Measurements International

Metrology is Our Science, Accuracy is Our Business™

7023 COMPENSATED CURRENT TRANSFORMER

Featuring

- Operating Voltage up to 300 kV Line to Neutral
- Partial Discharge < pC @ rated voltage
- Rated Current up to 4000 A
- Wide Measurement Range
- Negligible Current Division Errors
- Burden Compensation

Overview

The model 7023 series of High Voltage Current Transformers was designed for the current input to MI's 300 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 current up to 4000 A.

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 7023 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 7023 is a four-wire single-ratio passive-two-stage high voltage current transformer. The nominal current division ratio is 2000:1 and rated voltage of 300 kV. The rated primary current can go up to 4000 A for a secondary current of 2 A.

The model 7023 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 300 kV and 4000 A	The wide operating range for voltage and current gives test facilities the flexibility for testing all sizes of power transformers and shunt reactors with one setup.
Wide Measurement Range	Provides continuous testing capability, no need for changing taps during the tests. 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 for leads length.
Partial Discharge < 10 pC	Such low level ensures the test setup has no or negligible impact on any measurement or those where partial discharge is tested.

Measurements International

Metrology is Our Science, Accuracy is Our Business™

7023 COMPENSATED CURRENT TRANSFORMER

Specifications: Rev 2

Model	7023/4000
Operating Current Rating (at 50/60 Hz)	4000 A
Operating Voltage (max) (Line to Neutral @ 50/60 Hz)	300 kV
Withstand Voltage (Line to Neutral @ 50/60 Hz)	330 kV
Partial Discharge	< 10 pC @ 300 kV
CT Nominal Ratio	2000:1
Ratio Error (for magnitude and phase shift)	≤ 20 ppm
Temperature Range (Operating)	- 5 °C to 40 °C
Relative Humidity Range (Operating)	Up to 95 %, non-condensing
Operating Environment	Indoor Use Only
Overall Height: mm (in)	3280 (129.1)

Corporate Headquarters
Measurements International
PO Box 2359, 118 Commerce Drive
Prescott, Ontario, Canada K0E 1T0

Phone: 613-925-5934
Fax: 613-925-1195
Email: sales@mintl.com

Toll Free: 1-800-324-4988