

EXTENDED-RANGE CURRENT TRANSFORMERS AND COMBINED METERING UNITS

OSKF XXX.ER / KOTEF XXX.ER

Introduction

As Independent Power Producers (IPP's) and other special metering situations become wide-spread, the need for metering wide current ranges from the high-voltage side has increased. To meet this need, Ritz has developed the Extended-Range Current Transformer (ERCT) featuring **Dynalloy** core material. The ERCT offers a metering accuracy suitable to measure full load currents, as well as currents resulting from light auxiliary loads. The ERCT design is available in current transformers (69 kV to 765 kV) and combined metering units (69 kV to 230 kV).

Construction

The design is adapted from the Ritz conventional CT design (OSKF type), and combined metering unit design (KOTEF type), including the same oil/paper insulation system, which has been in service for more than 30 years.

A conventional core/coil arrangement is used for the current transformation. The core is the special **Dynalloy** core material, which has improved magnetic characteristics over conventional silicon-steel material. External insulation is by means of a porcelain or composite insulator.

Please refer to the Ritz OSKF 72.5...800 brochure and the KOTEF 72.5...245 brochure for further details on design and construction.

Extended ranges are also available in a slip-over bushing CT configuration. Please consult the factory for further information, as accuracy and range vary with dimensions.

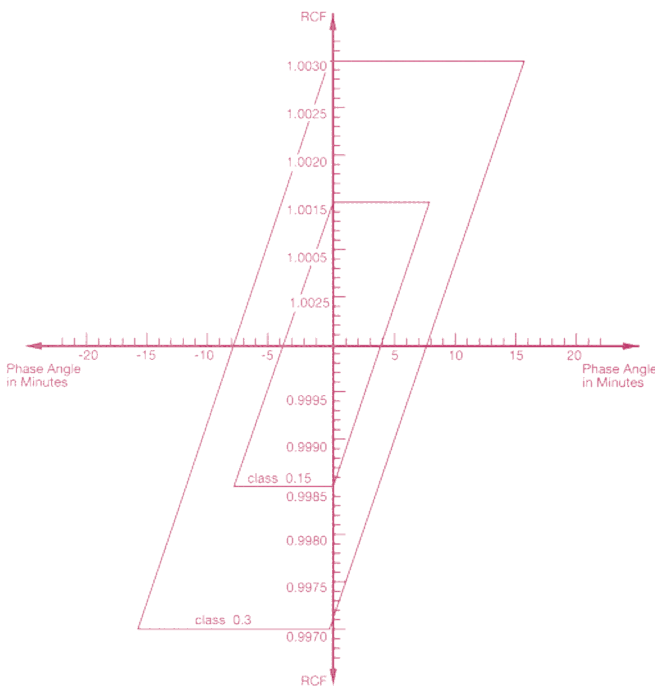
ERCT versus Conventional CTs

To understand the difference between Ritz ERCTs and conventional CTs, one must first understand how ANSI C57.13 defines metering accuracy. ANSI C57.13 defines the most accurate metering accuracy class to be 0.3%. ANSI states that the accuracy of 0.3% should be met at the rated current up to the maximum continuous current. It also states that the accuracy from rated current down to 10% of rated current is 0.6% (half as accurate as the 0.3% rating).



For most generation metering, particularly metering at Independent Power Producers (IPP), the primary current can be in the range of 0.25A – 2 A when the power plant is not producing and is buying power from the local utility and feeding off of the power transformer auxiliaries. When the plant is producing power, primary currents are generally between 1000 A and 3000 A. Given the way ANSI defines of the 0.3% metering class, it is impossible to choose a ratio to yield a metering accuracy at both the low and high end of the current range.

The Ritz ERCT addresses the problem by offering a revenue metering accuracy from very low primary currents all the way up to the maximum current level required. Not only does it offer this range, but it meets a 0.15% accuracy across the entire range. Since ANSI C57.13 does not specify a 0.15% accuracy, Ritz defines it as twice as accurate as the 0.3% class.

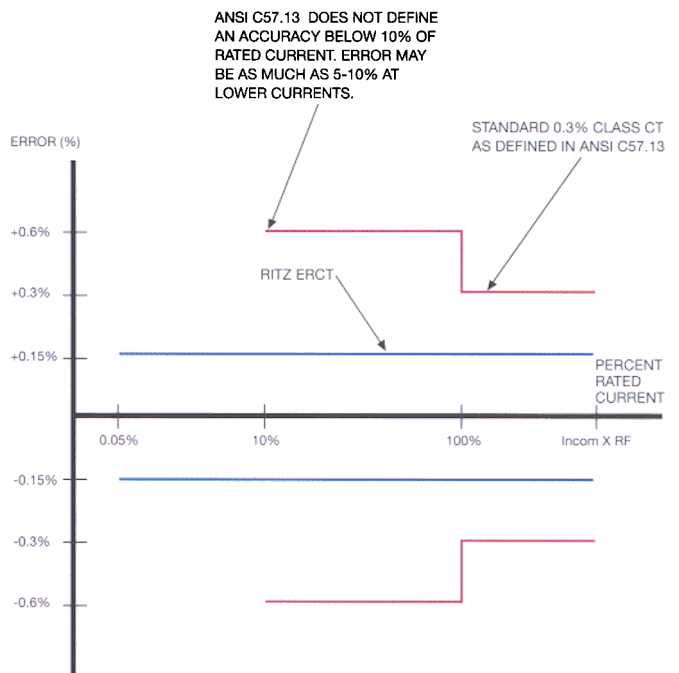


CLASS 0.3 AND 0.15

Ratings

The ERCT configuration is available in three standard types.

	Type 1	Type 2	Type 3
Ratio	2000:5 A	1000:5 A	500:5 A
Accuracy/Burden	0.15B1.8	0.15B1.8	0.15B1.8
Rating Factor	2.0	2.0	1.5
Accuracy Range	1A to 4000A	0.5A to 2000A	0.25A to 750A
Thermal Current	120 kA – 1 sec	75 kA – 1 sec	54 kA – 1 sec



The ERCT is also available with a series/parallel primary winding, in which the Type 1 and Type 2 can be accommodated in the same unit, with range selection adjustable in the field. Please consult the factory for further information on this design and other extended-range current transformer design options.

Sales Representative