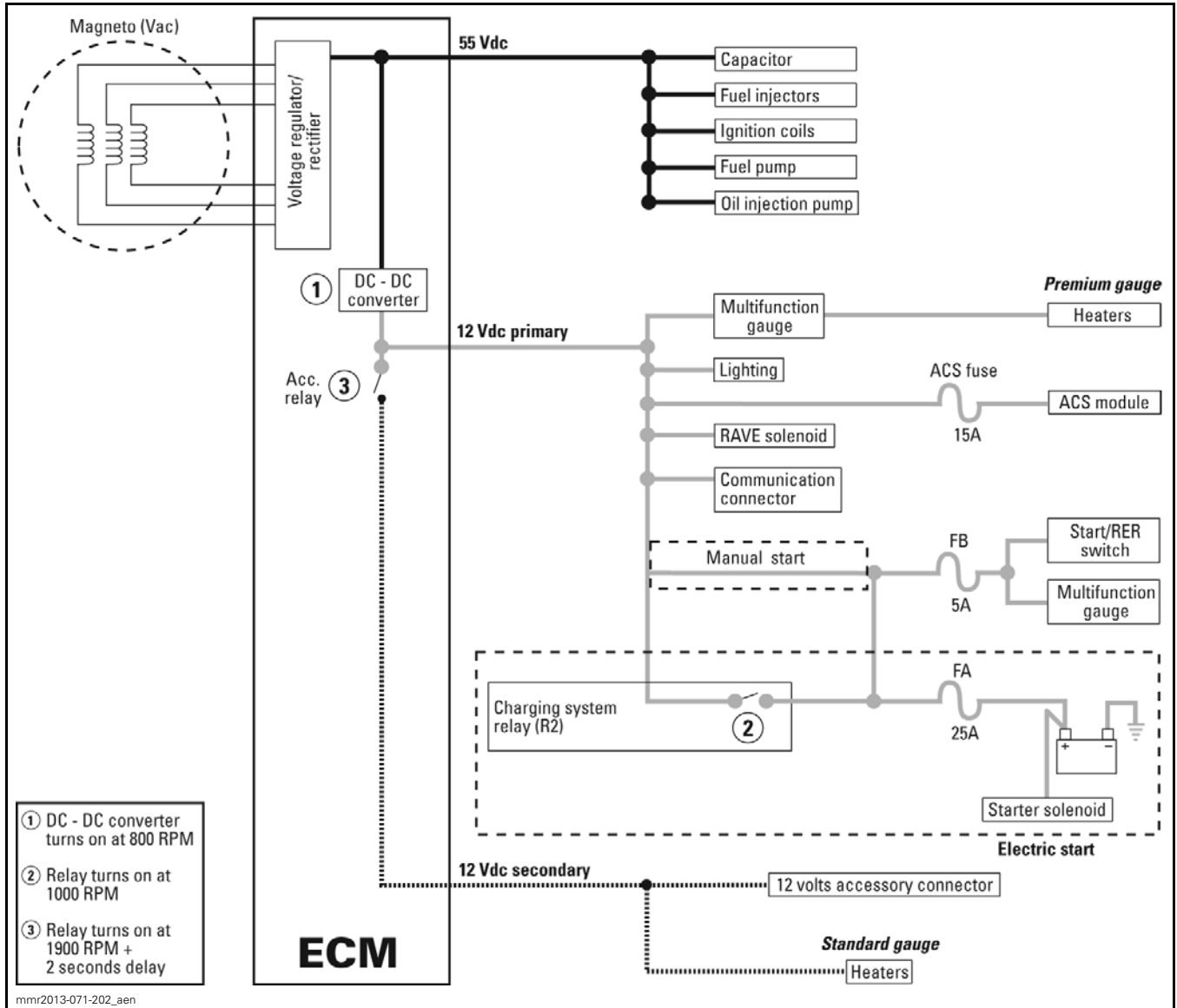


POWER DISTRIBUTION (E-TEC)

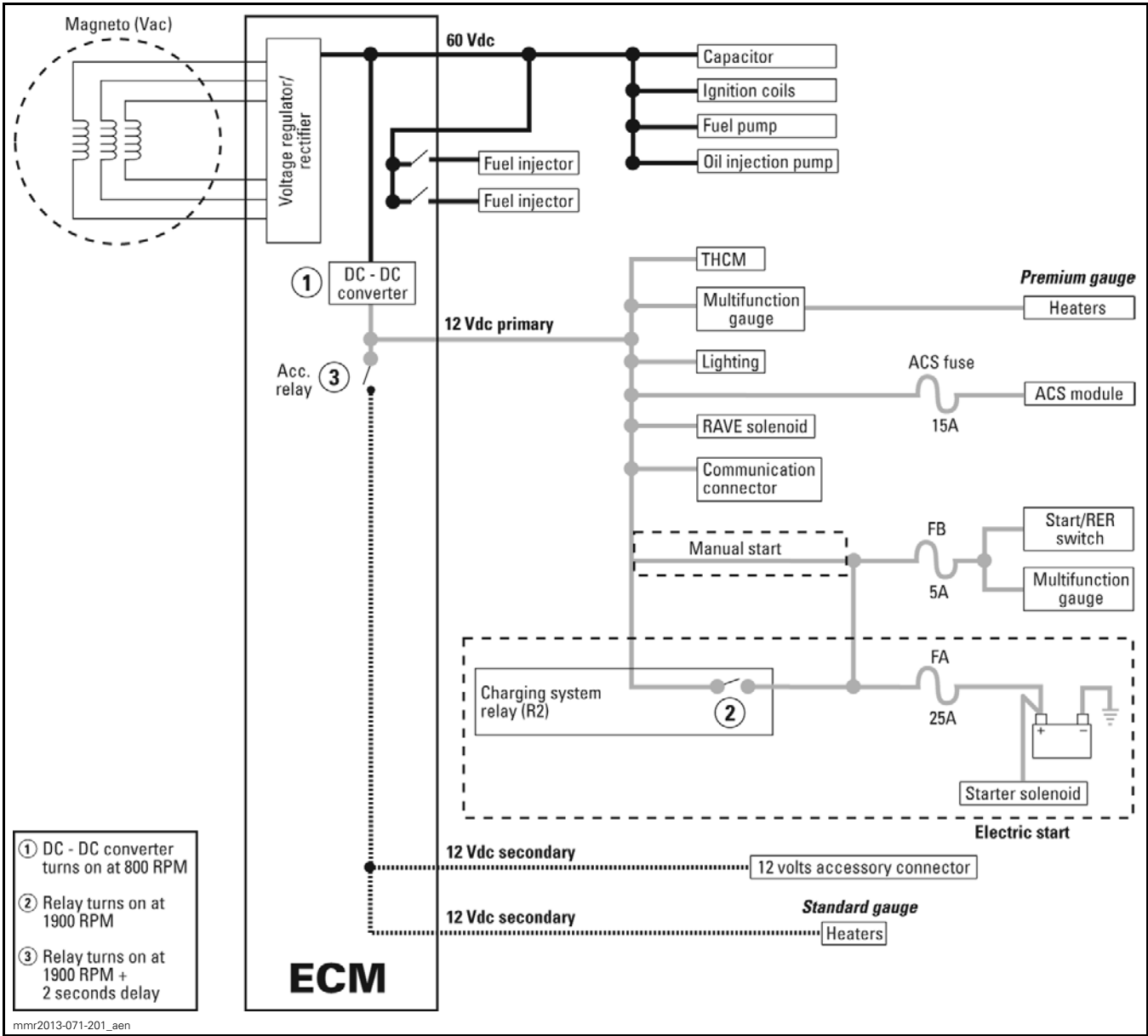
GENERAL

OVERVIEW



Acc. relay	Accessory relay
ACS	Air controlled suspension

Section 05 ELECTRICAL SYSTEM
Subsection 01 (POWER DISTRIBUTION (E-TEC))



800R E-TEC SIMPLIFIED SCHEMATIC

Acc. relay	Accessory relay
ACS	Air controlled suspension
THCM	Thermocouple module

The vehicle requires the highest possible voltage at low RPM (to quickly supply the fuel pump, injectors and ignition coils) and the highest possible current at higher RPM (to properly supply the engine electrical loads that increase with RPM and all the other components like RAVE valves, gauge, lights and heaters). To achieve this, the stator windings are connected in series at low RPM to meet the voltage requirements and then connected in parallel at higher RPM to meet the current requirements. This series-parallel switch is done in the ECM.

SYSTEM VOLTAGE (12 VDC)

Primary Voltage (12 Vdc)

Since the available power is not at its maximum at the early stage of engine starting, the ECM supplies 12 Vdc to the components that are critical for the engine and vehicle when engine reaches 800 RPM.

- THCM (thermocouple module) on some models
- RAVE solenoid
- Communication connector

- Lighting system
- Multifunction gauge (and heaters on Premium gauge models).
- ACS (air controlled suspension).

Secondary Voltage (12 Vdc)

When the conditions indicated in the chart are met, the accessory relay inside the ECM closes and power is delivered to the vehicle accessories (heaters on Standard gauge models) 12 V power outlet and other accessories).

POWER DISTRIBUTION SUMMARY

ENGINE OPERATION	VOLTAGE DELIVERED	COMPONENT SUPPLIED
Any engine speed	55/60 Vdc	<ul style="list-style-type: none"> – ECM (internally powered) – Fuel pump – Fuel injectors – Ignition coils – Electronic oil injection pump
When engine reaches 800 RPM	12 Vdc	<ul style="list-style-type: none"> – THCM (thermocouple module) on some models – RAVE solenoid – Communication connector – Lighting system – Multifunction gauge (and heaters on Premium gauge models) – ACS (air controlled suspension)
When engine reaches 1000 RPM	12 Vdc	<ul style="list-style-type: none"> – Battery charging on electric start models
When engine reaches 1900 RPM + 2 second delay	12 Vdc	<ul style="list-style-type: none"> – (and heaters on Standard gauge models) – 12 V power outlet – Other accessories