OPERATING INSTRUCTIONS

MONTGOMERY WARD

P200 ELECTRONIC MEMORY CALCULATOR

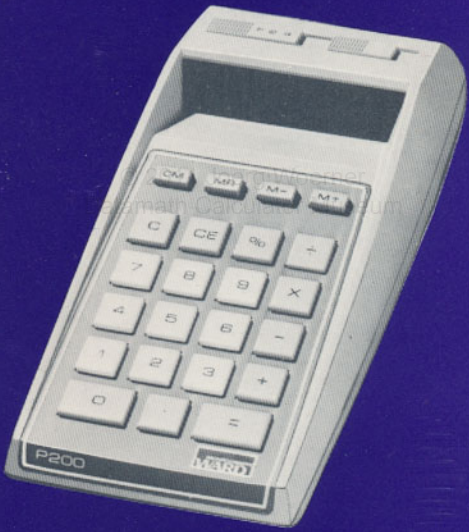

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TABLE OF CONTENTS

NOTE: Read battery considerations on pages 1 and 5 carefully before operating your calculator.

INTRODUCTION

Thank you for purchasing the Wards P200 Portable Memory Calculator. The P200 features a full memory system which stores and recalls numbers and also sums numbers in the memory. Using the percent key, problems such as taxes, discounts, and percentage calculations are easily solved. The constant feature is there when needed for multiplication or division by a constant and is ignored when not wanted.

Designed with state-of-the-art MOS/LSI integrated circuits and constructed with quality components, the P200 should provide years of reliable service.

Features

Full Memory System — Electronic memory stores and recalls subtotals and results of previous calculations. Numbers stored in the P200 memory can be used without re-entering the numbers into the calculator.

Percent Key — [%] key permits easy calculation of percentages, taxes, discounts and other similar problems.

Easy to Operate — Press the keys in the same order as the problem is written.

Fully Portable — Weighs less than 10 ounces and fits neatly in a briefcase or purse.

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

Rechargeable Batteries — 3 "AA" nickel-cadmium rechargeable batteries provide 4-6 hours of portable power whrn fully charged. Batteries can be fully recharged over night (10 hours) with the power switch in the OFF position using the AC 9130 Adapter/Charger included with your calculator.

Disposable Batteries – The P200 can also operate from 4 size "AA" alkaline or carbon-zinc batteries (non-rechargeable). Alkaline batteries are recommended for maximum life. Some carbon-zinc batteries have a tendency to leak when fully discharged, causing damage to the calculator. When using carbon-zinc batteries, therefore, be sure that the batteries are removed immediately when fully discharged. Battery life, using alkaline batteries, will be approximately 15 hours of normal use.

OPERATING INSTRUCTIONS

Switches

On Switch – Located on top right side of the calculator. Turns calculator on and off.

Decimal Select Switch – Located on top left side of the calculator. Selects floating (F) or 2 or 4 decimal places for the answer.

Keys

[0] – [9] **Keys** – Enters numbers (limit 8 digits).

[.] **Key** – Enters a decimal point.

[+] **Key** – Instructs the calculator to add the previous number or result to the following number.

[−] **Key** – Instructs the calculator to subtract the following number from the previous number or result – or assigns a negative sign to the following number.

[x] **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.

[=] **Key** – Instructs the calculator to complete the previously entered operations to provide the desired calculation result.

[C] **Key** – Clears (erases) information in calculator and display and sets calculator to zero for start of new problem. Pressing the [C] key does not clear the memory.

[CE] **Key** – Corrects an erroneous entry by clearing the last number entered manually on the keyboard.

[%] **Key** — Converts *keyboard* entry into percentage.

When used with the [x] key, the [%] key can be used to calculate any percentage of a displayed number, which then can be added to or subtracted from the original number. (See examples.)

When the [%] key is used with division, results are expressed as a percentage.

[M+] **Key** — Transfers or adds a displayed number to the electronic memory. Note the [M+] key *adds* the displayed number to any number previously stored in the memory rather than replacing the previous number.

[M−] **Key** — Subtracts the display from memory.

[MR] **Key** — Recalls the number in memory to the display. The information shown on the display is also retained by the memory until the [CM] key is depressed.

[CM] **Key** — Clears the calculator memory.

Display

Power On Indication — The presence of digits in the display is indication that power is on.

Minus Sign — Appears on left side of display to indicate negative numbers.

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 decimal numbers.

Memory In Use Indication — When a number is stored in the memory, a ⌜ will appear at the left side of the display.

If the stored number is negative, a − will be seen when the MR key is pressed.

Calculation Overflow Indication — When a calculated result is more than eight digits, the sign will appear at the left of the display and the calculator will not accept any more key instructions until the C key is pressed. The display will show the 8 most significant digits of the calculation. If the memory is in use when the overflow occurs, a − will be seen, and if a negative number recalled from memory is part of the calculation overflow, a − will be seen.

Note: When a calculation overflow occurs in memory, all keys are inoperative until CM or MR is depressed.

Battery Considerations

Calculator Operation — Before portable use, the batteries should be given a full charge of 10 hours with the switch in the OFF position. If during portable operation the display appears dim, calculations may be continued using the AC 9130 Adapter/Charger. Connect the adapter/charger to the calculator and charge for at least 1 minute with the power switch in the OFF position. Then turn the calculator on and continue calculations with the Adapter/Charger connected to the calculator. The calculator will not operate with the AC 9130 Adapter/Charger unless 3 nickel-cadmium batteries are properly installed according to the diagram in the battery cavity.

Low Battery Indication — When the batteries are low the display will appear dim. Recharge the nickel cadmium or replace the alkaline batteries when the display appears dim. Rechargeable batteries do lose their strength through non-use and after two or three months will require recharge before portable operation.

Periodic Recharging — For maximum rechargeable battery life, it is recommended that you operate the calculator as a portable and recharge the nickel cadmium batteries periodically. Although the calculator will operate indefinitely attached to the AC Adapter/Charger, the nickel cadmium batteries can lose their storage capability if they are not allowed to discharge occasionally.

WARNING: Avoid leaving the calculator on for several hours after the display appears dim. This will result in fully discharged batteries and may damage their ability to be recharged. This condition requires that the batteries be charged for an extended period of time (See inside back cover, paragraph 3).

Alkaline Battery Use – The P200 can be operated by 4 size "AA" alkaline batteries. To use alkaline batteries, remove the battery cover on the rear of the calculator and replace the 3 nickel cadmium batteries with 4 alkaline batteries.

CAUTION: Do not use the AC Adapter/Charger when operating the calculator with alkaline batteries.

OPERATING EXAMPLES

The following examples show how to operate the P200 and should be followed to become familiar with how the calculator works.

Before turning the calculator on, charge the batteries for one minute. The calculator can be used while the batteries are charging, but it is recommended that the batteries be charged for 10 hours before portable operation.

Place ON-OFF switch in the ON position, press the [C] key, and a zero should appear in the display. In all examples, the decimal select switch is set at F unless DEC:2 or DEC:4 is shown prior to the problem.

Addition and Subtraction

Example: 4.23 + 4 = 8.23

Enter	Press	Display
4.23	[+]	4.23
4	[=]	8.23

Example: 6 − 1.854 = 4.146

Enter	Press	Display
6	[−]	6.
1.854	[=]	4.146

Example: 12.32 − 7 + 1.6 = 6.92

Enter	Press	Display
12.32	[−]	12.32
7	[+]	5.32
1.6	[=]	6.92

Multiplication and Division

Example: 27.2 X 18 = 489.6

Enter	Press	Display
27.2	[x]	27.2
18	[=]	489.6

Example: 12 ÷ 5.2 = 2.3076923

Enter	Press	Display
12	[÷]	12.
5.2	[=]	2.3076923

Example: (4 X 7.3) ÷ 2 = 14.6

Enter	Press	Display
4	[x]	4.
7.3	[÷]	29.2
2	[=]	14.6

Using the [CE] Key

When an incorrect number is entered in a calculation, the [CE] (clear entry) key is used to clear the display so the correct number can be entered and the calculation continued.

Example: 5 + 3 = 8

Enter	Press	Display	Remarks
5	[+]	5.	
4		4.	4 pressed incorrectly
	[CE]	0.	Clear entry
3	[=]	8.	Enter correct number and complete calculation

Multiplication and Division by a Constant

The constant feature of the P200 allows multiplication or division of a series of numbers by one number. A number entered before the [x] key in multiplication and after the [+] key in division becomes the constant. The constant is erased by pressing the [c] key.

Also, a number entered before the [+] key becomes a constant add number and a number entered after the [-] key becomes a constant subtract number.

Example: 4 X 5 = 20, 4 X 6 = 24, 4 X 7 = 28

Enter	Press	Display
4	[x]	4.
5	[=]	20.
6	[=]	24.
7	[=]	28.

Example: 12 ÷ 2 = 6, 20 ÷ 2 = 10, 44 ÷ 2 = 22

Enter	Press	Display
12	[÷]	12.
2	[=]	6.
20	[=]	10.
44	[=]	22.

Example: 5 + 3 = 8, 5 + 9 = 14, 5 + 91 = 96

Enter	Press	Display
5	[+]	5.
3	[=]	8.
9	[=]	14.
91	[=]	96.

Example: 8 − 6 = 2, 25 − 6 = 19, 3 − 6 = −3

Enter	Press	Display
8	[−]	8.
6	[=]	2.
25	[=]	19.
3	[=]	−3.

Calculations With Positive and Negative Numbers

When performing multiplication or division, a negative value is assigned to a number by pressing the [−] key before entering the number.

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

Enter	Press	Display
	C −	0.
125	÷	−125.
5	+	−25.
3	× −	−0.
4	=	88.

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

Performing Mixed Calculations

The P200 can do mixed calculations — combinations of add +, subtract −, multiply ×, and divide ÷ very easily. Just press the keys in the same order as the problem is written.

Example: 12 × 13 ÷ 14 + 15 − 16 = 10.142857

Enter	Press	Display
12	×	12.
13	÷	156.
14	+	11.142857
15	−	26.142857
16	=	10.142857

Using the Percent Key

It's easy to find percentages with the P200's percent key. The following examples show how.

DEC:2

Example: 6% of $1,250.00

Enter	Press	Display
1250	[x]	1250.
6	[%]	75.

Example: $65.00 plus 5% tax

Enter	Press	Display	Remarks
65	[x]	65.	
5	[%]	3.25	Amount of tax
	[+]	68.25	Total

Example: $85.00 less 8% discount

Enter	Press	Display	Remarks
85	[x]	85.	
8	[%]	6.8	Amt. of discount
	[−]	78.2	Total

Example: $125.00 less 10% discount plus 4% tax.

Enter	Press	Display	Remarks
125	[x]	125.	
10	[%]	12.5	Amt. of discount
	[−] [x]	112.5	Discounted price
4	[%]	4.5	Amount of tax
	[+]	117.	Total

Subtotals and Grand Totals

DEC:F

Example:

	19.95	
	+12.95	
	32.90	
−10%	− 3.29	
	29.61	Subtotal
	+16.00	
	− 7.95	
	37.66	
−5%	− 1.883	
	35.777	Grand Total

Enter	Press	Display
	C CM	0.
19.95	+	19.95
12.95	×	32.9
10	%	3.29
	− +	29.61
16	−	45.61
7.95	=	37.66
	×	37.66
5	%	1.883
	−	35.777

Using the Memory

Storing and Recalling Numbers

Example: 2 X 3 = 6

Enter	Press	Display	Memory
	C CM	0.	0
2	X	2.	0
3	=	6.	0
	M+	6.	6
	C	0.	6
	MR	6.	6
	CM	6.	0
	M−	6.	−6
	MR	6.	−6
	C CM	0.	0

Example: $\frac{(2 \times 3) + (3 \times 5) + (6 \times 5)}{3} = 17$

Enter	Press	Display	Memory
2	X	2.	
3	= M+	6.	6
3	X	3.	6
5	= M+	15.	21
6	X	6.	21
5	= M+	30.	51
	C MR ÷	51.	51
3	=	17.	51

Note: The automatic constant must be cleared by pressing the C key before pressing the MR key.

ADDENDUM

Example: $\frac{1.23}{1.23 + 4.56 + 7.89} = \frac{.08991228}{100} = 8.991228\%$

Enter	Press	Display	Memory
	[C] [CM]	0.	0.
1.23	[M+]	1.23	1.23
	[C]	0.	1.23
4.56	[M+]	4.56	5.79
	[C]	0.	5.79
7.89	[M+]	7.89	13.68
	[C]	0.	13.68
1.23	[÷]	1.23	13.68
	[MR]	13.68	13.68
	[%]	0.1368	13.68
	[=]	8.991228	13.68

NOTE: After each entry into memory (M+, M-) of a number which contains a decimal, the [C] (Clear) key should be depressed.

Group and Grand Totals

Calculate the amount to be added/subtracted in memory using the [+], [−], [x] or [÷] keys and the [=] key; then depress [M+] to add to memory or [M−] to subtract from memory.

Example:

5		4	
+6		+2	
+7		+9	
18	+	15	= 33

Enter	Press	Display	Memory
5	[+]	5.	0
6	[+]	11.	0
7	[=]	18.	0
	[M+]	18.	18
4	[+]	4.	18
2	[+]	6.	18
9	[=]	15.	18
	[M+]	15.	33
	[MR]	33.	33

Multiplication and Division Using the Memory

DEC:2

Example:
4 X $11.99 = $47.96
6 X 2.97 = 17.82
12 X 0.98 = 11.76
Total = $77.54

Enter	Press	Display	Memory
	C CM	0.	0
4	X	4.	0
11.99	= M+	47.96	47.96
6	X	6.	47.96
2.97	= M+	17.82	65.78
12	X	12.	65.78
.98	= M+	11.76	77.54
	MR	77.54	77.54

DEC:F

Example: $\frac{\$1.98}{4} + \frac{\$2.27}{2} + \frac{\$4.98}{8} = \$2.25$

Enter	Press	Display	Memory
	C CM	0.	0
1.98	÷	1.98	0
4	= M+	0.495	0.495
2.27	÷	2.27	0.495
2	= M+	1.135	1.63
4.98	÷	4.98	1.63
8	= M+	0.6225	2.2525
	DEC:2	0.6225	2.2525
	C MR =	2.25	2.2525

Division by a Sum

DEC:F

Example: $\frac{1500}{15 + 25 + 35} = 20$

Enter	Press	Display	Memory
	C CM	0.	0
15	+	15.	0
25	+	40.	0
35	= M+	75.	75
1500	÷	1500.	75
	MR =	20.	75

Product of Sums

DEC:F

Example: (2 + 3) X (4 + 5) = 45

Enter	Press	Display	Memory
	C CM	0.	0
2	+	2.	0
3	= M+	5.	5
4	+	4.	5
5	= X	9.	5
	MR =	45.	5

Sum of Products

DEC:F

Example: (2 X 3) + (4 X 5) = 26

Enter	Press	Display	Memory
	[C] [CM]	0.	0
2	[X]	2.	0
3	[=] [M+]	6.	6
4	[X]	4.	6
5	[=]	20.	6
	[+] [MR] [=]	26.	6

Reciprocals

The reciprocal of the number displayed (that is, the quotient of the number divided into 1) can be calculated *without* re-entering the number. Just enter the number, press the [÷] key, and then press the [=] key twice.

DEC:F

Example: 1/6 = 0.1666666

Enter	Press	Display
	[C] [CM]	0.
6	[÷] [=] [=]	0.1666666

Example: $\frac{1}{2+3} = 0.2$

Enter	Press	Display
	C	0.
2	+	2.
3	÷	5.
	= =	0.2

Product/Quotient of Sums

DEC:F

Example: $\frac{(7+5) \times (6+4)}{(2+1)} = 40$

Enter	Press	Display	Memory
	C CM	0.	0
7	+	7.	0
5	= M+	12.	12
6	+	6.	12
4	×	10.	12
	MR	12.	12
	= CM M+	120.	120
2	+	2.	120
1	=	3.	120
	÷ MR	120.	120
	= ÷	0.025	120
	= =	40.	120

Squares

The square of the number displayed (that is, the product of that number multiplied by itself) can be determined *without* re-entering the number. Just press the [x] and [=] keys in sequence.

DEC:F

Example: $26^2 = 26 \times 26 = 676$

Enter	Press	Display
	[C] [CM]	0.
26	[x] [=]	676.

Example: $(5 + 4)^2 = 81$

Enter	Press	Display
	[C]	0.
5	[+]	5.
4	[=]	9.
	[x] [=]	81.

Raising Numbers to a Power

Raising numbers to a power is accomplished — when the exponent is a whole number — by pressing the [=] key the same number of times as the power, less one.

DEC:F

Example: $4^3 = 64$

Enter	Press	Display
	C	0.
4	x	4.
	=	16.
	=	64.

Example: $3^5 = 243$

Enter	Press	Display
	C	0.
3	x	3.
	=	9.
	=	27.
	=	81.
	=	243.

Square Root

The square root of any given number (that is, the number which multiplied by itself equals the given number) can be determined quickly by using a repetitive process.

$$\sqrt{N} \approx 1/2 \left(\frac{N}{Approx_1} + Approx_1 \right) = Approx_2$$

It is necessary to make an initial approximation, but the process rapidly approaches the correct answer. For example to find the square root of 26 to four decimal places, you begin with an approximation of 5.

DEC:4

Example: $\sqrt{26} \approx 5$ ($\approx$ means "approximately equal to")

$= 5.0990$

Enter	Press	Display	Memory
	C CM	0.	0
26	÷	26.	0
5	+	5.2	0
5	= ÷	10.2000	0
2	= M+	5.1000	5.1
26	÷	26.	5.1
	MR +	5.0980392	5.1
	MR = ÷	10.1980	5.1
2	= CM M+ C MR	5.099	5.099
	X =	25.9998	5.099

The last step is an accuracy check. For maximum accuracy, operate the calculator in the floating decimal mode and repeat the process until 8 significant digits are obtained.

Registration Card

Complete and mail the attached Registration Card within 10 days of purchase or receipt as a gift. Also record the serial number of your calculator below. Any correspondence concerning your calculator, include both model and serial number.

P200

Model No. **Serial No.** **Purchase Date**

In Case of Difficulty

1. Check to be sure the power switch is in the ON position. If no digits appear in the display, press the [c] key. If a number is displayed, but key entries or [c] key do not affect the display, switch the calculator OFF and then ON.

2. If no display appears or if the display appears dim, place the calculator on charge, making sure the charger is plugged into a working AC outlet. Before operating your calculator while charging, switch the calculator to OFF and charge for 1 minute. For maximum portable use, allow the calculator to charge fully (10 hours in OFF position) before using without the Adapter/Charger.

3. If the calculator has been left on for several hours after Low Battery Indication (Example: accidently left on overnight). Charge the calculator with the power switch in the OFF position for 16 hours before portable use. Or, the calculator may be used with the AC 9130 adapter/charger after allowing the batteries to charge with the power switch OFF for 1 hour.

4. Review the operating instructions to be certain calculations have been performed in the manner described in this book. Improper key sequences may result in incorrect calculations.

CAUTION: Use of other than the AC9130 AC Adapter/Charger may apply improper voltage to your calculator and cause damage.

If none of the above corrects the difficulty, return the calculator for repair to your nearest Montgomery Ward branch. Out of warranty repairs can be mailed directly to the factory Service Facility. Please include the nature of the difficulty experienced and return, include: name, address, city, state and zip code. As with any valued possession, please pack your calculator well and mail via parcel post insured to the location shown on the back cover.

1 ☐ Mr.
2 ☐ Ms.

Wards Calculator Registration Card

Mail within 10 days

TXI-8662

Owner's First Name | Initial | Last Name | Model No. | Serial No. | Purchase Date

Owner's Mailing Address | City | State | Zip

Please help us in planning other useful products by providing the following information:

Was Your Calculator a Gift?
1 ☐ Yes 2 ☐ No

Where the Calculator Will be Used (Check One)
1 ☐ Home
2 ☐ Occupation
3 ☐ School

Where Purchased?
1 ☐ Retail Store
2 ☐ Catalog

Your Occupation (Check One)
1 ☐ Engineer/Scientist
2 ☐ Businessman
3 ☐ Accountant
4 ☐ Farmer/Rancher
5 ☐ Student
6 ☐ Educator
7 ☐ Homemaker
8 ☐ Doctor/Lawyer
9 ☐ Banker/Financier
10 ☐ Other (Specify)

_____

Your Approximate Age
1 ☐ Under 18
2 ☐ 18-24
3 ☐ 25 and over

Would You Recommend This Calculator to a Friend?
☐ Yes ☐ No

P200 ELECTRONIC

PLACE
STAMP
HERE

WARDS (TXI) SERVICE FACILITY
P.O. BOX 22283
DALLAS, TEXAS 75222

1-YEAR GUARANTEE

Montgomery Ward guarantees this Electronic Calculator against defects in materials and workmanship, as follows:

For 1-year from date of purchase Montgomery Ward will repair or, at its option, replace any defective part free, including labor.

For service covered by this guarantee, return calculator to any Montgomery Ward branch with evidence of date of purchase.

Out of Warranty Repair Facility:

Wards (TXI) Service Facility
P.O. Box 22283
Dallas, Texas 75222

All correspondence regarding your calculator should include the model number and serial number found on the bottom of the calculator.

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