

Fault Loop Impedance Calculator

Calculate measured and lead-corrected fault-loop impedance from entered test voltage and current without making a trip-time or acceptance decision.

Generated October 10, 2026

<https://www.elecatrix.com/testing-protection-grounding/fault-loop-impedance-calculator/>

Inputs

Input	Value	Unit
Test voltage	24	V
Measured fault current	10	A
Lead impedance	0.1	ohm

Results

Result	Value	Unit
Measured loop impedance	2.4	ohm
Lead impedance used	0.1	ohm
Corrected loop impedance	2.3	ohm
Fault current used	10	A

Calculation details

Detail	Value	Unit
Calculation basis	Measured loop impedance equals test voltage divided by measured fault current; entered lead impedance is subtracted as a worksheet correction.	
Boundary	Fault-loop worksheet arithmetic only; no test method, trip-time, touch-voltage, grounding, protection, or acceptance decision is made.	

Formulas

measured impedance = test voltage / measured fault current

corrected impedance = max(measured impedance - lead impedance, 0)

Warnings and limitations

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This is worksheet arithmetic only and does not determine trip time, touch voltage, grounding adequacy, or acceptance.