

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

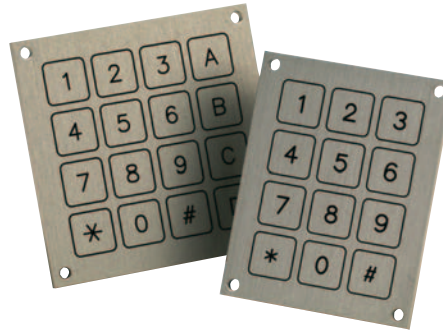
- Lifts
- Food Industry
- Mining Equipment
- Public Internet and Information Kiosks
- Chemical and PetroChemical Industry
- Safety and Security
- Medical Equipment
- Vending machines
- Beverage Dispensers



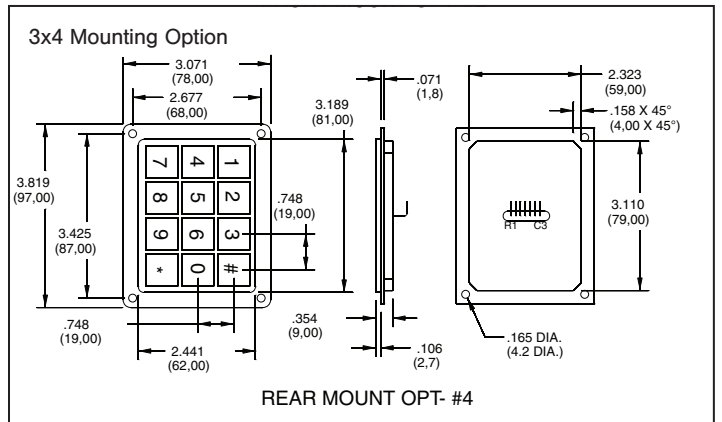
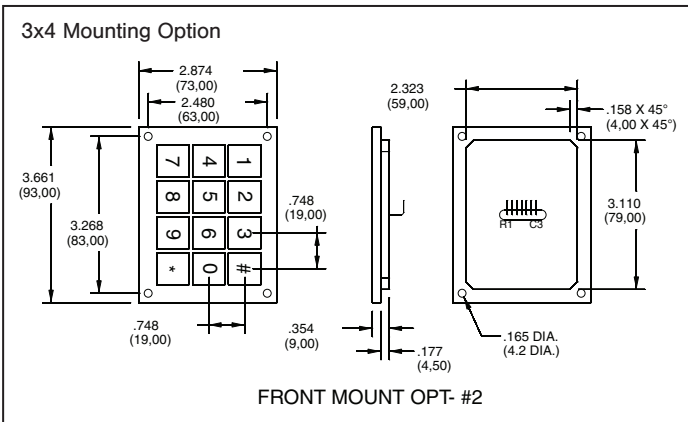
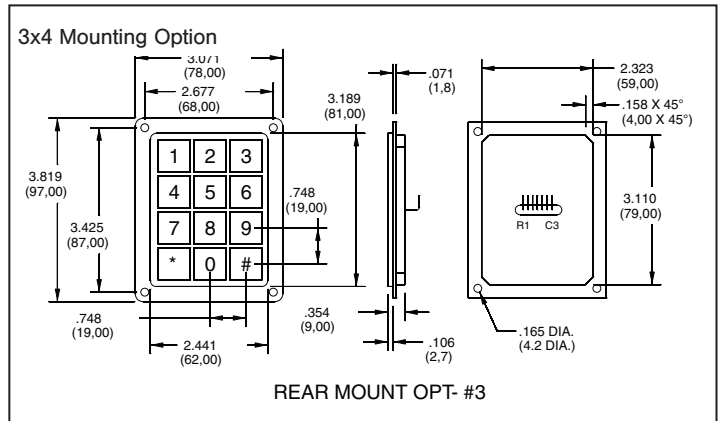
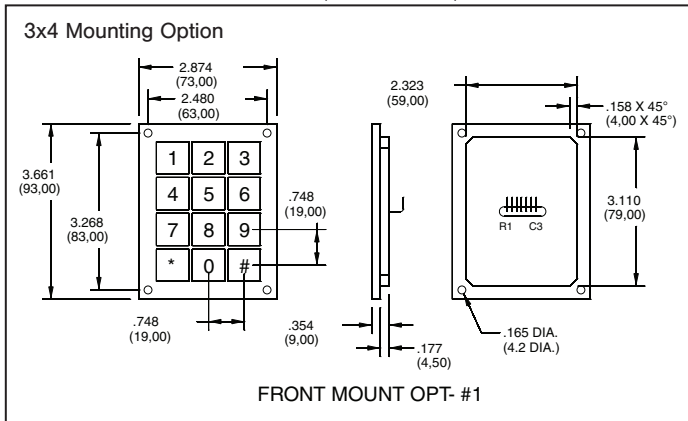
SERIES 37F
PIEZO Switches

FEATURES

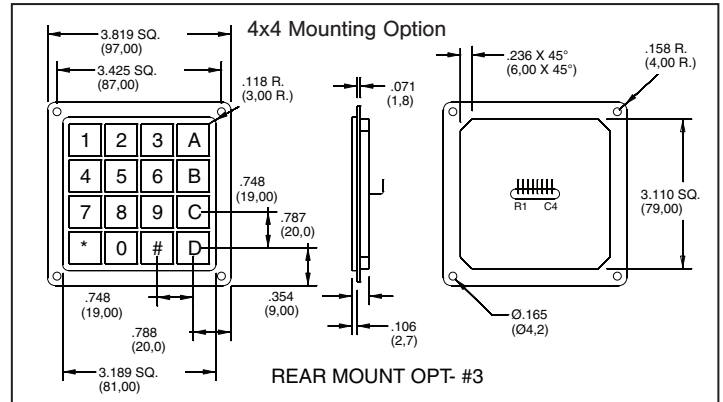
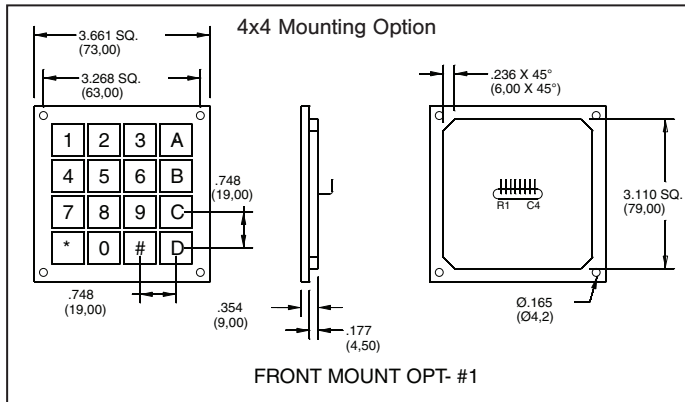
- Fully Sealed
- Virtually Indestructible
- Vandal Resistant
- Indoor and Outdoor Use



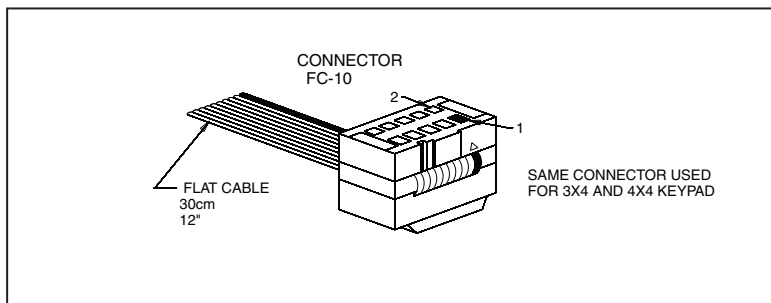
DIMENSIONS In inches (and millimeters)



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

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

		Connector Pin Number						
		1	2	3	4	5	6	7
		R1	R2	R3	R4	C1	C2	C3
1		●				●		
2		●					●	
3		●						●
4			●			●		
5			●				●	
6			●					●
7				●		●		
8				●			●	
9				●				●
*					●	●		
0					●		●	
#					●			●

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					

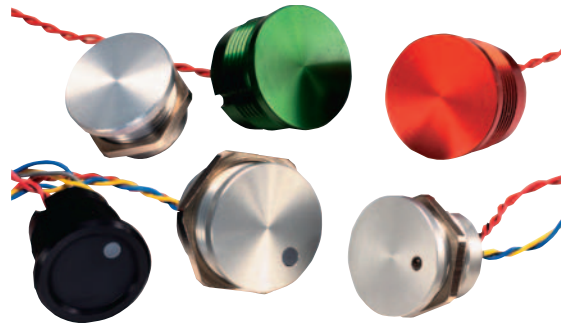
Available from your local Grayhill Component Distributor.
 For prices and discounts, contact a local Sales Office, an authorized local distributor or Grayhill.

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

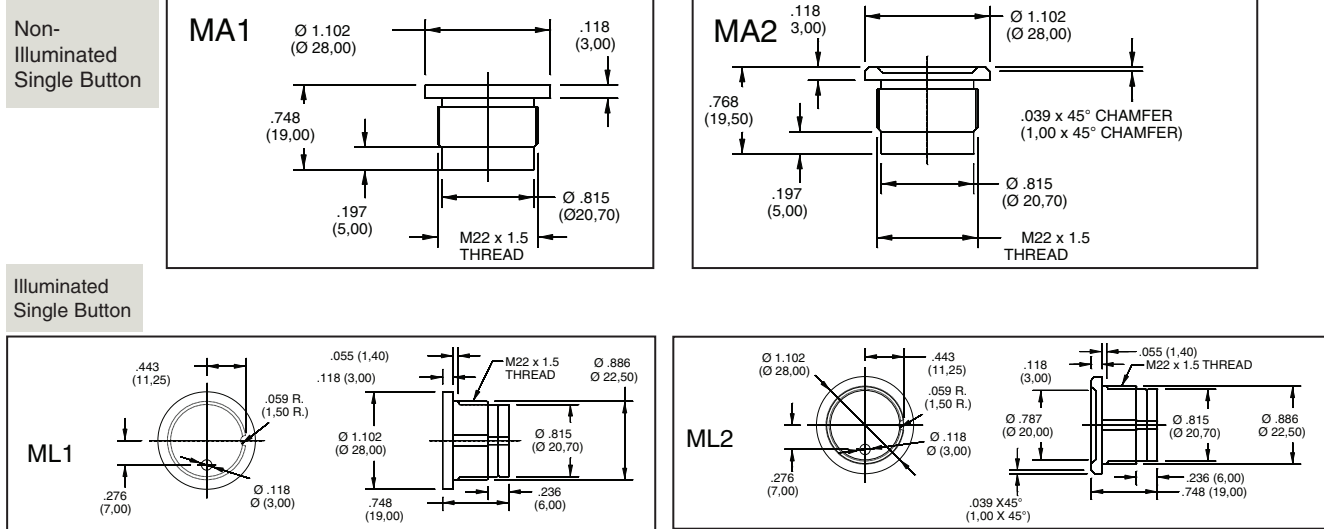
SERIES 37F
PIEZO Pushbutton Switches

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 Option

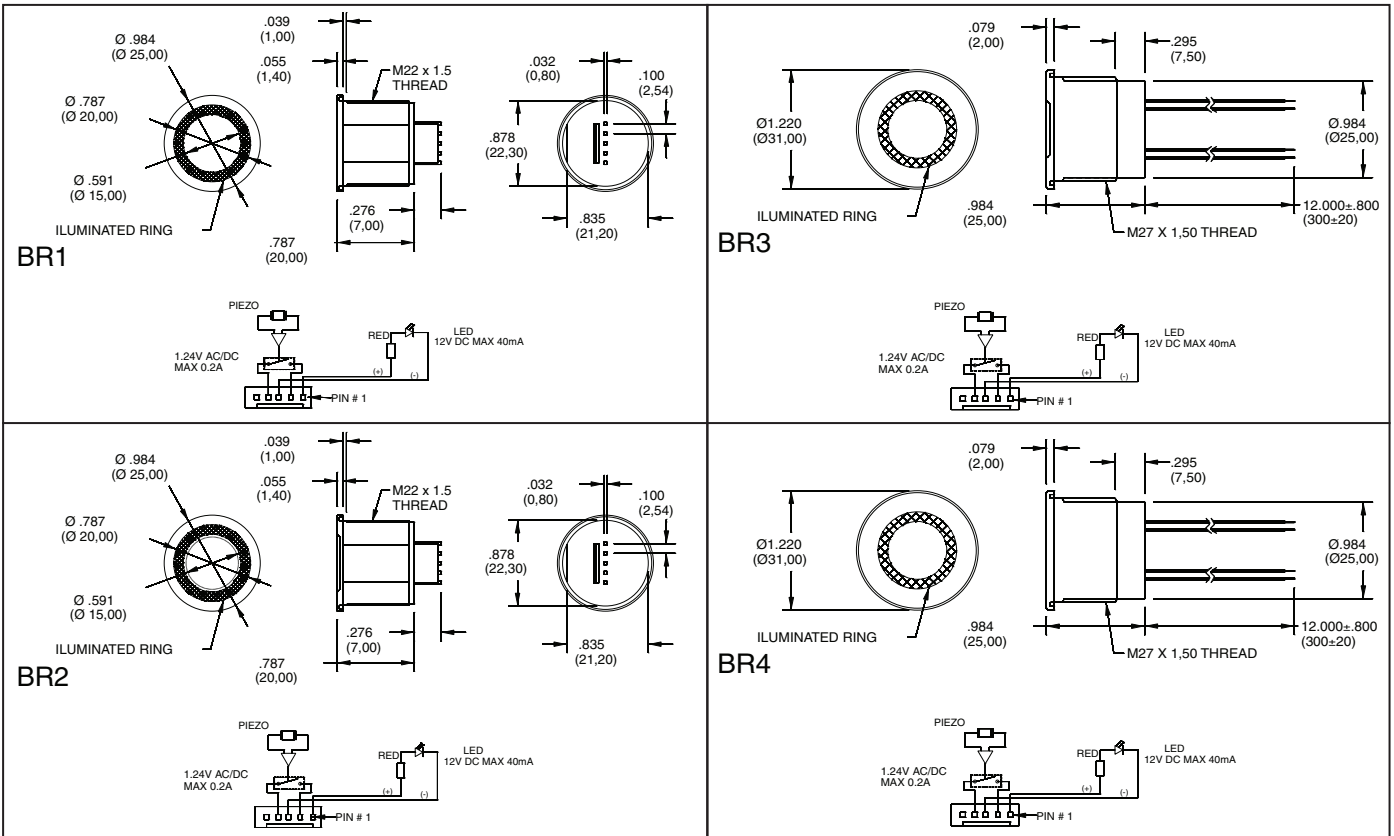
**This Option Not Available with LED Housing ML1 or ML2

***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)



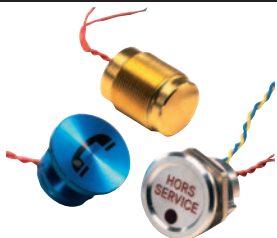
ORDERING INFORMATION, 37FBR

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	12V Option 112=RED 212=GREEN 312=YELLOW 412=BLUE 24V Option 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

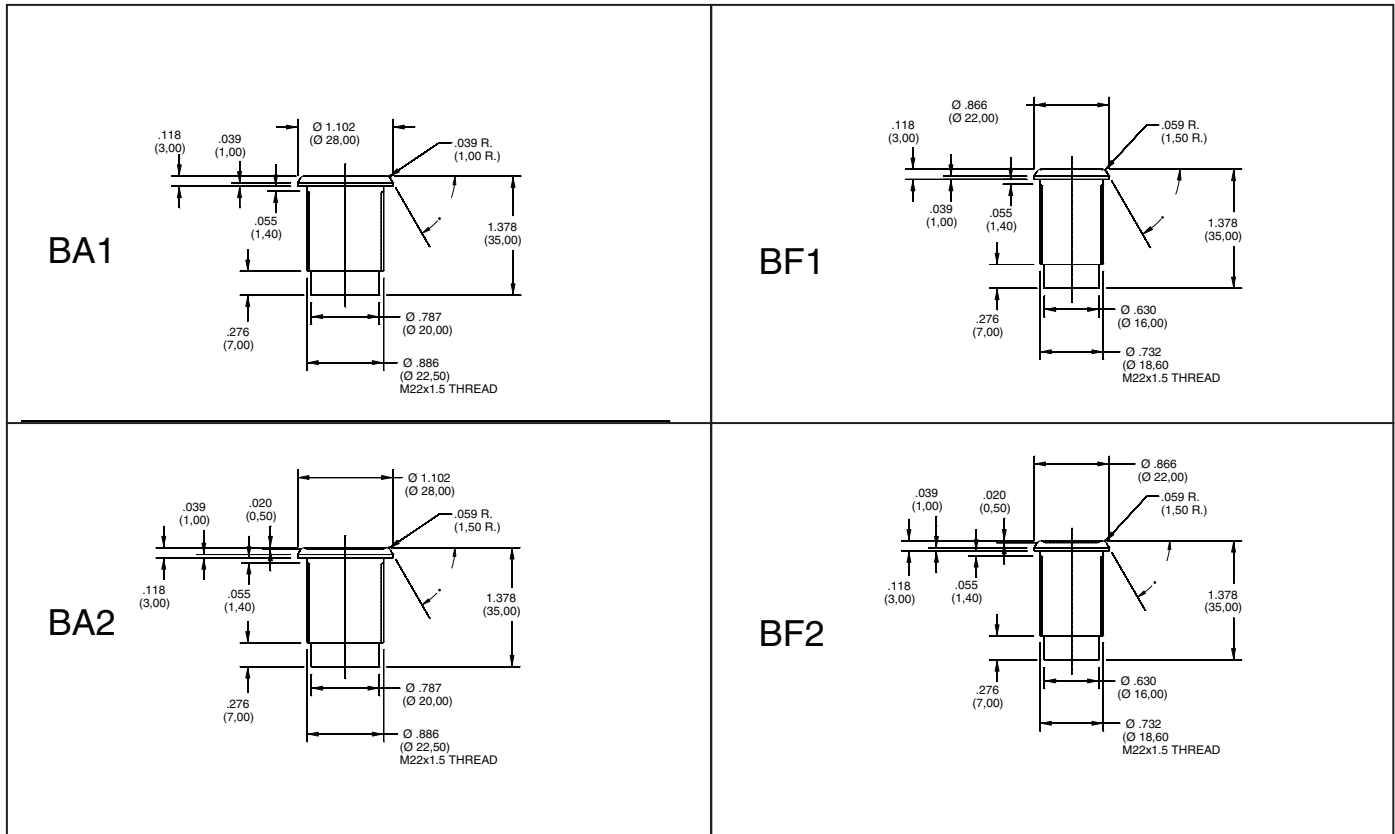
Available from your local Grayhill Component Distributor.

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DIMENSIONS In inches (and millimeters)

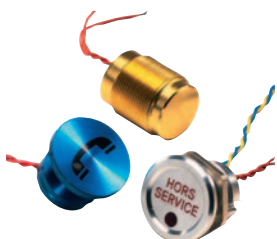


ORDERING INFORMATION, 37FBA and 37FBF

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.

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