

Vehicle Telematics Training Manual

Version 24.x Last Modified 24.0 | March 2024

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Technical Support

AssetWorks provides several ways to connect with the Customer Support team. Be prepared to provide detailed information to the representative. If you are reporting an issue by email, include screen shots of your problem. This will provide the Customer Support representative with the information needed to respond quickly and effectively.

Customer Support is available Monday through Friday, 7:00 a.m. to 7:00 p.m., Eastern Time.

Telephone: 1-610-225-8300

Email: <u>M5Support@AssetWorks.com</u>

Website: Community.AssetWorks.com

The support website can be used to open issues, subscribe to user groups, and download documentation, as well as to access the latest AssetWorks news. For secure access to the website, contact Customer Support by calling the number above.

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FleetFocus M5 Vehicle Telematics Overview

Note: The Telematics module requires integration with an additional program that will collect the fault code data. Please contact your Project Manager or M5 Customer Support for more information.

Modern Vehicles are controlled by computers that use sensors located throughout the engine, transmission and other major assemblies to constantly monitor the component. A vehicle's Electronic Control Unit (ECU) is the main computer on the vehicle and stores operating data and faults generated by the many sensors it connects to. The operating parameter data, diagnostic trouble codes (DTC), GPS location information and other electronic vehicle data is collectively referred to as telemetry or telematics.

Several different tools and communication methods are available that allow vehicle operators to access the data being stored in the ECU and use that information to monitor vehicle performance and manage its maintenance. Among the many ways that ECU data can be accessed are GPS-based vehicle locating systems that transmit ECU data along with the location of the vehicle, engine diagnostic tools that connect directly to the ECU and download data and in-cab solutions that alert drivers to vehicle parameters and trouble codes.

Depending on the age of your fleet vehicles you may have a variety of ECU types with different standards. The M5 Vehicle Telemetry Module is intended to provide a single method for capturing ECU parameter values and DTCs, processing this information into intelligent Work Requests and viewing historical telematics data for individual vehicles or groups of vehicles.

Each different vendor application uses a UIA adapter to load the ECU information into M5. Regardless of the application and adapter used the M5 Telemetry Module can process and store the information. This allows Fleet Managers to consolidate the collection of their telematics data and allows AssetWorks to support only a single module and the individual adapters.

FleetFocus M5 Functionality

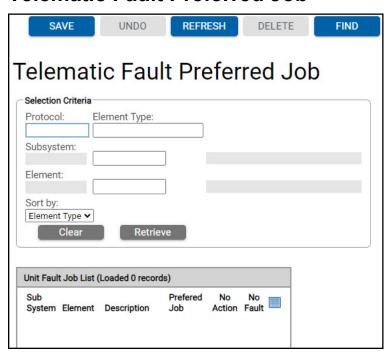
FleetFocus M5 employs a service that captures general telematics data. The Service can be a web service or make use of standard queuing software to accept the data.

As part of this functionality, M5 captures and stores parameter data, readings and fault codes from the ECM into system tables. The data is stored in the TM_MESSAGES table. It can then be evaluated and used with custom reports and dashboards. The readings are stored in the TM_READINGS table. The fault codes are stored in the TM_ALERTS table.

Despite the variety of tools and methods available to read the ECU, the industry has developed standards for communicating with the ECU and standard structures for reporting the parameters and diagnostic trouble codes. The Society of Automotive Engineers has published standards that vehicle manufacturers were to adopt in programming their ECU's. Depending on the type of engine and the age of the vehicle, most vehicles built in the last 20 years use:

- **J1708** An early SAE serial communication protocol found in older truck and buses.
- **J1939** A newer SAE controller area network (CAN) protocol widely adopted by many diesel engine manufacturers.
- **J1979** (OBD-II) The protocol used by light-duty gasoline-powered vehicles.

Telematic Fault Preferred Job



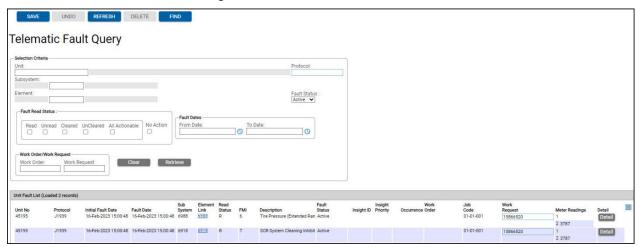
The Telematic Fault Preferred Job frame displays a list of the unit fault codes for a particular protocol. It allows a user to enter a preferred job for a particular fault code or a default job. The default job reason can be set for all fault codes by setting the following system flags:

- System Flag 5206 Default job code for inspecting ECM faults.
- System Flag 5207- Default job reason for inspecting ECM faults.

The user can choose to select **No Action** when a fault code is recorded or to record as No Fault. The **No Fault** setting is common for fault codes that are informational only where no action is required. M5 uses the following sequence to search for the preferred job to apply to the fault:

- Tech Spec Main
- Category Main
- Fault Preferred Job Frame
- System Flags

Telematic Fault Query



The Telematic Fault Query frame allows a user to query the fault codes for a unit or protocol in a variety of methods such as *Fault Read Status* codes, *Fault Dates* range, or by a *Work Order* or **Work Request**. The **Retrieve** button displays the records that meet the selection criteria in the *Unit Fault List* i-frame. To create a new query, select the **Clear** button.

Unit Fault List i-frame

The *Unit Fault List* i-frame displays the records that meet your selection criteria.

The Fault Date column displays the Alert Date.

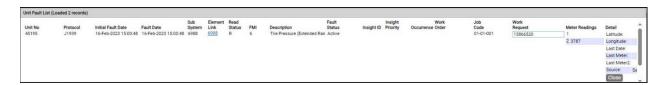
The *Insight ID* link opens the Insight Notes window that displays Insight Cause and Insight Complaint fields. The Note Text and Change Information also displays.

Note: No Cause Notes Provided or No Complaint Notes Provided display when the Insight does not have Cause or Complaint notes.

The Insight Priority field indicates the Insight Priority:

- Critical Red
- Major Orange
- Minor Yellow

If the **Detail** button is selected, the most current fault Latitude, Longitude, Last Date, Last Meter, and Source displays. The fault may be reported more than once. A record is not created for each fault, the Initial Fault Date is displayed, and the fault information is updated in the Detail Column.



Workflow Processing

After Fault code data is captured the record can be used to initiate Work Flow Processing by creating Work Requests and completing them on Work Orders.

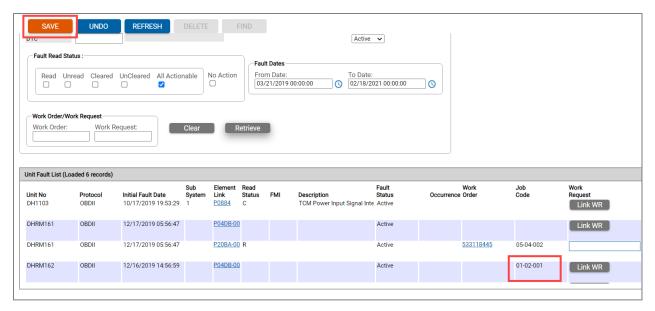
Work Requests

From the Telematics Fault Query frame, the user can use the **Link WR** button to link an existing work request to a fault code or create a new work request for the fault code. After the link is made, the Status is now R - Read.

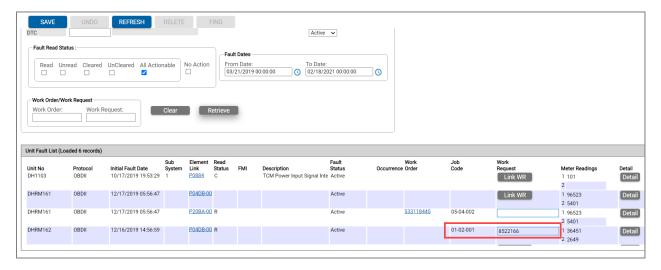
To create a new work request for the fault:

- 1. Select the **New Ticket** button. Enter the **Job Code**, **Job Reason**, and **Employee/Group** (optional).
- 2. Select the x on the right corner of the frame to return to the Telematics Fault Query.





3. Select the **SAVE** button to see the work request number created.



To link the fault to an existing work request:

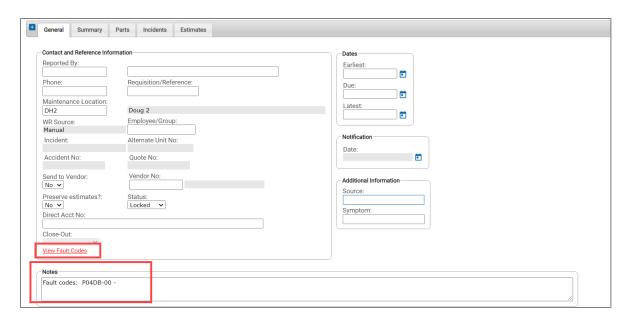
- 1. Select the Link WR button.
- 2. Use Work Request LOV to select an existing, available work request.
- 3. Select the x on the right corner of the frame to return to the Telematics Fault Query.

UNDO REFRESH DELETE ATTACH RELATED ~ FIND Work Request Main Work Request Max WO: DHRM162 2016 CIVIC EX Serial#/Vin: 1FT8X3BT4EEB08283 Number: Occurrence: Create Date: 8522166 New Ticket 12/15/2021 Job Code: Campaign No: REPAIR RADIATOR GRILLE 01-02-001 Job Reason: Tester: G EXT DATA JOB REASON Schedule Shift: Work Order: General Summary Parts Incidents Estimates Contact and Reference Information Reported By: \equiv Requisition/Reference: Phone: Due: \blacksquare Maintenance Location: Latest: Doug 2 DH2 \blacksquare WR Source: Employee/Group: Manual Notification Incident: Alternate Unit No:

You can navigate to Work Request Main by double-clicking the work request number.

The **View Fault Codes** hyperlink displays as red and the fault codes are described in the note area.

Date:

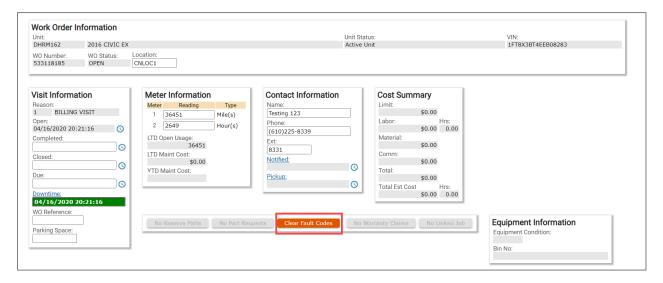


Accident No:

Quote No:

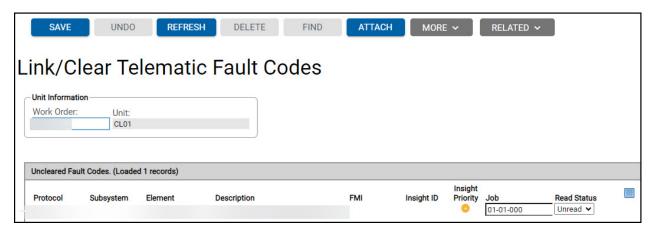
Work Order Processing

When the work order is opened, if there is a work request for the fault job it can be selected. If the user hovers over the work request, a note will appear describing the fault. If the unit has a fault, the **Clear Fault Codes** hyperlink appears on the work order when it is opened.



Link/Clear Telematic Fault Codes

If the **Clear Fault Codes** hyperlink is selected, the Link/Clear Telematic Fault Codes frame opens.



The *Insight ID* link opens the *Insight Notes* window that displays **Insight Cause and Insight Complaint** fields. The Note Text and Change Information also displays.

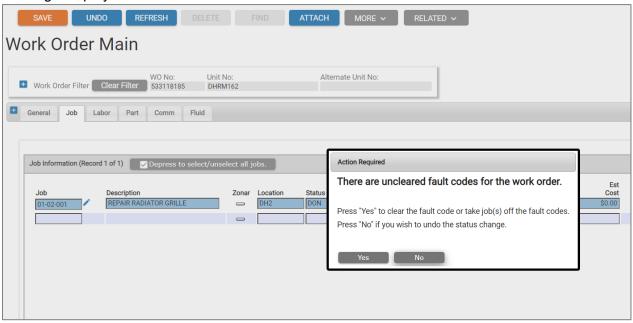
Note: No Cause Notes Provided or No Complaint Notes Provided display when the Insight does not have Cause or Complaint notes.

The **Insight Priority** field indicates the Insight Priority:

- Critical Red
- Major Orange
- Minor Yellow

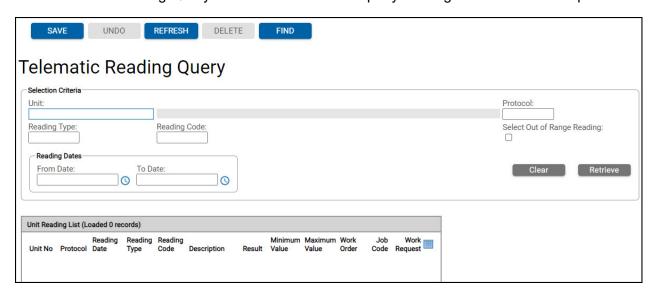
The job code is entered for the fault that was cleared and the **Read Status** is updated to *Cleared*.

If the faults are not cleared, when the job status is changed to DON, the following message displays.



Telematic Reading Query

The Telematic Reading Query frame allows a user to query reading codes for a unit or protocol.

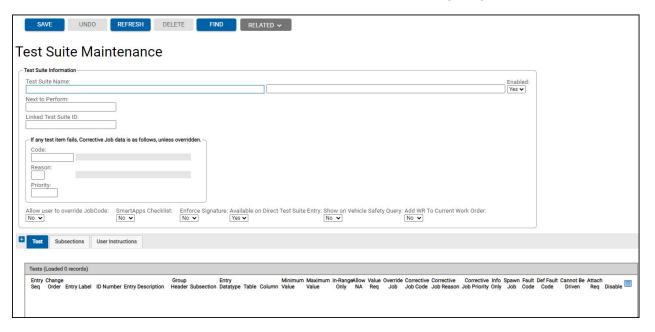


This frame can display any readings that are outside the expected range. In order to validate the results of the ECU parameters, the Test Suites functionality is used to establish the parameter codes and its minimum and maximum values if required. **Note:** There will be no actual Test Suite result created.

Test Suite Maintenance

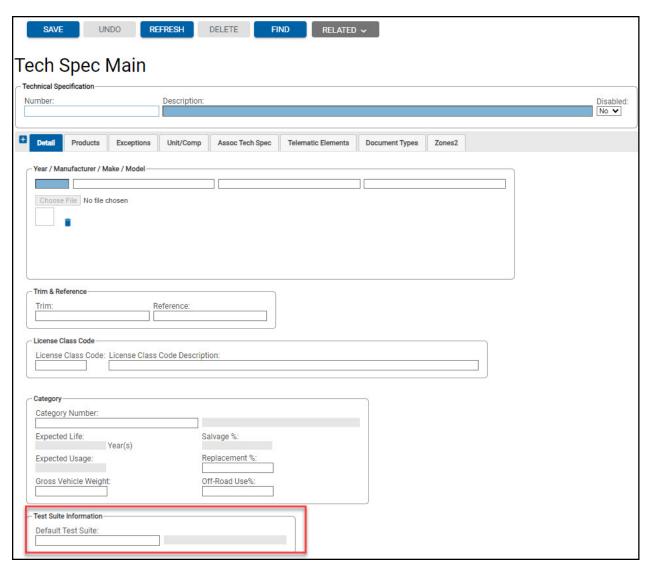
A Test Suite is created for the type of vehicle parameter data to be tracked. Entries are made on the Test Suite to represent the parameter codes that will be sent to M5 from the telematics service provider. On the Test Suites these are referred to as labels. Based on the user's requirements, each label (parameter) will be defined with minimum and maximum values and any corrective jobs if required.

Refer to the Test Suites Quick Reference Guide for details on configuring this frame.



Tech Spec Main

The Test Suite is associated with the technical specification by entering the *Test Suite* name in the **Default Test Suite** field.



Workflow Processing

When parameter data is sent, M5 will compare the parameter result data sent to the unit's tech spec Default Test Suite. Based on the configuration of the Test Suite, M5 will take the action required such as create a work request.

Work Request

When the work request is generated, the reading code is written to the note area.

Work Order Processing

When the work order is opened, if there is a work request for the out-of-range reading job it can be selected. If the user hovers over the work request, the note will appear describing the reading message.



Out of Range Condition

To select the results for an out of range condition, use the Telematic Reading Query frame. Select **Out of Range Reading** checkbox and then select **Retrieve**.



Notification Processing

In addition, the READING OUT OF RANGE notification event can be enabled. This sends an email notification to email address on the location main record for the maintenance location of the unit.



Reporting Fault Data

While there are no Standard Reports available for telematics data analysis, custom reports can be produced using Ad-hoc Reporting and Crystal Reports. Custom Dashboards can also be developed to support business requirements.

Updates

Release	Section	Description
23.2	Telematic Fault Query	Added Insight ID and Insight Priority fields.
23.2	Link/Clear Telematic Fault Codes	Added Insight ID and Insight Priority fields.
24.0	Test Suite Maintenance	Updated the reference file title name.
24.0	Telematic Fault Query	Added Fault Date column.