EECO®

2300 SERIES
MICRO-DIP® PRINTED CIRCUIT BOARD SWITCHES

An EECO innovation, the 2300 Series MICRO-DIP® family includes the industry's only double pole rotary DIP switch.

Ideal for CMOS applications, the ***2300 Series*** double pole switch offers a unique output arrangement in which all four bits are always connected to one of the two commons, allowing the use of a single pull-up resistor instead of 4 as required by conventional DIP switches. The ***2300 Series*** includes 10 and 16 position double pole models, plus a 10 single pole right angle version. The double pole switches are available with process seals for wave soldering, and all ***2300 Series*** are color coded for easy identification. The ***2300 Series*** is covered by EECO's exclusive ***Lifetime Warranty***.

All ***2300 Series*** products are **Lead-Free** and fully **RoHS compliant**.

SPECIFICATIONS

MECHANICAL

No. of Switching Positions	10 & 16
Life	10,000 Detents at +25^{0}C
Rotational Torque (Initial)	1.0 - 2.5 Inch/Ounces
Terminal Strength	Pull 3 Pounds, Push 3 Pounds, for 15 Seconds
Weight	0.03 Oz (.85 Gr.).

ELECTRICAL

Maximum Electrical Current, Non-Switching	1A
Maximum Rated Load, Switching	100 mA at 5 VDC Resistive
Contact Resistance (Initial)	100 mΩ Maximum
Insulation Resistance	1,000 MΩ Minimum At 100 VDC
Dielectric Withstanding Voltage	250 VAC (RMS)

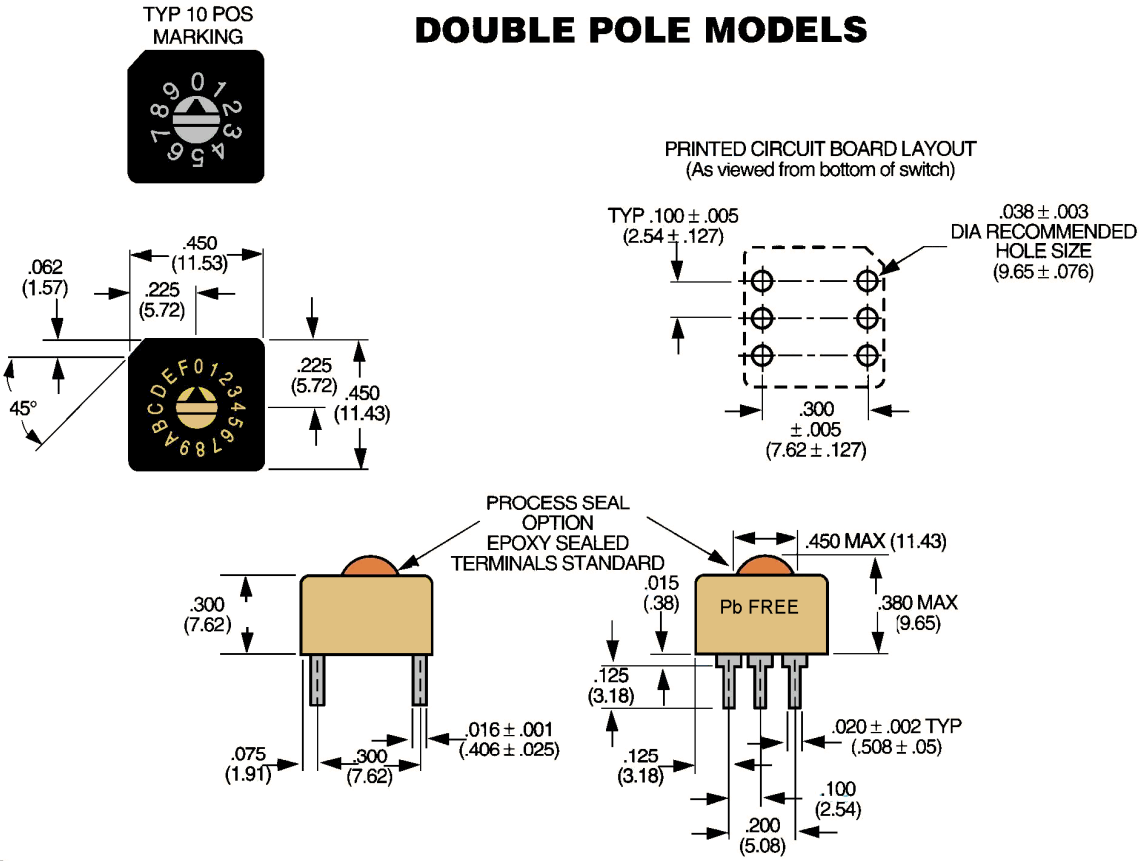
ENVIRONMENTAL

Operating Temperature	-25^{0}C To +85^{0}C
Storage Temperature	-55^{0}C To +100^{0}C
Seal (DP Models)	Top: Removable Plastic
	Bottom: Epoxy

MATERIALS

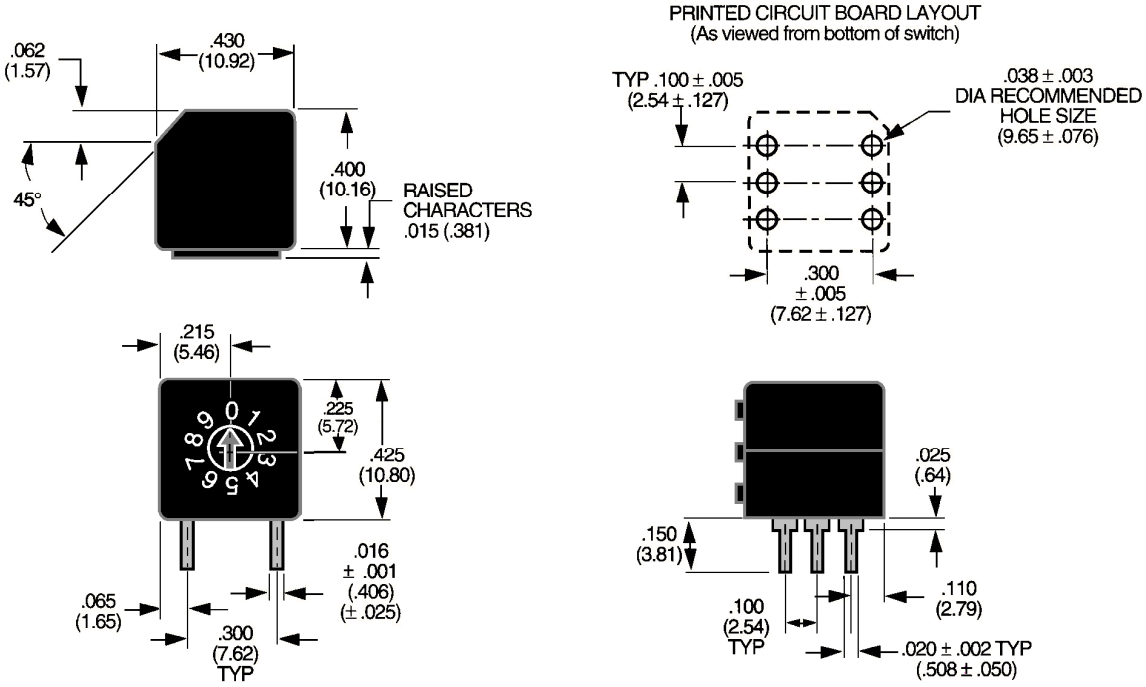
Housing and Base	Glass Reinforced 6/6 Nylon, UL 94 V0
Contact	Copper Alloy Base, Gold Over Nickel Plate
Terminal	Matte Tin With Whisker Inhibitors Over Nickel Plate

DOUBLE POLE MODELS



NOTES:
TOLERANCE ON ALL DIMENSIONS
± .010 UNLESS OTHERWISE SPECIFIED
( ) METRIC DIMENSIONS IN MM

SINGLE POLE, 10 POSITION
SIDE ADJUST MODEL



TRUTH TABLES

B02

BCD
1 Pole 10 Position

DIAL	Common (C) connected to terminals indicated					
	1	2	4	8		
0						
1	●					
2		●				
3	●	●				
4			●			
5	●		●			
6		●	●			
7	●	●	●			
8				●		
9	●			●		

231002G

D02

BCD 2 Pole 10 Position
Sep Com to NT Bits

DIAL	Common C (●) and C (✱) connected to terminals indicated					
	1	2	4	8		
0	✱	✱	✱	✱		
1	●	✱	✱	✱		
2	✱	●	✱	✱		
3	●	●	✱	✱		
4	✱	✱	●	✱		
5	●	✱	●	✱		
6	✱	●	●	✱		
7	●	●	●	✱		
8	✱	✱	✱	●		
9	●	✱	✱	●		

230056GB
230056GP

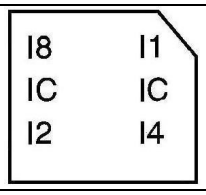
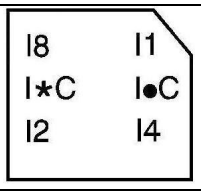
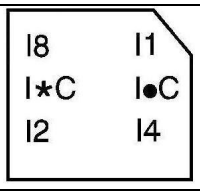
D06

2 Pole Binary with
Sep Com to NT Bits

DIAL		Common C (●) and C (✱) connected to terminals indicated					
		1	2	4	8		
0	0	✱	✱	✱	✱		
1	1	●	✱	✱	✱		
2	2	✱	●	✱	✱		
3	3	●	●	✱	✱		
4	4	✱	✱	●	✱		
5	5	●	✱	●	✱		
6	6	✱	●	●	✱		
7	7	●	●	●	✱		
8	8	✱	✱	✱	●		
9	9	●	✱	✱	●		
A	10	✱	●	✱	●		
B	11	●	●	✱	●		
C	12	✱	✱	●	●		
D	13	●	✱	●	●		
E	14	✱	●	●	●		
F	15	●	●	●	●		

230057GB
230057GP

TERMINAL IDENTIFICATION

MODEL NUMBER	231002G	230056GB/GP	230057GB/GP	Notes
CODE	B02	D02	D06	1. Views shown are of bottom (terminal side) of switch. 2. 231002G: connect both "C" terminals external to switch. 3. ● True Common 4. ✱ Not True Common
TERMINAL I.D. AS VIEWED FROM BOTTOM OF SWITCH				
HOUSING MARKING	0-9	0-9	0-9, A-F	
NO. OF POSITIONS	10 SINGLE POLE	10 DOUBLE POLE	16 DOUBLE POLE	

PART NUMBERS AND FEATURES

PART NUMBER	SWITCH DESCRIPTION	NUMBER OF POSITIONS	TRUTH TABLE	COLOR CODE
		SINGLE POLE BINARY		
231002G	Right Angle Mount BCD	10	B02	Black
		DOUBLE POLE BINARY		
230056GB 230056GP	Double Pole Binary With Separate Common To Not True Bits	10	D02	Gray
230057GB 230057GP	Double Pole Binary With Separate Common To Not True Bits	16	D06	Almond

SEALING PROVISIONS

PART NUMBER	DUST SEAL	BOTTOM EPOXY SEAL	REMOVABLE TOP PROCESS SEAL
231002G	●		
230056GB		●	
230056GP		●	●
230057GB		●	
230057GP		●	●

Refer to EECO Switch document “Soldering and Cleaning Specifications” for additional processing information.

RoHS COMPLIANCE

EECO Switch is fully committed to complying with the European Lead-Free and RoHS directives. All EECO 2300 Series switches marked the “Pb-Free” logo on the body of the part are Lead-Free and RoHS compliant.

EECO®

3500 SERIES
MICRO-DIP® PRINTED CIRCUIT BOARD SWITCHES

The 3500 Series MICRO-DIP® is a low profile, fully sealed rotary DIP switch designed for today's automated soldering and cleaning processes!

Featuring direct decimal to binary conversion, the ***3500 Series Micro-DIP*** is a user friendly means of addressing PROM's or setting micro-processor controlled devices. The ***3500 Series*** is offered in six binary and decimal codes, with extended shafts and right angle orientations for maximum design flexibility. The ***3500 Series*** is covered by EECO's exclusive ***Lifetime Warranty***. All ***3500 Series*** products are **Lead-Free** and fully **RoHS compliant**.

SPECIFICATIONS

MECHANICAL

No. of Switching Positions	8, 10 16
Life	20,000 Detents at +25^{0}C
Rotational Torque (Initial)	1.0-4.5 Inch/Ounces
Terminal Strength	Pull 3 Pounds, Push 3 Pounds, for 15 Seconds

ELECTRICAL

Minimum Switching Current	1µA
Minimum Switching Voltage	30 mVDC
Maximum Electrical Current, Non-Switching	1A
Maximum Rated Load, Switching	100 mA at 28 VDC Resistive
Contact Resistance (Initial)	100 mΩ Maximum
Insulation Resistance	1,000 MΩ Minimum At 100 VDC
Dielectric Withstanding Voltage	250 VAC (RMS)

ENVIRONMENTAL

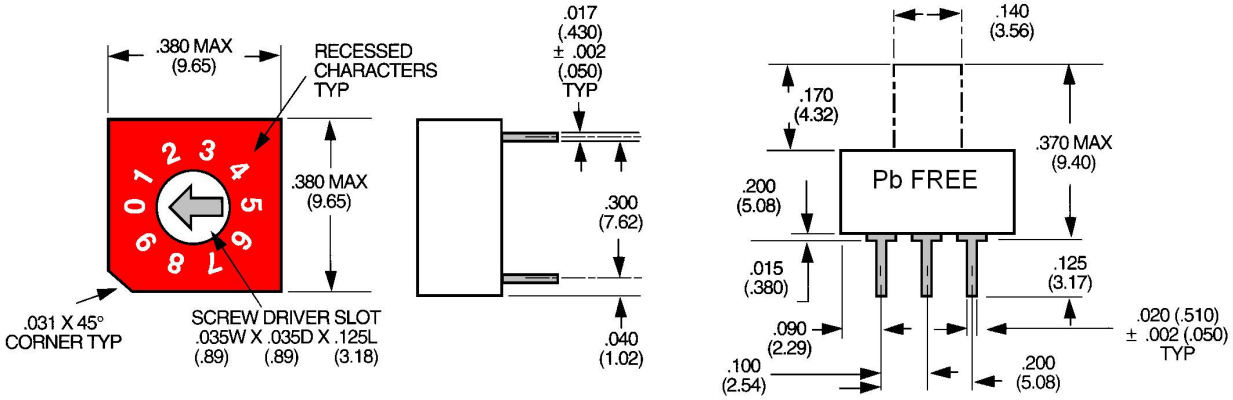
Operating Temperature	-65^{0}C To +85^{0}C
Storage Temperature	-65^{0}C To +125^{0}C
Vibration	15g, 10 to 2,000 Hz, Method 204, Condition B of Mil-Std 202
Moisture Resistance	Method 106, Mil-Std 202, 50 VDC Polarizing Voltage
Seal	Top: O-Ring Bottom: Epoxy
Solderability	Method 208 of Mil-Std 202, 95% Coverage
Solvent Resistance	Method 215 of Mil-Std 202
Humidity	Method 103B of Mil-Std 202, Test Condition A 50 VDC Polarizing Voltage

MATERIALS

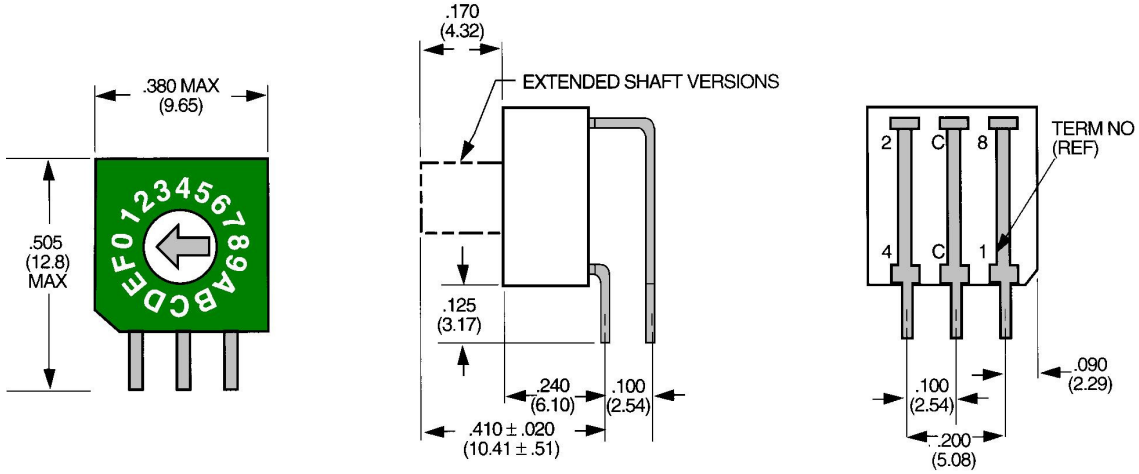
Housing and Base	Glass Reinforced High Temperature 4/6 Nylon, UL 94 V0
Rotor	Glass Reinforced 6/6 Nylon UL 94 V0
O-Ring	Silicon Rubber
Contact	Copper Alloy Base, Gold Over Nickel Plate
Terminal	Matte Tin With Whisker Inhibitors Over Nickel Plate
Weight	0.03 Oz (.86G)
Knobs	
Type B	ABS, UL 94 V0 (Black)
Type K	Glass Reinforced Polyester, 94 V0 (White)
Type V	Glass Reinforced 6/6 Nylon, 94 V0 (Black)

STANDARD MODELS AND OPTIONS

TOP ADJUST MODEL

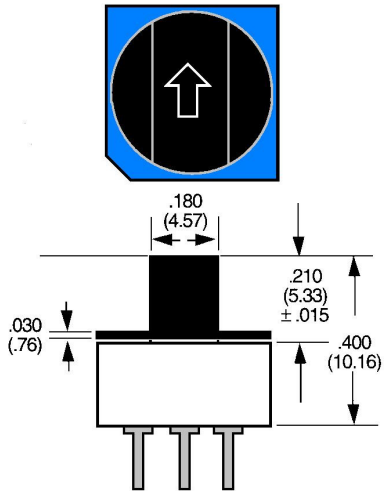


SIDE ADJUST MODEL



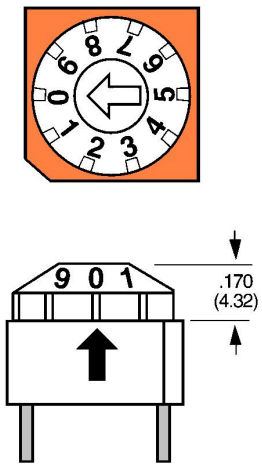
KNOB OPTION B

Available with Extended Shaft Models only



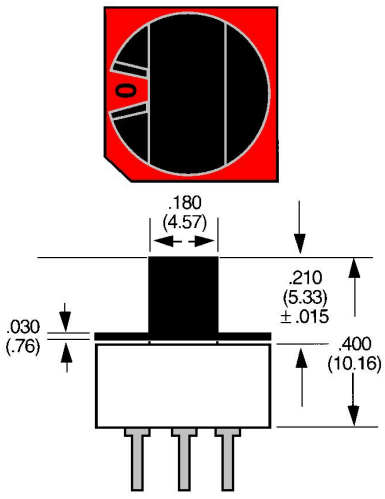
KNOB OPTION K

Available with Extended Shaft Models only



KNOB OPTION V

Available with Extended Shaft Models only



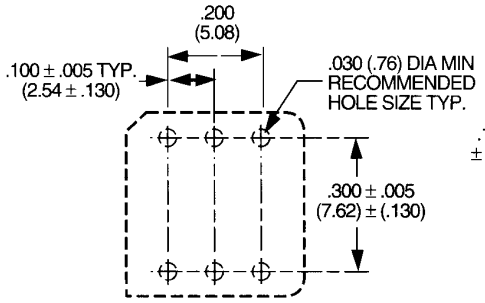
NOTE: Tolerances on all dimensions ± .010 unless otherwise specified.

All switches set to 0 position.
Consult factory for custom knobs.

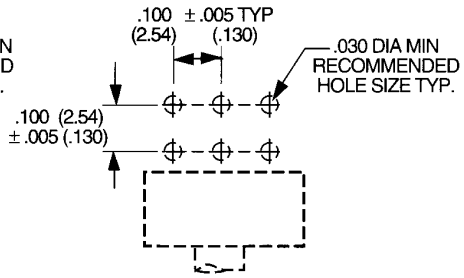
NOTE: "B" and "V" Knobs are Black, "K" Knob is White

PCB DESIGN INFORMATION

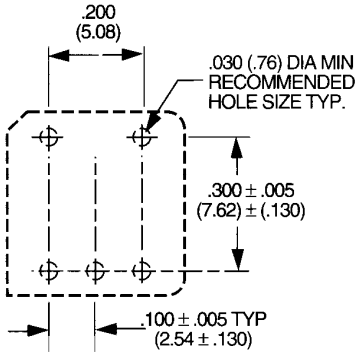
PRINTED CIRCUIT BOARD LAYOUT
As viewed from bottom of switch



MOUNTING HOLE PATTERN
TOP ADJUST MODEL



MOUNTING HOLE PATTERN
SIDE ADJUST MODEL



MOUNTING HOLE PATTERN
350X34GS TOP ADJUST MODEL

TERMINAL I.D. AS VIEWED FROM BOTTOM OF SWITCH

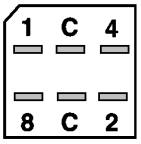


FIG. 1

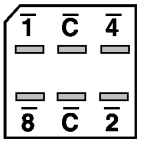


FIG. 2

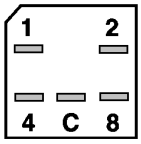


FIG. 3

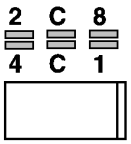


FIG. 4

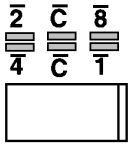


FIG. 5

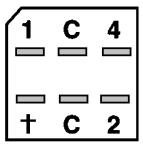


FIG. 6

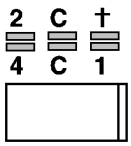
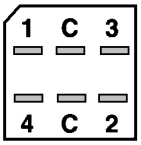
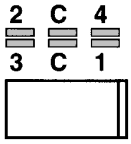


FIG. 7





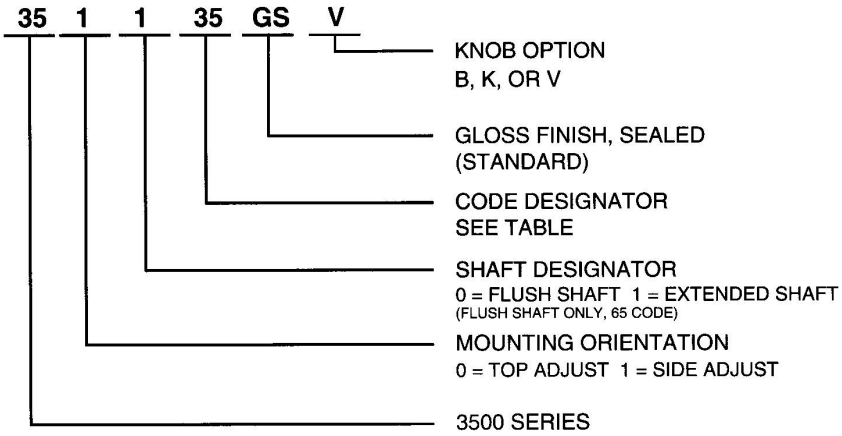
NOTE: "C" terminals must be connected together external to switch. † Not used.

Refer to EECO Switch document “Soldering and Cleaning Specifications” for processing information.

RoHS COMPLIANCE

EECO Switch is fully committed to complying with the European Lead-Free and RoHS directives. All EECO 3500 Series switches marked with the “Pb-Free” logo on the body of the part are Lead-Free and RoHS compliant.

ORDERING INFORMATION



Code Number	Truth Table	Color Code	No. of Positions	Top Adjust	Side Adjust	Terminal I.D. Fig.
02	B02	Red	10	X		1
02	B02	Red	10		X	4
08	B01	Brown	8	X		6
08	B01	Brown	8		X	7
12	C12	Orange	10	X		2
12	C12	Orange	10		X	5
34	B07	Black	16	X		3
35	B07	Green	16	X		1
35	B07	Green	16		X	4
41	C16	Blue	16	X		2
41	C16	Blue	16		X	5
65	S24	Turquoise	10	X		8
65	S24	Turquoise	10		X	9

TRUTH TABLES

B01

BCD 1 Pole 8 Position

DIAL	1	2	4
0			
1	●		
2		●	
3	●	●	
4			●
5	●		●
6		●	●
7	●	●	●

Common (C) connected to terminals indicated

B02

BCD 1 Pole 10 Position

DIAL	1	2	4	8
0				
1	●			
2		●		
3	●	●		
4			●	
5	●		●	
6		●	●	
7	●	●	●	
8				●
9	●			●

Common (C) connected to terminals indicated

B07

Binary Code 1 Pole 16 Position

DIAL	1	2	4	8
0 0				
1 1	●			
2 2		●		
3 3	●	●		
4 4			●	
5 5	●		●	
6 6		●	●	
7 7	●	●	●	
8 8				●
9 9	●			●
A 10		●		●
B 11	●	●		●
C 12			●	●
D 13	●		●	●
E 14		●	●	●
F 15	●	●	●	●

Common (C) connected to terminals indicated

C12

BCD Complement Only 1 Pole 10 Position

DIAL	$\overline{1}$	$\overline{2}$	$\overline{4}$	$\overline{8}$
0	●	●	●	●
1		●	●	●
2	●		●	●
3			●	●
4	●	●		●
5		●		●
6	●			●
7				●
8	●	●	●	
9		●	●	

Common (C) connected to terminals indicated

C16

Binary Complement Only 1-Pole 16-Position

DIAL	$\overline{1}$	$\overline{2}$	$\overline{4}$	$\overline{8}$
0 0	●	●	●	●
1 1		●	●	●
2 2	●		●	●
3 3			●	●
4 4	●	●		●
5 5		●		●
6 6	●			●
7 7				●
8 8	●	●	●	
9 9		●	●	
A 10	●		●	
B 11			●	
C 12	●	●		
D 13		●		
E 14	●			
F 15				

Common (C) connected to terminals indicated

S24

1 Pole 5 Position repeating no output on 0

DIAL	1	2	3	4
0				
1	●			
2		●		
3			●	
4				●
0				
1	●			
2		●		
3			●	
4				●

Common (C) connected to terminals indicated

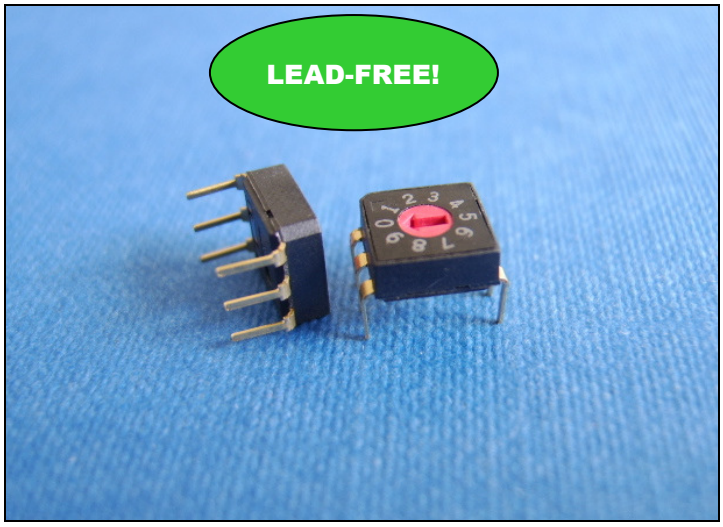
EECO®

4600 SERIES
MICRO-DIP® PRINTED CIRCUIT BOARD SWITCHES

The 4600 Series MICRO-DIP® continues the EECO tradition of innovative switch design.

Like all EECO MICRO-DIPS, the ***4600 Series*** permits direct setting of binary-coded values for PROMs and other user-addressable devices. The ***4600 Series*** features high temperature materials carefully selected to withstand the rigors of today's auto mated soldering and cleaning processes. The ***4600 Series*** is fully sealed, and the compact dimensions of the ***4600 Series*** require minimal board space. The ultra low profile design permits unrestricted heat flow during installation, eliminating the possibility of shadowing adjacent components. The ***4600 Series*** is covered by a one year warranty.

All ***4600 Series*** products are **Lead-Free** and **RoHS compliant**.



SPECIFICATIONS

MECHANICAL		
	No. of Switching Positions	10 16
	Life (Electrical)	10,000 Detents Min at Rated Load
	(Mechanical)	20,000 Detents Min. At No Load
	Rotational Torque (Initial)	2.75 Inch/Ounce Max
ELECTRICAL		
	Minimum Rated Load	1µA At 1 mV, AC/DC
	Maximum Rated Load, Switching	40 mA at 20 VDC
	Contact Resistance (Initial)	100 mΩ Maximum At 10 mA, 2.0 VDC
	Insulation Resistance	1,000 MΩ Minimum At 250 VDC
	Dielectric Withstanding Voltage	250 VAC, 1 Minute
ENVIRONMENTAL		
	Operating Temperature	-30^0C To $+85^0$C
	Storage Temperature	-45^0C To $+100^0$C
	Seal	Full Process Seal
MATERIALS		
	Housing and Base	Polyphenylene Sulfide UL 94 V0
	Rotor	46 Nylon UL 94V0
	O-Ring	Silicon Rubber
	Contact and Terminal	Beryllium Copper, Gold Over Nickel Plate
	Detent	Stainless Steel

RoHS COMPLIANCE

EECO Switch is fully committed to complying with the European Lead-Free and RoHS directives. The 4600 Series is Lead-Free and RoHS compliant.

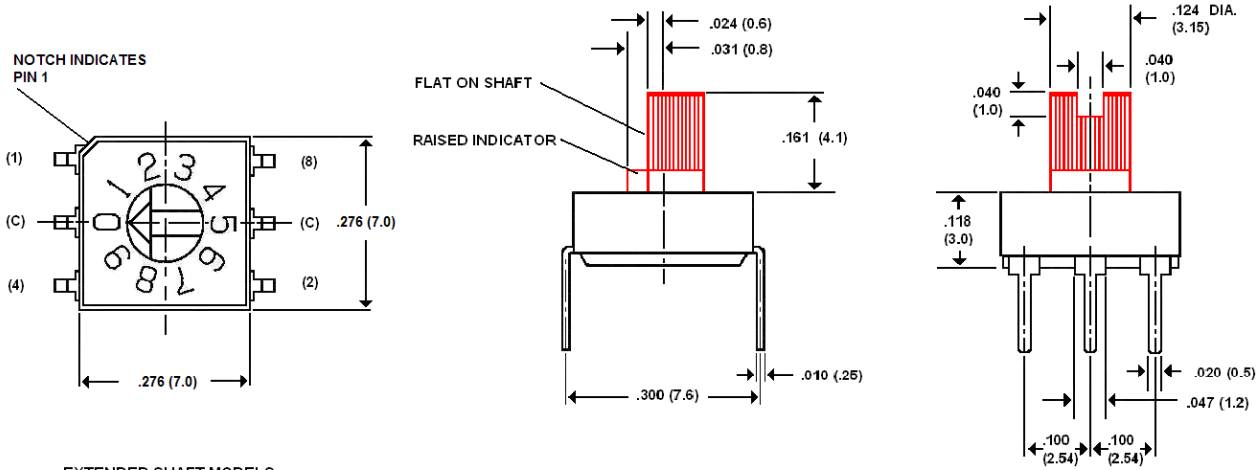
Refer to EECO Switch document "Soldering and Cleaning Specifications" for processing information

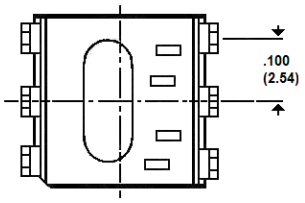
PART NUMBERS AND DIMENSIONS

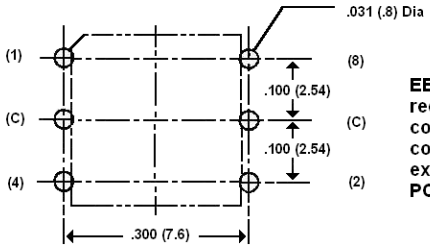
4600 SERIES STANDARD SWITCHES

FLUSH SHAFT	EXTENDED SHAFT	ROTOR COLOR	CODE DESCRIPTION	NO. OF POSITIONS	TRUTH TABLE
460002G	460102G	Red	1 Pole BCD	10	B02
460012G	460112G	Orange	1 Pole BCD Complement	10	C12
460035G	460135G	Green	1 Pole BCH	16	B07
460041G	460141G	White	1 Pole BCH Complement	16	C16

Consult factory for additional ordering information and packaging details for Tape and Reel packaging.







Dimensions: Inch (mm)

EECO recommends connecting the commons externally on the PCB

B02

BCD 1-Pole 10 position — Common (C) connected to terminals indicated

DIAL	1	2	4	8
0				
1	●			
2		●		
3	●	●		
4			●	
5	●		●	
6		●	●	
7	●	●	●	
8				●
9	●			●

BCD

B07

BCH 1-Pole 16 position — Common (C) connected to terminals indicated

DIAL	1	2	4	8
0				
1	●			
2		●		
3	●	●		
4			●	
5	●		●	
6		●	●	
7	●	●	●	
8				●
9	●			●
A		●		●
B	●	●		●
C			●	●
D	●		●	●
E		●	●	●
F	●	●	●	●

BCH

C12

BCD Complement 1-Pole 10 position — Common (C) connected to terminals indicated

DIAL	1	2	4	8
0	●	●	●	●
1		●	●	●
2	●		●	●
3			●	●
4	●	●		●
5		●		●
6	●			●
7				●
8	●	●	●	
9		●	●	

BCD COMPLEMENT

C16

BCH Complement 16-position — Common (C) connected to terminals indicated

DIAL	1	2	4	8
0	●	●	●	●
1		●	●	●
2	●		●	●
3			●	●
4	●	●		●
5		●		●
6	●			●
7				●
8	●	●	●	
9		●	●	
A	●		●	
B			●	
C	●	●		
D		●		
E	●			
F				

BCH COMPLEMENT

EECO®

4800 SERIES

MICRO-DIP® SMT PRINTED CIRCUIT BOARD SWITCHES

The 4800 Series MICRO-DIP® is a true SURFACE MOUNT version of our popular MICRO-DIP family.

Like all EECO MICRO-DIPS, the ***4800 Series*** permits direct setting of binary-coded values for PROMs and other user-addressable devices. All materials used in the ***4800 Series*** were carefully selected to withstand the rigors of the surface-mount process, then engineered into an ultra low profile, fully sealed package. The compact dimensions of the ***4800 Series*** require minimal board space and permit closely stacked PCB designs. The ultra low profile design allows unrestricted heat flow during installation, eliminating the possibility of shadowing adjacent components. The ***4800 Series*** is covered by a one year warranty.

All ***4800 Series*** products are **Lead-Free** and **RoHS compliant**.

SPECIFICATIONS

MECHANICAL

No. of Switching Positions	10 16
Life (Electrical)	10,000 Detents Min at Rated Load
(Mechanical)	20,000 Detents Min. At No Load
Rotational Torque (Initial)	2.75 Inch/Ounce Max

ELECTRICAL

Minimum Rated Load	1µA At 1 mV, AC/DC
Maximum Rated Load, Switching	40 mA at 20 VDC
Contact Resistance (Initial)	100 mΩ Maximum At 10 mA, 2.0 VDC
Insulation Resistance	1,000 MΩ Minimum At 250 VDC
Dielectric Withstanding Voltage	250 VAC, 1 Minute

ENVIRONMENTAL

Operating Temperature	-30^0C To $+85^0$C
Storage Temperature	-45^0C To $+100^0$C
Seal	Full Process Seal

MATERIALS

Housing and Base	Polyphenylene Sulfide UL-94 V0
Rotor	46 Nylon UL-94V0
O-Ring	Silicon Rubber
Contact and Terminal	Beryllium Copper, Gold Over Nickel Plate
Detent	Stainless Steel

RoHS COMPLIANCE

EECO Switch is fully committed to complying with the European Lead-Free and RoHS directives. The 4800 Series is Lead-Free and RoHS compliant.

Refer to EECO Switch document “Soldering and Cleaning Specifications” for processing information

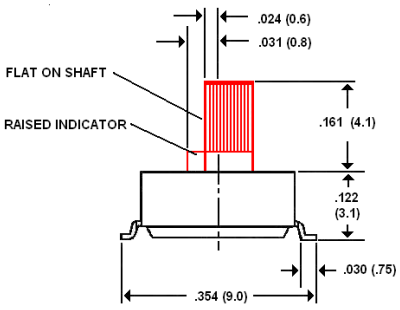
PART NUMBERS AND DIMENSIONS

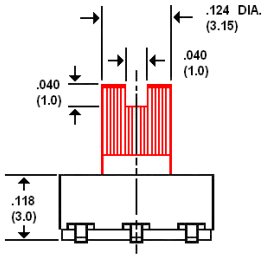
4800 SERIES STANDARD SWITCHES

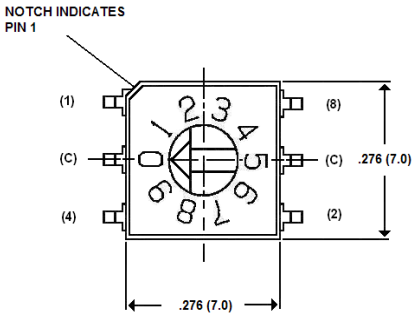
FLUSH SHAFT	EXTENDED SHAFT	ROTOR COLOR	CODE DESCRIPTION	NO. OF POSITIONS	TRUTH TABLE
480002G	480102G	Red	1 Pole BCD	10	B02
480012G	480112G	Orange	1 Pole BCD Complement	10	C12
480035G	480135G	Green	1 Pole BCH	16	B07
480041G	480141G	White	1 Pole BCH Complement	16	C16

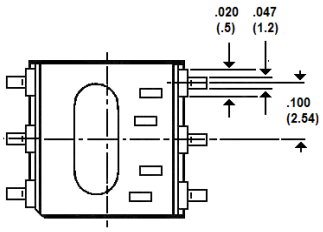
Tape and Reel packaging available. Add “R” to part number to specify, ex. 480002GR.
Consult factory for additional ordering information and packaging details.

EXTENDED SHAFT MODELS

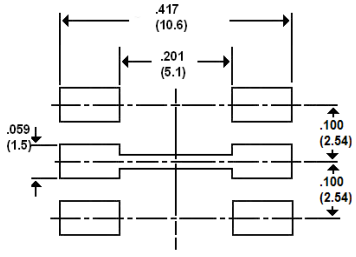








Dimensions: Inch (mm)



EECO RECOMMENDS CONNECTING COMMONS EXTERNALLY

B02

BCD 1-Pole 10 position

DIAL	Common (C) connected to terminals indicated			
	1	2	4	8
0				
1	●			
2		●		
3	●	●		
4				●
5	●			●
6		●		●
7	●	●		●
8				●
9	●			●

BCD

B07

BCH 1-Pole 16 position

DIAL	Common (C) connected to terminals indicated			
	1	2	4	8
0				
1	●			
2		●		
3	●	●		
4			●	
5	●		●	
6		●	●	
7	●	●	●	
8				●
9	●			●
A		●		●
B	●	●		●
C			●	●
D	●		●	●
E		●	●	●
F	●	●	●	●

BCH

C12

BCD Complement 1-Pole 10 position

DIAL	Common (C) connected to terminals indicated			
	1	2	4	8
0	●	●	●	●
1		●	●	●
2	●		●	●
3			●	●
4	●	●		●
5		●		●
6	●			●
7				●
8	●	●	●	
9		●	●	

BCD COMPLEMENT

C16

BCH Complement 16-position

DIAL	Common (C) connected to terminals indicated			
	1	2	4	8
0	●	●	●	●
1		●	●	●
2	●		●	●
3			●	●
4	●	●		●
5		●		●
6	●			●
7				●
8	●	●	●	
9		●	●	
A	●		●	
B			●	
C	●	●		
D		●		
E	●			
F				

BCH COMPLEMENT