



BOURNS®

Features

- Incremental encoder / momentary push switch option
- Long operating life
- Sturdy construction
- Snap-in mount

EPS - Digital Contacting Encoder With Momentary Switch Option

Electrical Characteristics

Output	2-bit quadrature code, Channel A leads Channel B by 90 ° electrically turning clockwise (CW)
Closed Circuit Resistance	5 ohms maximum
Open Circuit Resistance	500 K ohms minimum
Contact Rating	10 milliamp @ 10 VDC or 0.1 watt maximum
Insulation Resistance (500 VDC)	1,000 megohms minimum
Dielectric Withstanding Voltage (MIL-STD-202 Method 301) Sea Level	1,000 VAC minimum
Electrical Travel	Continuous
Contact Bounce (15 RPM)	5 milliseconds maximum
RPM (Operating)	120 maximum
Encoder Switching Configuration (applies to detented version only)	Normally Open
Phase Tolerance (CH A to CH B)	90 ° ± 72 °

Environmental Characteristics

Operating Temperature Range	+1 °C to +85 °C (+34 °F to +185 °F)
Storage Temperature Range	-40 °C to +85 °C (-40 °F to +185 °F)
Humidity	MIL-STD-202, Method 103B, Condition B
Vibration	15 G
Contact Bounce	0.1 millisecond maximum
Shock	50 G
Contact Bounce	0.1 millisecond maximum
Rotational Life	200,000 shaft revolutions
Switch Life	100,000 cycles
IP Rating	IP 40

Mechanical Characteristics

Mechanical Angle	360 ° Continuous
Running Torque	0.5 to 1.5 N-cm (0.75 to 2.25 oz-in.)
Mounting Torque	56 to 79 N-cm (5-7 lb.-in.) maximum
Shaft Side Load (Static)	4.53 kg (10 lbs.) minimum
Weight	Approximately 21 gms. (0.75 oz.)
Terminals	Printed circuit board terminals
Soldering Condition	Recommended hand soldering using Sn95/Ag5 no clean solder, 0.025 " wire diameter. Maximum temperature 399 °C (750 °F) for 3 seconds. No wash process to be used with no clean flux. Part can be wave soldered at 260 °C (500 °F) for 5 seconds, no wash process with no clean flux.
Marking	Manufacturer's name and part number, and date code
Hardware	One lockwasher and one mounting nut supplied with each encoder, except where noted in the part number.

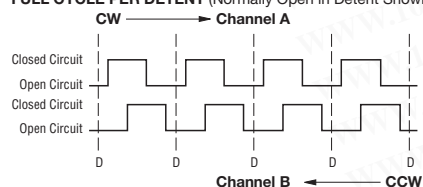
Switch Characteristics

Switch Type	Push Momentary, SPST N.O.
Power Rating (Resistive Load)	10 milliamps @ 12 volts DC
Closed Switch Resistance	Less than 200 ohms @ 440 gram force on shaft
Switch Travel	2.25 ± 0.25 mm
Switch Actuation Force	370 ± 70 grams (5 ± 1 oz.-in.)

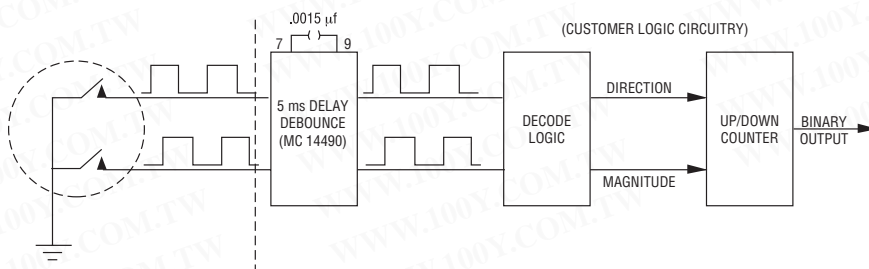
Quadrature Output Table - This table is intended to show available outputs as currently defined.

FULL CYCLE PER DETENT
(Normally Open in Detent Shown)

FULL CYCLE PER DETENT (Normally Open in Detent Shown)



RECOMMENDED INCREMENTAL CONTROL DIAGRAM
FOR USE WITH A DEBOUNCE CIRCUIT

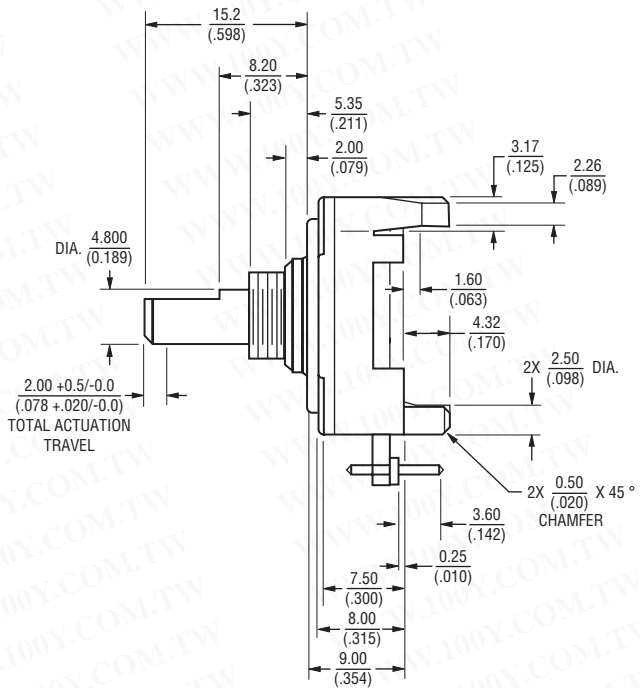
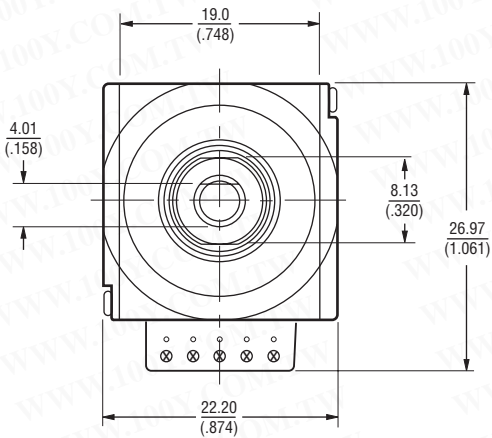


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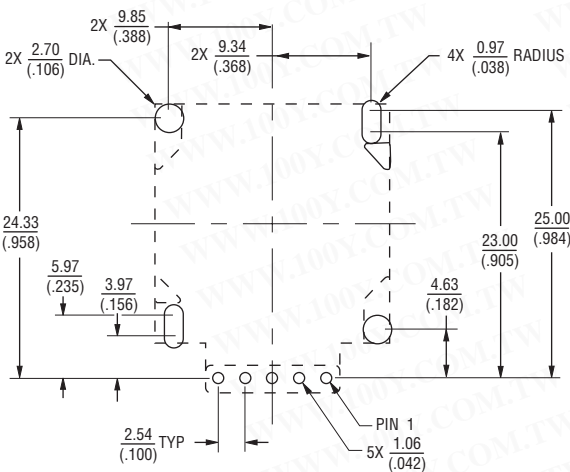
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Product Dimensions

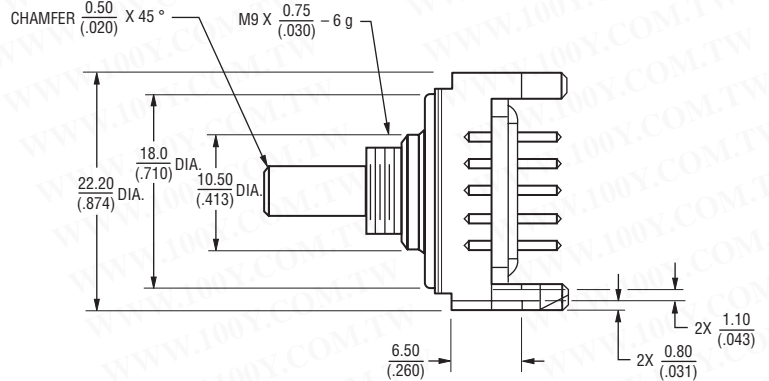
SNAP-IN MOUNTING - S style bushing / F style shaft



PCB MOUNTING DIMENSIONS



- 1 ○
 - 2 ○ CHANNEL B
 - 3 ○ COMMON
 - 4 ○ CHANNEL A
 - 5 ○
- TERMINAL PIN NO.



DIMENSIONS: MM (IN)
 TOLERANCES: EXCEPT WHERE NOTED
 DECIMALS: .XX ± .51 (.020) .XXX ± .13 (.005)

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How to Order

PART NUMBERING SYSTEM

E P S 1 D - F 1 9 - A E 0 0 3 6 L

Encoder with Switch Option

BUSHING CONFIGURATION	
Code	Description
S	9 mm flatted x 5.35 mm length Threaded M9 x 0.75

SWITCH OPTION	
Code	Description
1	Switch (Push Momentary)

ANTI-ROTATION LUG POSITION	
Code	Description
J	9:00 Position
D	None

SHAFT STYLE (See Outline Drawing for Details)	
Code	Description
F	Flatted (4.8 mm Dia.)

RoHS IDENTIFIER	
Code	Description
L	Compliant
Blank	Non-Compliant

PERFORMANCE CODE		
Code	Detents	Cycles/Rev.
E0006	0	6
E0009	0	9
E0012	0	12
E0024	0	24
E0036	0	36
D0024	24	24

HOUSING TERMINAL CONFIGURATION (X indicates "Equipped With")		
Features	Code	
	A	B
Terminal (Rear Mounting)	X	X
Mounting Hardware Included	X	

SHAFT LENGTH (FMS)		
Code	Description	Available Shaft Styles
19	Length (19/32)	F

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Bourns:

[EPS1D-F19-AD0024](#) [EPS1D-F19-AE0036](#) [EPS1D-F19-AE0012](#) [EPS1D-F19-AE0024](#) [EPS1D-F19-AE0009](#) [EPS1D-F19-AE0006](#) [EPS1D-F19-AD0024L](#) [EPS1D-F19-AE0024L](#) [EPS1D-F19-AE0036L](#) [EPS1D-F19-BD0024L](#)

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