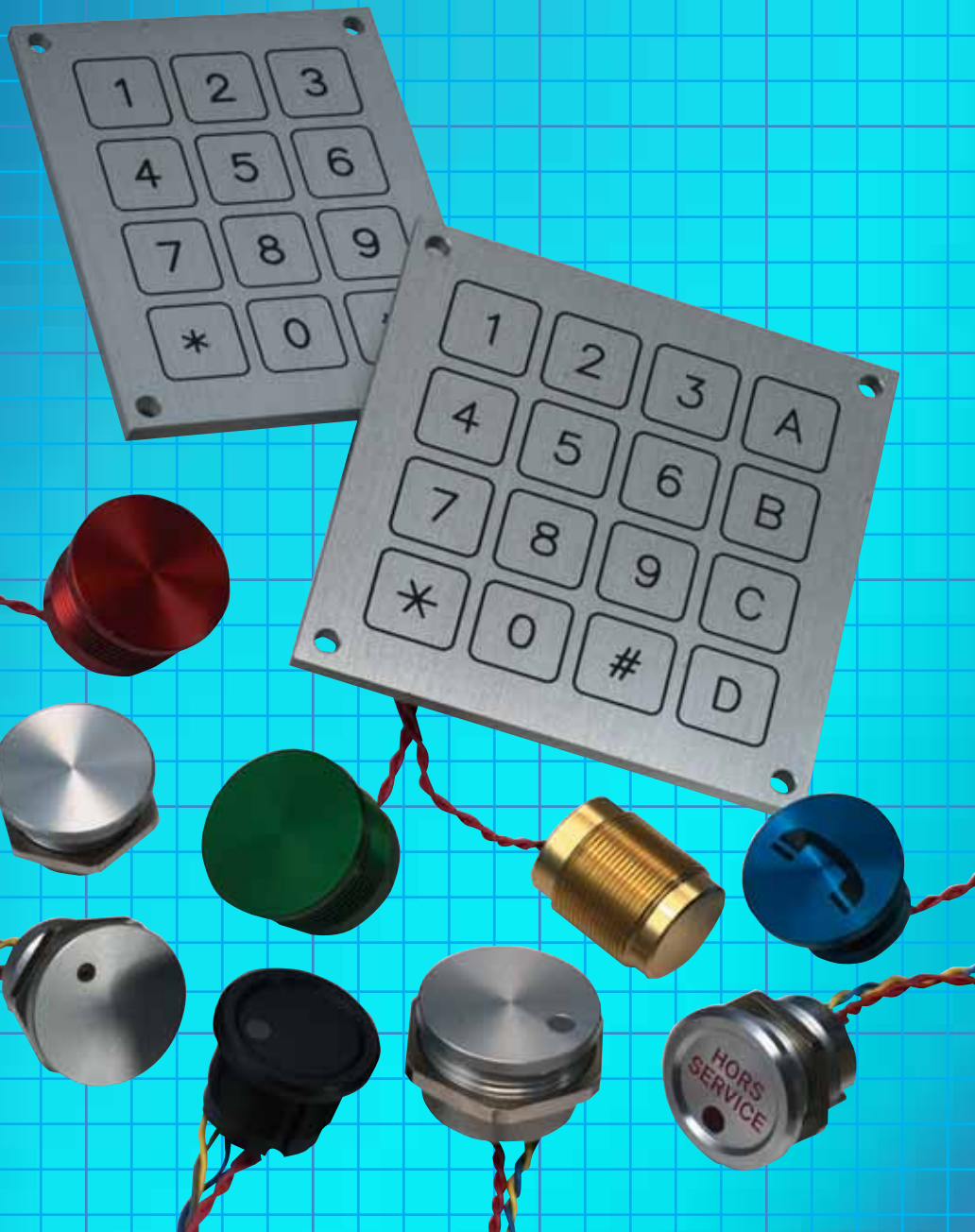


Piezo Keypads and Pushbuttons

Piezo Technology

Piezo Keypads and Pushbuttons function based on the Piezo effect. The external push force activates a Piezo element that releases voltage utilized for switching (MosFet)



Benefits of Grayhill Piezo Keypads and Pushbuttons

- Vandal Resistant
- Virtually Indestructible
- Easy to Keep Clean
- Suitable for Harsh Environments
- Pressure Activated (No moving Parts)
- Water and Dust Proof
- Indoor and Outdoor Use
- Manufactured in any shape

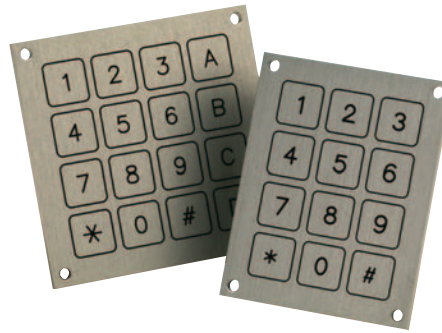
Applications

- Lifts
- Food Industry
- Mining Equipment
- Public Internet and Information Kiosks
- Chemical and PetroChemical Industry
- Safety and Security
- Medical Equipment
- Vending machines
- Beverage Dispensers

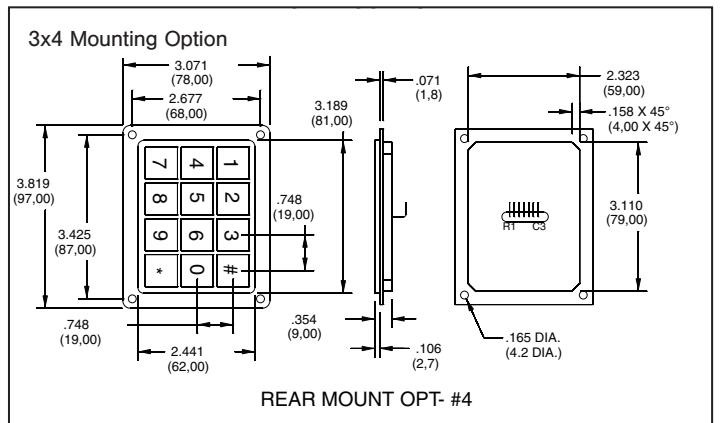
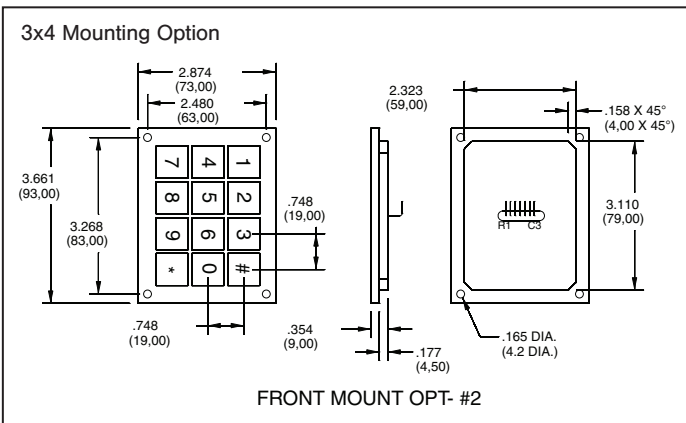
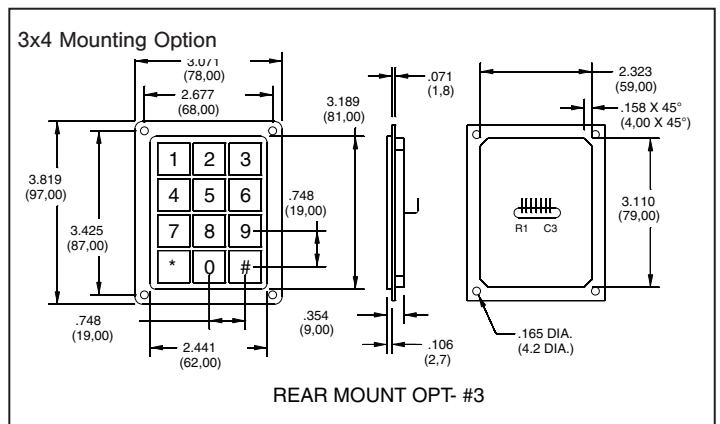
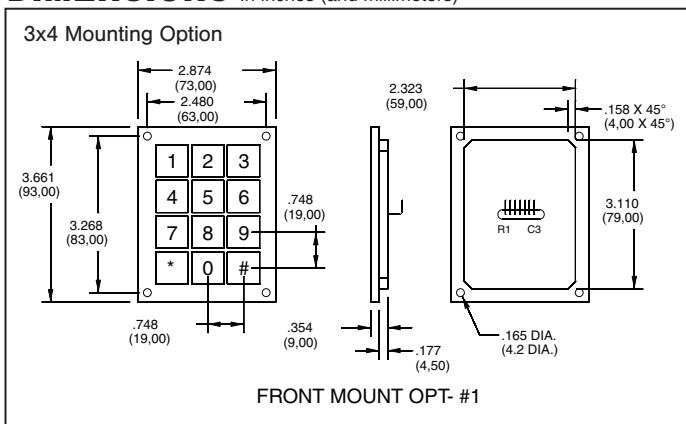
SERIES 37F
PIEZO Switches

FEATURES

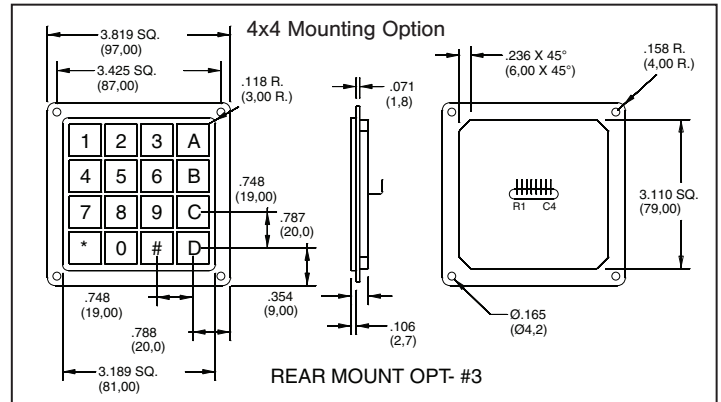
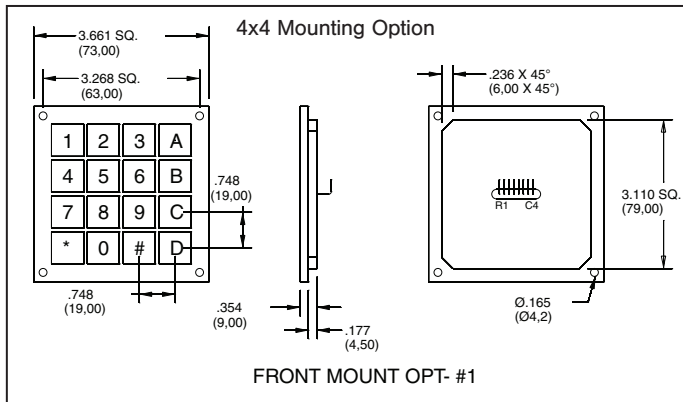
- Fully Sealed
- Virtually Indestructible
- Vandal Resistant
- Indoor and Outdoor Use



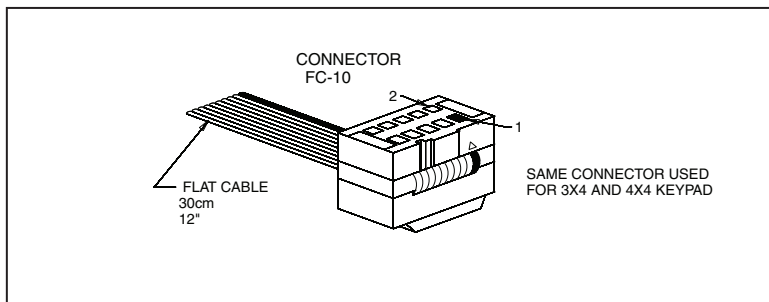
DIMENSIONS In inches (and millimeters)



DIMENSIONS In inches (and millimeters)



CONNECTORS In inches (and millimeters)



SPECIFICATIONS

Activation Force: 3-5N TYP.

Switch Action

Momentary: 120 Msec. Pulse Typ.

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

Toggle: switch changes position at each activation.

Resistance "on": <10 ohms.

Resistance "off": >5 Megohms.

RFI radiation/susceptibility: none.

Life cycles: >50 million.

Operating temp.: -40°C to +85°C (-40°C to +125°C if requested)

Protection system: IP68 according to IEC 529.

Rated voltage: 0-24 V AC/DC

Rated current: 0-2 amps

Switch capacitance: 25pf.

LED: 5 V DC, I_{max} 10mA

TRUTH TABLES

TRUTH TABLE FOR 4X4		TRUTH TABLE FOR 3X4					
Connector Pin Number		Connector Pin Number					
	1 2 3 4 5 6 7 8		1 2 3 4 5 6 7				
	R1 R2 R3 R4 C1 C2 C3 C4		R1 R2 R3 R4 C1 C2 C3				
1	●				●		
2	●				●		
3	●					●	
A	●						●
4		●			●		
5		●			●		
6		●				●	
B		●					●
7			●		●		
8			●		●		
9			●			●	
C			●				●
*				●	●		
0				●		●	
#				●			●
D				●			●

ORDERING INFORMATION

SERIES	MOUNTING OPTION	KEYPAD SIZE	CIRCUITRY OPTION	ELECTRICAL SPEC	HOUSING MATERIAL
37F	1	A	B2	AC	1
37F= PIEZO KEYPAD SWITCHES	OPTIONS: 1,2,3,4	OPTIONS: A=3x4 B=4x4	OPTIONS: B2=Matrix C2=Common Bus	AC=Cable and Connector AP=Terminal Pins	1=Aluminum 2=Stainless Steel
Example Part Number: 37F1AB2AC1					

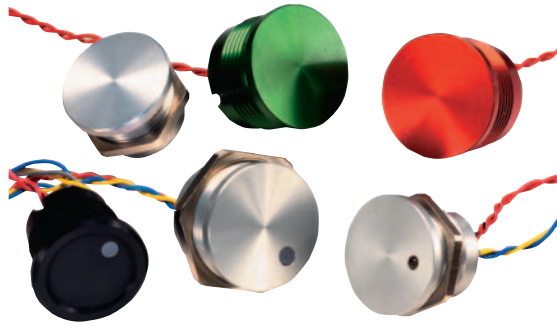
Available from your local Grayhill Component Distributor.
 For prices and discounts, contact a local Sales Office, an authorized local distributor or Grayhill.

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

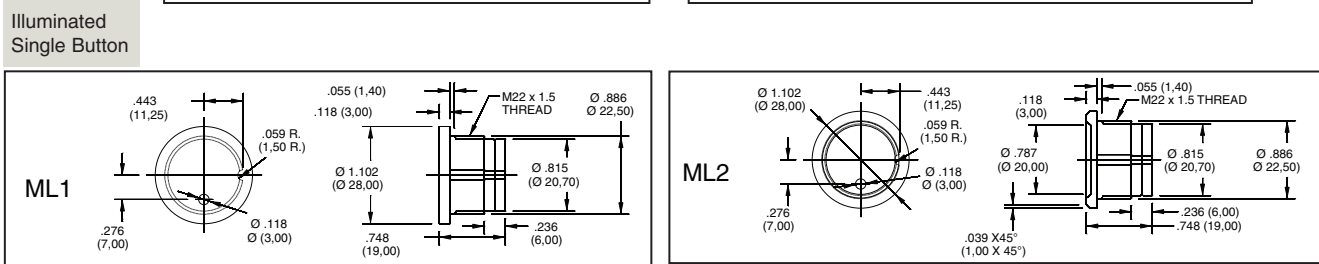
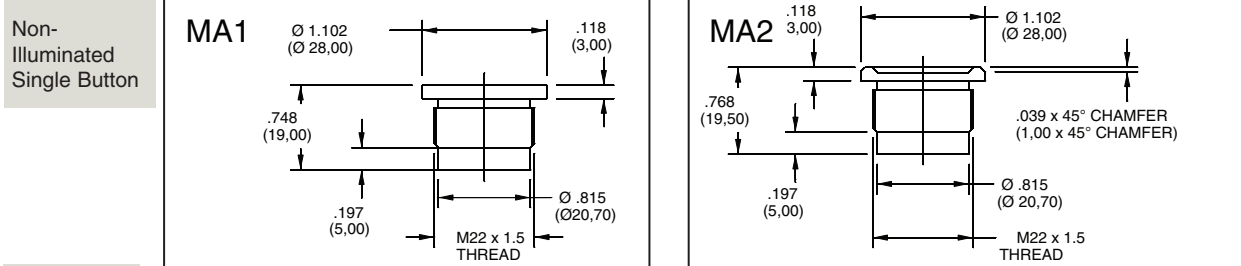
SERIES 37F
PIEZO Pushbutton Switches

FEATURES

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



DIMENSIONS In inches (and millimeters)



ORDERING INFORMATION, 37FMA and 37FML

SERIES	HOUSING TYPE	CIRCUITRY	ELECTRICAL SPEC	LED COLOR***	HOUSING MATERIAL	HOUSING COLORS
37F	MA1	A	AP	1	1	N
37F= PIEZO SINGLE BUTTON SWITCHES	OPTIONS: MA1 MA2 ML1* ML2*	OPTIONS: A=N.O. B=N.C.	AW- V MAX: 24V I MAX: 0.2 A AC/DC TERM: RED WIRE BW- V MAX: 24V I MAX: 0.2 A AC/DC 150 TRANSIENT TERM: PURPLE WIRE CW- V MAX: 24V I MAX: 1.0 A AC/DC 150 TRANSIENT TERM: ORANGE/WHITE WIRE EW- V MAX: 24V I MAX: 0.2 A AC/DC TERM: GREEN WIRE AP- V MAX: 24V I MAX: 0.2 A AC/DC TERM: PIN CP**- V MAX: 24V I MAX: 1.0 A AC/DC TERM: PIN	1=RED 2=GREEN 3=YELLOW 4=RED/GREEN	1=Aluminum 2=Stainless Steel	OPTIONS: N=Natural B=Black R=Red G=Green O=Gold L=Blue

Wire Colors Change with Electrical Spec Option

WIRE	FUNCTION
RED	} 24V AC/DC
RED	
BLUE	} 5V DC
YELLOW	
	LED (-)

*LED Option

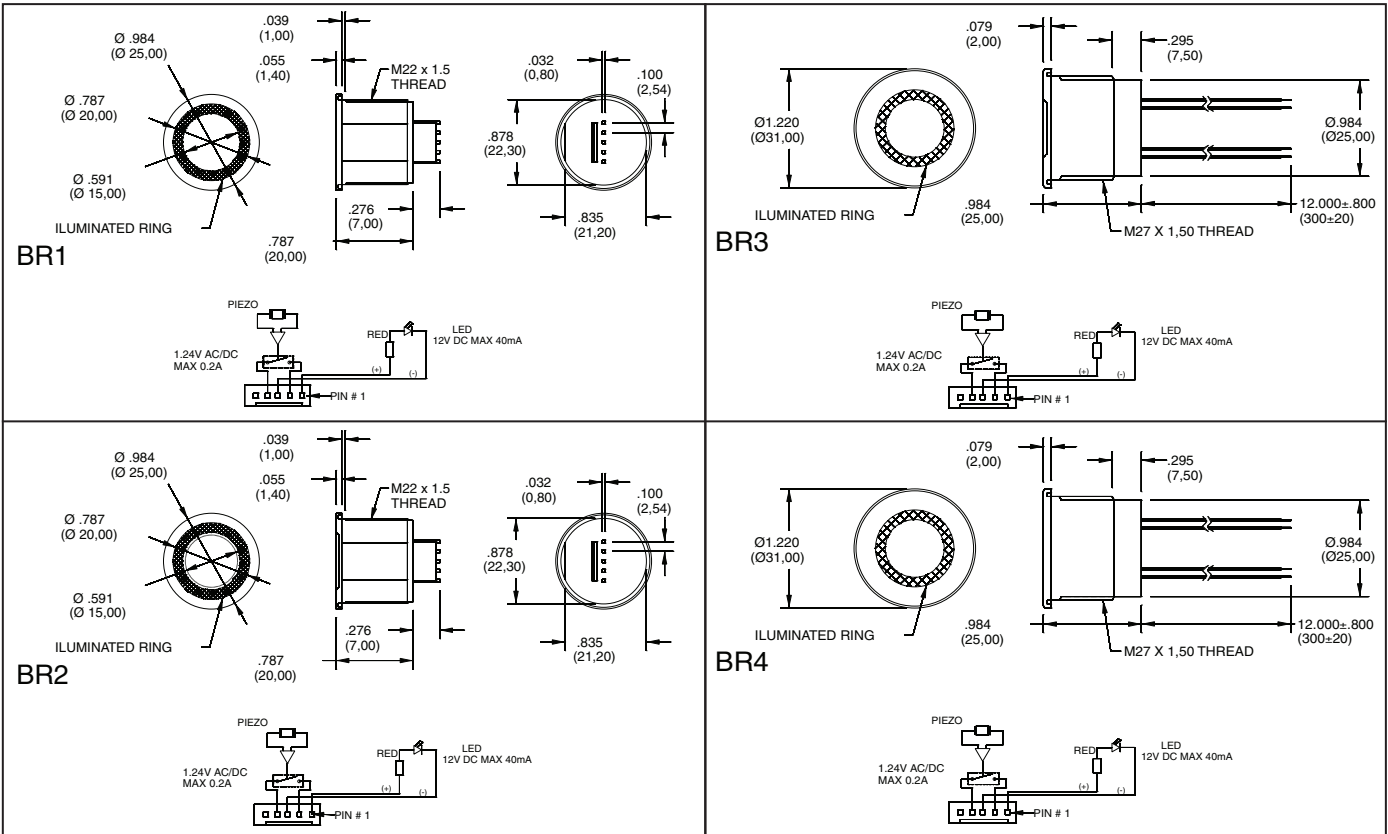
**This Option Not Available with LED Housing ML1 or ML2

***Only Available with Housing Types ML1 and ML2.

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

Example Part Number: 37FMA1AAP1N

DIMENSIONS In inches (and millimeters)



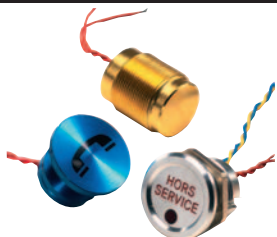
ORDERING INFORMATION, 37FBR

SERIES TYPE	HOUSING	CIRCUITRY SPEC	ELECTRICAL	LED COLOR	HOUSING MATERIAL	HOUSING COLORS
37F	BR1	A	AP	1	1	N
37F= PIEZO SINGLE BUTTON SWITCHES	OPTIONS: BR1 BR2 BR3 BR4	OPTIONS: A=N.O. B=N.C.	AW- V MAX: 24V I MAX: 0.2 A DC TERM: RED WIRE AP- V MAX: 24V I MAX: 0.2 A DC TERM: PIN	<u>12V Option</u> 112=RED 212=GREEN 312=YELLOW 412=BLUE <u>24V Option</u> 124=RED 224=GREEN 324=YELLOW 424=BLUE	1=Aluminum 2=Stainless Steel	OPTIONS: N=Natural B=Black R=Red G=Green O=Gold L=Blue

Example Part Number: 37FBR1AAP1121N

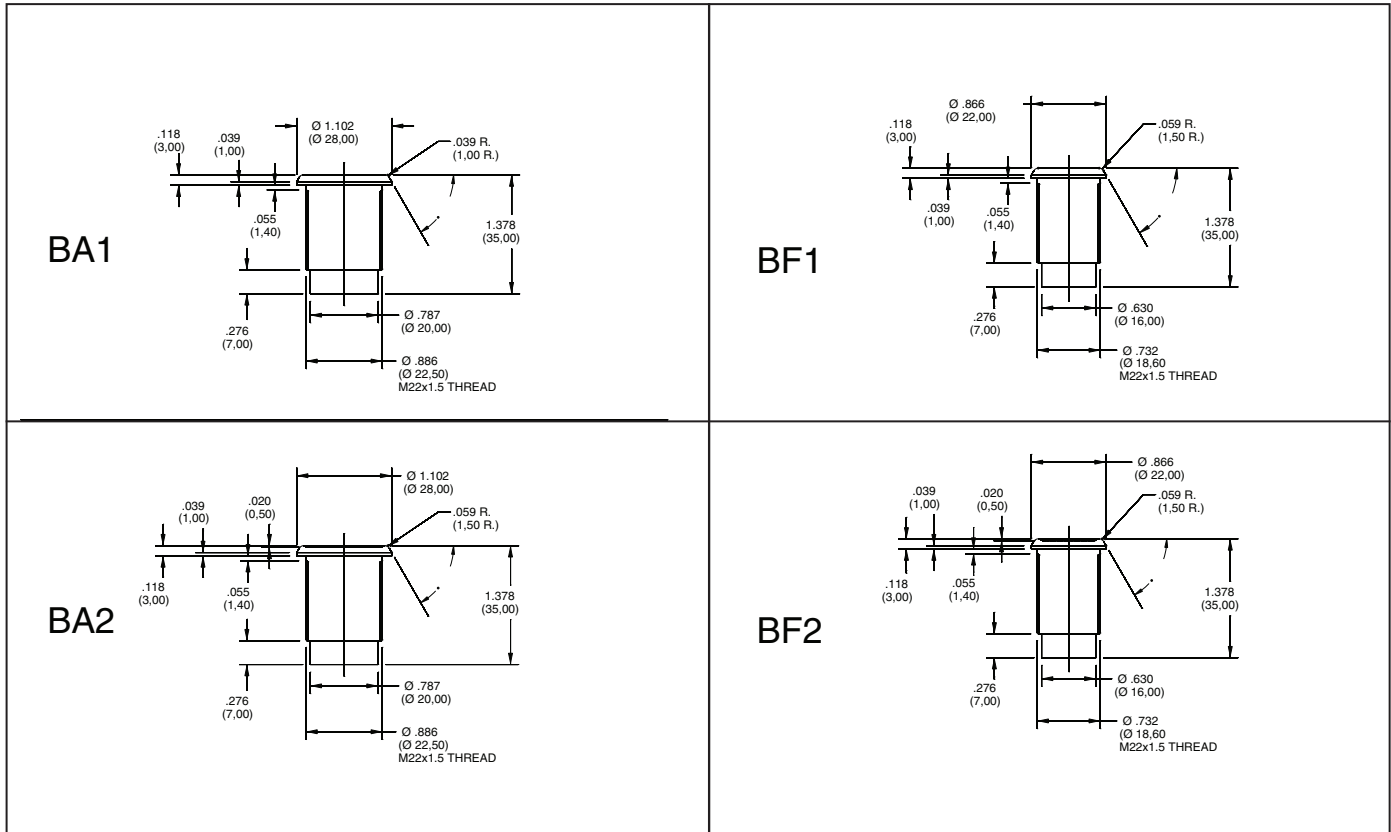
Available from your local Grayhill Component Distributor.

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)

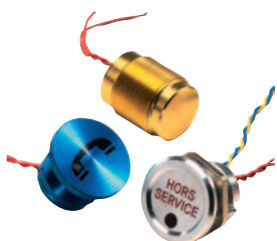


ORDERING INFORMATION, 37FBA and 37FBF

SERIES TYPE	HOUSING	SWITCH TYPE	CIRCUITRY	ELECTRICAL SPEC	HOUSING MATERIAL	HOUSING COLORS
37F	BA1	C	A	1	1	N
37F= PIEZO SINGLE BUTTON SWITCHES	OPTIONS: BA1 BA2 BF1 BF2	OPTIONS C=CONTINUOUS T=TOGGLE	OPTIONS: A=N.O. B*=N.C.	AW- 10- 24V .15A AC/DC WIRE: 1 BLACK 1 BROWN 2 BLUE EW- 3V AND UP DC WIRE: 1 BLACK 1 BROWN 2 BLUE	1=Aluminum 2=Stainless Steel	OPTIONS: N=Natural B=Black R=Red G=Green O=Gold L=Blue
*Normally Closed (N.C.) in Continuous Only						
Example Part Number: 37FBA1CAAW1N						

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.

Contact Grayhill or your local Grayhill sales representative for more information.



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