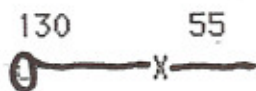


## To Find Short Using Ohms Only



You have to know the ohms with a good line (either actual or by mnfg. specs).

You have to know the mnfg.'s ohms/1,000'

$$130 + 55 = 185$$

185 = total ohms of the line reading through the short  
2 times (once from each end)

132 = ohms of good line at 7.5 x known length <sup>OHMS/1000'</sup>

185 - 132 = 53 which is the excess ohms read 2 x's

53 divided by 2 = 26.5 ohms excess from each end.

$$130 - 26.5 = 103.5$$

$$55 - 26.5 = 28.5$$

Now divide the new found ohms resistance by the mnfg. ohms/1,000' to get the distance in feet to the short

$$\begin{array}{l} 103.5 \text{ divided by } 7.5 = 13,800' \\ 28.5 \text{ divided by } 7.5 = 3,800' \end{array} \quad \left. \vphantom{\begin{array}{l} 103.5 \\ 28.5 \end{array}} \right\} = 17,600' \text{ TOTAL LENGTH}$$

## To Find Short With High Resistance Leak Using Battery

You have to know the line length first, either from customers record book or from our cable records for that unit.

Line Length x Volt Reading End To End

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 Volt Reading + Volt Reading From Opposite Polarity

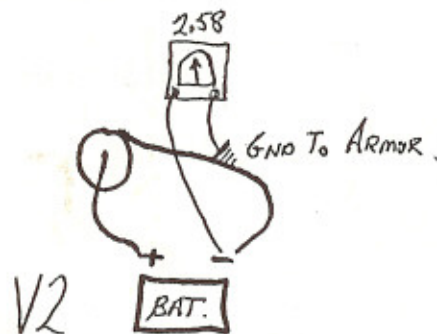
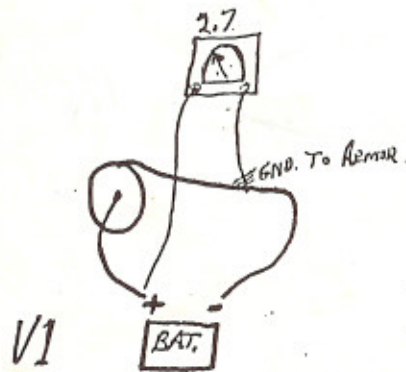
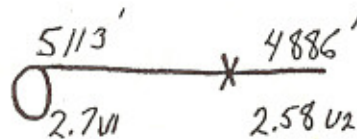
$$\frac{L.L. \times V1}{V1 + V2} = \text{Leak from the V1 end}$$

$$\frac{L.L. \times V2}{V1 + V2} = \text{Leak from the V2 end}$$

$$\frac{10,000 \times 2.7}{2.7 + 2.58} = \frac{27,000}{5.28} = 5113'$$

$$\frac{10,000 \times 2.58}{2.7 + 2.58} = \frac{25,800}{5.28} = 4886'$$

9,999' (ALWAYS 1' SHORT OF ORIGINAL TOTAL)



**NOTE:** Connect battery end to end on the conductor; **NOT** end to gnd.  
 Take the voltage drop reading with the pos. lead on the conductor  
 and ground the other lead to the armor.