

# MOS ENCODED KEYBOARD

product sheet 75SW12 Series



## features

SOLID STATE KEYS - - - LONGER LIFE AND HIGH RELIABILITY  
TOUCH TYPING ARRAY - - -  
CONFORMS TO USA STANDARD  
FOR TYPEWRITER NON-  
LOGICAL PAIRING\*

DUAL MODE USASCII CODE  
ASSIGNMENT - - - THE MOST  
FREQUENTLY REQUESTED  
CONTROL CHARACTERS IN  
SEPARATE BLOCK ARRAYS

## "N" KEY ROLLOVER

SCULPTURED BUTTONS FOR  
CONTOURED TYPING SURFACE

OPTIONAL ENCLOSURE  
AND CONNECTOR AVAILABLE

PRICE SAVINGS AS THE RESULT  
OF VOLUME PRODUCTION

AVAILABLE FROM STOCK

The 75SW12 series keyboards combine MOS encoding, coupled to solid state keys, thus providing the most reliable and versatile keyboards available today. MOS has greatly increased the number of functions the keyboard can perform, while at the same time allowing significant cost reduction.

These keyboards have our new "n" key rollover feature. Data bits are set by a pulse from the down stroke of each key depressed and stored in the MOS memory. When a second key is operated, new data is set into the memory even though the first key may be still depressed. Thus, there is no possibility of missing a character or of transposing characters as the result of the order of key release. With "n" key rollover any number of keys may be depressed and held depressed and the sequence of release doesn't affect the proper sequence of data entry. The pulsed output is part of the solid state chip within each key, rather than a pulse network of discrete components. This adds significantly to the reliability of the keyboard.

The touch typing key arrangement is the USA standard for nonlogical typewriter pairings, rather than conventional logically paired USASCII. This feature provides instant familiarity for operators trained on office typewriters. Sculptured buttons provide a contoured typing

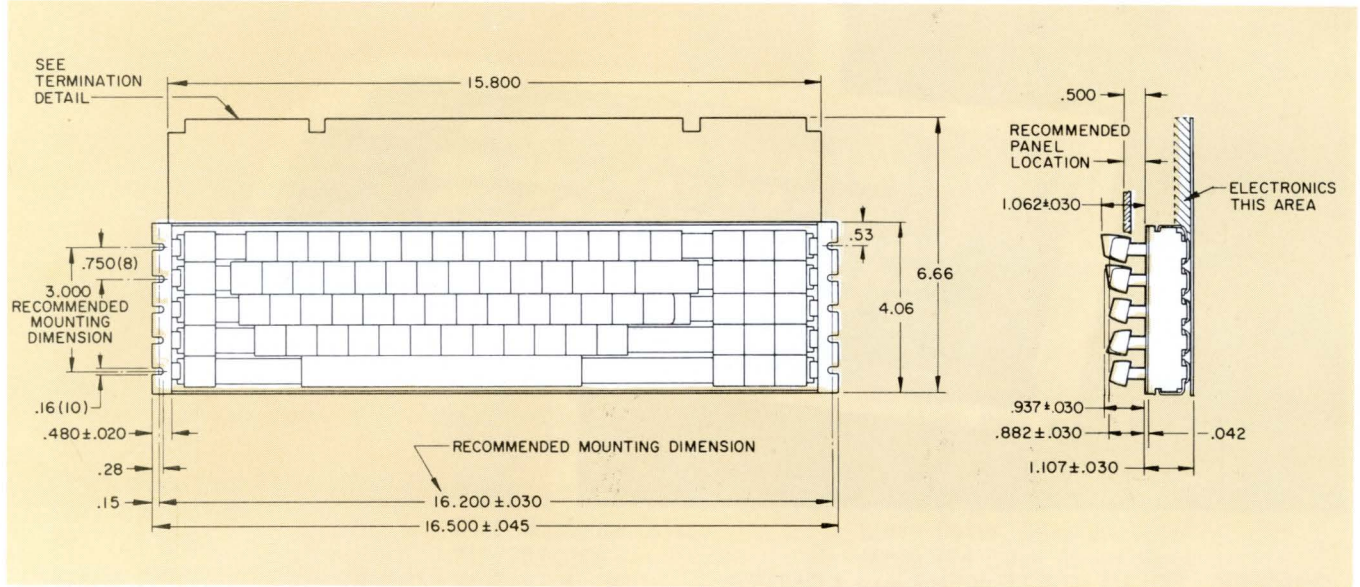
surface. The top surface of each row of buttons is molded at a slightly different angle to form a dished effect similar to that found on some high quality typewriters. This feature adds to operator comfort as well as the appearance of the keyboard with your equipment.

The 75SW12 series keyboards are ideal for applications that, from a human factor point-of-view, benefit from having the control characters set apart from the hard-core array (touch typing area) in a block array. In this type of format the operator doesn't have to put the keyboard into the control mode in order to generate control codes, as is the case with conventional tri-function keyboards. The controls are generated regardless of whether the keyboard is in the shifted or unshifted mode. For quick identification the control characters in the block arrays use gray buttons with white legends while the hard-core array has off-white buttons with gray legends.

If your requirements do not fit the 75SW12-1 or 75SW12-2 arrays you may select code and character assignments for 28 of the keys by filling out page 5.

\*Character assignment conforms to American National standard for alpha numeric keyboards, X4.14/1971.

**MICRO SWITCH**



**ELECTRICAL DATA**

Power Requirements	+5 volts DC $\pm 5\%$ @ 1.2 Amperes max. -12 volts DC $\pm 20\%$ @ 5 milliamps max. Keyboard Ground @ 0 volts Note: Tolerances include ripple.
Data Key Outputs  (Positive logic)	<u>Logic '0'</u> : +0.6 volts DC max. @ 1.6 milliamps (sinking) <u>Logic '1'</u> : +2.55 volts DC min. @ 0.12 milliamps max. (sourcing) <u>Timing</u> : Data bits are held in memory until the next key depression.
Function Key Outputs	<u>Key Unoperated</u> : +0.25 volts DC max. with load resistance of 2500 ohms or less. <u>Key Operated</u> : +2.8 volts DC min. 1 to 10 milliamp current source.
Strobe Outputs	All keys in unoperated state: +0.6 volts DC max. @ 1.6 milliamps (sinking) Key Operated: +2.55 volts DC min. @ 0.12 milliamps max (sourcing) pulsed output <u>Pulse Duration</u> : 10 micro seconds min. <u>Timing</u> : Data bits are true prior to strobe pulse.

**BUTTONS**

MICRO SWITCH sculptured button style in touch typing area and stepped button orientation in outboard blocks.

Touch typing keys: button shell off-white, legends dark gray  
Blocks: button shell gray legend white

**KEYROW OFFSET**

3/8-3/16-3/8 inch in touch typing area.

**KEY SPACING**

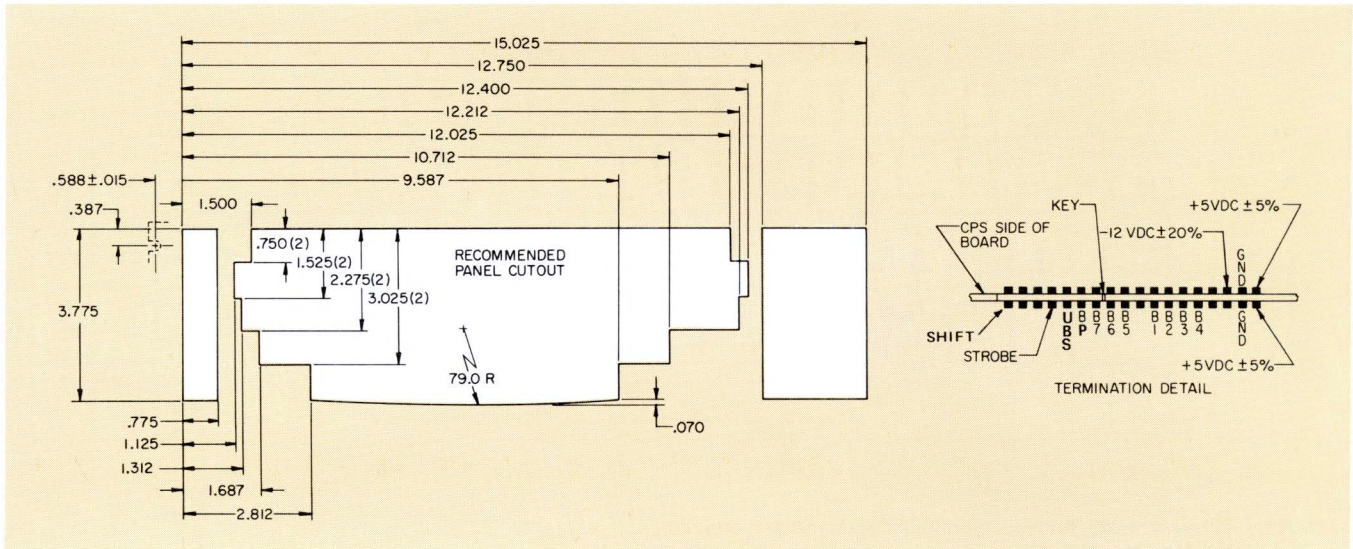
Keys spaced 3/4 inch center-to-center

**WEIGHT**

With Enclosure: 8.75 lbs. approx.  
Without Enclosure: 2.75 lbs. approx.

**OUTPUT INTERFACE**

Card-edge output with gold plated terminals accept standard connectors such as: Cinch Jones #251-18-30-160 with between-contact key or equivalent.



**SYSTEM CONTROL**

Shift lines are provided to permit programming of your system to initiate keyboard shifts.

1. System Shift: Inputs to the shift lines will require a diode isolated current source capable of sourcing 1.5 Milliamp Max. @ (Keyboard V<sub>CC</sub>-1.7)
2. Mode Indication: The shift lines may also be used for mode indication. Each shift line is loaded in the keyboard by a 4.5K±30% resistor to ground. Thus external current load must be adjusted accordingly.

NOTE: The system shift must not be clamped to ground.

**SHIFT LOCK**

Alternate action key is used. The keyboard is put into the shifted mode when the shift lock key is operated and returned to the unshifted mode when the shift lock key is operated a second time. In the operated con-

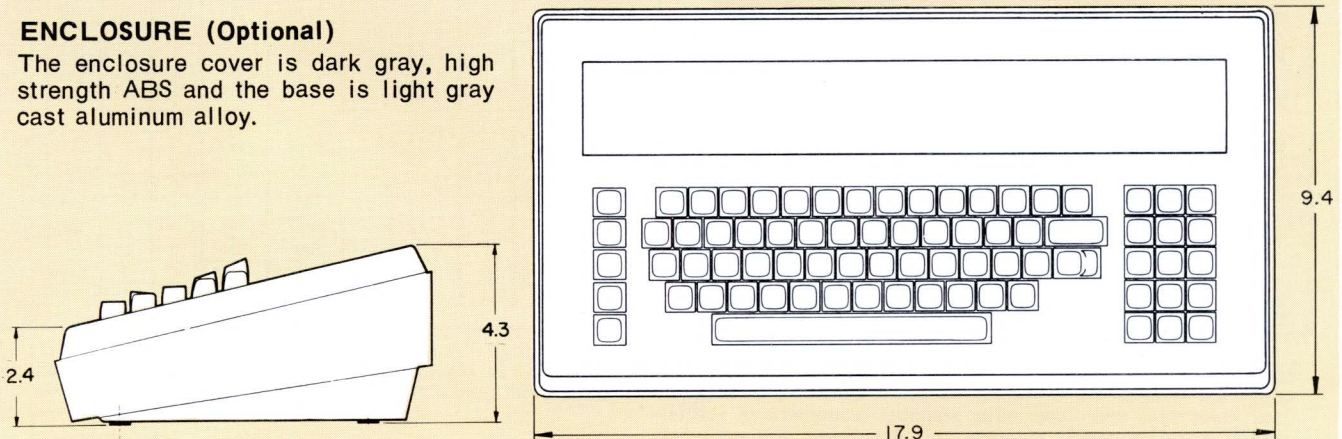
dition the shift lock key remains visibly below (approx. 3/16 inch) the other unoperated keys to provide an indication to the operator that she is in the shifted mode.

**75SW12 SERIES LISTING INDEX**

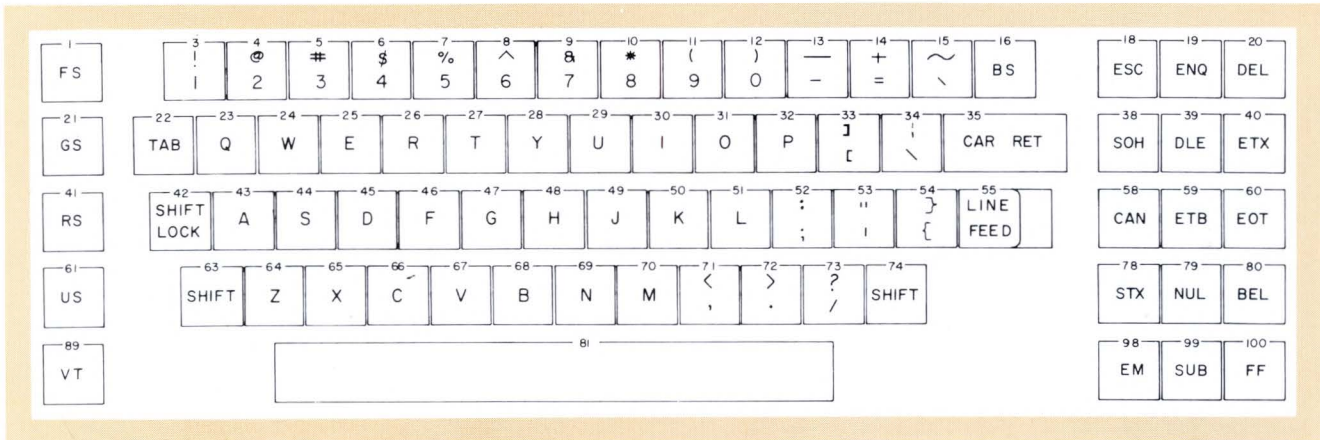
LISTING	Control Keys Assigned By Customer	Enclosure and Connector Included	In Stock
75SW12-1		✓	✓
75SW12-2			✓
75SW12-3	✓	✓	

**ENCLOSURE (Optional)**

The enclosure cover is dark gray, high strength ABS and the base is light gray cast aluminum alloy.



CODE AND CHARACTER ASSIGNMENT 75SW12-1 and 75SW12-2



NOTE: Although these listings have fixed codes, other legends and button colors may be specified. Consult your nearest MICRO SWITCH Branch Office.

USASCII CODE TYPEWRITER PAIRED ODD PARITY

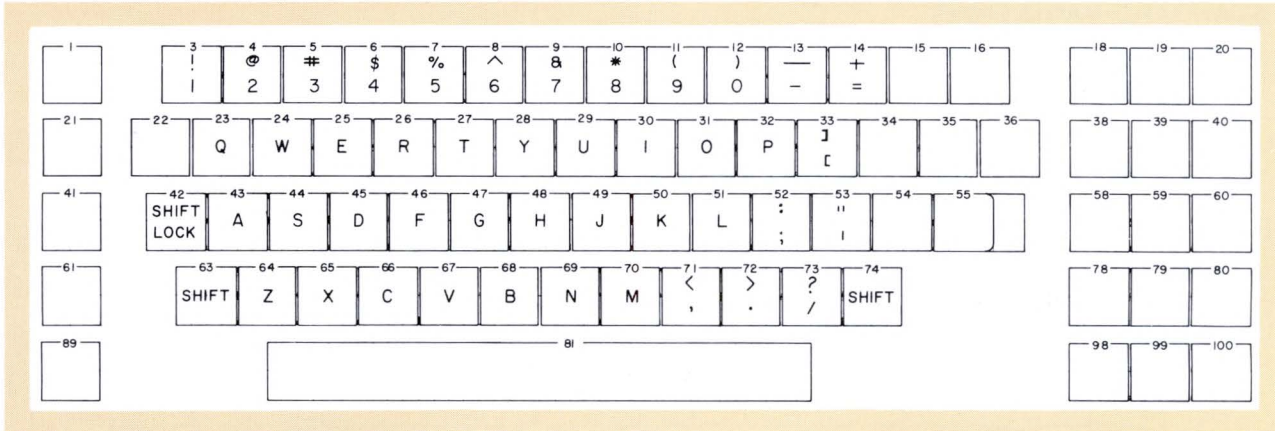
KEY NO.	CHAR	UNSHIFTED				SHIFTED				
		UBS*	P**	765	4321	CHAR	UBS*	P**	765	4321
1	FS	0	0	001	1100	FS	0	0	001	1100
3	1	1	0	011	0001	!	1	1	010	0001
4	2	1	0	011	0010	@	0	0	100	0000
5	3	1	1	011	0011	#	1	0	010	0011
6	4	1	0	011	0100	\$	1	1	010	0100
7	5	1	1	011	0101	%	1	0	010	0101
8	6	1	1	011	0110	^	0	0	101	1110
9	7	1	0	011	0111	&	1	0	010	0110
10	8	1	0	011	1000	*	1	0	010	1010
11	9	1	1	011	1001	(	1	1	010	1000
12	0	1	1	011	0000	)	1	0	010	1001
13	-	1	1	010	1101	_	0	1	101	1111
14	=	1	0	011	1101	+	1	1	010	1011
15	\	1	1	110	0000	~	1	1	111	1110
16	BS	0	0	000	1000	BS	0	0	000	1000
18	ESC	0	1	001	1011	ESC	0	1	001	1011
19	ENQ	0	1	000	0101	ENQ	0	1	000	0101
20	DEL	1	0	111	1111	DEL	1	0	111	1111
21	GS	0	1	001	1101	GS	0	1	001	1101
22	TAB	0	1	000	1001	TAB	0	1	000	1001
23	q	0	1	111	0001	Q	0	0	101	0001
24	w	0	1	111	0111	W	0	0	101	0111
25	e	0	1	110	0101	E	0	0	100	0101
26	r	0	1	110	0011	R	0	0	101	0010
27	t	0	1	111	0100	T	0	0	101	0100
28	y	0	0	111	1001	Y	0	1	101	1001
29	u	0	0	111	0101	U	0	1	101	0101
30	i	0	1	110	1001	I	0	0	100	1001
31	o	0	1	110	1111	O	0	0	100	1111
32	p	0	0	111	0000	P	0	1	101	0000
33	[	0	0	101	1011	]	0	0	101	1101
34	\	0	1	101	1100		1	0	111	1100
35	CR	0	0	000	1101	CR	0	0	000	1101
38	SOH	0	0	000	0001	SOH	0	0	000	0001
39	DLE	0	0	001	0000	DLE	0	0	001	0000
40	ETX	0	1	000	0011	ETX	0	1	000	0011
41	RS	0	1	001	1110	RS	0	1	001	1110
42	SHIFT LOCK									

KEY NO.	CHAR	UNSHIFTED				SHIFTED				
		UBS*	P**	765	4321	CHAR	UBS*	P**	765	4321
43	a_	0	0	110	0001	A	0	1	100	0001
44	s	0	0	111	0011	S	0	1	101	0011
45	d	0	0	110	0100	D	0	1	100	0100
46	f	0	1	110	0110	F	0	0	100	0110
47	g	0	0	110	0111	G	0	1	100	0111
48	h	0	0	110	1000	H	0	1	100	1000
49	j	0	1	110	1010	J	0	0	100	1010
50	k	0	0	110	1011	K	0	1	100	1011
51	l	0	1	110	1100	L	0	0	100	1100
52	;	1	0	011	1011	:	1	1	011	1010
53	'	1	1	010	0111	"	1	1	010	0010
54	{	1	1	111	1011	}	1	1	111	1101
55	LF	0	1	000	1010	LF	0	1	000	1010
58	CAN	0	1	001	1000	CAN	0	1	001	1000
59	ETB	0	1	001	0111	ETB	0	1	001	0111
60	EOT	0	0	000	0100	EOT	0	0	000	0100
61	US	0	0	001	1111	US	0	0	001	1111
63	SHIFT									
64	z	0	0	111	1010	Z	0	1	101	1010
65	x	0	1	111	1000	X	0	0	101	1000
66	c	0	1	110	0011	C	0	0	100	0011
67	v	0	0	111	0110	V	0	1	101	0110
68	b	0	0	110	0010	B	0	1	100	0010
69	n	0	0	110	1110	N	0	1	100	1110
70	m	0	0	110	1101	M	0	1	100	1101
71	,	1	0	010	1100	<	1	1	011	1100
72	.	1	1	010	1110	>	1	0	011	1110
73	/	1	0	010	1111	?	1	1	011	1111
74	SHIFT									
78	STX	0	0	000	0010	STX	0	0	000	0010
79	NUL	0	1	000	0000	NUL	0	1	000	0000
80	BEL	0	0	000	0111	BEL	0	0	000	0111
81	SP	1	0	010	0000	SP	1	0	010	0000
89	VT	0	0	000	1011	VT	0	0	000	1011
98	EM	0	0	001	1001	EM	0	0	001	1001
99	SUB	0	0	001	1010	SUB	0	0	001	1010
100	FF	0	1	000	1100	FF	0	1	000	1100

\*Upper bit 6 (UBS) is an alternate bit for customer choice at the card edge termination. Thus the keyboard simultaneously generates lower case and upper case alphabet characters in the unshifted mode. Whenever the upper bit 6 is used, the parity bit should not be used.

\*\*Parity bit is provided for use with bits 1 through 7 when upper bit 6 is not used.

**CODE AND CHARACTER ASSIGNMENT 75SW12-3**



NOTE: 1. 28 keys are reserved for your assignment. (Blank Stations)  
 2. Code for assigned keys same as 75SW12-1 and 75SW12-2.

**CODE SELECTION CHART FOR UNASSIGNED KEYS**

1. Any or all of the 28 unassigned keys may be used as function keys.
2. Any or all of the 28 keys may be encoded from the following chart.
3. Procedure:
  - (a) Draw in the legends in the code and character assignment chart above. (All 28 unassigned stations must be specified.)
  - (b) Mark legends in the code selection chart below.
  - (c) A two-unit sculptured style button may be specified for station 34 (it extends over station 35) or for station 35 (it will extend over station 36).
  - (d) One-and-one-half unit, two-unit, and three-unit stepped buttons style may be specified in the 3 X 5 block array.
4. Contact your nearest MICRO SWITCH Branch Office for available legends.
5. After completing this page, submit a copy to your nearest MICRO SWITCH Branch Office.

CHAR	UNSHIFTED and SHIFTED BITS				Legends Assigned by Customer	KEY NO.
	UBS	P	765	4321		
SP	1	0	010	0000		
BS	0	0	000	1000		
HT	0	1	000	1001		
DEL	1	0	111	1111		
CR	0	0	000	1101		
LF	0	1	000	1010		
ESC	0	1	001	1011		
SOH	0	0	000	0001		
CAN	0	1	001	1000		
STX	0	0	000	0010		
EM	0	0	001	1001		
FS	0	0	001	1100		
GS	0	1	001	1101		
RS	0	1	001	1110		
US	0	0	001	1111		
VT	0	0	000	1011		
ENQ	0	1	000	0101		
FF	0	1	000	1100		
ETB	0	1	001	0111		
NUL	0	1	000	0000		
SUB	0	0	001	1010		
ETX	0	1	000	0011		
EOT	0	0	000	0100		
BEL	0	0	000	0111		
SYN	0	0	001	0110		
DLE	0	0	001	0000		

FUNCTION KEYS ASSIGNED By Customer	
LEGENDS	KEY NUMBER

UNSHIFTED BITS					SHIFTED BITS					Legends Assigned by Customer	KEY NO.
CHAR	UBS	P	765	4321	CHAR	UBS	P	765	4321		
0	1	1	011	0000	)	1	0	010	1001		
1	1	0	011	0001	!	1	1	010	0001		
2	1	0	011	0010	@	0	0	100	0000		
3	1	1	011	0011	*	1	0	010	0011		
4	1	0	011	0100	\$	1	1	010	0100		
5	1	1	011	0101	%	1	0	010	0101		
6	1	1	011	0110	^	0	0	101	1110		
7	1	0	011	0111	&	1	0	010	0110		
8	1	0	011	1000	*	1	0	010	1010		
9	1	1	011	1001	(	1	1	010	1000		
SO	0	0	000	1110	SI	0	1	000	1111		
DC1	0	1	001	0001	DC2	0	1	001	0010		
DC3	0	0	001	0011	DC4	0	1	001	0100		
ACK	0	1	000	0110	NAK	0	0	001	0101		
~	1	1	110	0000	~	1	1	111	1110		
\	0	1	101	1100		1	0	111	1100		
{	1	1	111	1011	}	1	1	111	1101		

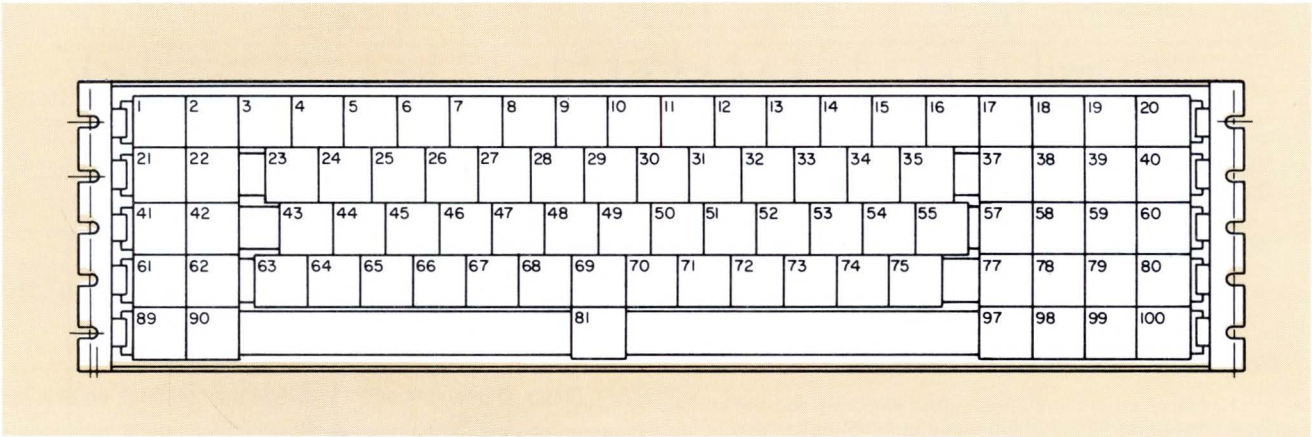
Customer's Name  
 Date:  
 Comments:

**STANDARD VARIATIONS**

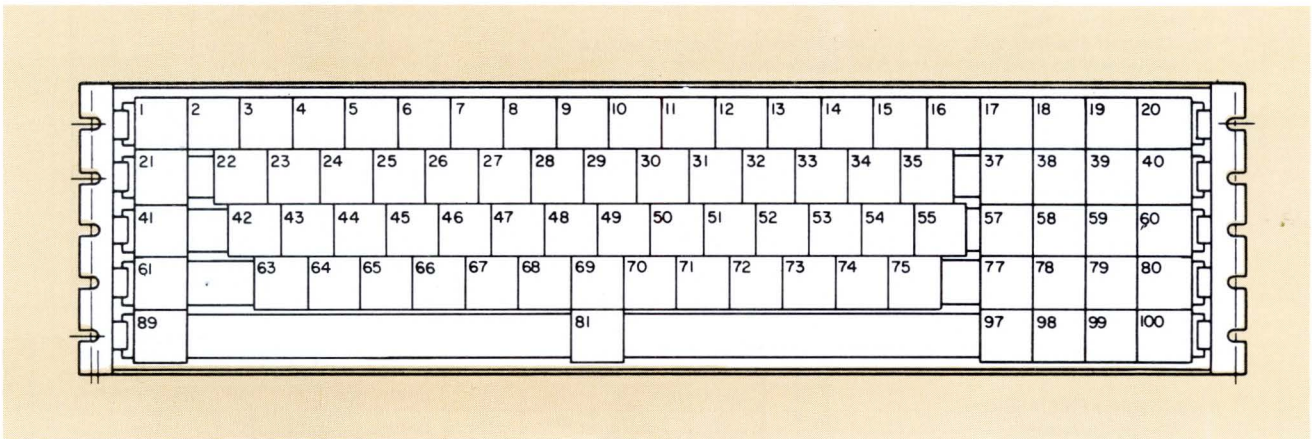
Consult your nearest MICRO SWITCH Branch Office for details

**ARRAYS:**

Alternate Array Number 1 (84 keys maximum)



Alternate Array Number 2 (82 keys maximum)

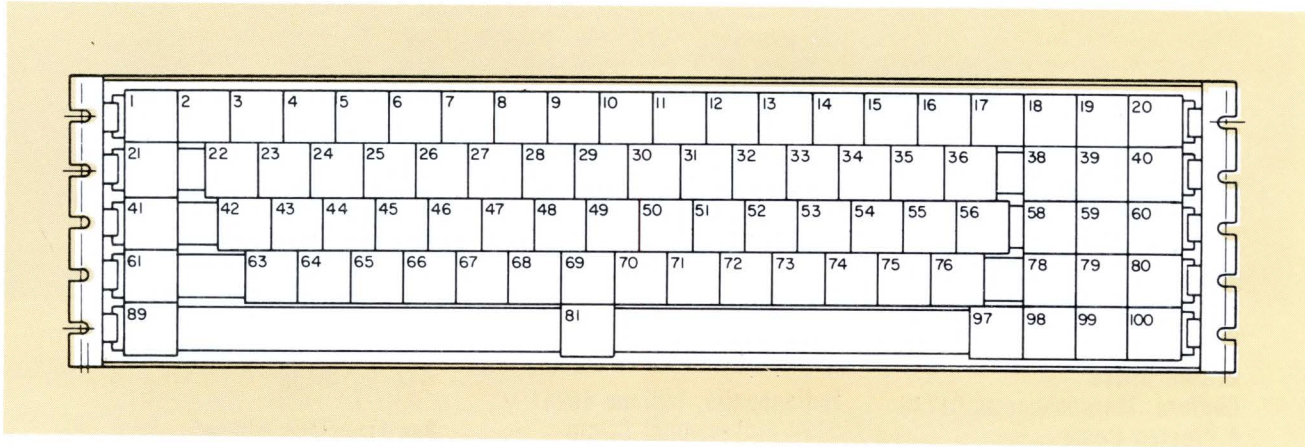


**NOTE:**

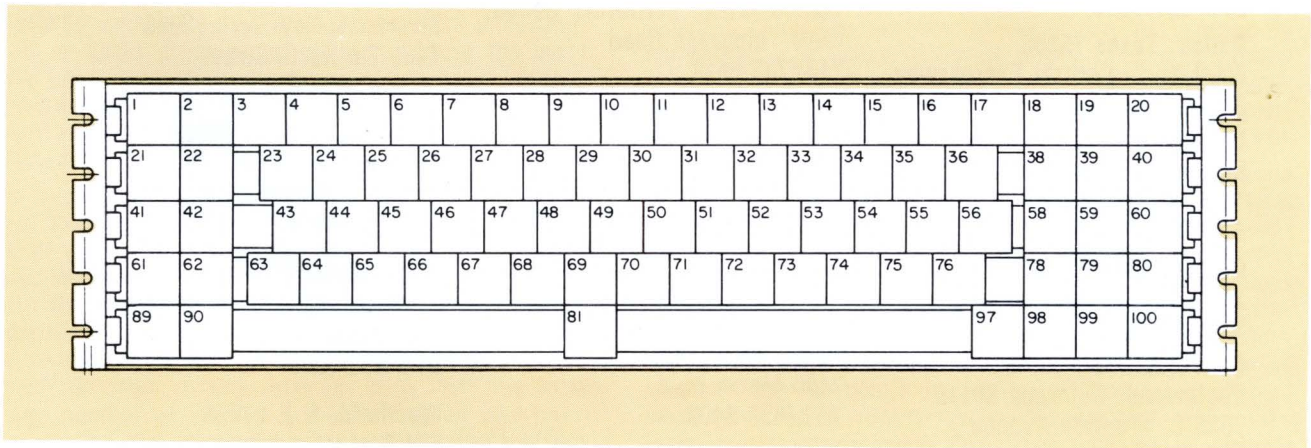
The alternate arrays show the maximum key capability of the printed circuit board. Your application may require fewer keys. When assigning key positions it is recommended you allow separation of the block arrays from the touch typing array for appearance and human factor considerations.

**CODES:** Keyboard may be specified with logical paired ASCII codes. Other code character sets also available.

Alternate Array Number 3 (82 keys maximum)



Alternate Array Number 4 (84 keys maximum)



OPTIONS:

1. Choice of buttons and legend colors plus a wide selection of legends. Also a selection of button sizes and shapes including sculptured buttons.
2. Keyrows may be specified either stepped or sloped.

Contact your nearest MICRO SWITCH Branch Office and a Field Engineer will be glad to work with you in satisfying your keyboard requirements: proper selection, pricing, and delivery scheduling. These experienced keyboard experts will provide sound and practical answers to your needs.

**Atlanta, Georgia 30329**

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**Hartford, Connecticut 06101**

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317/243-0831

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408/732-0120

**Seattle Office**

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**MICRO SWITCH**

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