

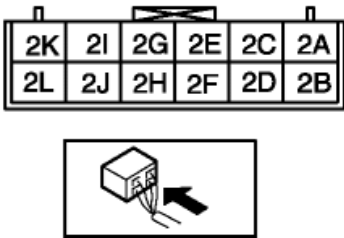
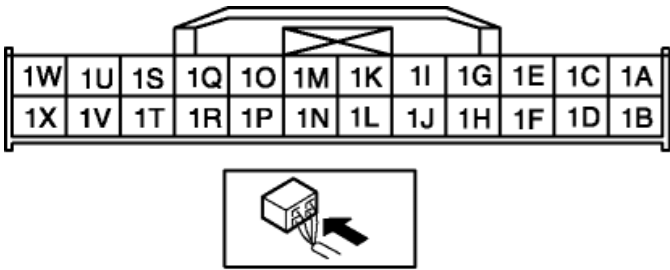
2012 - Mazda6 - HVAC

CLIMATE CONTROL UNIT INSPECTION [FULL-AUTO AIR CONDITIONER]

1. Remove the climate control unit. (See [CLIMATE CONTROL UNIT REMOVAL/ INSTALLATION \[FULL-AUTO AIR CONDITIONER\]](#).)
2. Connect the climate control unit connector.
3. Connect the negative (-) lead of the tester to body ground.
4. Switch the ignition to ON.
5. By inserting the positive (+) lead of the tester into each climate control unit terminal, measure the voltage according to the terminal voltage table.
- If there is any malfunction, inspect the parts under "Inspection item (s)".

▪ If the parts under "Inspection item (s)" are found to be normal, replace the climate control unit.

Terminal Voltage Table (Reference)



Terminal	Signal name	Connected to	Measurement condition	Voltage (V)	Inspection item (s)
1A	MS_CAN_H	CAN related module	Because this terminal is for communication, good/no good judgment by terminal voltage is not possible.		• Related wiring harness
1B	MS_CAN_L	CAN related module	Because this terminal is for communication, good/no good judgment by terminal voltage is not possible.		• Related wiring harness
1C	—	—	—	—	—
1D	GND	Body ground	Under any condition	1.0 or less	• Related wiring harness • ROOM 15 A fuse
1E	B+	ROOM 15 A fuse	Under any condition	B+	
1F	Illumination control	Instrument cluster	Headlight switch ON and panel light control switch at MAX	1.0 or less	• Related wiring harness • Instrument
			Headlight switch ON and panel	11.5	

			light control switch at MIN		cluster
1G	IG2	A/C 10 A fuse	Switch the ignition to ON	B+	- Related wiring harness - A/C 10 A fuse
			Switch the ignition to off	1.0 or less	
1H	—	—	—	—	—
1I	Blower fan speed control	Front power MOS FET	Fan speed 1—7	Pulse (See Fig.1)	- Related wiring harness - Front power MOS FET
1J	—	—	—	—	—
1K	Motor operation	Airflow mode actuator	Moving towards DEFROSTER	B+	- Related wiring harness - Airflow mode actuator
			Moving towards VENT	1.0 or less	
1L	Motor operation (RECIRCULATE)	Air intake actuator	Moving towards RECIRCULATE	B+	- Related wiring harness - Air intake actuator
			Moving towards FRESH	1.0 or less	
1M	Motor operation	Airflow mode actuator	Moving towards VENT	B+	- Related wiring harness - Airflow mode actuator
			Moving towards DEFROSTER	1.0 or less	
1N	Motor operation (FRESH)	Air intake actuator	Moving towards RECIRCULATE	1.0 or less	- Related wiring harness - Air intake actuator
			Moving towards FRESH	B+	
1O	Motor operation (HOT)	Passenger's side air mix actuator	Moving towards HOT	B+	- Related wiring harness - Passenger's side air mix actuator
			Moving towards COLD	1.0 or less	
1P	Motor operation (HOT)	Driver's side air mix actuator	Moving towards HOT	B+	- Related wiring harness - Driver's side air mix actuator
			Moving towards COLD	1.0 or less	
			Moving towards HOT	1.0 or less	Related wiring

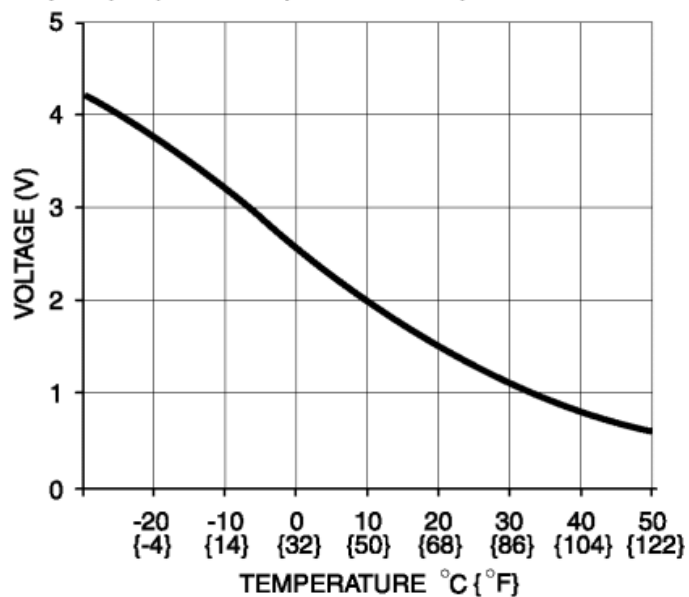
1Q	Motor operation (COLD)	Passenger's side air mix actuator	Moving towards COLD	B+	harness Passenger's side air mix actuator
1R	Motor operation (COLD)	Driver's side air mix actuator	Moving towards HOT	1.0 or less	- Related wiring harness - Driver's side air mix actuator
			Moving towards COLD	B+	
1S	Rear window defroster switch	Rear window defroster relay	Rear window defroster switch OFF	B+	- Related wiring harness - Rear window defroster relay - Climate control unit
			Rear window defroster switch ON	1.0 or less	
1T	—	—	—	—	—
1U	—	—	—	—	—
1V	—	—	—	—	—
1W	TNS signal	Auto light/wiper control module	Headlight switch ON	B+	- Related wiring harness - Auto light/wiper control module - Headlight switch
			Headlight switch OFF	1.0 or less	
1X	—	—	—	—	—
2A	Potentiometer input	Passenger's side air mix actuator	Set temperature at MAX COLD	1.0 or less	- Related wiring harness - Passenger's side air mix actuator - Climate control unit: terminal voltage (2K)
			Set temperature at MAX HOT	4.3 or more	
2B	Potentiometer input	Airflow mode actuator	VENT	4.2 or more	- Related wiring harness - Airflow mode actuator - Climate
			BILEVEL	3.31	
			HEAT	2.37	

			HEAT/DEF	1.39	control unit: terminal voltage (2K)
			DEFROSTER	0.8 or less	
2C	Potentiometer input	Driver's side air mix actuator	Set temperature at MAX HOT	4.3 or more	• Related wiring harness • Driver's side air mix actuator • Climate control unit: terminal voltage (2K)
			Set temperature at MAX COLD	1.0 or less	
2D	Solar radiation sensor input	Solar radiation sensor (LH)	Sunlight shined directly on the solar radiation sensor	4	• Related wiring harness • Climate control unit: terminal voltage (2K) • Solar radiation sensor
			Blocking light to solar radiation sensor	5	
2E	Evaporator temperature sensor input	Evaporator temperature sensor	Compared with temperature detected by evaporator temperature sensor	Refer to graph 1	• Related wiring harness • Evaporator temperature sensor • Climate control unit: terminal voltage (1D,1G)
2F	Solar radiation sensor input	Solar radiation sensor (RH)	Sunlight shined directly on the solar radiation sensor	4	• Related wiring harness • Climate control unit: terminal voltage (2K) • Solar radiation sensor
			Blocking light to solar radiation sensor	5	
2G	—	—	—	—	—
2H	—	—	—	—	—
	Passenger		Compared with temperature	Refer	• Related wiring harness • Passenger compartment

2I	compartment temperature sensor input	Passenger compartment temperature sensor	detected by passenger compartment temperature sensor	to graph 2	temperature sensor Climate control unit: terminal voltage (2K)
2J	—	—	—	—	—
2K	+5V	- Driver's side air mix actuator - Passenger's side air mix actuator - Airflow mode actuator - Solar radiation sensor	Switch the ignition to ON	5	- Related wiring harness - Driver's side air mix actuator - Passenger's side air mix actuator - Airflow mode actuator - Solar radiation sensor - Climate control unit: terminal voltage (1D)
			Switch the ignition to off	1.0 or less	
2L	Sensor GND	- Passenger compartment temperature sensor - Evaporator temperature sensor - Air mix actuator - Airflow mode actuator	Under any condition	1.0 or less	Climate control unit: terminal voltage (1D)

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Graph 1 (Evaporator temperature sensor)



Graph 2 (Passenger compartment temperature sensor)

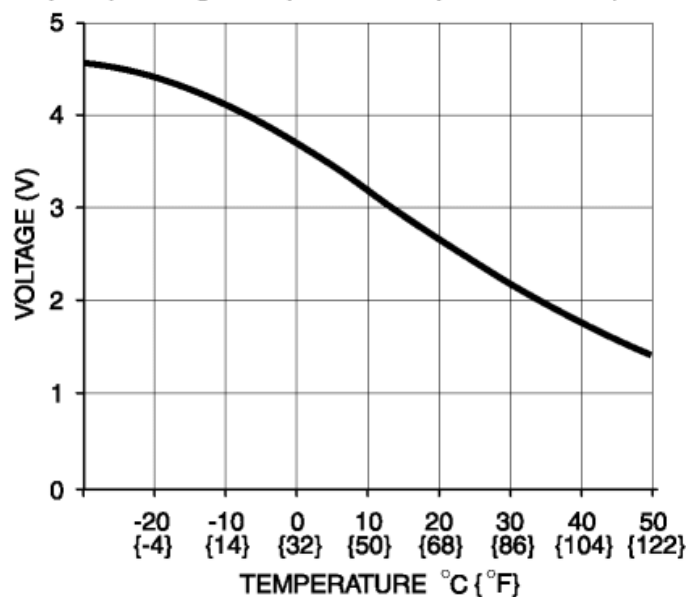
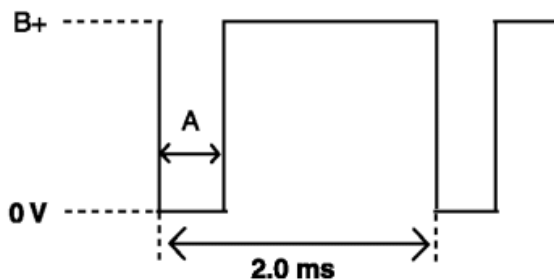


FIG. 1



FAN SPEED	A (ms)
1	1.443
2	1.216
3	1.004
4	0.792
5	0.565
6	0.345
7	0.000

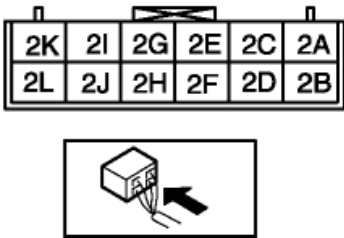
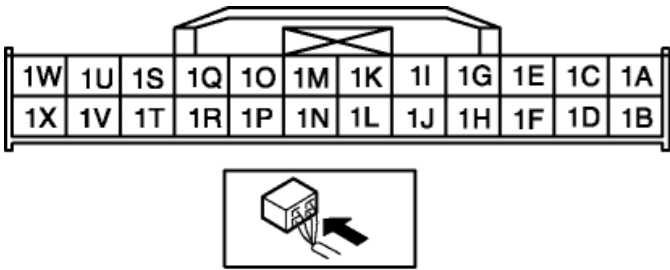
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1D	GND	Body ground	Under any condition	1.0 or less	• Related wiring harness • ROOM 15 A fuse
1E	B+	ROOM 15 A fuse	Under any condition	B+	
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			Headlight switch ON and panel	11.5	

			light control switch at MIN		cluster
1G	IG2	A/C 10 A fuse	Switch the ignition to ON	B+	- Related wiring harness - A/C 10 A fuse
			Switch the ignition to off	1.0 or less	
1H	—	—	—	—	—
1I	Blower fan speed control	Front power MOS FET	Fan speed 1—7	Pulse (See Fig.1)	- Related wiring harness - Front power MOS FET
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			Moving towards VENT	1.0 or less	
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			Moving towards FRESH	1.0 or less	
1M	Motor operation	Airflow mode actuator	Moving towards VENT	B+	- Related wiring harness - Airflow mode actuator
			Moving towards DEFROSTER	1.0 or less	
1N	Motor operation (FRESH)	Air intake actuator	Moving towards RECIRCULATE	1.0 or less	- Related wiring harness - Air intake actuator
			Moving towards FRESH	B+	
1O	Motor operation (HOT)	Passenger's side air mix actuator	Moving towards HOT	B+	- Related wiring harness - Passenger's side air mix actuator
			Moving towards COLD	1.0 or less	
1P	Motor operation (HOT)	Driver's side air mix actuator	Moving towards HOT	B+	- Related wiring harness - Driver's side air mix actuator
			Moving towards COLD	1.0 or less	
			Moving towards HOT	1.0 or less	Related wiring

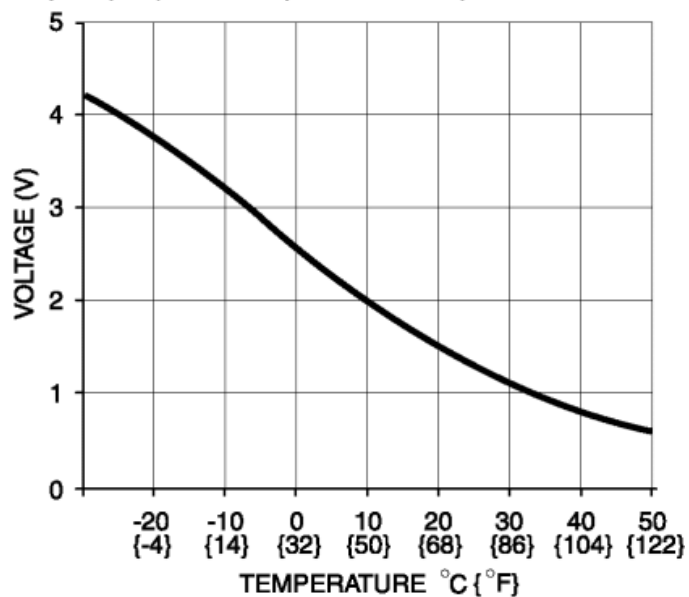
1Q	Motor operation (COLD)	Passenger's side air mix actuator	Moving towards COLD	B+	harness Passenger's side air mix actuator
1R	Motor operation (COLD)	Driver's side air mix actuator	Moving towards HOT	1.0 or less	- Related wiring harness - Driver's side air mix actuator
			Moving towards COLD	B+	
1S	Rear window defroster switch	Rear window defroster relay	Rear window defroster switch OFF	B+	- Related wiring harness - Rear window defroster relay - Climate control unit
			Rear window defroster switch ON	1.0 or less	
1T	—	—	—	—	—
1U	—	—	—	—	—
1V	—	—	—	—	—
1W	TNS signal	Auto light/wiper control module	Headlight switch ON	B+	- Related wiring harness - Auto light/wiper control module - Headlight switch
			Headlight switch OFF	1.0 or less	
1X	—	—	—	—	—
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2C	Potentiometer input	Driver's side air mix actuator	Set temperature at MAX HOT	4.3 or more	- Related wiring harness - Driver's side air mix actuator - Climate control unit: terminal voltage (2K)
			Set temperature at MAX COLD	1.0 or less	
2D	Solar radiation sensor input	Solar radiation sensor (LH)	Sunlight shined directly on the solar radiation sensor	4	- Related wiring harness - Climate control unit: terminal voltage (2K) - Solar radiation sensor
			Blocking light to solar radiation sensor	5	
2E	Evaporator temperature sensor input	Evaporator temperature sensor	Compared with temperature detected by evaporator temperature sensor	Refer to graph 1	- Related wiring harness - Evaporator temperature sensor - Climate control unit: terminal voltage (1D,1G)
2F	Solar radiation sensor input	Solar radiation sensor (RH)	Sunlight shined directly on the solar radiation sensor	4	- Related wiring harness - Climate control unit: terminal voltage (2K) - Solar radiation sensor
			Blocking light to solar radiation sensor	5	
2G	—	—	—	—	—
2H	—	—	—	—	—
	Passenger		Compared with temperature	Refer	- Related wiring harness - Passenger compartment

2I	compartment temperature sensor input	Passenger compartment temperature sensor	detected by passenger compartment temperature sensor	to graph 2	temperature sensor Climate control unit: terminal voltage (2K)
2J	—	—	—	—	—
2K	+5V	- Driver's side air mix actuator - Passenger's side air mix actuator - Airflow mode actuator - Solar radiation sensor	Switch the ignition to ON	5	- Related wiring harness - Driver's side air mix actuator - Passenger's side air mix actuator - Airflow mode actuator - Solar radiation sensor - Climate control unit: terminal voltage (1D)
			Switch the ignition to off	1.0 or less	
2L	Sensor GND	- Passenger compartment temperature sensor - Evaporator temperature sensor - Air mix actuator - Airflow mode actuator	Under any condition	1.0 or less	Climate control unit: terminal voltage (1D)

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Graph 1 (Evaporator temperature sensor)



Graph 2 (Passenger compartment temperature sensor)

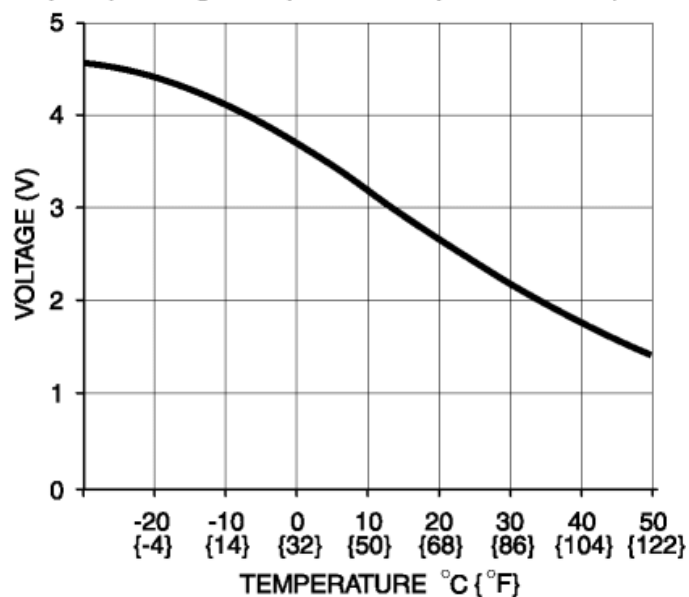
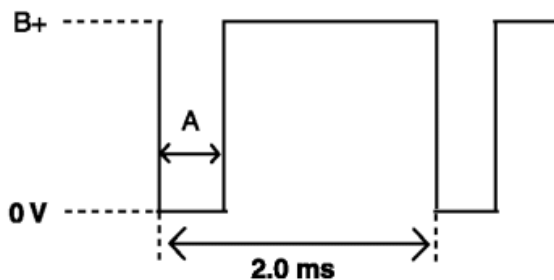


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