

Features

- Absolute encoder / absolute code output
- Digital output
- Sturdy construction
- Bushing mount
- Available with PC board mounting bracket (optional)
- *RoHS compliant

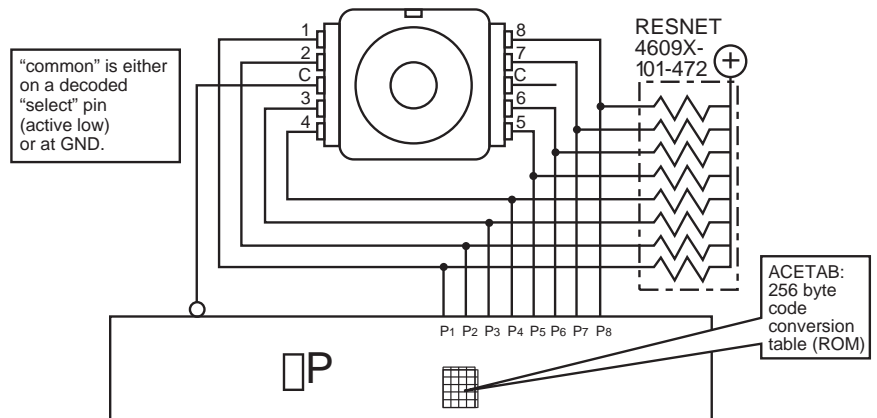
EAW - Absolute Contacting Encoder (ACE™)

General Information

Until now, the choice of an absolute encoder meant an expensive, and larger-sized product. Through the use of combinatorial mathematics, the absolute code pattern of the Bourns® Absolute Contacting Encoder (ACE™) is placed on a single track for a very economical, energy-efficient and compact product. Bourns® ACE™ provides an absolute digital output that will also retain its last position in the event of a power failure.

An intelligent alternative to incremental encoders and potentiometers, the Bourns® ACE™ is ideally suited for many industrial, medical and consumer product applications.

Recommended Control Diagram for ACE-128



Electrical Characteristics

Output.....	8-bit code with 128 absolute states
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 (60 RPM).....	2.7 milliseconds maximum*
RPM (Operating).....	120 maximum

Environmental Characteristics

Operating Temperature Range.....	-40 °C to +85 °C (-40 °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.....	50,000 shaft revolutions minimum
IP Rating.....	IP 40

Mechanical Characteristics

Mechanical Angle.....	360 ° Continuous
Running Torque.....	0.5 to 1.5 N-cm (0.75 to 2.50 oz-in.)
Mounting Torque.....	79 N-cm (7 lb.-in.) maximum
Shaft Side Load (Static).....	4.5 kg (10 lbs.) minimum
Weight.....	Approximately 14 gms. (0.50 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 ux 260 °C (500 °F) max. for 5 seconds
Wash processes.....	Not recommended
Marking.....	Manufacturer's name and trademark, part number, and date code.
Hardware.....	One lockwasher and one mounting nut are shipped with each encoder, except where noted in the part number.
Packaging.....	45 pcs./tray

*High probability of missing quadrature codes with maximum bounce.



WARNING Cancer and Reproductive Harm
www.P65Warnings.ca.gov

*RoHS Directive 2015/863, Mar 31, 2015 and Annex.

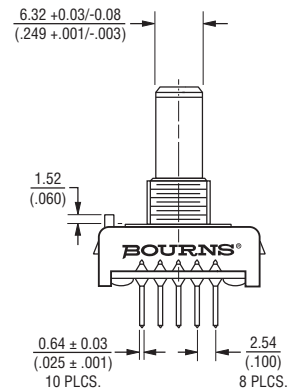
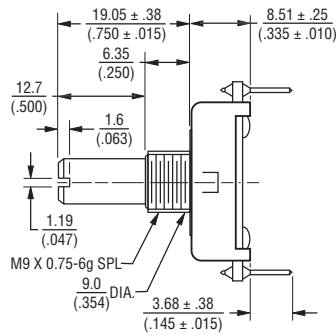
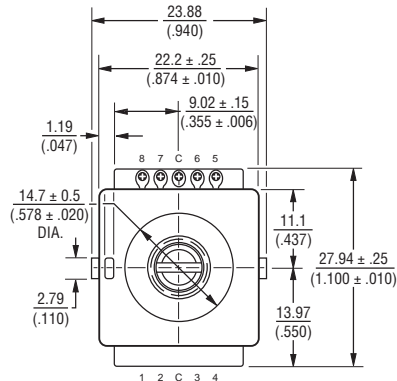
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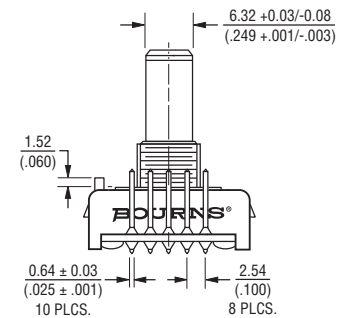
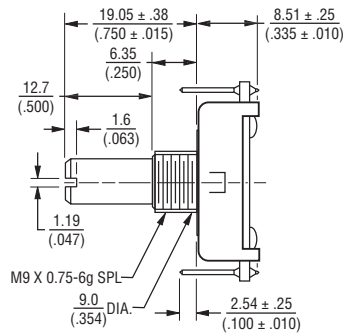
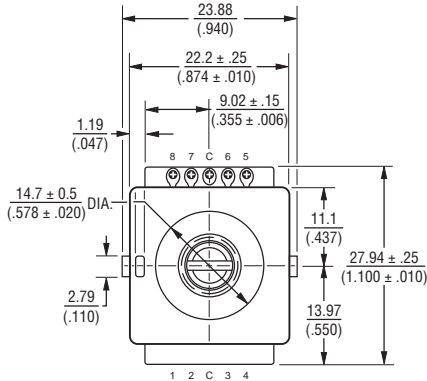
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Dimensional Drawings

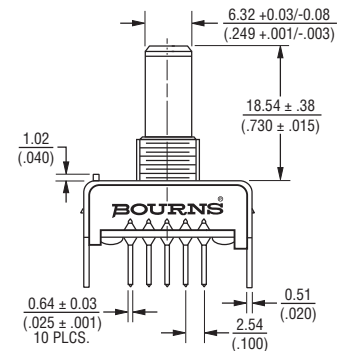
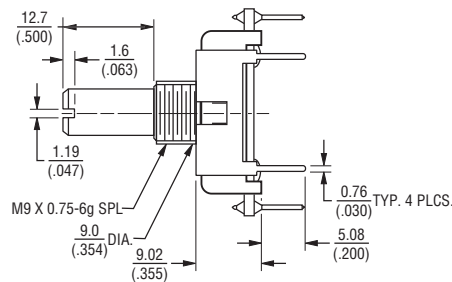
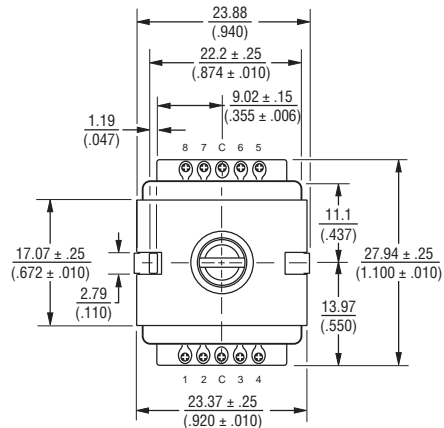
Bushing Mounted: Housing A with Rear Facing Terminals



Bushing Mounted: Housing A with Forward Facing Terminals



PCB Bracket Mounted: Housing B



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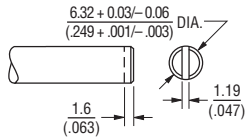
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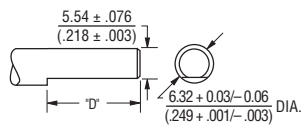
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Dimensional Drawings

Shaft Style B

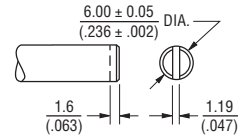


Shaft Style C



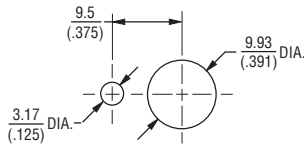
"D" DIMENSION EXTENDS FROM SHAFT END TO BUSHING FACE
 "D" = (SHAFT LENGTH, FMS) - (BUSHING LENGTH)

Shaft Style R

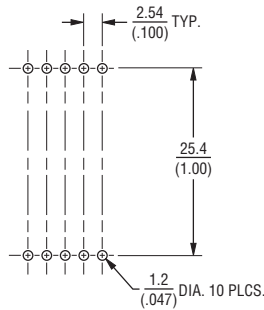


Bushing Mounted: Housing A with Rear Facing Terminals

Panel Hole Dimensions

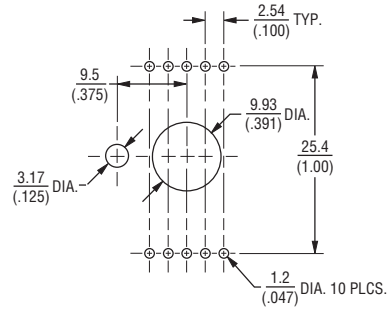


PCB Board Hole Pattern w/PCB Bracket



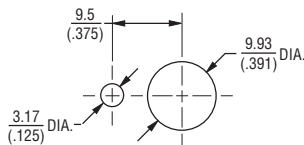
Bushing Mounted: Housing A with Forward Facing Terminals

PCB Board Hole Pattern w/PCB Bracket

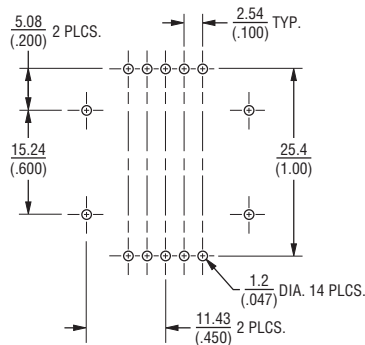


PCB Bracket Mounted: Housing B

Panel Hole Dimensions



PCB Board Hole Pattern w/PCB Bracket



TOLERANCES EXCEPT WHERE NOTED:

.XX = ± $\frac{.51}{(.02)}$.XXX = ± $\frac{.127}{(.005)}$

DIMENSIONS: $\frac{MM}{(IN)}$

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How to Order

PART NUMBERING SYSTEM

E A W 0 J - B 2 4 - A E 0 1 2 8 L

Code	Rotational Life
A	50,000 Revolutions

BUSHING CONFIGURATION	
Code	Description
W	9 mm x 1/4" Length. Threaded M9x0.75
L	9 mm x 3/8" Length. Threaded M9x0.75 (Use B shaft only.)

DETENT CONFIGURATION	
Code	Description
0	Non-Detented

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

SHAFT STYLE (See Outline Drawing for Details)	
Code	Description
B	Plain with Inserted Slot (1/4" Dia.)
C	Single Flatted (1/4" Dia.)
R	Plain with Inserted Slot (6 mm Dia.)

RoHS IDENTIFIER	
Code	Description
L	Compliant

PERFORMANCE CODE		
Code	Detents	States/Rev.
E0128	0	128

HOUSING TERMINAL CONFIGURATION (X indicates "Equipped With")					
Code					
Features	A	B	C	H	K
Rear Mount Terminals	X	X	X		
Forward Facing Terminals				X	X
PCB Bracket		X	X		
Hardware Included	X		X	X	

SHAFT LENGTH (FMS)		
Code	Description	Available Shaft Styles
24	3/4" (19.05 mm) Length	B, C
Metric		
19	19 mm Length	R

The sample part number demonstrates the identification code for Bourns contacting encoders.
The part number shown is a commonly used model, typically available from stock.

*Consult factory concerning special inquiries.

REV. 09/19

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