

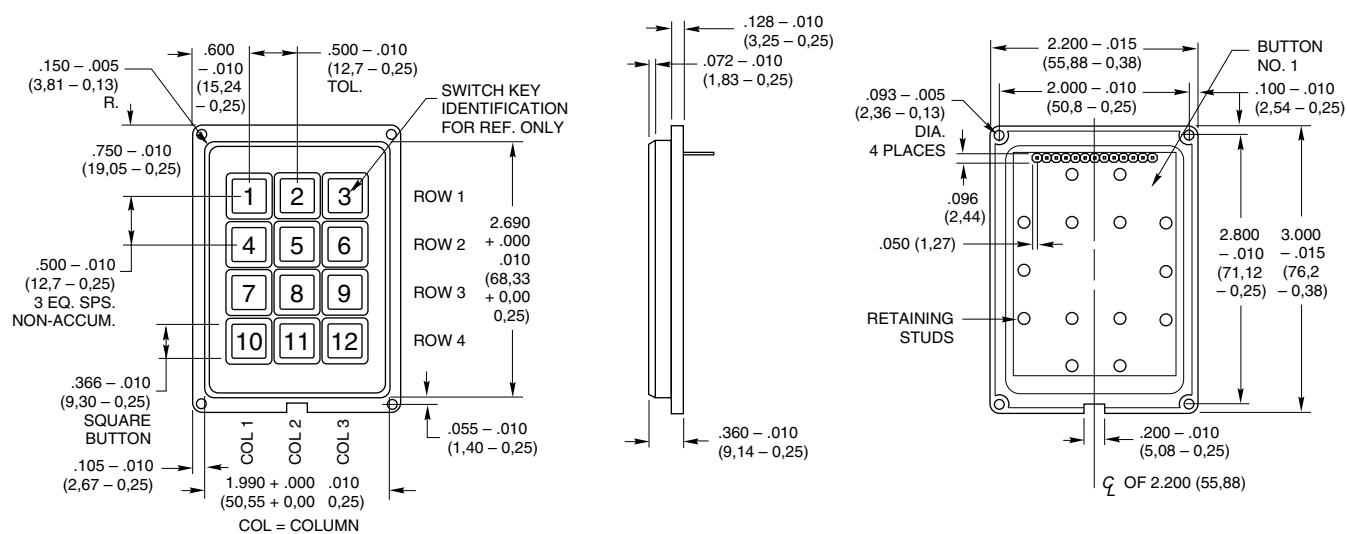
Unsealed, .500" Centers, Flange Mounted

- 1/2" Button Centers
- Flange Mounted
- Top Surface or Sub Surface Mounting
- Snap-Dome Contact Provides Positive Feedback

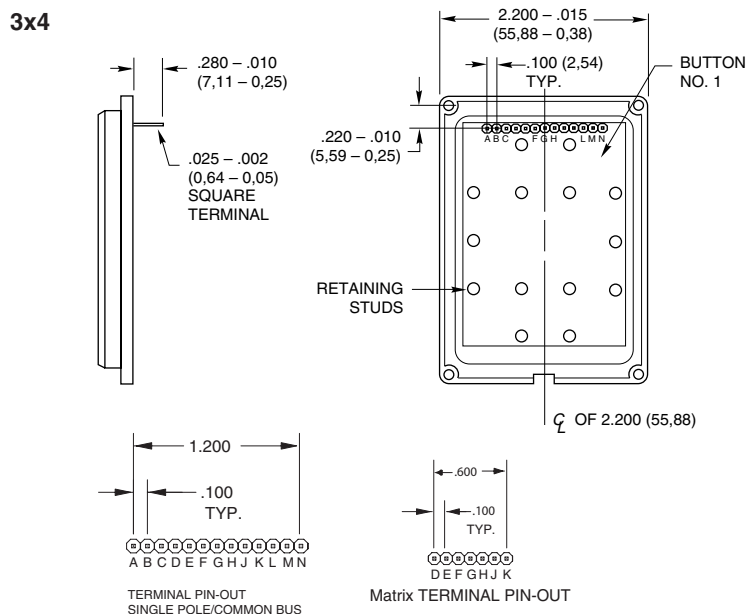


DIMENSIONS in inches (and millimeters)

3x4 Keyboard

**Termination** in inches (and millimeters)

Code and Truth Table



Dots in the chart indicate connected terminals when switch is closed. Terminals are identified on the keyboard.

[illegible]

SERIES 86
Unsealed, .500" Centers,
Flange Mounted

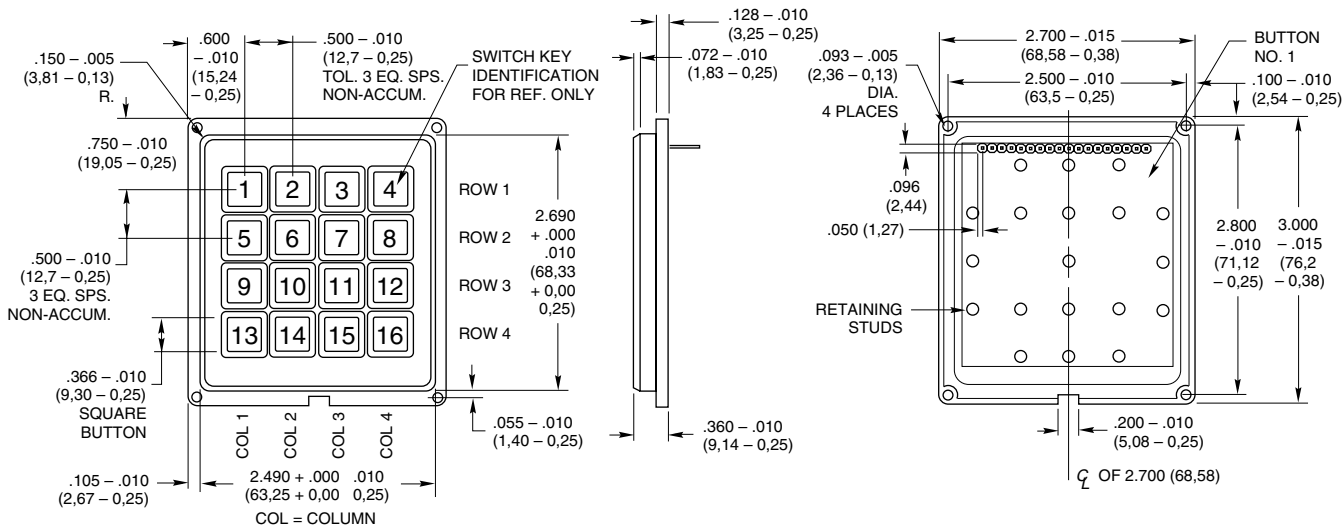
FEATURES

- 1/2" Button Centers
- Flange Mounted
- Top Surface or Sub Surface Mounting
- Snap-Dome Contact Provides Positive Feedback



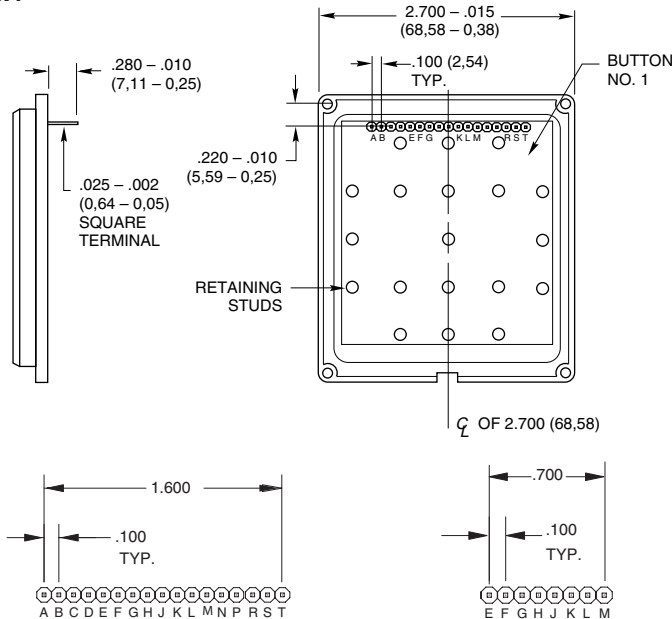
DIMENSIONS in inches (and millimeters)

4x4 Keyboard



Termination in inches (and millimeters)

4x4



SINGLE POLE COMMON BUS TERMINAL

MATRIX TERMINAL PIN-OUT

Code and Truth Table

Dots in the chart indicate connected terminals when switch is closed. Terminals are identified on the keyboard.

4x4		CODES																										
		Matrix								Single Pole/Common Bus																		
BUTTON LOCATION	1	•						•																			•	
	2		•																									•
	3			•																								•
	4				•																							•
	5	•																										•
	6		•																									•
	7			•																								•
	8				•																							•
	9	•																										•
	10		•																									•
	11			•																								•
	12				•																							•
	13	•																										•
	14		•																									•
	15			•																								•
	16				•																							•
		H	G	F	E	M	L	K	J	P	J	E	A	R	L	F	B	S	M	H	C	T	N	G	D	K		
		TERMINAL LOCATION																										

Unsealed, .500" Centers, Flange Mounted

- 1/2" Button Centers
- Flange Mounted
- Top Surface or Sub Surface Mounting
- Snap-Dome Contact Provides Positive Feedback



DIMENSIONS in inches (and millimeters)

Technical drawings of two electronic components, showing dimensions and specifications.

Left Component (Switch Assembly):

- Overall dimensions: $.150 \pm .005$ (3,81 $\pm$ 0,13) R. (Key width), $.600 \pm .010$ (15,24 $\pm$ 0,25) (Key pitch), $.500 \pm .010$ (12,7 $\pm$ 0,25) (Key pitch), TOL. 4 EQ. SPS. NON-ACCUM. (Tolerance), $.750 \pm .010$ (19,05 $\pm$ 0,25) (Overall width), $.500 \pm .010$ (12,7 $\pm$ 0,25) (Key pitch), 3 EQ. SPS. NON-ACCUM. (Tolerance), $.366 \pm .010$ (9,30 $\pm$ 0,25) (Key width), $.105 \pm .010$ (2,67 $\pm$ 0,25) (Key pitch).
- Key dimensions: $.150 \pm .005$ (3,81 $\pm$ 0,13) R. (Key width), $.600 \pm .010$ (15,24 $\pm$ 0,25) (Key pitch), $.500 \pm .010$ (12,7 $\pm$ 0,25) (Key pitch), TOL. 4 EQ. SPS. NON-ACCUM. (Tolerance), $.750 \pm .010$ (19,05 $\pm$ 0,25) (Overall width), $.500 \pm .010$ (12,7 $\pm$ 0,25) (Key pitch), 3 EQ. SPS. NON-ACCUM. (Tolerance), $.366 \pm .010$ (9,30 $\pm$ 0,25) (Key width), $.105 \pm .010$ (2,67 $\pm$ 0,25) (Key pitch).
- Key layout: 20 keys arranged in 4 rows (ROW 1 to ROW 4) and 5 columns (COL 1 to COL 5). Key numbers: 1-5 (Row 1), 6-10 (Row 2), 11-15 (Row 3), 16-20 (Row 4).
- Key pitch: $.500 \pm .010$ (12,7 $\pm$ 0,25) (Key pitch), 3 EQ. SPS. NON-ACCUM. (Tolerance).
- Key width: $.366 \pm .010$ (9,30 $\pm$ 0,25) (Key width), SQUARE BUTTON (Key shape).
- Key pitch: $.105 \pm .010$ (2,67 $\pm$ 0,25) (Key pitch).
- Key pitch: $.2990 \pm .000 - .010$ (75,95 $\pm$ 0,00 - 0,25) (Key pitch), COL = COLUMN (Label).
- Key pitch: $.055 \pm .010$ (1,40 $\pm$ 0,25) (Key pitch).
- Key pitch: $.072 \pm .010$ (1,83 $\pm$ 0,25) (Key pitch), .280 $\pm .010$ (7,11 $\pm$ 0,25) (Key pitch), .025 $\pm .002$ (0,64 $\pm$ 0,05) (Key pitch), SQUARE TERMINAL (Key shape), .096 (2,44) (Key pitch), .050 (1,27) (Key pitch), .360 $\pm .010$ (9,14 $\pm$ 0,25) (Key pitch).
- Key pitch: $.128 \pm .010$ (3,25 $\pm$ 0,25) (Key pitch), 3.200 $\pm .015$ (81,28 $\pm$ 0,38) (Key pitch), 3.000 $\pm .010$ (76,2 $\pm$ 0,25) (Key pitch), .100 $\pm .010$ (2,54 $\pm$ 0,25) (Key pitch), 2.800 $\pm .010$ (71,12 $\pm$ 0,25) (Key pitch), 3.000 $\pm .015$ (76,2 $\pm$ 0,38) (Key pitch), .093 $\pm .005$ (2,36 $\pm$ 0,13) DIA. 4 PLACES (Key pitch), CL OF 3.200 (81,28) (Key pitch).
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Termination in inches (and millimeters)

Code and Truth Table

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[illegible]

SPECIFICATIONS

Rating Criteria

Rating at 24 Vdc: 10 milliamps, resistive

Contact Resistance: Compatible with MOS, TTL and DTL (10 ohms maximum)

Voltage Breakdown: 250Vac between mutually insulated parts

Life Expectancy: 3,000,000 operations per button

Contact Bounce: Less than 4 milliseconds at make, 10 milliseconds at break

Operating Temperature: -40°C to +80°C

Materials and Finishes

Housing: ABS polycarbonate, black

Buttons: ABS plastic, white. Legends are black.

Snap-On-Cap: Clear polycarbonate

Contact Dome: Stainless steel, selectively gold-plated

Terminals: Phosphor bronze

Operating Features

Button Travel: 0.015" nominal total travel

Typical Operating Force: 350 grams

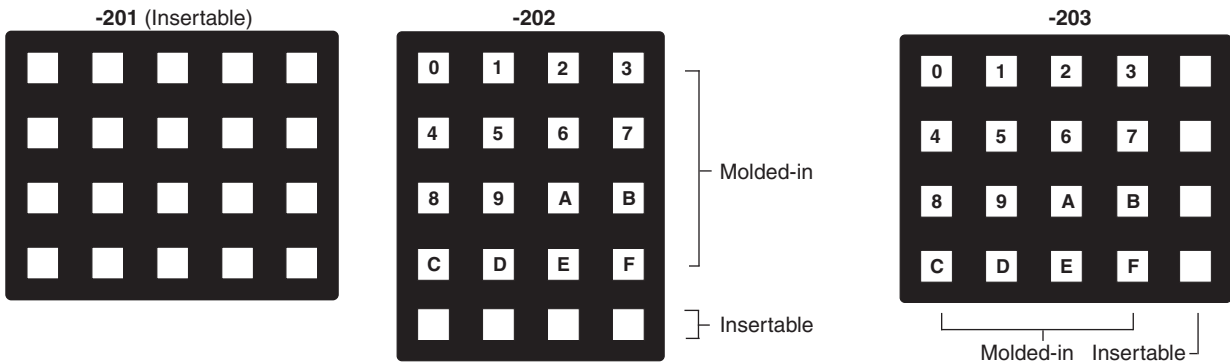
STANDARD LEGENDS

Insertable legend version (legend numbers -101, -001, -201 and row or column indicated in -202 and -203) has a removable cap. The revealed button surface can be legended by an insert or a dry transfer of a blank legend

5x4: Shown below

insert. This surface can also be ink stamped by Grayhill in higher volume quantities. When the cap is replaced, the assembly extends approximately .015" (0.38 mm) above the surface. The legend sheet information follows

the legend presentation. All other legends incorporate molded-in (two shot) legends with the exception of legend numbers -202 and -203. The blank legends or spaces in legends -202 and -203 are insertable legends, others are molded-in.

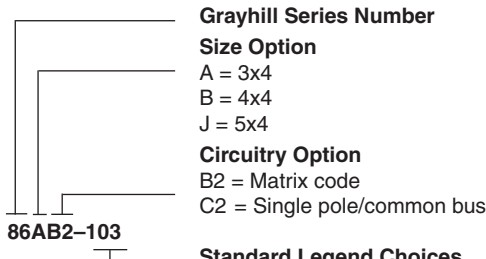


INSERTABLE LEGENDS

For use with -101, -001, -201, -202 and -203 legend options. Legends are die cut to fit button surface when cap is removed. Dry transfer legends offer some flexibility to customize the blank inserts included on the sheet of popular legend letters, words and symbols provided or on the insertable legends sheet.

Description	Part No.
Sheet of Legend Inserts	87AC2046
Dry Transfer Lettering, Small	87-DT-2096-088
Dry Transfer Lettering, Medium	87-DT-2096-125
Dry Transfer Lettering, Large	87-DT-2096-187

ORDERING INFORMATION



Grayhill Series Number

Size Option

A = 3x4

B = 4x4

J = 5x4

Circuitry Option

B2 = Matrix code

C2 = Single pole/common bus

Standard Legend Choices

3x4 Size: -101, -102 or -103

4x4 Size: -001, -002, -003, -004, -005 or -006

5x4 Size: -201, -202, or -203

Available from your local Grayhill Distributor.

For prices and discounts, contact a local Sales Office, an authorized local Distributor or Grayhill.