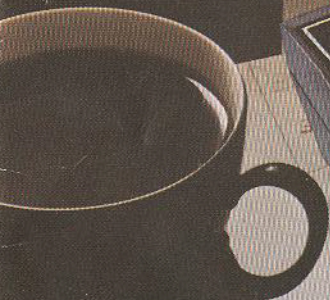


Texas Instruments
electronic slide rule calculator
SR-10



Texas Instruments

electronic slide rule calculator
SR-10

Fully Portable

Extremely lightweight. Battery or AC operated.

Versatile

Performs addition, subtraction, multiplication and division including credit balance, reciprocals, squares, square roots, chain and mixed calculations. Automatic conversion to scientific notation when calculated answer exceeds eight digits. Full floating decimal point.

Easy to Operate

Operations are performed in the same order as with classical slide rules. For simple arithmetic operations, just touch the numbers and functions as you would write them on paper. Automatic clearing—no need to touch clear key between problems.

Long Life

Solid-state components, integrated circuits, and a display using light emitting diodes provide dependable operation and long life.

Built in Rechargeable Batteries


The SR-10 calculator comes complete with *fast charge* nickel-cadmium batteries which will provide 4-6 hours of operation without recharging under normal use. About 3 hours of recharging will restore full charge to the batteries.

AC Adapter/ Charger

Recharge or direct operation from standard outlets is easily accomplished with the AC Adapter/Charger included with your SR-10 calculator. Just plug the AC Adapter/Charger into a convenient outlet and the attached cord into the calculator. You can operate your calculator indefinitely while connected to your AC Adapter/Charger as your batteries cannot be overcharged.

Do not attempt to operate calculator with charger plugged in *unless* batteries are in place.

Battery Saver Circuit

To save battery power your light emitting diode display turns off automatically approximately 15 seconds after the last keyboard entry, except for the first digit. If the display turns off while entering a problem, the display turns on automatically with the first keyboard entry. To bring back the last calculated result to the display, depress the  key.

Therefore, the number in the first digit on the display is a double reminder — that you have an entry or calculation waiting in your calculator *or* that your calculator is in the power ON position.

operational functions

On/Off Switch

Located on top surface of calculator on right side

 Key

Clears (erases) information in calculator and display and sets calculator to zero for start of new problem.


 Key

Clears the last number entered manually in the keyboard or the last calculated result, whichever is displayed.

 Key

Instructs the calculator to ADD the following number to the previous number or result.

 Key

Instructs the calculator to SUBTRACT the following number from the previous number or result. If there is no previous number, the calculator subtracts the following number from zero, which is the same as entering a negative number. To enter a negative number in the middle of a chain calculation, use the  key.

 Key

Instructs the calculator to MULTIPLY the previous number or result by the following number.

 Key

Instructs the calculator to DIVIDE the previous number or result by the following number.

$\boxed{=}$ Key

Instructs the calculator to complete the previously entered operations to provide the desired calculation result.

$\boxed{\cdot}$ Key

Enters a DECIMAL point.

$\boxed{0}$ $\boxed{-}$ $\boxed{9}$ Key

Enters NUMBERS (limit 8 digit mantissa, 2 digit exponent).

Datamath Calculator Museum

$\boxed{1/x}$ Key

Instructs the calculator to find the *reciprocal* of the number displayed (that is to divide the number displayed into 1).

$\boxed{x^2}$ Key

Instructs the calculator to find the SQUARE of the number displayed (that is to multiply the number displayed by itself).





$\boxed{\sqrt{x}}$ Key

Instructs the calculator to find the SQUARE ROOT of the number displayed (that is to find the number which multiplied by itself, equals the number displayed).

\boxed{EE} Key

Instructs the calculator that the following number is to be entered as an EXPONENT of 10. To enter a number in scientific notation, first enter the mantissa, press \boxed{EE} and enter the desired exponent of 10.

 Key

Instructs the calculator to change the sign of the mantissa or exponent appearing in the display. To enter a negative number, first enter the number and then press the  key. Using this "change sign" key prior to using the  key changes the sign of the mantissa. If the  key is pressed *after* the  key, the sign of the exponent is changed.


Power On Indication

A zero appears at the right of the 8 digit mantissa when power switch is on and no other numbers are displayed.


Minus Sign

Appears to the left of the 8 digit mantissa to indicate negative numbers, and appears on the left of the exponent (right of mantissa) to indicate negative exponents.

Decimal Point

Automatically appears to the right of any number entered unless positioned in another sequence by use of  key. A zero will precede the decimal for fractional numbers.

Calculation Overflow

 appears on left side of display to indicate a result larger than 9.9999999×10^{99} or smaller than $1.0000000 \times 10^{-99}$.

operational examples

Before Operation

The fast charge nickel-cadmium batteries furnished with your calculator were fully charged at the factory, but may require charging before initial battery operation due to shelf life discharging.

You can operate your calculator while it's being charged. Just plug the charger cord into the calculator and the charger into a convenient outlet. You can now calculate while you charge—a full charge requires only 3 hours when switch is off or 6 hours while in normal operation.

It is recommended that you recharge the batteries periodically and that you refrain from running the power source to zero, as this type of operation may reduce the life of the batteries.

On some units, an L will appear on the extreme left of the display when the batteries are low and need recharging.

Calculator Operation

Place switch in ON position. A zero will appear on the display.

Performing calculations with the SR-10 calculator is easy. For simple operations, numbers and functions are entered in the same sequence as the mathematical expression is normally written. The following examples will help you.

Scientific Notation

Any number can be entered into the SR-10 in scientific notation – that is, as a number multiplied by 10 raised to some power (exponent). For example, 1000 can be written as 1×10^3 .

ENTER
1 [] 3

Very large and very small numbers must be entered in scientific notation. 110,000,000 is written as 1.1×10^8 .

ENTER
1 [] 1 [] 8

In both these examples, the exponent indicates how many places the decimal should be moved to the right. If the exponent is a negative number, the decimal point should be moved to the left: $1.1 \times 10^{-8} = .000000011$.

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Datamath Calc

The last two digits on the right side of the display are used to indicate exponents. For example 1.1×10^{-8} is displayed.

ENTER
1 . 1 [] [] [] [] [] [] 8 [] [] [] [] [] [] 1 . 1 [] [] 8 []

By using scientific notation, you can retain eight significant digit accuracy even on numbers less than unity (1). If you use scientific notation, the results will remain in scientific notation until you press [] .

Addition and Subtraction

EXAMPLE $4.23 + 4 = 8.23$

OPERATION
4 [] 23 [] 4 [] 8.23

EXAMPLE $6 - 1.854 = 4.146$

OPERATION
6 [] 1 [] 854 [] 4.146

EXAMPLE $12.32 - 7 + 1.6 = 6.92$

OPERATION
12 [] 32 [] 7 [] 1 [] 6 [] 6.92

Multiplication and Division

EXAMPLE $27.2 \times 18 = 489.6$
OPERATION
27 \times **2** **18** \times **489.6**

EXAMPLE $12 \div 5.2 = 2.3076923$
OPERATION
12 \div **5** **2** \div **2.3076923**

EXAMPLE $(4 \times 7.3) \div 2 = 14.6$
OPERATION
4 \times **7** \div **3** \div **2** \div **14.6**

Squaring Numbers

A number can be squared (multiplied by itself) simply by entering the number and pressing the \square key.

EXAMPLE $4^2 = 4 \times 4 = 16$
OPERATION
4 \square = **16**

EXAMPLE $99999999^2 = 99,999,999 \times 99,999,999 = 9,999,999,800,000,001 = 9.9999998 \times 10^{15}$
OPERATION
99,999,999 \square = **9.9999998 15**

EXAMPLE $(2.1 \times 10^4)^2 = 4.41 \times 10^8$
OPERATION
2 \times **1** \square **4** \square = **4.41 08**

Square Roots of Numbers

The square root of a number (the number that multiplied by itself equals the number entered) can be found simply by entering the number and pressing the $\sqrt{\square}$ key:

EXAMPLE $\sqrt{25}$ means find the value of y when $y \times y = 25$. In this case $y = 5$, so:
 $\sqrt{25} = 5$
OPERATION
25 $\sqrt{\square}$ = **5**

EXAMPLE $\sqrt{3} = 1.7320508$

OPERATION

3 $\sqrt{\square}$ = 1.7320508

EXAMPLE $\sqrt{1.1 \times 10^8} = 1.0488088 \times 10^4$

OPERATION

1 \square 1 EE 8 $\sqrt{\square}$ = 1.0488088 04

E appears when the square root of a negative number is taken. Since the square root of a negative number is imaginary, the overflow indication indicates the calculator recognizes an error, but performs the operation as though the number were positive.

© 2010 Joerg Woerner Data Calculator Reciprocals of Numbers

The reciprocal of a number (one divided by the number) can be found simply by entering the number and pressing the $\frac{1}{\square}$ key.

EXAMPLE The reciprocal of $2 = \frac{1}{2} = 0.5$

OPERATION

2 $\frac{1}{\square}$ = 0.5

EXAMPLE The reciprocal of $100 = \frac{1}{100} = 0.01$

OPERATION

100 $\frac{1}{\square}$ = 0.01

EXAMPLE The reciprocal of $10^{10} = 1.0 \times 10^{-10}$

OPERATION

1 EE 10 $\frac{1}{\square}$ = 1. - 10

EXAMPLE The reciprocal of $1.1 \times 10^{-18} = 0.9090909 \times 10^{17}$

OPERATION

1 \square 1 EE 18 $\frac{1}{\square}$ = 9.090909 17

Mixed Calculations

Mathematical operations can be performed in sequence with combinations of addition, subtraction, multiplication, division, squares, square roots and reciprocals. If a *function* key is pressed immediately after the \square key, calculation continues using the displayed answer as the last entry. The calculator is cleared and made ready for another operation automatically when a *number* key is pressed immediately after the \square key. It is not necessary to press the \square key before starting a new calculation.

EXAMPLE $\frac{(8.3 + 2)}{4} - 6.8 = -4.225$

OPERATION

$8 \square 3 \square + \square 2 \square \div \square 4 \square - \square 6 \square 8 \square = -4.225$

EXAMPLE $6 \times 3 = 18$ (automatic clearing)
 $3 \div 8 = 0.375$

OPERATION

$6 \square \times \square 3 \square = 18$ (automatic clearing)
 $3 \square \div \square 8 \square = 0.375$

EXAMPLE $4 \times 5 = 20$ and $20 \div 8 = 2.5$
(continuation of problem)

OPERATION

$4 \square \times \square 5 \square \div \square 8 \square = 2.5$

EXAMPLE $\frac{1}{\sqrt{(15 \times 4) - 11}} = 0.1428571$

OPERATION

$15 \square \times \square 4 \square - \square 11 \square \sqrt{\square} = 0.1428571$

Calculations with Positive and Negative Numbers

Datamath Calculator

Entry Overflow

Calculation Overflow

$$\text{EXAMPLE } \left(\frac{1}{\sqrt{1.4 \times 10^{-12} + 4 \times 10^{-10}}} - 1.6 \times 10^8 \right)^2 \\ = 2.5584031 \times 10^{16}$$

OPERATION

1 □ 4 □ EE □ 12 □ + □ 4 □ EE □ 10 □ M □ M □
□ 1 □ 16 □ EE □ 8 □ M □ = 2.5584031 16

$$\text{EXAMPLE } \left(\frac{-125}{5} + 3 \right) \times (-4) = 88$$

OPERATION

□ □ 125 □ 5 □ ÷ □ 3 □ + □ 4 □ M □ = 88

NOTE: When the first number of a calculation is a negative number, the previous problem must be cleared manually by pressing the □ key. (The □ is a function key and will not automatically clear the calculator.)

The calculator will ignore any mantissa digits entered in excess of eight and will use the last two exponent digits entered as shown in the display.

If a calculation result is more than eight digits before the decimal, it is automatically converted to a scientific notation. If a calculation result is greater than 9.9999999×10^{99} , the signal □ will be displayed with the answer. The answer shown will normally be correct, but only the *last two* digits of the exponent will be displayed.

in case of difficulty

- 1) Check to be sure calculator is correctly plugged into a proper outlet that has power and that the AC adapter charger voltage switch is set on the correct voltage.
- 2) Check to be sure ON-OFF switch is in the ON position. A " $\bar{0}$ " should appear in far right digit position of the 8 digit mantissa.
- 3) If display fails to light on battery operation, recharge batteries.
- 4) Review operating instructions to be certain calculations are performed correctly.

If none of these corrects the difficulty, return the unit prepaid for repair to your nearest Texas Instruments Consumer Service Facility listed on following page. Please include information on your difficulty as well as return information of name, address, city, state and zip code.

CAUTION: Use of other than the SR-10 AC Converter Charger may apply improper voltage to your SR-10 calculator and cause damage.

specifications

Type	SR-10.
Display	Light emitting diode display.
Decimal Point	Complete floating decimal on input and output.
Types of Calculations	Addition, subtraction, multiplication and division. Credit balance. Chain and mixed calculations. Reciprocals. Squares. Square roots. Scientific notation.
Overflow	\overline{E} Sign on display indicates data calculation overflow. \overline{E} indicates negative calculation overflow.
Negative Sign	True value indication with minus sign on display.
Calculation Components	One MOS/LSI Integrated Circuit.
Power Source	The built-in rechargeable batteries provide four to six hours of service between recharges.
AC Adapter/ Charger — Included	Allows operation from 115 V, 60HZ or 230V, 50HZ AC source.

Texas Instruments

electronic slide rule calculator
SR-10

Warranty

The SR-10 electronic calculator from Texas Instruments is warranted to the original purchaser for a period of one year from the original purchase date – under normal use and service against defective materials or workmanship.

Defective parts will be repaired, adjusted, and/or replaced at no charge when the calculator is returned prepaid to a Texas Instruments Consumer Service Facility listed below.

The warranty is void if the calculator has been visibly damaged by accident or misuse, or if the calculator has been serviced or modified by any person other than a Texas Instruments Consumer Service Facility.

This warranty contains the entire obligation of Texas Instruments Incorporated and no other warranties expressed, implied, or statutory are given.

The warranty is void unless the Purchase Registration Card has been properly completed and mailed to Texas Instruments Incorporated within 10 days of purchase.

TEXAS INSTRUMENTS
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DALLAS, TEXAS

Texas Instruments consumer services facilities

For warranty or out of warranty service send your SR-10 calculator to the nearest service facility.

Texas Instruments Service Facility
P. O. Box 477
Springfield, New Jersey 07081

Texas Instruments Service Facility
P. O. Box 1967
Orange, California 92668

Texas Instruments Service Facility
P. O. Box 970
Arlington Heights, Illinois 60006

Texas Instruments Service Facility
P. O. Box 5012 M/S 10
Dallas, Texas 75222

ADDENDUM

SR-10 OWNERS MANUAL

Use of the \boxed{CD} Key

Additional Use — The \boxed{CD} key can be used to correct entry of an erroneous basic function key as well as an erroneous number entry. If a $\boxed{+}$ or a $\boxed{-}$ key is pressed in error, the \boxed{CD} key can be used to clear the display to zero before pressing the correct function key. This method nullifies the error by adding or subtracting 0 from the previous calculation result. If an erroneous $\boxed{\times}$ or $\boxed{\div}$ key is pressed, the \boxed{CD} key can be used to clear the display before entering $\boxed{1}$ and pressing the correct function key. In this case, the error is nullified by multiplying or dividing the previous calculation result by unity.

Limitation — The \boxed{CD} key cannot be used to correct an erroneous number or function entry if the previous calculation result is negative or less than unity (exponent is negative). Use of the \boxed{CD} key alone will change the mantissa and/or exponent of the previous calculation result from negative to positive.

Use of the \boxed{EE} Key

Maximum Accuracy — The SR-10 was designed to give the user the option of having results in either conventional notation or scientific notation. Whenever the final or interim calculation results are between 1.0 and 0.0000001, maximum accuracy is obtained by using scientific notation. To convert to scientific notation, simply press the \boxed{EE} key immediately after any number entry. It is not necessary to enter any values in scientific notation.

Suggested uses
for your new
SR-10 calculator...

BUSINESS USES:

- engineering design
- budget planning
- purchasing
- inventory control
- quality control
- surveying
- expense accounts

CLASSROOM USES:

- engineering
- science
- mathematics
- statistics
- accounting

HOME USES:

- balance your checkbook
- prepare tax statements
- vacation planning
- plan household budgets
- compare unit costs at store
- student homework
- calculate interest rates

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