engaged. (PTO, pump, etc....)

Note: The "sense" of the Green wire can be programmed (see below). This alternatively allows equipment which provides a 12V "active" signal to be connected to this input.

Engage Input 2

Attach the AFIS Harness connector Pin #7 White wire to any equipment that provides a ground signal when the fast idle needs to be engaged. (PTO, pump, etc....)

Engage Input 3

Attach the AFIS Harness connector Pin #5 Yellow wire to any equipment that provides a ground signal when the fast idle needs to be engaged. (PTO, pump, etc....)

If multiple engage inputs are active, the lower number has priority. Auto triggers will have the lowest priority and will only trigger if none of the inputs are active.

Engage Input 1—Fast Idle Pin-8 Trigger, Active: Ground or 12V signal Enable/Disable

The module is configured from the factory for an active ground fast idle trigger. To change this to an active 12V trigger, the following sequence must be performed:

Turn the key on, ground the Pin #4 Grey wire (in the harness which connects to the 8 pin Molex connector), apply the Park Brake, place the transmission in neutral and press the Service Brake four times within 5 seconds.

Upon successful reprogramming, the LEDs will flash as a confirmation. Cycle the key for the change to take affect. Repeat to reverse back to a ground trigger.

VBAT Low Fast Idle Trigger Disable, Black wire loop

The system is configured from the factory for Fast Idle to be triggered when the battery voltage (VBAT) drops below 12.5V. If the VBAT Low Fast Idle Trigger is not desired, it can be disabled by cutting the Black wire loop on the 8-Pin connector between Pin #1 and Pin #3.



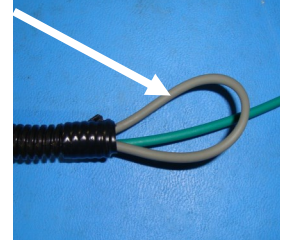
Configurable Idle Speed (Gray wire)

The C-AFIS733VSX-BP allows the user to change the fast idle RPM for each fast idle input during installation. The default speeds are as follows:

- Input 1—1500 RPM
- Input 2—1750 RPM
- Input 3—950 RPM

Any speed between 900 RPM and 2000 RPM can be selected in 50 RPM increments when reconfiguring. (Note: some engines may not Fast Idle above 1500RPM).

1. To change the idle speed, locate the Gray wire in the harness which connects to the 8 pin Molex connector.
2. Pull this wire out of the loom to expose the bare copper end.
3. Place the vehicle in Fast Idle by grounding the selected Engage Input wire. Only the active idle input will be adjusted.
4. With the engine in Fast Idle, momentarily grounding the Gray wire (RPM Configuration input) increases the idle speed by 50 RPM. When the idle speed reaches the maximum allowable speed for the particular engine, it will roll back around to 900 RPM. Wherever the user stops, this RPM becomes the new default Fast Idle speed, even through key cycles.
5. Repeat this operation for each of the three Engage Input wires as desired.
6. After the vehicle is set to the desired fast idle speeds, insert the end of the Gray wire into the harness tubing and use tape to secure.



All Auto Triggers (VBAT and PB) share the same idle speed configuration as Input 1. Input 1 idle speed can be configured when in one of these triggers also.

Note: When configuring the idle speed, the engine RPM will momentarily drop before ramping back up to the new level. This is normal behavior

Note: Some vehicle PCM's will limit Fast Idle to less than 2000 RPM. Continue to momentarily ground the Gray wire and the RPM will eventually roll back around to 900 RPM. Do not leave the RPM's set in a range that the engine RPM is not responding to as this may cause Fast Idle issues.

Note: After 4 minutes of continuous idling, the RPM will drop for a brief moment and return to fast idle.

Park Brake Fast Idle Trigger Enable/Disable

The module is configured from the factory for Fast Idle **not** to be triggered when the Park Brake is applied. If the Park Brake Fast Idle trigger is desired, it may be enabled (or disabled) by the following procedure:

With key on, place the transmission in neutral, apply the Park Brake and press the Service Brake three times within 5 seconds.

Upon successful reprogramming, the on-board LEDs will briefly flash as a confirmation. Cycle the key for the change to take affect.

Post Installation System Operation Test

Perform the following tests before actually mounting the module, to allow easy viewing of the diagnostic LED's, if needed.

1. Place transmission in Park and start the engine. **Note:** Vehicle may enter Fast Idle if VBAT is low. Either wait to see if the battery charges and Fast Idle stops, or place a charger on the vehicle to disable the VBAT low trigger to allow testing of other triggers.
2. One at a time, manually engage all three Fast Idle Inputs by having aftermarket vehicle equipment ground the Input wires. Engine speed will increase to the set RPM level. If this does not occur, check harness connections. Also see diagnostics below.
3. When Fast Idle is engaged, keep the Input wire grounded, and depress the Service Brake for 1 second. Fast idle will temporarily disengage anytime the Service Brake is pressed, and will automatically reengage after approximately 2 seconds once the Brake pedal is released.
4. Place transmission shift lever in the "Neutral" position. (Input wire still grounded). Verify the vehicle does not go into Fast Idle.

If the C-AFIS733VSX-BP fails any of the above tests, check harnesses and review instructions, or check diagnostics below. If necessary, call InterMotive Technical Support at (530) 823-1048.

Diagnostics

Diagnostic mode is entered by momentarily shorting the pads labeled "Test" on the module. The module provides diagnostic LEDs which illuminate according to the following table. To exit this mode simply cycle the key or momentarily ground the "Test" pad again.



LED #	Diagnostic Mode LED Descriptions
1	On when fast idle is engaged
2	On when any input trigger wire is active
3	On when Gray RPM set wire is grounded
4	On when the Parking Brake is applied with the parking brake trigger enabled
STATUS	Continuously flashes two digit status codes. See Status Code table

Module Mounting

Ensure all harnesses are properly connected and routed, and are not hanging below the dash area. Mount the C-AFIS733VSX-BP module using screws or double sided tape. Reinstall the lower dash panel.

Fast Idle Status Codes

Status Codes provide the current status of the Fast Idle system. The on-board "Status" LED will flash a 2-digit code as shown in the table. The first digit will flash, wait one second, flash the second digit, then wait four seconds before the next code. The Status Codes continue to flash until the module is reset (cycle key), or the test input is momentarily grounded again.

AFIS Status Codes	
Status Code	Description
1-1	Ready for fast idle
2-3	Triggered: Parking Brake
2-4	Triggered: VBAT Low
2-7	Triggered: Engage Input 2
2-8	Triggered: Engage Input 1
2-9	Triggered: Engage Input 3
3-1	RPM > 2800
3-2	RPM < 200
3-3	TR not = to PARK
3-4	VSS not = to 0 MPH
3-5	Service Brake applied
3-7	Unsafe; Need to cycle TR
3-8	ECT > 230°F

Leave in vehicle
C-AFIS733VSX-BP Fast Idle System
2022 Dodge ProMaster

System Operation

The Advanced Fast Idle System (AFIS) elevates engine idle speed in response to a number of “triggers” in order to assist electrical or mechanical systems on the vehicle.

Fast Idle may be initiated by either a manual trigger (Input wire being grounded), a low battery voltage (low VBAT) condition, or if enabled, by setting the Park Brake.

Fast Idle will only occur when the required preconditions are met, as listed below. Fast Idle operation will be terminated by a loss of **any** of the preconditions, or removal of the trigger(s).

Fast Idle Triggers		
Trigger Name	Trigger Conditions	Disable Conditions
Manual Engage Inputs#1-3	Fast Idle Engage Input wire(s) activated	Fast Idle Engage Input wires not active
VBAT Low	VBAT < 12.5V	Any Precondition Violation
Parking Brake (if enabled)	Parking Brake applied	Parking Brake Released

Fast Idle Preconditions

The following preconditions must be met prior to initiating Fast Idle operation:

- Vehicle speed zero
- Transmission in Park
- Accelerator pedal must not be applied
- Engine Coolant temperature less than 230°F
- Engine RPM must be greater than 200 and less than 2800.
- Service Brake not applied

Note: After 4 minutes of continuous idling, the RPM will drop for a brief moment and return to fast idle.

Upfitter Options -The following are configurable when the module is installed. The default values are shown:

C-AFIS733VSX-BP

Input 1: 1500 gas

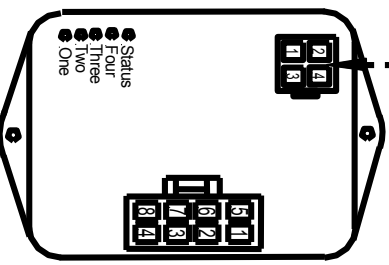
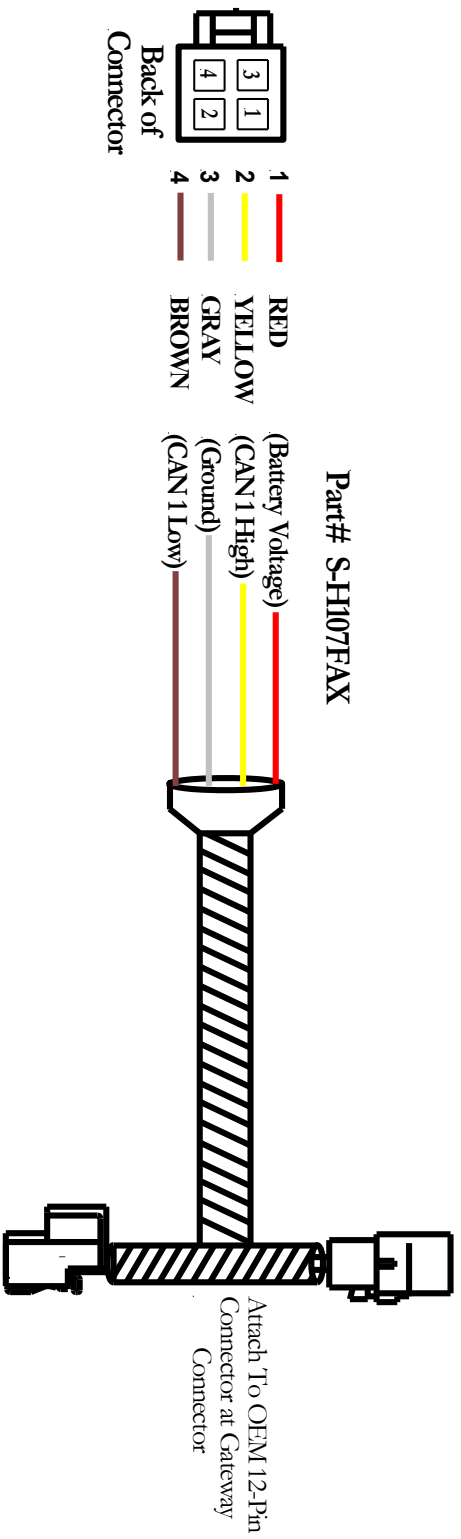
Input 2: 1750 gas

Input 3: 950 gas

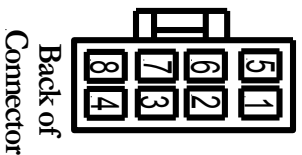
VBAT Low: 12.5V

Parking Brake Trigger: Disabled

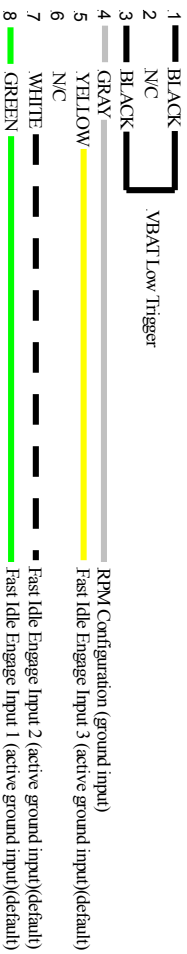
Part# S-H107FAX



C-AFIS733V/SX-BP
Part # S-M1100-023



Part# S-H38BX



Submit product registration at www.intermotive.net

If the C-AFIS733V/SX-BP fails any step in the System Operation Test, review the installation instructions and check all connections. If necessary, call Intermotive Technical Support at (530) 823-1048.