Features

- Quadrature output
- Detent option
- Snap-in PC board mount
- Long operating life
- Incremental output
- Up to 24 full quadrature outputs per revolution

ES Series - Shaftless Contacting Encoders

Electrical Characteristics

Output	2-bit quadrature code, Channel A leads Channel B turning clockwise (CW)
Closed Circuit Resistance	5 ohms maximum
Open Circuit Resistance	100 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

Environmental Characteristics

Operating Temperature Range	-40 ºC to +85 ºC (-40 °F to +185 °F)
Storage Temperature Range	-40 ºC to +85 ºC (-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
IP Rating	IP 40

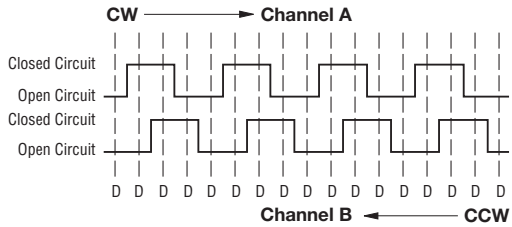
Mechanical Characteristics

Mechanical Angle	Continuous
Running Torque (Detented)	0.5 to 1.5 N-cm (0.75 to 2.25 oz-in.)
Undetented Torque	0.17 to 0.8 N-cm (0.25 to 1.25 oz-in.)
Weight	Approximately 8 gm (0.28 oz.)
Terminals	Printed circuit board terminals
Soldering Condition	
Manual Soldering	96.5Sn/3.0Ag/0.5Cu solid wire or no-clean rosin cored wire; 370 °C (700 °F) max. for 3 seconds
Wave Soldering	96.5Sn/3.0Ag/0.5Cu solder with no-clean flux; 260 °C (500 °F) max. for 5 seconds
Wash Processes	Not recommended
Marking	Manufacturer's name and trademark, part number and date code
Hardware	No hardware supplied

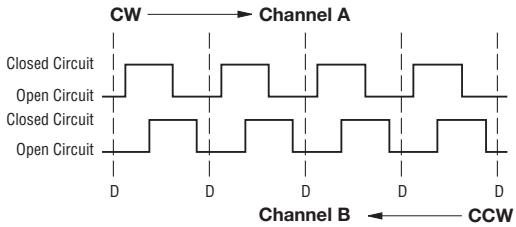
Quadrature Output Table

This table is intended to show available outputs as currently defined.

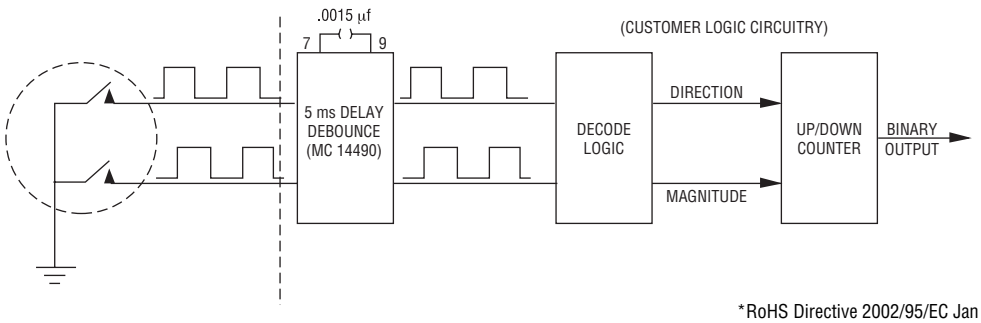
1/4 CYCLE PER DETENT



FULL CYCLE PER DETENT (Normally Open in Detent Shown)

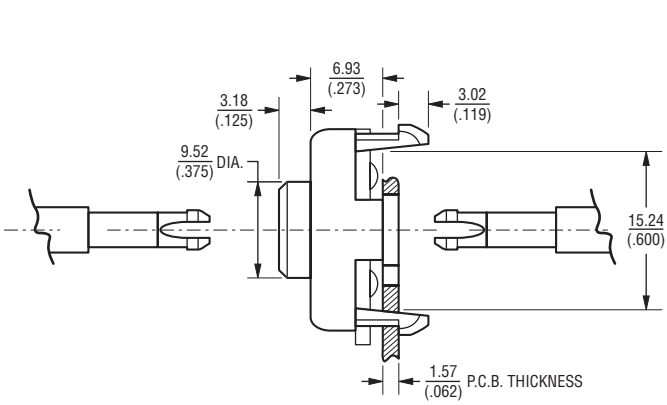


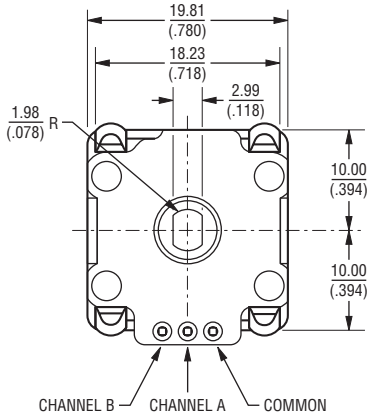
RECOMMENDED INCREMENTAL CONTROL DIAGRAM FOR USE WITH A DEBOUNCE CIRCUIT



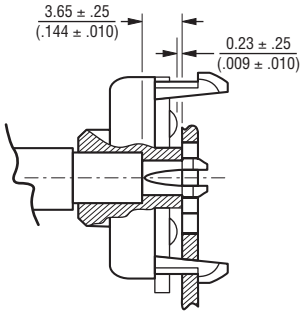
*RoHS Directive 2002/95/EC Jan 27, 2003 including Annex.

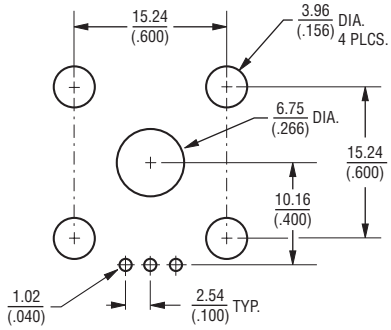
Product Dimensions

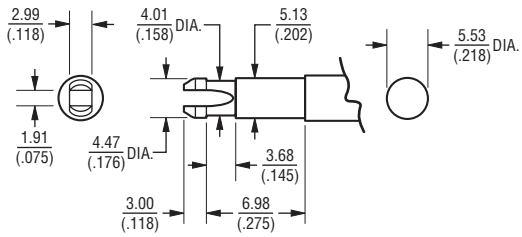




Mounting Dimensions







DIMENSIONS: MM / (INCHES)

How To Order

BOURNS ES SERIES SHAFTLESS ENCODER (Non-Stock Adjustable)

E	S	D	1	D	-	S	0	0	-	G	C	0	0	2	4	L

BUSHING CONFIGURATION	
Code	**Description**
D	3/8 " Dia. X 1/8 " High Threadless Bushing

SWITCHING CONFIGURATION (In Detent Position)
Applies to performance codes B0012 and C0024 only, use code "0" for all other performance codes.

Code	Description
0	Not Applicable
1	Normally Open

ANTI-ROTATION LUG POSITION	
Code	**Description**
D	None

SHAFT STYLE/LENGTH	
Code	**Description**
S00	No Shaft

HOUSING TERMINAL CONFIGURATION (X indicates "Equipped With"	
Features	**Code G**
Standard Housing	X
Snap-in Legs	X
Rear Facing Terminals - .100 " Spacing	X

PERFORMANCE CODE		
Code	**Detents**	**Cycles/Rev.**
E0006	0	6
E0009*	0	9
E0012*	0	12
E0024	0	24
B0012*	12	12
C0006	24	6
C0024		24

**Consult factory.*

RoHS IDENTIFIER	
Code	**Description**
L	Compliant
Blank	Non-Compliant