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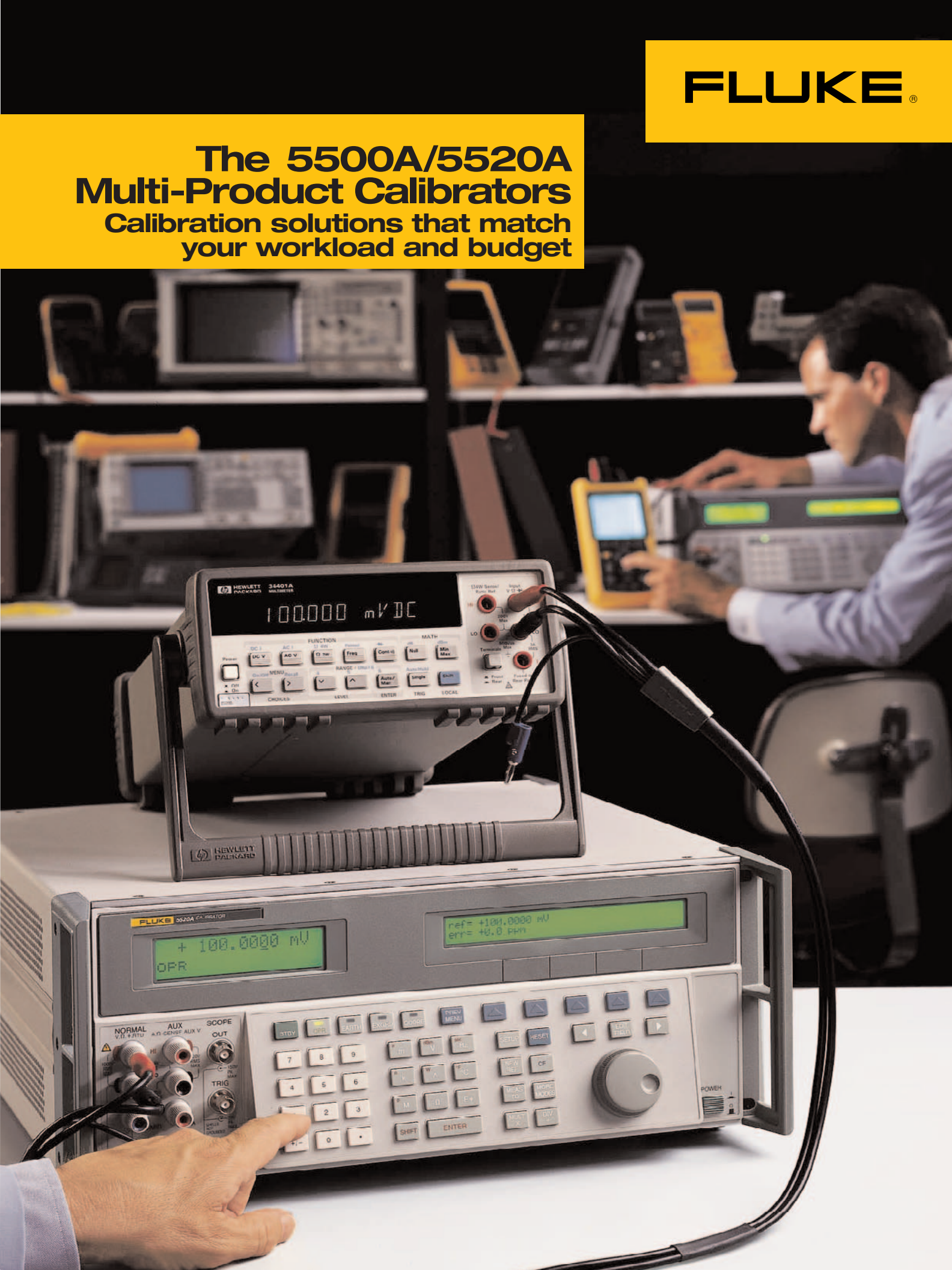
The 5500A/5520A Multi-Product Calibrators

Calibration solutions that match your workload and budget



Multi-product calibration: The smart solution for your changing workload

Rapid changes in technology are dramatically increasing the number of electronic test tools used to keep today's industrial and office environments running. As a result, more types of instruments are coming into the hands of more users. These instruments feature ever-increasing levels of performance and a growing list of functions and capabilities, all of which need to be verified.

International quality standards, such as ISO 9000, as well as safety, nuclear, environmental, and other regulations, require these instruments to be calibrated traceable to nationally recognized standards.

For your business, this can create a major challenge: how to cover this wide calibration workload, accurately, economically, and efficiently.

11 calibrators in one

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

Fluke's 5500A, the world's first multi-product calibrator, gained a solid reputation as a real workhorse as soon as it was introduced. It's known worldwide for its ability to calibrate a wide range of electrical test instruments at an affordable price.

The 5520A builds on the 5500A's capabilities, extending its workload coverage even further. Its improved accuracy, expanded ranges, and added features, including current to 20A and pressure measurement, as well as its capability to calibrate 5½ and 6½ digit multimeters, means the 5520A can cover virtually all your high-performance workload.

Both models offer options to fully calibrate oscilloscopes to 300 MHz or 600 MHz. The 5520A also offers an option to fully calibrate oscilloscopes to 1.1 GHz. Both the 5500A and the 5520A are built to Fluke's high standards for rugged durability so you can use them easily on or off the bench. And they feature extensive self-diagnostics to help isolate problems to the module level. They receive full support through the Fluke Module Exchange program, so you can identify problems that may arise and solve them fast.

The complete solution

To compete in the world market, you need to be able to accurately and cost effectively measure up to world standards. Only Fluke offers so many solutions to match your workload and budget. Complete solutions that include a broad line of multi-product and multi-function calibrators. A comprehensive line of calibration standards. Calibration and asset management software. Training and technical support. And, of course, world-wide calibration and repair services. As the world leader in electrical calibration, Fluke covers all the bases, accurately, reliably, and cost effectively.

Maximize your workload coverage with the Fluke Multi-Product Calibration family

The Fluke family of multi-product calibrators is designed to help you calibrate the widest range of electronic test tools with a single instrument, affordably and efficiently. Without sacrificing performance or accuracy.

These innovative calibrators cover virtually all the test tools you use to keep your operation running, including:

- Handheld and bench meters (analog and digital) up to 6½ digits.
- Complete calibration of analog or digital handheld and bench oscilloscopes to 300 MHz, 600 MHz, or 1.1 GHz (with options).
- Thermocouple and RTD thermometers.
- Process calibrators.
- Data loggers.
- Strip and chart recorders.
- Watt meters.
- Power harmonics analyzers.
- Current clamps and clamp meters.
- Panel meters.
- Graphical multimeters.
- Power quality instruments (with 5520A-PQ option).
- And more, including pressure gauges and transducers and three-phase power meters (with the 5520A).

Don't buy several standards to calibrate a variety of instruments. Fluke multi-product calibrators can meet your needs with one compact, affordable tool.

5500A: Wide workload coverage at a value price

The versatile Fluke 5500A Multi-Product Calibrator offers an unprecedented range of dc and low-frequency electrical calibration workload coverage. It includes all the traditional meter calibration functions—voltage, current, resistance, and capacitance. Both resistance and capacitance are continuously variable with resolution down to 1 mΩ or 0.1 pF. And both functions are easy and practical to use with a wide variety of measurement tools.

Because power is simulated using dual dc or ac outputs, you can source two voltages, or voltage plus current at the same time with precise phase control to calibrate watt meters or power harmonics analyzers. The 5500A also simulates a wide range of thermocouples and RTDs for temperature calibration.

And for all its capabilities, the 5500A is remarkably affordable. For about the same price you'd expect to pay for a calibrator designed for only one type of instrument, the 5500A can cover much more. That makes it an even better value when you consider how your workload may change in the future.

The new 5520A: Expanding your high performance workload

If you need increased performance, the Fluke 5520A Multi-Product Calibrator expands your workload coverage even further with improved accuracy in nearly all areas and with several additional features and functions, including:

- Lower output uncertainties to meet the requirements of 5½ and 6½ digit multimeters.
- Phase lock to simplify simulation of three-phase power. You may also sum the current from multiple 5520As to perform high current tests, such as direct calibration of current clamps or verification of current transformers.
- Current output expanded to 20A. Verify current clamps to 1000A using the 5500A/COIL 50-Turn Coil accessory.
- Pressure measurement using any of the 27 Fluke 700 Series Pressure Modules, which cover ranges from 0–10"(0–2.5 kPa) H_2O to 0–10,000 PSI (0–70,000 kPa) to calibrate pressure gauges, transducers and other indicators.
- Temperature measurement, making it easy to record environmental conditions present at the time of calibration, as required by all quality standards.
- Improved phase and frequency accuracy and the capability to reference the 5520A to an external 10 MHz frequency standard to support calibrating frequency counters.
- Wider capacitance calibration and resistance ranges.
- Increased compliance voltage in current output modes.
- Expanded ac Volt*Hertz capacity to 330V at 100 kHz.

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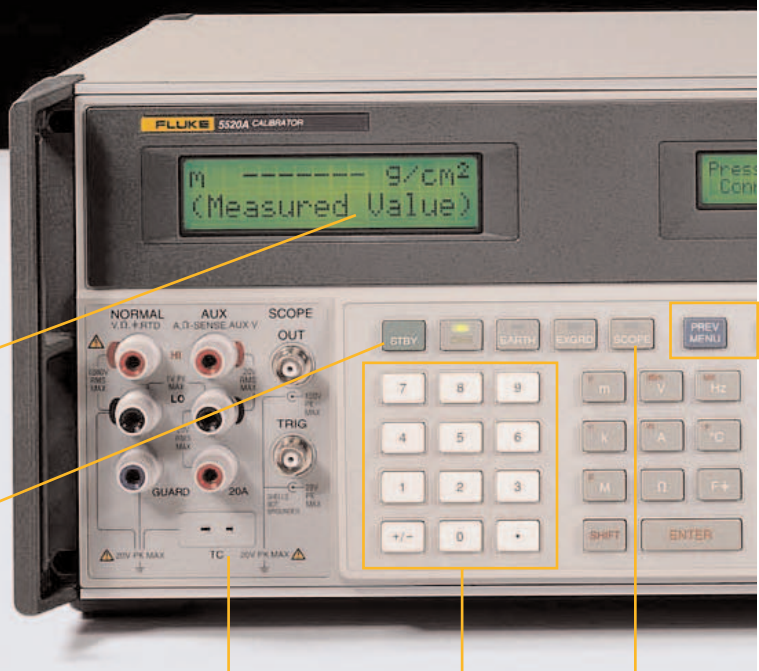
Only the 5500A and the 5520A offer several options to provide truly complete calibration solutions, including:

- Calibration of oscilloscopes to 300 MHz, 600 MHz, or 1.1 GHz faster, easier and more cost effectively than ever before. Verify dynamic response, bandwidth, timing, multiple triggering functions, input resistance and capacitance and more.
- Calibration and documentation software tools to help you automate calibration, plus collect and report the results as required by today's quality standards, such as ISO 9000.
- A complete range of accessories that enable you to connect to virtually any instrument, measure relative humidity, temperature, and pressure, as well as calibrate high current clamps and clamp meters, and to store and transport your calibrator.
- Calibration of power quality instrumentation to the standards of the IEC and other regulatory agencies. Three precision waveform modes include composite harmonic waveform generation; flicker simulation; and sags and swells simulation, providing traceability for power meters, disturbance analyzers, power quality monitors, recorders and other power quality related equipment.

In addition, both the 5500A and 5520A offer the excellent stability, linearity and low noise performance you expect from Fluke. And each unit is shipped with test data and a certificate of traceability to nationally-recognized standards so you can put it to work right away.

Powerful calibration solutions that are easy to use

While Fluke 5500A and 5520A Multi-Product calibrators help you do more work, they make it easier for you to get your work done. Their intuitive design makes operating them as natural as turning on a light switch, reducing references to the manual. For most tasks, your hand moves from the left to right keeping you from having to make long, illogical or uncomfortable movements. Most functions require minimal keystrokes. Plus it's easy on your budget because no additional fixtures are needed and you can use it with conventional test leads.



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

Control output by pressing separate STBY and OPR Keys.

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

Easy to use with traditional test leads. No additional "work surface" required.

Source or measure using one of 12 thermocouple modes.

Calculator-style keypad makes it easy to enter values.

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

SETUP activates setup softkey menus. RESET returns the instrument to its power-up state. NEW REF sets present output as the reference for calculating errors.

Temperature and humidity measurement modes document environmental conditions present at the time of calibration, as required by all quality standards. (%RH display in 5520A only)

An interface for Fluke 700 Series Pressure Modules to make pressure measurements from 0–10" (0–2.5 kPa) H_2O to 0–10,000 PSI (0–70,000 kPa) to calibrate pressure transducers and related instrumentation. (5520A only)

Control Window displays a variety of status messages, softkey menus, and status and other auxiliary information.

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

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.

5500A/5520A performance at a glance

Function & Range	5500A	5520A
Direct Volts	±1020V	0–±1020V
Direct Current	0–±11At	0–±20.5A
Alternating Volts	1 mV – 1020V 10 Hz – 500 kHz	1 mV – 1020V 10 Hz – 500 kHz
Volt*Hertz	1000V@ 10 kHz/33V@100 kHz	1000V@ 10 kHz/33V@100 kHz
Alternating Current	33 µA – 11A 10 Hz – 10 kHz	29 µA – 20.5A 10 Hz – 30 kHz
Waveforms	Sine, square, triangle, truncated sine	Sine, square, triangle, truncated sine
Resistance	0–330 MΩ	0 – 1.1 GΩ
Capacitance	330 pF – 1.1 mF	190 pF – 110 mF
Power (phantom loads)	11.2 kW	20.9 kW
Phase Control	0.02°	0.01°
Thermocouple (source and measure temperature)	B, C, E, J, K L N R, S, T, U 10 µV/°C	B, C, E, J, K L N R, S, T, U 10 µV/°C 1 mV/°C 1 mV/%RH
RTD (source temperature)	Pt 385-100Ω, Pt 3926-100Ω Pt 3916-100Ω, Pt 385-200Ω, Pt 385-500Ω, Pt 385 1000Ω, PtNi 385-120Ω, (Ni120), Cu 427 10Ω	Pt 385-100Ω, Pt 3926-100Ω, Pt 3916-100Ω, Pt 385-200Ω, Pt 385-500Ω, Pt 385 1000Ω, PtNi 385-120Ω, (Ni120), Cu 427 10Ω
Humidity Measurement	Displayed in mV/%RH	Displayed in %RH
Interfaces	RS 232, IEEE 488, 5725A	RS 232, IEEE 488
Phase Lock	No	Yes
Frequency Uncertainty	<25 ppm	<25 ppm
External Frequency Reference (10 MHz)	No	Yes
Oscilloscope Calibrator (options)	300 MHz, 600 MHz, or 1.1 GHz, to <300 ps rise time, 5.5V pp level sine over full range, multiple trigger functions, lowest dc, square wave and timing uncertainty	
Power Calibrator (options)	Composite harmonic, flicker simulation, sags and swells simulation modes	

From calibrators and standards, to training and support, you can depend on Fluke

In addition to the 5500A and 5520A Multi-Product Calibrators Fluke offers a complete range of calibration instruments, standards, software, and related equipment to meet all your dc/low frequency metrology and traceability needs.

Calibrators

5720A/5700A Series II

Setting the standard for accuracy and usability.

These multi-function calibrators are the world standard for your high-performance workload up to 8½ digit multimeters. Both models state specifications to the standard Fluke 99% confidence level as well as the 95% confidence level to support easy measurement comparisons according to international guidelines. Plus, the high performance 5720A offers an unprecedented accuracy level that delivers the lowest uncertainties available to allow you to calibrate the most demanding workload like the Hewlett-Packard 3458A. Both the 5720A and 5700A are easy to support using just three standards, thanks to their built-in Artifact Calibration capability.

5820A Oscilloscope Calibrator

Dedicated oscilloscope calibration that grows with you.

The powerful Fluke 5820A Oscilloscope Calibrator provides a complete solution for applications dedicated entirely to oscilloscope calibration either on the bench or in the field. It's designed to calibrate all the ranges and functions of the vast majority of digital and analog oscilloscopes in use or being purchased today. It allows you to purchase exactly the functionality you need to do the job without paying for extras you don't need.

The 5820A's compact, portable, rugged design makes it perfect for the bench or on site. On the bench, its small footprint leaves you plenty of work space. On site, the 5820A is easy to carry and doesn't require extra accessories like pulse heads.

The 5820A fully addresses your 600 MHz oscilloscope calibration workload today. Enhancements extend its capability to fully address oscilloscopes to 2.1 GHz.

An auxiliary pass-through channel and tunnel diode pulser drive mode make it easy to perform bandwidth or response tests on high-speed oscilloscopes up to 2.4 GHz, using an external signal generator you may already have. A frequency reference input allows you to enhance the 5820A's frequency accuracy by locking it to an external 10 MHz reference. You'll have the power you need today, and the flexibility to meet tomorrow's requirements.

525A Temperature/Pressure Calibrator

Superior accuracy and functionality in an economical benchtop package

The Fluke 525A Temperature/Pressure Calibrator gives you a workhorse combination of high accuracy and broad functionality for temperature and pressure instrument calibration. Compact and economical, the 525A has an interface for automated calibration, providing wide workload coverage in instrument shops and calibration labs, as well as in ATE applications.

The 525A is the most accurate Fluke temperature calibrator, sourcing and measuring a complete range of RTDs, thermocouples, and the YSI 400 thermistor. It also measures pressure, covering common ranges from 1 inch (6900 Pa) of water up to 10,000 PSI (69 Mpa) using the Fluke 700 Series pressure modules. Plus, the dc voltage and current specifications of the 525A enable you to calibrate other process calibrators and a wide variety of other instruments with accuracy that rivals any calibrator in its price range.

Standards

5790A AC Measurement Standard
A complete, automated ac measurement standard for the most demanding calibration applications. It combines the accuracy of a thermal transfer standard with the ease-of-use of a digital multimeter.

732B/734A Direct Voltage Reference Standards

These compact, rugged, solid-state, portable direct voltage reference standards are designed for reliable, convenient transfers. They feature very predictable performance and long battery life, and are ideal for Artifact Calibration of the 5700A and 5720A.

742A Resistance Standards

These rugged, high-accuracy working standards deliver precise, on-site resistance calibration over a wide temperature range without requiring oil or air baths. They are also ideal for Artifact Calibration.

792A AC/DC Transfer Standard

Offering state-of-the-art performance with total uncertainties to ±10 ppm traceable to national standards. Robust input protection and fast settling times support measuring voltages from 2 mV to 1000V and frequencies from 10 Hz to 1 MHz—in just seconds.

5725A Amplifier

This amplifier increases 5700A and 5720A direct and alternating current to 11A. It also extends the Volt*Hertz product of the 5500A, 5700A and 5720A to cover the calibration requirements of many bench and system meters.

Software, training and support

Software

Today's quality standards impose more and more stringent requirements for documentation, reporting and control. Fluke calibration software has become the de facto industry standard because it provides a complete, easy, affordable solution.

MET/CAL® Calibration Software
MET/CAL is a powerful environment for creating, editing, and testing calibration procedures and collecting and reporting results on a wide variety of instruments. It can automate your procedures to improve the quality and consistency of your calibrations and the productivity of your technicians. Plus it provides documentation of procedures, adequacy, and traceability as required by ISO 9000 guidelines. It supports a wide variety of standards. And Fluke stands behind each of the more than 300 procedures included at no extra charge.

5500/CAL is a low cost version of MET/CAL for use with the Fluke 5500A and 5520A.

MET/TRACK® Metrology Property Management Software
This powerful metrology property management package is designed to help you document and report on all aspects of your measurement assets, including inventory, calibration history, results, location, and repair. It features an industry-standard SQL database for easy data access from a variety of applications and operating systems.

Metrology training
Our five-day "Principles of Metrology Workshop" combines real-world applications with our expertise in the test and measurement field. You'll get hands-on experience in everything from how to use voltage dividers, to calculating and evaluating measurement system uncertainties. A half-day course "Getting Started in Electrical Calibration" and on-site training are also available.

Lab management training
Our five-day "Calibration Lab Management Workshop" takes you step by step through the process of setting up and operating a calibration lab from a business viewpoint.

MET/CAL® *Plus* training
These courses are designed to help you realize the full potential of MET/CAL, 5500/CAL, and MET/TRACK software. The MET/CAL Database and Reports course uses hands-on sessions to teach a systematic approach to data collection and to manage your metrology assets consistently and completely. Other basic and advanced courses focus on writing procedures.

Calibration: Philosophy In Practice, Second Edition
This thoughtfully-organized, easy-to-understand volume presents an in-depth look at all aspects of dc and low frequency metrology, from the world leader in electrical metrology.

Priority software support
The better we support you, the happier you will be with Fluke. That commitment is at the heart of the MET/SUPPORT Silver and Gold programs. The complimentary Silver program is designed to help you get up and running quickly with MET/CAL *Plus*. The Gold program has been designed to provide premier support services that help you maximize your software investment over time. Gold support includes valuable support and services including priority access to our support team; software updates and upgrades, free access to our comprehensive procedures library; discounts on training and services; and much more.

Calibration and repair service
Fluke offers extensive calibration support and service to ensure your long-term satisfaction with your calibration equipment. Our worldwide network of Calibration Centers offers accredited calibrations traceable to national standards. And we offer fast quality repair and calibration services including a module exchange program, comprehensive training, and full support in setting up your lab.

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Ordering Information

Model

5520A High Performance Multi-Product Calibrator
5500A Multi-Product Calibrator

Options

5500A-SC300	300 MHz Oscilloscope Calibration Option
5500A-SC600	600 MHz /300 ps Oscilloscope Calibration Option
5520A-SC1100	1.1 GHz /300 ps Oscilloscope Calibration Option
5520A-PQ	Power Quality Option

Accessories

5500A/LEADS	Comprehensive Test Lead Kit
5500A/COIL	50-Turn Coil
5500A/CASE	Transit Case with Wheels
5520A/PROBE	Relative Humidity Probe
TC100	Instrument Cart
5725A	Amplifier (5500A only)
5500/CAL	Automated Calibration Software (RS232 only)
MET/CAL	Automated Calibration Software (IEEE-488 and RS232)
MET/TRACK	Metrology Property Management Software
5500A/HNDL	Side Handle
Y5537	Rack Mount Kit

Fluke. *Keeping your world up and running.*

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Printed in U.S.A. 11/2001 1264830 B-ENG-N Rev C