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 re-
   chargeable 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

<table>
<thead>
<tr>
<th>Power Sources</th>
<th>Operating time</th>
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<tbody>
<tr>
<td>Rechargeable battery pack JL-032</td>
<td>Approx. 3 hours</td>
</tr>
<tr>
<td>Dry battery pack JL-012 with: Panasonic size AA alkaline dry cells</td>
<td>Approx. 5 hours</td>
</tr>
<tr>
<td>Dry battery pack JL-012 with: Panasonic size AA Hi-Top dry cells</td>
<td>Approx. 1 1/2 hours</td>
</tr>
</tbody>
</table>

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

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 key.

6. Correction of erroneous entry
   When a number is entered erroneously, that number can be cancelled by pressing the clear entry key 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 is pressed erroneously, simply press the correct key and continue. However, the minus key following a or 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

<table>
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<tr>
<th>Calculation</th>
<th>Keyboard Entry and Function Key</th>
<th>Displayed Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Addition 12+3+4.56</td>
<td>12 ⊕ 3 ⊕ 4.56 ⊗</td>
<td>19.56</td>
</tr>
<tr>
<td>Subtraction 12-2.5-1.47</td>
<td>12 ⊖ 2.5 ⊖ 1.47 ⊗</td>
<td>8.03</td>
</tr>
<tr>
<td>Addition and Subtraction 12.5-55-17.1+3.55</td>
<td>12.5 ⊖ 55 ⊖ 17.1 ⊕ 3.55 ⊗</td>
<td>-56.05</td>
</tr>
<tr>
<td>Multiplication 12.3x45.67</td>
<td>12.3 ⊗ 45.67 ⊗</td>
<td>561.741</td>
</tr>
<tr>
<td>Calculation</td>
<td>Keyboard Entry and Function Key</td>
<td>Displayed Answer</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>---------------------------------</td>
<td>------------------</td>
</tr>
<tr>
<td>Division 100÷5.5</td>
<td>100 ⊕ 5.5 ⊗</td>
<td>18.181818</td>
</tr>
<tr>
<td>Multiplication and Division 8x2÷4x2÷5</td>
<td>8 ⊕ 2 ⊕ 4 ⊕ 2 ⊕ 5 ⊗</td>
<td>1.6</td>
</tr>
<tr>
<td>Constant Addition 12.3+45.6</td>
<td>12.3 ⊕ 45.6 ⊗</td>
<td>57.9</td>
</tr>
<tr>
<td>98.7+45.6</td>
<td>98.7 ⊗</td>
<td>144.3</td>
</tr>
<tr>
<td>Constant Subtraction 12.3-45.6</td>
<td>12.3 ⊖ 45.6 ⊖</td>
<td>-33.3</td>
</tr>
<tr>
<td>98.7-45.6</td>
<td>98.7 ⊖</td>
<td>53.1</td>
</tr>
<tr>
<td>Calculation</td>
<td>Keyboard Entry and Function Key</td>
<td>Displayed Answer</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>---------------------------------</td>
<td>------------------</td>
</tr>
<tr>
<td><strong>Constant Multiplication</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.3x45.6</td>
<td>12.3 ( \times ) 45.6 ( \Box )</td>
<td>560.88</td>
</tr>
<tr>
<td>98.7x45.6</td>
<td>98.7 ( \Box )</td>
<td>4500.72</td>
</tr>
<tr>
<td><strong>Constant Division</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.3/(−45.6)</td>
<td>12.3 ( \div ) 45.6 ( \Box )</td>
<td>−0.2697368</td>
</tr>
<tr>
<td>98.7/(−45.6)</td>
<td>98.7 ( \Box )</td>
<td>−2.1644736</td>
</tr>
<tr>
<td><strong>Exponent Calculation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(3.21^2)</td>
<td>3.21 ( \times ) ( \Box )</td>
<td>10.3041</td>
</tr>
<tr>
<td>(2^4)</td>
<td>2 ( \times ) ( \times ) ( \times ) ( \times ) ( \Box ) or 2 ( \times ) ( \times ) ( \times ) ( \times ) ( \Box )</td>
<td>16.</td>
</tr>
<tr>
<td>4x5x5x5</td>
<td>4 ( \times ) 5 ( \Box ) ( \Box ) ( \Box ) ( \Box ) ( \Box )</td>
<td>500.</td>
</tr>
<tr>
<td>12÷4÷4</td>
<td>12 ( \div ) 4 ( \Box ) ( \Box ) ( \Box ) ( \Box ) ( \Box )</td>
<td>0.75</td>
</tr>
<tr>
<td>Calculation</td>
<td>Keyboard Entry and Function Key</td>
<td>Displayed Answer</td>
</tr>
<tr>
<td>-----------------------------------------</td>
<td>---------------------------------</td>
<td>------------------</td>
</tr>
<tr>
<td>Mixed Calculation</td>
<td>[Image 0x208 to 3370x2176]</td>
<td></td>
</tr>
<tr>
<td>((-2) \times 12 ÷ 9)</td>
<td>(\bigcirc \bigcirc 2 \bigodot 12 \bigodot 9)</td>
<td>-2.66666666</td>
</tr>
<tr>
<td>((1500 - 3) ÷ 25 \times 11)</td>
<td>(\bigcirc \bigcirc 1500 \bigodot 3 \bigodot 25 \bigotimes 11)</td>
<td>658.68</td>
</tr>
<tr>
<td>((25 + 0.75 - 12) \times 4 + 80)</td>
<td>(\bigcirc \bigcirc 25 \bigodot 0.75 \bigodot 12 \bigotimes 4 \bigoplus 80)</td>
<td>166.33333</td>
</tr>
<tr>
<td>Underflow Calculation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2468.642 \times 135.79)</td>
<td>(2468.642 \bigotimes 135.79)</td>
<td>335216.89</td>
</tr>
<tr>
<td>Overflow Calculation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(12345 \times 98765)</td>
<td>(12345 \bigotimes 98765)</td>
<td>(\text{E12.192539} (\text{Means 12.192539} \times 10^8))</td>
</tr>
</tbody>
</table>
## Technical Specifications

**Computing Element:** MOS-LSI

**Power Input:**
- **AC:** 120V ±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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YLEE 78004510
Printed in Japan