

## VEHICLE EMISSIONS DYNAMOMETER CALIBRATION PROPERLY MONITORED

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### INFLUX REBEL LT VEHICLE DATA LOGGER SAVES USERS TIME & MONEY

CAS DataLoggers provided the data logging solution for a well-known original equipment manufacturer using a standard production diesel vehicle for an emissions dynamometer calibration procedure of their equipment at their plant. The test vehicle was locked in place on the [dynamometer](#) which had been calibrated to mimic the test vehicle's inertia and driving resistance. The vehicle was driven over a preset speed profile to reproduce typical road conditions and achieve a given speed and/or acceleration. An emissions analyzer was connected to the vehicle's exhaust, which recorded the amounts of each pollutant (HC, CO, NOx, CO2) emitted during the driving cycle. Every day the vehicle would be driven through the same test drive cycle and the diagnostic results would be used to indicate if the emissions equipment was suitably calibrated. During these test cycles, the engine was started and driven at many different speeds over a simulated distance of about 10 miles (16 km). However, it was possible during certain test runs, that the vehicle would unexpectedly regenerate its emissions reduction system, potentially causing damage by overheating the emissions analyzer that was connected to the exhaust. The customer needed a way to help prevent this by warning when the regeneration process would take place so that the vehicle could be taken off-line or the emissions analyzer could be disconnected.



## INSTALLATION

The manufacturer installed an [Influx Rebel LT Vehicle Data Logger](#) onto the diagnostic bus of the test vehicle. The Rebel CAN data logger allowed plant engineers to directly access the engine parameter data and to record all the test data. It is a high-speed vehicle data logger designed for vehicle test and OEM engineering data acquisition. The LT supports ODB and J1939 protocols on its 2 CAN bus interfaces plus high-speed CCP/xCP and UDS protocols to acquire internal ECU parameters for engineering applications. CAN signals could be recorded in a 'listen only' mode for CAN bus data logging applications. Data collected during each test was automatically uploaded via an optional WiFi interface to a central server so that the lead engineer could monitor key parameters from his desk daily. From this data the engineer was able to stop testing if a regeneration cycle was imminent, saving the plant's emissions analyzer from potential damage. In addition, the Rebel indicated to the driver via the optional dash display if a regeneration process was due.



## USAGE

The Rebel LT offered flexible and powerful data logging solution for this application. It could also capture other real-time data from several sources including temperatures, RPM, throttle settings, speed, to be able to confirm the correct driving cycle had been followed during the dynamometer calibration. For other applications, the Rebel LT provides a flexible full featured tool for engineering data acquisition, vehicle testing in the field or customer problem investigation. It can simultaneously capture data from different CAN sources plus 1 K-line bus and save up to 32 GB of data to a removable SD memory. Four analog inputs allow it acquire data from additional voltage output sensors and an optional K box expands this capability for other sensors like thermocouples. Other options include an internal GPS for capturing location data during field testing, an internal 3 axis accelerometer and an internal 3G modem to automatically upload data to a cloud server. The Rebel LT is packaged in a rugged dust- and splash-proof enclosure, with an LCD Display, keypad and 8 LED's.

The plant engineer found the Rebel LT easy to setup with no need to write any complex scripts using DiaLog software. The simple, intuitive interface allowed the engineer to construct data logging configurations using the simple graphical interface in a few minutes. Configurations can be uploaded to the logger via WiFi or USB. Dialog can import industry standard ASAM A2L files, ODX and CAN dbc formats to build a list of available messages. DiaLog also allows analyzing live and recorded data in one intuitive package.

For more in-depth evaluation, the Influx Analyzer software package allows for advanced configuration and visual data analysis, Analyzer can create ODX framework files from a UDS compliant vehicle. Live CAN data and diagnostics can be easily monitored and analyzed using sophisticated graphing tools.

## BENEFITS

The customer gained multiple benefits from installing the Influx Rebel LT Vehicle Data Logger to monitor the calibration of their dynamometer calibration procedure, foremost of which was the ability to prevent the test vehicle regenerating in the middle of the project and damaging the heat-sensitive equipment. This alone saved the plant a good deal of time and money. Direct access to test data and automatic uploads via WiFi upload enabled constant project supervision. The Rebel LT CAN-based vehicle logger also provided the plant with a cost-effective means of recording the data without requiring extra instrumentation and could capture a wide variety of other real-time data, ensuring its use in subsequent vehicle tests applications. Easy configuration and intensive analysis was provided via DiaLog software, increasing data accessibility using standard formats.

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For further information on the [Influx Rebel LT Vehicle Data Logger](#), emissions dynamometer calibration procedures, or to find the ideal solution for your application-specific needs, contact a CAS Data Logger Application Specialist at **(800) 956-4437** or [www.DataLoggerInc.com](http://www.DataLoggerInc.com).