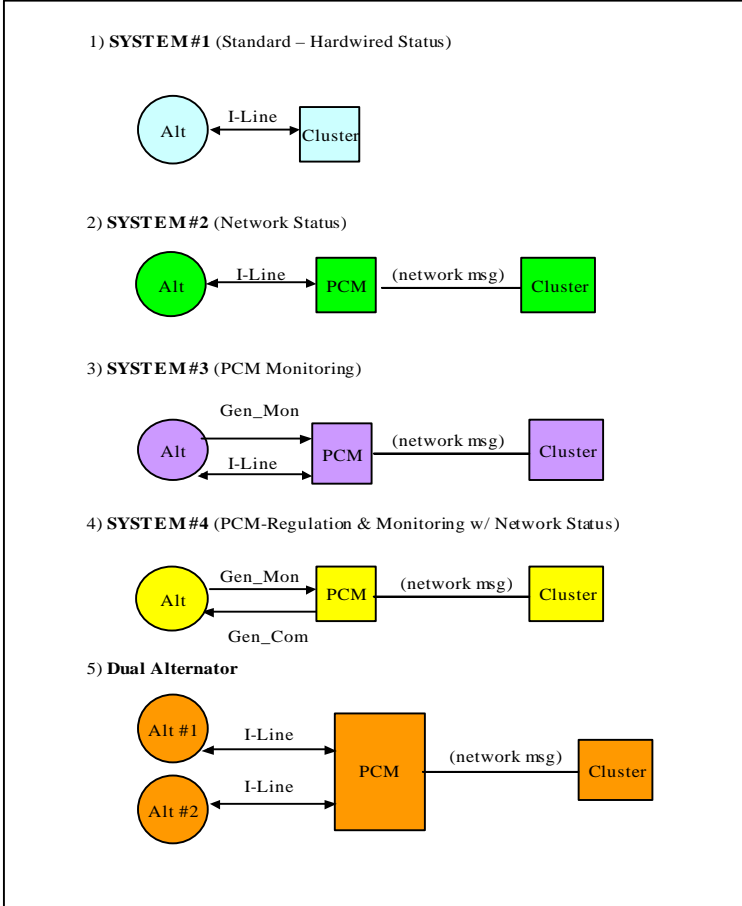


Alternator Configuration Sheet for 2001--2004 MY

	2001MY	2002 MY	2003 MY	2004 MY
Aviator			System #2	System #2
Blackwood	System #1	System #1		
Continental	System #1	System #1		
Cougar	System #1	System #1		
CrossTrainer/500				System #4
Crown Victoria/Grand Marquis	System #1	System #1	System #4	System #4
Econoline (Diesel)	Dual Alternator	Dual Alternator	Dual Alternator	Dual Alternator
Econoline (Gas/Diesel)	System #1	System #1	System #1	System #1
Escape 2.0L	System #4	System #4	System #4	System #4
Escape 3.0L	System #1	System #1	System #1	System #1
Excursion (Gas/Diesel)	Dual Alternator	Dual Alternator	Dual Alternator	Dual Alternator
Excursion Diesel	System #1	System #1	System #1	System #1
Expedition/Navigator	System #1	System #1	System #2	System #2
Explorer Sport	System #1	System #1	System #1	
Explorer Sport Trac	System #1	System #1	System #1	System #1
Explorer/Mountaineer	System #1	System #2	System #2	System #2
F-150 (P221)				System #4
F-150 (PN96 classic)	System #1	System #1	System #1	System #1
F700 - F900	System #1	System #1	System #1	System #1
Focus	System #4	System #4	System #4	System #4
Lincoln LS	System #4	System #4	System #3	System #3
Motorhome (F53)	System #1	System #1	System #1	System #1
Mustang	System #1	System #1	System #1	System #1
Ranger	System #1	System #1	System #1	System #1
Super Duty (F250-550 Diesel)	Dual Alternator	Dual Alternator	Dual Alternator	Dual Alternator
Super Duty (F250-550 Gas/Diesel)	System #1	System #1	System #1	System #1
Taurus/Sable	System #1	System #4	System #4	System #4
Thunderbird		System #4	System #3	System #3
Towncar	System #1	System #1	System #4	System #4
Windstar	System #4	System #4	System #4	System #4



System 1 (Standard - Hardwired Status) :

The Alternator Status Line (I-Line) is hardwired from the Alternator to the Instrument Cluster's system warning indicator (a.k.a. Gen Lamp or Batt Lamp).
 The Alternator sets the I-Line to ground when it senses a fault; thus, turns on the system warning indicator.

System 2 (Network Status) :

The Alternator Status Line (I-Line) goes to the PCM.
 The Alternator sets the Status Line (I-Line) to ground when it senses a fault.
 The PCM reads the I-Line and sends a DTC via the network when the I-Line indicates a fault.

System 3 (PCM Monitoring w/ Networked Status) :

The wakeup power for the Alternator's regulator (I-Line) is supplied by the PCM.
 The Alternator sets Gen_Mon to VBatt+ or ground when it senses a fault.
 The PCM reads Gen_Mon and sends a DTC via the network when the I-Line indicates a fault.

System 4 (PCM Regulation & Monitoring w/ Network Status) :

The Alternator output to the battery is controlled by the PCM using the Gen_Com communication line.
 The Alternator sets the Gen_Mon to VBatt+ or ground when it senses a fault.
 The PCM reads Gen_Mon and sends a DTC via the network when the I-Line indicates a fault.

Dual Alternator :

Both Alternators' Status Lines (I-Lines) go to the PCM.
 Either or both Alternators set their own Status Line (I-Line) to ground when they sense a fault.
 The PCM reads the I-Lines and sends a DTC via the network when either of the I-Lines indicate a fault.

Symptom Chart

SYMPTOM	Potential Root Causes																								
	ALTERNATOR EFFECT ON SYSTEM VOLTAGE					SLIPPING or BROKEN BELT/BELT TENSION/WARPED PULLEY		BATTERY		INSTRUMENT CLUSTER		PCM		STARTER		PATS		IGNITION SWITCH		Key-Off-Loads (KOL) ³		OTHER ELECTRICAL (EDS ⁴ , modules, motors, switches ...)		POWERTRAIN/CHASSIS SUBSYSTEMS/ COMPONENTS (such as Exhaust, Engine, Fuel, Suspension, ...)	
	RC?	NO	LOW	HIGH	INTER- MIT- ENT	RC?	Affect on Altr Output	RC?	Affect on System Voltage	RC?	Affect on System Voltage	RC?	Affect on System Voltage	RC?	Affect on System Voltage	RC?	Affect on System Voltage	RC?	Affect on System Voltage	RC?	Affect On Battery	RC?	How?	RC?	Source/Source
Battery Light/Volt Amp Light ON ¹ [G29]	Y	X	X	X		Y	NO/LOW/INTERMITTENT VOLTAGE	Y	NO/LOW VOLT	Y	None	Y	None	N		N		Y	None	Y	NO/LOW VOLT	Y	SHORT/OPEN/BAD GND/HIGH KOL/INTERMITTENT actuation/ VOLTAGE SPIKES/EMC/RFI	N	
Voltmeter Reads Low (manuals only)	Y	X	X			Y	NO/LOW/INTERMITTENT VOLTAGE	Y	NO/LOW VOLT	Y	None	N		N		N		N		Y	NO/LOW VOLT	Y	SHORT/OPEN/BAD GND/HIGH KOL/INTERMITTENT actuation	Y	LOW ENGINE IDLE/ENGINE NOT PROPERLY FUNCTIONING
Voltmeter Reads High (manuals only)	Y			X		N		N		N		N		N		N		N		N		N		N	
Engine MIL Light ON [E29]	Y	X	X	X		Y	NO/LOW/HIGH/INTERMITTENT VOLTAGE	Y	NO/LOW/HIGH VOLT	Y	None	Y	None	N		N		N		Y	NO/LOW VOLT	Y	SHORT/OPEN/BAD GND/HIGH KOL/INTERMITTENT actuation	Y	IMPROPERLY FUNCTIONING ENGINE SUBSYSTEM/COMPONENTS
Engine Noise [D50, N11, N12, N18, N50]	Y		X			Y	NO/LOW/INTERMITTENT VOLTAGE	N		N		N		N		N		N		N		N		Y	NOISY ENGINE/CHASSIS COMPONENTS
Radio Noise [A02, A04, A06, A07]	Y					N		N		N		N		N		N		N		N		Y	AFTERMARKET RADIO	N	
No Start/Stall [D02, D21]	Y	X	X			Y	NO/LOW/INTERMITTENT VOLTAGE	Y	NO/LOW VOLT	Y	None	Y	None	Y	None	Y	None	Y	None	Y	NO/LOW VOLT	Y	SHORT/OPEN/BAD GND/HIGH KOL/INTERMITTENT actuation/ VOLTAGE SPIKES/EMC/RFI	Y	IMPROPERLY FUNCTIONING ENGINE SUBSYSTEM/COMPONENTS
Gages Sweeping [G29]	Y			X	X	Y	NO/LOW/INTERMITTENT VOLTAGE	Y	NO/LOW VOLT	Y	None	N		N		N		N		Y	NO/LOW VOLT	Y	SHORT/OPEN/BAD GND/HIGH KOL/INTERMITTENT actuation/ VOLTAGE SPIKES/EMC/RFI	N	
Dash Lights Flicker [L25, L29]	Y				X	Y	HIGH/INTERMITTENT VOLTAGE	Y	HIGH	Y	None	N		N		N		N		Y	NO/LOW VOLT	Y	SHORT/OPEN/BAD GND/HIGH KOL/INTERMITTENT actuation/ VOLTAGE SPIKES/EMC/RFI	N	
Engine Hesitates/Stalls [D21, D36, D41]	Y	X	X		X	Y	NO/LOW/INTERMITTENT VOLTAGE	Y	NO/LOW VOLT	Y	None	Y	None	N		N		N		Y	NO/LOW VOLT	Y	SHORT/OPEN/BAD GND/HIGH KOL/INTERMITTENT actuation/ VOLTAGE SPIKES/EMC/RFI	Y	LOW/UNSTABLE ENGINE IDLE/ENGINE NOT PROPERLY FUNCTIONING
Engine Surges/Bucks [D36, D41]	Y	X	X		X	Y	NO/LOW/INTERMITTENT VOLTAGE	Y	NO/LOW VOLT	Y	None	Y	None	N		N		N		Y	NO/LOW VOLT	Y	SHORT/OPEN/BAD GND/HIGH KOL/INTERMITTENT actuation/ VOLTAGE SPIKES/EMC/RFI	Y	LOW/UNSTABLE ENGINE IDLE/ENGINE NOT PROPERLY FUNCTIONING
Exterior Lights Dim [L26]	Y	X	X		X	Y	NO/LOW/INTERMITTENT VOLTAGE	Y	NO/LOW VOLT	Y	None	Y	None	N		N		N		Y	NO/LOW VOLT	Y	SHORT/OPEN/BAD GND/HIGH KOL/INTERMITTENT actuation/ VOLTAGE SPIKES/EMC/RFI	Y	LOW ENGINE IDLE/ENGINE NOT PROPERLY FUNCTIONING
Loss of Electrical Power ² [C25, C26, C27]	Y	X	X		X	Y	NO/LOW/INTERMITTENT VOLTAGE	Y	NO/LOW VOLT	Y	None	N		N		N		Y	NO/INTERMITTENT	Y	NO/LOW VOLT	Y	SHORT/OPEN/BAD GND/HIGH KOL/INTERMITTENT actuation/ VOLTAGE SPIKES/EMC/RFI	Y	LOW ENGINE IDLE/ENGINE NOT PROPERLY FUNCTIONING
Slow Crank [D03]	Y	X	X		X	Y	NO/LOW/INTERMITTENT VOLTAGE	Y	NO/LOW VOLT	Y	None	Y	None	N		N		N		Y	NO/LOW VOLT	Y	SHORT/OPEN/BAD GND/HIGH KOL/INTERMITTENT actuation/ VOLTAGE SPIKES/EMC/RFI	Y	IMPROPERLY FUNCTIONING ENGINE SUBSYSTEM/COMPONENTS

¹ For Dual Alternator, Battery Warning Light May not come on when one alternator is not functioning.
² For Diesel engines, during cold weather operation, glow plugs draw high amperage thereby temporarily (up to 2 minutes) pulls down system voltage.
³ Key-Off-Loads are E/E components which draw electrical power while the ignition is OFF.
⁴ Electrical distribution system (EDS) consists of : wiring, connectors, grounds, fuses and relays. Check for shorts, opens, intermittent connections, ...

RC = Root Cause
 Altr = Alternator
 KOL = Key-Off-Loads