

## Features

- Conductive plastic technology
- Low profile package
- 50,000 cycle rotational life
- Available with momentary push or rotary switch option
- PCB mount terminal configuration
- Rugged metal housing for industrial applications
- Flatted or slotted shaft options
- RoHS compliant\*

## 39 – 13 mm Single-Turn Panel Control with Switch Option

### Electrical Characteristics<sup>1</sup>

Standard Resistance Range.....	5 K - 100 K ohms
Total Resistance Tolerance.....	±20 %
Independent Linearity.....	±5 %
End Resistance.....	2 ohms maximum
Effective Electrical Angle	
Non-Switch Type (Bushing Type "S").....	220 ° ± 5 °
Rotary Switch Type (Bushing Type "S").....	220 ° ± 5 °
Momentary Push Switch Type (Bushing Type "L").....	201 ° ± 5 %
Contact Resistance Variation.....	3 % maximum
Dielectric Withstanding Voltage (MIL-STD-202, Method 301)	
Sea Level.....	750 VRMS minimum
Insulation Resistance.....	100 megohms minimum
Power Rating @ 70 °C (Derated to 0 @ 125 °C)	
(Voltage Limited by Power Dissipation or 350 VAC, whichever is less)	
Linear Taper.....	0.25 watt
Audio Taper.....	0.125 watt

### Switch Characteristics

Rotary Switch Type.....	SPST N.O.
Power Rating (Resistive Load).....	1.5 amps @ 12 VDC
Contact Resistance @ 10 mA.....	200 milliohms maximum
Contact Bounce.....	5 milliseconds
Actuation Torque.....	0.7 to 4.9 N-cm (1 to 7 oz.-in.)
Momentary Push Switch Type.....	SPST N.O.
Power Rating (Resistive Load).....	250 milliamps @ 12 VDC
Contact Resistance @ 10 mA (w/500 gm Shaft Load).....	50 ohms maximum
Contact Bounce.....	5 milliseconds
Actuation Force.....	500 ± 100 gram

### Environmental Characteristics

Operating Temperature Range.....	-40 °C to +85 °C (-40 °F to +185 °F)
Storage Temperature Range.....	-55 °C to +85 °C (-67 °F to +185 °F)
Vibration.....	15 G
Total Resistance Shift.....	±3 %
Voltage Ratio Shift.....	±5 %
Shock.....	30 G
Total Resistance Shift.....	±3 %
Voltage Ratio Shift.....	±5 %
Load Life.....	1,000 Hours
Total Resistance Shift.....	±10 %
Rotational Life (No Load).....	50,000 cycles
Total Resistance Shift.....	±10 %
Switch Life	
Rotary Switch Type.....	25,000 cycles
Momentary Push Switch Type.....	50,000 cycles
Moisture Resistance.....	MIL-STD-202, Method 103, Condition B
Total Resistance Shift.....	±10 %
IP Rating.....	IP 40

### Mechanical Characteristics

Stop Strength.....	19.8 N-cm (28 oz.-in.)
Mechanical Angle	
Non-Switch and Rotary Switch Type.....	270 ° ± 10 °
Momentary Push Switch Type.....	230 ° ± 10 °
Torque	
Starting.....	0.07 to 0.70 N-cm (0.1 to 1.0 oz.-in.) minimum
Running.....	0.07 to 0.53 N-cm (0.1 to 0.75 oz.-in.) maximum
Mounting.....	1.7 to 2.0 N-m (15 to 18 lbs.-in.) maximum
Shaft Retention	
Pull Force.....	4 Kg (8.8 lb.) maximum
Push Force.....	4.5 Kg (10 lb.) maximum
Weight (Single Section).....	4 grams (0.14 oz.)
Terminals	
Potentiometer.....	Printed circuit board terminals
Switch.....	Flat 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 trademark, part number and date code
Ganging.....	1 cup maximum
Hardware.....	One lockwasher (H-37-5) and one mounting nut (H-38-15) is shipped with each potentiometer
Packaging.....	100 pcs./tray

<sup>1</sup> Electrical specifications tested at 250 RPM, at room ambient: +25 °C nominal.

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

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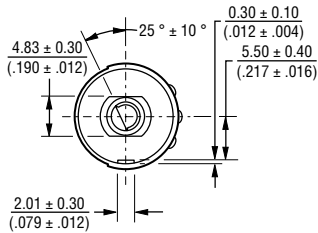
**WARNING**  
**Cancer and Reproductive Harm**  
[www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

# PC – “Slimline” 22 mm Square Single Turn Panel Control

# BOURNS®

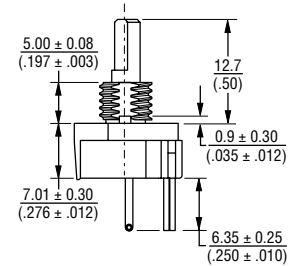
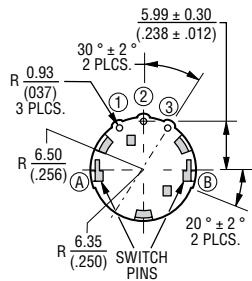
## Product Dimensions

### BUSHING STYLE "L"

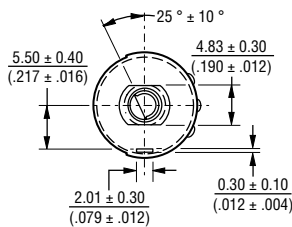


DIMENSIONS:  $\frac{\text{MM}}{\text{(INCHES)}}$

### BOTTOM VIEW

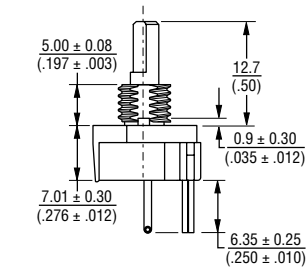
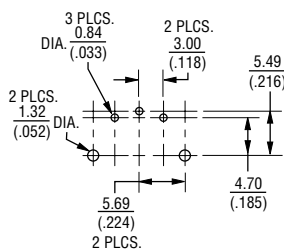


### BUSHING STYLE "S"

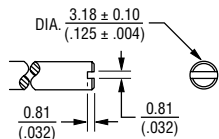


TOLERANCES EXCEPT AS SHOWN:  
 .XX 0.13 (.005)    .X 0.38 (.015)

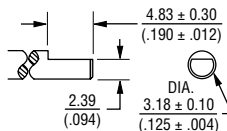
### BOARD LAYOUT



### SHAFT STYLE "A"



### SHAFT STYLE "B"

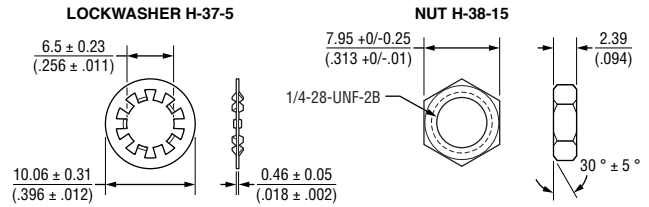


## Date Code Description

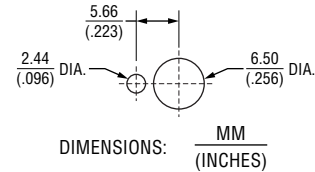
YYWWMM

- M = COUNTRY OF MANUFACTURE (MEXICO)
- WW = WEEK NUMBER
- YY = LAST TWO DIGITS OF YEAR MANUFACTURED

## Hardware



## Suggested Panel Layout



DIMENSIONS:  $\frac{\text{MM}}{\text{(INCHES)}}$

## How To Order

**39 S B - 1 R B - 503**

SWITCH TYPE	
Code	Description
N	No Switch
P	Momentary Push
R	Rotary Switch

TERMINAL CONFIGURATION	
Code	Description
1	6.35 mm (.250")

SHAFT TYPE (SEE SHAFT STYLE FIGURES)	
Code	Description
A	Slotted Shaft, Dia. 3.175 mm (1/8") x 12.7 mm (1/2") FMS
B	Flatted Shaft, Dia. 3.175 mm (1/8") x 12.7 mm (1/2") FMS

BUSHING TYPE (SEE BUSHING STYLE FIGURES)		EFFECTIVE ELECTRICAL ANGLE	AVAILABLE ONLY IN SWITCH TYPE
Code	Description		
L	1/4-28-UNF-2A x 5 mm (.197") FMS	201	P
S	1/4-28-UNF-2A x 5 mm (.197") FMS	220	R & N

MODEL NUMBER	
Code	Description
39	Model 39

ELEMENT TAPER	
Code	Description
B	Linear C.P. 20 %
D	CW Audio C.P. 20 %
G	CCW Audio C.P. 20 %

RESISTANCE CODE 20 %	
Code	Description
502	5 K Ohms (13)
103	10 K Ohms (15)
203	20 K Ohms (16)
253	25 K Ohms (17)
503	50 K Ohms (18)
104	100 K Ohms (20)

REV. 10/20

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