

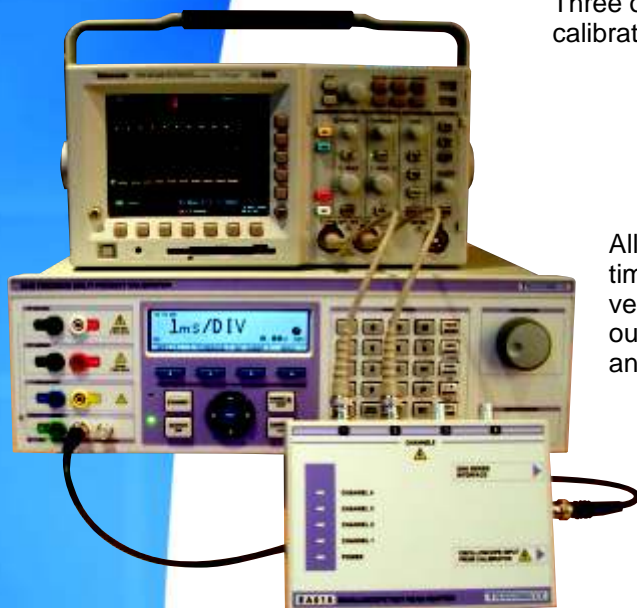


Three options are available for the 3000 Series calibrators which are suitable for calibration of both analogue and digital storage oscilloscopes.

- ▶ 250MHz (SCP250) : 3050
- ▶ 350MHz (SCP350) : 3041 / 3010
- ▶ 600MHz (SCP600) : 3041 / 3010

All options provide the calibration waveforms required for amplitude, timebase and bandwidth including gain and linearity of the horizontal and vertical deflection circuits. To minimise lead changing, the oscilloscope outputs are output from a single BNC connector - for automated calibration an optional 4 channel test head adapter is available.

- ▶ Amplitude to 50V/Div (300V PK-PK) - 1,2,5 sequence
- ▶ Timebase to 2ns
- ▶ Separate trigger output
- ▶ All calibration signals from a single BNC



AMPLITUDE

Easily selected using the softkeys, the calibrator produces either a precision 1kHz square wave or a DC level covering the range from 2mV/Div to 50V/Div in a 1,2,5 sequence. Deviation up to 10% in 0.01% steps can be applied using the digital control. The calibrator's wide range output, giving up to 300V pk-pk, can be used to directly calibrate the ever increasing number of oscilloscopes with amplitude ranges up to 50V/Div placing it in a class leading position.

TIMEBASE

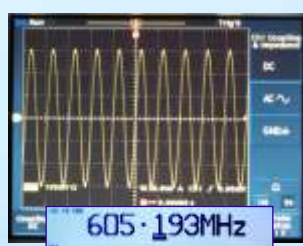
The timebase function of the oscilloscope option provides outputs from 2ns/Div to 5s/Div. Deviation up to 10% in 0.01% steps can be applied using the digital control. To use, simply align the time marker with the graticule display and read the deviation from the % display on the calibrator. The comb waveform used below 100ns is ideal for triggering on both analogue and digital oscilloscopes alike. For faster timebase calibration, a sine wave is produced which makes viewing on bandwidth limited oscilloscopes easier. The timebase output can be used either directly or into a 50 Ohm input.

FAST RISE

A fast rise output is available with a rising edge time of typically 1ns for evaluating overshoot, undershoot and ringing of oscilloscope attenuation and amplifier circuits.

LEVELED SWEEP

The leveled sweep output of the oscilloscope option provides a continuously variable sine wave from 5MHz to 620MHz. A 50kHz reference level waveform is also available to allow the oscilloscope controls to be set to give a 6 graticule height display.



SPECIFICATIONS

Voltage Amplitude	
Range	2mV/Div to 50V/Div
Sequence	1 • 2 • 5
Frequency	1kHz
Accuracy	0.01% ± 5uV
Time Markers	
Range	2ns to 5s
Sequence	1 • 2 • 5
Waveshape	Comb < 100ns Sine > 100ns
Accuracy	5ppm
Fast Rise*	1ns typical
* 3041 / 3010 only	
Leveled Sweep	
Range (SCP250)	5MHz to 250MHz
Range (SCP350)	5MHz to 350MHz
Range (SCP600)	5MHz to 600MHz
Leveled Sweep	600mV into 50Ohms
Reference Level	50kHz
Accuracy	0.5dbm
50kHz Reference	
Frequency Accuracy	30ppm
Level Accuracy	0.5%
See extended specifications for full details	

**OSCILLOSCOPE CALIBRATION TEST HEAD
EA017**

For automating oscilloscope calibration a 4 channel switching test head is available. Connect to the 3000 Series adapter interface and select channel required. For accurate calibration of 50Ohm input oscilloscopes up to 1V/Div a low impedance buffered amplitude output can be selected.



SPECIFICATIONS

Channels	
Input	1
Output	4
Output Impedance	
Direct	As Input
Buffered	Typically 0.2
See extended specifications for full details	



AFFORDABLE AC/DC POWER CALIBRATION

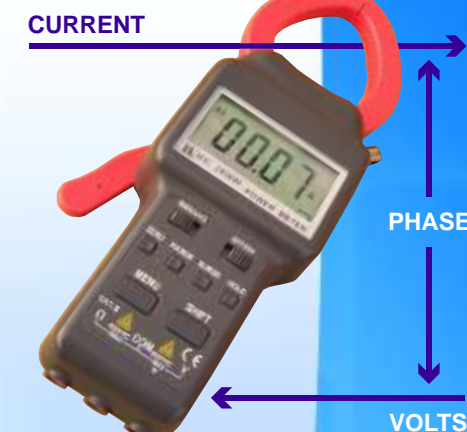
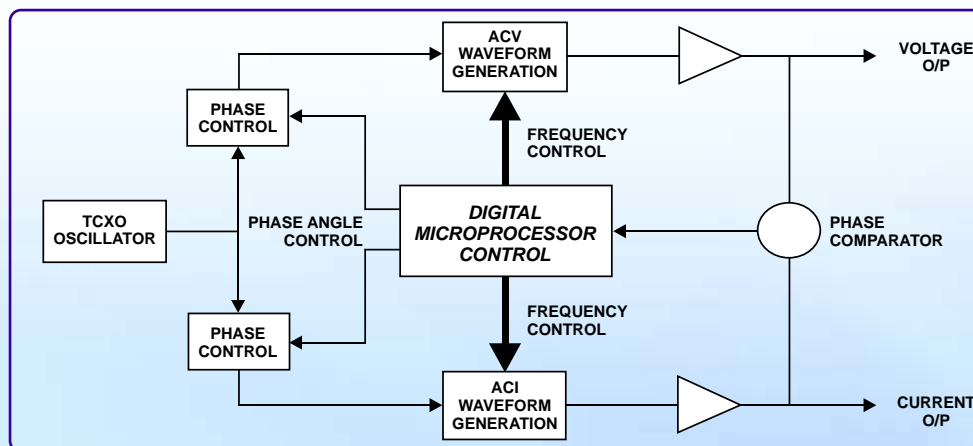
Three options provide cost effective calibration of power (Watts) and VA ranges on power meters, power/harmonics analysers & clamp meters. The power option for the 3000 series calibrators allows both voltage and current output to be generated simultaneously (phantom load) with an adjustable phase relationship.

- ▶ 3050 : Sine power option (PWR50)
- ▶ 3041/3010 : 2 options
PWR5INE : Sine & DC power
PWRDDS : 5 waveforms+custom & DC
- ▶ Up to 1.5MW (using 50 Turn Clamp Coil)
- ▶ 0° to 359.9° adjustable phase relationship

Any voltage up to 1025 Volts can be set using the normal output ranges and specification of the calibrator. Currents up to 30Amps are available from the output of the calibrator without the need for an external amplifier.

The power function is extremely easy to use - select 'Power' from the soft key menu, connect the power meter to both the voltage and current output terminals and enter the voltage, current and frequency. Phase angle can be adjusted using the softkeys with a resolution of 0.1°. Power output is calculated & displayed in kW.

The 3000 series calibrator dynamically controls the phase angle between the current and voltage waveforms eliminating errors caused by capacitive or inductive loading experienced when using clamp coils.



Extended Power Range Using The 2 / 10 / 50 Clamp Coil

Combined with the optional clamp coil adapter the power calibration option allows a current of 1500Amps to be simulated, and power to 1.5Megawatt (1500Amps x 1000Volts).

Power Harmonics Analyser Calibration Using Programmable Waveforms (Option PWRDDS)

Option PWRDDS for the 3041 and 3010 calibrators allows generation of waveforms with harmonic content for calibrating power meters with power harmonics functions. This includes a set of five fixed waveforms, plus the capability to upload user defined waveforms from a PC allowing waveforms with custom harmonic content to be generated.

kWatt hour meter & Energy Calibration.



Using the 3000 Series VFP the Voltage, current, frequency, phase angle, time and the number of coil turns can all easily be set, click the energy button and the power is turned on for a set period making calibration of kWatt/hours and energy meters easy.

SPECIFICATIONS

DC Power (3041/3010)	
Voltage Range	0 to 1025V
Current Range	300mA to 30A
Resolution	300mA to 2A 2A to 30A
Accuracy	300mA to 2A 2A to 30A
AC Power	
Voltage Range	0 to 1025V
Frequency Range	40Hz to 1kHz
Resolution	300mA to 2A 2A to 30A
Accuracy : 3041/3010	
300mA to 2A 2A to 30A	0.05% ± 0.35mW/Volt 0.05% ± 3.5mW/Volt
Accuracy : 3050	
300mA to 2A 2A to 20A	0.1% ± 0.5mW/Volt 0.1% ± 5mW/Volt
Phase Angle Resolution	0.1°
Phase Accuracy	0.1°
See extended specifications for full details	