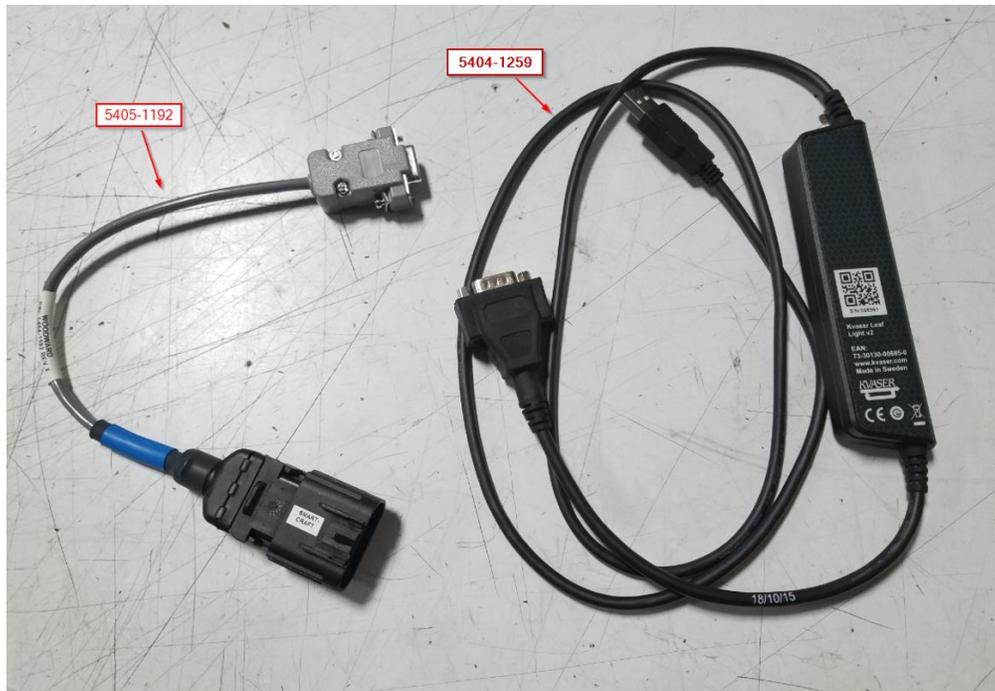


Toolkit is the diagnostics and development software used with the PG+ fueling system. This allows users to connect to an ECU to configure and calibrate, troubleshoot and program/reprogram. The purpose of this document is to document the installation and setup process for Toolkit. Note that screenshots and wordage in this document are for Toolkit v5.6 Build 518 on a computer with Windows 10.

In addition to the software, there are two part numbers for hardware that are required:

- Kvaser Interface Cable Kit WWA0554041259. This kit contains two components
 - 5404-1259 – Kvaser Leaf Light v2 CAN to USB converter
 - 5405-1192 – CAN1 Adapter



- Interface Cable Adapter, CAN2 CEA55115241Q



The SECM70 ECU used in the PG+ fueling system utilizes two CAN networks; CAN1 for the control panel communication and CAN2 for Toolkit communication. The above hardware set has communication interface adapters for both networks. In the diagnostic connector C18, CAN1 is populated positions J & K and CAN2 is populated in positions C & D. See wiring diagram for more information.

There are four types of files required for communication with an ECU. Each of these files should be placed in their respective directories. The correct file structure is covered later in this document.

- .dll – XCP Security File
- .sid – Service Interface Definition File
- .wtool – PG+ calibration and diagnostic display file
- .wapp – application data file

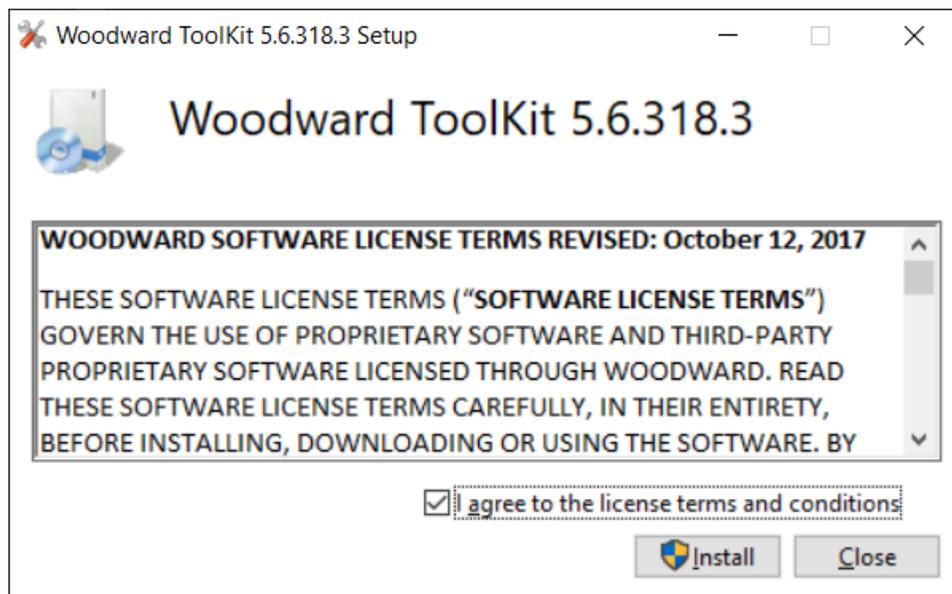
 IIC00017_A Merged PROD v042.wapp	2/21/2020 5:05 PM	WAPP File	778 KB
 PGPlus_Service_v3_4.wtool	11/13/2019 3:54 PM	ToolKit Tool File	616 KB
 PGPlus_XCPSecurity2304.dll	11/13/2019 4:26 PM	Application extens...	24 KB
 PGPlusP7017030430423FT8042.sid	2/21/2020 8:16 AM	SID File	6,419 KB

The .wtool, .dll and .sid files will be sent along with the application file.

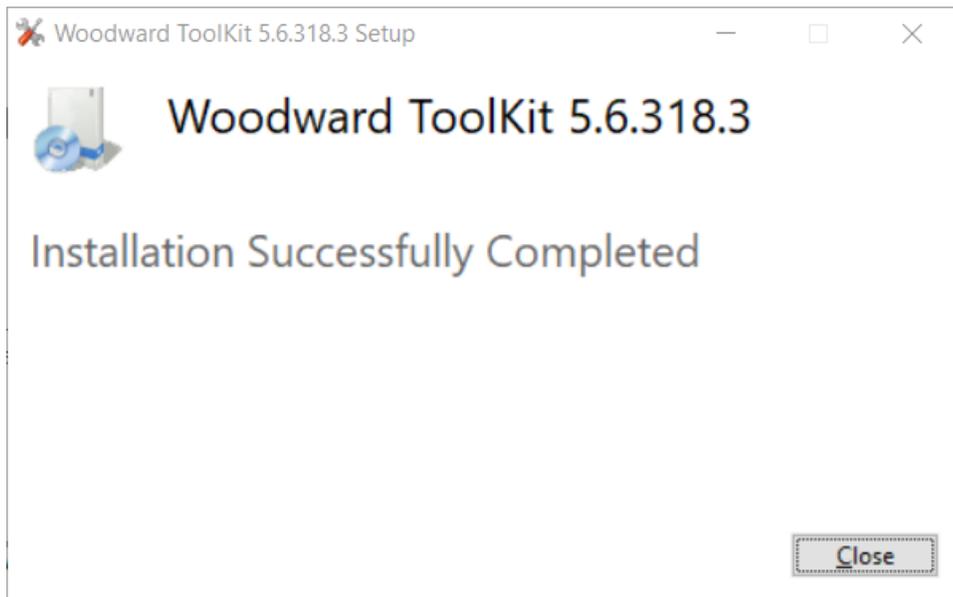
The installer file can be obtained one of two ways. First, navigate to [Woodward's website](#) and go to Support > Software > Software Lookup. In the Search box, type 'Toolkit'. The results can be further narrowed down with the filters on the left side of the page. At the time of this document's creation, it is recommended that version 5.6 is utilized. The second method is to contact Industrial Irrigation for assistance. To install Toolkit, start by running the Toolkit 5.6 executable and following the on-screen prompts:

Name	Date modified	Type	Size
 kvaser_drivers_setup	11/10/2017 2:29 PM	Application	8,870 KB
 RunExeSW_TypeCv2	1/2/2018 11:44 AM	Windows Comma...	1 KB
 ToolKit_5_5_312_0_CR	6/13/2017 10:49 AM	Application	4,171 KB
 ToolKitSetup_5.6.318.3	3/20/2019 3:13 PM	Application	4,390 KB

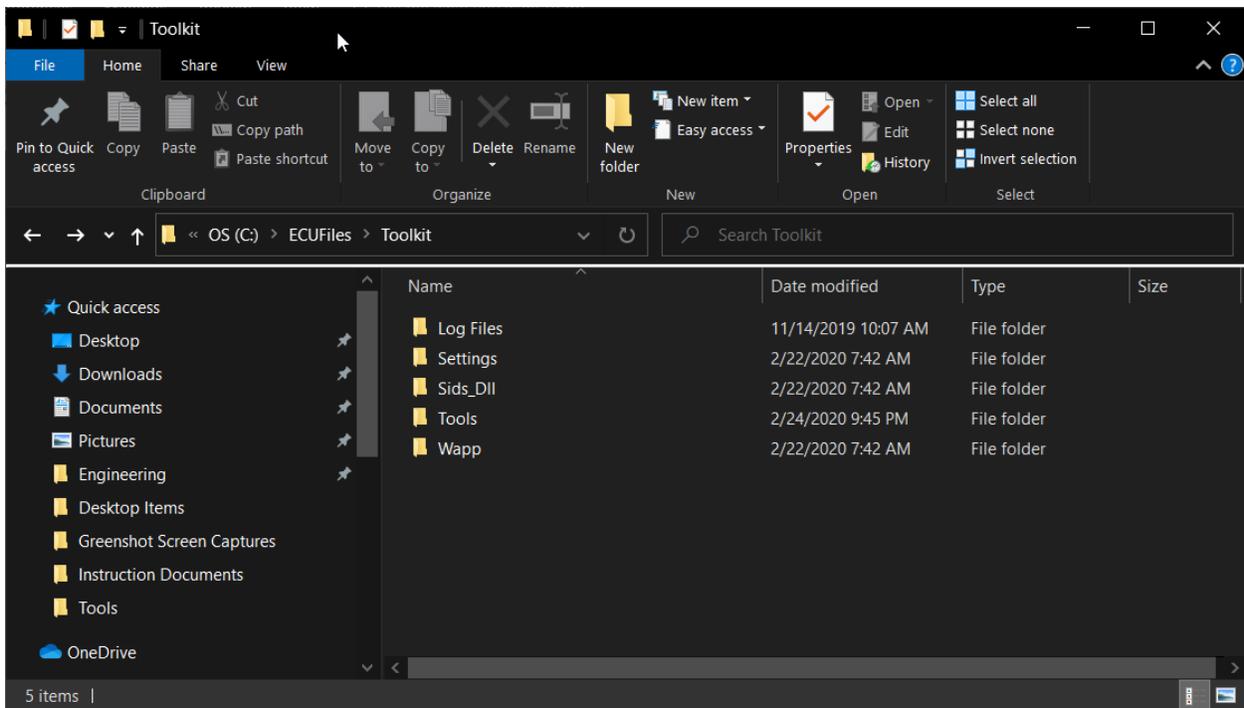
The License Terms and Conditions must be agreed to prior to installation:



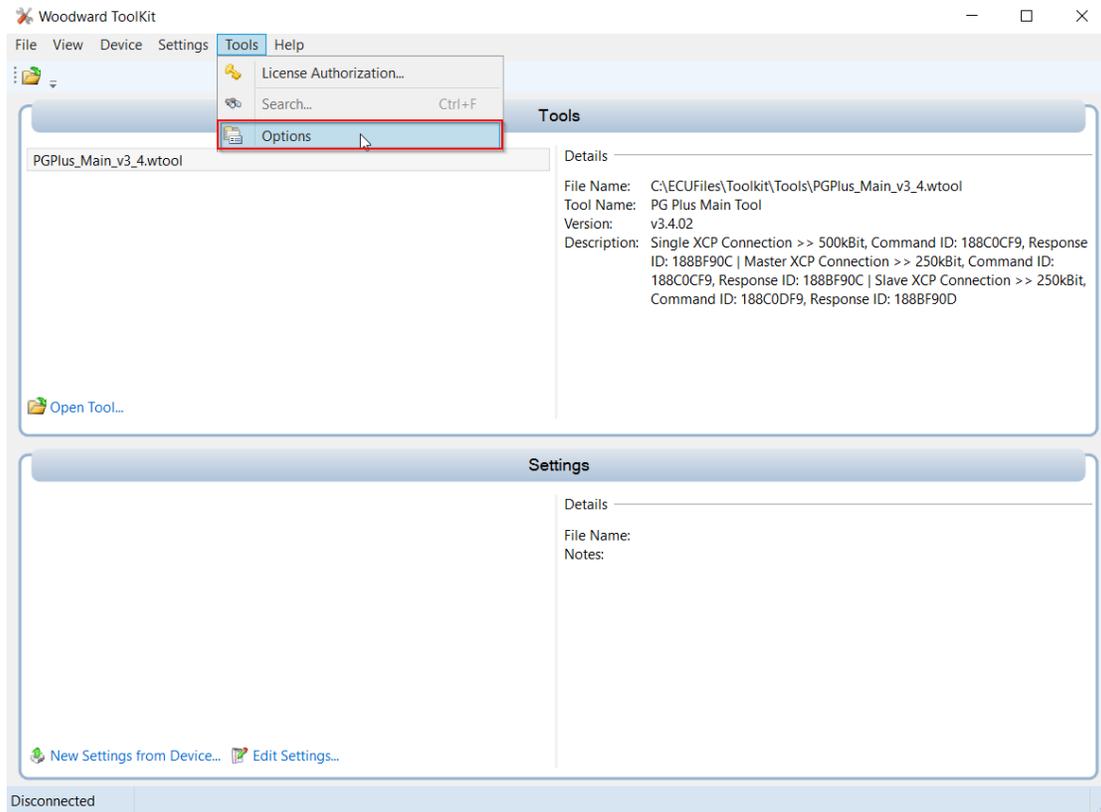
The installation should not take long; 15-20 seconds maximum. Click 'Close' to exit the installation.



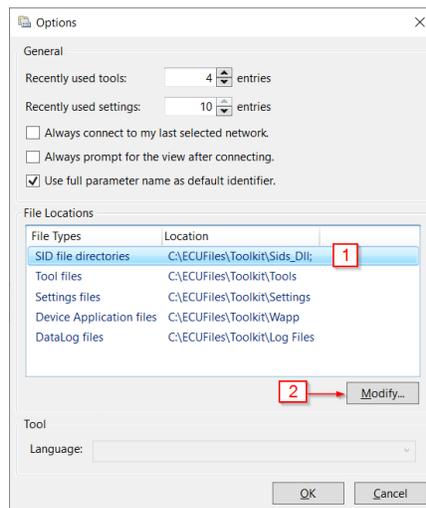
The next step is to verify the folder structure is set up correctly and Toolkit has been directed to said folders. If not already present, navigate to C:\ECUFiles and create a folder named Toolkit. Within this folder, create five folders named Log Files, Settings, Sids_dll, Tools and Wapp.



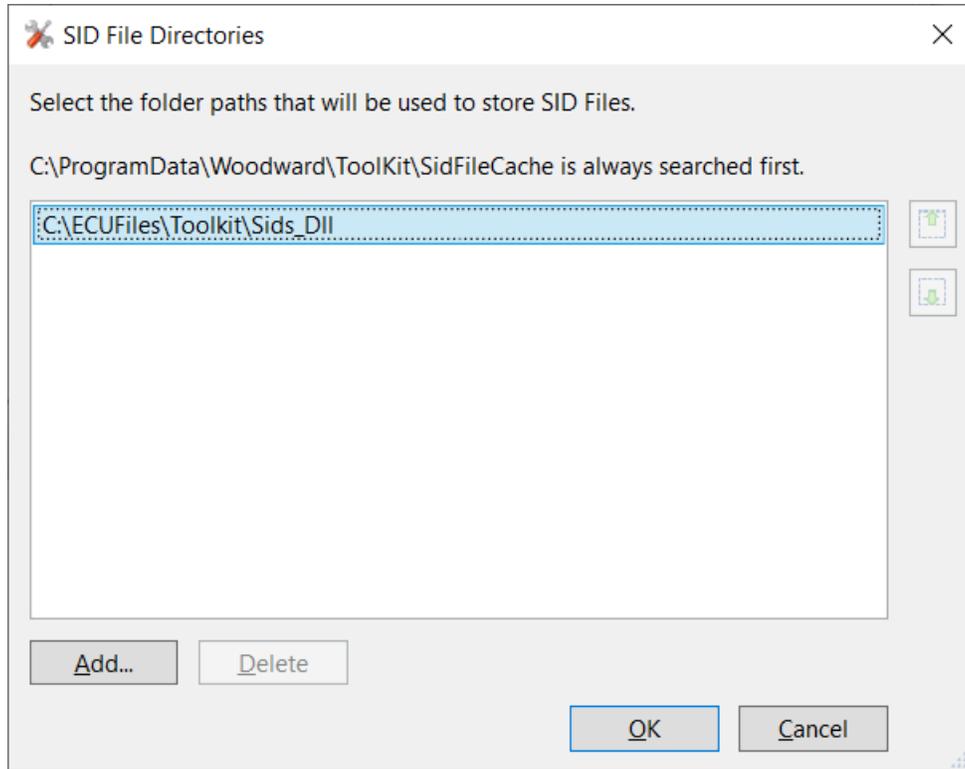
To point Toolkit to these folders, open Toolkit and navigate to Tools > Options.



Select the first line and click modify. Alternatively, the line can be double clicked.



There must be at least one file location for the .sid files at all times. If the default location is not correct, first add the correct directory then select the undesired directory and click Delete to remove it from the list.



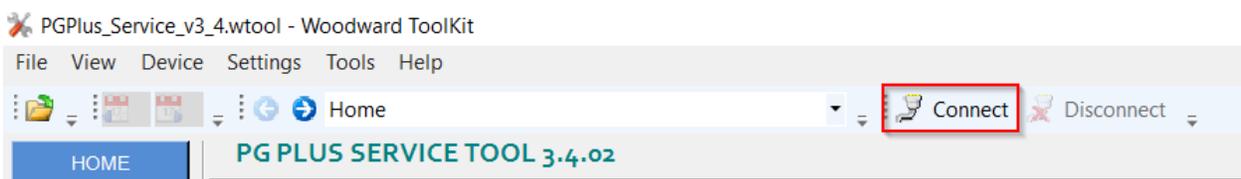
Repeat the above process with the other file types. Note the .sid file type is the only type that allows for more than one directory. All other types allow only a single location.

Once Toolkit has been redirected, the required files must be placed in their respective locations. Below is a list of file types and their correct locations:

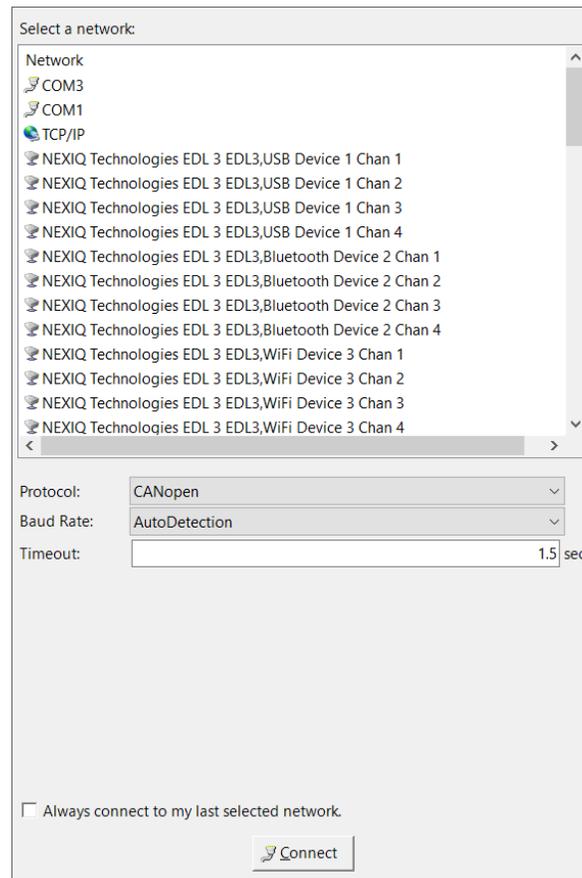
- .wapp files → saved in Wapp folder
- .wtool files → saved in Tools folder
- .dll files → saved in Sids_dll
- .sid files → saved in Sids_dll

The next step is to open a Tool and set up a new connection. This step will require an online connection to an ECU. This can be accomplished by connecting the interface cable and adapter to an engine wire harness and ECU. If the wire harness is on an engine, it must have the ability to be powered up without starting the engine.

With Toolkit closed, plug in the Kvaser interface cable is plugged into the PC and ensure the drivers successfully installed. If the Kvaser cable is plugged in after Toolkit is already open, it will not recognize the cable is present. Open Toolkit and click 'Open Tool' and navigate to the desired .wtool file. At the time of this document's creation, the Service Tool is named PGPlus_Service_v3_4.wtool.



By default, the Connect dialog box will look like the below:



To set up the connection, choose the following options:

1. Choose 'Kvaser Leaf Light v2 #0' in the Network section. Depending on the drivers already installed, this list may be fairly long
2. Set the Protocol to 'XCP'
3. Set the Baud Rate to 'Baud_500kbit'
4. Below the Extended Slave Identifier heading, check the boxes next to Command and Response. Enter 188C0CF9 in the Command text box and 188BF90C in the Response text box and click add.
5. Click 'Connect'

Select a network:

Network

- NEXIQ Technologies, Inc. USB Link CAN1 Autobaud Device 240
- NEXIQ Technologies, Inc. USB Link CAN2 Autobaud Device 241
- NEXIQ Technologies, Inc. USB Link CAN3 Autobaud Device 242
- NEXIQ Technologies, Inc. MPSI MagiKey JD Parallel Port Data Module Device 2
- NEXIQ Technologies, Inc. MPSI MagiKey HD Parallel Port Data Module Device
- NEXIQ Technologies, Inc. MPSI MagiKey JD Parallel Port Data Module on CAN'
- NEXIQ Technologies, Inc. MPSI MagiKey JD Parallel Port Data Module on CAN2
- NEXIQ Technologies, Inc. MPSI MagiKey JD Parallel Port Data Module USB Dev
- NEXIQ Technologies, Inc. MPSI MagiKey HD Parallel Port Data Module USB De
- NEXIQ Technologies, Inc. MPSI MagiKey JD Parallel Port Data Module USB on C
- NEXIQ Technologies, Inc. MPSI MagiKey JD Parallel Port Data Module USB on C
- Kvaser Leaf Light v2 #0 (Channel 0)
- Kvaser Virtual #0 (Channel 0)
- Kvaser Virtual #0 (Channel 1)

Protocol:

Baud Rate:

Check the devices to connect to:

Alias	Command ID	Response ID
<input checked="" type="checkbox"/> 188C0CF9	188C0CF9	188BF90C

Extend Slave Identifier (hex)

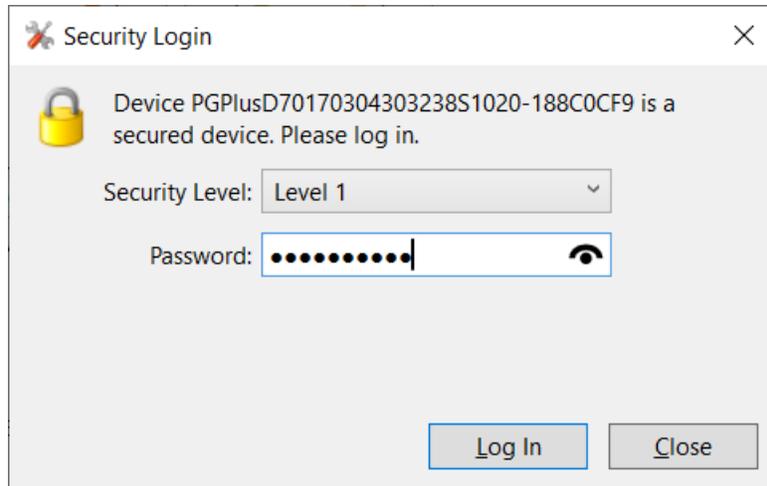
Comma

Respons

Always connect to my last selected network.

A security login dialogue box should display. If it doesn't, or another error message appears, it is likely Toolkit is not seeing the correct .sid and/or security files. First verify the file paths for each of these files and also ensure the files are in the specified directories. If the correct .sid or security file is not available, contact Industrial Irrigation for assistance.

The password for the Level 1 security level is IISservice. Click Log In to establish a live connection.



The main screen should now be displaying live data.

PG PLUS SERVICE TOOL 3.4.02

HOME | DIAGNOSTICS

Alarm Status
 ● Major Alarm
 ● MIL

ANALOG INPUT
 FUEL CONFIG
 ADAP TIVE LEARN
 THROTTLE TEST
 EFR TEST
 SPARK TEST
 TSC1 SPEED
 UEGO AIR CAL
 KNOCK
 MISFIRE
 CAN J1939
 DATALOG

Engine Speed rpm 0	Throttle Pos Demand % 5.0	EFR Pos Demand % 5.0	PreCAT - UEGO phi 1.001	Spark Advance degBTDC 0.0	SPEED CONTROL rpm Set 800 REF RPM	AFR CONTROL phi 0.000 1.000 DEG C PHI
System Voltage V 13.4	ECT degC 87.9	Oil Pressure kPa 2.5	MAP kPa 75.0	Fuel Pressure kPa 0.00	Switch Input ● Run ● Stop ● RatedSwitch ● Idle ● Raise Switch ● Lower ● ExternalShutdown ● GCB ● FaultAlarmReset ● UTB	Fuel Lockoff Status ● FuelType1 ● FuelType2 O2 Closed Loop Ctrl PreCA1 ● O2CtrlMode PostCA1 ● O2CtrlMode
PRESSURE MAP 75.0 kPa PTP 85.0 kPa deltaP 0.00 kPa BARO 75.0 kPa Oil P 2.5 kPa	TEMPERATURE ECT 87.9 degC MAT 30.0 degC IAT 58.1 degC EGT 400.0 degC OilT 30.0 degC	Maximum Record ECT_Max 98.3 degC MAT_Max 58.1 degC ECU Temp 20.0 degC Engine Hour Meter Engine Hour 108.3 Hour	Application Info Engine GM 5.7L V8 SW Rev PGPlusP70170304304238S1042 Cal ID 5.7L_Genset_NG_A			

XCP Connection Info. Baud_500Kbit, Command ID : 188C0CF9, Respond ID : 188BF90C Compatible with P04304Release