Service Memorandum

SM1903 Aftertreatment Abnormal Update Rate Faults

Models Affected: Vision, All American, and TX4 with Cummins diesel engines that are EPA/CARB certified on highway (Blue Bird production date January 18, 2016 or later)

Subject: Aftertreatment Abnormal Update Rate Fault Codes

This service memorandum includes basic troubleshooting steps for Cummins engines with "Aftertreatment Abnormal Update Rate Fault Codes". These codes indicate either a problem with the aftertreatment battery power/ground circuits, the proprietary data link circuits, or one of the components connected to the proprietary data link. Both Cummins and Blue Bird harnesses include the proprietary data link circuits, and power/ground circuits. Blue Bird harnesses include the aftertreatment power/ground circuits, and the proprietary data link circuits on the OEM side of the 14-pin crossover connector that plugs to the Cummins engine harness. The Blue Bird supplied circuits go from the 14 pin OEM crossover connector to the SCR sensor table, DPF sensor table, and the DEF tank sensor. Proprietary data link circuits DO NOT go to the diagnostic port connector located inside the cab of the bus.

Cummins supplied components that are connected to the proprietary datalink:

- VGT actuator
- Aftertreatment intake NOx sensor
- Aftertreatment outlet NOx sensor
- Aftertreatment DPF temperature sensor module
- Aftertreatment SCR temperature sensor module
- Aftertreatment intermediate NH3 sensor, if equipped

Blue Bird supplied components that are connected to the proprietary datalink:

- Data link Aftertreatment DEF tank Tri-Function sensors (level, temperature, and quality)

Examples of Cummins Aftertreatment Abnormal Update Rate Fault Codes that may be active include:

2771 - Aftertreatment 1 Outlet NOx Sensor - Abnormal Update Rate
3232 - Aftertreatment 1 Intake NOx Sensor - Abnormal Update Rate
4151 - Aftertreatment Diesel Particulate Filter Temperature Sensor Module - Abnormal Update Rate
4152 - Aftertreatment Selective Catalytic Reduction Temperature Sensor Module - Abnormal Update Rate
4572 - Aftertreatment 1 Diesel Exhaust Fluid Tank Temperature - Abnormal Update Rate
4677 - Aftertreatment 1 Diesel Exhaust Fluid Tank Level - Abnormal Update Rate

TROUBLESHOOTING STEPS:

Step 1

Batteries should be fully charged (12 volts or above), battery cable connections should be clean and tight before beginning remaining checks

Turn ignition key "ON" and verify power and ground supplied to all applicable aftertreatment component(s). See applicable Blue Bird and Cummins wiring schematic for the bus being serviced.
Verify battery voltage level supplied to the applicable aftertreatment component(s). Voltage measured at the supply pins should be within 1 volt of battery voltage.
If battery voltage at the supply pins are not within 1 volt of battery voltage, correct faulty aftertreatment wiring, connector, relay, or component.
If no voltage issue found or if fault code(s) remains active after voltage is verified correct, proceed to step 2.

Note to access Blue Bird wiring schematics for your bus visit: https://vantage.blue-bird.com
Note to access Cummins wiring schematics for your engine visit: https://quickserve.cummins.com

Step 2

Refer to Cummins Procedure 019-417 (available on Cummins QuickServe®)

Follow the resistance and short circuit checks to verify the proprietary data link circuits, and or the components connected to the proprietary data link. See applicable Blue Bird and Cummins wiring schematic for the bus being serviced.
Correct any circuit or component issues found. If no issues found, proceed to step 3.

Note to access Cummins Procedure 019-417 visit: https://quickserve.cummins.com/qs3/pubsys2/xml/en/procedures/455/455-019-417.html

Step 3

Use Cummins INSITE™ to verify Cummins ECM calibration installed

Refer to Cummins QuickServe® to confirm latest Cummins ECM calibration available for the engine serial number (ESN). Insure the latest applicable Cummins ECM calibration is installed.
Also confirm and complete any applicable Cummins campaigns or technical service bulletins, that address the active fault code(s).