

Instrument transformer accuracy is normally specified in terms of 'Class' values. These are defined in the relevant Standards, BS EN 60044-4 for Current Transformers and BS EN 60044-2 for Voltage (or Potential) Transformers. The figures quoted below are based on extracts from the standards.

Current Transformers

Accuracy Class	Ratio Error % Reading				Phase Error Minutes				Worst Case kW Error % Reading 5% FLC PF = 0.5
	100% FLC	20% FLC	5% FLC	1% FLC	100% FLC	20% FLC	5% FLC	1% FLC	
5	5								N/A
3	3								N/A
1	1	1.5	3		60	90	180		11.9
0.5	0.5	.75	1.5		30	45	90		6.0
0.5S	0.5	0.5	0.75	1.5	30	30	45	90	3.01
0.2	0.2	0.35	0.75		10	15	30		2.25
0.2S	0.2	0.2	0.35	0.75	10	10	15	30	1.10
0.1	0.1	0.2	0.4		5	8	15		1.15

NOTE Class 5 and Class 3 CTs are only specified for Ratio Error, at 120% FLC and 50% FLC. Class 0.5S and Class 0.2S, which are mainly designed for precision CT operated Meters, are only defined for a 5 Amp nominal output, have an operating range of 50mA to 6 Amp. For Class 0.1, 0.2, 0.5 and 1 CTs, the current errors and phase displacements shown above are the maximum permissible when the secondary burden is any value between 25% and 100% of the rated burden, and operation is at rated frequency. The present standard does not allow rated burdens of less than 1 VA.

Voltage Transformers

Class	Percentage Voltage (ratio) error % Reading	Phase Displacement - Minutes	Worse Case kW Error PF = 0.5
0.1±	± 0.1%	5	± 0.35%
0.2	± 0.2%	10	± 0.70%
0.5	± 0.5%	20	± 1.5%
1.0	± 1.0%	40	± 3.0%
3.0	± 3.0%	Not Specified	Not Specified

NOTE

A Class 3 VT is specified only for Ratio Error.

For all the above VTs, the voltage errors and phase displacements shown are the maximum permissible at any voltage between 80% and 120% of rated voltage, when the secondary burden is any value between 25% to 100% of the rated burden, the burden Power Factor is 0.8 lagging, and operation is at rated frequency

Usage of Transformers

For general kW and kWh measurement	Class 1
For kW and kWh measurement at poor Power Factors	Class 0.5
High Accuracy Measurements	Class 0.5 or better
Laboratory or Standards Room use	Class 0.2 or better