

MODEL 622
ALPHA INPUT
KEYBOARD

REFERENCE
MANUAL

WANG

MODEL 622
ALPHA INPUT
KEYBOARD

REFERENCE MANUAL

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MODEL 688

ALPHA INPUT

KEY BOARD

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PREFACE

Wang Laboratories, America's leading manufacturer of electronic calculating systems, would like to take the opportunity to congratulate you on your purchase of Wang calculating equipment.

As a company, we are committed to a total program of services to meet the needs of our customers. We maintain an extensive library of programs and technical services. Our worldwide service organization, staffed by trained personnel, gives prompt attention to any problems you may have.

This manual provides operating instructions for the Wang 622 Alpha Input Keyboard. Illustrations are typical and show the principal design features of the unit.

Wang Laboratories is dedicated to manufacturing the finest calculating equipment in the world. We are ready to serve you in any way that will best meet your requirements.

For further information, contact your local sales office or use the Customer Comment form provided for you on the last page of this manual. All inquiries or comments are answered promptly.

SPECIFICATIONS

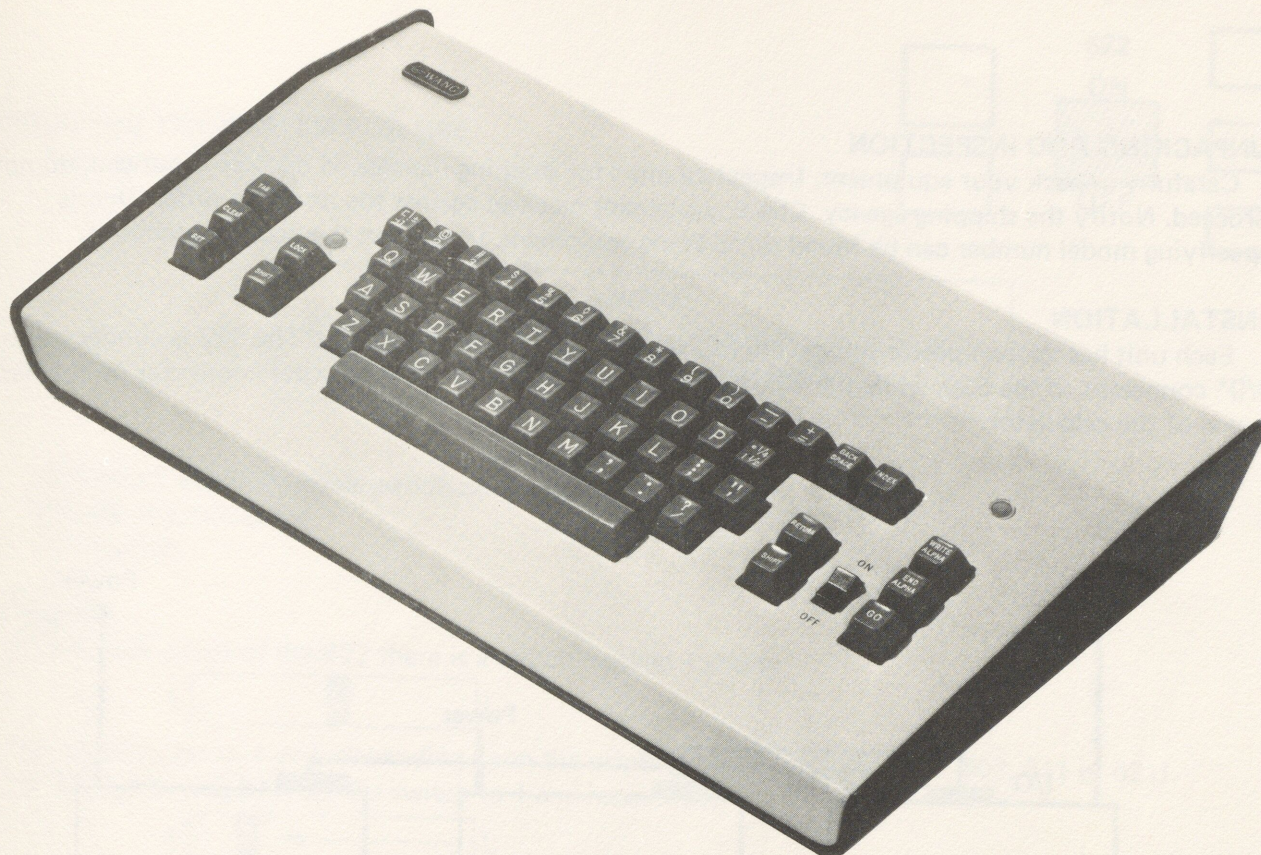
SIZE:	Height	3 inches	(7.6 cm)
	Width	17½ inches	(44.5 cm)
	Depth	10 inches	(25.4 cm)
	Weight	7 lbs.	(3.2 kg.)
POWER REQUIREMENTS:		115 or 230 VAC ± 10%	
		50 or 60 Hz	
CONNECTING CABLES:		12 ft. (3.66 m) cable with connector to calculator I/O jack	
OPERATING ENVIRONMENT:		50° to 104° F (10° C to 40° C)	
		20% to 80% relative humidity	

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INTRODUCTION

The model 622 Alpha Input Keyboard enables any 600 Series calculator user to generate all of his alpha data via the 622 keyboard. This eliminates the need for present users of Wang equipment to engage in tedious selector switch settings.

At the present time a 601 user wanting to generate the "A" character via the 600 keyboard would depress the T switch (SP up) and touch 12. However, with the 622 keyboard to generate the code 0112 for the "A" character, a depression of the "A" on the 622 keyboard automatically generates the code 0112. As a result, writing a program with a lot of alpha character requirements is as simple as typing on a regular typewriter.

The Model 622 Keyboard is similar to the IBM Selectric® Typewriter Keyboard. It has a total of 88 characters (44 uppercase and 44 lowercase). In addition, all typewriter control keys are available which include CR/LF, TAB, CLEAR TAB, SET TAB, SHIFT UP, SHIFT DOWN, etc.

With all Wang equipment, the keyboard can be installed easily and efficiently with no need to modify the system — within seconds the system is ready to use.

Features

1. Eliminates Selector Switch settings and Function key depressions for alpha characters.
2. Speeds up programming time.
3. Hands-on control of all Alpha input.
4. An extensive software library of programs, all compatible with this system.

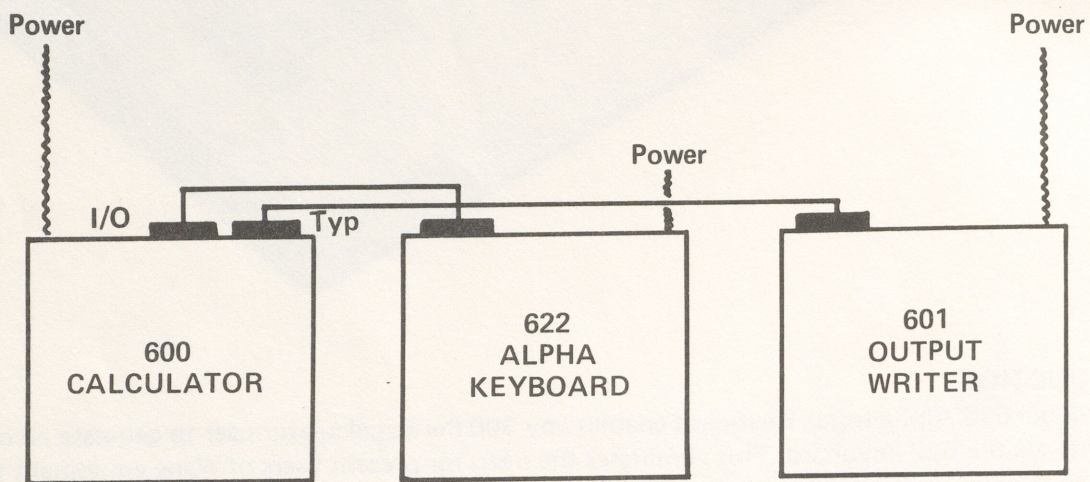
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UNPACKING AND INSPECTION

Carefully unpack your equipment. Inspect all units for shipping damage. If damage is noticed, do not proceed. Notify the shipping agency. Check equipment received against the purchase order. Decals specifying model number can be found on all Wang equipment, usually on the back of each unit.

INSTALLATION

Each unit has its own power source. Plug each unit into a power receptacle. The 622 is connected to the I/O* connector of the 600, while the 601/602/etc. is connected to the typewriter connector on the back panel of the calculator.



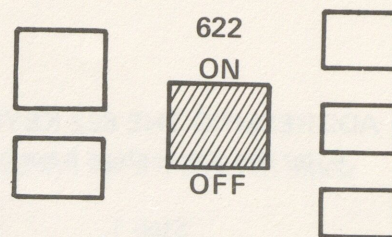
TYPICAL CONFIGURATION

In addition to a 600 calculator, a 601 WRITER and a 622 KEYBOARD, your 600 Series System may also consist of a 612 PLOTTER, a 609 DUAL TAPE CASSETTE, etc. A T-connector or I/O BUFFER may be required if additional devices are connected to the I/O connector.

* I/O — means Input/Output

PREPARING THE SYSTEM FOR USE

1. Turn power "ON" on all units.



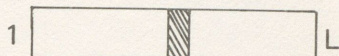
NOTE:

If your system includes a 601 Output Writer, it must be in the AUTO position to function properly.

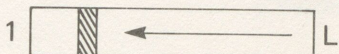
2. DEPRESS the RUN mode switch on the calculator.
3. PRIME the calculator.
4. "1" Switch

"1" Switch

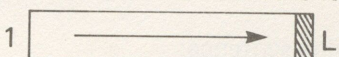
On the back panel of the 622 there is a switch marked 1 and L.



The switch is set to 1 or L depending upon the printing device used (e.g. 601, 602, 611 or 621). For 601, 602, and 611, set the switch to 1 and leave it there.



For 621, set the switch to L and leave it there.



This switch affects what codes are generated when the $\textcircled{L}$ and $\textcircled{\begin{smallmatrix} 1 \\ + \\ 1 \end{smallmatrix}}$ keys are used on the 622, with the respective printing devices. The following table summarizes what position the "1 Switch" should be in when using either the 601, 602, 611 or 621. The table also shows what code is generated when either the $\textcircled{L}$ or $\textcircled{\begin{smallmatrix} 1 \\ + \\ 1 \end{smallmatrix}}$ key is used, depending upon where the "1 Switch" is located, and then shows what the printout is for that code for each of the printing devices.

Position of "1 Switch"	Key on 622	Code Generated	Printing Device	Printout
1	$\textcircled{L}$	02 09	601, 602, 611	L/1
	$\textcircled{\begin{smallmatrix} 1 \\ + \\ 1 \end{smallmatrix}}$	03 15	601, 602, 611	[/] or 1/±
L	$\textcircled{L}$	03 15	621	L (no lower case)
	$\textcircled{\begin{smallmatrix} 1 \\ + \\ 1 \end{smallmatrix}}$	02 09	621	1 (number 1) *

* Since there is no lower case ℓ on the 621, many operators use the 1 key. (0209)

THE SYSTEM IS NOW READY TO USE.

ADDRESSING THE 622 KEYBOARD

After the above steps have been followed, the 622 is addressed with a two step command.

- Step 1. GROUP 2 (1514)
Step 2. [X] SELECTOR-SWITCH DOWN, [11] Register Keys (0411)

These two commands pass control of the system to the 622 keyboard. The system is now ready to load alpha data via the 622 keyboard into the memory of the 600 calculator. The 600 display now looks like this:

DISPLAY

Step No.	Code
???? (can be anything)	???? (can be anything)

NOTE:

Even though the RUN mode switch is depressed, the calculator is ready to accept program steps from the 622 as if in the LEARN mode.

Example 1

Using the 622 ALPHA INPUT keyboard, type in the following sentence:

The little brown fox jumps over the moon.

1. Power "ON" on all units. (601 in AUTO position).
2. Depress RUN switch on 600.
3. Touch PRIME on 600.
4. "1" switch to L.
5. Touch GROUP 2 on 600.
Depress [X] selector switch, touch [11] register key on 600.
6. Touch WRITE ALPHA key.
7. Type the following sentence in the same way you would normally type it if you were using a regular typewriter. The little brown fox jumps over the moon.
8. End your Alpha Input by touching END ALPHA key.
9. Now, return control back to the 600 keyboard by touching the GO key on the 622 keyboard. At this point, you may want to play back (print out) the sentence you just keyed in.
10. On the 600 keyboard, touch PRIME then touch GO — your sentence will be typed.

} Prepares 600 to
Use 622
Addresses 622
from 600

} 622
Key-
Strokes

NOTE:

All the codes generated when any key is used on the 622 are listed in Appendix A of this manual.

WRITE ALPHA

The WRITE ALPHA command is a required keystroke to initiate the system for the input of alpha characters.

END ALPHA

At the end of any sequence of Write ALPHA characters, you must give an END ALPHA instruction to terminate the alpha commands.

GO

The GO command will return control back to the 600 and continue execution of the program.

USING THE 622 WHEN THE 600 IS UNDER PROGRAMMING CONTROL

Assuming that you are entering a program into the memory of the 600 in LEARN mode. At a step (e.g. 99) you wish to enter some alpha data, you must address the 622. The following procedure is used:

1. Put calculator in RUN MODE.
2. Set Program Counter (if the P.C. is not already at the desired step).
3. Address 622
GROUP 2
04 11 (X selector switch, ☐ register key)
4. Touch WRITE ALPHA.
5. Type in ALPHA data.
6. Touch END ALPHA.

NOTE:

The alpha data codes are entered into the 600's memory at the next step (e.g. 100) from where you entered the last program step.

7. Touch GO on 622 to return control to the 600 keyboard. After you depress the GO key on the 600 keyboard, you can continue your programming at the 600 keyboard if you so desire.
8. Depress the LEARN switch. Continue entering the remainder of your program. The program is entered at the next step from where the alpha input stopped.

NOTE:

If the 600 is in LEARN mode, and you try to address the 622, the (Group 2, 04 11) codes are entered into the memory of the 600, control does not pass to the 622. If both the RUN and LEARN keys are depressed and you address the 622, control also does not pass to the 622. Exercise caution when addressing the 622. Make sure the 600 is in RUN mode.

Example 2 — Repetitive Typing

In certain applications the alphabetic portion of a program must be altered regularly. The following program and operating instructions is a sample subroutine which provides for the input of up to 40 alphanumeric instructions from the 622, with provisions for using the program as often as required, and also for changing the program as necessary. Program steps 16 – 55 are used as the buffer for the changeable alphabetic portion of the program, and steps 56 – 63 are reserved as buffer clearing registers when the variable portion is about to be changed. The program as shown is written for the 600-14. By changing steps 0069 – 0082, the program is adaptable to the 600-2 and 600-6. These changes are shown.

Operating Instructions:

1. Depress **F**(x) Switch
Key 0 to display, and key 00
This provides for new data to be entered and executed once.
2. **F**(x) Switch still down
Key 1 to display, and key 00
This provides for the data to be executed once.

STEP	CODE	KEY	COMMENT	STEP	CODE	KEY	COMMENT
0000	09 00	MARK	#	0050	08 03	GO	
0001	10 00	1000		0051	08 03	GO	
0002	08 04	JUMP IF 0		0052	08 03	GO	
0003	11 15	1115	SR	0053	08 03	GO	
0004	09 15	RETURN		0054	08 03	GO	
0005	11 14	1114	SR	0055	08 03	GO	
0006	11 15	1115	SR	0056	08 03	GO	
0007	11 15	1115	SR	0057	08 03	GO	
0008	09 15	RETURN		0058	08 03	GO	
0009	08 03	GO		0059	08 03	GO	
0010	08 03	GO		0060	08 03	GO	
0011	09 00	MARK	#	0061	08 03	GO	
0012	11 15	1115		0062	08 03	GO	
0013	09 04	JUMP IF -0		0063	08 03	GO	
0014	15 14	GROUP 2		0064	00 01	1	
0015	04 11	X 11		0065	09 15	RETURN	
0016	08 03	GO		0066	09 00	MARK	#
0017	08 03	GO		0067	11 14	1114	
0018	08 03	GO		0068	08 01	RECALL	
0019	08 03	GO		0069	14 15	REG 239	
0020	08 03	GO		0070	09 01	STORE	
0021	08 03	GO		0071	15 00	REG 240	
0022	08 03	GO		0072	09 01	STORE	
0023	08 03	GO		0073	15 01	REG 241	
0024	08 03	GO		0074	09 01	STORE	
0025	08 03	GO		0075	15 02	REG 242	
0026	08 03	GO		0076	09 01	STORE	
0027	08 03	GO		0077	15 03	REG 243	
0028	08 03	GO		0078	09 01	STORE	
0029	08 03	GO		0079	15 04	REG 244	
0030	08 03	GO		0080	00 15	CLEAR W	
0031	08 03	GO		0081	09 15	RETURN	
0032	08 03	GO		0082	09 14	END PROG	
0033	08 03	GO					
0034	08 03	GO					
0035	08 03	GO					
0036	08 03	GO					
0037	08 03	GO					
0038	08 03	GO					
0039	08 03	GO					
0040	08 03	GO					
0041	08 03	GO					
0042	08 03	GO					
0043	08 03	GO					
0044	08 03	GO					
0045	08 03	GO					
0046	08 03	GO					
0047	08 03	GO					
0048	08 03	GO					
0049	08 03	GO					

600 PROGRAM TITLE: 600-2 VERSION VERIFY 1046 NO

PAGE 1

STEP	CODE	KEY	COMMENT	STEP	CODE	KEY	COMMENT
------	------	-----	---------	------	------	-----	---------

0065	01		RETURN
0066	09	00	MARK
0067	11	14	1114
0068	08	01	RECALL
0069	06	15	REG 111
0070	09	01	STORE
0071	07	00	REG 112
0072	09	01	STORE
0073	07	01	REG 113
0074	09	01	STORE
0075	07	02	REG 114
0076	09	01	STORE
0077	07	03	REG 115
0078	09	01	STORE
0079	07	04	REG 116
0080	00	15	CLEAR W
0081	09	15	RETURN
0082	09	14	END PROG

600 PROGRAM TITLE: 600-6 VERSION VERIFY 1070 NO

PAGE 1

STEP	CODE	KEY	COMMENT	STEP	CODE	KEY	COMMENT
------	------	-----	---------	------	------	-----	---------

0065	-		RETURN
0066	09	00	MARK
0067	11	14	1114
0068	08	01	RECALL
0069	02	15	REG 47
0070	09	01	STORE
0071	03	00	REG 48
0072	09	01	STORE
0073	03	01	REG 49
0074	09	01	STORE
0075	03	02	REG 50
0076	09	01	STORE
0077	03	03	REG 51
0078	09	01	STORE
0079	03	04	REG 52
0080	00	15	CLEAR W
0081	09	15	RETURN
0082	09	14	END PROG

AUTOMATIC TYPING

You have already discovered the 622 Alpha Keyboard makes the process of generating your alpha requirements easier and faster. As a result, you have at your fingertips a limited word processing system, that enables you to use your 600/601/622 in exactly the same manner you would type a page on a regular typewriter. After the data is loaded in, you can change it with a minimum of effort. You can print out 1, 10, or 110 copies (whatever your needs are).

A sample printout below illustrates just one example of the capabilities you have with your system. Operating Instructions:

1. PRIME
2. GROUP 2
3. (x) SWITCH DOWN KEY 11 } 600 KEYBOARD
4. WRITE ALPHA
5. TYPE DOCUMENT } 622 KEYBOARD
6. END ALPHA
7. GO
8. PRIME } 600 KEYBOARD
9. GO

Your document will be typed as many times as needed.

Dear Mrs. Marr:

We are pleased to tell you that your charge account is now open and ready for your use. We are sure you will find it a great convenience.

The Charge-Plate enclosed, bearing your name, address, and account number, should be presented to the clerk, whenever you charge a purchase. A statement will be sent to you regularly each month.

Thank you for this opportunity to be of service.

Sincerely yours,

APPENDIX A LIST OF CODES GENERATED WITH ALPHA INPUT KEYBOARD

Space	00 02
Back Space	00 03
Index (LF)	01 10
Shift Up	01 03
Shift Down	01 02
CR/LF	01 08
Tab	00 08
Clear Tab	00 11
Set Tab	00 10

CHARACTER	CODES
(U/L Case)	
A/a	01 12
B/b	02 00
C/c	02 12
D/d	02 13
E/e	02 05
F/f	00 14
G/g	00 15
H/h	02 01
I/i	01 04
J/j	00 07
K/k	02 04
L/l	02 09 *
M/m	01 15
N/n	02 06
O/o	01 09
P/p	00 05
Q/q	00 04
R/r	01 13
S/s	01 01
T/t	02 07
U U/u	02 14
V/v	01 14
W/w	01 00
X/x	02 15
Y/y	00 01

CHARACTER	CODES
Z/z	03 07
[/] or 1/±	03 15 *
@/2	03 06
#/3	03 14
\$/4	03 09
%/5	03 05
¢/6	03 04
&/7	03 13
*/8	03 12
(/9	03 00
)/0	03 01
-/-	00 00
+/=	00 06
¼ ½ or °/!	01 07
:/;	00 13
"/'	01 05
./,	00 12
./.	01 06
?//	00 09
WRITE ALPHA	09 02
END ALPHA	02 02

* NOTE: These codes are generated with the 622 keyboard when the "1 Switch" is at "1" for the 601, 602 and 611. When using the 622 with a 621, the "1 Switch" is set to L, therefore, the (L) Key generates code 03 15 and the (L)⁺_[1] Key generates code 02 09.

To help us to provide you with the best manuals possible, please make your comments and suggestions concerning this publication on the form below. Then detach, fold, tape closed and mail to us. All comments and suggestions become the property of Wang Laboratories, Inc. For a reply, be sure to include your name and address. Your cooperation is appreciated.

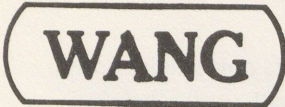
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