



Service Bulletin

Bulletin No.: 22-NA-188

Date: November, 2022

TECHNICAL

Subject: MAF Sensor Calibration Update – DTCs P227C and P10BC Set After ECM Replacement

Brand:	Model:	Model Year:		VIN:		Engine:	Transmission:
		from	to	from	to		
Buick	Encore GX	2020	2023	—	—	1.3L Turbo (RPO L3T)	—
Cadillac	XT4	2022	2022	SOP	1GYFZDR47NF151073	2.0L Turbo (RPO LSY)	—
	XT5	2022	2022	SOP	1GKKNUL42NZ176510		
	XT6	2022	2022	SOP	1GKKNUL42NZ176510		
Chevrolet	Blazer	2022	2023	3GNKBCR46NS187861	EOP	2.0L Turbo (RPO LSY)	—
	Trailblazer	2020	2023	—	—	1.3L Turbo (RPO L3T)	
GMC	Acadia	2022	2023	—	—	2.0L Turbo (RPO LSY)	—

Involved Region or Country	North America, Middle East
Condition	Some customers may have software anomalies after an Engine Control Module (ECM) replacement for an LSY or L3T engine. Technicians may find DTCs P227C and P10BC present or in recent history.
Cause	The cause of the condition may be a change in MAF (Mass Air Flow) Sensor design so the correct ECM calibration must be loaded after ECM replacement to complete the repair.
Correction	Reprogram the ECM with the correct calibration. Important: The correct calibration is based on the MAF sensor design of the vehicle. Vehicles with dual sensor MAF should receive ECR 12720240. Vehicles with a single MAF sensor should receive 12728222.

Service Procedure

Important: Service agents must comply with all International, Federal, State, Provincial, and/or Local laws applicable to the activities it performs under this bulletin, including but not limited to handling, deploying, preparing, classifying, packaging, marking, labeling, and shipping dangerous goods. In the event of a conflict between the procedures set forth in this bulletin and the laws that apply to your dealership, you must follow those applicable laws.

Caution: Before downloading the update files, be sure the computer is connected to the internet through a network cable (hardwired). DO NOT DOWNLOAD or install the files wirelessly. If there is an interruption during programming, programming failure or control module damage may occur.

- Ensure the programming tool is equipped with the latest software and is securely connected to the data link connector. If there is an interruption during programming, programming failure or control module damage may occur.
- Stable battery voltage is critical during programming. Any fluctuation, spiking, over voltage or loss of voltage will interrupt programming. Install a GM Authorized Programming Support Tool to maintain system voltage. Refer to www.gmdesolutions.com for further information. If not available, connect a fully charged 12V jumper or booster pack disconnected from the AC voltage supply. DO NOT connect a battery charger.

- Follow the on-screen prompts regarding ignition power mode, but ensure that anything that drains excessive power (exterior lights, HVAC blower motor, etc) is off.
- Clear DTCs after programming is complete. Clearing powertrain DTCs will set the Inspection/Maintenance (I/M) system status indicators to NO.

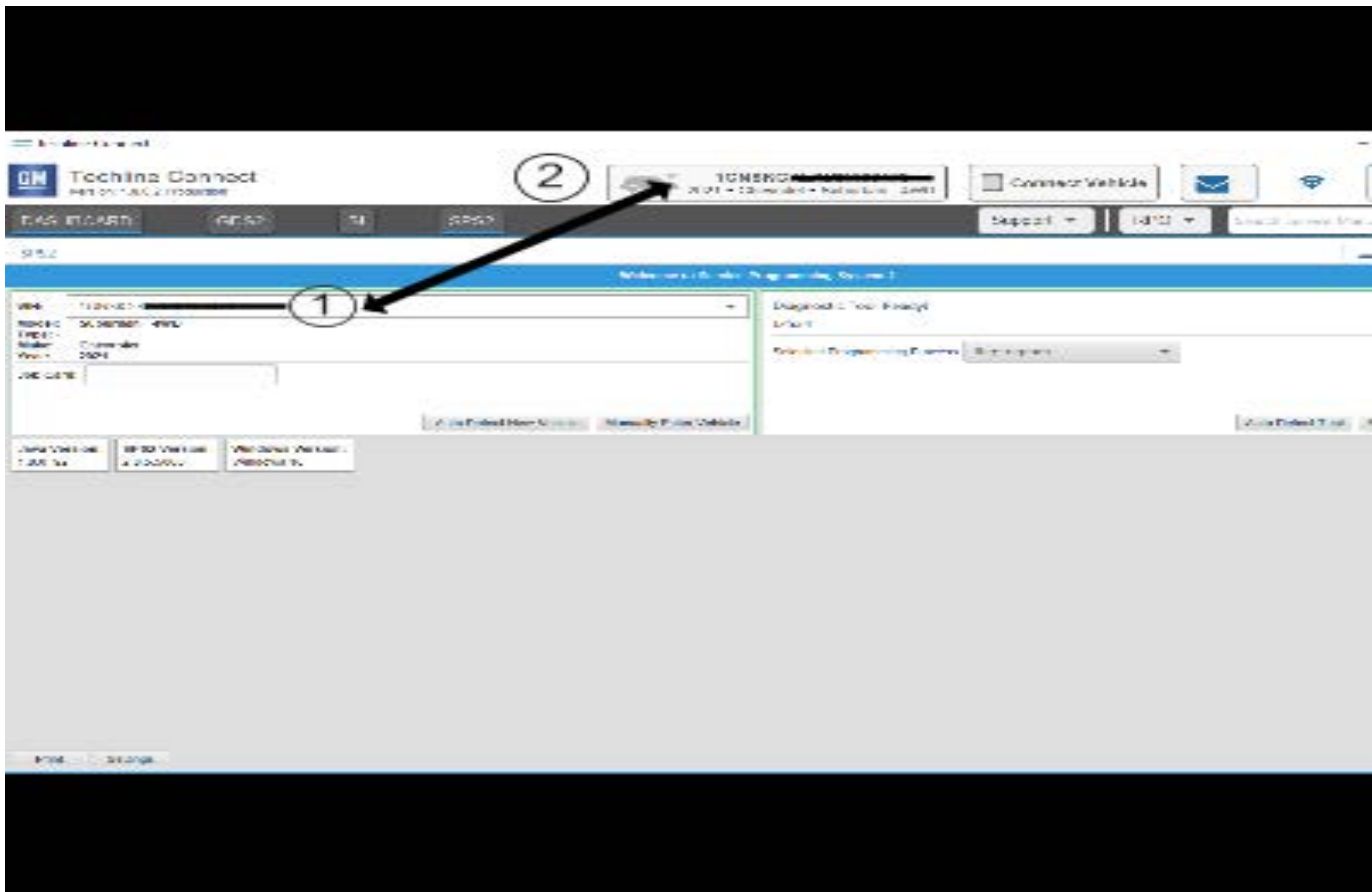
Important: The service technician always needs to verify that the VIN displayed in the TLC left side drop down menu and the top center window match the VIN plate of the vehicle to be programmed prior to using Service Programming System 2 (SPS2) for programming or reprogramming a module.

- For the TLC application, service technicians need to always ensure that the power mode (ignition) is "ON" before reading the VIN from the vehicle's VIN master module and that they do not select a VIN that is already in the TLC application memory from a previous vehicle.
- If the VIN that shows up in the TLC top center window after correctly reading the VIN from the vehicle does not match the VIN plate of the vehicle, manually type in the VIN characters from

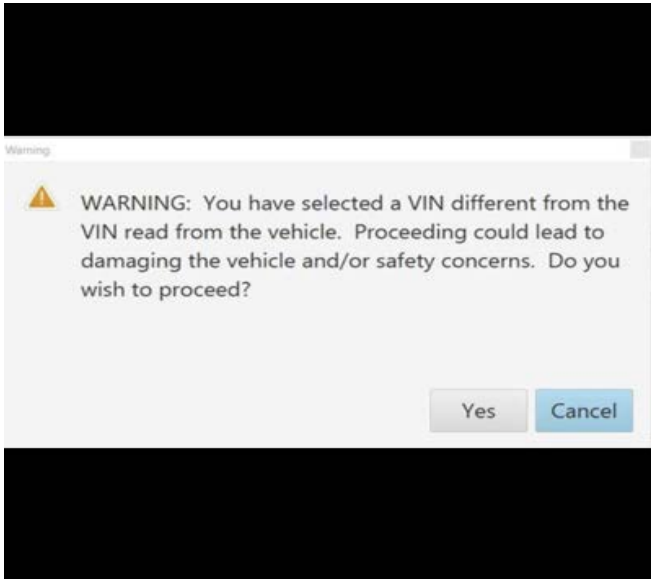
the vehicle VIN plate into the TLC top center window and use these for programming or reprogramming the subject module with the correct vehicle VIN and software and/or calibrations.

- The Engine Control Module (ECM) is the master module (for VIP vehicles) that TLC reads to determine the VIN of the vehicle. If the VIN read from the vehicle by TLC does not match the VIN plate of the vehicle, the ECM also needs to be reprogrammed with the correct VIN, software and calibrations that match the vehicle's VIN plate.
- The Body Control Module (BCM) is the master module (for GEM vehicles) that TLC reads to determine the VIN of the vehicle. If the VIN read from the vehicle by TLC does not match the VIN plate of the vehicle, the BCM also needs to be reprogrammed with the correct VIN, software and calibrations that match the vehicle's VIN plate.

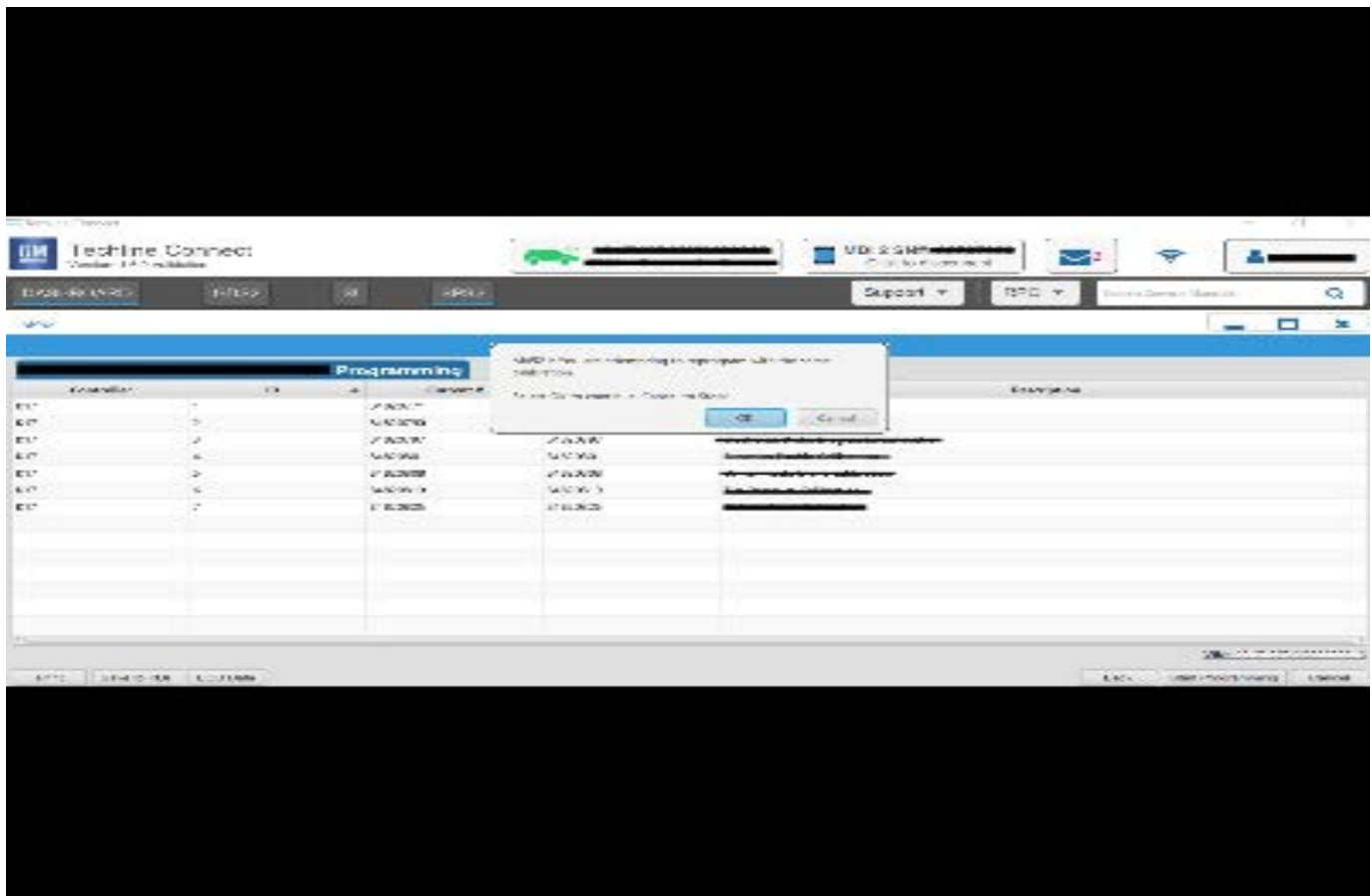
Caution: Be sure the VIN selected in the drop down menu (1) is the same as the vehicle connected (2) before beginning programming.



Important: If the vehicle VIN DOES NOT match, the message below will be shown.



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Important: Techline Connect screen shown above.

Important: If the same calibration/software warning is noted on the TLC or SPS Summary screen, select OK and follow screen instructions. After a successful programming event, the WCC is located in the Service Programming System dialogue box of the SPS

Summary screen. Document the WCC on the job card. No further action is required. Refer to the Warranty Information section of this bulletin.

1. Reprogram the Engine Control Module. Refer to *K20 Engine Control Module: Programming and Setup* in the Service Manual.



Note: The screenshot above is an example of module programming and may not be indicative of the specific module that is being programmed. Module selection and VIN information have been blacked out.

Important: To avoid warranty transaction rejections, you **MUST** record the warranty claim code provided on the Warranty Claim Code (WCC) screen shown above on the job card. Refer to callout 1 above for the location of the WCC on the screen.

- Record the Warranty Claim Code on the job card for warranty transaction submission.

Warranty Information

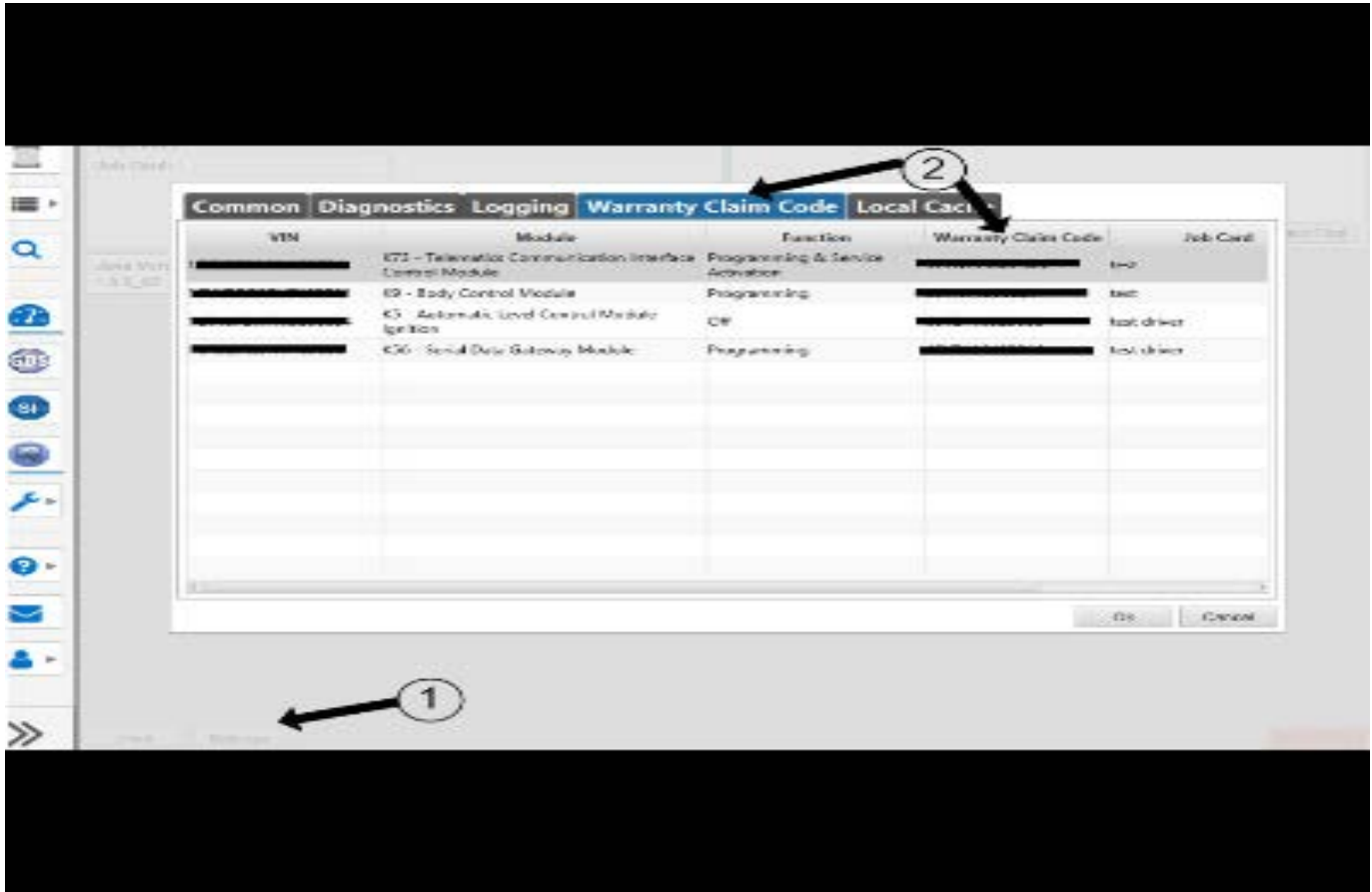
Important: Warranty coverage code E2 applies for this module programming event. ECM reprogramming is covered for 8 years/80,000 miles (U.S.) or 8 years/130,000 km (Canada).

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For vehicles repaired under warranty, use:

Labor Operation	Description	Labor Time
2810075*	Engine Control Module Reprogramming with SPS	Use Published Labor Operation Time
<p>Important: *To avoid warranty transaction rejections, carefully read and follow the instructions below:</p> <ul style="list-style-type: none"> The Warranty Claim Code must be accurately entered in the "SPS Warranty Claim Code" field of the transaction. When more than one Warranty Claim Code is generated for a programming event, it is required to document all Warranty Claim Codes in the "Correction" field on the job card. Dealers must also enter one of the codes in the "SPS Warranty Claim Code" field of the transaction, otherwise the transaction will reject. It is best practice to enter the FINAL code provided by SPS/SPS2. 		

Warranty Claim Code Information Retrieval



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If the Warranty Claim Code was not recorded on the Job Card, the code can be retrieved in the SPS2 system as follows:

1. Open TLC on the computer used to program the vehicle.
2. Select and start SPS2.
3. Select Settings (1).
4. Select the Warranty Claim Code tab (2).

The VIN, Warranty Claim Code and Date/Time will be listed on a roster of recent programming events. If the code is retrievable, dealers should resubmit the transaction making sure to include the code in the SPS Warranty Claim Code field.

Version	1
Modified	Released October 26, 2022

