



7022 COMPENSATED CURRENT TRANSFORMER



Featuring

- ▶ Operating Voltage up to 200 kV Line to Neutral
- ▶ Partial Discharge < 10 pC @ rated voltage
- ▶ Rated Current up to 6000 A
- ▶ Wide Measurement Range
- ▶ Negligible Current Division Errors
- ▶ Burden Compensation

Overview

The model 7022 series of High Voltage Current Transformers was designed to operate as part of the current channel in MI's 200 kV Loss Measurement Systems. This design meets the requirements of both IEC and IEEE standards for testing power transformers. The bushings are filled with insulating gas and fitted with a pressure indicator or with an optional pressure transducer with a 4-20 mA output for continuous monitoring. Connections to the primary window winding of the current transformer are made via a copper bar rated to handle high currents up to 6000 A, depending on the specific model.

The design of the built-in current transformer is based on the two-stage compensated technology. The main advantage of a two-stage compensated CT is that the effective burden is zero when feeding into another compensated CT such as the current input on the MI wattmeters, high voltage capacitance bridges,

and AC ratio bridges. As a result, the errors of the CT are effectively reduced to zero in both magnitude and phase. Lead length becomes unimportant and there is no further concern for any additional active components. The 7022 can be used with any two-wire input wattmeter, in this case, secondary and auxiliary leads must be connected as close as possible to the input of the wattmeter. Typical errors for burdens at 1 Ω are less than 50 ppm.

The model 7022 is a four-wire single-ratio passive-two-stage high voltage current transformer. The nominal ratio for all 7022 models is 2000:1 and the rated voltage of 200 kV. The rated primary current can go up to 6000 A for a secondary current of 3 A. The 7022 has 10 % over-range capabilities.

The model 7022 can also be used as a range extender for the model 7010 series of Capacitance/Inductance Bridges for measuring losses in shunt reactors.

Feature	Benefit
Operating Voltage up to 200 kV and 6000 A	The wide operating range for voltage and current gives test facilities the flexibility for testing all sizes of power transformers with one setup.
Wide Measurement Range	Provides continuous testing capability, no need for changing taps during the test. The high accuracy is maintained in the entire range.
Burden Compensation	Minimizes CT ratio errors to almost zero or negligible level. No need to compensate the leads length.
Partial Discharge < 10 pC	Such low levels ensures the test setup has no or negligible impact on any measurement or those where partial discharge is tested.



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7022 COMPENSATED CURRENT TRANSFORMER

Specifications: Rev 0

Model	7022	7022/4000	7022/6000
Operating Current Rating (at 50/60 Hz)	2000 A	4000 A	6000 A
Operating Voltage (max) (Line to Neutral @ 50/60 Hz)	200 kV	200 kV	200 kV
Withstand Voltage (Line to Neutral @ 50/60 Hz)	240 kV	240 kV	240 kV
Partial Discharge	< 10 pC @ 200 kV	< 10 pC @ 200 kV	< 10 pC @ 200 kV
CT Nominal Ratio	2000:1	2000:1	2000:1
Ratio Error (for magnitude and phase shift)	≤ 20 ppm	≤ 20 ppm	≤ 20 ppm
Temperature Range (Operating)	- 5 °C to 40 °C	- 5 °C to 40 °C	- 5 °C to 40 °C
Relative Humidity Range (Operating)	5 % to 80 % RH (non-condensing)	5 % to 80 % RH (non-condensing)	5 % to 80 % RH (non-condensing)
Environmental Conditions	Indoor Use Only	Indoor Use Only	Indoor Use Only
Overall Height: mm (in)	2752 (108.4)	2752 (108.4)	2822 (111.1)

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