CL-217A

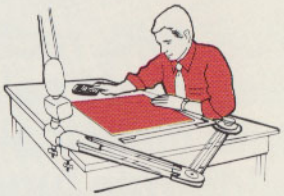
SR-40

Portable, rechargeable electronic calculator with classical slide-rule functions.

TEXAS INSTRUMENTS
INCORPORATED

Powerful. Economical. Rugged. Styled for today's professionals and college students.

With 48 of the most-needed functions to simplify problem-solving — from basic arithmetic to higher math.



At your desk, drawing board, lab, in the field or in the classroom, the SR-40 is the full-function slide rule calculator that goes where you go. And it's rechargeable. It performs the classical slide rule functions: Roots. Powers. Reciprocals. Common and natural logarithms. Trigonometry, in degrees, radians or grads. And basic arithmetic calculations. And it has AOS™, TI's unique Algebraic Operating System. AOS™ lets you enter calculations as they're written, left to right.

The SR-40's versatile memory functions include store, recall, sum to memory and memory/display exchange. Bright LED display indicates angular mode and shows eight digits and sign in standard format; or, in scientific notation, five-digit mantissa, two-digit exponent and two signs.

The SR-40 automatically rounds numbers for display purposes, yet maintains an internal calculating capacity of eleven digits.

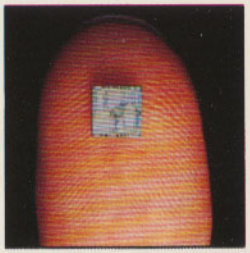
Operating on fast-charge rechargeable electronic battery pack or AC, the SR-40 is convenient to take anywhere. It's lightweight and fits easily into your briefcase. And its automatic turn-off substantially increases battery life.

With the SR-40, maximum value is the result of maximum technology. Applied not only to increased capability and quality, but also to lower costs.

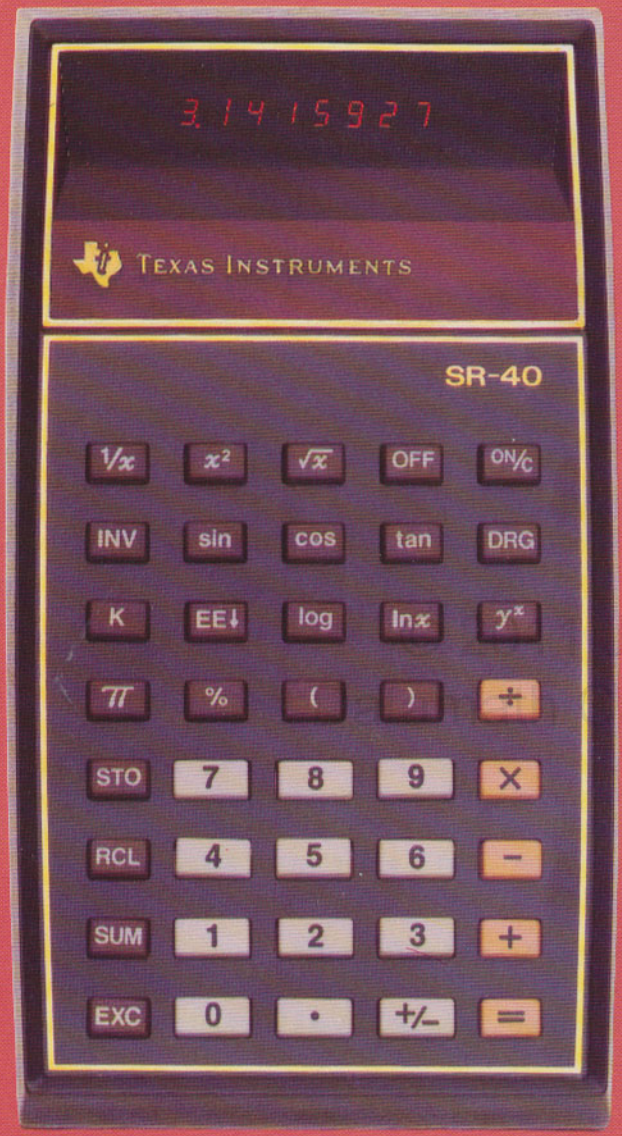
The catalyst for the calculator boom was the integrated circuit, a tiny chip of silicon combining the amazing computational power of thousands of transistors. TI invented the original integrated circuit and has produced more of them than any other company in the world.

Texas Instruments has long been a leader in solid-state technology and has pioneered a series of landmark developments relating directly to calculators. In addition to the original integrated circuit, TI holds key patents in the basic Metal-Oxide-Semiconductor (MOS) technology used in calculators, the "calculator-on-a-chip" integrated circuit which became the heart of miniature calculators, and the basic patent on the miniature calculator itself.

Texas Instruments is involved in calculator technology from start to finish. From design right through manufacturing, final assembly and testing.



The integrated circuit combines the computational power of thousands of transistors in a tiny chip of silicon. Texas Instruments is known worldwide for leadership in this advanced technology.



Actual Size

A brief summary of the SR-40's features and capabilities.

Basics

[+] Addition.
[−] Subtraction.
[×] Multiplication.
[÷] Division.
[%] Percent.
[π] Pi. Correct to 11 digits (rounded to 8 for display only).
[1/x] Reciprocal divides the display value into 1.
[K] Constant stores a number and its associated operation for repetitive calculations.
[+/−] Change sign.

Parentheses

[( ] [ )] Isolates numerical expressions for correct mathematical interpretation. The SR-40 provides 15 sets of parentheses with up to four pending operations.

Powers and Roots

[x²] Square.
[√x] Square root.
[y^x] y to the x power.

Logs

[lnx] Natural (base e).
[log] Common (base 10).

Trig Functions

[DRG] Degree, Radian, Grad. Selects the unit for angular measurement. Can be changed whenever desired.
[sin] Sine of the displayed angle.
[cos] Cosine of the displayed angle.
[tan] Tangent of the displayed angle.

Memory Functions

[STO] Stores data.
[RCL] Recalls data from memory.
[SUM] Adds data to memory.
[EXC] Exchanges the content of the memory with the display value.

Exponent Entry and Exponent/Decimal Shift Key

[EE↓] Pressed after a keyboard entry, it prepares the calculator to accept the next digits entered as the exponent. Pressed after a result, it decreases the exponent by one and moves the decimal point of the mantissa one place to the right.

Inverses

[INV] Works in a sequence with other keys to provide: x^{th} root of the value y. Arcsine. Arccosine. Arctangent. Common Antilogarithm (10^x). Natural Antilogarithm (e^x). Used with the exponential shift key, adds one to the exponent and moves the decimal one place to the left.

Scientific Notation.

Numbers in the range 10^{-99} to 10^{+99} are handled with ease. Very large or very small numbers (larger than $\pm 9.9999 \times 10^7$ or smaller than $\pm 1 \times 10^{-8}$) are entered in scientific notation. The number is entered as a mantissa multiplied by 10 raised to some power (exponent) such as 3.6089×10^{32}. Data in scientific notation form may be entered intermixed with data in standard form. The "exponent shift" key enables the exponent to be shifted one step at a time to a required value (i.e. 10^6 for mega-units or 10^{-3} for milli-units). Also, calculated results in the range $\pm 1 \times 10^{-8}$ to $\pm 1 \times 10^8$ can be changed into and out of scientific notation as desired.

Accuracy and Rounding.

While the display has a capacity of only 8 digits, the internal calculating capacity is 11 digits. The result within the calculator is automatically rounded to 8 digits for display purposes only (5 digits for scientific notation). The 5/4 rounding system adds one to the least significant displayed digit if the next non-display number is five or more (i.e. round up). When the digit is less than five, the calculator rounds down. As the calculator is capable of working internally with 11 digits, numbers with 9 to 11 digits may be entered by summing two numbers (389182 + .70636 = 389182.71). The calculator simply completes

the operation and uses the 11 digit result for further calculations.

Automatic Turn-off.

The display automatically turns off after a brief period of time if no new keyboard entries are made (typically 25 to 50 seconds). A traveling decimal remains in the display to indicate the calculator still contains the current status of calculations. As soon as any key is pressed, the full display is restored. When left unattended, the traveling decimal continues for a period of typically 7 to 14 minutes and then the calculator turns off completely, just as if you had pressed the [OFF] key. This feature substantially increases battery life if you forget to turn your calculator off or if it is turned on accidentally.

TI's unique algebraic operating system (AOS™) helps make the SR-40 easy to use.

The mathematics community uses a set of universally accepted rules when teaching and solving mathematics problems. AOS™ puts these rules right into your calculator. Problems can be entered left to right just as they're written. The calculator then automatically performs the calculations in the universally accepted order of algebraic hierarchy (special functions solved first, then powers and roots, then multiplication and division, then addition and subtraction). This capability, combined with the availability of 15 sets of parentheses and four pending operations is what makes up AOS™ in the SR-40. This provides an incredibly powerful, easy-to-use system for problem solving. And makes the calculator part of the solution — not part of the problem.

This example has only *one* right answer. But not all calculators will give it to you if you enter the problem directly.

$1 + 2 \times (3 - \frac{1}{7})^{2.5} = ?$

Solve it on the SR-40 exactly as it is written:

1 [+] 2 [×] [(] 3 [−] 1 [÷] 7 [)] [y^x] 2.5 [=] 28.596874

Specifications

Readout: Bright 8-digit, light-emitting diode display. Decimal point, negative sign, angular mode indicator, error indication "Error".

Electronics: Texas Instruments manufactured MOS/LSI integrated circuit . . . containing exclusive electronic on/off circuit.

Power Source: Electronic rechargeable battery pack that can be recharged hundreds of times. AC adapter/charger input 115 volts/60 Hz.

Included: Owner's Manual. Kit includes an electronic rechargeable battery and an AC adapter/charger.

Size: 5.8 x 3.2 x 1.4 inches (14.7 x 8.1 x 3.6 cm).

Weight: 6.3 ounces (179 grams).

One-Year Limited Warranty

The SR-40 is covered by a one-year limited warranty against defects in materials and workmanship.

Due to the difficulty in photographing calculator readouts, displays represented here are simulated.

Texas Instruments reserves the right to make changes in materials and specifications without notice.

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