J1939 Translator

Operating Manual

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Translator Operating Instructions

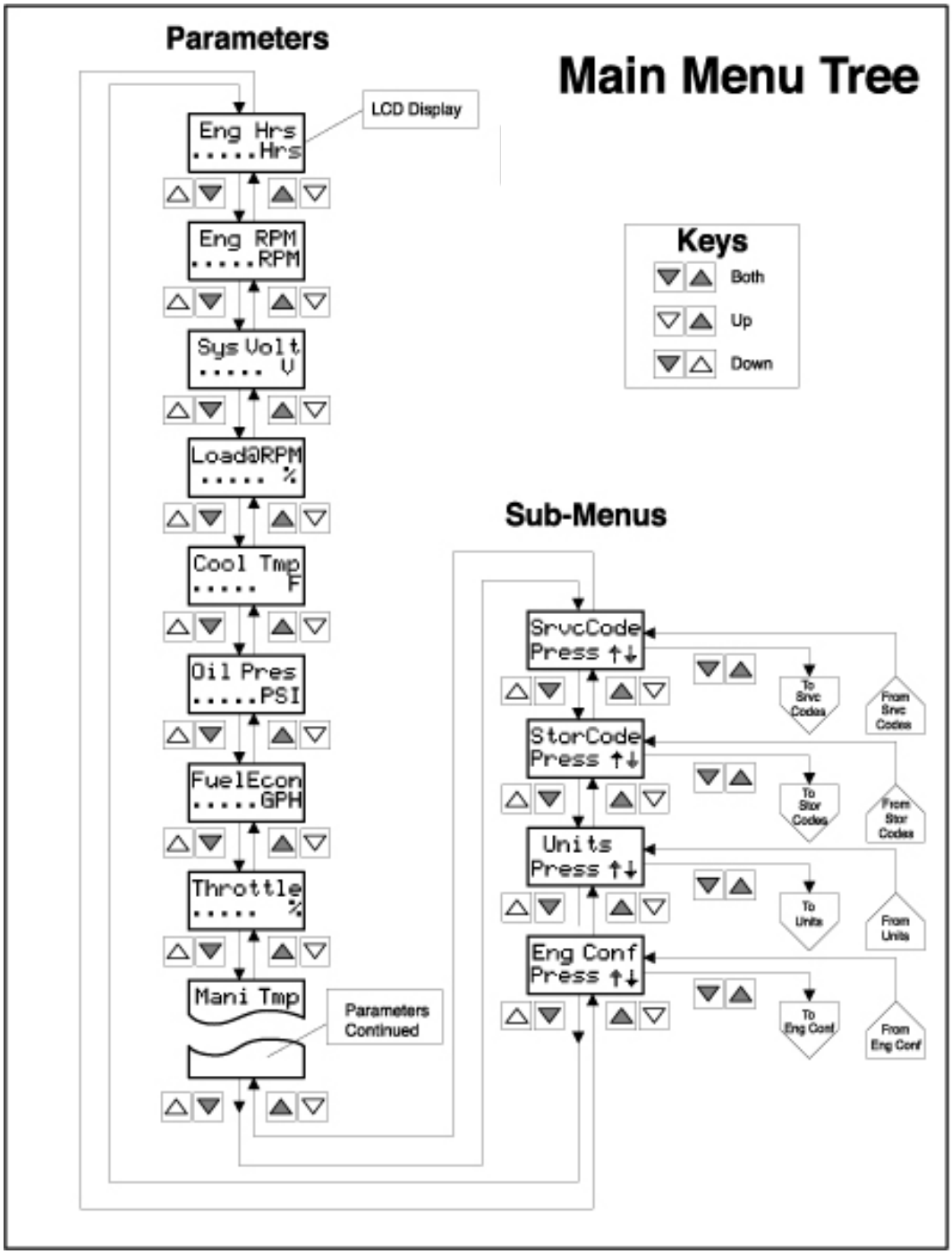
Operating Instructions

The J1939 Translator is simple to use and allows quick and easy navigation through the menu structure to find the information needed. The Translator Main Menu Tree (below) first displays engine data parameters, followed by the sub-menu entry points.

NOTE: *When first powered up some unused parameters may be displayed by the translator. These parameters will be automatically removed from the display after the initialization cycle is complete.*

The following two rules are used for accerssing the various items on the main menus:

1. to scroll through the parameter list, press either the UP or DOWN push buttons.
2. To select or exit a sub-menu SIMULTANEOUSLY press the UP and DOWN buttons.



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Selecting Engine Data Parameters

To read any of the engine parameters press either the UP or DOWN button until the top line of the display shows the desired information.

Selecting Sub-Menus

Press either the UP or DOWN button until the top line of the display shows the label of the desired Sub-Menu. Then press BOTH the UP and DOWN buttons SIMULTANEOUSLY. THIS ACTION WILL SELECT THE Sub-Menu and the next screen on the display will list the Sub-Menu items.

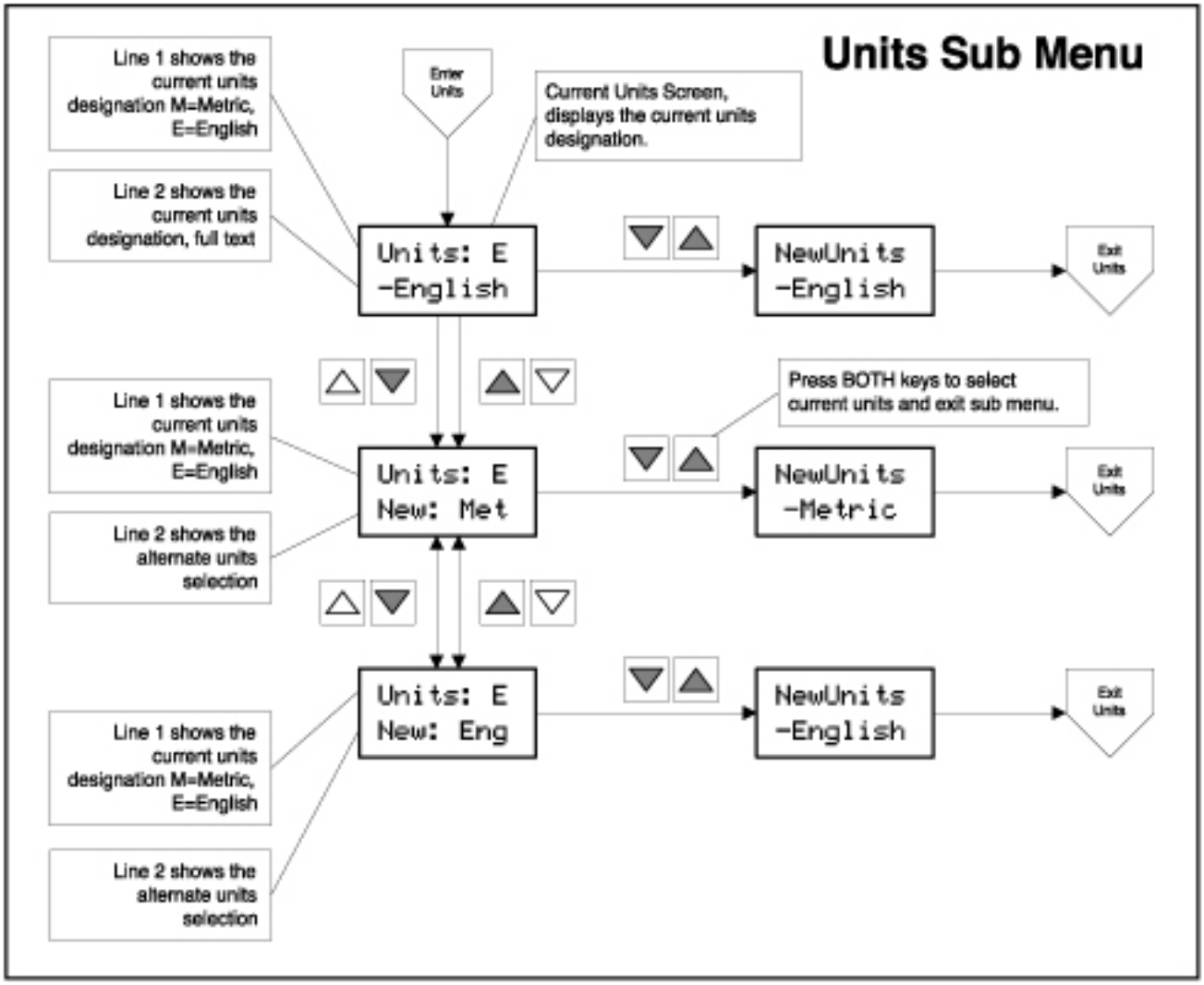
Changing the Units of Measure

The Translator can display engine data in either English or Metric units.

To select English or Metric, the Units Sub-Menue must be selected. To select the Units Sub-Menu, press the UP or DOWN button until the display shows the following label:

Press BOTH the UP and DOWN buttons SIMULTANEOUSLY to select the Units Sub-Menu. The Units Sub-Menu (below) shows the steps for selecting the desired units of measure. Two options are available:

1. Press BOTH buttons to retain the current units designation.
2. Press either UP or DOWN button to toggle the units selection, then press BOTH buttons to select the desired unit of measure.



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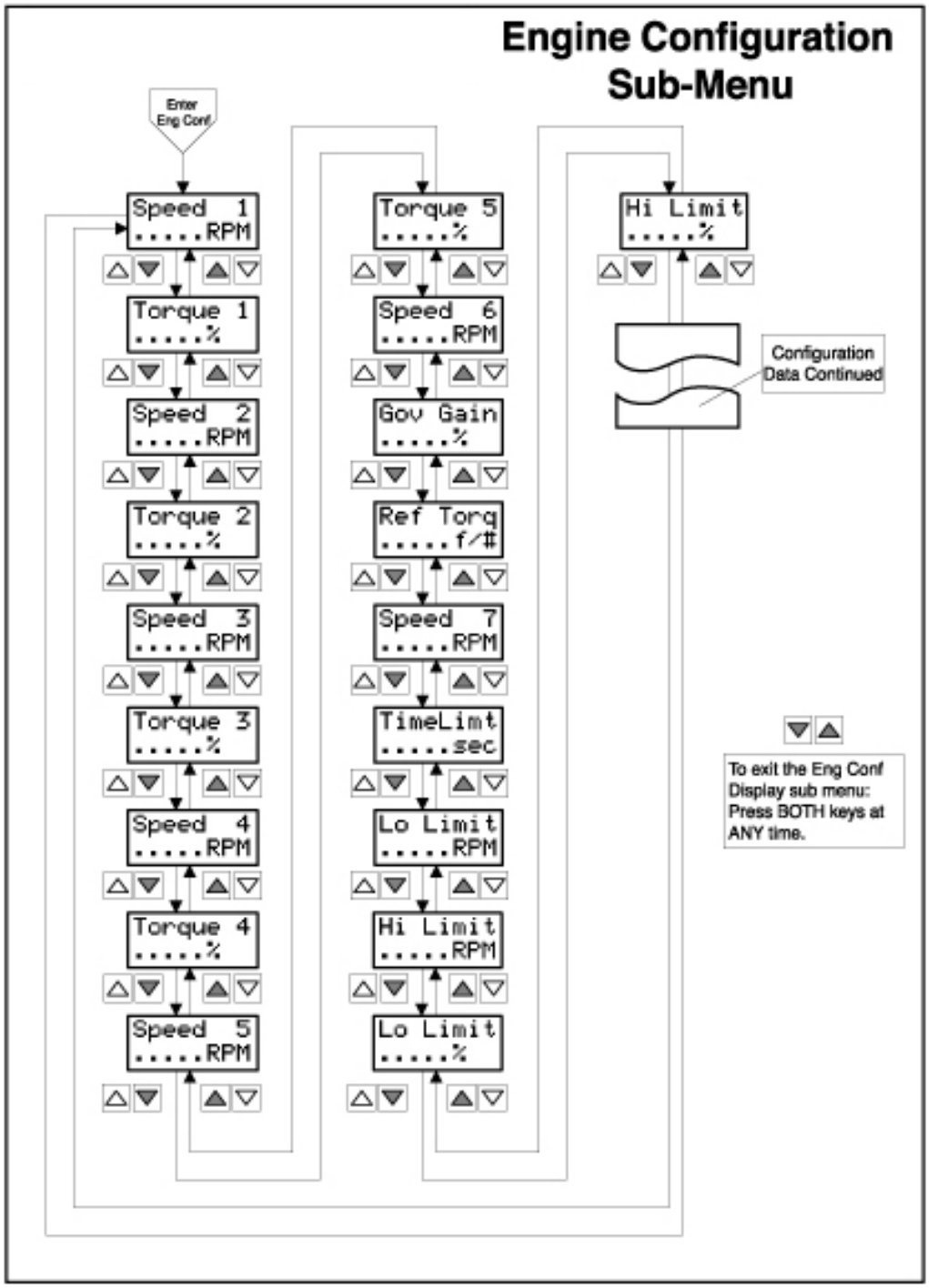
Viewing Engine Configuration Data

The Translator can display the engine configuration data stored in the engine ECM. To select the Engine Configuration Sub-Menu (shown below), press the UP and DOWN button until the display shows the following label.

E-Config
Press ▲▼

Press BOTH the UP and DOWN buttons SIMULTANEOUSLY to select the Engine configuration Sub-Menu. The Translator will display the engine configuration data as shown in Engine configuration Sub-Menu. If the Engine configuration is not available, the display will show:

E-Config
N/A ▲▼



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Viewing Active Engine Service Codes

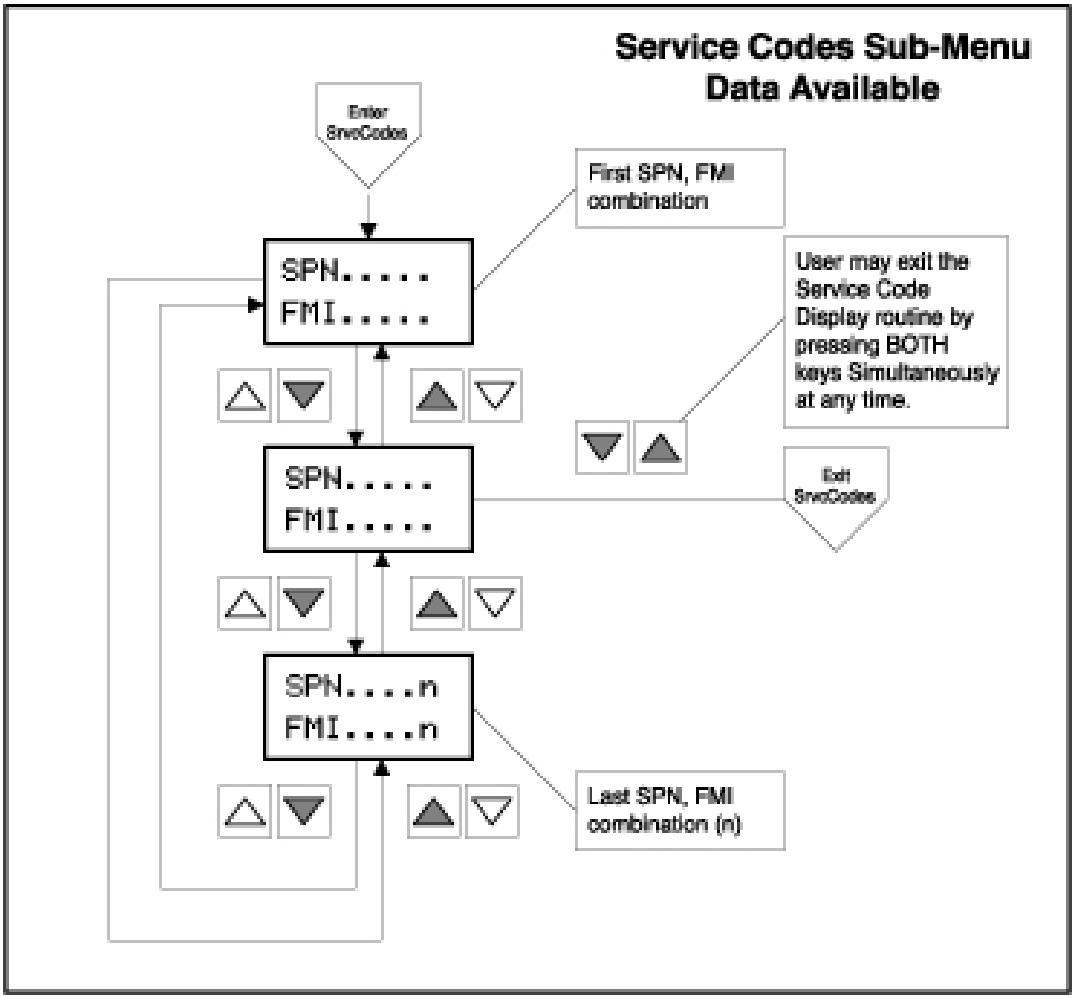
The Translator continuously monitors all messages broadcast over the J1939 Control Area Network (CAN) and displays all Active Service Codes at the time the message is broadcast. When a fault occurs the display will show the message "SrvcCode" every five seconds interrupting the currently display4ed parameter. In addition, the amber LED will be illuminated during the Active Service Code warning faults, and the red LED will be illuminated during shutdown faults. These warnings will continue until the fault clears.

To view the Active Service Codes select the Service Code Sub-Menu by pressing the UP or DOWN button until the display shows the following label:

SrvcCode
Press ▲▼

Press both the UP and DOWN buttons SIMULTANEOUSLY to select the Service code Sub-Menu. The Translator will display all Active Service Codes as shown in the Service Codes menu schematic (below). If Service Codes are not available, the display will show the following:

SrvcCode
No Codes



Explanation of SPN & FMI Diagnostic Codes

SPN refers to Suspect Parameter Number and FMI refers to Failure Mode Identifier.
Both the SPN and FMI are used in the J1939 standard for identification of faults and conditions.

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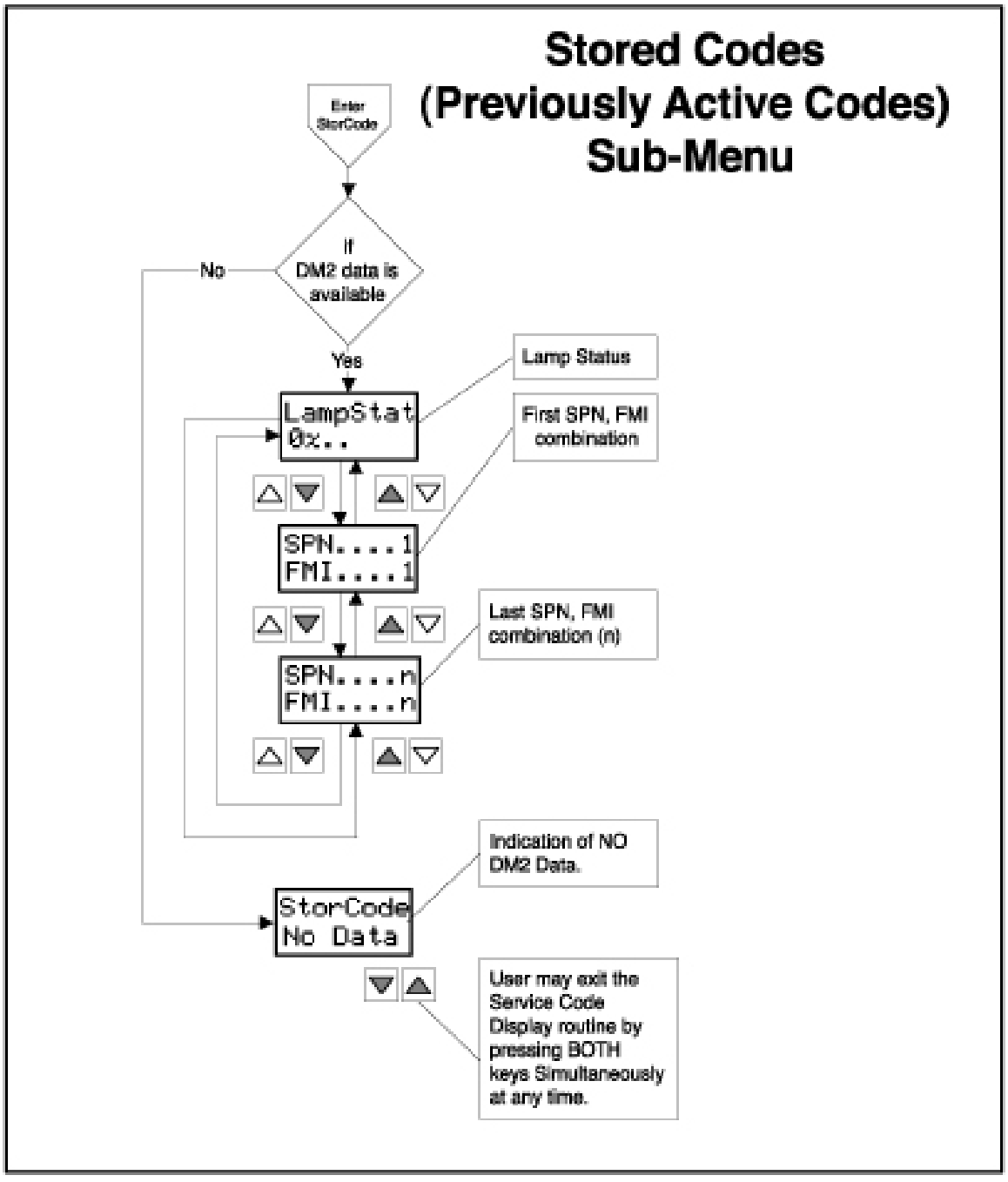
Viewing Service Codes in
The Engine Control Module (ECM)

The Translator can request Stored Service Codes (DM2) from the engine. The Stored Service Codes may be used for diagnostic and service needs. To view the Stored Service Codes it is necessary to select the StorCode Sub-Menu by pressing the UP or DOWN button until the display shows the following label:

StorCode
Press ▲▼

Press both the UP and DOWN buttons SIMULTANEOUSLY to select the StorCodes Sub-Menu. The Translator will display the Stored Service Codes according to the menus shown in the schematic below.
If Stored Service Codes are not available, the display will show:

StorCode
No Data



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Modbus RS485 Serial Connection Parameters: 9600 Bps, 8 Data Bits, 1 Stop Bit, No Parity.												
Modbus Register	**Parameter**	**Decimal Places**	**Units**	**Range**	**Resolution per bit**	**Value for not available**	**Cat Marine**	**John Deere**	**Cummins**	**Detroit Diesel**	**Deutz EMR**	**Perkins 1300 EDI**
40001	Percent Load at Current Speed	0	Per Cent	0 - 255	1 Per Cent	FFFFh, -1d	Y	Y	Y	Y	Y	Y
40002	Actual Engine Per Cent Torque	0	Per Cent	-125 - 130	1 Per Cent	7FFFh, 32767d			Y	Y		Y
40003	Engine Speed	0	RPM	0 - 8000	1 RPM	FFFFh, -1d	Y	Y	Y	Y	Y	Y
40004	Total Engine Hours Fraction	1	HRS	0.0 - 999.9	0.1 HRS	FFFFh, -1d	Y	Y	Y	Y	Y	Y
40005	Total Engine Thousands of Hours	x1000	HRS	0 - 65535	1000 HRS	FFFFh, -1d	Y	Y	Y	Y	Y	Y
40006	Electric Potential	1	VDC	0.0 - 3276.7	0. 1 VDC	FFFFh, -1d	Y		Y	Y		
40007	Battery Potential Voltage (switched)	1	VDC	0.0 - 3276.7	0.1 VDC	FFFFh, -1d		Y				Y
40008	Engine Oil Level	1	Per Cent	0.0 - 102.0	0.1 Per Cent	FFFFh, -1d			Y	Y		
40009	Coolant Level	1	Per Cent	0.0 - 102.0	0.1 Per Cent	FFFFh, -1d				Y		Y
40010	Fan Speed	0	Per Cent	0 - 100	1 Per Cent	FFFFh, -1d						
40011	Total Fuel Used Fraction	1	Liters	0.0 - 999.9	0.1 Liters	FFFFh, -1d		Y	Y	Y		
40012	Total Fuel Used 1000's of Liters	x1000	Liters	0 - 65535	1000 Liters	FFFFh, -1d		Y	Y	Y		
40013	Engine Coolant Temperature	0	deg. C	-40 - 215	1 deg. C	7FFFh, 32767d	Y	Y	Y	Y	Y	Y
40014	Fuel Temperature	0	deg. C	-40 - 215	1 deg. C	7FFFh, 32767d	Y	Y	Y	Y		Y
40015	Engine Oil Temperature	0	deg. C	-273 - 2007	1 deg. C	7FFFh, 32767d			Y	Y		Y
40016	Engine Intercooler Temperature	0	deg. C	-40 - 215	1 deg. C	7FFFh, 32767d				Y		
40017	Fuel Delivery Pressure	0	Kpa	0 - 1020	1 Kpa	FFFFh, -1d	Y	Y		Y		
40018	Engine Oil Pressure	0	KPa	0 - 1020	1 KPa	FFFFh, -1d	Y	Y	Y	Y	Y	Y
40019	Coolant Pressure	0	KPa	0 - 2040	1 KPa	FFFFh, -1d			Y	Y		
40020	Fuel Rate	1	Liters / Hr	0.0 - 3276.7	0.1 Liters / Hr	FFFFh, -1d	Y	Y	Y	Y	Y	Y
40021	Barometric Pressure	1	KPa	0.0 - 102.0	0.1 Kpa	FFFFh, -1d			Y			
40022	Air Inlet Temperature	0	deg. C	-40 - 215	1 deg. C	7FFFh, 32767d		Y				
40023	Boost Pressure	0	KPa	0 - 510	1 KPa	FFFFh, -1d	Y	Y	Y	Y	Y	Y
40024	Intake Manifold Temperature	0	deg. C	-40 - 215	1 deg. C	7FFFh, 32767d		Y	Y	Y		
40025	Air Filter Differential Pressure	1	KPa	0.0 - 127.5	0.1 KPa	FFFFh, -1d				Y		
40026	Exhaust Gas Temperature	0	deg. C	-273 - 2007	1 deg. C	7FFFh, 32767d				Y		
40027	Transmission Oil Pressure	0	KPa	0 - 4080	1 KPa	FFFFh, -1d	Y					
40028	Transmission Oil Temperature	0	deg. C	-273 - 2007	1 deg. C	7FFFh, 32767d	Y					
40029	Injector Metering Rail 1 Pressure	2	Mpa	0.00 - 327.67	0.01 Mpa	FFFFh, -1d				Y		
40030	Injector Metering Rail 2 Pressure	2	Mpa	0.00 - 327.67	0.01 Mpa	FFFFh, -1d						
40031	Auxiliary Temperature 1	0	deg. C	-40 - 210	1 deg. C	7FFFh, 32767d						
40032	Auxiliary Pressure 1	0	KPa	0 - 4000	1 KPa	FFFFh, -1d						
40033	Malfunction Indicator Lamp Status			1 = On, 0 = Off		FFFFh, -1d						
40034	Red Stop Lamp Status			1 = On, 0 = Off		FFFFh, -1d						
40035	Amber Stop Lamp Status			1 = On, 0 = Off		FFFFh, -1d						
40036	Protect Lamp Status			1 = On, 0 = Off		FFFFh, -1d						
40037	Future Use											
40038	Future Use											
40039	Future Use											
40040	Future Use											
40041	Percent Load at Current Speed	0	Per Cent	0 - 255	1 Per Cent	FFFFh, -1d	Y	Y	Y	Y	Y	Y
40042	Actual Engine Per Cent Torque	0	Per Cent	-125 - 130	1 Per Cent	7FFFh, 32767d			Y	Y		Y
40043	Engine Speed	0	RPM	0 - 8000	1 RPM	FFFFh, -1d	Y	Y	Y	Y	Y	Y
40044	Total Engine Hours Fraction	1	HRS	0.0 - 999.9	0.1 HRS	FFFFh, -1d	Y	Y	Y	Y	Y	Y
40045	Total Engine Thousands of Hours	x1000	HRS	0 - 65535	1000 HRS	FFFFh, -1d	Y	Y	Y	Y	Y	Y
40046	Electric Potential	1	VDC	0.0 - 3276.7	0. 1 VDC	FFFFh, -1d	Y		Y	Y		
40047	Battery Potential Voltage (switched)	1	VDC	0.0 - 3276.7	0.1 VDC	FFFFh, -1d		Y				Y
40048	Engine Oil Level	1	Per Cent	0.0 - 102.0	0.1 Per Cent	FFFFh, -1d			Y	Y		
40049	Coolant Level	1	Per Cent	0.0 - 102.0	0.1 Per Cent	FFFFh, -1d				Y		Y
40050	Fan Speed	0	Per Cent	0 - 100	1 Per Cent	FFFFh, -1d						
40051	Total Fuel Used Fraction	1	Gallons	0.0 - 999.9	0.1 Gallons	FFFFh, -1d		Y	Y	Y		
40052	Total Fuel Used 1000's of Gallons	x1000	Gallons	0 - 65535	1000 Gallons	FFFFh, -1d		Y	Y	Y		
40053	Engine Coolant Temperature	0	deg. F	-40 - 419	1 deg. F	7FFFh, 32767d	Y	Y	Y	Y	Y	Y
40054	Fuel Temperature	0	deg. F	-40 - 419	1 deg. F	7FFFh, 32767d	Y	Y	Y	Y		Y
40055	Engine Oil Temperature	0	deg. F	-459 - 3645	1 deg. F	7FFFh, 32767d			Y	Y		Y
40056	Engine Intercooler Temperature	0	deg. F	-40 - 419	1 deg. F	7FFFh, 32767d				Y		
40057	Fuel Delivery Pressure	0	PSI	0 - 147	1 PSI	FFFFh, -1d	Y	Y		Y		
40058	Engine Oil Pressure	0	PSI	0 - 147	1 PSI	FFFFh, -1d	Y	Y	Y	Y	Y	Y
40059	Coolant Pressure	0	PSI	0 - 295	1 PSI	FFFFh, -1d			Y	Y		
40060	Fuel Rate	1	Gallons / Hr	0.0 - 3276.7	0.1 Gallons / Hr	FFFFh, -1d	Y	Y	Y	Y	Y	Y
40061	Barometric Pressure	1	PSI	0.0 - 14.7	0.1 PSI	FFFFh, -1d			Y			
40062	Air Inlet Temperature	0	deg. F	-40 - 419	1 deg. F	7FFFh, 32767d		Y				
40063	Boost Pressure	0	PSI	0 - 73	1 PSI	FFFFh, -1d	Y	Y	Y	Y	Y	Y
40064	Intake Manifold Temperature	0	deg. F	-40 - 419	1 deg. F	7FFFh, 32767d		Y	Y	Y		
40065	Air Filter Differential Pressure	1	PSI	0.0 - 18.5	0.1 PSI	FFFFh, -1d				Y		
40066	Exhaust Gas Temperature	0	deg. F	-459 - 3645	1 deg. F	7FFFh, 32767d				Y		
40067	Transmission Oil Pressure	0	PSI	0 - 591	1 PSI	FFFFh, -1d	Y					
40068	Transmission Oil Temperature	0	deg. F	-459 - 3645	1 deg. F	7FFFh, 32767d	Y					
40069	Injector Metering Rail 1 Pressure	0	PSI	0 - 32767	1 PSI	FFFFh, -1d				Y		
40070	Injector Metering Rail 2 Pressure	0	PSI	0 - 32767	1 PSI	FFFFh, -1d						
40071	Auxiliary Temperature 1	0	deg. F	-40 - 410	1 deg. F	7FFFh, 32767d						
40072	Auxiliary Pressure 1	0	PSI	0 - 580	1 PSI	FFFFh, -1d						
40073	Malfunction Indicator Lamp Status			1 = On, 0 = Off		FFFFh, -1d						
40074	Red Stop Lamp Status			1 = On, 0 = Off		FFFFh, -1d						
40075	Amber Stop Lamp Status			1 = On, 0 = Off		FFFFh, -1d						