

HP-41C PROGRAM DESCRIPTION

PROGRAM TITLE

ELECTRO

AUTHOR(S)

J Dale

DATE

26/10/2026

Program description, equations, variables:

This is a suite of programs suitable for an electronics experimenter. The suite gives answers to commonly found problems.

1. Resistors in parallel: $\frac{1}{R_T} = \frac{1}{R_1} + \frac{1}{R_2}$

2. Ohm's Law: $E = IR$

3. Power calculation: $P = I^2R$

4. Resonant frequency of an LC circuit : $F = 1 / (2\pi\sqrt{LC})$

R = Resistance in Ohms

E = potential in Volts

I = current in Amps

P = power in Watts

L = Inductance in Henries

C = Capacitance in Farads

Necessary accessories:

Operating limits and warnings:

References:

HP-41C USER INSTRUCTIONS

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STEP	PROCEDURE	ENTER	DISPLAY
	After loading the program make sure USER mode is set.		
1	Parallel resistance or serial capacitance	A	
	Program asks for R1 and R2		RT
1a	Calculate missing resistance in parallel to give wanted total	B	
	Program asks for RT and R1		R2
2	Ohm's Law potential	C	
	Program asks for I and R		E
2a	Calculate current using Ohm's Law	D	
	Program asks for E and R		I
2b	Calculate resistance using Ohm's Law	E	
	Program asks for E and I		R
3	Calculate resistor power when passing current I	F	
	Program asks for R and I		P
4	Calculate resonant frequency for serial or parallel RC circuit	G	
	Program asks for L and C		F
4a	Calculate Capacitance needed when F and L are known	H	
	Program asks for L and F		C
4b	Calculate Inductance when F and C are known	I	
	Program asks for F and C		L

REGISTERS							NOTES
0	1	2	3	4	5	6	
Temp use							
7	8	9	10	11	12	13	
14	15	16	17	18	19	20	
USER KEYS							
A	RT parallel			F	Power		
B	R2 parallel			G	Resonant Frequency		
C	Ohm's E			H	C resonant		
D	Ohm's I			I	L resonant		
E	Ohm's R			J	Not used		

HP-41C PROGRAM NAME:		ELECTRO
DATE:	26/10/2026	Purpose: Various electronics calculations for the experimenter
AUTHOR:	J Dale	
STEP	PROGRAM STATEMENT	DESCRIPTION
0001	LBL "ELECTRO"	
0002	LBL A	Calculates total of two parallel resistances or two capacitors in series.
0003	'R1 ?'	
0004	PROMPT	
0005	1/X	
0006	'R2 ?'	
0007	PROMPT	
0008	1/X	
0009	+	
0010	1/X	
0011	STO 00	
0012	'RT='	
0013	ARCL 00	
0014	AVIEW	
0015	RTN	
0016	LBL B	Calculates resistor to be put in parallel to give a final total. Also works for capacitances in series.
0017	'RT ?'	
0018	PROMPT	
0019	1/X	
0020	'R1 ?'	
0021	PROMPT	
0022	1/X	
0023	-	
0024	1/X	
0025	STO 00	
0026	'R2='	
0027	ARCL 00	
0028	AVIEW	
0029	RTN	
0030	LBL C	Ohms Law voltage calculation
0031	'I ?'	
0032	PROMPT	
0033	'R ?'	
0034	PROMPT	
0035	*	
0036	STO 00	
0037	'E='	
0038	ARCL 00	
0039	AVIEW	
0040	RTN	
0041	LBL D	Ohms Law current calculation
0042	'E ?'	
0043	PROMPT	

0044	'R ?'	
0045	PROMPT	
0046	/	
0047	STO 00	
0048	'I='	
0049	ARCL 00	
0050	AVIEW	
0051	RTN	
0052	LBL E	Ohms Law resistance calculation
0053	'E ?'	
0054	PROMPT	
0055	'I ?'	
0056	PROMPT	
0057	/	
0058	STO 00	
0059	'R='	
0060	ARCL 00	
0061	AVIEW	
0062	RTN	
0063	LBL F	Calculates power dissipation of a resistor passing a
0064	'I ?'	given current
0065	PROMPT	
0066	X ²	
0067	'R ?'	
0068	PROMPT	
0069	*	
0070	STO 00	
0071	'P='	
0072	ARCL 00	
0073	AVIEW	
0074	RTN	
0075	LBL G	Calculates the resonant frequency of a LC circuit
0076	'L ?'	
0077	PROMPT	
0078	'C ?'	
0079	PROMPT	
0080	*	
0081	SQRT	
0082	PI	
0083	*	
0084	2	
0085	*	
0086	1/X	
0087	STO 00	
0088	'F='	
0089	ARCL 00	
0090	AVIEW	

0091	RTN	
0092	LBL H	Calculates the capacitance needed for a given inductance and resonant frequency
0093	'L ?'	
0094	PROMPT	
0095	'F ?'	
0096	PROMPT	
0097	X ²	
0098	*	
0099	PI	
0100	X ²	
0101	*	
0102	4	
0103	*	
0104	1/X	
0105	STO 00	
0106	'C='	
0107	ARCL 00	
0108	AVIEW	
0109	RTN	
0110	LBL I	Calculates the inductance needed for a given capacitance and resonant frequency
0111	'C ?'	
0112	PROMPT	
0113	'F ?'	
0114	PROMPT	
0115	X ²	
0116	*	
0117	PI	
0118	X ²	
0119	*	
0120	4	
0121	*	
0122	1/X	
0123	STO 00	
0124	'F='	
0125	ARCL 00	
0126	AVIEW	
0127	RTN	
0128	END	
0129		
0130		
0131		
0132		
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0135		
0136		
0137		

Source File for this Bar Code: Date: 26/10/2026
C:\Users\flaxc\Documents\Calculators\HP-41C\Electro\Electro.raw

Row 1 (Lines 1-2)



Row 2 (Lines 2-6)



Row 3 (Lines 6-15)



Row 4 (Lines 16-20)



Row 5 (Lines 20-28)



Row 6 (Lines 29-34)



Row 7 (Lines 35-42)



Row 8 (Lines 42-48)



Row 9 (Lines 48-55)



Row 10 (Lines 55-63)



Row 11 (Lines 63-69)



Row 12 (Lines 70-76)



Row 13 (Lines 76-85)



Row 14 (Lines 86-93)



Row 15 (Lines 93-101)



Row 16 (Lines 102-110)



Row 17 (Lines 111-117)



Row 18 (Lines 118-127)



Row 19 (Lines 128-128)



There should be a total of 19 Rows