

## Fault Code Information

FAULT CODE {LAMP}	J1587 PID(P) SID(S) {FMI}	J1939 SPN(S) {FMI}	REASON	EFFECT
115 {Red}	P190 {2}	None {None}	No engine speed signal detected at pins Number 1 and 15 or 11 and 14 of SH.	Current to injectors turned off. Engine dies.
121 {Yellow}	P190 {10}	None {None}	No engine speed signal detected at one pair of pins either Number 1 and 15 or 11 and 14 of SH.	None. Possible fueling or timing shift.
122 {Yellow}	P102 {2}	None {None}	High voltage detected at boost pressure signal pin No. 26 of SH.	None on performance.
123 {Yellow}	P102 {4}	None {None}	Low voltage detected at boost pressures signal No. 26 of SH.	None on performance.
131 {Red}	P091 {3}	None {None}	High voltage detected at throttle position signal pin No. 11 of SH.	Severe derate (power and speed). Power to get off road, or limp home if throttle pedal is held down.
132 {Red}	P091 {4}	None {None}	Low voltage detected at throttle position signal pin No. 11 or OH.	Severe derate (Power and speed). Power to get off road, or limp home if throttle pedal is held down.
135 {Yellow}	P100 {3}	None {None}	High voltage detected at oil pressure signal pin No. 7 of SH.	No engine protection for oil pressure.
141 {Yellow}	P100 {4}	None {None}	Low voltage detected at oil pressure signal pin No. 7 of SH.	No engine protection for oil pressure.
143 {Engine Protection}	P100 {1}	None {None}	Voltage signal at oil pressure signal pin No. 7 of SH indicates oil pressure lower than 55 kPa [8 psi] at idle - 800 rpm; 55 to 173 kPa [8 to 25 psi] at 800 to 1200 rpm; 173 to 208 kPa [25 to 30 psi] at 1200 to 2400 rpm. Note: All N14 engines now use 138 kPa [20 psi] at 1200 RPM instead of 713 kPa [25 psi].	Progressive power derate with increasing time after alert.
144 {Yellow}	P110 {3}	None {None}	High voltage detected at coolant temperature signal pin No. 17 of SH.	Possible white smoke. Fan on if ECM controlled. No engine protection for coolant temperature.
145 {Yellow}	P110 {4}	None {None}	Low voltage detected at coolant temperature signal pin No. 17 of SH.	Possible white smoke. Fan on if ECM controlled. No engine protection for coolant temperature.
151 {Engine Protection}	JP110 {0}	None {None}	Voltage signal at coolant temperature signal pin No. 17 of SH indicates coolant temperature above 10.4°C [220°F].	Progressive power and speed derate with increasing temperature.
153 {Yellow}	P105 {3}	None {None}	High voltage detected at manifold air temperature signal pin No. 25 of SH.	Fan clutch engaged if ECM controlled. No engine protection for manifold air temperature.
154 {Yellow}	P105 {4}	None {None}	Low voltage detected at manifold air temperature signal pin No. 25 of SH.	Fan clutch engaged if ECM controlled. No engine protection for manifold air temperature.
155 {Engine Protection}	P105 {None}	None {None}	Voltage signal at manifold air temperature signal pin No. 24 of SH indicates manifold air temperature above 82.2°C [180°F].	Progressive power and speed derate with increasing temperature.
212 {Yellow}	P175 {3}	None {None}	High voltage detected at oil temperature signal pin No. 6 or SH.	No engine protection for oil temperature.
213 {Yellow}	P175 {4}	None {None}	Low voltage detected at oil temperature signal pin No. 6 of SH.	No engine protection for oil temperature.
214 {Engine Protection}	p175 {None}	None {None}	Voltage signal at oil temperature signal pin No. 6 of SH indicates oil temperature above 124.5°C [258°F].	Progressive power derate with increasing temperature.
221 {Yellow}	P108 {3}	None {None}	High voltage detected at ambient air pressure signal pin No. 27 of SH.	Power derate by 15%.
222 {Yellow}	P108 {4}	None {None}	Low voltage detected at ambient air pressure signal pin No. 27 of SH.	Power derate by 15%.
234 {Red}	P190 {None}	None {None}	Engine speed signal on pins No. 1 and 15 and/or 11 and 14 of SH indicates engine speed greater than 2730 rpm.	Fuel shutoff valve de-energizes. Re-energizes when RPM falls to 2000. Rapid re-start valve opens immediately. Standard valve opens when fuel pressure drops to 103 kPa [15 psi].
235 {Engine Protection}	P111 {1}	None {None}	Voltage detected on coolant level low signal pin No. 9 of SH indicates low coolant level on vehicle.	Progressive power derate with increasing time after alert.
241 {Yellow}	P084 {2}	None {None}	Vehicle speed signal on pins No. 3 and 7 of OH has been lost.	Engine speed limited to Max. Engine Speed W/O VSS.
242 {Yellow}	P084 {10}	None {None}	Vehicle speed signal on pins No. 3 and 7 of OH indicates intermittent connection or possible tampering.	Engine speed limited to Max. Engine Speed W/O VSS.
243 {Yellow}	P121 {4}	None {None}	Less than 6 volts detected at engine brake relay supply pin No. 18 of AH. Indicates current draw from ECM greater than 2 amps or faulty ECM power supply.	ECM turns off fan engine brake supply voltage. Engine brakes can <b>not</b> be activated.
245 {Yellow}	S033 {4}	None {None}	Less than 6 volts detected at fan clutch supply pin No. 7 or AH. Indicates current draw from ECM greater than 2 amps or faulty ECM power supply.	ECM turns off fan engine brake supply voltage. Fan will <b>not</b> turn on. Possible engine overheat if ECM controlled fan in use.

FAULT CODE {LAMP}	J1587 PID(P) SID(S) {FMI}	J1939 SPN(S) {FMI}	REASON	EFFECT
254 {Red}	S017 {4}	None {None}	Less than 6 volts detected at fuel shutoff solenoid supply pin No. 16 of AH. Indicates current draw from ECM greater than 2 amps or faulty ECM power supply.	ECM turns off fuel shutoff valve supply voltages. Engine dies.
255 {Yellow}	S026 {3}	None {None}	Externally supplied voltage detected going into ECM fuel shutoff solenoid supply pin No. 16, or fan clutch supply pin No. 7 or engine brake relay supply pin No. 18, all of AH.	None on performance. Fuel shutoff valve or fan clutch or brake enable supply voltage stays on.
311 {Yellow}	S001 {6}	None {None}	Current detected at No. 1 injector return pin No. 10 of AH when voltage supply at pin No. 1 or AH is off.	Speed derate to 1400 to 1600 RPM. Current to injector is shutoff.
312 {Yellow}	S005 {6}	None {None}	Current detected at No. 5 injector return pin No. 2 of AH when voltage supply at pin No. 11 or AH is off.	Speed derate to 1400 to 1600 RPM. Current to injector is shutoff.
313 {Yellow}	S003 {6}	None {None}	Current detected at No. 3 injector return pin No. 12 of AH when voltage supply at pin No. 3 or AH is off.	Speed derate to 1400 to 1600 RPM. Current to injector is shutoff.
314 {Yellow}	S006 {6}	None {None}	Current detected at No. 6 injector return pin No. 6 of AH when voltage supply at pin No. 13 or AH is off.	Speed derate to 1400 to 1600 RPM. Current to injector is shutoff.
315 {Yellow}	S002 {6}	None {None}	Current detected at No. 2 injector return pin No. 14 of AH when voltage supply at pin No. 5 or AH is off.	Speed derate to 1400 to 1600 RPM. Current to injector is shutoff.
321 {Yellow}	S004 {6}	None {None}	Current detected at No. 4 injector return pin No. 6 of AH when voltage supply at pin No. 15 or AH is off.	Speed derate to 1400 to 1600 RPM. Current to injector is shutoff.
322 {Yellow}	S001 {5}	None {None}	No current detected at No. 1 injector return pin No. 10 of AH when voltage supply at pin No. 1 of AH is on.	Speed derate to 1400 to 1600 RPM. Current to injector is shutoff.
323 {Yellow}	S005 {5}	None {None}	No current detected at No. 5 injector return pin No. 2 of AH when voltage supply at pin No. 11 of AH is on.	Speed derate to 1400 to 1600 RPM. Current to injector is shutoff.
324 {Yellow}	S003 {5}	None {None}	No current detected at No. 3 injector return pin No. 12 of AH when voltage supply at pin No. 3 of AH is on.	Speed derate to 1400 to 1600 RPM. Current to injector is shutoff.
325 {Yellow}	S006 {5}	None {None}	No current detected at No. 6 injector return pin No. 4 of AH when voltage supply at pin No. 13 of AH is on.	Speed derate to 1400 to 1600 RPM. Current to injector is shutoff.
331 {Yellow}	S002 {5}	None {None}	No current detected at No. 2 injector return pin No. 14 of AH when voltage supply at pin No. 5 of AH is on.	Speed derate to 1400 to 1600 RPM. Current to injector is shutoff.
332 {Yellow}	S004 {5}	None {None}	No current detected at No. 4 injector return pin No. 6 of AH when voltage supply at pin No. 15 of AH is on.	Speed derate to 1400 to 1600 RPM. Current to injector is shutoff.
333 {Yellow}	S254 {12}	None {None}	No voltage detected on one or more of the injector supply pins No. 1, 3, 5, 11, 13, or 15 or AH when power is commanded.	Speed derate to 1400 to 1600 RPM.
335 {Red}	S254 {12}	None {None}	RAM memory read/write error inside ECM.	Unpredictable - possible no start (no power to either fuel solenoid or injectors).
341 {Red}	S254 {12}	None {None}	ROM memory checksum error inside ECM.	Unpredictable - possible no start (no power to either fuel solenoid or injectors).
342 {Red}	S253 {12}	None {None}	ECM <b>not</b> calibrated with ESDN or internal EEPROM memory checksum error.	Engine will <b>not</b> start (no power to fuel solenoid).
343 {Yellow}	S254 {12}	None {None}	Micro-processor communication error inside ECM.	None on performance.
351 {Yellow}	S254 {12}	None {None}	Injector power supply below specifications inside ECM.	Possible no noticeable effects. Possible reduced performance.
352 {Yellow}	S232 {4}	None {None}	No outgoing voltage detected at ECM switch supply pin No. 10 of OH ... OR ... low voltage detected at ECM sensor supply pins on SH.	Cruise control/PTO, engine brakes won't work. 431 fault code - Compulink™ shows all switches open ... OR ... derate to no air and simultaneous logging of fault codes, 123, 141, 145, 154, 213, 222 and 422.
411 {Yellow}	S249 {3}	None {None}	Data transmission error on control data link pins No. 10 and 20 of SH.	Control device will <b>not</b> work properly.
412 {Yellow}	S250 {3}	None {None}	Data transmission error on vehicle data link pin No. 27 and 8 of OH.	Electronic Service Tool will <b>not</b> work properly.
413 {Yellow}	S249 {9}	None {None}	Data transmission error on control data link pins No. 10 and 20 of SH.	Control device will <b>not</b> work properly.
414 {Yellow}	S250 {9}	None {None}	Data transmission error on vehicle data link pins No. 27 and 8 of OH.	Electronic Service Tool will <b>not</b> work properly.

FAULT CODE {LAMP}	J1587 PID(P) SID(S) {FMI}	J1939 SPN(S) {FMI}	REASON	EFFECT
415 {Engine Protection}	P100 {1}	None {None}	Voltage signal at oil pressure signal pin No. 7 or SH indicates oil pressure lower than 55 kPa [8 psi] at idle -800 RPM; 55 to 173 kPa [8 to 25 psi] at 800 to 2400 RPM.	Progressive power and speed derate with increasing time after alert.
422 {Yellow}	P111 {2}	None {None}	Voltage detected simultaneously on both the coolant level high and low signal pins No. 18 and 9 or SH ... OR ... no voltage detected on either pin.	No engine protection for coolant level.
431 {Yellow}	P091 {2}	None {None}	Voltage detected simultaneously on both the coolant level high and low signal pins No. 9 and 6 or SH ... OR ... no voltage detected on either pin.	None on performance.
432 {Red}	P091 {11}	None {None}	Voltage detected at idle validation on-idle signal pin No. 6 of OH when voltage at throttle position signal pin No. 11 or OH indicates pedal is <b>not</b> at idle ... OR ... voltage detected at idle validation of-idle signal pin No. 9 or OH when voltage at throttle position signal pin No. 11 of OH indicates pedal is at rest.	Engine will <b>only</b> idle.
433 {Yellow}	P102 {2}	None {None}	Voltage signal at boost pressure signal No. 26 of SH indicates high boost pressure but other engine characteristics indicate that boost pressure should be low.	None on performance.
434 {Yellow}	S251 {4}	None {None}	Battery supply voltage at pins No. 20, 21, 22, 23 or AH (relative to return pin No. 9, 25, 27 of AH) fell below 6.2 volts for fraction of a second ... OR ... ECM was <b>not</b> allowed to power down properly (retain battery supply voltage for 3 seconds after voltage on keyswitch input pin 26 of AH was removed).	Possible no noticeable performance effects. Possibility of engine dying or difficulty in starting engine.

Bulletin No. 3666018-04

Fault Code Information		
Engine operating conditions are recorded in the ECM at the time a fault code is first recorded. The following data fields are reported by Compulink™ and EcheK™ under the Fault code menu:		
Compulink™	EcheK™	Description
Code	Code	Cummins code in Compulink™ and EcheK™
	PID or SID, FMI	Optional SAE J1587 code in EcheK™
Stat	Status	Active or inactive status of fault code
Spd	MPH	Vehicle speed in MPH or KPH
Th	% Throttle	Percent that accelerator pedal was depressed
RPM	RPM	Engine speed
Count	Count	Number of occurrences of a fault code
	x/y (e.g., 1/3)	Sequence/Total (e.g., first of three fault codes)
Switch position	SW	Switch position at first occurrence of fault

Engine Protection Fault Code Information			
Fault Code	Fluid System	Limit	Comments
143	Low Oil Pressure	Speed Dependent	Power Derate
151	High Oil Pressure	104°C [220°F]	Power Derate, Speed Derate after 115°C [239°F]
155	High Boost Air Temp	84°C [183°F]	Power Derate, Speed Derate after 111°C [231°F]
214	High Oil Temp	124°C [255°F]	Power Derate
235	Low Coolant Level	Installation Dependent	Power Derate
415	Very Low Oil Pressure	Speed Dependent	Speed Derate, Power is already derated with Fault Code 143

Switch Position	Explanation	Audit Trail Code	Explanation
1	Clutch	C1	New calibration
2	Service brake	C2	Accelerate/Coast Flag
3	Cruise/Resume	D1	Vehicle information (make, model ID, year)
4	Cruise/Set	E1	Maximum engine speed without VSS
5	Cruise/PTO	F1	Low idle adjust feature switch
6	Test diagnostic switch	F2	PTO feature switch
7	Radiator coolant level high	F3	Cruise control feature switch
8	Radiator coolant level low	F4	Progressive shift feature switch
9	Not used	F5	All speed governor feature switch
10	Keyswitch	F6	Idle shutdown feature switch
11	Idle validation switch off idle	F7	Gear-Down Protection feature switch
12	Remote PTO	F8	Engine protection shutdown switch