Energy Meter Accuracy Test (Pulses or Revolutions)

Error of an energy meter from its constant in impulses or revolutions per kWh, the pulses counted, the time taken and the true load during the test.

Method: Meter constant definition; error = (recorded − true) / true

Input parameters

Unit system: SI

Parameter	Value	Unit
Meter constant (impulses or revolutions per kWh)	3,200.0	
Pulses or revolutions counted	32.000	
Time taken	35.500	s
True load during the test	1,000.0	W

Calculated results

Parameter	Value	Unit
Energy recorded by the meter	0.010000	kWh
True energy	0.009861	kWh
Meter error (positive = reads fast)	1.4085	%
Time a correct meter would take	36.000	s

Formula and method

$$E_m = \frac{n}{K}, \quad \varepsilon = \frac{E_m - Pt}{Pt}$$

Variables

K	Meter constant (impulses or revolutions per kWh)	-
n	Pulses or revolutions counted	-
t	Time taken	s
P	True load during the test	W
E_m	Energy recorded by the meter	J
E_t	True energy	J
ε	Meter error (positive = reads fast)	-
t_0	Time a correct meter would take	s

Method and standards

Recorded energy from the meter constant compared with the true energy.

Assumptions and limits

- Steady load during the test.

References

- Meter constant definition; error = (recorded − true) / true

Report details

Report reference	FCC-JBSY-JQ5T (the same inputs always give the same reference)
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Calculator	Energy Meter Accuracy Test (Pulses or Revolutions)
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Release checks	3 reference cases of this calculator, computed independently, are checked on every release

Results are for engineering estimation. Verify critical designs against the referenced standards and your own data.

This calculator online

https://calc.firecad.com/electrical/power/energy-meter-accuracy-test

Open this case on calc.firecad.com →

Reopens the calculator with the inputs of this report.