

7. SPECIFICATIONS

| | |
|--------------------|--|
| Type: | 8 digits handy type electronic calculator |
| Power source: | DC: 3V Dry battery operation, SUM-3E x 2 Operates for 8 hours on two manganese dry batteries (at 20°C) (Slightly changes according to the kinds of the batteries and the way of use.) AC operation with AC adaptor/charger (EA-17E), Ni-Cd (EA-18B) |
| Capacity: | 8 digits |
| Decimal point: | Complete floating decimal point positioning |
| Indicator: | Minus sign indicator Memory indicator Overflow error indicator |
| Calculations: | 4 arithmetic calculations Chain multiplication and division Tax/Discount calculation Power calculation, square root calculation Percentage calculation Reciprocal calculation Mixed calculation, memory calculation |
| Temperature: | 0°C ~ 40°C |
| Components: | LSI, etc. |
| Power consumption: | DC; 0.5W |
| Dimensions: | 76mm(W) x 20mm(H) x 128.5mm(D) |
| Weight: | 160g (with the dry batteries) |

1. INTRODUCTION



That's right! The EL-8116 is so easy and fast. And you can perform complicated calculations up to 8 digits instantly with amazing convenience.

Printed in Japan
7T501<1658>

ELECTRONIC CALCULATOR
EL-8116
INSTRUCTION MANUAL

SHARP COMPET



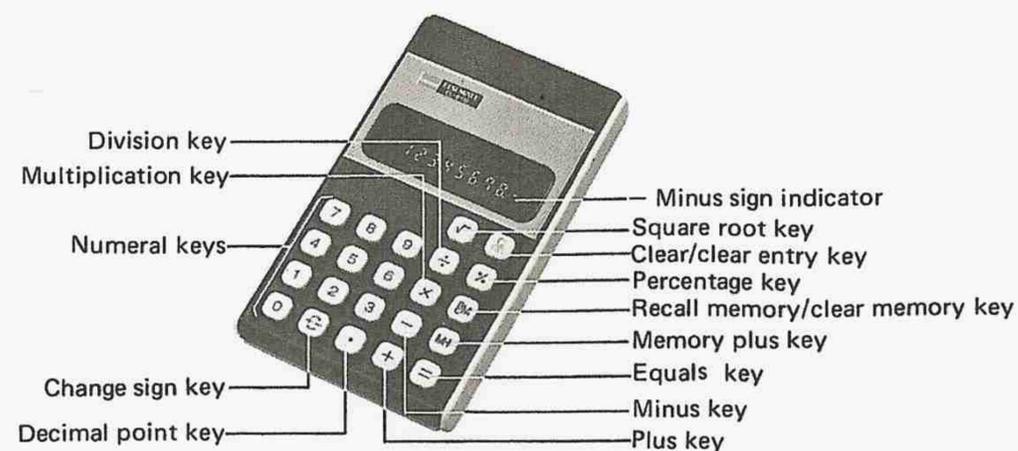
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2. OUTSTANDING FEATURES

- ★ Square root calculation
- ★ Complete floating decimal point positioning
- ★ Overflow error check device
- ★ Tax and discount calculation
- ★ Chain calculation
- ★ Power calculation
- ★ Percentage calculation
- ★ Reciprocal calculation
- ★ Memory calculation
- ★ Approximate results in excess of 8 digits

3. KEY LAYOUT CHART



4. OVERFLOW ERROR

In the following cases, an overflow error symbol turns on. To clear the error, depress the \square key.

1. When the integer portion of the result exceeds 8 digits.
2. When the number is divided by zero. ($A \div 0$)
3. When the square root extraction is performed for the negative number.

$$[\sqrt{-x} \ (x \geq 0)]$$

4. When the integer portion of the quotient exceeds 16 digits.
5. When the integer portion of the result after adding (subtracting) to (from) memory exceeds 8 digits.

As for the case 1, the upper significant 8 digits of the result is divided by 10^8 (100000000) and then it is displayed on the numeral display-part, and an overflow error symbol (E) is displayed on the symbol display-part.

(The symbol (E) turns on when the result is negative.)

Therefore, the decimal point of the displayed number means the unit of one hundred million. While as for the case 2 to 5, the display is occupied "0 · E".

(Note) In all the cases 1 to 5, the memory retains the contents before the overflow error is detected.

5. HOW TO REPLACE THE BATTERY

1. Set the power switch at off position.
2. Slide a battery cover in the direction of an arrow mark and take it out. (Fig.)
Take care not to mistake the battery polarity.
3. Slide the battery cover into the unit.
4. When the voltage of the batteries are lowered, display becomes dark.

In this case, please exchange the batteries with new ones, or charge the Ni-Cd batteries.

5. This set can be operated also with optionally available Ni-Cd batteries. (EA-18B).
6. The Ni-Cd batteries can be recharged by the aid of EA-17E.

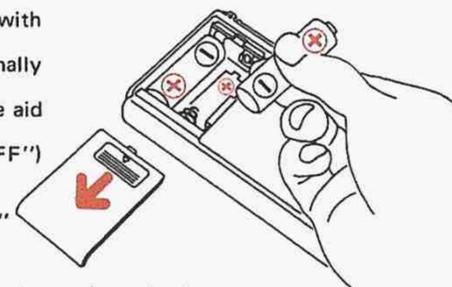
Charging time: 15 hrs. (power switch at "OFF")
(at the rated voltage)

Useful life: 6 hrs.

Note 1: If the power switch is set at "ON"
Ni-Cd batteries can be recharged.

Caution:

1. Dry batteries and Ni-Cd batteries should not be used as mixed.
2. When operating the set with dry batteries, be sure to insert two pieces of type AA.



6. OPERATIONS

| | Examples | Operations |
|---|---|--|
| 1 | Addition & Subtraction $123 - 45.6 + 789 = 866.4$ | $123 \text{ [] } 45.6 \text{ [+] } 789 \text{ [=] } \longrightarrow 866.4$ |
| 1 | Multiplication & Division $(-1.15) \times 365 \div 0.5 = -839.5$ | $\text{[] } 1.15 \text{ [X] } 365 \text{ [] } 0.5 \text{ [=] } \longrightarrow 839.5 -$ |
| 1 | Constant Multiplication & Division $295 \times 8 = 2360$ $295 \times 6 = 1770$ | $295 \text{ [X] } 8 \text{ [=] } \longrightarrow 2360.$ $295 \text{ [X] } 6 \text{ [=] } \longrightarrow 1770.$ |
| 2 | $18 \div 2 = 9$ $12 \div 2 = 6$ | $18 \text{ [] } 2 \text{ [=] } \longrightarrow 9.$ $12 \text{ [] } 2 \text{ [=] } \longrightarrow 6.$ |
| 1 | Square & Power Calculation $5^2 = 25$ | $5 \text{ [X] } \text{[] } \longrightarrow 25.$ |
| 2 | $((2^3)^2)^2 = 4096$ | $2 \text{ [X] } \text{[] } \text{[X] } \text{[] } \text{[X] } \text{[] } \longrightarrow 4096.$ |

| | Examples | Operations |
|---|--|--|
| 1 | Reciprocal Calculation $1/7 = 0.1428571\text{.....}$ | $7 \text{ [] } \text{[] } \longrightarrow 0.1428571$ |
| 1 | Square root calculation $\sqrt{7 \times 8} + \sqrt{9} = 10.483314$ | $7 \text{ [X] } 8 \text{ [=] } \text{[] } + 9 \text{ [] } \text{[] } \longrightarrow 10.483314$ |
| 1 | Percentage calculation $1200 \times 25\% = 300$ | $1200 \text{ [X] } 25 \text{ [%] } \longrightarrow 300.$ |
| 2 | $1200 \times 83\% = 996$ $108 \div 360 = 30\%$ $162 \div 360 = 45\%$ | $1200 \text{ [X] } 83 \text{ [%] } \longrightarrow 996.$ $108 \text{ [] } 360 \text{ [%] } \longrightarrow 30.$ $162 \text{ [] } 360 \text{ [%] } \longrightarrow 45.$ |
| 1 | Approximate calculation $96857431 + 4563211 = 101420642$ | $96857431 \text{ [+] } 4563211 \text{ [=] } \longrightarrow 1.0142064\text{E}$ $(1.0142064 \times 10^8 = 101420640)$ |
| 2 | $1234567 \times 25896 = 31970347032$ | $1234567 \text{ [X] } 25896 \text{ [=] } \longrightarrow 319.70347\text{E}$ $(319.70347 \times 10^8 = 31970347000)$ |

(13) Correcting mistakes

Ex. 1 123×556 (mistake) 456 (correct)

Operation $123 \text{ [X] } 556 \text{ [] } 456 \text{ [=] } \longrightarrow 56088.$

Ex. 2 5×8 (mistake) 9 (correct)

Operation $5 \text{ [X] } 8 \text{ [] } 9 \text{ [=] } \longrightarrow 45.$

NOTES

1. Avoid placing the unit in hot, dusty or humid locations.
2. When cleaning the cabinet, do not use a wet cloth or any organic solutions such as kerosene or benzene.

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| | Examples | Operations |
|---|---|--|
| 1 | Mixed calculation $(5 + 12) \times 18 \div 4 - 16 = 60.5$ | $5 \boxed{+} 12 \boxed{\times} 18 \boxed{\div} 4 \boxed{-} 16 \boxed{=} \rightarrow 60.5$ |
| 1 | Tax/discount calculation $6000 + 6000 \times (15\%) = 6900$ $6000 - 6000 \times (12\%) = 5280$ | $6000 \boxed{\times} 15 \boxed{\%} \boxed{+} \boxed{=} \rightarrow 6900.$ $6000 \boxed{\times} 12 \boxed{\%} \boxed{-} \boxed{=} \rightarrow 5280.$ |
| 1 | Applications $\frac{123}{123 + 456 + 789} = 8.991228(\%)$ | $123 \boxed{+} 456 \boxed{+} 789 \boxed{\div} \boxed{=} 123 \boxed{\%} \rightarrow 8.991228$ |
| 2 | $\frac{456}{123 + 456 + 789} = 33.333333(\%)$ | $456 \boxed{\%} \rightarrow 33.333333$ |
| 3 | $\frac{789}{123 + 456 + 789} = 57.675438(\%)$ | $789 \boxed{\%} \rightarrow 57.675438$ |

INTERNATIONAL WARRANTY SYSTEM

In an agreement with Sharp's international service network, warranty repair may be obtained for any Sharp battery-operated consumer calculator within one (1) year of the purchase date when presented along with an international warranty certificate to any of the service centers listed below.

Australia, Hong Kong, Iran, Japan, Kuwait, Lebanon,
Malaysia, Panama, Philippines, Singapore, South Africa,
Thailand, United Kingdom, U.S.A., West Germany

This international warranty certificate is not necessary to receive warranty repair within the continental United States. However, if you plan to travel abroad, an international warranty certificate may be obtained free of charge by sending your dated proof of purchase listing the model and serial number of your calculator to Sharp Electronics Corporation, 10, Keystone Place, Paramus, N.J. 07652, ATT: NATIONAL SERVICE MANAGER. Your proof of purchase will be returned to you along with your international warranty certificate. Please allow three (3) weeks for processing.

| | Examples | Operations |
|---|--|---|
| 1 | Memory calculation $46 + 78 = 124$ $+ 125 - 59 = 66$ $- 72 + 86 = 158$ <hr/> $(\text{Total } 32)$ | $\boxed{M} \boxed{M} 46 \boxed{+} 78 \boxed{M+} \rightarrow 124..$ $125 \boxed{-} 59 \boxed{M+} \rightarrow 66..$ $72 \boxed{+} 86 \boxed{=} \rightarrow 158..$ $\boxed{C} \boxed{M+} \boxed{M} \rightarrow 32..$ |
| 2 | $(123 + 45) \times (456 - 83) = 61656$ $= 61656$ | $\boxed{M} \boxed{M} 123 \boxed{+} 45 \boxed{M+} \rightarrow 168..$ $456 \boxed{-} 89 \boxed{\times} \boxed{M} \boxed{=} \rightarrow 61656..$ |
| 3 | $369 \times 8 = 2952$ $+ 258 \div 6 = 43$ $- 147 \times 12 = 1764$ <hr/> $(\text{Total } 1231)$ | $\boxed{M} \boxed{M} 369 \boxed{\times} 8 \boxed{M+} \rightarrow 2952..$ $258 \boxed{\div} 6 \boxed{M+} \rightarrow 43..$ $147 \boxed{\times} 12 \boxed{C} \boxed{M+} \rightarrow 1764..$ $\boxed{M} \rightarrow 1231..$ |
| 4 | $5 \times 8 = 40$ $5 \times 7 = 35$ $+ 5 \times (-4) = -20$ <hr/> $(\text{Total } 55)$ | $\boxed{M} \boxed{M} 5 \boxed{\times} 8 \boxed{=} \boxed{M+} \rightarrow 40..$ $7 \boxed{=} \boxed{M+} \rightarrow 35..$ $4 \boxed{C} \boxed{=} \boxed{M+} \rightarrow 20..$ $\boxed{M} \rightarrow 55..$ |

LIMITED WARRANTY

SHARP Electronics Corporation warrants this product to the original purchaser to be free from defective materials and workmanship, and agrees to repair any such defect or to furnish a new or equal part in exchange, except batteries, through an authorized SHARP Factory Service Center.

This warranty does not apply to appearance items nor to any product subjected to misuse, abnormal service or handling, nor to any product altered or repaired by other than an authorized SHARP Factory Service Center.

The period of this warranty covers one (1) year on parts and one (1) year on labor from date of purchase.

This warranty entitles the original purchaser to have service rendered at no cost for the period of the warranty described above when the calculator is carried or shipped into an authorized SHARP Factory Service Center together with proof of purchase.

Neither this warranty nor any other warranty expressed or implied shall extend beyond the period of time listed above.
In no event shall SHARP be liable for consequential damage.

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