

# Electrical/Electronic System

## Expected Voltages - Matrix

### Plastic or Metal Control Panel Integrated To Plastic Tooled And Form Molded Air Distribution Assemblies.

#### Estimated Voltage Readings, Per Ventilation Mode, At The Control Panel Connection

Ventilation Mode	SHUTTER ACTUATORS								
	Fresh / Recirculation Inlet Air			Defrost - Floor / Panel			Defrost / Floor		
	BLK	YEL	RED	BLK	WHT	RED	BLK	GRN	RED
Fresh Air »	0	Grd	11-13	0	NA	11-13	0	NA	11-13
Recirculation Air »	0	No Signal	11-13	0	NA	11-13	0	NA	11-13
Panel »	0	NA	11-13	0	0	11-13	0	11-13	11-13
Panel / Floor »	0	NA	11-13	0	5-7	11-13	0	11-13	11-13
Floor »	0	NA	11-13	0	11-13	11-13	0	11-13	11-13
Defrost / Floor »	0	NA	11-13	0	11-13	11-13	0	5-7	11-13
Defrost »	0	NA	11-13	0	11-13	11-13	0	0	11-13

### Metal Control Panels Integrated To Metal Air Distribution Assemblies.

#### Estimated Voltage Readings, Per Ventilation Mode, At The Control Panel Connection

Ventilation Mode	SHUTTER ACTUATORS								
	Fresh / Recirculation Inlet Air			Defrost - Floor / Panel			Defrost / Floor		
	BLK	YEL	RED	BLK	WHT	RED	BLK	GRN	RED
Fresh Air	0	Grd	11-13	0	NA	11-13	0	NA	11-13
Recirculation Air	0	No Signal	11-13	0	NA	11-13	0	NA	11-13
Panel	0	NA	11-13	0	0	11-13	0	0	11-13
Panel / Floor	0	NA	11-13	0	5-7	11-13	0	0	11-13
Floor	0	NA	11-13	0	11-13	11-13	0	5-7	11-13
Defrost / Floor	0	NA	11-13	0	11-13	11-13	0	11-13	11-13
Defrost	0	NA	11-13	0	11-13	11-13	0	11-13	11-13

### Estimated Hot Water Valve Actuator Voltage Readings

#### Per Potentiometer Position

Potentiometer Position	BLK	YEL	RED
Full Cool (Far Left)	0	11-13	11-13
Full Heat (Far Right)	0	0	11-13

### Estimated Blower Motor Voltage Readings Per Blower Speed

#### Plastic Control Panel

Blower Speed	RED	BLK
Off	0	0
Low	2-4	0
Medium / Low	5-7	0
Medium / High	8-10	0
High	11-13	0

#### Metal Control Panel

RED	BLK	Blower Speed
0	0	Off
2-5	0	Low
6-10	0	Medium
11-13	0	High

### Notes:

- 1) Voltages per vehicle will vary depending on voltage regulation and voltage loss due to resistance of the wire.
- 2) Always test with voltage meter referencing vehicle ground and not wire harness ground.
- 3) A limiting resistor is wired in series with the shutter actuator's control signal wire in order to reduce the rotation of the air flow shutter to desired position. **Voltage readings at the shutter actuator will be less but follows the same voltage logic as the control panel voltage readings.**