

UD14927 Rolls-Royce/Bentley Coolant Level Amplifier Refurbishment

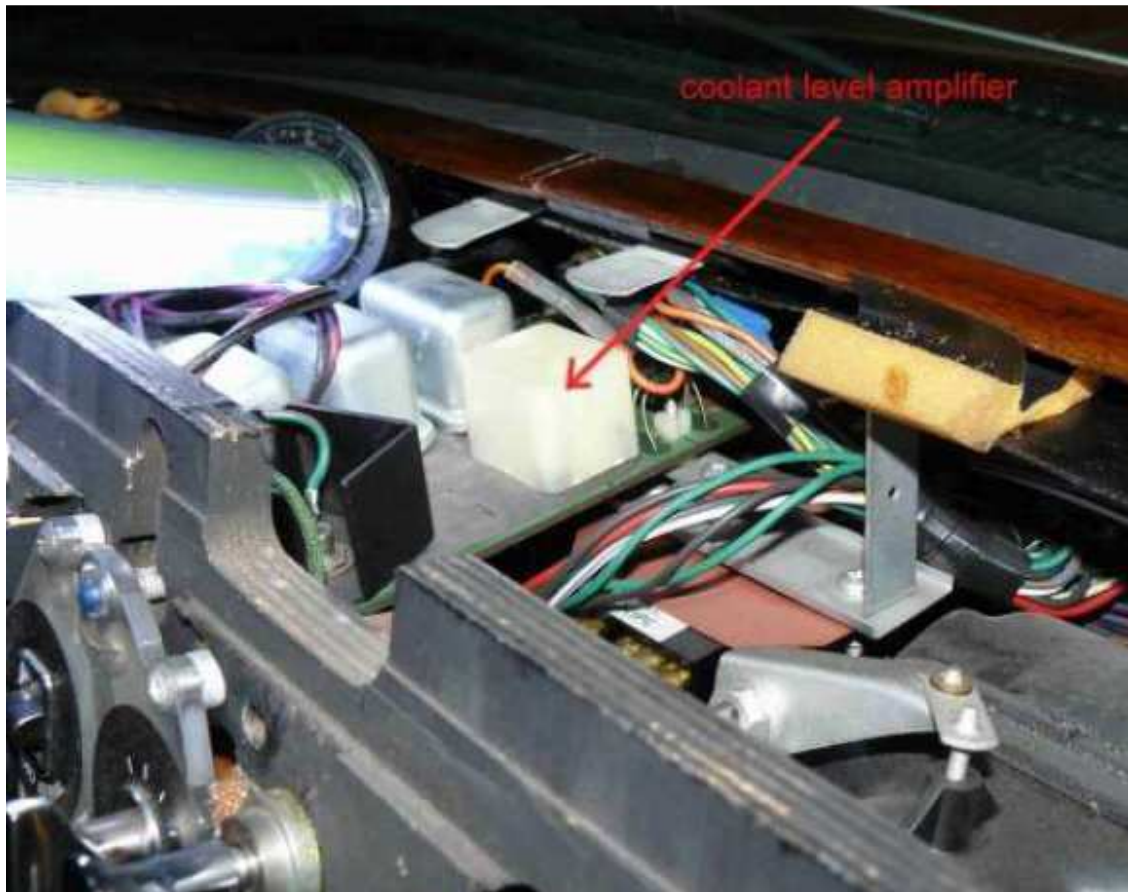
If your low coolant light never comes on other than during the lamp check, or if it stays on constantly, your coolant level amplifier may have gone wonky.

If the light never comes on be sure the bulb is not burned out before digging in to the dash “guts” under the center of the top roll to get to the coolant level amplifier. Also make sure that no previous owner has intentionally put both sensor wires on a single post to “make that light go away.”

If the light is constantly on, try putting both sensor wires on one of the posts to see if this causes it to extinguish. If it does the ends of the sensor probes in the header tank have probably developed enough corrosion to prevent them from completing the circuit. If that’s the case just remove them, clean them, put everything back together, then do this check again.

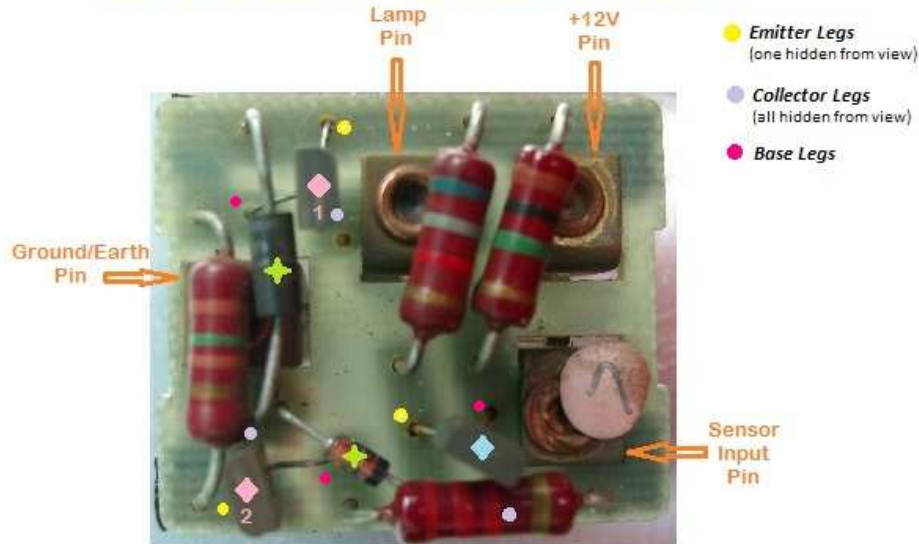
After checking the above, along with as much of the wiring related to the coolant probe circuit as you possibly can, if you have a low coolant light that’s either perpetually on or perpetually off you probably have a bad coolant level amplifier.

To get to the amplifier remove the top roll from the dash and look almost dead center for a cluster of relays, which will be oriented differently depending on the era of the car:



On the same board as those relays will be a whitish plastic cube, usually with its label intact, that reads: "UD 14927 Coolant Level." Carefully remove it from the relay board. After it is off the relay board, gently and carefully pry the circuit board out of the base of the cover. When that's done you should see something exactly like or very similar to this:

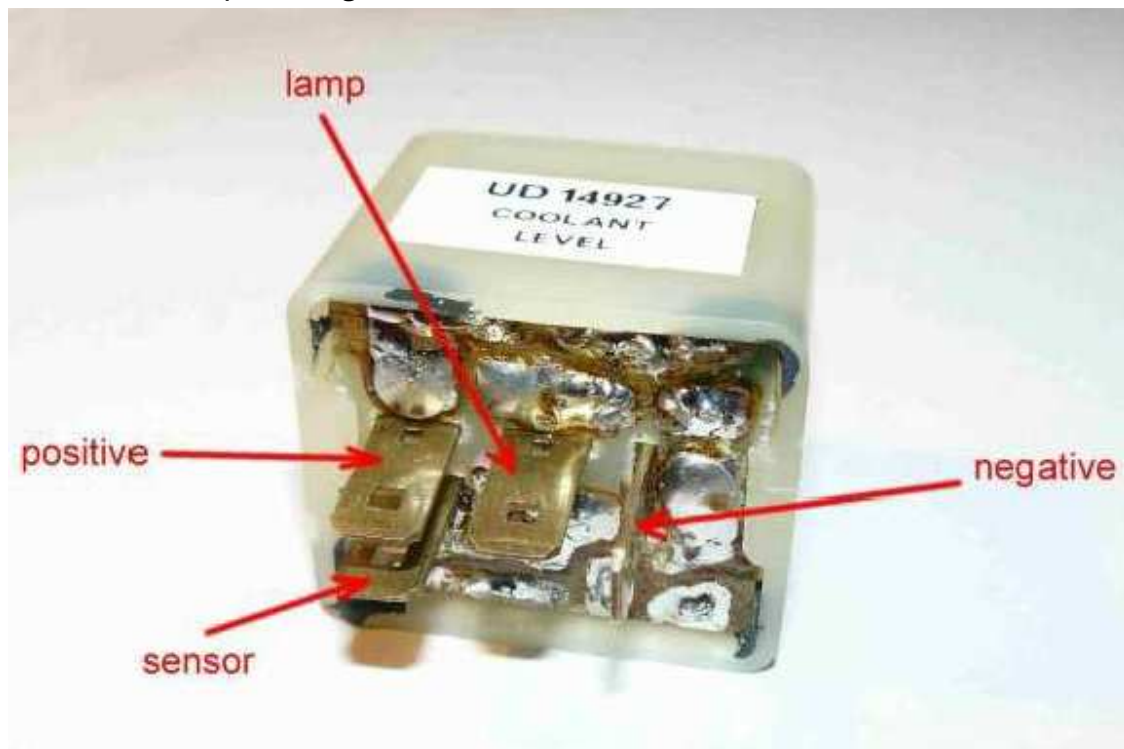
UD14927 Rolls-Royce/Bentley Low Coolant Amplifier



- ◆ Amplifier Transistors - Replace each with either a BD138 or PN200 transistor
- ◆ Sensor Transistor - Replace with either a BD139 or PN100 transistor
- ✚ Diodes - Replace each with a 1N4007 or similar rectifier diode

Once you have the circuit board oriented to match the photo above, you know which transistors and diodes need to be replaced and with what.

Here's what the pin arrangement on the underside of the circuit board looks like:



For the diodes, make sure that you maintain the same orientation of the cathode (striped) end and anode end when you solder the new ones in.

The transistors are a bit trickier since they have three legs: an emitter, collector, and base. You should be able to determine which is which on your replacement transistors based upon their spec sheets (and markings). The originals, however, can be trickier. Always check what's on your board against the following. While the annotations above are correct for the PCB in question, you never know when the actual arrangement of the PCB might have changed. The connections, though, won't change:

1. For the existing sensor transistor:
 - ❖ Emitter leg is soldered to the legs of a resistor and diode
 - ❖ Collector leg is soldered to the leg of a resistor only
 - ❖ Base leg is soldered to the sensor input pin and the leg of a resistor

2. Amplifier transistor #1 [at upper, left side of annotated photo]
 - ❖ Emitter leg is soldered to a diode, two resistors, and the +12V pin
 - ❖ Collector leg is soldered to the warning lamp pin
 - ❖ Base leg is soldered to a resistor

3. Amplifier transistor #2 [at bottom, left side of annotated photo]
 - ❖ Emitter leg is soldered to a resistor (other end of resistor goes to base of other amp transistor)
 - ❖ The collector leg is soldered to two diodes and ground/earth/negative pin
 - ❖ The base leg is soldered to a resistor (other end of resistor goes to sensor transistor)

You simply solder in your replacement BD139/PN100 sensor transistor such that its legs match the original sensor leg configuration and do the same for each of the two respective BD138/PN200 amplifier transistors.