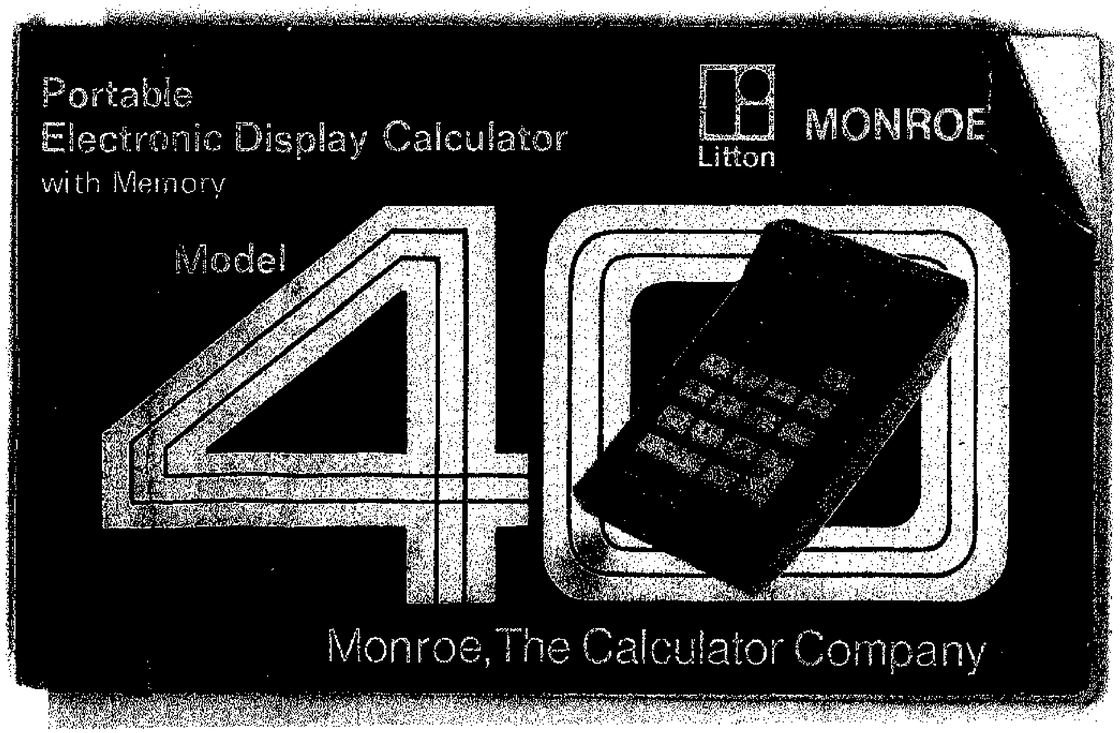
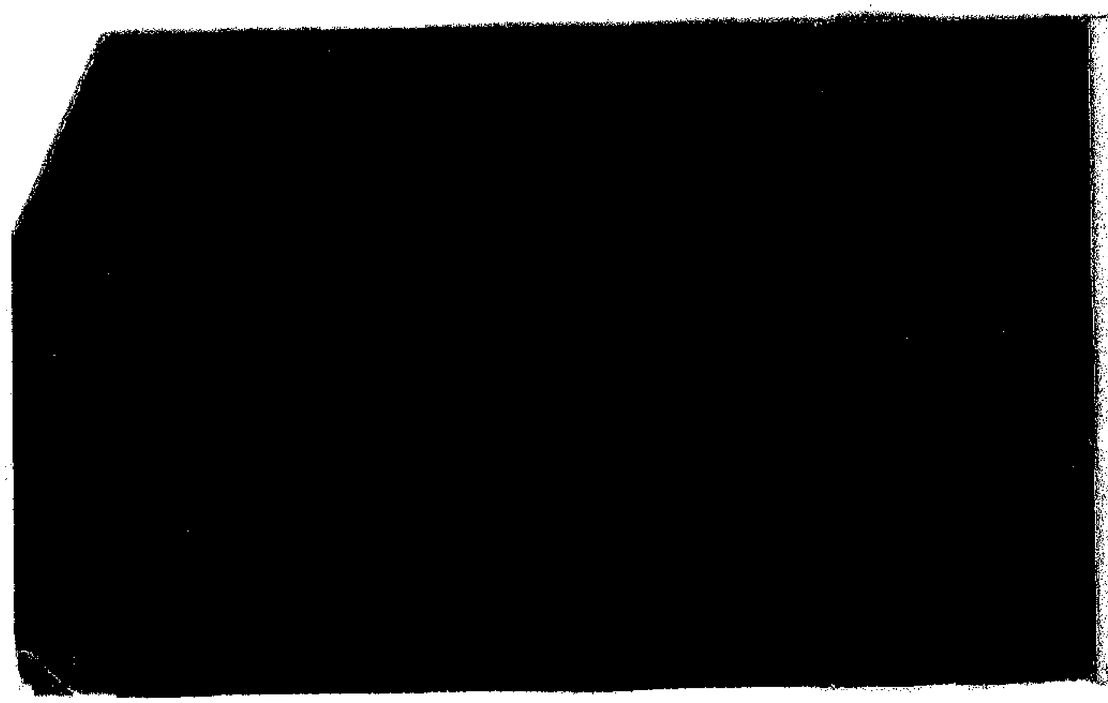

Portable
Electronic Display Calculator
with Memory
Litton
MONROE
Model
410
Monroe, The Calculator Company



Litton MONROE

Model **40**

Portable Electronic Display Calculator

with Memory

operating instructions

Monroe, The Calculator Company

GENERAL SPECIFICATIONS

Dimensions: Length 6 in. (15.2 cm); width 3.4 in. (8.6 cm); height 1.9 in. (4.8 cm)

Weight: 13.3 oz. (377 gm)

Primary Components: MOS/LSI

Operating Temperature: 32°F (0°C) to 104°F (40°C)

INTRODUCTION

Congratulations on your discriminating taste in calculators. In buying a Monroe Model 40, you have purchased the end result of meticulous quality workmanship backed by Monroe's 60-plus years of solid experience. Your Model 40 features a ten-digit display capacity; automatic constant multiplication and division, sequential and percent calculations, decimal selection of floating (F), and add-mode (+), and 0 through 6, automatic accumulation, repeat addition and subtraction, separate subtotal and total keys, provide true adding machine operation, zero suppression for longer operating time, overflow, underflow, reverse underflow, and a bright, large, glare-free planar display for maximum readability.

The spacious keyboard and the angle of the display facilitate desk-top as well as hand-held operation.

Once you have worked with Monroe's Model 40, you'll know why we take justifiable pride in this dynamic new product.

OPERATING CONTROLS

CLEAR AND CLEAR ENTRY KEY
Clears incorrect entries, a pending multiplication or division operation or an overflow condition.

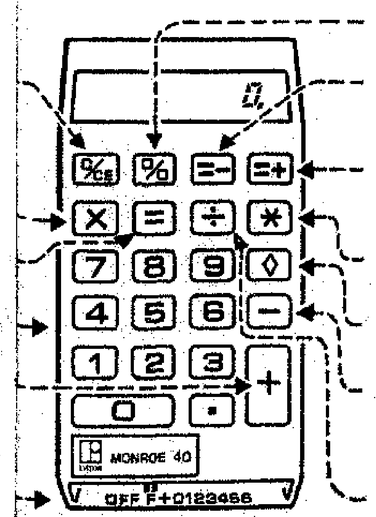
MULTIPLY KEY
Enters number in the display as a multiplicand or completes a calculation and sets up result as a multiplicand.

EQUALS KEY
Completes a multiplication or division operation.

NUMERIC ENTRY KEYS
Enter numbers and decimal point exactly as you would write them.

PLUS KEY
Adds entry to the add register. Repetitive depressions cause repeat addition. If depressed after a multiplication percentage operation, it adds the result to the multiplicand.

ON/OFF DECIMAL SELECTOR SWITCH
The Model 40 is turned on by moving the slide to any of the nine positions. Selections are F (full floating), + (add-mode) and 0 through 6.



When the Model 40 is turned on, it is automatically cleared and ready for use.

PERCENT KEY
Calculates percentages. Has add-on and discount capabilities.

EQUALS MINUS KEY
Completes a multiplication or division operation and subtracts result from the add register.

EQUALS PLUS KEY
Completes a multiplication or division operation and adds result to the add register.

TOTAL KEY
Displays contents of add register. Add register is cleared.

SUBTOTAL KEY
Displays contents of add register. Add register is not cleared.

MINUS KEY
Subtracts entry from add register.
Repetitive depressions cause repeat subtraction. If depressed after a multiplication percentage operation it subtracts result from the multiplicand.

DIVIDE KEY
Enters number in display as a dividend or completes a calculation and sets up result as a dividend.

OPERATING CHARACTERISTICS AND TECHNIQUES

DECIMAL SYSTEM

Entries may contain a maximum of 10 whole or nine decimal digits or any combination of whole or decimal digits up to a total of 10.

0 THROUGH 6

Results will contain the corresponding number of decimal places.

Example: Selector at 2

10.3875 x 9.2 = 95.57

F (FULL FLOATING)

The decimal point will automatically position itself in results to allow maximum decimal accuracy within the 10-digit display capacity, without the loss of whole number digits.

Examples: Selector at F

1 ÷ 3 = 0.333333333

12,345,678 x 0.12345678 = 1524157.653

+ (ADD-MODE)

The last two digits of an entry will automatically be displayed as decimals unless an actual decimal key depression is made in a position other than the second place. If a result is obtained at this setting by depressing the [=], [=+], [=-], or [%] key, it will automatically be rounded to two decimal places. This special setting is designed for convenience when working with monetary values.

Example: Decimal at +

$ 13.75
145.00
$158.75

Numbers are set as 1375+, 14500+ and displayed as 13.75, 145.00. If the two zeroes in 14500 are not entered, the displayed number would be 1.45. An alternate method of entering whole dollar amounts such as $145.00 is to depress the decimal point key instead of entering two zeroes.

UNIT/PRICE MODE

With the selector at +, a number entered with the multiply or divide key will be considered as a whole number unless an actual decimal entry is made. The last

continued

two digits of the second number will automatically be entered as decimals. This feature is designed for convenience when calculating the total price of a number of items; e.g., in an invoice.

Example: Decimal at +

6 pieces at $6.47 ea. = $38.82

8 lbs. at $1.19 per lb. = $9.52

Enter	Depress	Display
6	x	6.00
647	=	38.82
8	x	8.00
119	=	9.52

DECIMAL FLEXIBILITY

The decimal setting may be changed at any time without affecting the accuracy of a number being entered or a number already stored in the calculator.

UNDERFLOW

In results containing a combination of whole or decimal digits in excess of the display capacity of 10, the decimal will shift to accommodate the 10 most significant digits not to exceed 10 whole numbers.

Example: 123456.7891 x 278.01 = 34322221.9377

Instructions: Decimal at 4

Enter	Depress	Display
123456.7891	x	123456.7891
278.01	=	34322221.94

REVERSE UNDERFLOW

For small fractional results, an insufficient decimal setting is overridden to show as many significant digits as possible, so the Model 40 will always provide an accurate result.

Example: 2 ÷ 625

Instructions: Decimal at 2

Enter	Depress	Display
2	÷	2.00
625	=	0.0032

Without reverse underflow, result would have been displayed as 0.00

INSIGNIFICANT ZERO SUPPRESSION

Unnecessary zeroes to the left of the most significant displayed digit are not displayed.

AUTOMATIC 5/4 ROUNDOFF

In all multiplication, division and percent operations, the last digit displayed is increased by one if the following digit would have been five or greater.

Example: 12.75 x 2.385 = 30.40875

Instructions: Decimal at 2

Enter	Depress	Display
12.75	x	12.75
2.385	=	30.41

APPLICATIONS

ADDITION/SUBTRACTION WITH REPETITIVE ENTRIES

EXAMPLE:

1.23
1.23
4.56
−7.89
−7.89
−8.76 credit balance

INSTRUCTIONS:

Decimal at +
Depress [*]

Enter	Depress	Display
123	[+]	1.23
	[+]	1.23
456	[+]	4.56
789	[−]	7.89
	[−]	7.89
	[*]	−8.76

ADDITION INTERRUPTED BY MULTIPLICATION

EXAMPLE:

2.25
3.35
4.45 → 18 x 2.6 = 46.80
interruption

5.55 ← return to addition
15.60

INSTRUCTIONS:

Decimal at +
Depress [*]

Enter	Depress	Display
225	[+]	2.25
335	[+]	3.35
445	[+]	4.45
18	[x]	18.00
2.6	[=]	46.80
555	[+]	5.55
	[*]	15.60

NOTE: Both addition and subtraction can be interrupted at any time in order to perform any multiplication or division operation.

MULTIPLICATION AND DIVISION

EXAMPLE:

45.67 x 1234.56 = 56,382.36

INSTRUCTIONS:

Decimal at 2

Enter	Depress	Display
45.67	[x]	45.67
1234.56	[=]	56,382.36

EXAMPLE:

375 ÷ 500 = 0.75

INSTRUCTIONS:

Decimal at 2

Enter	Depress	Display
375	[÷]	375.00
500	[=]	0.75

CONSTANT MULTIPLICATION AND DIVISION

EXAMPLE: 1.65 x 211 = 348.15
1.65 x 59 = 97.35
1.65 x 67 = 110.55

INSTRUCTIONS:

Decimal at 2

Enter	Depress	Display
1.65	[x]	1.65
211	[=]	348.15
59	[=]	97.35
67	[=]	110.55

EXAMPLE: 48 ÷ 3
12 ÷ 3
10 ÷ 3

INSTRUCTIONS:

Decimal at 2

Enter	Depress	Display
48	[÷]	48.00
3	[=]	16.00
12	[=]	4.00
10	[=]	3.33

SEQUENTIAL CALCULATIONS

EXAMPLE:

$7 \div 2 \div 1.6 \times 5 \times 2 = 21.88$

INSTRUCTIONS:

Decimal at 2

Enter	Depress	Display
7	÷	7.00
2	÷	3.50
1.6	x	2.1875
5	x	10.9375
2	=	21.88

RAISING A NUMBER TO A POWER

EXAMPLE:

$3^2 = 9$
$3^3 = 27$
$3^4 = 81$

INSTRUCTIONS:

Decimal at F

Enter	Depress	Display
3	x	3.
	=	9.
	=	27.
	=	81.

REVERSE UNDERFLOW

EXAMPLE:

$2 \div 625 = 0.0032$

INSTRUCTIONS:

Decimal at 2

Enter	Depress	Display
2	÷	2.00
625	=	0.0032

PERCENT CALCULATIONS

EXAMPLE: What is 16% of 150?

INSTRUCTIONS:

Decimal at 2

Enter	Depress	Display
150	×	150.00
16	%	24.00

EXAMPLE: What % of 150 is 60?

INSTRUCTIONS:

Decimal at 2

Enter	Depress	Display
60	÷	60.00
150	%	40.00

EXAMPLE: What is the amount of discount and the cost of an article marked $30.45 less 12.5%?

INSTRUCTIONS:

Decimal at 2

Enter	Depress	Display	
30.45	×	30.45	
12.5	%	3.81	(discount)
	−	26.64	(cost)

EXAMPLE: What is the tax and the total cost of an article costing $25.20? Tax is 4%.

INSTRUCTIONS:

Decimal at 2

Enter	Depress	Display	
25.20	×	25.20	
4	%	1.01	(tax)
	+	26.21	(total cost)

NOTE: Depression of + or − after a percent calculation does not affect the contents of the add register.

PERCENTAGE DISTRIBUTION WITH 100% PROOF

EXAMPLE:

	Sales in Thousands	Percent of Total Sales
Detroit	$ 123	9%
Boston	456	33
New York	789	58
	$1368	100%

INSTRUCTIONS:

Decimal at 4

Depress [*]

Enter	Depress	Display
123	+	123.0000
456	+	456.0000
789	+	789.0000
	÷	789.0000
	*	1368.0000
	=+	0.5768
456	=+	0.3333
123	=+	0.0899
	*	1.0000

PERCENTAGE DISTRIBUTION WITH 100% PROOF UTILIZING % KEY

EXAMPLE:

Use same figures from previous problem

INSTRUCTIONS:

Decimal at 2

Depress [*]

Enter	Depress	Display
123	+	123.00
456	+	456.00
789	+	789.00
	÷	789.00
	*	1368.00
	%	57.68
	+	57.68
456	%	33.33
	+	33.33
123	%	8.99
	+	8.99
	*	100.00

CALCULATING SIMPLE INTEREST ON SAVINGS ACCOUNT

EXAMPLE:

Calculate the simple interest on an account of $1500 at an interest rate of 7.5% for 160 days using a 360-day year.

INSTRUCTIONS:

Decimal at 2

Enter	Depress	Display
160	÷	160.00
360	x	0.444444444
1500	x	666.6666667
7.5	%	50.00

COMPOUND INTEREST

EXAMPLE:

Decimal at F

If $1000 is invested for 2½ years at 7% compounded quarterly, find the compound interest.

Formula: $S = P(1 + i)^n - P$

where: S = compound interest

P = principle ($1000)

i = quarterly interest rate $\frac{0.07}{4}$

n = 4 quarters x 2.5 years = 10

INSTRUCTIONS:

Decimal at F

Enter	Depress	Display	
.07	÷	0.07	
4	=+	0.0175	
1	+	1.	
	*	1.0175	
	x	1.0175	
	=	1.03530625	
	=	1.053424109	
	=	1.071859031	
	=	1.090616564	
	=	1.109702354	
	=	1.129122145	
	=	1.148881783	
	=	1.168987214	
	=	1.18944449	(10th power)
	x	1.18944449	
1000	−	1000.	
	=+	1189.44449	
	*	189.4444899	(compound interest)

MARK UP

Mark up is a percentage of profit and is usually figured on the selling price. If the selling price is $15.00 and the cost is $12.00, what is the percentage of mark up?

Formula: $\frac{15 - 12}{15}$

INSTRUCTIONS:

Decimal at 2

Enter	Depress	Display
15	+	15.00
	÷	15.00
	=	1.00
12	−	12.00
	*	3.00
	%	20.00

INVOICING

EXAMPLE:

12 items @ $1.25
5 items @ $5.25
6 items @ $5.55

Discount rate = 15%
Tax = 5%
Freight charge = $6.33

Find: extensions
discount amount
net
tax amount
gross billing
grand total

INSTRUCTIONS:

Decimal at +

Depress [*]

Enter	Depress	Display	
12	x	12.00	
125	=+	15.00	
5	x	5.00	
525	=+	26.25	
6	x	6.00	
555	=+	33.30	
	*	74.55	(total of extensions)
	x	74.55	
15	%	11.18	(discount amount)
	−	63.37	(net)
	x	63.37	
5	%	3.17	(tax amount)
	+	66.54	(gross billing)
	+	66.54	
633	+	6.33	(freight charge)
	*	72.87	(grand total)

GENERAL INFORMATION

Accessories

- Four 1.5 v. size AA alkaline batteries
- Converter/Charger for operation on household AC current
- Nickel Cadmium rechargeable batteries
- Auxiliary battery charge receptacle
- Soft contoured zippered cover

Battery Life

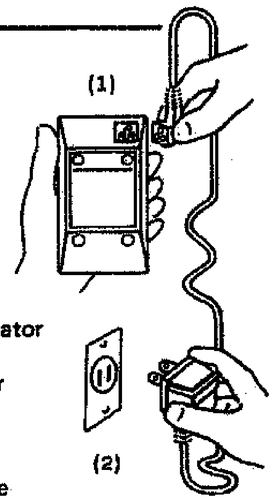
Alkaline batteries: average operating time 20 hours depending on batteries used*
Nickel Cadmium rechargeable batteries: operating time 9 hours on a full charge

Battery Discharge

When the Model 40 is approaching discharge, the display will flicker and then blank. No erroneous calculation will result when the batteries approach discharge. However, this is your signal to replace or recharge the batteries.

*For longer battery life, replacement batteries such as Mallory MN1500 or Eveready E91 should be used.

AC Operation with Converter/Charger



Connect the Converter/Charger to your Model 40 making sure the three holes in the plug align with the three prongs in the calculator (illus.1). Then connect Converter to an appropriate AC outlet (illus.2). Operation on AC current can take place with or without batteries in place.

Charging the Model 40

Connect the Converter/Charger to your Model 40 making sure the three holes in the plug align with the three prongs in the calculator (illus.1). Then connect Converter to an appropriate AC outlet (illus.2). Charging time ranges from 12 to 14 hours. The calculator can be used while being recharged.

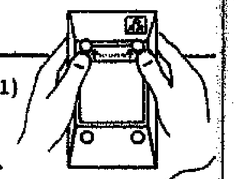
Warning: Never leave the Converter/Charger connected to the calculator when not connected to an AC outlet since this will cause battery discharge.

BATTERY REPLACEMENT

Opening the Calculator

Open the back of the calculator by sliding the two round feet in the direction of the arrows (illus.1). Remove bottom panel and batteries.

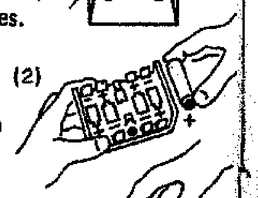
(1)



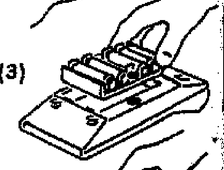
Alkaline Battery Replacement

Remove old batteries and insert new batteries in the battery cartridge making sure that the positive (+) and negative (–) symbols on the batteries correspond to the symbols on the cartridge (illus.2). Insert battery cartridge in calculator making sure that the ● symbol on the cartridge aligns with the ● symbol on the Model 40 case (illus.3).

(2)



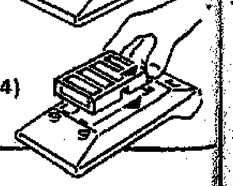
(3)



Rechargeable Battery Replacement

To replace the rechargeable batteries, place the sealed cartridge into the Model 40 making sure that the ▶ symbol on the cartridge aligns with the ▶ symbol on the Model 40 case (illus.4).

(4)



CARE OF CALCULATOR

The soft zippered cover protects the keyboard and electronic components from dirt and dust when the calculator is not in use. Always be sure the calculator is off before putting it in its cover.

SERVICE

With the 1600 factory-trained service personnel in the United States and Canada, Monroe enjoys a well-deserved reputation for prompt and expert service. Technical service, should the need arise, is available through your local Monroe branch office.

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Litton **MONROE**

Monroe, The Calculator Company

Orange, New Jersey, U.S.A. · Toronto, Canada · Zurich, Switzerland

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