CM-812 AIR CONDITIONING TROUBLESHOOTING FLOW CHART

Disconnect both the six and four pin connector from the control module. Checks will be performed on the vehicle end of the harness. Turn vehicle ignition and A/C controls in cab to the on position. Voltage checks should be between 11.0 and 16.0 volts.

Six pin connector, is there battery voltage between pin 4 (module ground) and pin 2 (module power)?

Yes

Six pin connector, is there voltage between pin 4 (module ground) and pin 5 (t-stat circuit)?

Yes

Four pin connector, is the resistance at pin 3 and pin 4 (high pressure switch circuit) between 0 and 5 ohms? If ok, check at switch **

Yes

Remove high pressure switch. Is the impedance between 0 and 5 ohms at the switch?

No

Replace pressure switch.

Yes

Remove pressure restriction from high side of the system.

No

Replace pressure switch.

Yes

Continue to other side of page.

No

Check ECM fan output.****

Find open circuit between harness and A/C cab controls. Check at the t-stat, defroster microswitch, blower motor switch, A/C relay circuit or A/C On/Off switch.

* Start delay, compressor lubrication cycle:
- The A/C compressor is held off for the first 15 seconds after ignition switch engagement (module power up).
- After start delay the A/C compressor is turned on for 15 seconds if the high pressure state, low pressure switch state, clutch state and system voltage is correct.
- Note: The T-stat input is ignored during this period.

** High pressure switch note:
If system is exhibiting abnormal high head pressure and/or the pressure relief valve on the A/C compressor is being blown open, first verify no restriction or blockage is present on the high side of the system, if no restriction is present replace high pressure switch. This is a indication of the high pressure switch not opening when pressure rises above 300PSI.
- Note: Pressure differential can be up to 5-PSI lower per foot from compressor to high pressure switch. Red headed pressure switches set at 350PSI.

*** Thermostatic (t-stat) switch note:
If a t-stat fails in the closed position the compressor clutch will run continuously and the evaporator will freeze up.

**** ECM fan output:
Pin 3 is the ECM fan output. Voltage should read between 5 and 12 volts. With the ignition in the off position, jumper pin 4 to pin 3. Turn the vehicle on, if the engine fan is engaged the problem is not in the control module. If the engine fan is not engaged, inspect proper operation of solenoid valve, relay, fan blades and/or related components. If all components check good, replace the control module.
Six pin connector, is the resistance at pin 4 and pin 1 (A/C compressor clutch circuit) between 2.4 and 5 ohms? If ok, check at clutch.

Yes

Is impedance below 2.4 ohms?

No

Is impedance above 5.0 ohms?

Yes

Replace A/C clutch

No

Check for an open in the wiring or in the A/C clutch.

Reconnect to module, Is the control module making a good connection to the truck harness?

Yes

Repair connection.

No

Does Module pass its start delay compressor lubrication cycle?

Yes

Does the control module have any LED's?

No

Replace the control module.

Yes

If red LED is blinking, does the blink code reset by cycling the ignition switch four times?

No

Yes

Install A/C service gauges and perform typical troubleshooting practices.

Does A/C operate?

No

Yes

Is blink code reoccurring after fault has been cleared?

No

Start at beginning of tree and recheck.

Yes

Start at beginning of tree and recheck.

Yes

Done

Connector Pin Out

- Not Used
- Thermostat and A/C On/Off Input
- Vehicle Ground
- A/C Clutch
- VIGN 12 Volts
- Engine Fan Output
- Low Pressure Switch
- Low Pressure Switch Return
- High Pressure Switch
- High Pressure Switch Return

If vehicle is experiencing intermittent problems and/or module is flashing a three blink code after determining vehicle checks are in specification, refer to CM-612 Product Description & Troubleshooting Manual for more detailed troubleshooting information. It is recommended that a external ground wire is added to the body of the compressor to the ground post of the alternator, it may also be necessary to add the same ground wire to the control module. Access to this document is available by logging on to the Index web site at www.indexsensors.com under technical manuals or by calling Index customer service at (360) 629-5200.