



9840 Series Power Calibrators (Single and 3 Phase)

Time Electronics

Calibration, Test & Measurement

- 4 voltage ranges: 57 - 110 - 220 - 500V
- 4 current ranges: 1 - 5 - 20 - 100A
- Frequency: 45 - 70Hz
- Phase angle: -90/0/+90°
(0.1° resolution)
- Total harmonic distortion:
Pre-settable from 1% to 15%



The **9840 series calibrators** are used for adjusting, checking and verification of measuring instruments used in power engineering. These include active and reactive power meters, phase meters, frequency meters, ammeters, voltmeters, transducers, monitoring systems, and frequency, voltage and current relays.

It is constructed in a standard 19" rack-mount size case. Voltage and current output signals are set by multi-turn potentiometers and are simultaneously indicated on 4.5 digit LED displays. Frequency and phase angle are also set by multi-turn potentiometers and are displayed on 4 digit LED indicators.

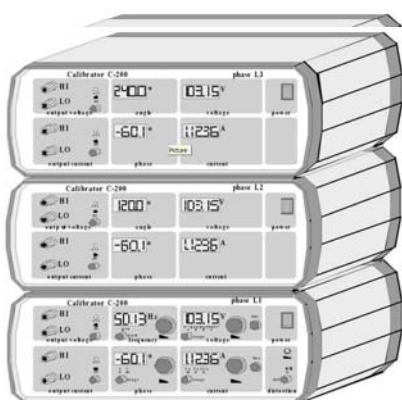
Instruments to be calibrated can safely be connected to the outputs without changing the set values since the calibrator can be switched to 'standby' mode to isolate the output terminals.

Sinusoidal signals are generated on both voltage and current outputs. If required, between 1% and 15% harmonic distortion can be added to the signals.

Three Phase Calibrator Set

Calibrator 9840 can work in a three phase set (order code 9845). It consists of one calibrator in basic configuration (phase L1) and two calibrators in special configuration (phase L2 and phase L3). Calibrator phase L1 controls phase L2 and L3 by means of analogue and digital signals. All connections are on the rear panels.

The calibrator set is able to generate a symmetrical three phase vector, programmed from control calibrator phase L1. The phase angles between the 3 phases are shown on the displays.



Shift angle between voltage signals	120° ±1° *
Maximum amplitude difference in each phase from average value (voltage)	±1% of value
Maximum amplitude difference in each phase from average value (current)	±1% of value
Maximum difference in phase angle between voltage and current	±1° *
* for settings greater than 10% on voltage and current range	

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9840 Series Technical Specifications

Parameter	Range	Settings Span	Resolution	Accuracy	Maximum Load
Voltage	57V	0.5 - 60V	0.01V	$\pm 0.05\%$ of set value ± 3 digits	250mA@60V
	110V	1.00 - 125V	0.01V		140mA@130V
	220V	2.0 - 250V	0.1V		70mA@250V
	500V	3.0 - 500V	0.1V		40mA@420V
Current	1A	0.01 - 1.3A	0.0001A	$\pm 0.05\%$ of set value ± 3 digits	12V@1.2A
	5A	0.05 - 6A	0.001A		3V@6A
	20A	0.2 - 20A	0.001A		1V@20A
	100A (9841)	1 - 100A	0.01A		0.7/0.3V@50/100A
Frequency		45 - 70Hz	0.01Hz	$\pm 0.02\text{Hz}$	
Phase		0.0 - $\pm 90.0^\circ$	0.1°	$\pm 0.5^\circ$ *	
Total Harmonic Distortion (adjustable 1 - 15%)				0.5% of set value	
Dimensions (width x height x depth)				478 x 194 x 342 mm / 14Kg	
Power Supply				230V $\pm 10\%$ / 50Hz 200VA, 110V option	

* for settings greater than 10% of voltage and current range

Parameter	Operating conditions
Ambient temperature	+5...+40°C
Atmospheric pressure	70...106kPa
Relative humidity	20...80% non-condensing
Power supply voltage	230V $\pm 10\%$ 50Hz $\pm 5\text{Hz}$. 110V 60Hz optional
Power supply freq	45...65Hz
Power supply w/form	Sine, distortion factor < 0.05
Warm up time	30 min

Parameter	Requirement
Safety	Class 1 according to EN61010
Insulation (50Hz) power supply pins – case	1.5kV
Voltage and current output terminals – case	2kV
Voltage output terminals – current output terminals	2kV
Control D-sub connection – case	500V
Degrees of protection electrical equipment	IP20 according to IEC529
Climatic conditions	Group I according to IEC359
Power consumption	200VA max
Dimensions (with/height/depth), Weight	478/194/342mm, 14kg

Ordering Information

Code	Description
9840	Standard single phase source with current range up to 20A
9841	Single phase source with additional 100A current range
9845	Three phase symmetrical source with current range up to 20A
9846	Three phase symmetrical source with additional 100A current range
9847	Three phase asymmetrical source with current range up to 20A
9848	Three phase asymmetrical source with additional 100A current range

Due to continuous development Time Electronics reserves the right to change specifications without prior notice.