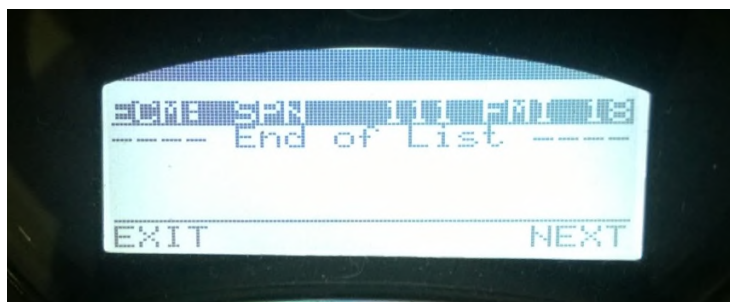




## 2010 43QGP Allegro Bus

6/5/2016

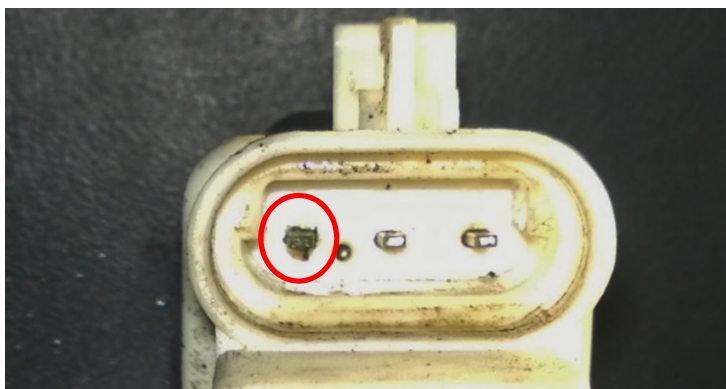
**133 - FYI – COOLANT LEVEL SENSOR.** During a recent slide open operation a “Check Engine Light” was displayed on the dash. Using dash instrumentation the fault code was checked displaying a, SPN 111 FMI 18 code.



The fault code was decoded showing a problem with the coolant level sensor.

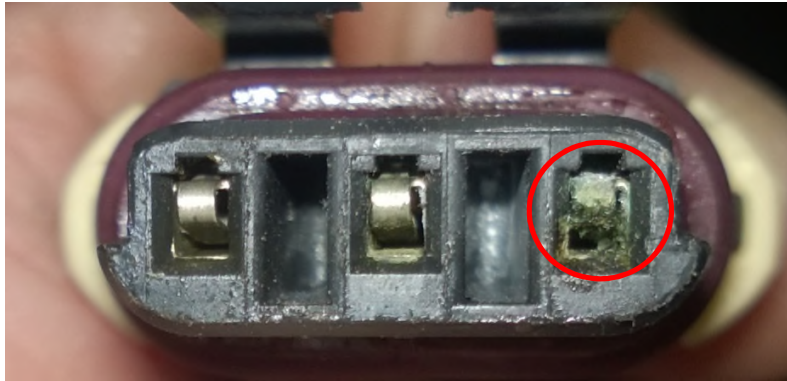
SA 0 SAE Diagnostic Trouble Codes and Cummins Fault Codes

SAE J1939 SPN	SAE J1939 FMI	Lamp Color	MIL Lamp Status	J1939 SPN/FMI Description	Fault Code	Cummins Description	2013 ISX15	2013 ISX12	2013 ISL9	2013 ISB6.7
111	17	Maintenance	None	Engine Coolant Level Data Valid But Below Normal Operating Range - Least Severe Level	2448	Coolant Level - Data Valid But Below Normal Operating Range - Least Severe Level	X	X	X	X
111	18	Amber	None	Engine Coolant Level Data Valid But Below Normal Operating Range - Moderately Severe Level	197	Coolant Level - Data Valid But Below Normal Operating Range - Moderately Severe Level	X	X	X	X



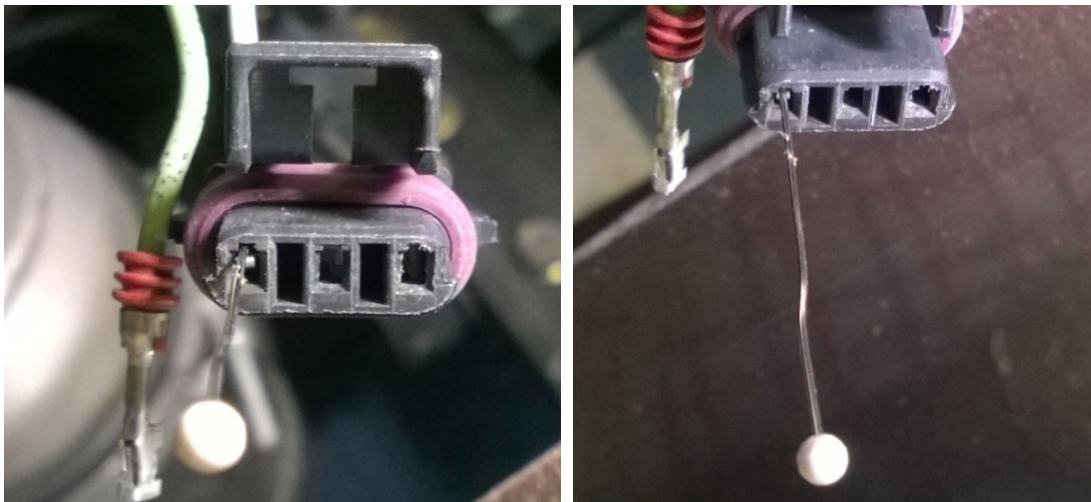
After disconnecting the coolant level sensor harness from the coolant sensor the problem was easily seen, both sensor and harness have a corroded pin. Both sensor pin and harness socket were cleaned however it was quickly apparent cleaning them would not provide a permanent solution. Nathan Davidson in the Tiffin Motorhomes Powerglide shop was contacted. Nathan provided me with the Coolant Level Sensor part number. Nathan then put me in contact with the parts department so the part could be ordered and shipped.

The sensor part number is **31643** cost of the part is \$ 55.96 with shipped adding another \$ 17.71 for a total of \$ 73.68. An additional \$ 0.01 was added to the cost, adding the penny provided a line item so Tiffin could supply me with a few socket pins and a new female harness connector to replace the damaged parts on the connector harness.



Now to one of the fun portions of this type of repair the harness socket pin has to be released or unlocked from the harness connector before a pin can be replaced.

I've found over the years using a sewing/quilting pin with a round head provides me with a strong metal object which can be used to bypass/unlock the locking mechanism on many harness connectors.



As seen above the wire with the socket was pushed **INTO** the harness from the back side then the pin was inserted above the pin on the front side where the locking tab is pushed down when the pin is inserted disabling the locking function. After the pin lock is disabled the wire along with the pin/socket was pulled out the back of the connector.

As it turned out the pins supplied with the new coolant sensor were not the exact same pins used with the OEM harness, the small difference caused a few problems until the new socket was modified by bending over one protruding tab on the new socket. When that modification was made the new socket and wire could be slid into the back of the new connector.

As shown one of the two tabs required bending over flat before the connector will allow pin insertion. The locking "T" tab prevents the pin/socket from backing out of the connector. To allow removal the wire and pin have to be pushed **into** the connector then the quilting pin is inserted above the "T" which pushes down and unlocks the tab allowing the pin/socket to be removed from the back side of connector. The wiring seals were damaged during pin replacement, since I did not have new wiring seals silicone

sealant was inserted into the wire cavity. The sealant was allowed to cure before the female connector was installed on the coolant level sensor.

Removal and replacement of the sensor required a gallon of coolant to be siphoned out of the coolant recover tank prior to removing the old sensor. After installing the new sensor the removed coolant was poured back into the coolant tank.

This tab required bending flat to allow insertion into connector



One side of locking "T" tab used to prevent socket/pin from backing out of connector

Locking "T" tab prevents socket/pin from backing out of connector



Tab required bending flat to allow insertion into connector