ZS: THE WHOLE LOOP

MEASURE ZS, OR CALCULATE IT?

Z_s is the complete loop — the external part plus your circuit — and it is taken at the **end of line**, the point of utilisation. A socket, a lighting point, the furthest accessory.

$$Z_s = Z_e + (R_1 + R_2)$$

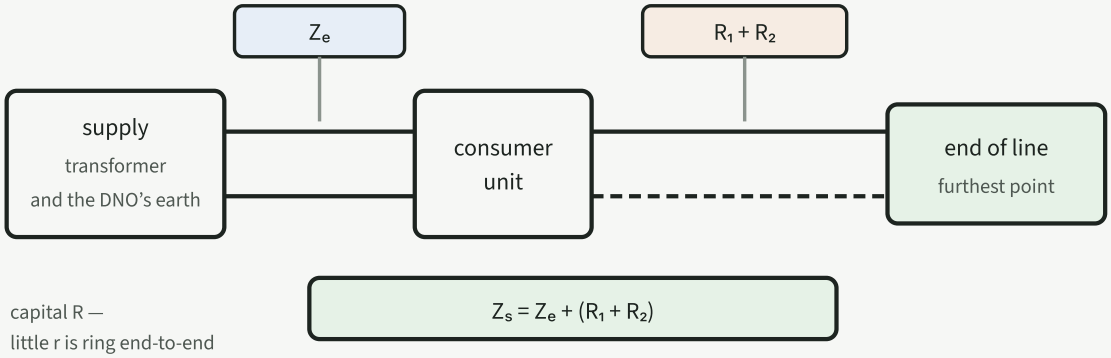
Capital R, not little r.
Little r belongs to ring final end-to-end readings. The Z_s formula takes the capital values.

You can get Z_s two ways: **measure** it directly at the far point, or **calculate** it by adding your measured $R_1 + R_2$ to Z_e. Both are legitimate, and the calculation is the one that saves you when you cannot get a reading. Either way, **nothing is disconnected** — you want the parallel paths.

If you have a Z_{db} instead of a Z_e.

Guidance Note 3

· p.85 gives the second form: swap Z_e out and use **$Z_{db} + (R_1 + R_2)$**. That is what you use for circuits fed from a sub-main board — a garage, workshop or shed. Highlight both formulas.



Measured at the point of utilisation — a socket, a lighting point, the furthest accessory. Either measure it directly, or add your measured $R_1 + R_2$ to Z_e.

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