



**FLUKE®**

Calibration

## 5522A Multi-Product Calibrator

Robust, transportable  
wide workload coverage

# Wide workload coverage in the lab or in the field



## 5522A features at a glance

- Calibrates a wide variety of electrical test equipment
- Robust protection circuits prevent costly damage from operator error
- Redesigned carrying handles make the 5522A easy to transport
- Rugged carrying case with built-in handles and wheels and removable front/rear access doors for in-situ calibration in almost any environment
- Remarkably affordable



## Multiple calibrators in one

The 5522A Multi-Product Calibrator addresses a wide calibration workload and comes with internal and external protection features that protect it against damage and make it easier to transport for on-site or mobile calibration. The 5522A can also be fully automated with MET/CAL® Plus Calibration Management Software. It is the ideal calibrator for metrology professionals who need to calibrate many different types of electronic equipment and want a transportable instrument that offers them a high return on investment.

The 5522A sources direct voltage and current, alternating voltage and current with multiple waveforms and harmonics, two simultaneous voltage outputs or voltage and current to simulate dc and ac power with phase control, resistance, capacitance, thermocouples and RTDs. The 5522A can also measure thermocouple temperature and pressure using one of 29 Fluke 700 Series pressure modules. Two options add the capability to calibrate oscilloscopes up to either 600 MHz or 1.1 GHz. And the 5520A-PQ Power Quality Option enables the 5522A to calibrate power quality instrumentation to the standards of the IEC and other regulatory agencies.

The 5522A calibrator covers many of the electronic test tools you use to keep your company up and running, including:

- Handheld and bench meters (analog and digital) up to 6½ digits
- Current clamps and clamp meters
- Thermocouple and RTD thermometers
- Process calibrators
- Data loggers
- Strip and chart recorders
- Watt meters
- Power harmonics analyzers
- Panel meters
- Graphical multimeters
- Power quality analyzers (with option)
- Analog or digital handheld and bench oscilloscopes to 600 MHz or 1.1 GHz (with options)
- ...and more, including pressure gauges and transducers and three-phase power meters

# Calibrate almost anywhere, easily and dependably

## Internal circuitry offers “mistake proof” protection

The 5522A provides reverse power protection, immediate output disconnection, and/or fuse protection on the output terminals for all functions. This protection is for applied external voltages up to  $\pm 300$  V peak.

## Rugged carrying case enables safe transport and efficient onsite calibration

An innovative carrying case accessory makes it easier than ever to calibrate outside of the calibration laboratory, as well as inside. The shock-mounted case features built-in handles and wheels, enabling you to move the calibrator from place to place easily and safely.

The front and rear access doors are removable, so you can calibrate with the 5522A while its top, bottom and side panels remain protected—and avoid having to completely unpack and then re-pack the calibrator.

A redesigned front panel and ergonomic carrying handles make it easy to transport the calibrator short distances within the cal lab.





# Powerful calibration solutions that are easy to use

## The Fluke 5522A Multi-Product Calibrator makes it easy to get more work done.

It's intuitive design makes learning to operate it easy even for less experienced technicians, reducing references to the manual. For most tasks, your hand moves from left to right, keeping you from having to make long, illogical or uncomfortable movements. Most functions require minimal keystrokes.

The bright, backlit LCD display is easy to read from all angles and under a variety of light conditions.

Ergonomically designed, rugged handles make the 5522A easy to transport.

Temperature measurement modes calibrates thermocouple simulators and can also document environmental conditions present at the time of calibration, as required by all quality standards.



Spec menu lets you view the uncertainty for the present value.

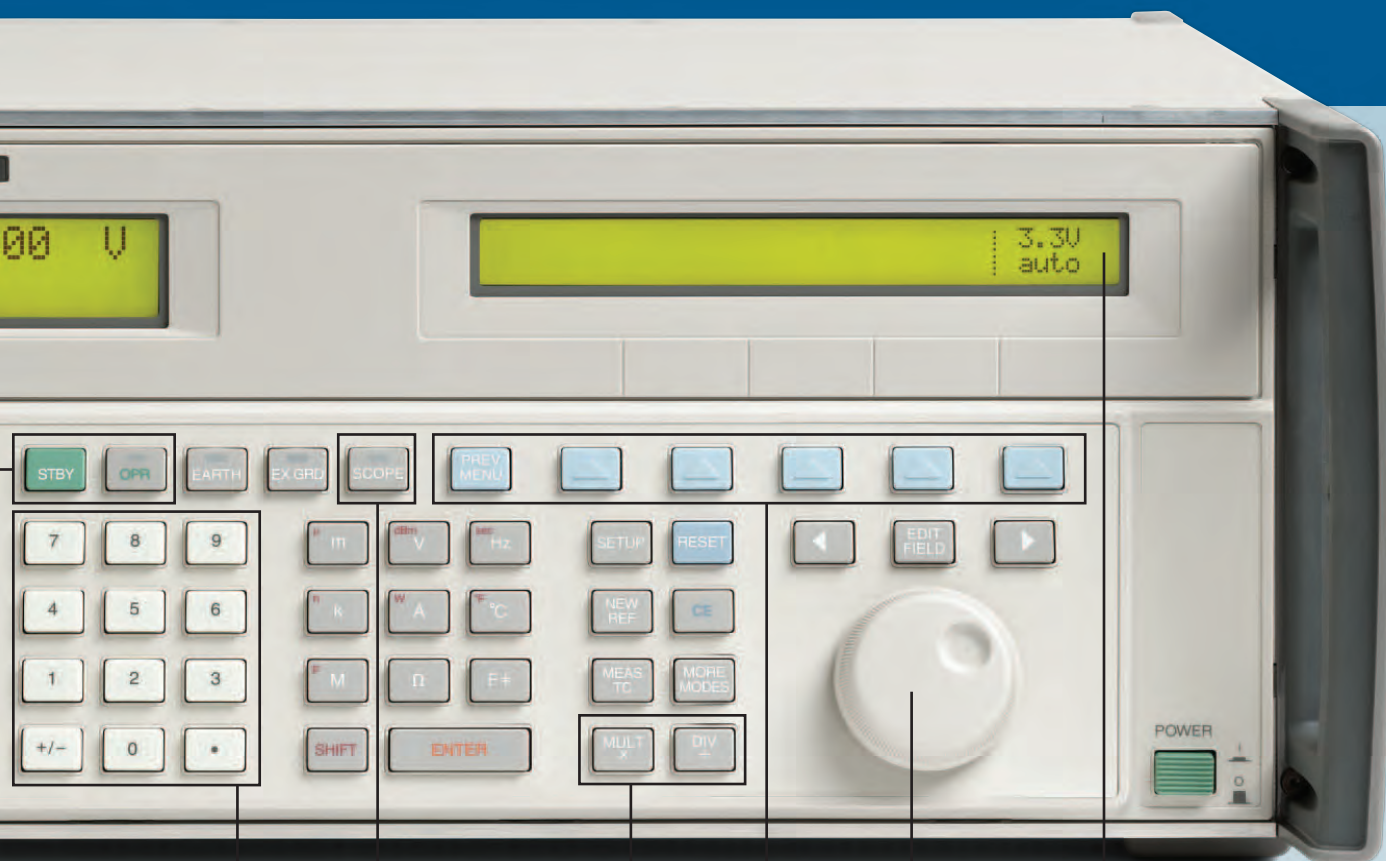
Phase lock makes it easy to simulate three-phase power and enables current summing for high-current tests.

Internal circuitry plus overcurrent fuses protect against costly damage caused by electrical overloads accidentally applied to the calibrator's input terminals.

A rugged carrying case makes it easy to do onsite calibration. The front and back panels remove so you can use the calibrator without unpacking it.

An interface for Fluke 700 Series Pressure Modules, which are used to make precision measurements to calibrate pressure transducers and related instrumentation. Modules span various pressure ranges, as low as 0 to 10" H<sub>2</sub>O (0 to 2.5 kPa), or as high as 0 to 10,000 psi (0 to 70,000 kPa).





Control output by pressing STBY and R keys.

Calculator-style keypad makes it easy to enter values.

Press the SCOPE key for on-demand oscilloscope calibration (optional).

The control window displays a variety of status messages, softkey menus, and status and other auxiliary information.

Edit knob allows you to vary the output. When editing, the difference between the original output and the edited output is automatically computed and displayed in the control window.

Soft keys allow access to the menus in the control windows, letting you select parameters such as offset, waveforms, phase, thermocouple or RTD type. PREV MENU lets you step backward through these menus.

MULT [X] and DIV [÷] keys simplify stepping up and down in decade multiples of any output setting, and let you step up or down to the next range in a 1-2-5 sequence for oscilloscope calibration.



# Maximize your efficiency and your investment

## Automate to increase throughput and efficiency

Quality standards impose stringent requirements for documenting, reporting, and controlling calibration processes and results. Using MET/CAL *Plus* Calibration Management Software can help you meet these requirements easily while also enabling you to increase throughput and streamline your calibration processes.

MET/CAL *Plus* is a powerful application for creating, editing and testing calibration procedures and collecting and reporting results on a wide variety of instruments. It includes MET/CAL®—the industry-leading software for automated calibration and MET/TRACK®—a dedicated system to manage your test and measurement assets. It is the most complete software solution available to calibration professionals.

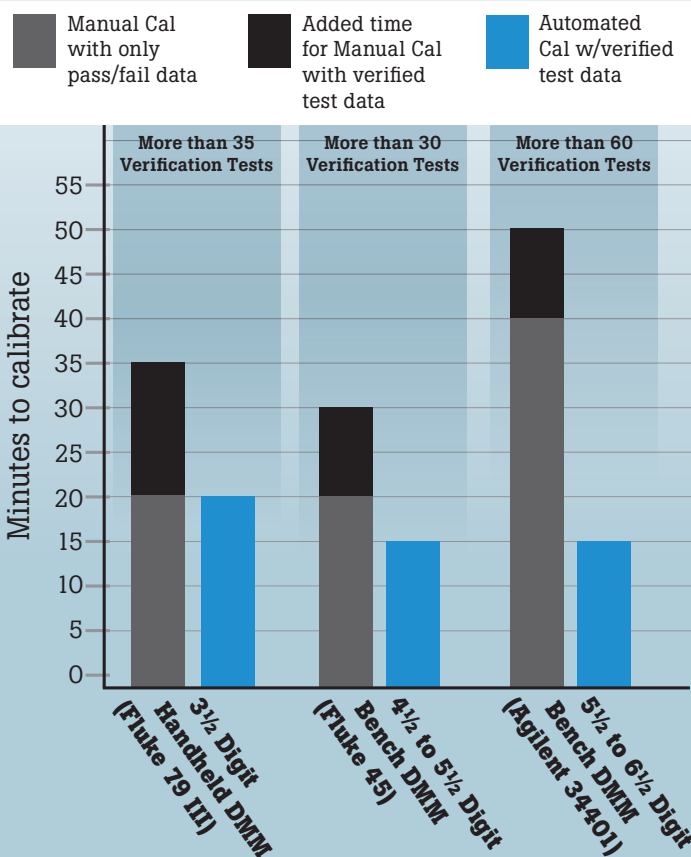
## Priority software support helps you stay productive

MET/SUPPORT Gold is an annual membership program offering premium support and services to help you stay as productive as possible with MET/CAL *Plus* software. Services include free software updates and upgrades, free access to the Fluke MET/CAL Warranted Procedures Library, plus discounts on training and custom procedure development. Members also receive invitations to regular calibration software web seminars and user group meetings. Use only a few of the Gold services and you can easily recover more than the cost of your membership fee.

## Calibration and repair service

Fluke Calibration offers extensive calibration support and service to ensure your long-term satisfaction and return on investment in calibration equipment. Our worldwide network of calibration centers offers accredited calibrations traceable to national standards. We also offer fast, quality repair and calibration services including a module exchange program and full support in setting up your lab.

**Time comparison for manual and automated calibration methods**



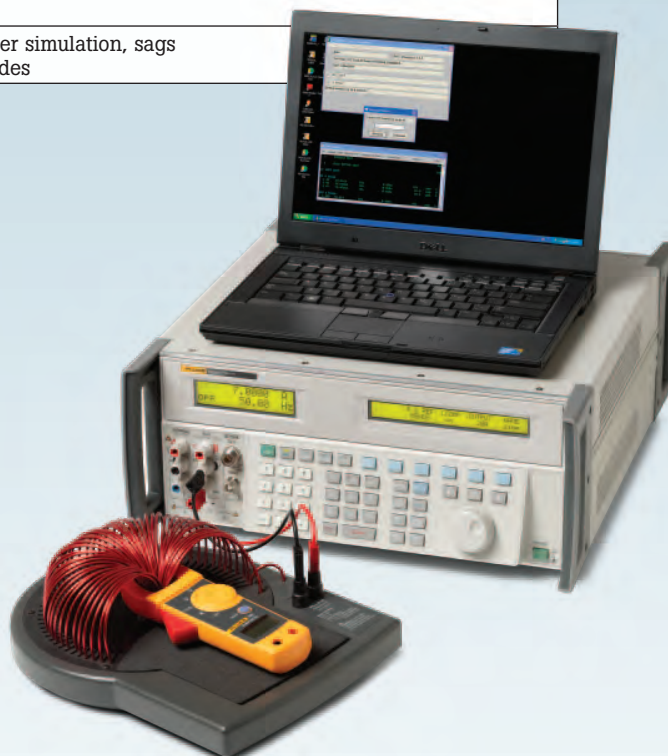
# Summary specifications

Function and range	
Direct volts	0 to $\pm 1020$ V
Direct current	0 to $\pm 20.5$ A
Alternating volts	1 mV to 1020 V 10 Hz to 500 kHz
Volt/hertz	1000 V@ 10 kHz/330 V@100 kHz
Alternating current	29 $\mu$ A to 20.5 A 10 Hz to 30 kHz
Waveforms	Sine, square, triangle, truncated sine
Resistance	0 M $\Omega$ to 1100 M $\Omega$
Capacitance	220 pF to 110 mF
Power (phantom loads)	20.9 kW
Phase control	0.01°
Thermocouple (source and measure temperature)	B, C, E, J, K L N R, S, T, U 10 $\mu$ V/°C
RTD (source temperature)	Pt 385-100 $\Omega$ , Pt 3926-100 $\Omega$ Pt 3916-100 $\Omega$ , Pt 385-200 $\Omega$ , Pt 385-500 $\Omega$ , Pt 385 1000 $\Omega$ , PtNi 385-120 $\Omega$ (Ni120), Cu 427 10 $\Omega$
Interfaces	RS-232, IEEE 488
Phase lock	Yes
Frequency uncertainty	< 2.5 ppm
External frequency reference (10 MHz)	Yes
Oscilloscope calibrator (options)	Levelled sine wave from 5 mV to 5.5 Vpp max, frequencies 50 kHz to 600 kHz and 3.5 Vpp max to 1100 MHz; edge rise times of < 300ps, multiple trigger functions, lowest dc, square wave and timing uncertainty
Power Calibrator (options)	Composite harmonic, flicker simulation, sags and swells simulation modes

## Metrology training increases skill levels

Calibration and metrology training from Fluke can help you and your staff become more knowledgeable in a wide variety of disciplines. Instructor-led classroom training is available for general topics in metrology, as well as for calibration software. On-site training can also be scheduled if you have a number of people in your organization who would benefit.

Fluke Calibration also offers other educational events such as web seminars and road shows on a wide variety of topics. The best way to stay informed about these events is to register to receive email and direct mail from Fluke Calibration. You can register online at [www.fluke.com](http://www.fluke.com).



# Fluke Calibration Multi-Product Calibrator Family



## Innovation from the leader in calibration

Fluke Calibration pioneered the multi-product calibrator concept, creating a family of instruments that allow you to calibrate the widest range of today's electronic test tools with a single instrument. These calibrators offer simple, portable, cost-effective solutions that allow you to match your calibrator to your workload and your budget.

Fluke is also recognized for its offerings in temperature, pressure, power, process, and rf calibration. Fluke provides the calibrators, standards, software, service, support and training you need for a complete solution in your cal lab.

## 5500A Multi-Product Calibrator

### Calibration solutions that match your workload and budget

The 5500A is a versatile product that addresses a wide cross-section of your electrical calibration work load. It sources direct voltage and current, alternating voltage and current with multiple waveforms and harmonics, two simultaneous voltage outputs or voltage and current, and simulates power with phase control, resistance, capacitance, thermocouples and RTDs. The 5500A's Oscilloscope Calibration options provide level sine wave, fast edge, time mark and amplitude signals for calibration of oscilloscopes up to 600 MHz.

### The 5500A was designed to cover a very wide range of medium accuracy electrical measurement devices including:

- Handheld and bench multimeters
- Oscilloscopes and ScopeMeter® Test Tools
- Wattmeters
- Analog volt/ohm/amp/watt instruments
- Electronic thermometers
- Data loggers
- Strip chart recorders
- XY Recorders
- Power harmonics analyzers
- Process calibrators
- Current clamps
- And related instruments

## 9100A Universal Calibration System

### The world's best value multi-product calibrator

The 9100 is a multifunction calibrator with a wide breadth and depth of outputs. In addition to dc and ac voltage to 1050 V, variable resistance to 400 MΩ and dc and ac current to 20 A (1000 A via the optional current coils), the 9100 delivers continuously variable capacitance values to 40 mF and conductance values to 2.5 milliSiemens. It also generates digitally synthesized and phase-locked sine, square, triangle, impulse and trapezoidal waveforms, variable amplitude pulses to 10 MHz, pulse widths to 2 seconds, and duty cycles between 0.05 % and 99.95 %.

Add one of the two oscilloscope calibration options and it generates all the waveforms required to calibrate oscilloscopes up to 250 MHz or 600 MHz.

Fit the insulation/continuity tester option and it synthesizes resistance values as high as 2 GΩ at test voltages up to 1000 V. Fit the power meter option and it simultaneously generates variable phase angle voltages and currents that allow you to calibrate power meters up to 1 MW or 1 MVAR.

### 9100 features:

- Calibrates over 15 different categories of general-purpose test equipment
- Options for power meter, insulation/continuity tester and oscilloscope calibration - internally installed and retrofittable
- Semi-automated and fully automated procedure modes for maximum calibration throughput
- Fully supported by MET/CAL Plus software and procedure libraries
- Rapid return on investment
- Intuitive front panel operation for ease of use

## 5080A High Compliance Multi-Product Calibrator

### Calibration solutions for your analog and digital workload

The 5080A Multi-Product Calibrator calibrates your analog and digital workload accurately and economically. Its high voltage and current compliance makes analog workload calibration easy and precise. Built-in protection circuitry protects it against damaging input voltages.

### This easy-to-use instrument calibrates a wide workload that includes:

- Analog meters
- Panel meters
- Digital multimeters
- Watt meters
- Clamp meters (with coil accessory)
- Megohm meters (optional)
- Oscilloscopes to 200 MHz (optional)
- ...and more

Versatile software applications enable you to record paperless results, and more.

### Options and accessories expand workload coverage

Options and accessories enable you to use the 5080A to calibrate an even broader workload, including:

- Clamp meters. The 9100-200 10/50 turn coil and 5500A/COIL 50-turn current coil enables the 5080A to calibrate most popular clamp meters at currents up to 1000 A rms amps.
- Oscilloscopes. Calibrate oscilloscopes to 200 MHz quickly, easily, and cost effectively.
- Megohm meters. This option sources high ohms, high voltage resistors up to 18 G ohms. It also measures high voltage outputs.



## Ordering Information

### Model

5522A	Multi-Product Calibrator
5522A/6	Multi-Product Calibrator with 600 MHz Oscilloscope Calibration Option
5522A/1GHZ	Multi-Product Calibrator with 1100 MHz Oscilloscope Calibration Option
5522A-PQ	Multi-Product Calibrator with Power Quality Option
5522A-PQ/6	Multi-Product Calibrator with Power Quality and 600 MHz Oscilloscope Calibration Options
5522A-PQ/1GHZ	Multi-Product Calibrator with Power Quality and 1100 MHz Oscilloscope Calibration Options

### Accessories

5522A/CARRYCASE	Rugged Carrying Case with removable front/back panels
55XX/CASE	Transit Case with Wheels
5520A-525A/LEADS	Thermocouple and Test Lead Set
5500A/COIL	50-Turn Coil
5500A/HNDL	Side Handle
Y5537	Rack Mount Kit
Fluke-700Pxx	Pressure Module Series

### Software

MET/CAL	MET/CAL Plus Calibration Management Software
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## Other calibration solutions

Fluke Calibration provides the broadest range of calibrators and standards, software, service, support and training in electrical, temperature, pressure, RF and flow calibration.

Visit **[www.Fluke.com/FlukeCal](http://www.Fluke.com/FlukeCal)** for more information about Fluke Calibration products and services.

**Fluke Calibration.** *Precision, performance, confidence.™*

Electrical	RF	Temperature	Pressure	Flow	Software
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