

Mini Fuel Gauge Sending Unit Range Adjustment

Doug Lawson – 12/28/05

Object: The standard Mini fuel level sending unit operates nominally between 0-270 Ohms (full to empty). To use the sending unit with a fuel gauge requiring a different (lower) resistance range wire a load resistor in parallel with its contacts. The amount of the necessary resistance can be determined by manipulating the “inverse reciprocal sum” formula for parallel resistors: $R_{total} = (1 / (1/R1 + 1/R2))$. R_{total} is the desired upper resistance value, $R1$ is the “empty” resistance value of the standard sending unit. Solve the equation for $R2$ to determine the resistor to be placed in parallel with the sending unit. For 0-90 Ohm operation this value is approximately 135 Ohms.



Standard sending unit... “Full”



Standard sending unit... “Empty”



Two (2) 270 Ohm resistors in parallel = 135 Ohms

Connect the 135 Ohm load EITHER

- 1) Across the two sending unit terminals as shown below, or
- 2) Across the input on the back of the gauge (between earth and sending unit input).

(Note the position of the float arm in the surrounding pictures. Note the resistor in parallel to sender below.)



Sending unit “Full” with 135 Ohm parallel resistor



Sending unit “Empty” with 135 Ohm parallel resistor.