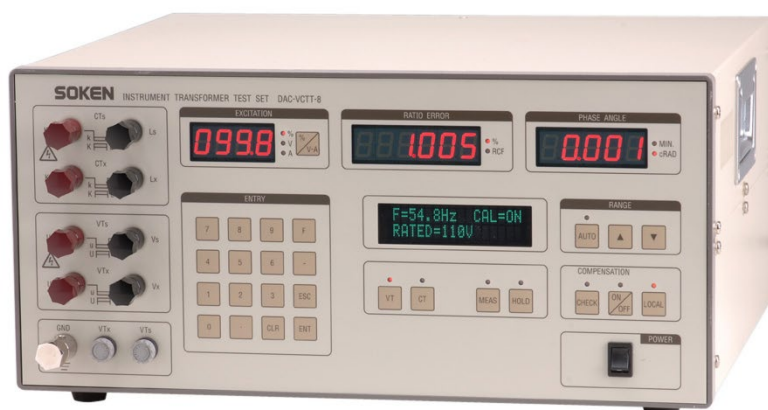


# INSTRUMENT TRANSFORMER TEST SET

## DAC-VCTT-8



DAC-VCTT-8 is a device designed for quality testing of instrument current and voltage transformers. It can measure the ratio error and phase angle of instrument transformers in accordance with the international standards.

Measurements are performed by the comparison test method with standard transformers. Transformers with a ratio different from that of the standard transformer can be tested by combining the optional ratio-adaptor DAC-RAC-2/DAC-RAV-2.

### Features

- Applicable to the standards IEC 61869 (IEC 60044), ANSI/IEEE C57.13.
- Accurate measurement for current transformer and voltage transformer.
- The ratio error, phase angle, test voltage, test current, and test frequency can be measured.
- Ratio error display can be selected from “%” or “RCF” (Ratio Correction Factor), and phase angle display can be selected from “Min” (minutes) or “Crad” (centiradians).
- USB and GP-IB interfaces.
- Error values of the standard VT/CT can be registered for automatic compensation. Registration: 10 units for each VT and CT (Test point: 20 points for every unit)
- Different-ratio testing is available by incorporating an optional different-ratio adapter model DAC-RAC-2 and DAC-RAV-2.
- A built-in burden compensation circuit realizes the burden of DAC-VCTT-8 itself as small as 0.1VA to adapt very small burden test conditions.

# DAC-VCTT-8 INSTRUMENT TRANSFORMER TEST SET

## Specifications

- Test Method Make a comparison between the instrument transformer under test and the standard Transformer which having the same transformation ratio. (The standard voltage/Current transformers are to be prepared by the user.)

- Rated secondary and test range

	Rated Secondary	Test Range
CT	1 A, 5 A	1 - 200%
VT	57.7V (100/ $\sqrt{3}$ V), 63.5V (110/ $\sqrt{3}$ V), 60V, 190/3 V, 100V, 110V, 120V, 150V, 200V, 230V, 240V	2 - 120%
	100/3, 110/3, 200/3 V	5 - 200%

- Measurement range

Ratio error (RCF) and phase angle

Measure Range	Ratio Error	Phase angle
2% Range	$\pm 1.999\%$ (0.98040-1.02040)	$\pm 99.9$ min
20% Range	$\pm 19.99\%$ (0.83440-1.24984)	$\pm 999$ min

Rated secondary Current: 0 – 210% of rated secondary current

	Phase angle
Rated 1A	0.000 – 2.100A
Rated 5A	0.00 – 10.50A

Rated secondary Voltage: 0 – 300V

Test Frequency: 45 - 66Hz

- Resolutions

Measurement Range	Ratio Error	Phase angle
2% Range	0.001%	0.1 min
20% Range	0.01%	1 min

Rated secondary current	Reading in % of rating	Reading in current
Rated 1A	0.1%	0.001A
Rated 5A	0.1%	0.01A

- Accuracy

Ratio error:  $\pm(3\%rdg + 2 \text{ digits})^* \pm(3\%rdg + 3 \text{ digits})$  when less than rated 20%

Phase angle:  $\pm(3\%rdg + 2 \text{ digits})^* \pm(3\%rdg + 3 \text{ digits})$  when less than rated 20%

Voltage/Current :  $\pm(3\%rdg + 3 \text{ digits})$

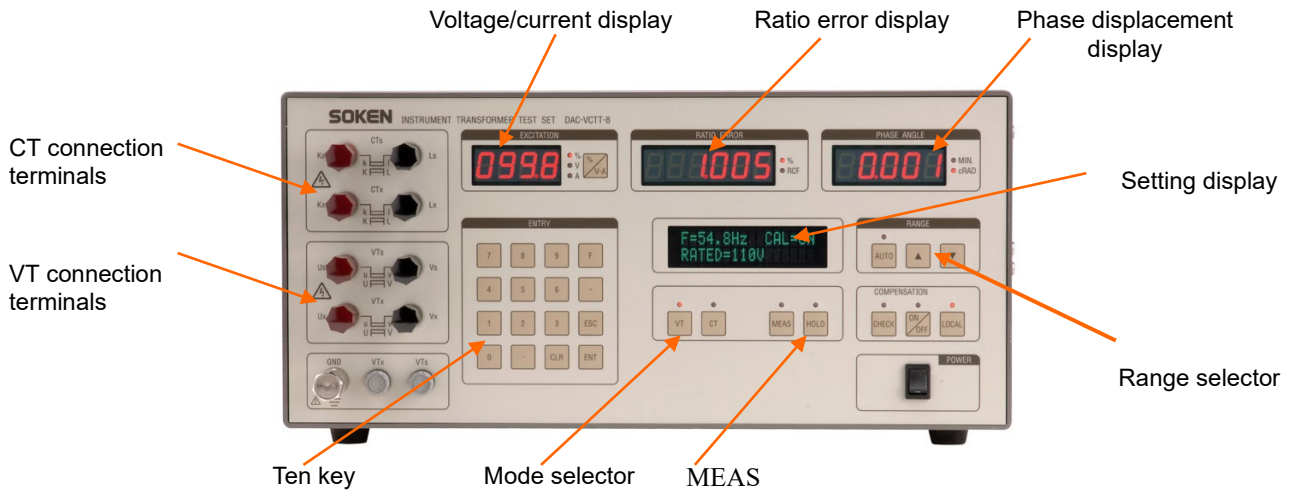
Frequency:  $\pm 0.1\text{Hz}$

- Internal Burden: 0.1VA or less
- Interface: USB (2.0/1.1) and GP-IB
- Input power: AC100-240V  $\pm 10\%$ , 50/60Hz
- Size and weight: W430xH200xD380 (mm), about 20kg

Note: Specifications are subject to change without notice due to our commitment to continual product improvement.

# DAC-VCTT-8 INSTRUMENT TRANSFORMER TEST SET

## Front Panel



## Advantages of the DAC-VCTT-8

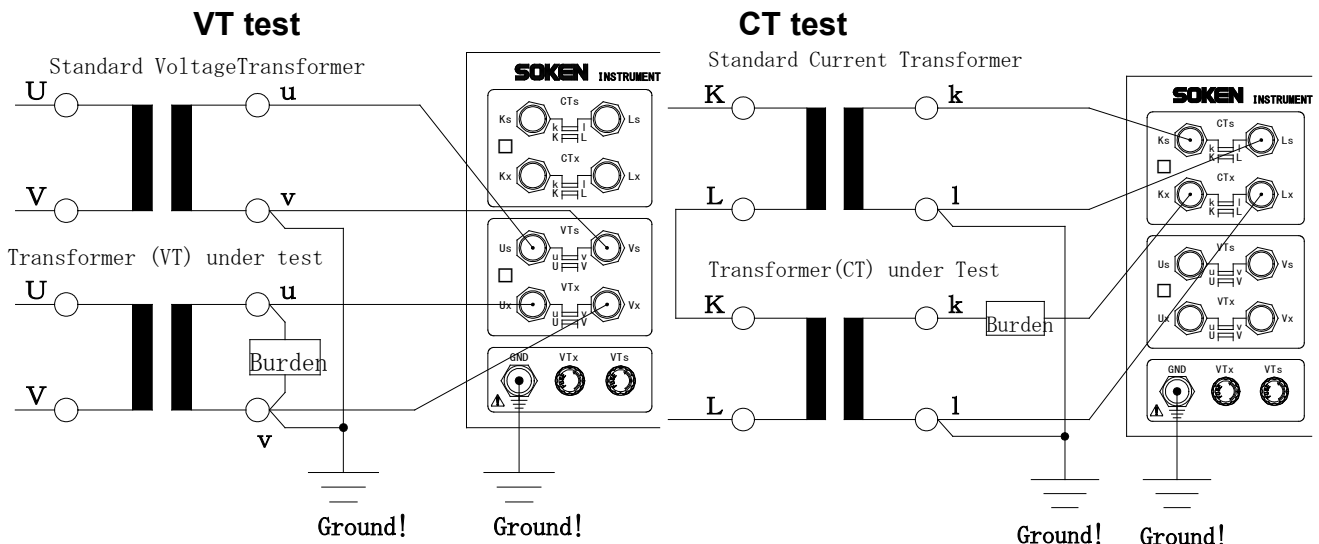
**The device internal burden < 0.1VA enables measurement under accurate load conditions.**

The error of Instrument transformers varies with the load impedance connected to the secondary side (burden). Therefore, to achieve accurate measurement of instrument transformer errors, the test shall be carried out with the equivalent impedance to the actual usage situation.

In recent years, instruments connected to the secondary circuit of instrument transformers have been computerized and their loads have become very small. Therefore, a testing with a very small or zero load can be required, but to adapt to this, the internal burden of the measurement device itself must be smaller than this. DAC-VCTT-8 incorporates an internal burden compensation circuit to enable testing even under test conditions with zero load impedance.

By combining DAC-VCTT-8 with the electronic burden unit DAC-PBVC-8 (DAC-PBV-8/PBC-8) as shown in the figures below, the error of instrument transformers can be confirmed under optional load conditions including zero load.

## Connecting Diagrams



# DAC-VCTT-8 INSTRUMENT TRANSFORMER TEST SET

## Option Accessories

### Ratio adapter Model DAC-RAC-2 / Model DAC-RAV-2

The option adaptors DAC-RAC-2 and DAC-RAV-2 enables testing of an instrument transformer whose transformation ratio is different from that of the standard voltage/current transformer.



The adaptors are useful in minimizing the required standard transformers and in improving the speed and efficiency of testing.

### Range of ratios

VT	DAC-RAV-2	Ks/Kx: 0.5000 - 2.0000
CT	DAC-RAC-2	Ks/Kx: 0.5000 - 2.0000

Ks: Transformation ratio of the standard transformer

Kx: Transformation ratio of an instrument transformer to be tested

When VTs is 6,600V/110V and VTx is 3,300V/110V,

$K_s=6,600V/110V=60$

$K_x=3,300V/110V=30$

$K_s/K_x=60/30=2$

Ratio value is 2.0000.

When transformation ratios are the same, ratio value shall be specified as 1.0000.

### Standard voltage transformer / Standard current transformer

The standard voltage transformers and current transformers can be offered as options. Please consult us for further specifications.

Class 0.1 or 0.2 (0.05% upon request)  
Rating 15VA



Specifications subject to be changed without prior notice.  
April 2024