

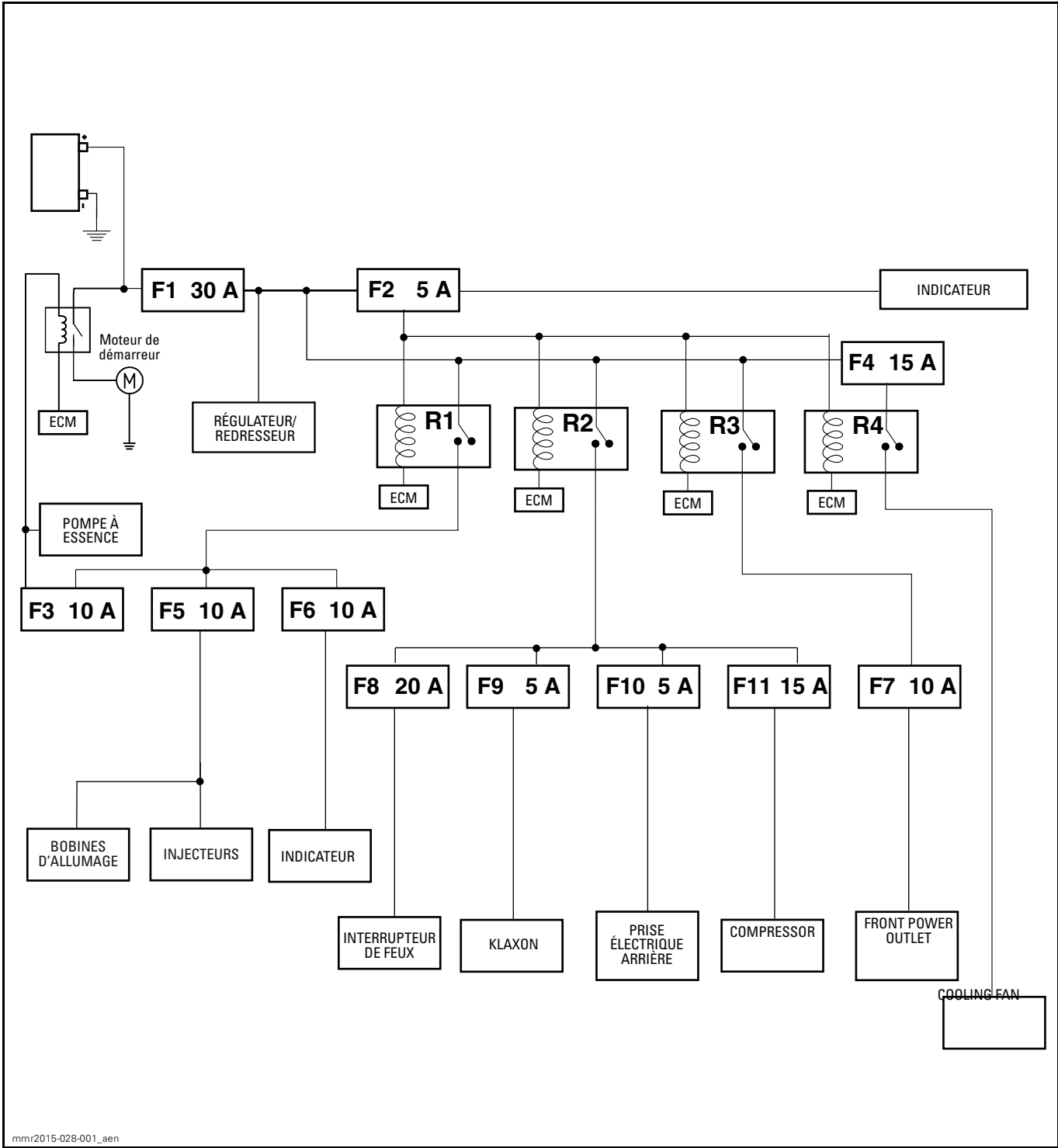
POWER DISTRIBUTION AND GROUNDS (900 ACE)

SERVICE TOOLS

Description	Part Number	Page
FLUKE 115 MULTIMETER	529 035 868	374

GENERAL

POWER DISTRIBUTION DIAGRAM



OVERVIEW

All the electrical system is powered by DC current supplied by a 12 V battery. The battery charge is maintained by the charging system.

Electrical system is protected by fuses located in a fuse box.

The system uses 3 relays that control different electrical components.

Automatic Power Cut-Off

The ECM features an automatic power cut-off that will completely turn off the ECM (after engine was running) and thus cutting all power to components. All the vehicle electrical loads will be turned off (except the clock in the multifunction gauge). This feature prevents the battery from discharging if the tether cord cap is left on engine cut-off switch when the engine is not running.

NOTE: If a power cable is connected to the communication connector power cut-off will not occur.

The cut-off time is as follows.

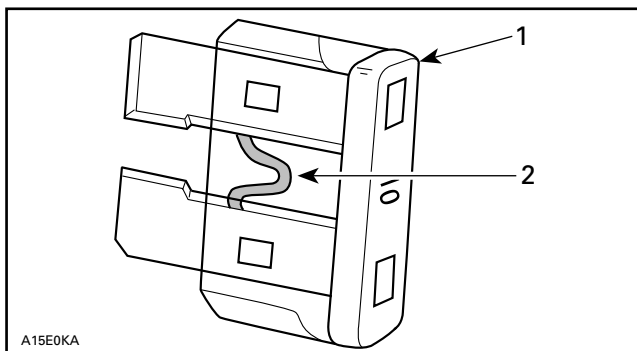
ACTION	POWER CUT-OFF TIME
Removing tether cord cap	Approximately 15 seconds
Setting emergency engine stop switch to STOP (tether cord cap connected)	Approximately 20 seconds

NOTE: The ECM will remain off until the START/RER button is pressed.

FUSES

Fuse Inspection

Check if filament is melted. Replace as necessary.



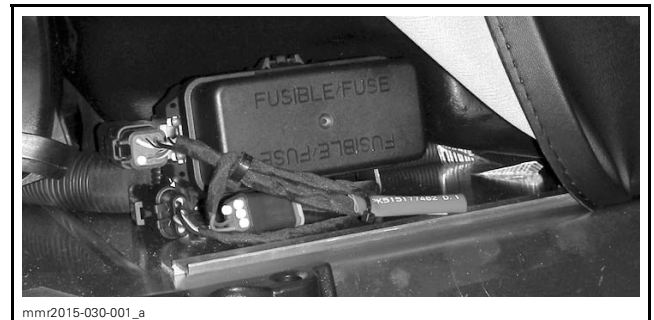
1. Fuse
2. Check if melted

⚠ WARNING

Do not use a higher rated fuse as this can cause severe damage to electric components and/or a fire. If fuse has burnt out, the cause of the malfunction should be determined and corrected before restarting.

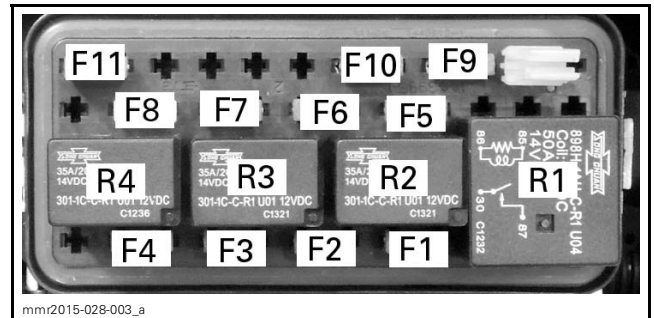
Fuse Box Location

The fuse box is located under the front left side of the seat.



FL SIDE OF SEAT

Fuse Box



F1	Main fuse	30 A
F2	Relay / start button	5 A
F3	Starter solenoid	10 A
F4	Fan	15 A
F5	HIC	10 A
F6	HIC / gauge	10 A
F7	Front power outlet and heaters	10 A
F8	Lighting	20 A
F9	Horn	5 A
F10	Rear power outlet	5 A
F11	Compressor	15 A

Section 06 ELECTRICAL SYSTEM
Subsection 01 (POWER DISTRIBUTION AND GROUNDS (900 ACE))

RELAY STATE (ON)	RELAY STATE (OFF)
R1 - Run Relay	
When START/RER button is pressed When engine is running	30 seconds after engine off
R2 - Load Relay	
When engine reaches 800 RPM	Approximately 30 seconds after ignition key is turned OFF OR If engine drops below 800 RPM
R3 - Load Relay	
When engine reaches 2000 RPM	If battery voltage is lower than 12 V for 10 seconds
R4 - Cooling Fan	
See <i>COOLING SYSTEM</i>	

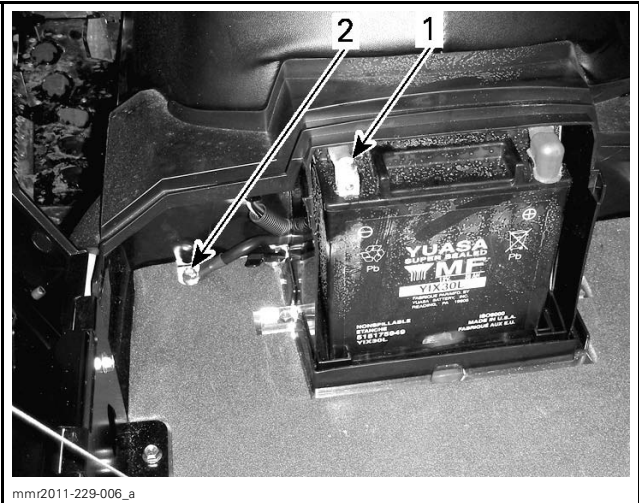
The following actions will be taken by the ECM to preserve electrical power for the most important functions.

CONDITION	ECM CORRECTIVE ACTION
If battery voltage is lower than 12 V for 10 seconds	Relay 3 is disabled.
If battery voltage is lower than 11.5 V	Idle speed is increased.
If battery voltage is lower than 11 V	Low battery pilot lamp turns on.

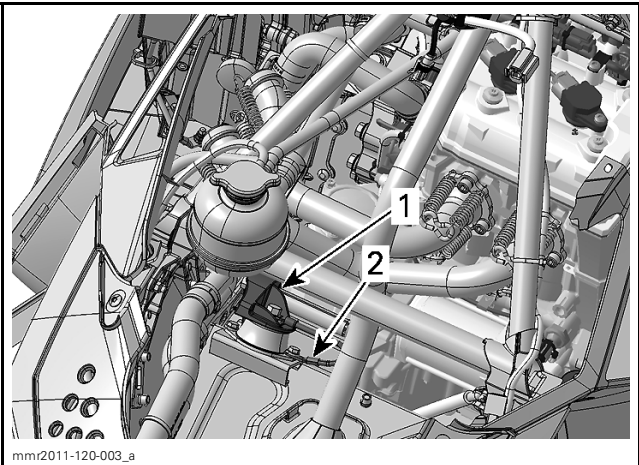
Fuse box contacts are identified as seen from the top of the fuse box with letters to identify rows and numbers to identify columns. The combined letter and number identify the coordinate of a contact that is used in the wiring diagram and procedures.

NOTICE Do not apply any lubricant or sealant product to the terminal contacts in fuse box.

GROUNDS
Ground Location



BATTERY AND FRAME GROUNDS
1. Battery ground
2. Frame ground



TYPICAL — ENGINE GROUND
1. Engine mount
2. Ground

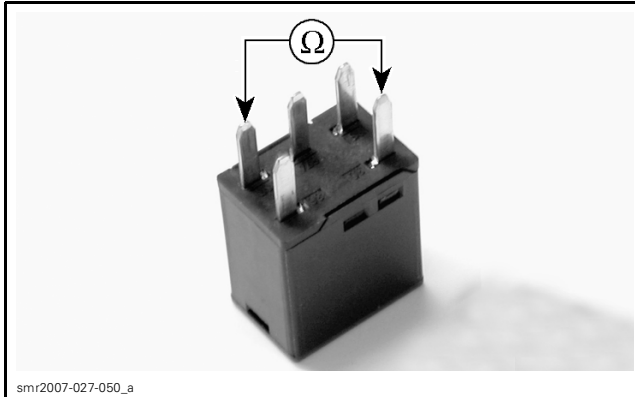
PROCEDURES
RELAY CONTINUITY TEST

- 1. Remove relay.
- 2. Set multimeter to Ω .

REQUIRED TOOL		
FLUKE 115 MULTIMETER (P/N 529 035 868)		

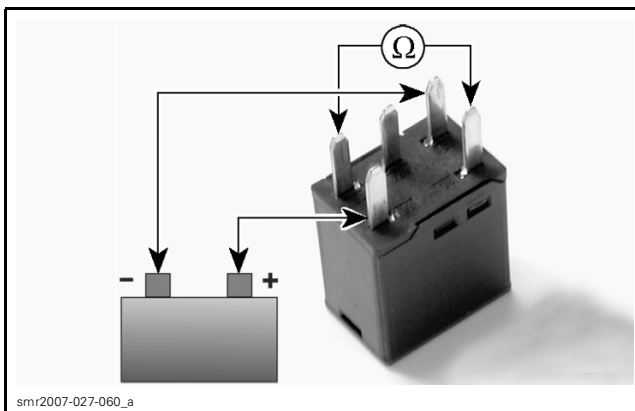
- 3. Probe relay as follows.

TERMINAL		RESISTANCE
30	87	Open circuit (OL)



4. Connect battery as shown and probe relay again as follows.

TERMINAL		RESISTANCE
30	87	0.5 Ω max. (continuity)



If relay failed any test, replace it.