Troubleshooting - PMCI-2 ECU - Injector and Pump unit control

PMCI-2 ECU pump unit control

The signals from the PMCI-2 to the pump units can only be directly measured using an oscilloscope. If an oscilloscope is not available, these sections may be omitted from the troubleshooting procedure.

Figure 1 shows the voltage output from the PMCI-2 electronic unit to each injector solenoid valve and Table 1 shows the pins for the injector solenoid valves. The pump unit injection cycle begins with a 50-V boost voltage to close the solenoid valve quickly so fuel pressure can be increased. This high initial voltage is followed by a series of 12-V pulses that hold the solenoid valve shut against the high-pressure fuel. Finally, voltage to the solenoid valve is switched off and the inductance of the solenoid results in a negative voltage as the valve closes.

The pump unit voltage shall only be measured using the breakout harness. Not using the breakout harness might result in open circuit DTC. These DTCs should be cleared immediately after verifying pump unit output.

Figure 1. PMCI-2 ECU voltage output for pump unit control

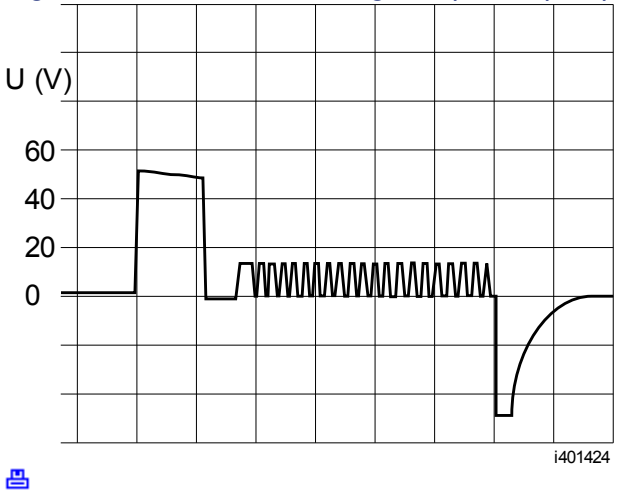

Table 1. Detailed information for the pump unit PMCI-2 outputs

Description	ECN	PMCI-2 connector 12-pin		Breakout harness	
		V (+)	V (-)	V (+)	V (-)
Pump unit 1	B131	26	25	34	33
Pump unit 2	B132	34	33	35	36
Pump unit 3	B133	30	29	38	37
Pump unit 4	B134	35	36	39	40
Pump unit 5	B135	27	28	42	41
Pump unit 6	B136	31	32	61	62

PMCI-2 ECU injector control

The signals from the PMCI-2 to the injectors can only be directly measured using an oscilloscope. If an oscilloscope is not available, these sections may be omitted from the troubleshooting procedure

Figure 2 shows the voltage output from the PMCI-2 electronic unit to each injector solenoid valve and Table 2 shows the pins for the injector solenoid valves. The injection cycle begins with a 50-V boost voltage to close the solenoid valve so pressure can be increased. This high initial voltage is followed by a series of 12-V pulses that hold the solenoid valve shut against the high-pressure fuel. Finally, voltage to the solenoid valve is switched off and the inductance of the solenoid results in a negative voltage as the valve closes.

The injector voltage shall only be measured using the breakout harness. Not using the breakout harness might result in open circuit DTC. These DTCs should be cleared immediately after verifying injector output.

Figure 2. PMCI-2 voltage output for the injector

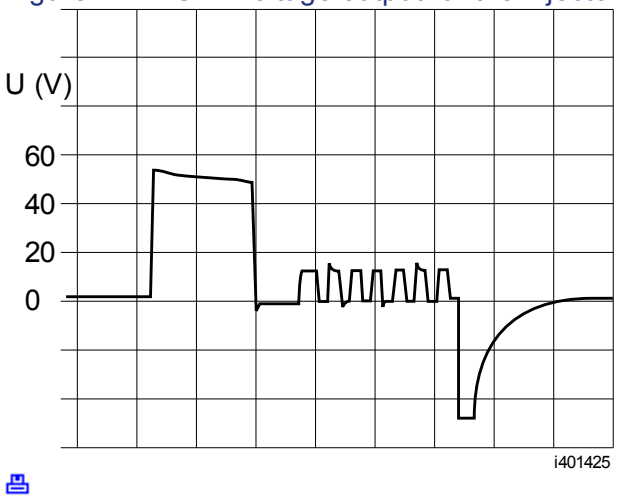

Table 2. ~~Detailed information for the injector PMCI-2 outputs~~

Description	ECN	PMCI-2 connector 12-pin		Breakout harness	
		V (+)	V (-)	V (+)	V (-)
Injector 1	B421	2	1	10	9
Injector 2	B422	10	9	18	17
Injector 3	B423	6	5	14	13
Injector 4	B424	11	12	19	20
Injector 5	B425	3	4	11	12
Injector 6	B426	7	8	15	16

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