Specifications are subject to change. Please refer to the current datasheet on www.grayhill.com for the most current published specifications for this product.

SERIES 96
Conductive Rubber

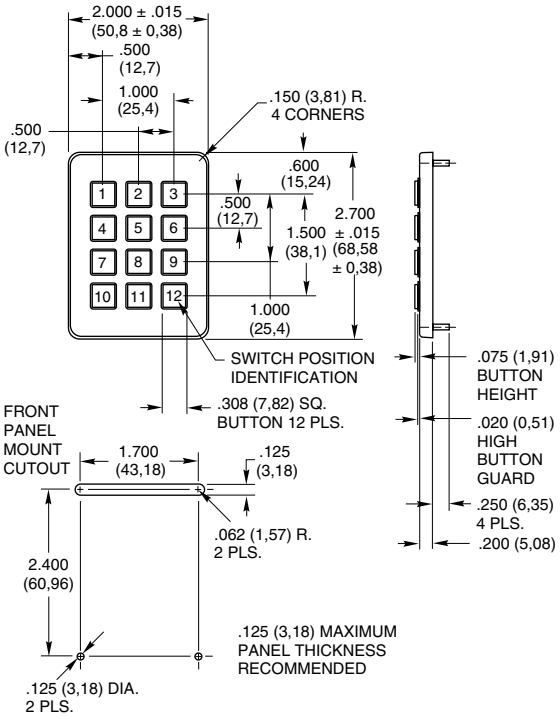
FEATURES
- Quality, Economical Keyboards
- Easily Customized Legends
- Matrix Circuitry
- Backlit and Shielded Options Available
- Termination Mates With Standard Connectors
- Tactile Feedback to Operator
- 1,000,000 Operations per Button
- Compatible With High Resistance Logic Inputs



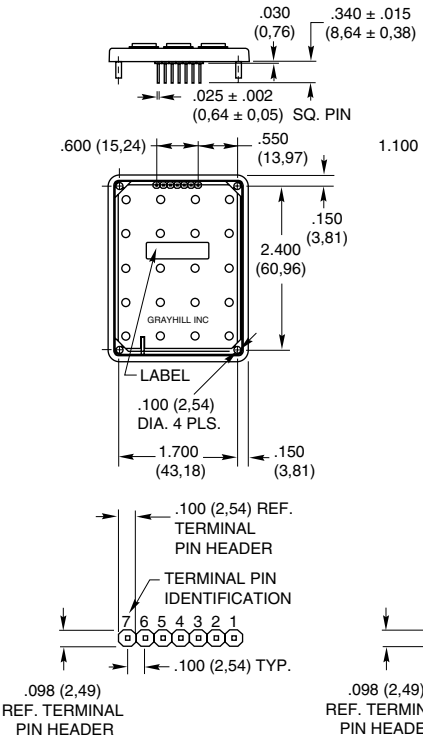
The Series 96 is Grayhill's most economical 3x4 and 4x4 keypad family. The contact system utilizes conductive rubber to mate the appropriate PC board traces. Offered in matrix circuitry, with shielded and backlit options. Built with quality component parts, the Series 96 is subjected to our rigid statistical process control to insure that it meets our reliability standards.

DIMENSIONS in inches (and millimeters)

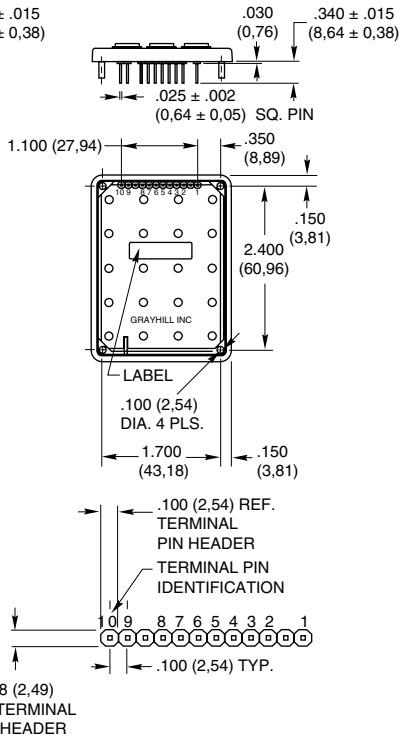
3x4 Front Mount Keyboard



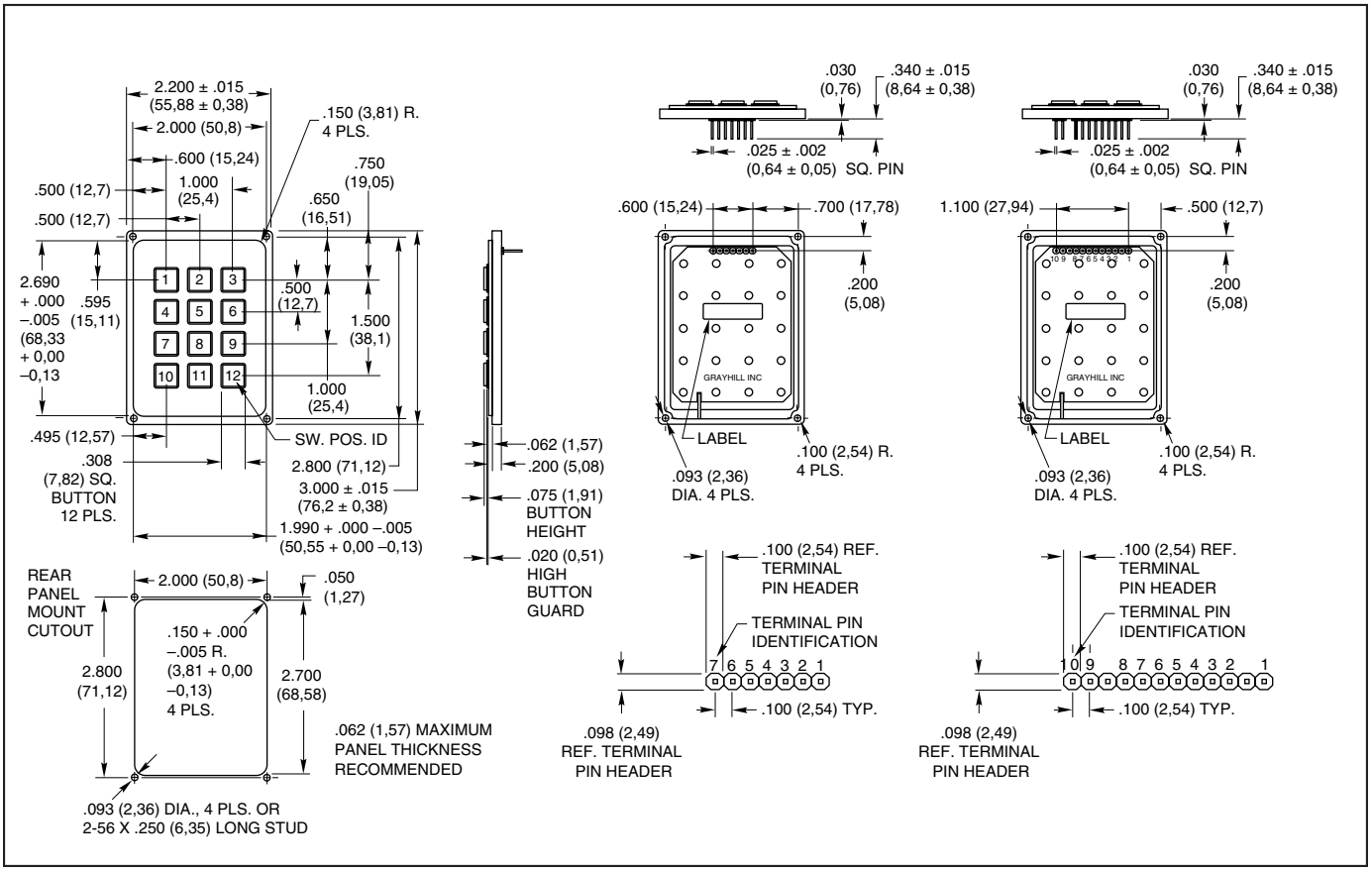
Standard Versions

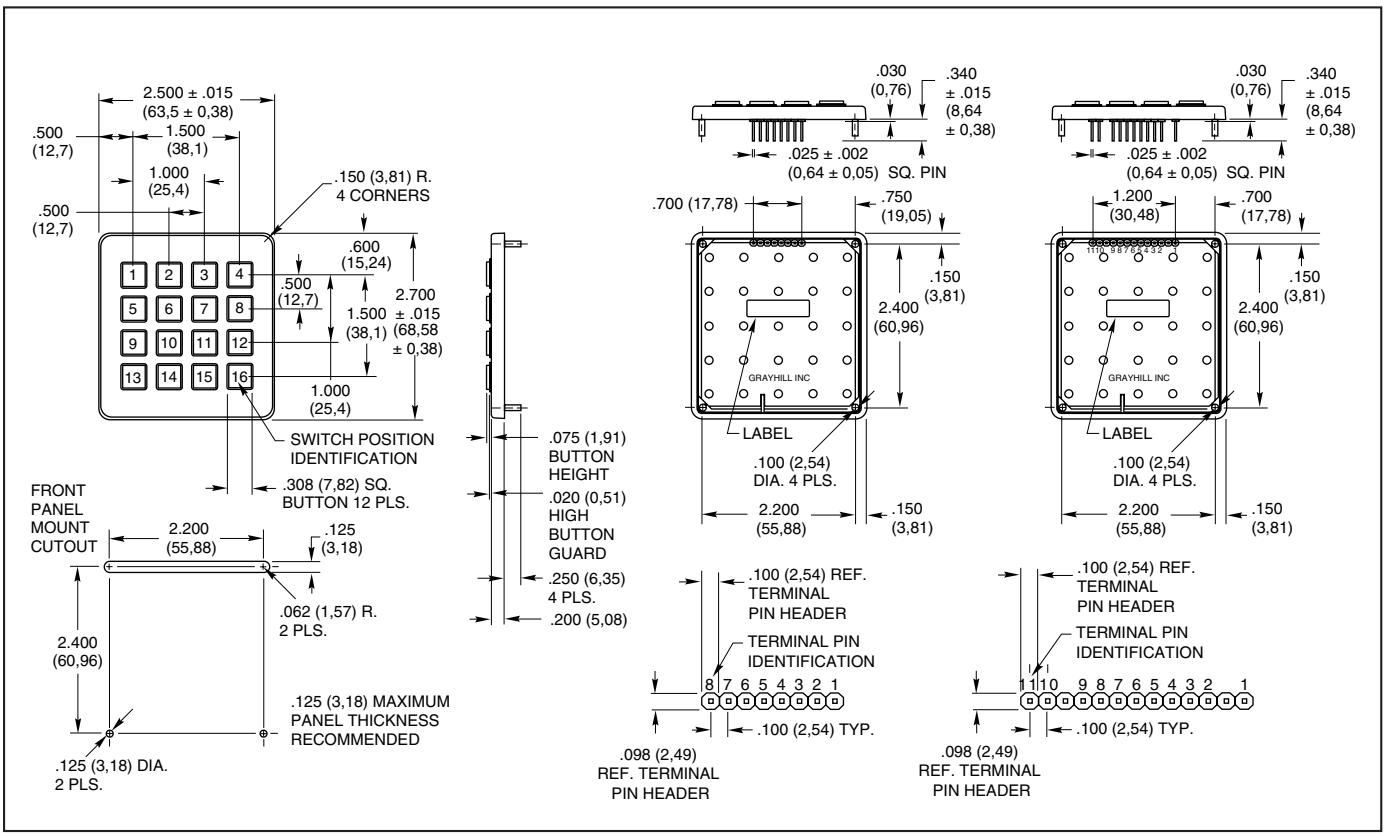


Shielded/Backlit Versions



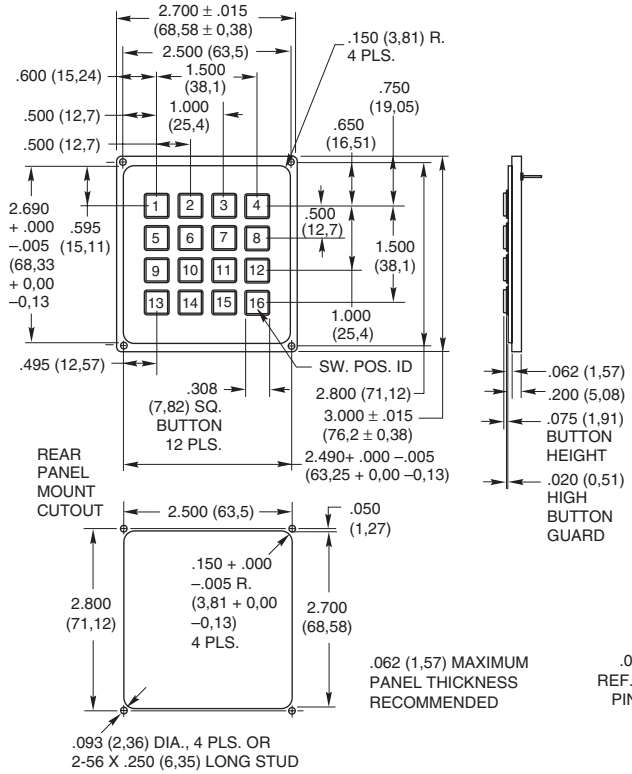
DIMENSIONS in inches (and millimeters)



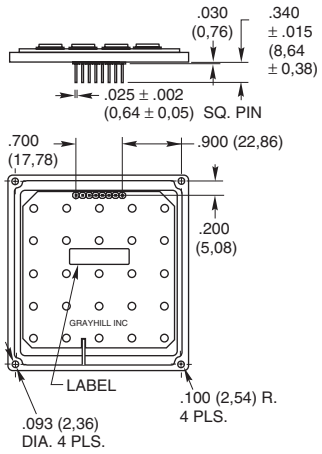


DIMENSIONS in inches (and millimeters)

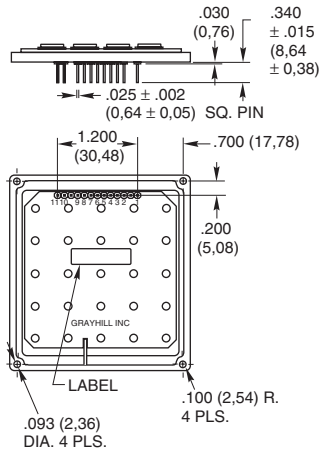
4x4 Rear Mount Keyboard

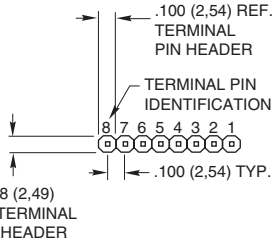


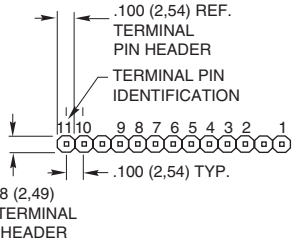
Standard Versions



Shielded/Backlit Versions







CODE AND TRUTH TABLES

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

12 Button Keypads

3x4	MATRIX CODES												
	Standard						Shielded/Backlit						
BUTTON LOCATION 1	●			●			●			●			
2		●		●				●		●			
3			●	●					●	●			
4	●				●		●				●		
5		●			●			●			●		
6			●		●				●		●		
7	●					●	●					●	
8		●				●		●				●	
9			●			●			●			●	
10	●					●	●						●
11		●				●		●					●
12			●			●			●				●
	5	6	7	1	2	3	4	6	7	8	2	3	4	5	1	9	10
	TERMINAL LOCATION																

- Shielded keypad = Shielded Backlit keypad = NC Shielded and backlit keypad = Shielded
- Shielded keypad = NC Backlit keypad = EL Panel 1 Shielded and backlit keypad = EL Panel 1
- Shielded keypad = NC Backlit keypad = EL Panel 2 Shielded and backlit keypad = EL Panel 2

16 Button Keypads

4x4	MATRIX CODES																			
	Standard								Shielded/Backlit											
BUTTON LOCATION 1	●				●				●				●							
2		●			●					●			●							
3			●		●						●		●							
4				●	●							●	●							
5	●					●			●					●						
6		●				●				●				●						
7			●			●					●			●						
8				●		●						●		●						
9	●						●		●						●					
10		●					●			●					●					
11			●				●				●				●					
12				●			●					●			●					
13	●							●	●							●				
14		●						●		●						●				
15			●					●			●					●				
16				●				●				●				●				
	5	6	7	8	1	2	3	4	6	7	8	9	2	3	4	5	1	10	11	
	TERMINAL LOCATION																			

- Shielded keypad = Shielded Backlit keypad = NC Shielded and backlit keypad = Shielded
- Shielded keypad = NC Backlit keypad = EL Panel 1 Shielded and backlit keypad = EL Panel 1
- Shielded keypad = NC Backlit keypad = EL Panel 2 Shielded and backlit keypad = EL Panel 2

Specifications are subject to change. Please refer to the current datasheet on www.grayhill.com for the most current published specifications for this product.

SPECIFICATIONS

Rating Criteria

Rating at 12 Vdc: 5 milliamps for .5 seconds
Contact Bounce: < 12 milliseconds
Contact Resistance: < 300 milliohms max.
Voltage Breakdown: 250 Vac between components
Mechanical Operation Life: 1,000,000 operations per key
Insulation Resistance: > 10^{12} ohms @ 500 Vdc
Push Out Force Per Pin: 5 lbs.

Operating Features

Travel: .040 minimum
Operating Force: 175 ± 40 grams
Operating Temperature: -30°C to +80°C

Material and Finishes

Terminal Pin: Phosphor bronze
PC Board: FR-4 glass cloth epoxy
Keypad: Silicone rubber, durometer 50 ± 5
Housing: ABS, cycolac FR15
Housing Color: Black

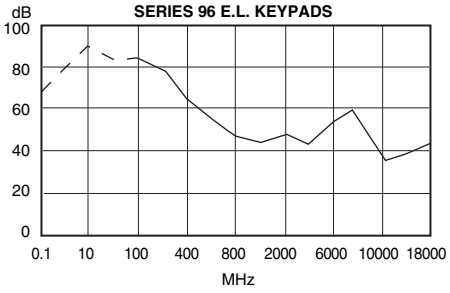
Shielding Effectiveness

Results shown are typical for a standard Grayhill Series 84S keyboard. A conductive gasket will generally increase the shielding, depending on the size and shape of the gasket and its material. Data derived for E-Field Radiation.

Test Method:
Measurements were made with the keyboard mounted to a brass plate, which in turn was mounted to a shielded enclosure containing the receiving equipment. A signal generator provided the frequency source that was radiated from the transmitting antenna to the enclosed receiving antenna. The spacing between antennas was maintained constant throughout the frequency range. The effectiveness rating is determined by establishing a reference reading without obstruction between the two antennas and determining the difference between that reading and the test setup reading.

Note:
When measured in actual equipment, shielding effectiveness is determined by many factors. This method accurately represents the shielding effectiveness of the Grayhill Series 84S under Ideal test conditions.

SHIELDING EFFECTIVENESS OF SERIES 96 E.L. KEYPADS



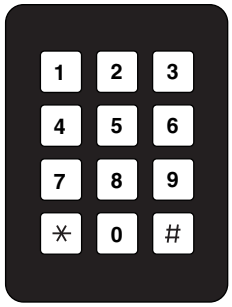
— – Represents shielding effectiveness greater than or equal to line.

Frequency M Hz	Rating in dB
0.1	≥ 66.2
10	≥ 94.8
100	90.5
400	64.2
800	42.3
2,000	40.5
6,000	33.1
10,000	34.4
18,000	37.0

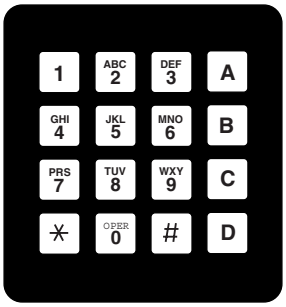
STANDARD LEGENDS

Available through Grayhill Distributors

To order one of the configurations below, use the dash number shown here; select the keypad size and code, and order the part number with the appropriate legend dash number.



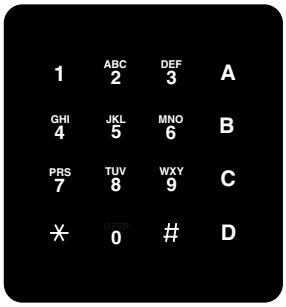
-102



-006



-152



-056

ORDERING INFORMATION

96AB2-102-FS-EL

Grayhill Series Number
Keyboard Size: A = 3x4, B = 4x4
Circuitry: B2 = Matrix (terminal pin header)

E.L. Panel Backlighting Option
EL = Backlit, Blank = Non-backlit
EMI/RFI Shielding Option
S = Shielded, Blank = Non-shielded
Mounting Option: F = Front panel mount, R = Rear panel mount
Standard Legend Choices
12 Position legends
102 = Black legends on a white button
152 = White legends on a black button
16 Position legends
006 = Black legends on a white button
056 = White legends on a black button

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