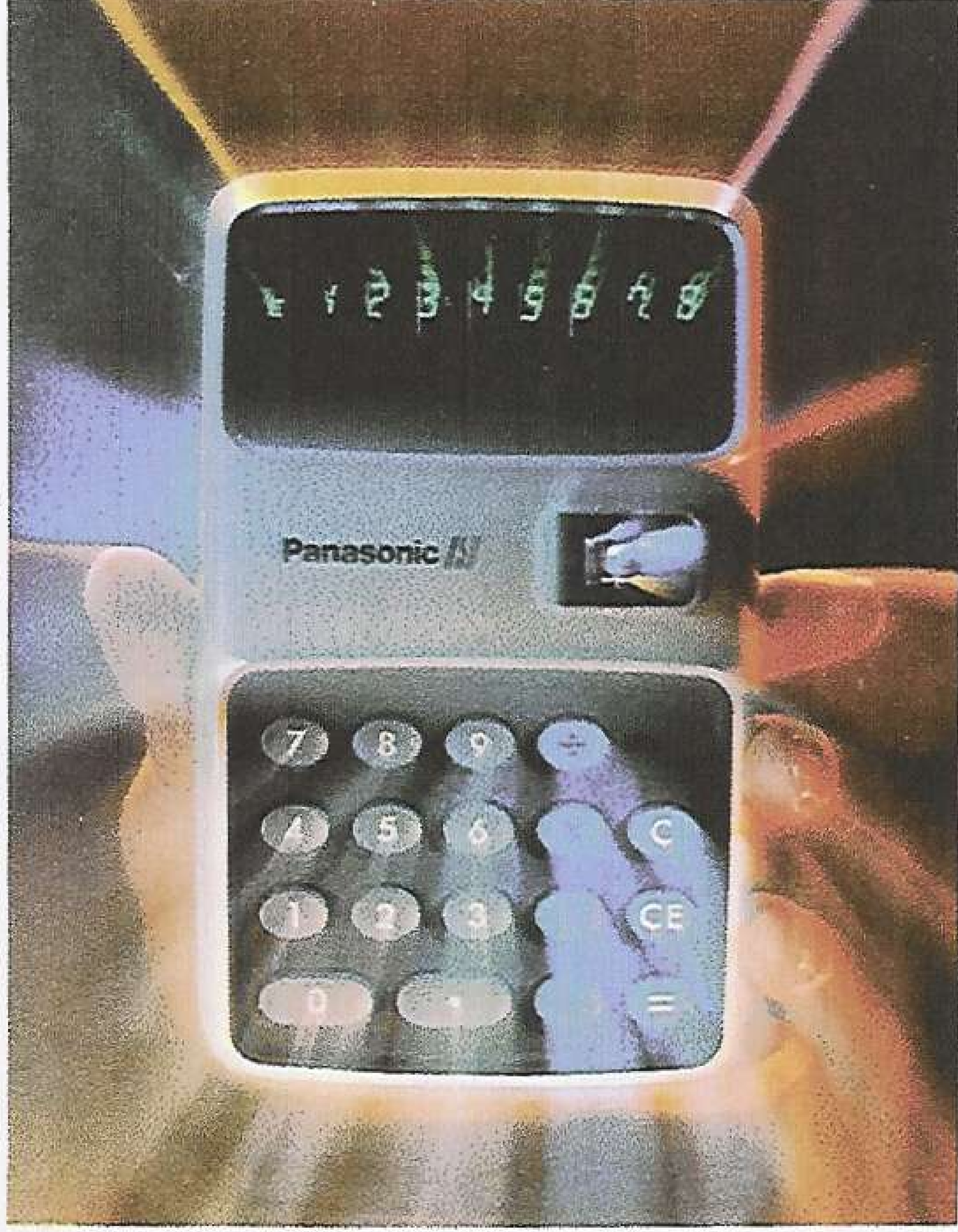


# Panasonic 850





## **Foreword**

Congratulations on your choice of the Panasonic Model JE-850 Electronic Calculator. It's a carefully crafted instrument that will serve you for years.

This instruction manual will show you how to get the most from your new Electronic Calculator.

The Model JE-850 is an advanced, fully modern calculator ideal for use in a store or office, at home or while travelling. After a few simple instructions, you'll be able to perform all of the calculations you probably require, easily and instantly.

The Panasonic Model JE-850 Electronic Calculator is a quality product of a company world-famous for excellence in electronics — Panasonic by Matsushita. The Model JE-850 incorporates the most recent advances in technology. Keep this instruction manual close at hand. By referring to it occasionally, you'll discover the new dimensions of convenience offered by the Panasonic Model JE-850.

## Features

### Underflow

When a calculation resulting in a decimal answer exceeds 8 digits, the answer will automatically shift to the right and drop off the least significant decimal digits, leaving the correct answer at 8 significant digits in the display. When a calculation has a whole number result with more than 8 digits, the proper answer is displayed multiplied by  $10^{-8}$  with an "E" symbol.

### Constant

Constant calculation in addition, subtraction, multiplication, and division can be simply and automatically performed.

### Automatic Clearing

The machine is automatically cleared when turned on.

### Fully Floating Decimal

All entries and answers fully float in display according to the number of decimals used in both.

**Suppressed Zeros**

For clear, accurate and speedy viewing, the non-significant zeros preceding the whole numbers in an answer are not displayed.

**Sign Correct Answers**

The correct sign for each negative answer is indicated in the display. Answers are algebraically correct.

**Components**

The component parts of the Panasonic Model JE-850 are MOS/LSI, diodes and transistors.

**Compact and Lightweight**

The Panasonic Model JE-850 weighs just 18 ounces and is so small it is easily operated while held in hand. A handy carrying strap and case are also provided.

**Battery Life Indicator**

When the power of the batteries is exhausted, a battery indicator lamp lights.

## **Keyboard**

**1. ON/OFF**

**2. Numerals**

Easy, quiet pushbuttons enter numbers into calculations using high quality reed switches.

**3. Decimal Point**

Decimals entered in sequence whenever required by pushing the decimal button.

**4. Function Keys**

For performing addition, subtraction, multiplication and division.

**5. Equal Key**

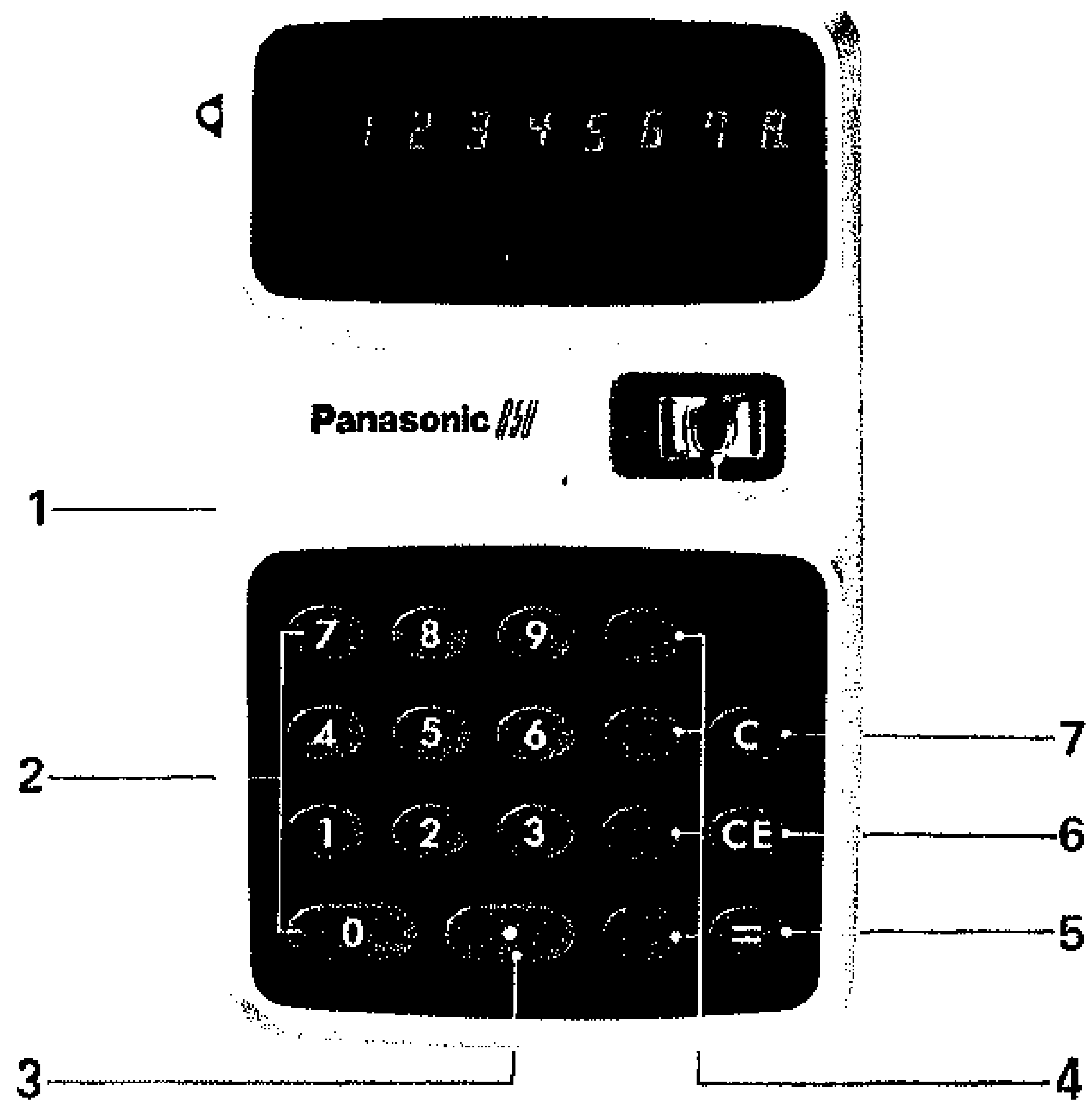
For obtaining the result of multiplication or division and for performing constant calculations in addition, subtraction, multiplication, and division.

**6. Clear Entry**

Clears only the display register.

**7. Clear All Key**

Clears the entire machine and resets the machine after overcapacity has occurred.



## Power Supply

1. **Operation on household power line**  
The AC adaptor and dry battery pack are used. The dry battery pack may be either with or without batteries. Batteries are not consumed when AC adaptor is used.
2. **Operation on dry batteries**  
The dry battery pack with four size "AA" dry cells is used.
3. **Operation on rechargeable battery pack (optional)**  
Rechargeable battery pack is used. Model JE-850 operates on the rechargeable battery pack while the battery is being recharged from the power line through AC adaptor (floating charge). If the power switch of Model JE-850 is turned off, the battery is recharged quicker (quick charge).



## Operating Time on Battery

### Power Sources Ambient temperature 68° F

Battery	Operating time
Rechargeable battery pack JL-032	Approx. 3 hours
Dry battery pack JL-012 with: Panasonic size AA alkaline dry cells	Approx. 5 hours
Dry battery pack JL-012 with: Panasonic size AA Hi-Top dry cells	Approx. 1½ hours

Use of highly reliable Panasonic batteries is recommended. Low-quality cells may leak, possibly damaging inside components of Model JE-850 as well as giving a shorter operating time.

### Notes on AC Adaptor

1. Model JE-850 Electronic Calculator is specially designed for exclusive use with the AC adaptor, Model JL-022. It should not be used with other AC adaptors.
2. The red lamp on the AC adaptor is lighted while it is charging the rechargeable battery pack. It starts flashing when the pack is nearing the full charge.

3. This charge pilot lamp is not lighted when the AC adaptor is used in combination with the dry battery pack.
4. If the calculator is not used for an extended period of time, disconnect the AC adaptor from the wall outlet. However, under normal line voltage conditions, no damage will result even if the adaptor is not disconnected.

### Notes on Dry Batter Pack

1. When the battery indicator dot appears on the display panel while Model JE-850 is being operated on the dry battery pack, immediately replace the dry cells with new ones.
2. The dry batteries are replaceable with size AA cells of any brand. Panasonic alkaline cell Model AM3 is economical for long operation of the calculator.
3. When leaving the dry battery pack unused for longer than a month, remove the batteries from the pack without fail. Otherwise, the batteries may corrode, possibly damaging the calculator.

## Pre-operation Instructions

1. Select the power source to be used, and connect the equipment securely.
2. Turn on the power switch.
3. The numbers to be entered should be a maximum of 8 digits.  
For a decimal, the decimal part should be 7 digits or less.
4. When results of a calculation exceed 8 digits, the answer will automatically shift to the right and drop off the least significant decimal digits. This allows the most significant digits to be displayed. When a calculated result has a larger integral part than 8 digits, the overflow lamp "E" lights near the left end of the display panel. In this case, the decimal point displayed shows the place of 100 million; therefore, an approximate answer with 8 most significant digits can be obtained by multiplying the displayed figure by 100 million (or  $10^8$  times). The "E" lamp also lights when model JE-850 is operated for dividing a number by zero. The displayed overflow can be

released by pressing the clear key  $\text{C}$ .

5. Press keys one by one, in the same order as you write down an arithmetic problem, and the answer will be displayed by pressing the  $\text{=}$  key.
6. Correction of erroneous entry  
When a number is entered erroneously, that number can be cancelled by pressing the clear entry key  $\text{CE}$  immediately thereafter. Then, operate the keyboard for entry of the correct number and continue the keyboard operation.
7. Correction of erroneously pressed operational key.  
When an operational key  $+$ ,  $-$ ,  $\times$  or  $\div$  is pressed erroneously, simply press the correct operational key and continue. However, the minus  $-$  key following a  $\times$  or  $\div$  key is regarded as the negative sign of a number to be entered next.
8. When two or more number keys are pressed simultaneously, two or more numerals may be displayed as superimposed.

## Calculations

Calculation	Keyboard Entry and Function Key	Displayed Answer
Addition 12+3+4.56	12 ⊕ 3 ⊕ 4.56 ○	19.56
Subtraction 12-2.5-1.47	12 ⊖ 2.5 ⊖ 1.47 ○	8.03
Addition and Subtraction 12.5-55-17.1+3.55	12.5 ⊖ 55 ⊖ 17.1 ⊕ 3.55 ○	-56.05
Multiplication 12.3x45.67	12.3 ⊗ 45.67 ○	561.741

Calculation	Keyboard Entry and Function Key	Displayed Answer
Division 100÷5.5	100 $\div$ 5.5 $=$	18.181818
Multiplication and Division 8x2÷4x2÷5	8 $\times$ 2 $\div$ 4 $\times$ 2 $\div$ 5 $=$	1.6
Constant Addition 12.3+45.6 98.7+45.6	12.3 $+$ 45.6 $=$ 98.7 $=$	57.9 144.3
Constant Subtraction 12.3-45.6 98.7-45.6	12.3 $-$ 45.6 $=$ 98.7 $=$	-33.3 53.1

Calculation	Keyboard Entry and Function Key	Displayed Answer
Constant Multiplication $12.3 \times 45.6$ $98.7 \times 45.6$	$12.3$ <input checked="" type="radio"/> $\times$ $45.6$ <input type="radio"/> $98.7$ <input type="radio"/>	560.88 4500.72
Constant Division $12.3 \div (-45.6)$ $98.7 \div (-45.6)$	$12.3$ <input checked="" type="radio"/> $\div$ <input type="radio"/> $-$ $45.6$ <input type="radio"/> $98.7$ <input type="radio"/>	-0.2697368 -2.1644736
Exponent Calculation $3.21^2$ $2^4$ $4 \times 5 \times 5 \times 5$ $12 \div 4 \div 4$	$3.21$ <input checked="" type="radio"/> <input type="radio"/> $2$ <input checked="" type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> or $2$ <input checked="" type="radio"/> <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/> $4$ <input checked="" type="radio"/> $5$ <input type="radio"/> <input type="radio"/> <input type="radio"/> $12$ <input checked="" type="radio"/> $4$ <input type="radio"/> <input type="radio"/>	10.3041 16. 500. 0.75

Calculation	Keyboard Entry and Function Key	Displayed Answer
Mixed Calculation $(-2) \times 12 \div 9$ $(1500 - 3) \div 25 \times 11$ $(25 \div 0.75 - 12) \times 4 + 80$	$\odot \ominus 2 \otimes 12 \oplus 9 \odot$ $1500 \ominus 3 \oplus 25 \otimes 11 \odot$ $25 \oplus .75 \ominus 12 \otimes 4 \oplus 80 \odot$	-2.6666666 658.68 165.33333
Underflow Calculation $2468.642 \times 135.79$	$2468.642 \otimes 135.79 \odot$	335216.89
Overflow Calculation $12345 \times 98765$	$12345 \otimes 98765 \odot$	E12.192539 (Means $12.192539 \times 10^8$ )

## Technical Specifications

COMPUTING ELEMENT:	MOS-LSI
POWER INPUT:	AC: 120V $\pm$ 10% 50Hz/60Hz (through AC adaptor JL-022) DC: 6V (four "AA" dry cells) ... JL-012 4.8V (NiCd battery pack) ... JL-032 (optional)
POWER CONSUMPTION:	AC ... Max. 6 Watts (AC operation) ... Max. 7 Watts (charging) DC ... Max. 1 Watt
TEMPERATURE:	32 to 104 degrees F (in operation)
DISPLAY:	Fluorescent display tubes
DECIMAL POINT SYSTEM:	Entry ... Floating Output ... Floating with automatic shift
CAPACITY:	8 digits, 7 decimal digits
CALCULATING SPEED:	Max. .1 sec.
DIMENSIONS:	W. 4 inches D. 6½ inches H. 1¾ inches
WEIGHT:	Calculator ... 18 oz. W/Battery 13 oz. W/O Battery AC adaptor JL-022 ... 8 oz.

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