

SERIES 37F

Keypads



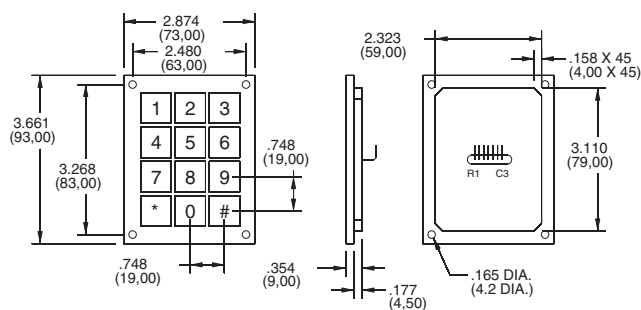
FEATURES

- Fully Sealed
- Virtually Indestructible
- Vandal Resistant
- Indoor and Outdoor Use

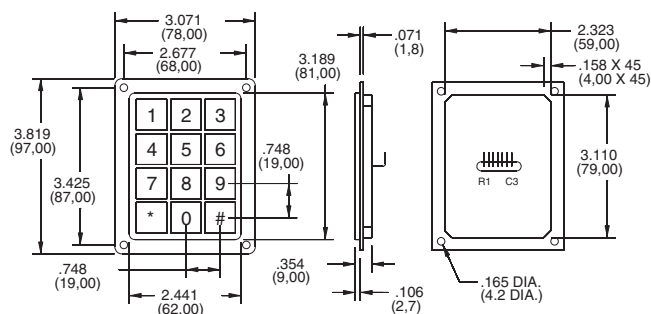


DIMENSIONS In inches (and millimeters)

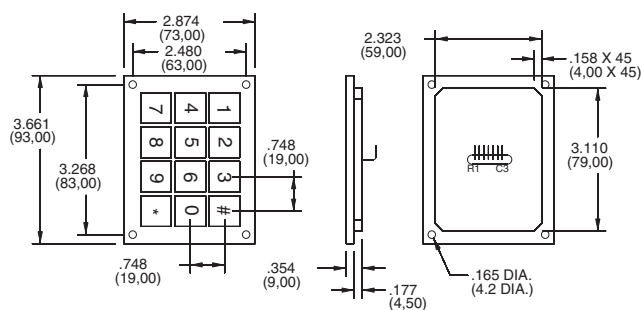
3x4 Keypad



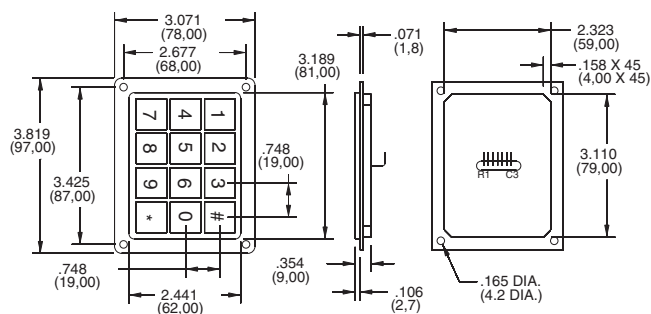
FRONT MOUNT OPT- #1



REAR MOUNT OPT- #3



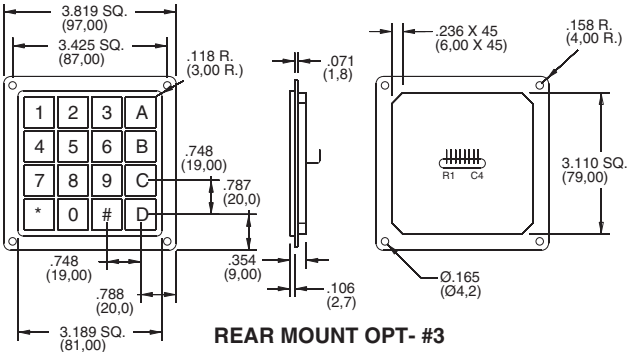
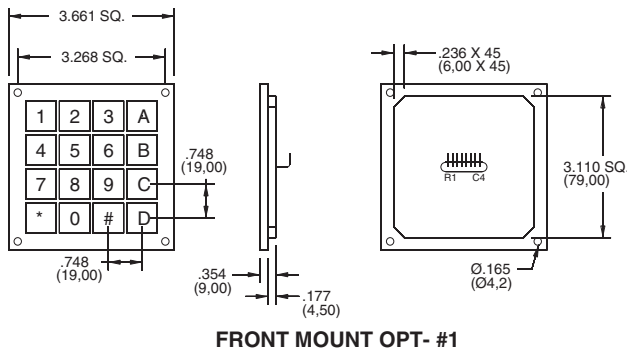
FRONT MOUNT OPT- #2



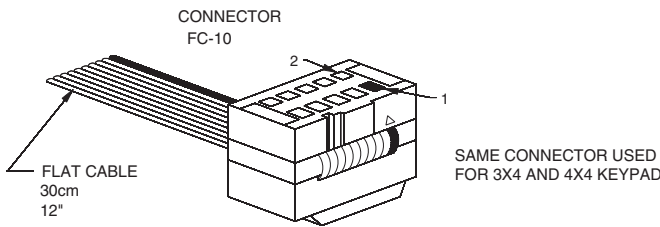
REAR MOUNT OPT- #4

DIMENSIONS In inches (and millimeters)

4X4 Keypad



CONNECTORS In inches (and millimeters)



CODE AND TRUTH TABLES

3X4 Connector Pin Number

	1	2	3	4	5	6	7
1				●			●
2				●		●	
3				●	●		
4			●				●
5			●			●	
6			●		●		
7		●					●
8		●				●	
9		●			●		
10	●						●
11	●					●	
12	●				●		

4X4 Connector Pin Number

	1	2	3	4	5	6	7	8
1	●				●			
2	●					●		
3	●						●	
4	●							●
5		●			●			
6		●				●		
7		●					●	
8		●						●
9			●		●			
10			●			●		
11			●				●	
12			●					●
13				●	●			
14				●		●		
15				●			●	
16				●				●

SPECIFICATIONS

Rating Criteria

Rated Voltage: 0 – 24V AC/DC

Rated Current: 0 – 2 Amps.

Resistance “ON”: <10 Ohms.

Resistance “OFF”: >5 megohms

Switch Capacitance: 25pF

Switch Functioning: One Shot

Activation Force: 3-5N Typ.

Operating Temperature: -40°C to 85°C
(40° to 125°C upon requested)

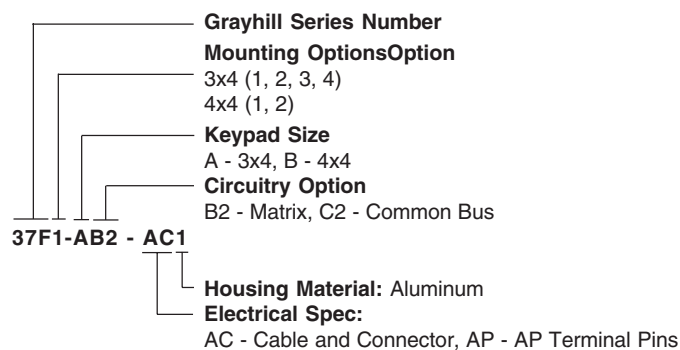
Lifecycle: >50 million

EMI or RFI Effect: None

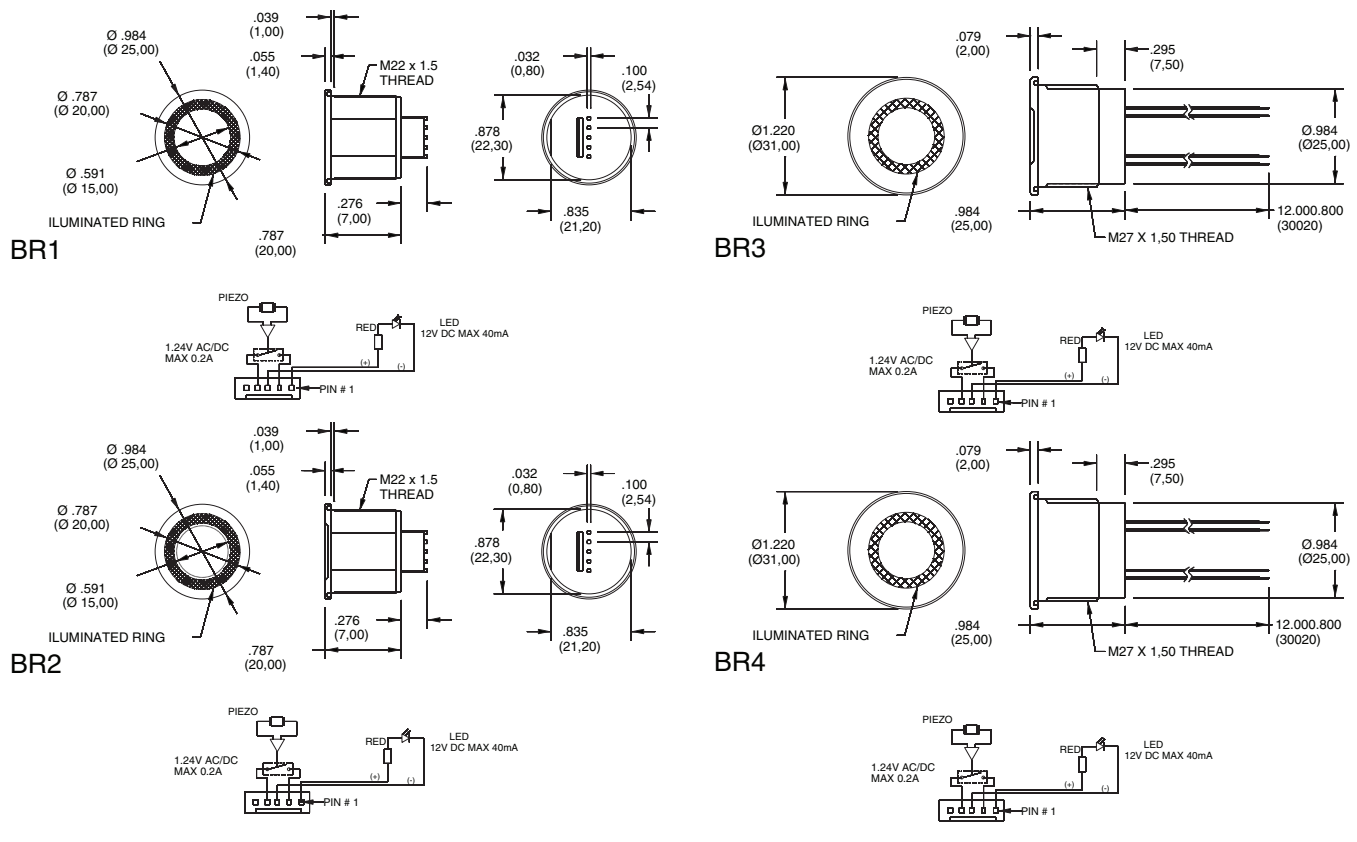
Housing Material: Aluminium

Protection System: IP68
according to IEC 529.

ORDERING INFORMATION



DIMENSIONS In inches (and millimeters)



ORDERING INFORMATION, 37FBR

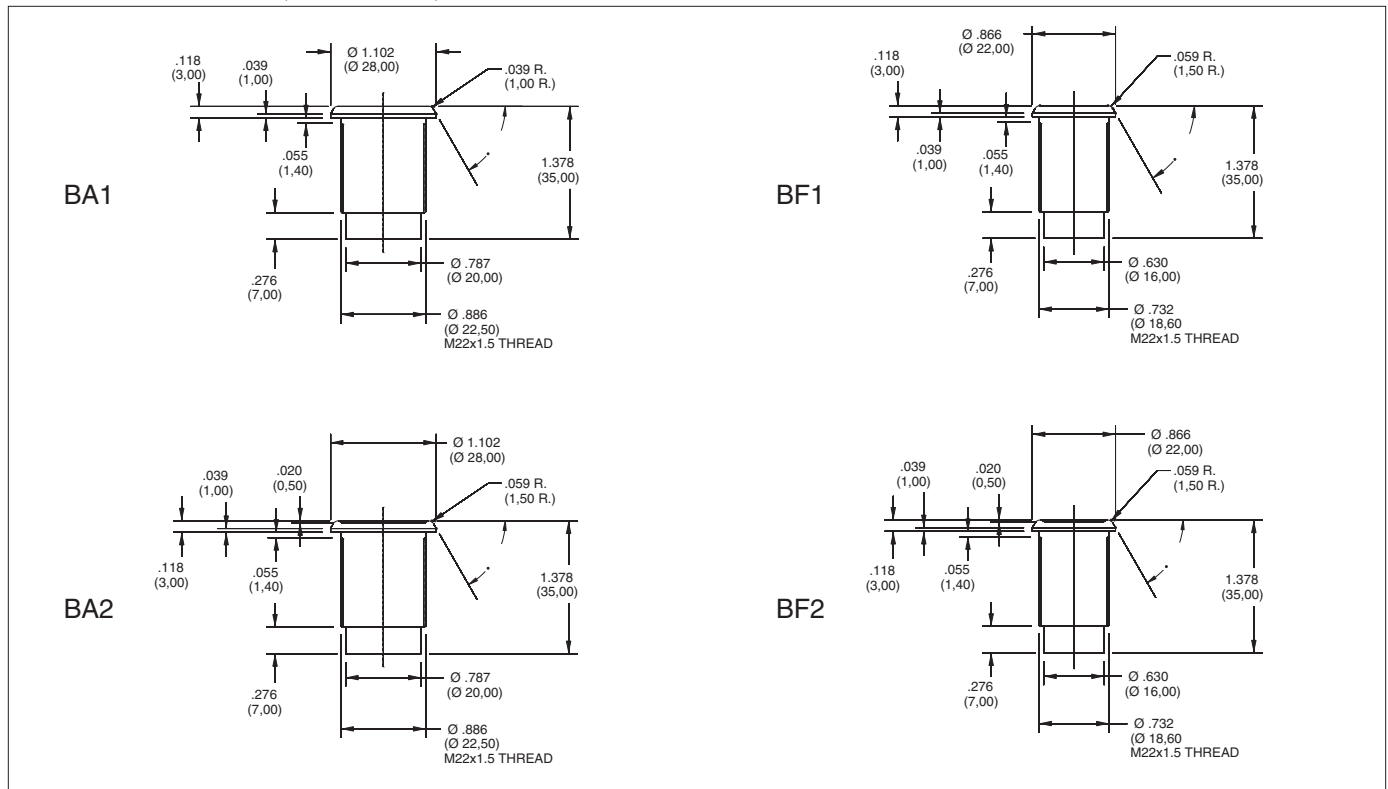
Grayhill Series
Housing Type
 BA1, BA2
 BF1, BF2
Switch Type
 C - Continuous, T - Toggle
Circuitry
 A - N.O., B - N.C.
Electrical Specification
 AW: 10-24V, .15A AC/DC,
 Wire: 1 - Black, 1 - Brown, 2 - Blue
Housing Color: N - Natural
Housing Material: 1 - Aluminum

Special colors, S.S. and legends available.
 Contact Grayhill for more information.

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

Special configurations and legends available. Contact Grayhill for more information.

DIMENSIONS In inches (and millimeters)



SPECIFICATIONS

Rated Voltage: 0-24V AC/DC

Rate Current: 0-24 amps.

Resistance "ON": <10 Ohms

Resistance "OFF": >5 megohms

Switch Capacitance: 25pF

Activation Force: 3-5N Typ.

Switch Action:

Momentary: 120 Msec. Pulse type

Continuous: Circuit is closed as long as switch is pressed, 30 sec. max.

Toggle: Switch changes position at each activation.

Lifecycle: >50 million

Operating Temp: -40°C- 85°C standard. (-40°C- 125°C upon request)

Storage Temp: -40°C- 125°C

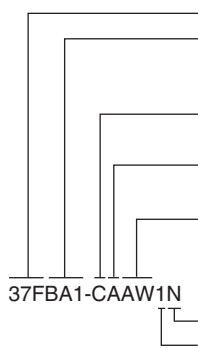
EMI or RFI Effect: None

Protection System: IP68 according to IEC529

LED: 5Vdc, 1 max, 10 mA

Housing Material: Aluminum

ORDERING INFORMATION, 37FBR



Grayhill Series

Housing Type

BA1, BA2

BF1, BF2

Switch Type

C - Continuous, T - Toggle

Circuitry

A - N.O., B - N.C.

Electrical Specification

AW: 10-24V, .15A AC/DC,

Wire: 1 - Black, 1 - Brown, 2 - Blue

Housing Color: N - Natural

Housing Material: 1 - Aluminum

Special colors, S.S. and legends available. Contact Grayhill for more information.

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

SERIES 84R

Sealed, Low Profile

FEATURES

- Metal Keys
- Easily Customized Legends
- Sealed Construction
- Choice of Dome Contacts or Carbon Pill
- 3,000,000 Operations per Button

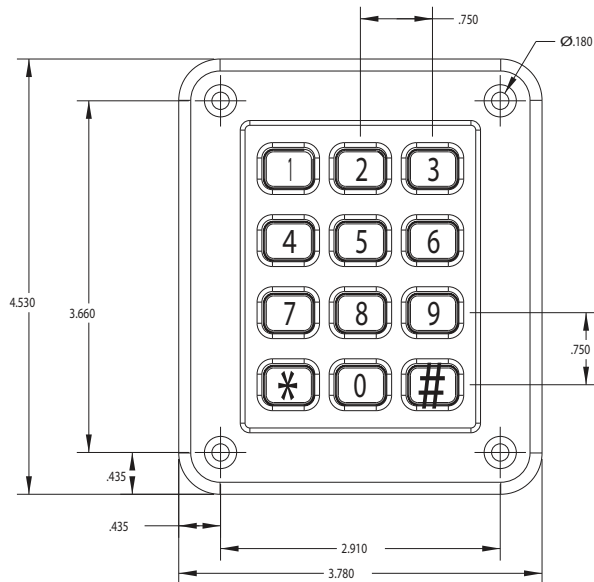
DESCRIPTION

Custom legends and colors are available at a nominal cost. The Series 84R is offered with a choice of matrix or single pole/common bus circuitries.

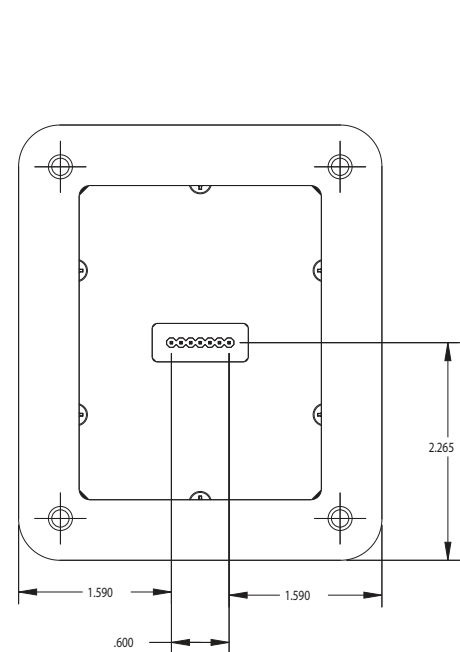


DIMENSIONS In inches (and millimeters)

3x4 Keyboard



Single Pole/Common Bus



Preliminary Specification

CODE AND TRUTH TABLES

The chart indicates the relationship of the terminal pins to each key switch.
The dot indicates a closed switch. Terminals are identified on the keyboard.

12 Button Key pads		16 Button Key pads	
3x4		4x4	
CODES		CODES	
Matrix		Matrix	
Single Pole/Common Bus		Single Pole/Common Bus	
BUTTON LOCATION	TERMINAL LOCATION	BUTTON LOCATION	TERMINAL LOCATION
1	C	1	D
2	B	2	B
3	A	3	A
4	G	4	F
5	F	5	E
6	E	6	D
7	D	7	C
8	C	8	B
9	B	9	A
10	A	10	G
11	G	11	F
12	F	12	E
	E	13	D
	D	14	C
	C	15	B
	B	16	A
	A		

SPECIFICATIONS

Rating Criteria

Rating at 24 Vdc: ≤ 10 milliamps resistive

Contact Bounce: 4 milliseconds maximum at make; 10 milliseconds, at break

Contact Resistance: MOS, TTL, and DTL compatible. (10 ohms maximum for dome contacts; 300 ohms maximum for carbon pill version)

Operating Temperature: -55°C to 85°C

Life Expectancy: 3 million operations/button

Insulation Resistance: 1,000 megohms

Operating Features

Pre-Travel: .030 inches minimum

Operating Force: 20 ± 4 ounces

Humidity: 0 to 98% (no condensation)

Minimum Push Out Force Per Pin: 5 pounds

Materials and Finishes

Terminal Pins: Copper alloy CDA 725

PC Board: FR-4 glass cloth epoxy

Dome Retainer/Rear Seal Sheet: Polyester

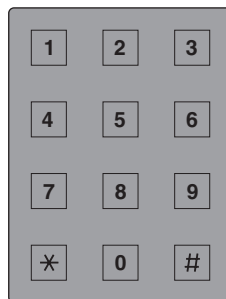
Housing: Die cast aluminum, anodized

Keys: Die cast aluminum, anodized with engraved epoxy filled legends

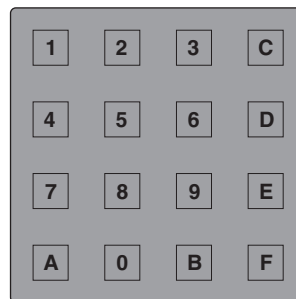
STANDARD LEGENDS

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.



-112



-014

CUSTOM LEGENDS

Any reasonable legend can be printed in the key area. Fax a sketch of your requirements to Grayhill. Legends will be coordinated in keeping with concepts of good design. Or, if required, the details of your submitted artwork

will be matched as closely as possible. Allow 3 to 4 weeks for custom legend delivery. A nominal charge, depending on the total quantity of keypads ordered and the complexity of the legend, will be assessed.

HEADER CONNECTORS

Compatible with:

Samtec, Inc. Header Series BCS, BSW, CES, ESW, ESQ, SLW, SSW, SSQ, IDSS and IDSD or equivalent.

ORDERING INFORMATION

Grayhill Series Number

Size Option

A = 3x4 B = 4x4

Circuitry Option

B2 = Matrix in-line pins C2 = Single pole/common bus

D = Metal domes, R = Conductive rubber

P = Terminal pins, C = Locking connector

Standard Legend Choices

3x4 Size, choose -112

4x4 Size, choose -014

84R-AB2-112-PD

Available from your local Grayhill Distributor.

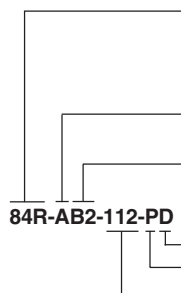
For prices and discounts, contact a local Sales Office, an authorized local distributor or Grayhill.

CUSTOM LEGENDS

Any reasonable legend can be printed in the key area. Fax a sketch of your requirements to Grayhill. Printing and symbols will be coordinated in keeping with concepts of good design. Or, if required, the details of your

submitted artwork will be matched as closely as possible. Allow 3 to 4 weeks for custom legend delivery. A nominal charge, depending on the total quantity of keypads ordered and the complexity of the legend, will be assessed.

ORDERING INFORMATION



Grayhill Series Number
Shielded or Non-Shielded Option
 R = Shielded
 RN = Non-Shielded

Size Option
 A = 3x4 B = 4x4

Circuitry Option
 B2 = Matrix in-line pins C2 = Single pole/common bus

84R-AB2-112-PD

D = Metal domes, R = Conductive rubber
 P = Terminal pins, C = Locking connector

Standard Legend Choices
 3x4 Size, choose -112
 4x4 Size, choose -014
 1x4 Size, choose -301 or -302

HEADER CONNECTORS

Compatible with:
Samtec, Inc. Header Series
 BCS, BSW, CES, ESW, ESQ,
 SLW, SSW, SSQ, IDSS and
 IDSD or equivalent.

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