

OB2 Gauge Programming for MM4X4 Parameter IDs (PIDs)

This document provides the instructions to setup an OB2 reader (such as an UltraGaugeMX, ScanGauge or a phone App) so that it can display lockup kit internal data. The lockup kit can be queried with custom PIDs just like any other ECU on the vehicle CANBus.

The lockup kit can provide the following data for display:

1. Mode

The current operating mode of the lockup kit.

-1 = lockup kit is OFF,

0 = vehicle is in SPORT/manual mode, or

1, 2 or 3 = the meaning depends on then individual kit

2. Pedal Position

The accelerator position percentage 0-100%

Cool feature! When using Cruise Control even if the pedal isn't being pressed, it displays the pedal position that the cruise control system is demanding.

3. Lockup Status

When the lockup kit is ON, this is the same as the LED status, which is ON when the lockup kit has the torque converter locked.

When the lockup kit is OFF the LED is OFF, so this is then the lockup status from the factory ECU computer.

Reading MM4X4 PIDs is currently available in selected products as follows:

- **auto-mateSPORT (for the MR Triton only)**

This list last updated 11 Jun 2024.

This feature is active even if the lockup kit is switched OFF, so the OB2 gauge can continue to display useful information rather than "ERROR", or "No Data".

The OB2 reader must be programmed with the MM4X4 PIDs in order to display the parameters.

This document provides instructions on how to setup the following OBD2 gauges to query the above parameters:

1. UltraGauge MX (link) <----our preferred gauge solution
2. ScanGauge2 (link)
3. ScanGauge3 (link)
4. CARSCANNER App with ELM327 dongle

NOTE: All the following instructions assume that you have a basic knowledge of how to use your gauge and how to configure the displays. These instructions address the creation of the MM4X4 PIDs.

Programming the UltraGauge MX



The UltraGauge MX has the ability to access non-standard, manufacturer specific gauges.

NOTE: The UltraGauge EM does not have this capability, so the MX version should be purchased.

These instructions are for both the UltraGauge MX versions 1.3 and 1.4.

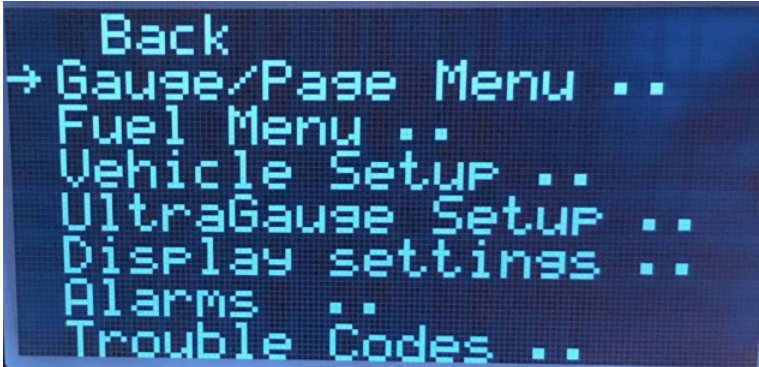
To monitor the lockup kit parameters, you need to program custom PIDs into the UltraGauge using the M-Gauge feature.

The following steps will setup the M-Gauge to measure your chosen parameter (Mode, Pedal %, or Lockup Status).

If you want to monitor all the kits' parameters, repeat the whole process and create an M-Gauge for each parameter.

Enter the M-GAUGE Menu

These instructions assume you are familiar with how to use the UltraGauge menu system and how to setup a page to display your preferred vehicle parameters onto the gauge screen. If not, please refer to the UltraGauge operating manual for more detail.

A screenshot of a blue monochrome LCD display showing a menu. The text is as follows:

```
Back
→ Gauge/Page Menu ..
Fuel Menu ..
Vehicle Setup ..
UltraGauge Setup ..
Display settings ..
Alarms ..
Trouble Codes ..
```

STEP 1

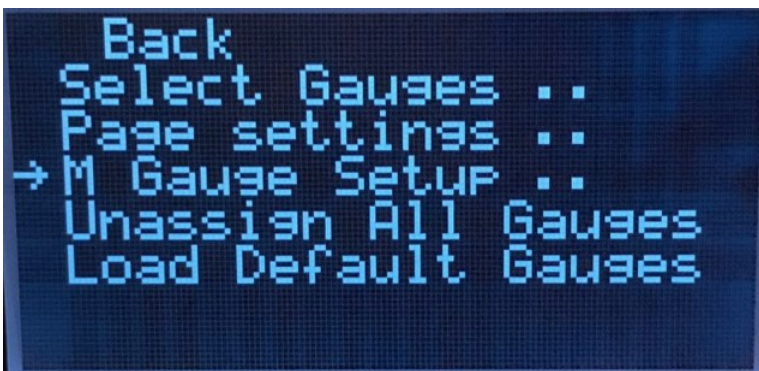
Enter the main menu and select the *Gauge/Page . .* menu

A screenshot of a blue monochrome LCD display showing a sub-menu. The text is as follows:

```
Back
→ Select Gauge/Page ..
Zero Ave Speed
Zero Ave MPG, G/H
Zero All Trip
Zero Run Time
Zero Oil Distance
Zero Service Dist
```

STEP 2

Select *Gauge/Page . .* menu

A screenshot of a blue monochrome LCD display showing a sub-menu. The text is as follows:

```
Back
Select Gauges ..
Page settings ..
→ M Gauge Setup ..
Unassign All Gauges
Load Default Gauges
```

STEP 3

Select the *M Gauge Setup* menu

STEP 4

The next steps create the M-Gauges for the MM4X4 PIDs. Setup the screens EXACTLY as shown (except for the M-Gauge number, which is your chosen M-Gauge position of 1-7).

Mode

```
M Gauge 5 Exit
Abbr1:Mde Abbr2:
TData: 07E42102000000
TCtrl:92 RCtrl: 21
RPos:3888 Mtch:610200
X:0001 /:0001 +:0000
Out Format:00 Ave:00
Left/Right:20
```

Choose the M-Gauge slot (1-7) you wish to occupy with the PID parameters.

Slot 5 is used for this example.

Pedal Position %

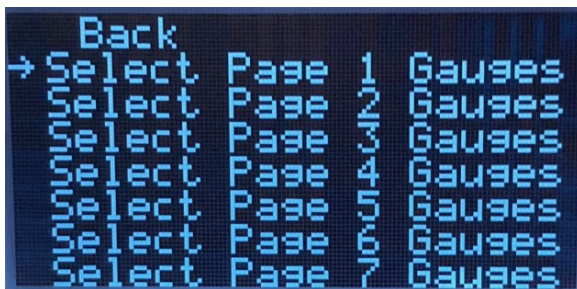
```
M Gauge 4 Exit
Abbr1:Pd1 Abbr2:%
TData: 07E42102000000
TCtrl:92 RCtrl: 21
RPos:2008 Mtch:610200
X:0001 /:0001 +:0000
Out Format:00 Ave:00
Left/Right:21
```

Lockup Status

```
M Gauge 6 Exit
Abbr1:Lck Abbr2:
TData: 07E42102000000
TCtrl:92 RCtrl: 21
RPos:1808 Mtch:610200
X:0001 /:0001 +:0000
Out Format:00 Ave:00
Left/Right:20
```

STEP 5

Now add the new M-Gauges to the page display.



Choose the page onto which the parameters will be displayed.



Using NEXT, scroll to the M-Gauge screen, and choose the page locations to display the parameters; positions 2, 4 and 6 in this example.

Example Display:



Data from the lockup kit

Programming ScanGauge™ 2 & 3



ScanGauge™ 2



ScanGauge™ 3

The ScanGauge™ features the X-Gauge™ programmable gauge system that gives the ability to customise your ScanGauge by adding additional vehicle specific digital gauges.

To monitor the MM4X4 lockup kit parameters you need to program the ScanGauge to read the data from the lockup kit using the X-Gauge feature.

The following steps will setup the X-gauge to display your chosen parameters (Mode, Pedal %, or Lockup Status).

If you want to monitor all the kits' parameters, repeat the whole process and create an X-Gauge for each parameter.

X-Gauge Parameters are:

TXD 07E42102

RXF 446105020000

RXD 4810 Mode of lockup kit, or

3008 Pedal %, or

2808 Lockup Status

MTH 000100010000

NAME Mde, or Pdl, or Lkp <- any 3 letters of your choice

These instructions assume you are familiar with the ScanGauge menu system and how to setup a page to display your preferred vehicle parameters onto the gauge screen. If not, please refer to the ScanGauge operating manual for more detail.

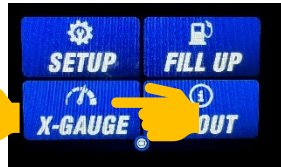
Programming PIDs into ScanGauge^{III} (3)

Create three XGauges, one for each lockup kit parameters.

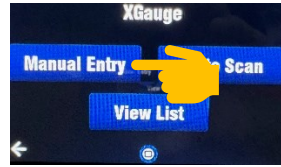
STEP 1



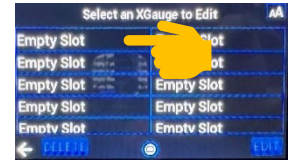
STEP 2



STEP 3



STEP 4



CHOOSE ANY SLOT

STEP 5



TXD = 07E42102

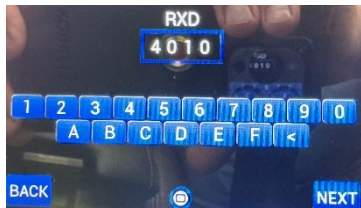
STEP 6



RXF=446105020000

STEP 7 Enter one parameter for RXD: Mode, Pedal % or Lockup

Mode = 4010



Pedal Position = 3008



Lockup Status = 2808

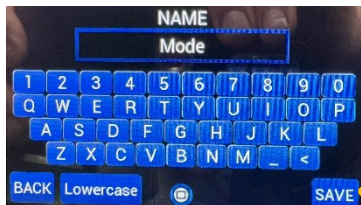


STEP 8 MTH = 000100010000



STEP 9 Create a name for the entered parameter, then SAVE.

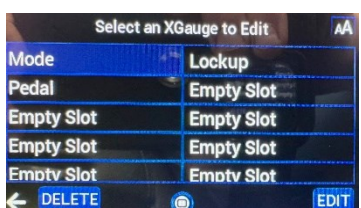
Mode



Pedal %



Lockup Status

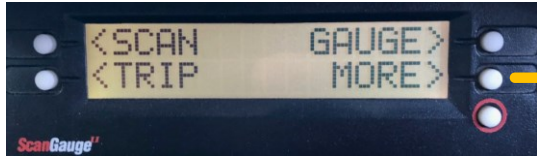


Repeat from Step 4 and create the next X-Gauge

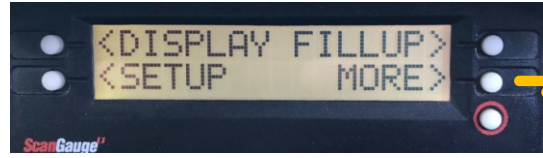
Programming PIDs into ScanGaugeII

Enter the MENU by pressing the button with the RED circle:

STEP 1 MORE



STEP 2 MORE



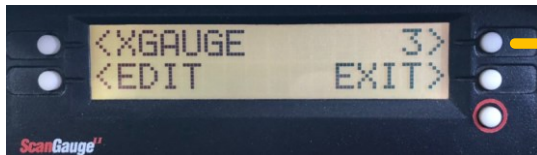
STEP 3 Press until XGAUGE displayed



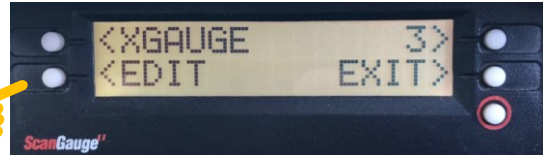
STEP 4 EDIT



STEP 5 Select the XGAUGE slot for the MM4X4 PID (eg, Slot 3 in this example)



STEP 6 EDIT



STEP 7 TXD = 07E42102



STEP 8 RXF=446105020000



STEP 9 Enter one parameter for RXD: *Mode, Pedal % or Lockup*

- Mode = 4010
- Pedal % = 3008
- Lockup Status = 2808

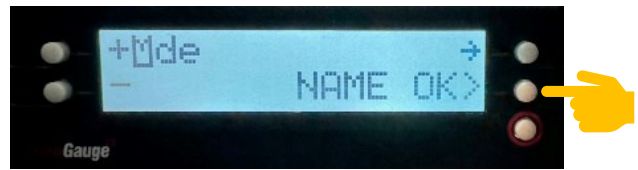


STEP 10 MTH = 000100010000



STEP 11 Create a name for the entered parameter

- Mode



- Pedal %

Don't use a name of "Ped" as this is already used.



- Lockup Status



STEP 12 SAVE



Repeat from STEP 5 to create the next XGAUGE

Programming the CarScanner App

There are many phone/tablet Apps available that can connect to an OBD2 dongle (such as a bluetooth ELM327 compatible device).

We have instructions for the CarScanner App, but based on the parameters shown you should be able to adjust them to your unique App.

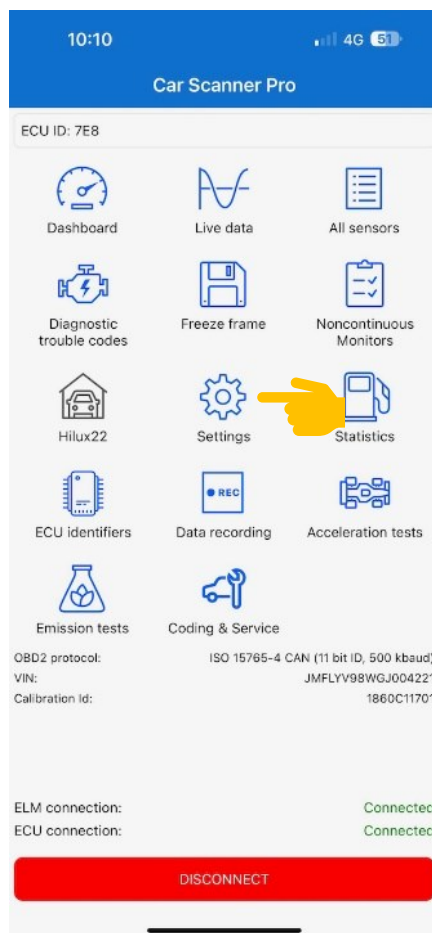
These instructions assume you are familiar with how to use the App and how to setup a page to display your preferred vehicle parameters onto the screen. If not, please refer to the App manual for more detail.

STEP 1

Launch CarScanner and connect to the car ECU.

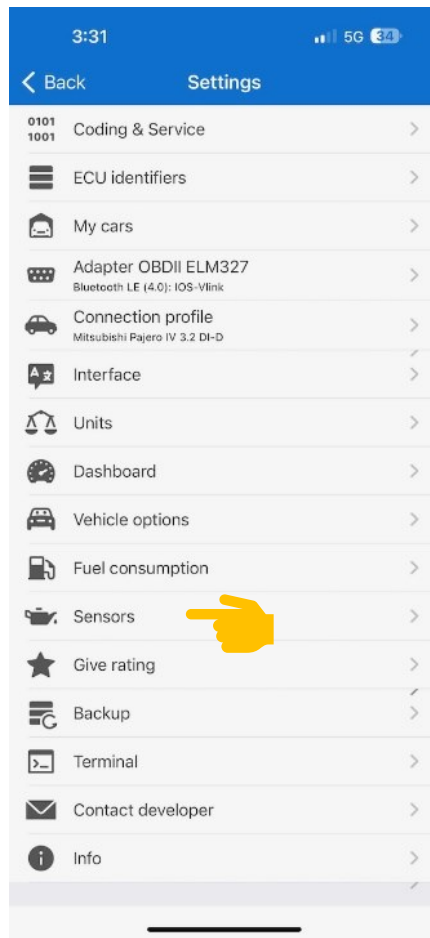
STEP 2

Select Settings



STEP 3

Select Sensors



There are two ways to enter the PIDs:

OPTION 1 - By importing a file provided by MM4X4, or

OPTION 2 - Manual entry

OPTION 1 - Import PIDs

We have a file available at the MM4X4 website to download which contains the PIDs.

STEP 4

Go to MM4X4.com.au

Navigate to [Support->Helpful Documents and Links](#)

Download the file **MM4X4 CarScanner PIDs.csp** from the website and store on your phone at a location of your choice.

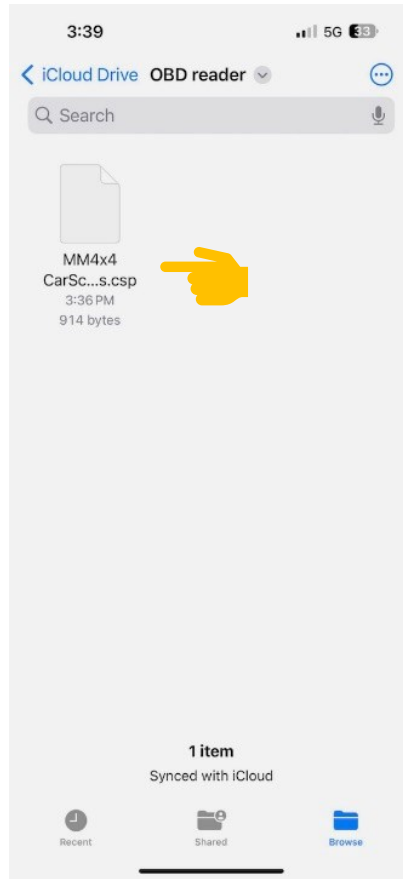
STEP 5

Import the file



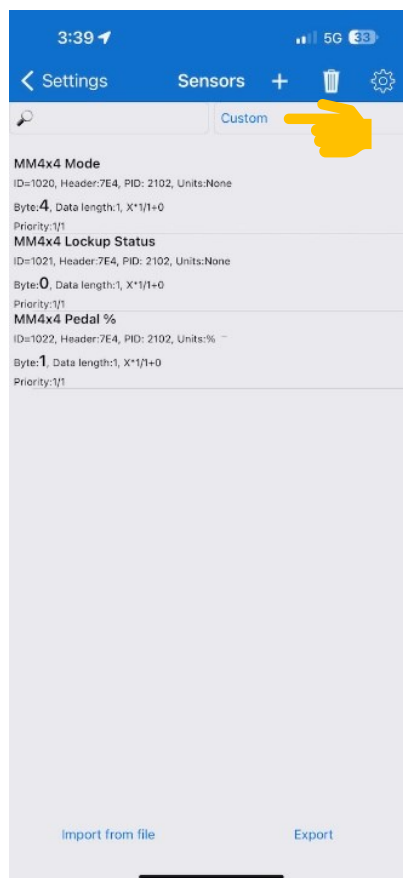
STEP 6

Select the file from the saved location.



STEP 7

Select Custom filter to easily display the loaded PIDs.



FINISH

Select the PIDs to display in the Gauge DashBoard. See the CarScanner App manual for instructions on customising the dashboards.

OPTION 2 - Manually create the PIDs

Perform Steps 1, 2 and 3 above, then;

STEP 4

Select ADD PID (+)



STEP 5

Select New PID entry that was created at the bottom of the list



STEP 6

Create a PID for a chosen parameter as follows:

- Mode

The screenshot shows the 'Custom PID editor' interface for a parameter named 'MM4x4 Mode'. The interface is a mobile application with a blue header bar containing the time '10:41', signal strength, 4G, and battery level '45'. Below the header, the title is '< Sensors Custom PID editor'. The form fields are as follows:

- Name: MM4x4 Mode
- Short name: Mode
- Command: 2102
- Header (leave blank for default): 7E4
- Decode scheme: Formula: Byte set Bit: Action PID VW TP2.0 Group Item
- Byte: 4
- Data length: 1
- Reversed byte order:
- Signed value:
- Multiplier: 1
- Divider: 1
- Offset: 0
- Minimum: 0
- Maximum: 100
- Units: None
- Priority: 1/1
- Role override: None
- Start diagnostics commands (separated by "\"):
- Stop diagnostics commands (separated by "\"):

At the bottom of the form, there are two buttons: 'Units override' and 'Test'.

- Pedal %

10:42 4G 45

< Sensors Custom PID editor

Name: MM4x4 Pedal %

Short name: Pedal

Command: 2102

Header (leave blank for default): 7E4

Decode scheme:

Formula:

Byte set

Bit:

Action PID

VW TP2.0 Group Item

Byte: 1

Data length: 1

Reversed byte order

Signed value


Multiplier: 1

Divider: 1

Offset: 0

Minimum: 0

Maximum: 100

Units: % 

Priority: 1/1

Role override: None

Start diagnostics commands (separated by "|"):

Stop diagnostics commands (separated by "|"):

Units override

Test

- Lockup Status

10:42 4G 45

< Sensors Custom PID editor

Name: MM4x4 Lockup Status

Short name: TC lockup

Command: 2102

Header (leave blank for default): 7E4

Decode scheme:

Formula:

Byte set

Bit:

Action PID

VW TP2.0 Group Item

Byte: 0

Data length: 1

Reversed byte order

Signed value

Multiplier: 1

Divider: 1

Offset: 0

Minimum: 0

Maximum: 100

Units: None

Priority: 1/1

Role override: None

Start diagnostics commands (separated by "\"):

Stop diagnostics commands (separated by "\"):

Units override

Test

Repeat the process from STEP 4 to create each MM4X4 PID.

FINISH

Select the PIDs to display in the gauge Dashboard.

See the CarScanner App manual for instructions on customising the dashboards.

END.