

Transformer Generator Coordination Calculator

Compare transformer load with entered generator kVA and kW ratings, showing capacity margins and the limiting utilization.

Generated October 10, 2026

<https://www.elecatrix.com/power-quality-transformers/transformer-generator-coordination-calculator/>

Inputs

Input	Value	Unit
Transformer size	75	kVA
Expected transformer loading	80	%
Load power factor	0.9	PF
Generator kW rating	70	kW
Generator kVA rating	80	kVA

Results

Result	Value	Unit
Transformer load (apparent)	60	kVA
Transformer load (real)	54	kW
Generator kVA margin	20	kVA
Generator kW margin	16	kW
Limiting utilization	77.1429	%

Status

Status	Value	Unit
Rating comparison	Within entered generator ratings	

Calculation details

Detail	Value	Unit
Calculation basis	Transformer kVA is scaled by expected loading and power factor, then compared with entered generator kVA and kW ratings.	

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Coordination boundary

Capacity comparison only; starting, transient, protection coordination, grounding, and transfer-equipment review remain external.

Formulas

Estimated load (kVA) = Transformer kVA x (Expected load percent/100)

Estimated load (kW) = Estimated load (kVA) x Load power factor

kVA margin = Generator kVA rating - Estimated load (kVA)

kW margin = Generator kW rating - Estimated load (kW)

kVA utilization = (Estimated load (kVA)/Generator kVA rating)

kW utilization = (Estimated load (kW)/Generator kW rating)

Limiting utilization = max(kVA utilization, kW utilization)

Warnings and limitations

This capacity comparison does not perform generator-transient, motor-starting, fault-current, grounding, protection coordination, emissions, fuel, or transfer-equipment review.