

## 7 Diagnostic Trouble Code Fault Descriptions

LDGCP and MGCP header pins are in standard font, HDGCP and MDGCP header pins are in italicized parentheses (##).

### 7.1 SPN & FMI to DTC Conversion Table

<b>Indmar</b>		<b>DTC Configurations</b>	
<b>SPN</b>	<b>FMI</b>	<b>DTC Code</b>	<b>Description</b>
29	3	DTC 2128	FPP2 voltage high
29	4	DTC 2127	FPP2 voltage low
51	3	DTC 123	TPS1 voltage high
51	4	DTC 122	TPS1 voltage low
51	0	DTC 221	TPS1-2 higher than expected
51	1	DTC 121	TPS1-2 lower than expected
51	7	DTC 2112	Unable to reach higher TPS
51	7	DTC 2111	Unable to reach lower TPS
51	31	DTC 2135	TPS1/2 simultaneous voltages out-of-range
84	8	DTC 502	Roadspeed input loss of signal
91	3	DTC 2122	FPP1 voltage high
91	4	DTC 2123	FPP1 voltage low
91	16	DTC 2126	FPP1-2 higher than expected
91	18	DTC 2121	FPP1-2 lower than expected
91	31	DTC 1121	FPP1/2 simultaneous voltages out-of-range (redundancy lost)
91	19	DTC 1630	J1939 ETC message receipt loss
100	1	DTC 524	Oil pressure low
100	1	DTC 524	Oil pressure sender low pressure
100	0	DTC 521	Oil pressure sender high pressure
100	3	DTC 523	Oil pressure sender high voltage
100	4	DTC 522	Oil pressure sender low voltage
102	3	DTC 238	TIP/TOP high voltage
102	4	DTC 237	TIP/TOP low voltage
102	0	DTC 234	Boost control overboost failure
102	1	DTC 299	Boost control underboost failure
102	2	DTC 236	TIP/TOP active
105	3	DTC 113	IAT voltage high
105	4	DTC 112	IAT voltage low
105	15	DTC 111	IAT higher than expected stage 1
105	0	DTC 127	IAT higher than expected stage 2
106	16	DTC 108	MAP pressure high
106	4	DTC 107	MAP voltage low
108	0	DTC 2229	BP pressure high
108	1	DTC 129	BP pressure low
110	3	DTC 118	ECT voltage high
110	4	DTC 117	ECT voltage low
110	15	DTC 116	ECT higher than expected stage 1
110	0	DTC 217	ECT higher than expected stage 2

168	15	DTC 563	Vbat voltage high
168	17	DTC 562	Vbat voltage low
515	16	DTC 1111	RPM above fuel rev limit level
515	0	DTC 1112	RPM above spark rev limit level
628	13	DTC 601	Microprocessor failure - FLASH
629	31	DTC 606	Microprocessor failure - COP
629	31	DTC 1612	Microprocessor failure - RTI 1
629	31	DTC 1613	Microprocessor failure - RTI 2
629	31	DTC 1614	Microprocessor failure - RTI 3
629	31	DTC 1615	Microprocessor failure - A/D
629	31	DTC 1616	Microprocessor failure - Interrupt
630	12	DTC 604	Microprocessor failure - RAM
636	2	DTC 336	CRANK input signal noise
636	8	DTC 16	Crank and/or cam could not synchronize during start
636	4	DTC 337	Crank signal loss
639	12	DTC 1626	CAN-J1939 Tx fault
639	12	DTC 1627	CAN-J1939 Rx fault
645	4	DTC 2618	Tach output ground short
645	3	DTC 2619	Tach output short to power
651	5	DTC 261	Injector 1 open or short to ground
651	6	DTC 262	Injector 1 coil shorted
652	5	DTC 264	Injector 2 open or short to ground
652	6	DTC 265	Injector 2 coil shorted
653	5	DTC 267	Injector 3 open or short to ground
653	6	DTC 268	Injector 3 coil shorted
654	5	DTC 270	Injector 4 open or short to ground
654	6	DTC 271	Injector 4 coil shorted
655	5	DTC 273	Injector 5 open or short to ground
655	6	DTC 274	Injector 5 coil shorted
656	5	DTC 276	Injector 6 open or short to ground
656	6	DTC 277	Injector 6 coil shorted
657	5	DTC 279	Injector 7 open or short to ground
657	6	DTC 280	Injector 7 coil shorted
658	5	DTC 282	Injector 8 open or short to ground
658	6	DTC 283	Injector 8 coil shorted
695	9	DTC 1629	J1939 TSC1 message receipt loss
701	3	DTC 1511	AUX analog Pull-Up 1 high voltage
701	4	DTC 1512	AUX analog Pull-Up 1 low voltage
702	3	DTC 1513	AUX analog Pull-Up 2 high voltage
702	4	DTC 1514	AUX analog Pull-Up 2 low voltage
703	3	DTC 1517	AUX analog Pull-Up 3 high voltage
703	4	DTC 1518	AUX analog Pull-Up 3 low voltage
710	3	DTC 1515	AUX analog Pull-Down 1 high voltage
710	4	DTC 1516	AUX analog Pull-Down 1 low voltage
723	4	DTC 342	Loss of CAM input signal
723	2	DTC 341	CAM input signal noise
731	4	DTC 327	Knock1 sensor open or not present
731	2	DTC 326	Knock1 excessive or erratic signal
920	4	DTC 1641	Buzzer control ground short
920	5	DTC 1642	Buzzer open

920	3	DTC 1643	Buzzer control short to power
1079	3	DTC 643	Sensor supply voltage 1 high
1079	4	DTC 642	Sensor supply voltage 1 low
1079	31	DTC 1611	Sensor supply voltage 1 and 2 out-of-range
1080	3	DTC 653	Sensor supply voltage 2 high
1080	4	DTC 652	Sensor supply voltage 2 low
1110	31	DTC 1625	J1939 shutdown request
1192	3	DTC 1131	WGP voltage high
1192	4	DTC 1132	WGP voltage low
1213	4	DTC 1644	MIL control ground short
1213	5	DTC 650	MIL open
1213	3	DTC 1645	MIL control short to power
1268	5	DTC 2300	Spark coil 1 primary open or short to ground
1268	6	DTC 2301	Spark coil 1 primary shorted
1269	5	DTC 2303	Spark coil 2 primary open or short to ground
1269	6	DTC 2304	Spark coil 2 primary shorted
1270	5	DTC 2306	Spark coil 3 primary open or short to ground
1270	6	DTC 2307	Spark coil 3 primary shorted
1271	5	DTC 2309	Spark coil 4 primary open or short to ground
1271	6	DTC 2310	Spark coil 4 primary shorted
1272	5	DTC 2312	Spark coil 5 primary open or short to ground
1272	6	DTC 2313	Spark coil 5 primary shorted
1273	5	DTC 2315	Spark coil 6 primary open or short to ground
1273	6	DTC 2316	Spark coil 6 primary shorted
1274	5	DTC 2318	Spark coil 7 primary open or short to ground
1274	6	DTC 2319	Spark coil 7 primary shorted
1275	5	DTC 2321	Spark coil 8 primary open or short to ground
1275	6	DTC 2322	Spark coil 8 primary shorted
1321	4	DTC 616	Start relay ground short
1321	5	DTC 615	Start relay coil open
1321	3	DTC 617	Start relay coil short to power
1323	11	DTC 1311	Cylinder 1 misfire detected
1323	31	DTC 301	Cylinder 1 emissions/catalyst damaging misfire
1324	11	DTC 1312	Cylinder 2 misfire detected
1324	31	DTC 302	Cylinder 2 emissions/catalyst damaging misfire
1325	11	DTC 1313	Cylinder 3 misfire detected
1325	31	DTC 303	Cylinder 3 emissions/catalyst damaging misfire
1326	11	DTC 1314	Cylinder 4 misfire detected
1326	31	DTC 304	Cylinder 4 emissions/catalyst damaging misfire
1327	11	DTC 1315	Cylinder 5 misfire detected
1327	31	DTC 305	Cylinder 5 emissions/catalyst damaging misfire
1328	11	DTC 1316	Cylinder 6 misfire detected
1328	31	DTC 306	Cylinder 6 emissions/catalyst damaging misfire
1329	11	DTC 1317	Cylinder 7 misfire detected
1329	31	DTC 307	Cylinder 7 emissions/catalyst damaging misfire
1330	11	DTC 1318	Cylinder 8 misfire detected
1330	31	DTC 308	Cylinder 8 emissions/catalyst damaging misfire
1347	5	DTC 628	Fuel-pump high-side open or short to ground
1347	6	DTC 629	Fuel-pump high-side short to power
1348	4	DTC 628	Fuel pump relay control ground short

1348	5	DTC 627	Fuel pump relay coil open
1348	3	DTC 629	Fuel pump relay coil short to power
1485	4	DTC 686	Power relay ground short
1485	5	DTC 685	Power relay coil open
1485	3	DTC 687	Power relay coil short to power
3050	11	DTC 420	Catalyst inactive on gasoline (Bank 1)
3051	11	DTC 430	Catalyst inactive on gasoline (Bank 2)
3217	5	DTC 134	EGO1 open / lazy
3227	5	DTC 154	EGO2 open / lazy
3256	5	DTC 140	EGO3 open / lazy
3266	5	DTC 160	EGO4 open / lazy
3673	3	DTC 223	TPS2 voltage high
3673	4	DTC 222	TPS2 voltage low
4236	0	DTC 1155	Closed-loop gasoline bank1 high
4236	1	DTC 1156	Closed-loop gasoline bank1 low
4237	0	DTC 171	Adaptive-learn gasoline bank1 high
4237	1	DTC 172	Adaptive-learn gasoline bank1 low
4238	0	DTC 1157	Closed-loop gasoline bank2 high
4238	1	DTC 1158	Closed-loop gasoline bank2 low
4239	0	DTC 174	Adaptive-learn gasoline bank2 high
4239	1	DTC 175	Adaptive-learn gasoline bank2 low
520197	4	DTC 332	Knock2 sensor open or not present
520197	2	DTC 331	Knock2 excessive or erratic signal
520199	11	DTC 2120	FPP1 invalid voltage and FPP2 disagrees with IVS (redundancy lost)
520199	11	DTC 2125	FPP2 invalid voltage and FPP1 disagrees with IVS (redundancy lost)
520199	11	DTC 1122	FPP1/2 do not match each other or IVS (redundancy lost)