Quality Assurance Department

LITRONIX, INC.
PO Box 6000
Cupertino, CA 94014

A GUIDE TO
MACHINE
CALCULATION

1 **2**

3 **4** **5**

litronix 1101P
electronic pocket calculator

+ **−** **×**

÷ **%**
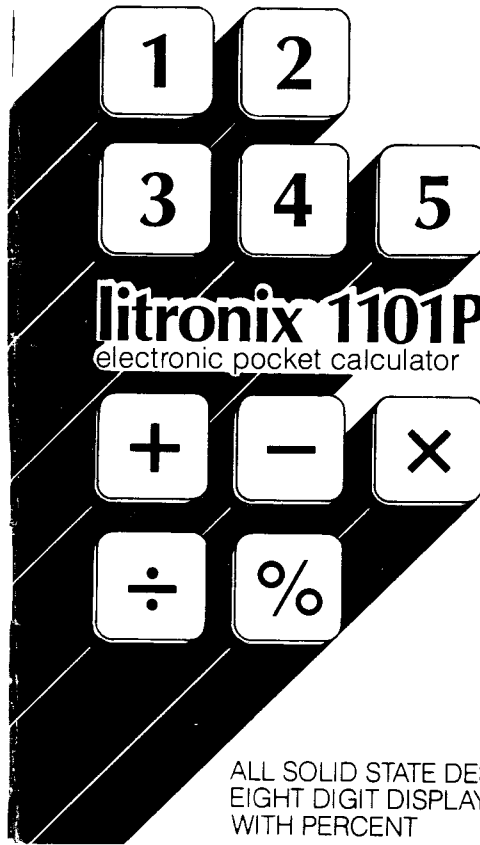
ALL SOLID STATE DESIGN
EIGHT DIGIT DISPLAY
WITH PERCENT

LITRONIX 1101P

Thank you for purchasing the Litronix 1101P personal calculator. The Litronix 1101P is made by the people who make the insides of many of the world's electronic hand calculators and digital watches. In fact, we supply 20% of the laboratory-grown (LED) crystals that light the numbers. We also design and supply the circuits that tie everything together. Because of this world wide technological and manufacturing leadership, the Litronix 1101P is a personal calculator that combines top quality and good value to serve you.

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- **Eight Digit Display**—Solid-state light emitting diode display produces bright, long lasting presentation of numerical entries.

- **Full Floating Decimal**—Calculator automatically positions decimal point to maintain full 8 digit accuracy.

- **Arithmetic Logic**—Allows entry sequence to follow adding machine mode. This is the mathematical method of problem solving.

- **Percent Key**—Provides for percentage add-on, discount, markup and yield calculations.

- **Overflow Indicator**—Display indicator notes when calculation exceeds 8-digit capacity.

- **Chain Calculations**—Allows for the completion of a series of calculations without having to write down intermediate answers.

- **Rugged Construction**—Bright 8-digit, solid state light emitting diode display, integrated circuitry, and complete solid state dependability.

- **Throw Away Batteries**—This calculator uses three AA penlight batteries for up to 8 hours of continuous operation. Up to 16 hours of continuous operation can be expected when Alkaline Batteries are used.

- **Optional A.C. Adapter**—This unit is available for use as an option. The internal batteries are automatically disconnected to conserve battery life when the A.C. Adapter is in use.

ON/OFF SWITCH

■ ON
● OFF   Switch in up position turns power on. When power is turned on, the calculator is cleared and ready for operation. To save batteries, always return to OFF position when not in use.

KEYS

C   Clears the calculator and returns the display to 0.

CE   Clears the display or last entry, but not previously entered numbers or operations.

**0** – **9**   Enters respective numbers into the display.

•   Enters decimal point.

×   Directs calculator to multiply the display by the following number and display intermediate results in a chain multiplication. To multiply a negative number, press **–=** then **×** to enter the negative number.

÷   Directs calculator to divide the display by the following number and display intermediate results in a chain division. To divide a negative number, press **–=** then **÷** to enter the negative number.

+=   Directs calculator to add the display to a previous number when used in addition operations. Successive depressions of this key without entering a new number will add the last entry to the display each time. In multiplication or division operations, this key completes the operation.

–=   Directs calculator to subtract the display from a previous number when used in subtraction operations. Successive depressions of this key without entering a new number will subtract the last entry from the display each time. In multiplication or division operations, this key completes the multiplication or division by a negative number.

%   Performs percentage calculations in conjunction with multiplication and division operations. The original figure is saved to obtain an add-on by using **+=** or a discount by using **–=** .

Minus Sign—Appears to left of display to indicate negative number.

Decimal Point—The calculator automatically positions the decimal point to maintain maximum floating point accuracy.

Overflow Indication—An "E" will appear at the leftmost position of the display to indicate that the result of a calculation exceeds the eight digit capacity of the calculator. A depression of **C** or **CE** will clear the overflow condition.

BATTERY HINTS

BATTERY INSTALLATION—Remove the battery cover which is located on the back of the calculator, by placing thumb on the grooves at the cover bottom and sliding it away from the case. Insert three AA batteries in proper sequence per the battery outline imprinted in the battery compartment. Replace the battery compartment cover.

BATTERY LIFE—The calculator is designed to operate on 3 AA penlight batteries, which will provide up to 8 hours of continuous use. For the best cost/power ratio for your unit, use leakproof Alkaline Batteries, which will improve operating life up to 16 hours of continuous use. When the display becomes dim or calculator refuses to turn on, the batteries should be replaced.

OPTIONAL A.C. ADAPTER OPERATION—An optional Litronix A.C. Adapter/Battery Eliminator (Model #102 for 110 volt operation and Model #104 for 230 volt operation) is available that will allow the calculator to be used with normal A.C. power. When the adapter is used, the internal batteries are automatically disconnected to conserve battery life.

1. Addition

$75 + 8 = 83$

2. Subtraction

$18.07 - 10 - 3.98 = 4.09$

3. Multiplication

$6 \times 7 = 42$

$(-8) \times 9 = -72$

$1.41 \times (-3) = 4.23$

4. Division

11 ÷ 3 = 3.6666666

| `C` | 11 | `÷` | ▓▓▓▓▓ |
| | 3 | `+ =` | ▓▓▓▓▓ |

(−105) ÷ (−5) = 21

| 105 | `− =` | `÷` | ▓▓▓▓▓ |
| 5 | `− =` | | ▓▓▓▓▓ |

5. Chain calculations

$$\frac{(60 + 13) \times 7}{5} - 4 = 98.2$$

`C`	60	`+ =`	▓▓▓▓▓
	13	`+ =`	▓▓▓▓▓
`×`	7	`÷`	▓▓▓▓▓
	5	`+ =`	▓▓▓▓▓
	4	`− =`	▓▓▓▓▓

6. Repetitive addition

4 + 6 + 6 + 2 + 3 + 3 = 24

| `C` | 4 | `+ =` | 6 | `+ =` | `+ =` | ▓▓▓▓▓ |
| | 2 | `+ =` | 3 | `+ =` | `+ =` | ▓▓▓▓▓ |

7. Repetitive subtraction

100 − 5 − 6 − 6 − 6 = 77

| `C` | 100 | `+ =` | 5 | `− =` | | ▓▓▓▓▓ |
| | 6 | `− =` | | `− =` | `− =` | ▓▓▓▓▓ |

8. Percent operations

$1.75 + 6% = 1.855

| `C` | 1 `•` 75 | `×` | 6 | `%` | ▓▓▓▓▓ |
| | | | | `+ =` | ▓▓▓▓▓ |

.79 − 13% = .6873

| `C` | `•` 79 | `×` | 13 | `%` | ▓▓▓▓▓ |
| | | | | `− =` | ▓▓▓▓▓ |

85 × 4.5% = 3.825

| `C` | 85 | `×` | 4 `•` 5 | `%` | ▓▓▓▓▓ |

1.75 ÷ 15% = 11.666666

| `C` | 1 `•` 75 | `÷` | 15 | `%` | ▓▓▓▓▓ |

9. Result overflow:

60000 × 8000 = 480000000 (9 digits)

`C`	60000	`×`	▓▓▓▓▓
	8000	`+ =`	▓▓▓▓▓
		`CE`	▓▓▓▓▓

10. Clear entry

6 × 123 = 738

`C`	6	`×`	122	`CE`	▓▓▓▓▓
			124	`CE`	▓▓▓▓▓
			123	`+ =`	▓▓▓▓▓

1. Balancing the checkbook:

Deposit	Withdrawal	Balance
C		■
200●76 +=		■
205●55 +=		■
	13●75 −=	■
	8●49 −=	■
	1●35 −=	■
55●05 +=		■
	10●29 −=	■

2. A pair of shoes regularly selling for $40.00 is now on sale at a 20% discount. How much does Fred pay to get this pair of shoes if there is a 6% sales tax? (Answer: $33.92)

		C	■
regular price	40	×	■
discount rate	20	%	$ discount ■
		−=	sale price ■
tax rate	× 6	%	tax amount ■
		+=	total cost ■

3. Valerie is figuring the total of her shopping cart in a market.

C	●89 +=		■
	●50 +=		■
	2●05 +=		■
	●33 +=		■
	2 +=		■
store coupon	●07 −=	total	■

4. Total cost of buying a new car plus monthly payments.

window price = $4,258.00
sales tax = 6%
trade-in allowance = $795.00
license fee = $59.00
interest rate = 10% on original balance
pay back period = 36 months

total cost of car = $4155.23
monthly payments = $115.42

C	4258	×	■
	6	%	tax ■
		+=	total price ■
	795	−=	trade in ■
	59	+=	license ■
×	10	%	interest ■
		+=	total cost financed ■
		÷	
	36	+=	monthly payment ■

5. John works at $5.00 per hour. On his time card, there are 40 regular hours and 10 overtime hours. If overtime rate is 1.5 times regular rate, what is the amount of John's gross pay for this week? (Answer: $275)

	C				
overtime hours	10	×			▓
overtime factor	1.5	+ =			▓
regular hours	40	+ =		×	▓
hourly rate	5	+ =			▓

6. John's vacation time accrues at the rate of 5/6 of a working day per month. After 2 years and 3 months employment without taking a vacation, how many days have been accrued? (Answer: 22.5 days). At the rate of $5.00 per hour, how much money is his vacation time equivalent to? (Answer: $900)

years	C	2	×		▓
months in a yr.		12	+ =		▓
months		3	+ =	months employment	▓
accruing rate	×	5	÷		▓
		6	×	days accrued	▓
8 hrs/day		8	×	hours accrued	▓
hourly rate		5	+ =	$	▓

7. Unit price comparison.
   Which is a better buy?
   $1.89 for 16 oz, or .59 for 7 oz ?

| C | 1●89 | ÷ | 16 | + = | $/oz | ▓ |
| C | ●59 | ÷ | 7 | + = | $/oz | ▓ |

Thus, the smaller size is actually less expensive— 8¢ per ounce versus 11¢ per ounce.

8. Filling a swimming pool.
   How much water is needed to fill the Thomas' new swimming pool? Its dimensions are 30' × 15' × 6' deep. Note that a cubic foot of water is equal to 7.48 gallons (Answer 20,196 gallons). How much will it cost if water runs 200 gallons per dollar? (Answer $100.98)

C	30	×	15	×		▓
	6	×	7●48	+ =	gallons	▓
		÷	200	+ =		▓

9. Loan payment schedule.

Terry and Jane purchased a new sofa with $300 borrowed from the credit union. The interest rate was ¾ of a percent a month on the unpaid balance (.75%). How much of their payments will be going to pay off the loan, and how much for interest if they pay $30 per month?

First Month

C	300	×	•	75	%	interest	▮
					+ =	after add on	▮
				30	− =	balance due after payment	▮

Second Month

	×	•	75	%	interest	▮
				+ =	after add on	▮
			30	− =	balance due after payment	▮

Third Month

	×	•	75	%	interest	▮
				+ =	after add on	▮
			30	− =	balance due after payment	▮

et cetera

10. Temperature conversion.

Convert 37° centigrade to farenheit. (Answer 98.6°F)

$$F = \tfrac{9}{5}C + 32$$

C	·	37	×	9	▮
	÷	5	+ =		▮
		32	+ =		▮

Convert 212° farenheit to centigrade. (Answer 100°C)

$$C = (F - 32) \times 5 \div 9$$

C		212	+ =	▮
		32	− =	▮
	×	5		▮
	÷	9	+ =	▮

11. Geometry

Area of a triangle

$$A = \frac{b \times h}{2} = 12 \text{ square inches}$$

h = 6

b = 4

A = ?
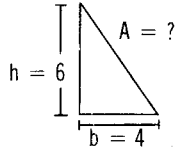
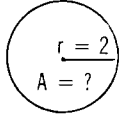| C	4	×	■■■■
	6	÷	■■■■
	2	+ =	■■■■

area

Area of a circle

$$A = \pi \times r \times r = 12.56636 \text{ square inches}$$

(π = 3.14159 Approximately)

r = 2

A = ?

C	3 ⊙ 14159	×	2	■■■■
	× 2	+ =		■■■■

area

LITRONIX 1101P GUARANTEE REGISTRATION

TO REGISTER YOUR CALCULATOR UPON PURCHASE,

COMPLETE AND MAIL TO: LITRONIX, INC., P.O. BOX 6000, CUPERTINO, CALIFORNIA 95014

SERIAL #

DATE OF PURCHASE

NAME MR ☐
MRS. ☐
MISS ☐

ADDRESS

STATE _____ ZIP

YOUR APPROX. AGE:
UNDER 18 ☐
18-24 ☐
25-34 ☐
35-49 ☐
50 & OVER ☐

WHERE WILL MACHINE BE PRIMARILY USED?
AT HOME ☐
AT SCHOOL ☐
AT WORK ☐

BOUGHT FOR SELF ☐
BOUGHT FOR GIFT ☐

AMOUNT PAID FOR
CALCULATOR (NOT
INCLUDING TAX) $

YOUR OCCUPATION:
STUDENT ☐
EDUCATOR/TEACHER ☐
DOCTOR/LAWYER ☐
ENGINEER/SCIENTIST ☐
SALESMAN ☐
ACCOUNTANT ☐
OTHER _____

INCLUDING THIS NEW LITRONIX
HOW MANY PERSONAL CALCULATORS
ARE OWNED BY YOUR IMMEDIATE
HOUSEHOLD?
ONE ☐
TWO ☐
THREE OR MORE ☐

TYPE OF STORE PURCHASED FROM:
DEPARTMENT STORE ☐
DISCOUNT STORE ☐
OFFICE SUPPLY STORE ☐
BOOK STORE ☐
MAIL ORDER ☐
OTHER _____