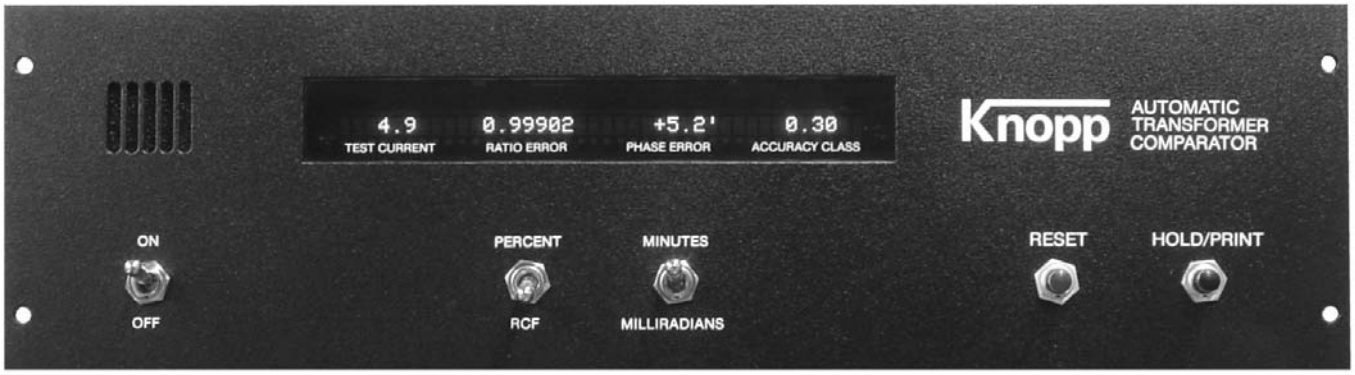
BULLETIN NO. 3500

Knopp

KATC automatic transformer comparator



description

The Knopp Automatic Transformer Comparators (KATC series) provide the most convenient means available to measure instrument transformer ratio and phase angle errors. Some of the comparator features are:

- reduced testing time—test results are typically available within three seconds,
- automatic operation (no manual "nulling" or adjustments required),
- microprocessor control,
- autoranging capability,
- digital display,
- calculation and display of ANSI accuracy class,
- fully protected circuitry,
- optional RS-232C output,
- interchangeable with other Knopp comparators.

This microprocessor-based comparator automatically selects the optimum measurement range, computes the results, and digitally displays the test current (or voltage), the transformer ratio and phase angle errors, and the ANSI accuracy class for which the transformer qualifies. Measurement time is greatly reduced, since the operator's tasks are limited to connection of the transformer-under-test and adjustment of the test current (or voltage). The capability to calculate and display the ANSI accuracy class eliminates the often difficult and time-consuming task of determining whether the measured results fall within the limits of the applicable ANSI parallelogram. The transformer ratio error can be displayed as Percent Error or Ratio Correction Factor. Phase error can be displayed as minutes or milliradians.

The comparator circuitry is fully protected and will not be damaged by excessive current (or voltage) that may result from improper connection of the transformer-under-test, or from transformers with incorrectly marked ratios. The operator is alerted to such errors by an audible alarm, and is informed of the specific nature of the error by a message on the display.

The comparator can be supplied with the circuitry necessary to interface to a computer for the purpose of test result transfer and storage.

The dimensions and input circuitry allow all previous Knopp comparators, whether in Knopp transformer test systems, or portable, to be easily replaced by the KATC comparators.

specifications

dimensions: 19.75" (50.2 cm) Wide x 18.1" (45.9 cm) Deep x 6.3" (16.0 cm) High.

weight: 45 lbs. (20.4 kg).

input power: 120 VAC, 0.2 A, 50/60 Hz.

test frequency: 60 Hz. (50/60 Hz. optional)

ranges: *Current Comparator (KATC-C)*
$0.2 \leq$ Test Current ≤ 25 A.
$-1000 <$ Phase Error $< +1000$ min.
$0 \leq$ RCF < 10
$-100\% <$ % Ratio Error $< +1000\%$
$0\% <$ Accuracy Class $< 100\%$

Voltage Comparator (KATC-V)
$50 <$ Test Voltage < 150 V.
$-1000 <$ Phase Error $< +1000$ min.
$0 \leq$ RCF < 10
$-100\% <$ % Ratio Error $< +1000\%$
$0\% <$ Accuracy Class $< 100\%$

resolution: dependent on Accuracy Class (Acc. Cl.) as follows:

	RCF	Phase Angle (Minutes)	Acc. Class
0.0% ≤ Acc. Cl. <0.2%	0.00001	0.01	0.01
0.2% ≤ Acc. Cl. <0.7%	0.00001	0.1	0.01
0.7% ≤ Acc. Cl. <1.4%	0.0001	0.1	0.01
1.4% ≤ Acc. Cl. <10.%	0.0001	1	0.01
10.% ≤ Acc. Cl.	0.0001	1	0.1

accuracy: ±(0.75% of reading + 1 Least Significant Digit)

burden: Standard Transformer —less than 0.2 VA at 5 A. (Current) or 120 V. (Voltage)
Test Transformer —typically less than 0.05 VA if within 0.6% Accuracy Class.

catalog numbers

36040	KATC-C Automatic Transformer Comparator (Current), 60 Hz.
36050	KATC-V Automatic Transformer Comparator (Voltage), 60 Hz.
36060	KATC-C Automatic Transformer Comparator (Current), 50/60 Hz.
36070	KATC-V Automatic Transformer Comparator (Voltage), 50/60 Hz.

Knopp
1307 - 66th Street
Emeryville, CA 94608
(510) 653-1661
(800) 227-1848
(510) 653-2202 (FAX)
email: sales@knoppinc.com

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