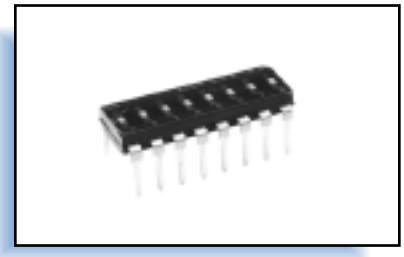
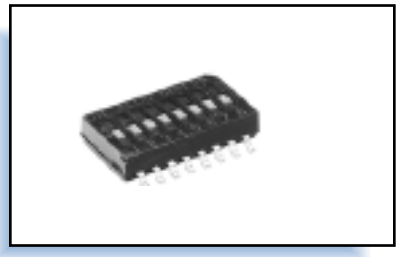
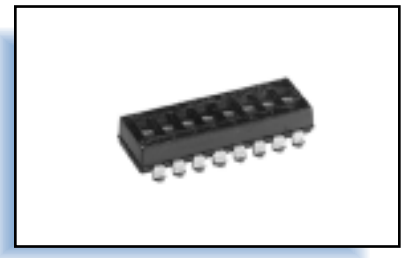
DIP Switches



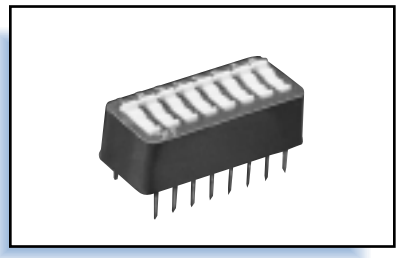
GD Series - Page A3



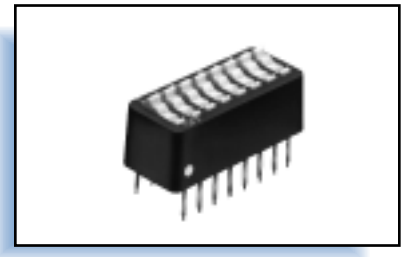
GDH Series - Page A5



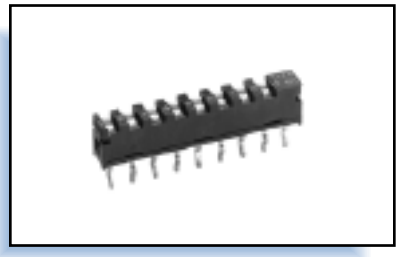
AD Series - Page A7



7000 Series - Page A11

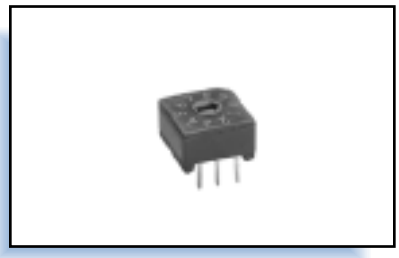


7100 Series - Page A17

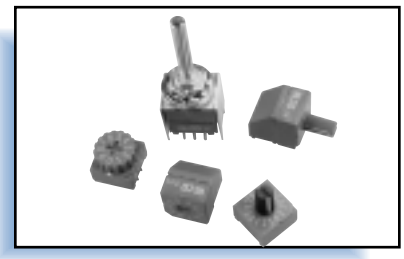


S Series - Page A18

MRD Series - Page A21



DRD Series - Page A23



DR Series - Page A25

Catalog 1308390
Issued 9-04

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C. America: 52-55-5-729-0425

South America: 55-11-3611-1514
Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-141-810-8967

A

DIP Switches

DIP Switch Part Number Index

Catalog 1308390
Issued 9-04

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UK: 44-141-810-8967

DIP Switches, Low Profile, Slide Actuator, Through Hole and Surface Mount

FEATURES:

- Conventional gold wiping contact system
- Available in PC and surface mount configurations
- Traditional tape seal standard
- 95% Minimum solder coverage (90/10 tin lead)
- Withstands wave soldering temperature of 245°C for 3-5 seconds
- Heat deflection temperature of 260°C for surface mount compatibility
- End stackable (GDS version)
- Auto-insertable (GDS and GDB version)
- Vacuum pick and place compatible (GDS, GDB and GDH)
- Half pitch .050" terminal spacing (GDH version)
- Available in optional tape & reel packaging
- Shipped in the off position

MATERIAL SPECIFICATIONS:

Moving Contact .....Gold over nickel over copper alloy
Fixed Contact .....Gold over nickel over copper alloy
Base Material .....PPS UL94V-0
Cover Material .....PPS UL94V-0
Actuator Material .....High temperature polyester/polyamide
Terminal .....Tin lead plated over nickel over copper alloy

TYPICAL PERFORMANCE CHARACTERISTICS:

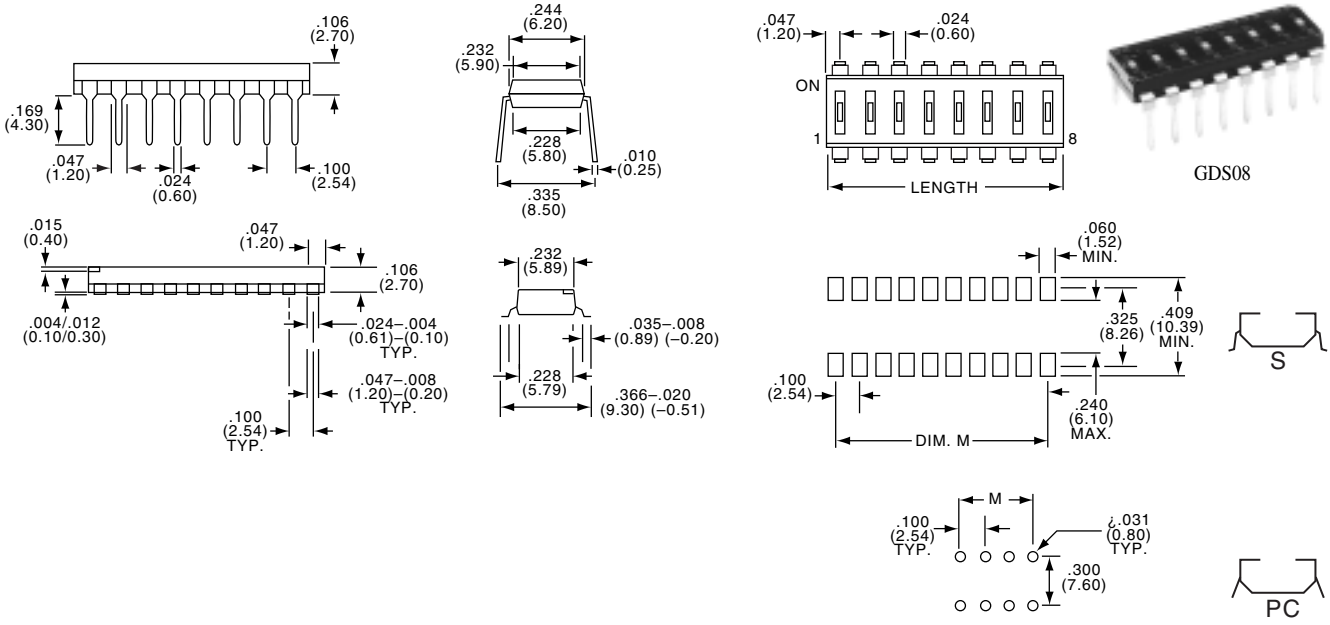
Contact Rating .....0.4 VA @ 24 VDC
Initial Contact Resistance.....100 Milliohms max.
Insulation Resistance .....100 Megohms min. @ 250 VDC
Dielectric Strength .....300 VAC
Life Expectancy .....1,000 Cycles
Operating Force .....60-600 Grams

ENVIRONMENTAL SPECIFICATIONS:

Operating Temperature.....-30°C to +85°C
Storage Temperature.....-45°C to +100°C
Solder Heat Resistance .....See page M3-4

End to End Stackable!

GDS
Low Profile Slide Actuator



Part Number								Poles	Length	Dim. M
PC Model		S Model		Tape & Reel		S Model No Tape				
Tyco Electronics	Alcoswitch	Tyco Electronics	Alcoswitch	Tyco Electronics	Alcoswitch	Tyco Electronics	Alcoswitch			
5-1437590-5	GDS02	5-1437590-7	GDS02S	5-1437590-8	GDS02STR	5-1437590-6	GDS02NTS	2	.194(4.94)	.100(2.54)
5-1437590-9	GDS04	6-1437590-1	GDS04S	6-1437590-2	GDS04STR	6-1437590-0	GDS04NTS	4	.394(10.02)	.300(7.62)
6-1437590-3	GDS06	6-1437590-5	GDS06S	6-1437590-6	GDS06STR	6-1437590-4	GDS06NTS	6	.594(15.10)	.500(12.7)
6-1437590-7	GDS08	6-1437590-9	GDS08S	7-1437590-0	GDS08STR	6-1437590-8	GDS08NTS	8	.794(20.18)	.700(17.78)
7-1437590-1	GDS10	7-1437590-2	GDS10S	7-1437590-3	GDS10STR	—	—	10	.994(25.26)	.900(22.86)

Catalog 1308390
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A

GD Series

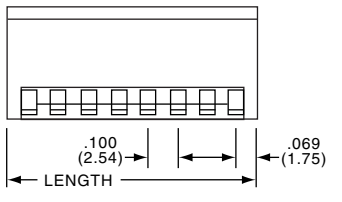
DIP Switches, Piano Actuator, Through Hole and Surface Mount

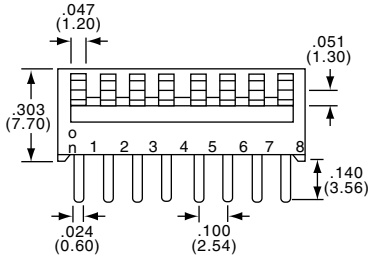
SEE PAGE A3 FOR PRODUCT SPECIFICATIONS

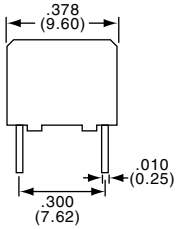
GDP

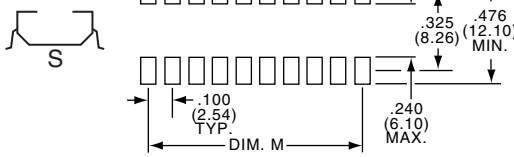
Classic Profile Piano Actuator

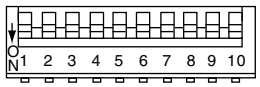
GDP08

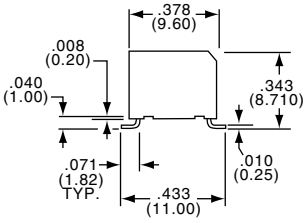


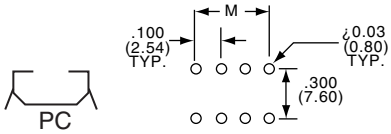










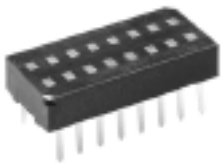


Part Number								Poles	Length	Dim. M
PC Model		S Model		Tape and Reel		S Model No Tape				
Tyco Electronics	Alcoswitch	Tyco Electronics	Alcoswitch	Tyco Electronics	Alcoswitch	Tyco Electronics	Alcoswitch			
3-1437590-2	GDP02	3-1437590-4	GDP02S	1571668-1	GDP02STR	3-1437590-3	GDP02NTS	2	.238(6.04)	.100(2.54)
3-1437590-5	GDP04	3-1437590-7	GDP04S	—	—	3-1437590-6	GDP04NTS	4	.438(11.12)	.300(7.62)
3-1437590-8	GDP06	3-1437590-9	GDP06S	—	—	—	—	6	.638(16.20)	.500(12.7)
4-1437590-0	GDP08	4-1437590-1	GDP08S	4-1437590-2	GDP08STR	—	—	8	.838(21.28)	.700(17.78)
4-1437590-3	GDP10	4-1437590-4	GDP10S	4-1437590-5	GDP10STR	—	—	10	1.038(26.36)	.900(22.86)

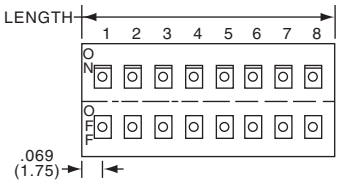
DIP Switches, Flush Rocker Actuator, Through Hole and Surface Mount

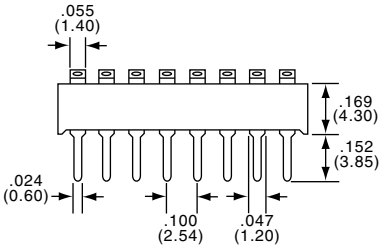
GDB

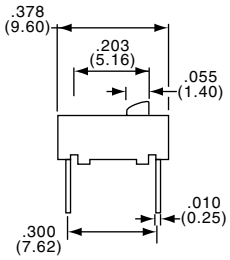
Flush Rocker Actuator

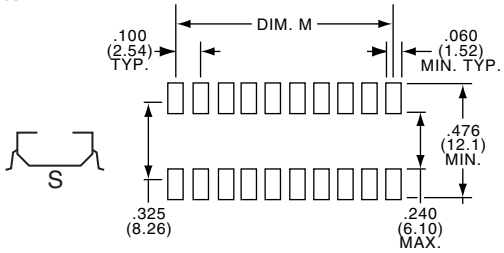


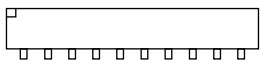
GDB08

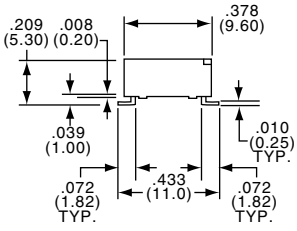


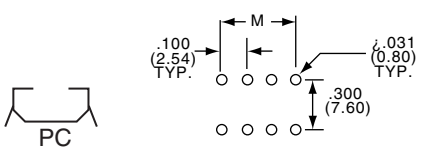












Part Number				Poles	Length	Dim. M
PC Model		S Model				
Tyco Electronics	Alcoswitch	Tyco Electronics	Alcoswitch			
1437590-1	GDB02	—	GDB02S	2	.238(6.04)	.100(2.54)
1437590-2	GDB04	1437590-3	GDB04S	4	.438(11.12)	.300(7.62)
1437590-4	GDB06	1437590-5	GDB06S	6	.638(16.20)	.500(12.7)
1437590-6	GDB08	1437590-7	GDB08S	8	.838(21.28)	.700(17.78)
1437590-8	GDB10	1437590-9	GDB10S	10	1.038(26.36)	.900(22.86)

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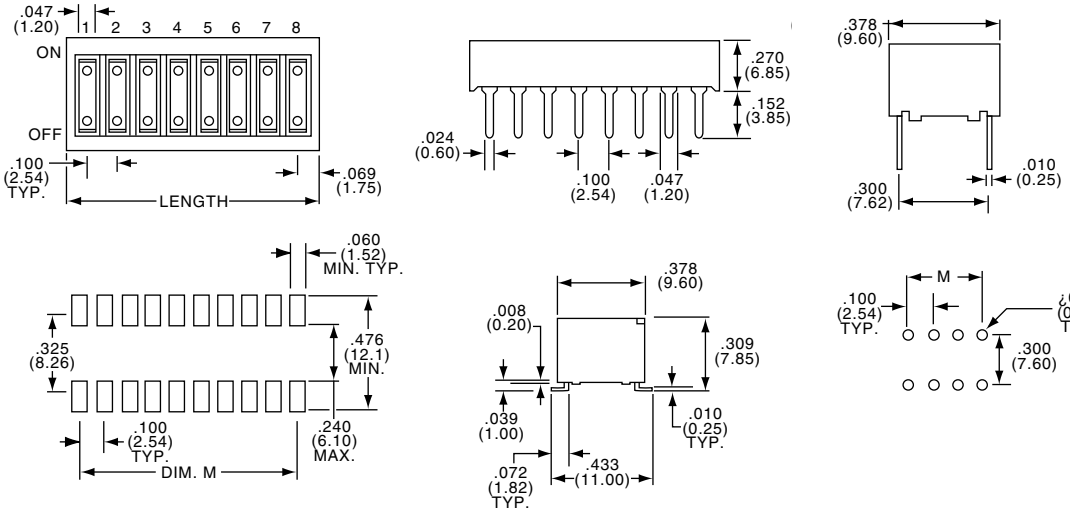
DIP Switches, Recessed Rocker, Through Hole and Surface Mount

SEE PAGE A3 FOR PRODUCT SPECIFICATIONS

GDR
Classic Profile
Recessed Rocker Actuator

GDR08

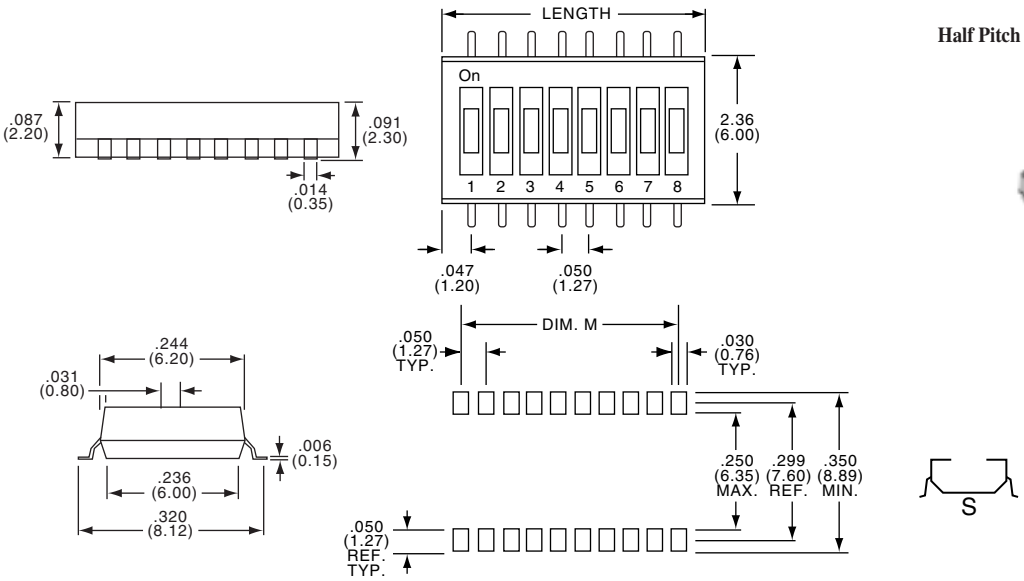
Part Number				Poles	Length	Dim. M
PC Model		S Model				
Tyco Electronics	Alcoswitch	Tyco Electronics	Alcoswitch			
4-1437590-6	GDR02	4-1437590-7	GDR02S	2	.238(6.04)	.100(2.54)
4-1437590-8	GDR04	4-1437590-9	GDR04S	4	.438(11.12)	.300(7.62)
5-1437590-0	GDR06	5-1437590-1	GDR06S	6	.638(16.20)	.500(12.7)
5-1437590-2	GDR08	5-1437590-3	GDR08S	8	.838(21.28)	.700(17.78)
5-1437590-4	GDR10	—	GDR10S	10	1.038(26.36)	.900(22.86)



DIP Switches, Half Pitch, Low Profile

GDH
Half Pitch .050" Terminal Spacing

GDH08S



Part Number				Poles	Length	Dim. M
PC Model		S Model				
Tyco Electronics	Alcoswitch	Tyco Electronics	Alcoswitch			
1-1437590-0	GDH02S	1-1437590-3	GDH02STR	2	.144(3.66)	.050(1.27)
1-1437590-4	GDH04S	1-1437590-6	GDH04STR	4	.244(6.20)	.150(3.81)
1-1437590-9	GDH06S	2-1437590-1	GDH06STR	6	.344(8.75)	.250(6.35)
2-1437590-2	GDH08S	2-1437590-4	GDH08STR	8	.444(11.29)	.350(8.89)
2-1437590-6	GDH10S	2-1437590-8	GDH10STR	10	.544(13.82)	.450(11.43)

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UK: 44-141-810-8967

DIP Switches, Half Pitch, Ultra Low Profile, .067" High

MATERIAL SPECIFICATIONS:

Contacts .....Copper alloy, gold plate over nickel
Case Material .....High temperature polyamide, UL 94V-0
Actuator Material .....High temperature polyester, 94V-0
Moving Contact .....Copper alloy, gold plate over nickel
Fixed Contact .....Copper alloy, gold plate over nickel
Terminals .....Copper alloy, gold flash over nickel

ENVIRONMENTAL SPECIFICATIONS:

Operating Temperature.....-30°C to +85°C (-22°F to +185°F)
Storage Temperature.....-45°C to +100°C (-49°F to +212°F)

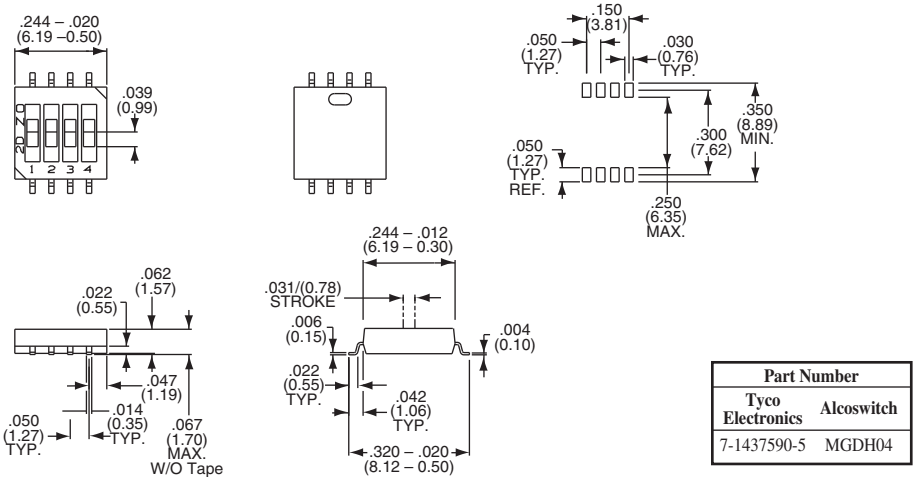
TYPICAL PERFORMANCE CHARACTERISTICS:

Contact Rating .....Non-switching: 100 Milliamps @ 50 VDC
Switching: 25 Milliamps @ 24 VDC
Initial Contact Resistance .....100 Milliohms max.
Insulation Resistance .....100 Megohms min. @ 100 VDC
Dielectric Strength .....300 VAC, 1 minute
Actuation Force .....60 - 600 Grams max.
Life Expectancy .....1,000 Cycles min.

MGDH

Half Pitch .050" Terminal Spacing, .067" High

MGDH04



Part Number	
Tyco Electronics	Alcoswitch
7-1437590-5	MGDH04

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UK: 44-141-810-8967

DIP Switches, Extended Actuator, Auto Insertable, Through Hole and Surface Mount

FEATURES:

- Available in PC or surface mount termination.
- High pressure wiping contact allows aqueous or solvent cleaning without tape seal.
- Auto-insertable
- Tape Seal version available for vacuum pick-n-place
- Unique design can withstand vapor phase reflow or wave soldering conditions.
- Gas tight contacts
- Shipped in the off position

ENVIRONMENTAL SPECIFICATIONS:

Operating Temperature .....-30°C to + 85°C
Storage Temperature .....-45°C to + 100°C
Solder Heat Resistance.....245°C ± 5°C with switch in "off" position 30 seconds when mounted on a .060" thick PCB per MIL-STD202, Method 210
Cleaning.....Aqueous solution or solvent

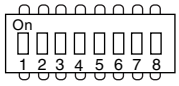
MATERIAL SPECIFICATIONS:

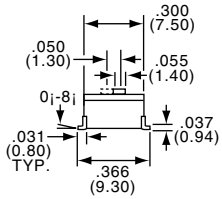
Base and Cover .....PPS-UL94V-0, (Black)
Actuator.....PA6T-UL94V-0, (White)
Fixed Contact/Terminal .....Copper alloy plate-solder/copper
Moving Contact .....Copper alloy plate-gold/nickel

TYPICAL PERFORMANCE CHARACTERISTICS:

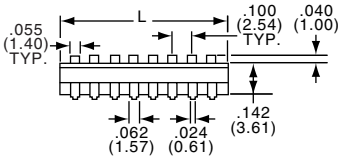
Contact Rating .....0.4 VA @ 20 VDC max.
Max Rating Switching–100 Milliamp @ 24VDC
Min Rating Switching–1 Microamp @ 1 Millivolt
Max Rating Non Switching–1 Amp @ 5VDC
Initial Contact Resistance .....50 Milliohms max.
Insulation Resistance .....1,000 Megohms min. @ 100 VDC
Dielectric Strength .....500 VAC
Operating Force .....Less than 800 grams
Actuator Travel .....AD/R Series 1.30mm/.050" piano style 25°
Life Expectancy .....1,000 Cycles

ADE



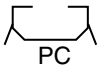


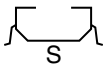
S Termination Shown



ADE08

Extended Actuator





PC Term.		"S" Term.		"SA" Term.		No. of Positions	Actuator Style	Dim. L
Tyco Electronics	Alcoswitch	Tyco Electronics	Alcoswitch	Tyco Electronics	Alcoswitch			
1437586-2	ADE02	1437586-4	ADE02S	1437586-5	ADE02SA	2	Slide	.278(7.06)
1437586-7	ADE03	1437586-8	ADE03S	—	ADE03SA	3	Slide	.378(9.60)
1-1437586-0	ADE04	1-1437586-2	ADE04S	1-1437586-3	ADE04SA	4	Slide	.478(12.14)
1-1437586-5	ADE05	1-1437586-7	ADE05S	—	ADE05SA	5	Slide	.578(14.68)
1-1437586-8	ADE06	2-1437586-0	ADE06S	2-1437586-1	ADE06SA	6	Slide	.678(17.22)
2-1437586-3	ADE07	2-1437586-5	ADE07S	—	ADE07SA	7	Slide	.778(19.76)
2-1437586-6	ADE08	2-1437586-8	ADE08S	2-1437586-9	ADE08SA	8	Slide	.878(22.30)
3-1437586-0	ADE09	—	ADE09S	—	ADE09SA	9	Slide	.978(24.84)
3-1437586-2	ADE10	3-1437586-7	ADE10S	—	ADE10SA	10	Slide	1.078(27.38)
3-1437586-8	ADE12	1571337-1	ADE12S	—	ADE12SA	12	Slide	1.278(32.51)

See Page A9 for PC Pad Layout.

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A

AD Series

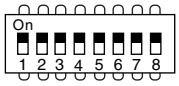
DIP Switches, Flush Acutuator, Auto Insertable, Through Hole, and Surface Mount

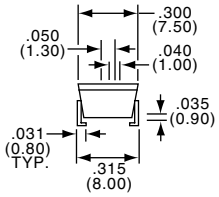
SEE PAGE A7 FOR PRODUCT SPECIFICATIONS

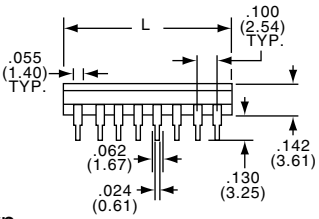
ADF

ADF08S
Flush Actuator

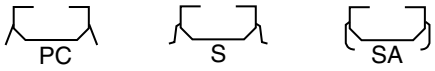
See Page A9 for PC Pad Layout.







SA Termination Shown



PC Term.		PC Term. w/Tape		No. of Positions	Actuator Style	Dim. L
Tyco Electronics	Alcoswitch	Tyco Electronics	Alcoswitch			
4-1437586-2	ADF02	5-1437586-0	ADF02T	2	Slide	.278(7.06)
5-1437586-1	ADF03	5-1437586-6	ADF03T	3	Slide	.378(9.60)
5-1437586-7	ADF04	6-1437586-4	ADF04T	4	Slide	.478(12.14)
6-1437586-5	ADF05	7-1437586-0	ADF05T	5	Slide	.578(14.68)
7-1437586-1	ADF06	8-1437586-0	ADF06T	6	Slide	.678(17.22)
8-1437586-1	ADF07	8-1437586-5	ADF07T	7	Slide	.778(19.76)
8-1437586-6	ADF08	9-1437586-5	ADF08T	8	Slide	.878(22.30)
9-1437586-6	ADF09	—	ADF09T	9	Slide	.978(24.84)
1437587-1	ADF10	1437587-7	ADF10T	10	Slide	1.078(27.38)
—	ADF12	1571336-1	ADF12T	12	Slide	1.278(32.51)

"S" Term.		"S" Term. w/Tape Seal		Tape & Reel		No. of Positions	Actuator Style	Dim. L
Tyco Electronics	Alcoswitch	Tyco Electronics	Alcoswitch	Tyco Electronics	Alcoswitch			
4-1437586-4	ADF02S	4-1437586-8	ADF02ST	4-1437586-9	ADF02STTR	2	Slide	.278(7.06)
5-1437586-2	ADF03S	5-1437586-4	ADF03ST	5-1437586-5	ADF03STTR	3	Slide	.378(9.60)
5-1437586-9	ADF04S	6-1437586-3	ADF04ST	1437583-6	ADF04STTR	4	Slide	.478(12.14)
6-1437586-6	ADF05S	6-1437586-8	ADF05ST	6-1437586-9	ADF05STTR	5	Slide	.578(14.68)
7-1437586-5	ADF06S	7-1437586-8	ADF06ST	7-1437586-9	ADF06STTR	6	Slide	.678(17.22)
8-1437586-2	ADF07S	8-1437586-3	ADF07ST	8-1437586-4	ADF07STTR	7	Slide	.778(19.76)
8-1437586-8	ADF08S	9-1437586-1	ADF08ST	9-1437586-2	ADF08STTR	8	Slide	.878(22.30)
9-1437586-7	ADF09S	9-1437586-8	ADF09ST	9-1437586-9	ADF09STTR	9	Slide	.978(24.84)
1437587-3	ADF10S	1437587-5	ADF10ST	1437587-6	ADF10STTR	10	Slide	1.078(27.38)
1437587-8	ADF12S	—	ADF12ST	1437587-9	ADF12STTR	12	Slide	1.278(32.51)

"SA" Term.		"SA" Term. w/Tape Seal		No. of Positions	Actuator Style	Dim. L
Tyco Electronics	Alcoswitch	Tyco Electronics	Alcoswitch			
4-1437586-5	ADF02SA	4-1437586-6	ADF02SAT	2	Slide	.278(7.06)
5-1437586-3	ADF03SA	—	ADF03SAT	3	Slide	.378(9.60)
6-1437586-0	ADF04SA	6-1437586-1	ADF04SAT	4	Slide	.478(12.14)
—	ADF05SA	—	ADF05SAT	5	Slide	.578(14.68)
7-1437586-6	ADF06SA	7-1437586-7	ADF06SAT	6	Slide	.678(17.22)
—	ADF07SA	—	ADF07SAT	7	Slide	.778(19.76)
8-1437586-9	ADF08SA	9-1437586-0	ADF08SAT	8	Slide	.878(22.30)
—	ADF09SA	—	ADF09SAT	9	Slide	.978(24.84)
—	ADF10SA	1437587-4	ADF10SAT	10	Slide	1.078(27.38)
—	ADF12SA	—	ADF12SAT	12	Slide	1.278(32.51)

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DIP Switches, Piano Acutuator, Auto Insertable, Through Hole, and Surface Mount

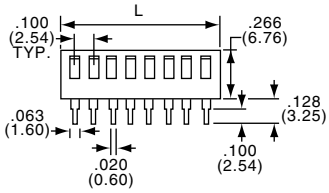
ADP

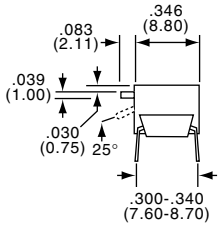
ADP04S

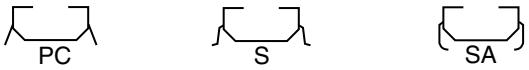
Piano Actuator

"PC" Termination Shown

SEE PAGE A7 FOR PRODUCT SPECIFICATIONS



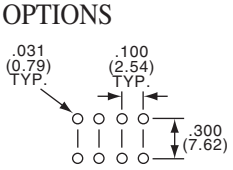




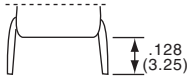
Lever Down "On"		"S" Term Lever Down "On"		"SA" Term. Lever Down "On"		No. of Positions	Actuator Style	Dim. L
Tyco Electronics	Alcoswitch	Tyco Electronics	Alcoswitch	Tyco Electronics	Alcoswitch			
1-1437587-1	ADP02	1-1437587-2	ADP02S	1-1437587-3	ADP02SA	2	Piano	.278(7.06)
1-1437587-5	ADP04	1-1437587-7	ADP04S	1-1437587-8	ADP04SA	4	Piano	.478(12.14)
2-1437587-0	ADP05	2-1437587-1	ADP05S	—	ADP05SA	5	Piano	.578(14.68)
2-1437587-2	ADP06	2-1437587-3	ADP06S	2-1437587-4	ADP06SA	6	Piano	.678(17.22)
2-1437587-5	ADP07	—	ADP07S	—	ADP07SA	7	Piano	.778(19.76)
2-1437587-6	ADP08	2-1437587-8	ADP08S	2-1437587-9	ADP08SA	8	Piano	.878(22.30)
3-1437587-0	ADP09	—	ADP09S	3-1437587-1	ADP09SA	9	Piano	.978(24.84)
3-1437587-3	ADP10	3-1437587-6	ADP10S	—	ADP10SA	10	Piano	1.078(27.38)

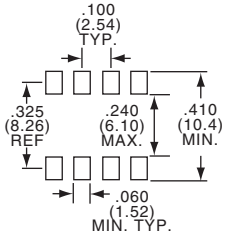
Lever Up "On"		"S" Term Lever Up "On"		"SA" Term. Lever Up "On"		No. of Positions	Actuator Style	Dim. L
Tyco Electronics	Alcoswitch	Tyco Electronics	Alcoswitch	Tyco Electronics	Alcoswitch			
4-1437587-7	ADPA02	—	ADPA02S	—	ADPA02SA	2	Piano	.278(7.06)
4-1437587-8	ADPA04	5-1437587-0	ADPA04S	5-1437587-1	ADPA04SA	4	Piano	.478(12.14)
5-1437587-2	ADPA05	5-1437587-3	ADPA05S	—	ADPA05SA	5	Piano	.578(14.68)
5-1437587-4	ADPA06	5-1437587-5	ADPA06S	5-1437587-6	ADPA06SA	6	Piano	.678(17.22)
5-1437587-7	ADPA07	—	ADPA07S	—	ADPA07SA	7	Piano	.778(19.76)
5-1437587-8	ADPA08	6-1437587-0	ADPA08S	—	ADPA08SA	8	Piano	.878(22.30)
—	ADPA09	—	ADPA09S	—	ADPA09SA	9	Piano	.978(24.84)
6-1437587-1	ADPA10	—	ADPA10S	—	ADPA10SA	10	Piano	1.078(27.38)

TERMINATION OPTIONS

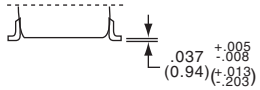


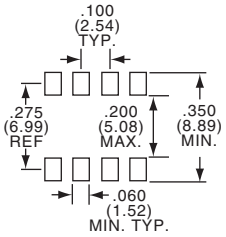
PC Termination



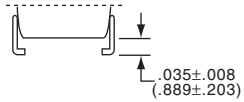


S Termination





SA Termination



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Hybrid DIP Switches, Through Hole and Surface Mount

AUTO-INSERTABLE* DIP SWITCH
WITH INTEGRAL RESISTORS

* Flush actuator versions are auto-insertable

SEE PAGE A7 FOR PRODUCT SPECIFICATIONS

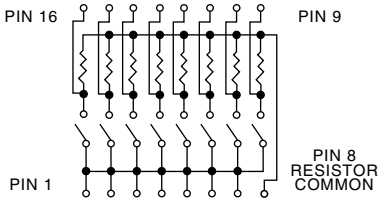
FEATURES:

All the features of the AD SERIES - PLUS

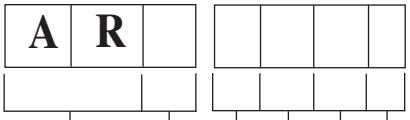
- Thick film pull-up resistors molded into the base of the switch.
- Replaces discrete resistor network plus DIP Switch with one component.
- Available with 3.3K ohms or 10K ohms resistors.
- Ceramic substrate allows wave soldering temperatures of 245°C for up to 30 seconds per MIL-STD 202, Method 210.
- Custom resistor values available.
- Shipped in off position.

Rated Pwr.	Resistance	Tolerance	Max. Voltage
125 mW	3.3K Ohms (red)	±5% at 85°C	24V
125 mW	10K Ohms (green)	±5% at 85°C	24V

RESISTOR NETWORK INFORMATION



HOW TO ORDER



Series
Auto-Dip with Resistors

Actuator Style
E = Extended
F = Flush Auto-Insertable
P = Piano (On Down)
PA = Piano (On Up)

See Pages A7-A9 for dimensional info.

No. of Positions
02, 04, 06, 08, 10

Resistor Value
3.3K Ohms (Red case)
10K Ohms (Green case)
Custom values are available on special order

Terminations
Blank = PC
S = Outside "L" (SMT)
SA - Inside "L" (SMT)

See Page A9 for board layout.

Seal Type
Blank = No seal
T = Tape (flush actuator only)

Example: ARF 06 10KST = Auto-Dip
Flush actuator
06 positions
10K ohms resistors
Outside "L" terminations & tape seal

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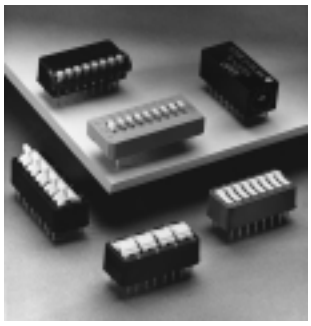
DIP Switches



Alcoswitch 7000 Series DIP switches are available in standard single pole, single throw; side actuated, single pole, single throw and multiple series versions. Contacts are made of high strength copper alloy with .000030 [0.00076] gold over .000050 [0.00127] nickel plating in contact area and legs plated to meet Tyco Electronics Solderability Specification 109-11-3.

The multiple series switches offer the unique feature of single pole switches coupled mechanically to provide switching of various poles simultaneously. This allows flexibility in programming.

Multipole switches are available with or without lever-actuated rockers and in a variety of configurations in addition to those listed. The maximum number of poles that can be ganged is six.

Performance Characteristics

Current and Voltage Rating:
Nonswitching — 1.5 amperes max. at 50 VDC
Switching — 100 milliamperes max at 5 VDC (resistive load);
25 milliamperes max. at 24 VDC (resistive load)

Contact Resistance, Dry Circuit:
100 milliohms max. (end of life) and 50 milliohms (initial) at 50 mV open circuit, 50 milliamperes

Insulation Resistance:
1×10^9 ohms min. at 100 VDC (initial)

Dielectric Withstanding Voltage:
500 VDC min. at standard atmosphereic conditions

Capacitance:
5 picofarads max.

Temperature Rating:
Nonoperating — -73.3°C to +105°C
Operating — -55°C to +105°C

Vibration:
Discontinuities shall not exceed 10 microseconds when subjected to 10-2000-10 Hz transversing for 20 minutes at .060 [1.52] inches total excursion

Shock:
No physical damage or discontinuities greater than 10 microseconds when tested with .10 ampere current applied per Tyco Electronics Specification 109-26, Condition A

Humidity:
Withstands an environment of +40°C and 95% RH for 96 hours

Durability:
No physical damage or contact resistance greater than 100 milliohms up to 7000 cycles of actuation with a resistive load of 24 VDC and 25 milliamperes max. current applied

Terminal Strength (Bend Test):
Two (2) 45° bend cycles per MIL-STD-202, Method 211, Condition B

Materials

Housing:
Glass-filled polyester, 94V-0 rated, black

Rocker:
Thermoplastic, 94V-0 rated, white

Spring Contacts and Leads:
Copper alloy with .000030 [0.00076] gold over .000050 [0.00127] nickel in contact area and .000150 [0.00381] tin-lead over .000050 [0.00127] nickel on solder legs, plated to meet Tyco Electronics Solderability Specification 109-11-3.

Technical Documents

Product Specification:
108-7519
Instruction Sheet:
408-07779
Application Specification:
114-1056

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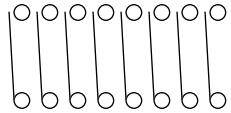
Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-141-810-8967

DIP Switches, Piano Style Actuator

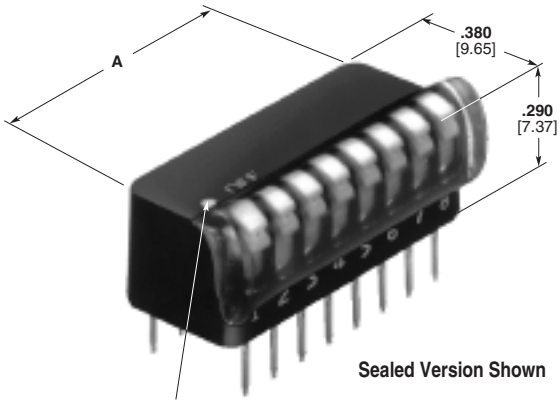
Single Pole
Single Throw
Side Actuated
Low Profile

Contact Lead Spacing — .100 x .300 [2.54 x 7.62]
Lead Length — .140 [3.56] below mounting surface

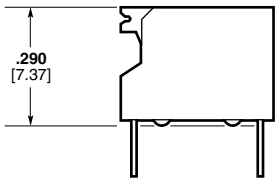
Contact Arrangement

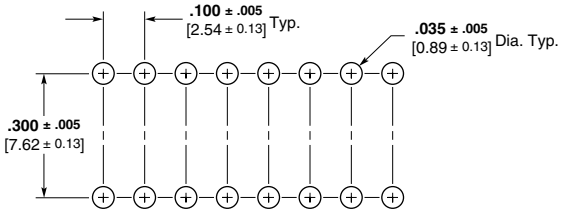


Note: Switches shown in open position



Sealed Version Shown





Recommended PC Board Hole Pattern

No. of Switches	Dim. A		SPST Side Actuated Part No.		
	inch	mm	Unsealed[1]	Sealed	Tape Sealed
2	.280	7.11	1-435802-0	—	—
3	.380	9.65	435802-2	—	—
4	.480	12.19	435802-3	1-435802-5	—
5	.580	14.73	435802-4	1-435802-6	—
6	.680	17.27	435802-5	1-435802-7	—
7	.780	19.81	435802-6	1-435802-8	—
8	.880	22.35	435802-1	435802-9	3-435802-8
9	.980	24.89	435802-7	1-435802-9	—
10	1.080	27.43	435802-8	2-435802-0	—
11	1.180	29.97	—	2-435802-1	—
12	1.280	32.51	—	2-435802-2	—

[1] All switches are bottom sealed.

Catalog 1308390
Issued 9-04

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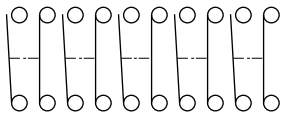
Japan: 81-44-844-8013
UK: 44-141-810-8967

DIP Switches, Extended Actuator, Single or Double Pole, Double Throw

Multiple Single Pole Double Throw

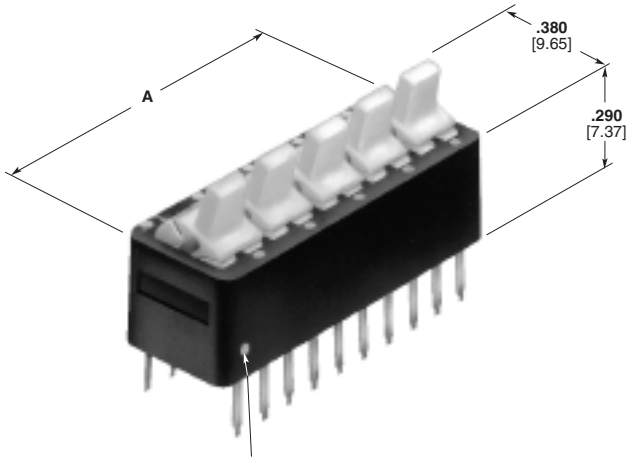
Contact Lead Spacing —
.100 x .300 [2.54 x 7.62]
Lead Length — .140 [3.56]
below mounting surface

Contact Arrangement

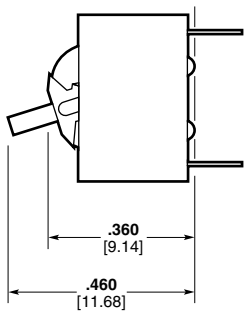


Pin 1

Note: Switch positions are closed when rockers are down toward white dots. Switches have make-before-break circuit design.



White Dot Identifies Pin 1



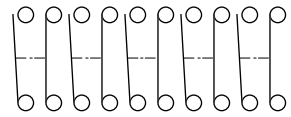
Extended Lever Actuator Shown

No. of Switches	Dim. A		SPDT Part No.	
	inch	mm	Low Profile Actuator	Extended Lever Actuator
1	.280	7.11	435470-7	2-435470-1
2	.480	12.19	435470-1	2-435470-2
3	.680	17.27	435470-2	—
4	.880	22.35	435470-3	2-435470-4
5	1.080	27.43	—	2-435470-5
6	1.280	32.51	—	2-435470-6

Double Pole Double Throw

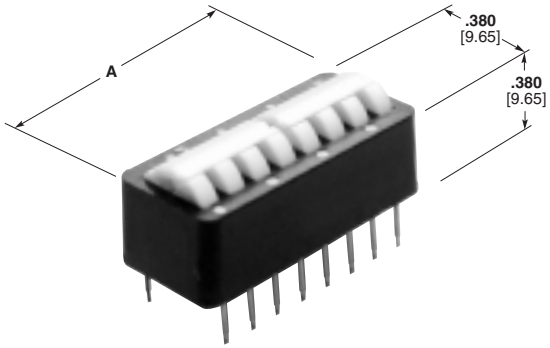
Contact Lead Spacing —
.100 x .300 [2.54 x 7.62]
Lead Length — .140 [3.56]
below mounting surface

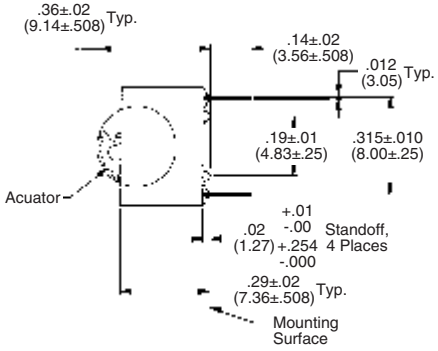
Contact Arrangement



Pin 1

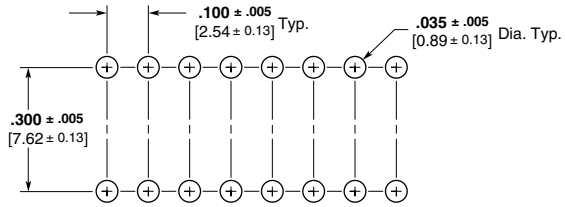
Note: Switch positions are closed when rockers are down toward white dots. Switches have make-before-break circuit design.





Low Profile Lever Actuator Shown

No. of Switches	Dim. A		DPDT Part No.	
	inch	mm	Low Profile Actuator	Extended Lever Actuator
1	.480	12.19	435470-5	3-435470-1
2	.880	22.35	435470-9	—



Recommended PC Board Hole Pattern

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Issued 9-04

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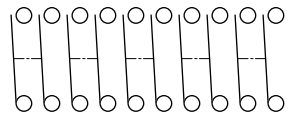
DIP Switches, Extended Actuator, Multiple Pole, Single Throw

Multiple Double Pole Single Throw

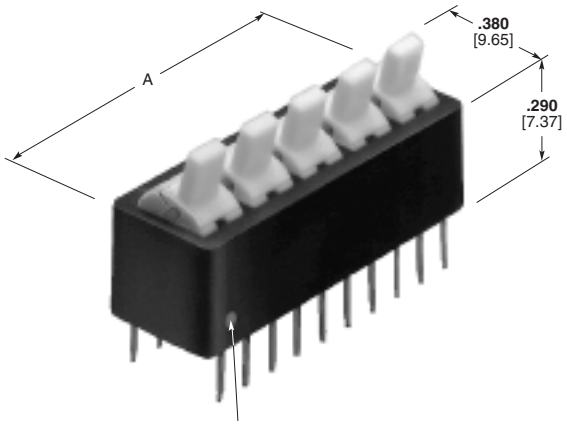
Contact Lead Spacing —
.100 x .300 [2.54 x 7.62]
Lead Length — .140 [3.56]
below mounting surface

Contact Arrangement

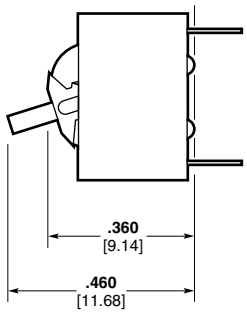


Pin 1

Note: Switches shown in open position.



White Dot Identifies Pin 1



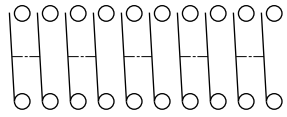
Extended Lever Actuator Shown

No. of Switches	Dim. A		DPST Part No.	
	inch	mm	Low Profile Actuator	Extended Lever Actuator
1	.280	7.11	435469-9	2-435469-1
2	.480	12.19	—	2-435469-2
4	.880	22.35	435469-3	2-435469-4
5	1.080	27.43	—	2-435469-5
6	1.280	32.51	—	2-435469-6

4-Pole Single Throw

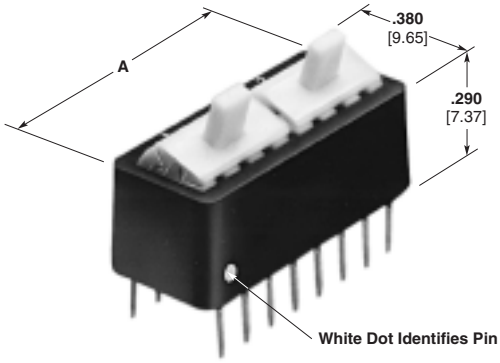
Contact Lead Spacing —
.100 x .300 [2.54 x 7.62]
Lead Length — .140 [3.56]
below mounting surface

Contact Arrangement

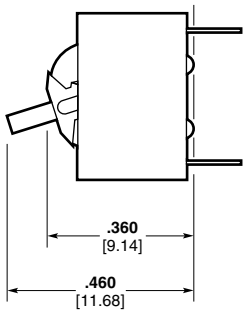


Pin 1

Note: Switches shown in open position.

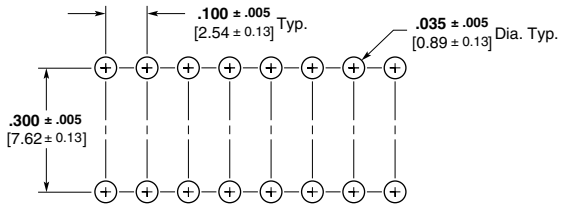


White Dot Identifies Pin 1



Extended Lever Actuator Shown

No. of Switches	Dim. A		4PST Part No.	
	inch	mm	Low Profile Actuator	Extended Lever Actuator
1	.480	12.19	435469-7	3-435469-1



Recommended PC Board Hole Pattern

Catalog 1308390
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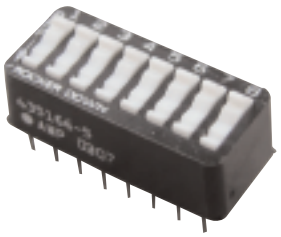
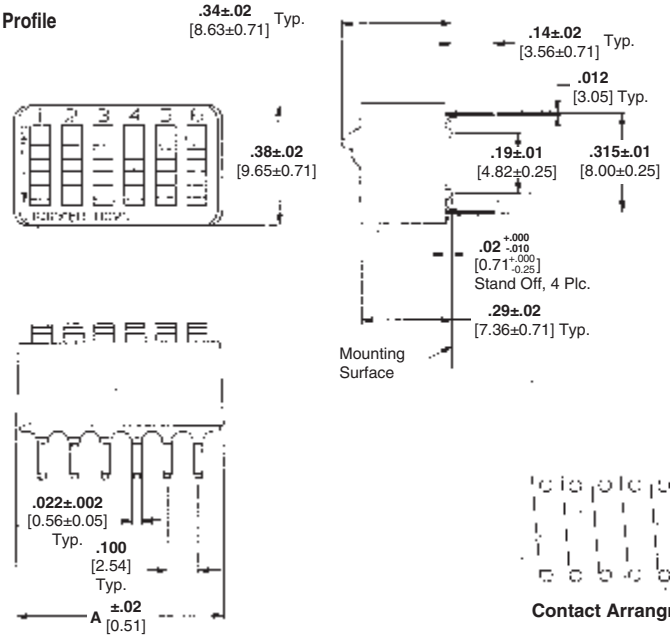
DIP Switches, Rocker Style Actuator

Contact Lead Spacing —
.100 x .300 [2.54 x 7.62]
Lead Length — .140 [3.56]
below mounting surface



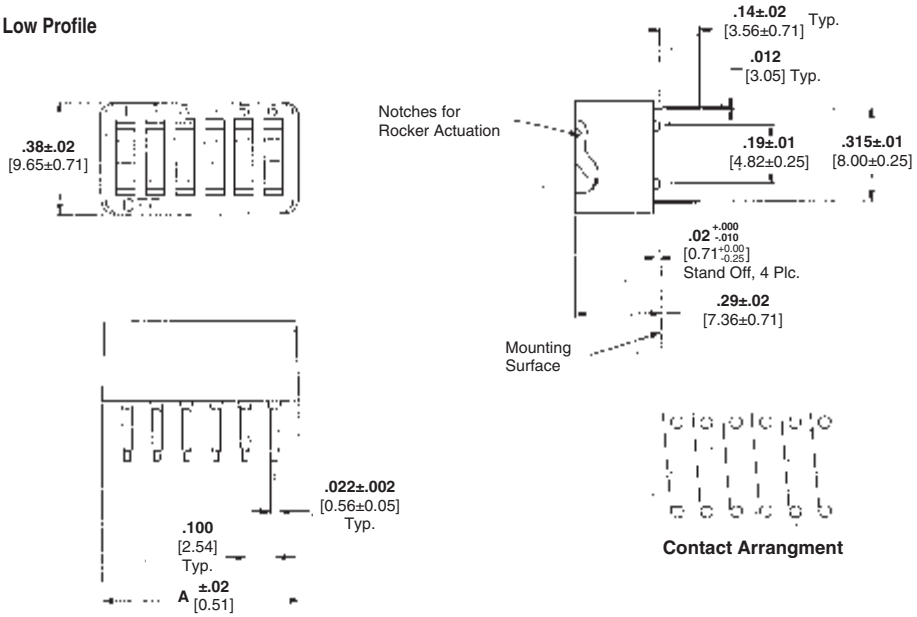
Standard Profile



Contact Arrangment

Low Profile

Contact Lead Spacing —
.100 x .300 [2.54 x 7.62]
Lead Length — .140 [3.56]
below mounting surface



Contact Arrangment

Number of Switches	SPST Standard Profile		SPST Low Profile	
	Unsealed	Sealed	Unsealed	Tape Sealed
2	2-435166-9	—	—	3-435626-6
3	—	—	—	3-435626-7
4	435166-2	4-435166-9	435626-1	3-435626-8
5	—	5-435166-0	435626-2	—
6	435166-4	5-435166-1	—	4-435626-0
7	435166-1	5-435166-2	—	4-435626-1
8	435166-5	5-435166-3	435626-5	4-435626-2
9	435166-6	—	—	—
10	435166-7	5-435166-5	—	4-435626-4

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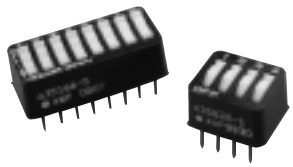
DIP Switches



Alcoswitch 7100 Series DIP Switches are recommended for programming applications where the number of cycles per pole is limited. These single pole, single throw switches have been designed for a life of up to 2000 cycles per pole and feature contacts of copper alloy with .000030 [0.00076] gold over nickel plating in the contact area and legs plated to meet Tyco Electronics Solderability Specification 109-11-3. In addition, the SPST standard and low profile switches are also available with a top seal to provide protection during soldering and cleaning processes.

Performance Characteristics

Current and Voltage Rating:
Nonswitching — 1.0 amperes max. at 40 VDC
Switching — 60 milliamperes max at 5 VDC (resistive load);
15 milliamperes max. at 24 VDC (resistive load)

Contact Resistance, Dry Circuit:
100 milliohms max. (end of life) and 50 milliohms (initial) at 50 mV open circuit, 50 milliamperes

Insulation Resistance:
1×10^9 ohms min. at 100 VDC (initial)

Dielectric Withstanding Voltage:
500 VDC min. at standard atmosphereic conditions

Capacitance:
5 picofarads max.

Temperature Rating:
Nonoperating — -73°C to +105°C
Operating — -55°C to +105°C

Vibration:
Discontinuities shall not exceed 10 microseconds when subjected to 10-2000-10 Hz transversing for 20 minutes at .060 [1.52] inches total excursion

Shock:
No physical damage or discontinuities greater than 10 microseconds when tested with .10 ampere current applied per Tyco Electronics Specification 109-26, Condition A

Humidity:
Withstands an environment of +40°C and 95% RH for 96 hours

Durability:
No physical damage or contact resistance greater than 100 milliohms after 2000 cycles of actuation with a resistive load of 24 VDC and 25 milliamperes max. current applied

Terminal Strength (Bend Test):
Two (2) 45° bend cycles per MIL-STD-202, Method 211, Condition B

Materials

Housing:
Glass-filled polyester, 94V-0 rated, blue

Rocker:
Thermoplastic, 94V-0 rated, white

Spring Contacts and Leads:
Copper alloy with .000030 [0.00076] gold over .000050 [0.00127] nickel in contact area and .000150 [0.00381] tin-lead over .000050 [0.00127] nickel on solder legs, plated to meet Tyco Electronics Solderability Specification 109-11-3.

Technical Documents

Product Specification:
108-7532
Instruction Sheet:
408-07779
Application Specification:
114-1056

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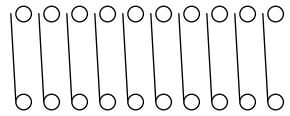
DIP Switches, Rocker Style Actuator

Single Pole Single Throw

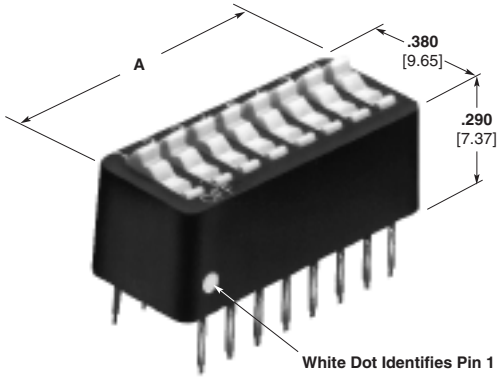
Contact Lead Spacing —
.100 x .300 [2.54 x 7.62]
Lead Length — .140 [3.56]
below mounting surface

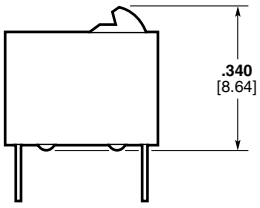
Contact Arrangement



Pin 1

Note: Switches shown in open position.

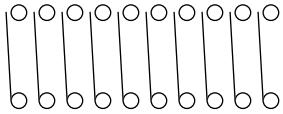




Single Pole Single Throw Low Profile

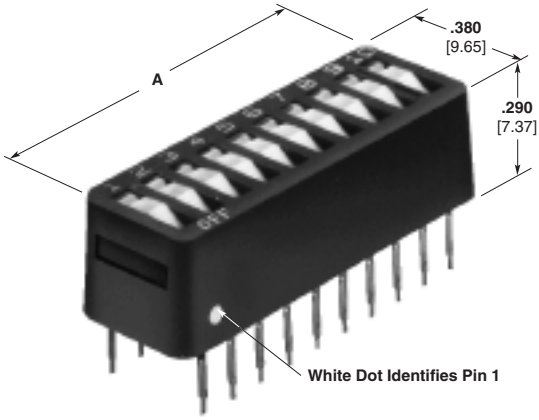
Contact Lead Spacing —
.100 x .300 [2.54 x 7.62]
Lead Length — .140 [3.56]
below mounting surface

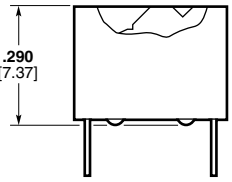
Contact Arrangement

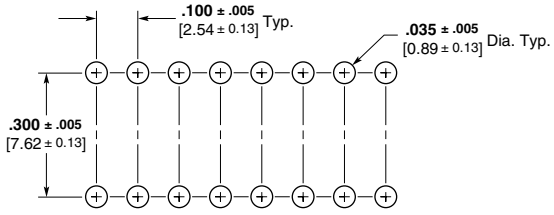


Pin 1

Note: Switches shown in open position.







Recommended PC Board Hole Pattern

No. of Switches	Dim. A		SPST Standard Profile		SPST Low Profile	
	inch	mm	Unsealed[1] Part No.	Sealed Part No.	Unsealed[1] Part No.	Tape Sealed Part No.
2	.280	7.11	2-435640-9	—	435668-1	2-435668-6
3	.380	9.65	3-435640-0	—	—	3-435668-3
4	.480	12.19	435640-2	3-435640-5	435668-3	3-435668-4
5	.580	14.73	435640-3	3-435640-6	435668-4	3-435668-5
6	.680	17.27	435640-4	3-435640-7	435668-5	2-435668-5
7	.780	19.81	435640-1	3-435640-8	—	2-435668-7
8	.880	22.35	435640-5	3-435640-9	435668-7	2-435668-8
9	.980	24.89	435640-6	4-435640-0	—	2-435668-9
10	1.080	27.43	435640-7	4-435640-1	435668-9	3-435668-0
11	1.180	29.97	—	—	—	3-435668-1
12	1.280	32.51	3-435640-2	4-435640-3	—	3-435668-2

[1] All switches are bottom sealed.

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A

S Series

Sip Switches, Low Profile, Vertical and Right Angle

FEATURES:

- End-to-end stackable in .100" center (SSV/SLV) versions
- High pressure wiping contacts allows aqueous or solvent cleaning
- Gas tight contacts (280,000 PSI)
- Ceramic substrate allows wave soldering temperature of 245° for up to 10 seconds (SLV Version)
- 2 SIP switches take up less board space than 1 DIP switch

ENVIRONMENTAL SPECIFICATIONS:

Operating Temperature .....-30°C to +85°C
Storage Temperature .....-45°C to +100°C
Solder Heat Resistance .....Wave soldering temperatures of 245°C ± 5°C with switch in off position 30 seconds when mounting on a .060" thick PCB per MIL-STD 202, Method 210

MATERIAL SPECIFICATIONS:

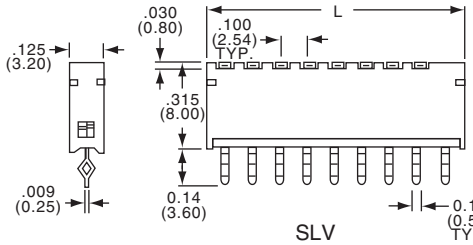
Base .....PPS 94V-0/Encapsulated Ceramic (SLV/SLH)
Cover .....PBT 94V-0
Contacts .....Gold flashed Beryllium copper
Actuator Material .....Polyamide
Terminals/Fixed Contacts .....Solder coated copper alloy
Terminal Seal .....Insert molded
Process Seal .....Gas tight contacts

TYPICAL PERFORMANCE CHARACTERISTICS:

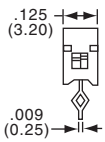
Contact Rating .....0.4 VA @ 20 VDC max.
Initial Contact Resistance .....50 Milliohms max.
Insulation Resistance .....100 Megohms min. @ 100 VDC
Dielectric Strength .....500 VAC
Actuation Force .....800 Grams max.
Actuator Travel .....50°
Life Expectancy .....1,000 Cycles

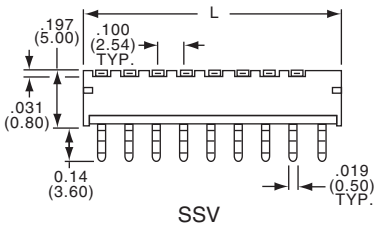
SSV

SSVO8



SLV



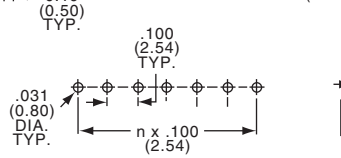


SSV

SLV

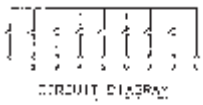
SLVO8

Model		No. of Positions	Dim. L
Tyco Electronics	Alcoswitch		
2-1437589-2	SSV02	2	0.298
2-1437589-3	SSV04	4	0.498
2-1437589-4	SSV06	6	0.698
2-1437589-6	SSV08	8	0.898
2-1437589-7	SSV10	10	1.098
1-1437589-5	SLV04	4	0.498
1-1437589-6	SLV08	8	0.898



(n) INDICATES NUMBER OF POSITIONS

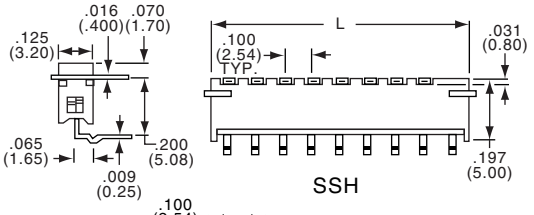
SLV and SSV



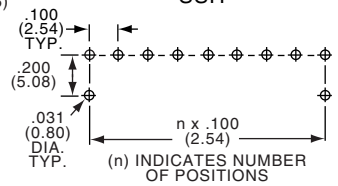
CIRCUIT DIAGRAM

SSH

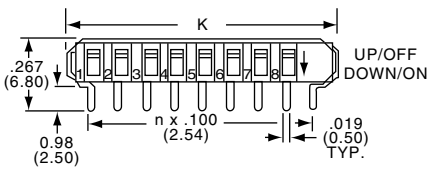
SSH06



SSH

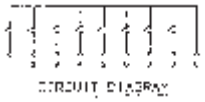


(n) INDICATES NUMBER OF POSITIONS



SSH

Model		No. of Positions	Dim. L	Dim. K
Tyco Electronics	Alcoswitch			
1-1437589-7	SSH02	2	0.298	0.338
1-1437589-8	SSH04	4	0.498	0.538
1-1437589-9	SSH06	6	0.699	0.738
2-1437589-0	SSH08	8	0.898	0.938
2-1437589-1	SSH10	10	1.098	1.138



CIRCUIT DIAGRAM

Catalog 1308390
Issued 9-04

www.tycoelectronics.com

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USA: 1-800-522-6752
Canada: 1-905-470-4425
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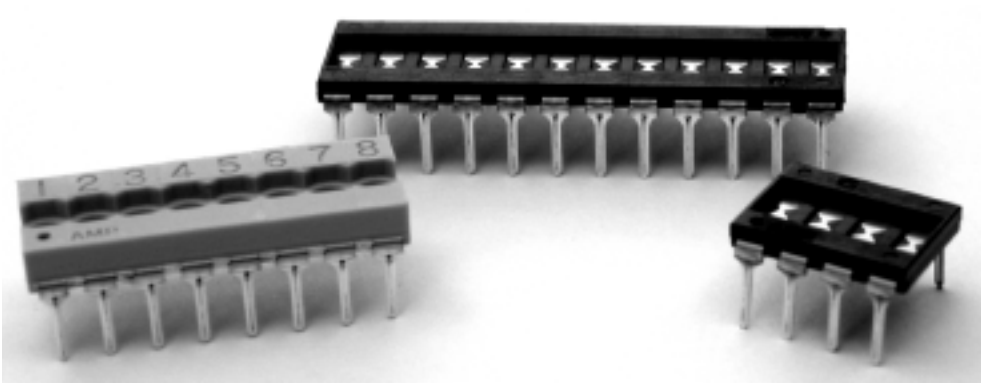
Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-141-810-8967

DIP Shunts

Alcoswitch DIP Shunts are a highly reliable, low cost means of manually programming various types of electrical/electronic equipment. The shunt consists of a series of conductive straps packaged in a DIP configuration. The straps can be retained intact for a closed circuit or broken with a hand tool to produce an open circuit.

DIP shunts are available in 4- through 12-position configurations. All shunts can be supplied either unprogrammed or preprogrammed.



Performance Characteristics

Current Rating:
Standard Pressure — 2 amperes for +20°C rise above ambient (one conductor per shunt)
Machine Insertable — 1 ampere for +20°C rise above ambient (one conductor per shunt)

Insulation Resistance:
1 x 10^{10} ohms min. at 100 VDC

Dielectric Withstanding Voltage:
500 VDC min.

Capacitance:
2 picofarads max. between adjacent straps
5 picofarads max. across cut straps

Temperature Rating:
-55°C to +105°C

Humidity:
Withstands an environment of +40°C and 95% RH for 96 hours

Terminal Strength (Bend Test):
Two 45° bend cycles per MIL-STD-202, Method 211, Condition B
Resistance to Soldering Heat: EIA-364-56A Condition C

Reconnection Option
Cut straps can be reconnected by soldering bridging. Solder bridging recommendations are:

- Use low temperature solder
- Use solder tip approximately 1/32 [0.79] in diameter
- Do not let solder tip come in contact with plastic material

Materials

Housing:
Glass-filled thermoplastic, 94V-0 rated

Metal Parts:
Copper alloy with electroplated tin finish (gold plated I/O legs are optional)

Technical Documents

Product Specifications:
108-7533 Through Hole
Instruction Sheets:
408-07768 Through Hole
Application Specifications:
114-1054 Through Hole

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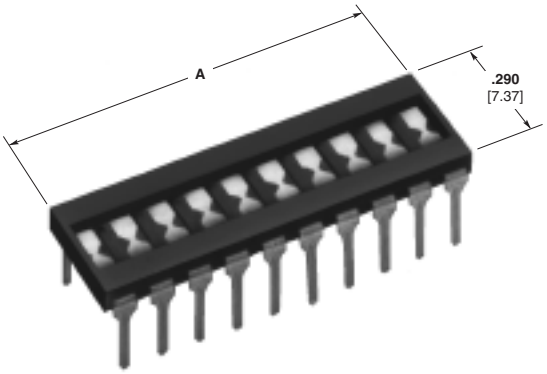
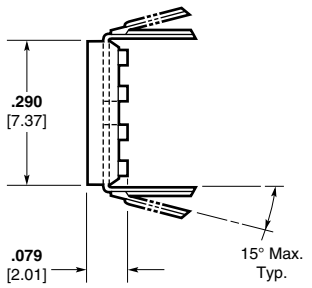
DIP Shunts

Standard Shunt
Standard Pressure

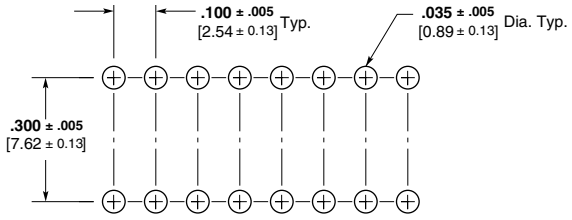
Contact Lead Spacing —
.100 x .300 [2.54 x 7.62]
Lead Length — .140 [3.56]
below mounting surface
Housing Color — Black
Programming Tool — See below





Programming
Hand Tool
Part No. 435862-1

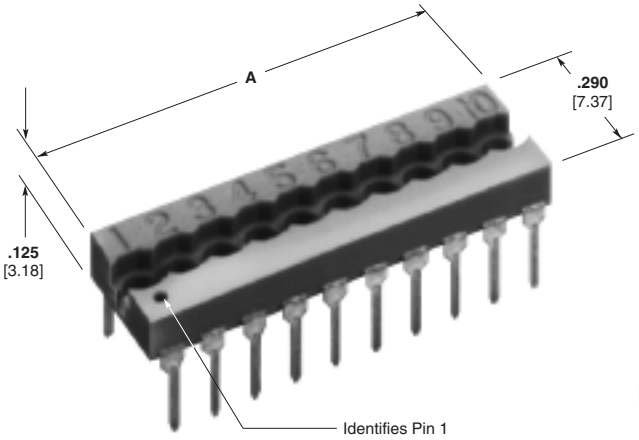
This tool provides a reliable means of programming DIP shunts. It is rugged, lightweight and dependable. No special skills are required to use this tool.

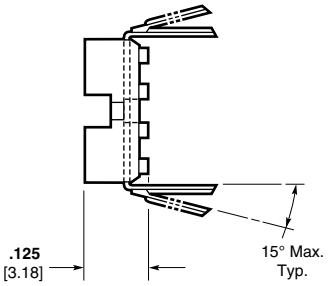


Recommended PC Board Hole Pattern

Machine Insertable Shunt
(Compatible with commercially available IC insertion equipment)

Contact Lead Spacing —
.100 x .300 [2.54 x 7.62]
Lead Length — .140 [3.56]
below mounting surface
Housing Color — Gray
Programming Tool — None required
(5 to 10 lbs. [22.2 to 44.4 N] required to manually program each shunt position)





No. of Positions	Dim. A		Standard Shunt Standard Pressure	Machine Insertable Shunt
	inch	mm		
4	.400	10.16	435704-4	—
6	.600	15.24	435704-6	—
7	.700	17.78	435704-7	—
8	.800	20.32	435704-8	436860-7
9	.900	22.86	435704-9	—
10	1.000	25.40	1-435704-0	—
12	1.200	30.48	1-435704-2	—

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UK: 44-141-810-8967

Rotary DIP Switches, Low Profile, Process Sealed, 7MM, Through Hole and Surface Mount

FEATURES:

- 40% PCB area space savings over standard rotary dips
- 50% Lower in profile than standard rotary dips
- Hexadecimal or binary code, complement available
- Deflection temperature of 250ºC for SMT reflow soldering
- Gold contacts, tin/lead terminals
- Sealed "O" ring design

MATERIAL SPECIFICATIONS:

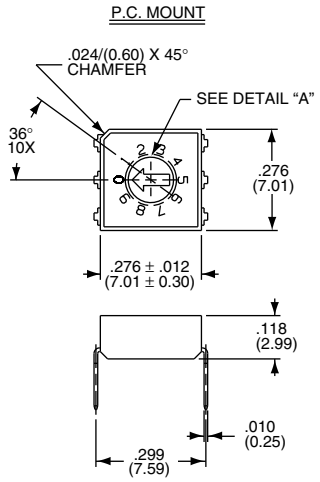
Fixed Contacts/Terminals.....Brass, gold plated / tin/lead
Moving Contacts.....BeCu, gold plated
Case Material .....PPS UL94V-0
Rotor .....Nylon UL94V-O
Cover Material .....PPS UL94V-0
O-Ring .....Fluoro Rubber

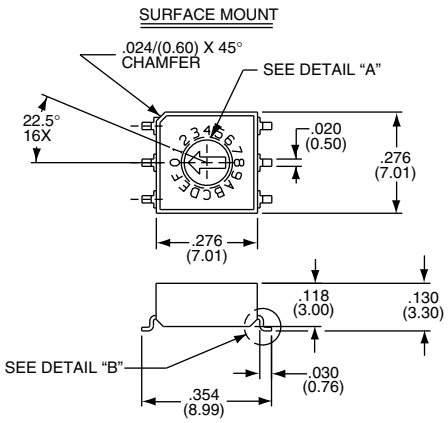
ENVIRONMENTAL SPECIFICATIONS:

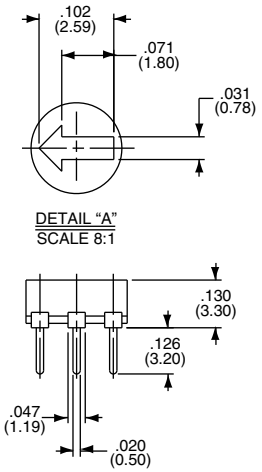
Operating Temperature.....-10°C to +85°C
Storage Temperature.....-45°C to +100°C
Solder Heat Resistance .....MIL-STD 202F, Method 210
IR Process Capability .....EIA-364-56 Level II (250°C peak)

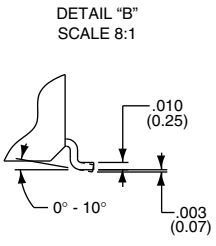
TYPICAL PERFORMANCE CHARACTERISTICS:

Contact Rating .....0.4 VA Max. @ 20 VDC
Initial Contact Resistance.....50m Max. @ 2 VDC 10mA
Insulation Resistance .....1,000 Megohms max.
Dielectric Strength .....300 VAC for 1 minute
Actuator Travel.....36° 10 Position, 22.5° 16 position
Operating Force .....200 Grams avg.
Life Expectancy .....20,000 Steps, mechanical










MRD10


MRD10S


MRD16C


MRD16S

Catalog 1308390
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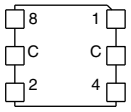
Rotary DIP Switches, Low Profile, Process Sealed, 7MM, Through Hole and Surface Mount

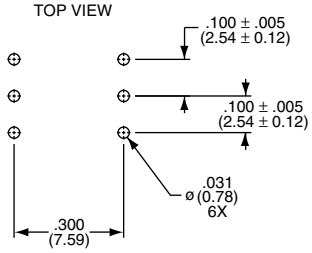
TERMINAL IDENTIFICATION

VIEWED FROM BOTTOM SWITCH



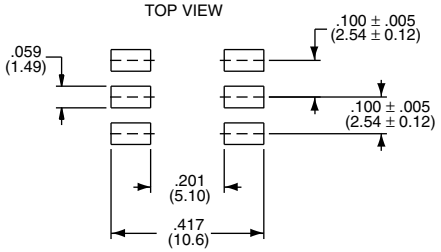
P.C. LAYOUT (THRU HOLE)

TOP VIEW



P.C. LAYOUT (SURFACE MOUNT)

TOP VIEW



TRUTH TABLES

10-Position, BCD (red actuator)

Pos.	0	1	2	3	4	5	6	7	8	9
C	X	X	X	X	X	X	X	X	X	X
1		X		X		X		X		X
2			X	X			X	X		
4					X	X	X	X		
8									X	X

16-Position, Hexadecimal (green actuator)

Pos.	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
C	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1		X		X		X		X		X		X		X		X
2			X	X			X	X			X	X			X	X
4					X	X	X	X					X	X	X	X
8									X	X	X	X	X	X	X	X

10-Position, BCD Complement (orange actuator)

Pos.	0	1	2	3	4	5	6	7	8	9
C	X	X	X	X	X	X	X	X	X	X
1	X		X		X		X		X	
2	X	X			X	X			X	X
4	X	X	X	X					X	X
8	X	X	X	X	X	X	X	X		

16-Position Hexadecimal Complement (white actuator)

Pos.	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
$\overline{C}$	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
$\overline{1}$	X		X		X		X		X		X		X		X	
$\overline{2}$	X	X			X	X			X	X			X	X		
$\overline{4}$	X	X	X	X					X	X	X	X				
$\overline{8}$	X	X	X	X	X	X	X	X								

HOW TO ORDER

MRD [ ] [ ] [ ]

Circuit Types
10 - BCD
10C = BCD complement
16 = Hexadecimal
16C = Hexadecimal complement

Terminations
Blank = PC
S = Outside L. surface mount

Packaging
TR = Tape & reel
(surface mount only)

Color Code	
Circuit Type	Actuator Color
10	Red
10C	Orange
16	Green
16C	White

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UK: 44-141-810-8967

Rotary Dip Switches, Process Sealed, Through Hole and Surface Mount

MATERIAL SPECIFICATIONS:

Contacts .....Gold flashed copper alloy
Terminals .....Tin lead plated brass
Base, Rotor, Case .....PC, Glass filled PBT resin (blue case)
SMT, Polymide (white case)
Movable Contact.....Gold flashed copper alloy
Ball Support Plate.....Copper alloy
Detent Spring .....Stainless steel (spring)

ENVIRONMENTAL SPECIFICATIONS:

Operating Temperature.....-22ºF to +185ºF (-30°C to +85°C)
Storage Temperature.....-49ºF to 212ºF (-45°C to +100°C)
Vibration Resistance.....Subjected to vibration of 10-55hz per second with a total amplitude of .06 in. in 3 mutually perpendicular directions for 2 hours each
Shock Resistance .....Will withstand 50G acceleration in 3 different planes for a period of 11 milliseconds
Salt Spray Test .....Withstands an atmosphere of 5% salt water at temperature of 50°C
Hydrogen Sulfide Test .....Withstands an atmosphere of 15-20 PPM hydrogen sulfide gas at temperature of 40°C for 240 hours
Atmospheric Test .....Withstands an atmosphere of 30-50 PPM sulfite gas at a temperature of 40°C for 240 hours
Solder Heat Resistance.....Withstands 5 sec. flow solder bath of 260°C when mounted on a .06" thick PC board per MIL-STD 202, Method 210
Bubble Test.....Withstands submersion in 60°C Flouriert for 1 min. without leakage

TYPICAL PERFORMANCE CHARACTERISTICS:

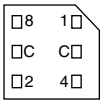
Contact Rating .....0.4 VA @ 20 VDC max.
Initial Contact Resistance.....50 Milliohms max. @ 2 VDC
Insulation Resistance .....1,000 Megohms min. @100 VDC
Dielectric Strength .....300 VAC RMS @ sea level
Operating Force .....6 Oz.-in. nom.
SMT Operating Force.....3 Oz.-in. nom.
Life Expectancy .....20,000 Steps

DRD10E

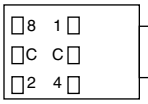
DRD16CE

TRUTH TABLES

Terminal Identification
(view from bottom of the switch)



VIEW FROM BOTTOM OF THE SWITCH



ACTUATOR LOCATION

NOTE: COMMON TERMINALS ARE CONNECTED INTERNALLY.

10-Position, BCD (red actuator)

Pos.	0	1	2	3	4	5	6	7	8	9
C	X	X	X	X	X	X	X	X	X	X
1		X		X		X		X		X
2			X	X			X	X		
4					X	X	X	X		
8									X	X

16-Position, Hexadecimal (black actuator)

Pos.	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
C	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1		X		X		X		X		X		X		X		X
2			X	X			X	X			X	X			X	X
4					X	X	X	X					X	X	X	X
8									X	X	X	X	X	X	X	X

10-Position, BCD Complement (orange actuator)

Pos.	0	1	2	3	4	5	6	7	8	9
$\overline{C}$	X	X	X	X	X	X	X	X	X	X
$\overline{1}$	X		X		X		X		X	
$\overline{2}$	X	X			X	X			X	X
$\overline{4}$	X	X	X	X					X	X
$\overline{8}$	X	X	X	X	X	X	X	X		

16-Position Hexadecimal Complement (white actuator)

Pos.	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
$\overline{C}$	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
$\overline{1}$	X		X		X		X		X		X		X		X	
$\overline{2}$	X	X			X	X			X	X			X	X		
$\overline{4}$	X	X	X	X					X	X	X	X				
$\overline{8}$	X	X	X	X	X	X	X	X								

Catalog 1308390
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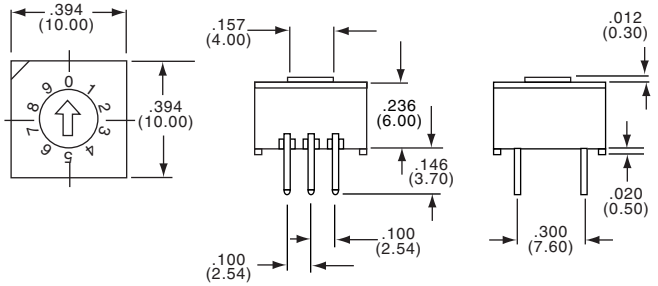
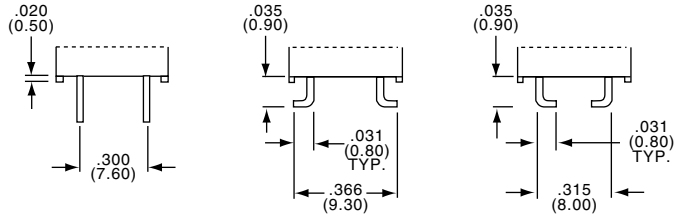
Rotary DIP Switches, Process Sealed, Through Hole and Surface Mount

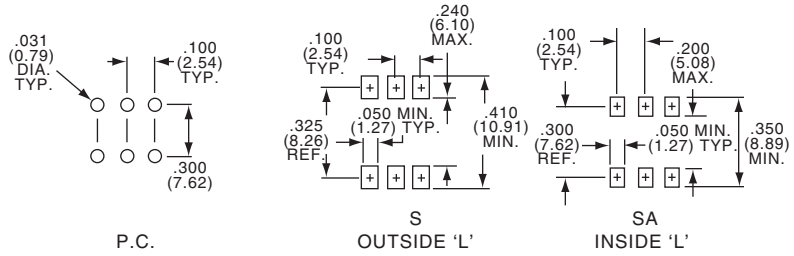
"D" FLUSH ACTUATOR



TERMINATIONS



LAYOUTS



HOW TO ORDER

DRD ☐ ☐ **E** ☐

10 = BCD
10C = BCD Complement
16 = Hexadecimal
16C = Hexadecimal Complement

Blank = PC
SA = SMT (Inside L)
S = SMT (Outside L)

Blank = Tubes
TR = Tape & Reel (for surface mount only)

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Rotary DIP Switches, Unsealed, Through Hole, Straight and Right-Angle

FEATURES:

- High pressure contacts (140K PSI) provide 20,000 Steps.
- Unique design utilizes high pressure pin-point sliding contacts to penetrate contaminants on contact surface.
- Terminals insert molded into base.
- Screwdriver, knob and shaft (plastic and steel) type actuators available in both upright and right angle versions.
- 10 And 16 position versions with both real and complement codes.

Note: Common terminals connected internally.

MATERIAL SPECIFICATIONS:

Contacts .....Gold flashed copper alloy
Terminals .....Tin Lead Plated
Base, Rotor, Case .....Polyester

TYPICAL PERFORMANCE CHARACTERISTICS:

Contact Rating .....0.4 VA @ 20 VDC
Initial Contact Resistance.....50 Milliohms max. @ 2 VDC
Insulation Resistance .....1,000 Megohms min. @ 100 VDC
Dielectric Strength .....300 VAC RMS @ sea level

ENVIRONMENTAL SPECIFICATIONS:

Operating Temperature.....-22ºF to +185ºF (-30°C to +85°C)
Storage Temperature.....-49ºF to +212ºF (-45°C to + 100°C)
Vibration Resistance.....Subjected to vibration of 10-55hz per second with a total amplitude of .06 in. in 3 mutually perpendicular directions for 2 hours each
Shock Resistance .....Will withstand 50G acceleration in 3 different planes for a period of 11 milliseconds
Salt Spray Test .....Withstands an atmosphere of 5% salt water at temperature of 50°C
Hydrogen Sulfide Test .....Withstands an atmosphere of 15-20 PPM hydrogen sulfide gas at temperature of 40°C for 240 hours
Atmosphere Test.....Withstands an atmosphere of 30-50 PPM sulfide gas at a temperature of 40°C for 240 hours
Solder Heat Resistance.....Withstands 5 sec. flow solder bath of 260°C when mounted on a .06" thick PC board per MIL-STD 202, Method 210

HOW TO ORDER

Example: DRW 10RA = Rotary Dip with
Wheel actuator
BDC -10 position
Right angle PC terminations

D	R				

Series
Rotary Dips (blue case)

Actuator Style
*D = Flush
M = Mini plastic shaft
W = Wheel
S = Metal shaft

Circuit Type
10 = BCD
10C = BCD complement
16 = Hexadecimal
16C = Hexadecimal complement

Terminations
Blank = PC
RA = Right angle for DRM, DRW, DRS only
RAE = Right angle, Auto Assembly Compatible for DRD type only

*DRD Available in RAE version only. For PC or SMT versions, see Pg. A24 DRD "E" Process Sealed Product.

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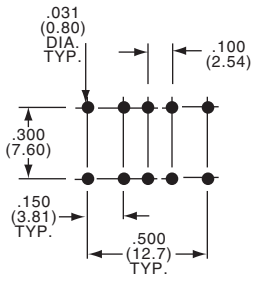
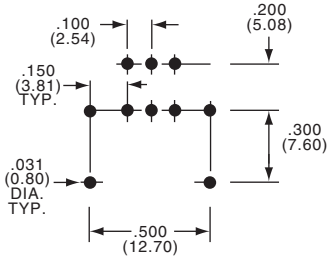
Rotary DIP Switches, Unsealed, Through Hole, Straight and Right-Angle

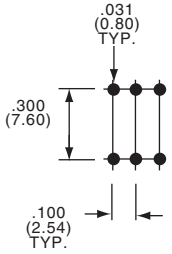
FOOTPRINTS



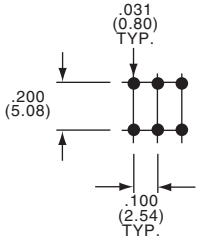
S STYLE VERTICAL
(METAL SHAFT)



S STYLE RA
(METAL SHAFT)



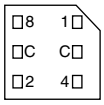
PC

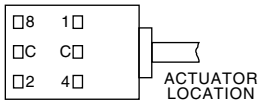


PC
RIGHT ANGLE

TRUTH TABLES

Terminal Identification
(view from bottom of the switch)





10-Position, BCD (red actuator)

Pos.	0	1	2	3	4	5	6	7	8	9
C	X	X	X	X	X	X	X	X	X	X
1		X		X		X		X		X
2			X	X			X	X		
4					X	X	X	X		
8									X	X

10-Position, BCD Complement (orange actuator)

Pos.	0	1	2	3	4	5	6	7	8	9
$\overline{C}$	X	X	X	X	X	X	X	X	X	X
$\overline{1}$	X		X		X		X		X	
$\overline{2}$	X	X			X	X			X	X
$\overline{4}$	X	X	X	X					X	X
$\overline{8}$	X	X	X	X	X	X	X	X		

16-Position, Hexadecimal (black actuator)

Pos.	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
C	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1		X		X		X		X		X		X		X		X
2			X	X			X	X			X	X			X	X
4					X	X	X	X					X	X	X	X
8									X	X	X	X	X	X	X	X

16-Position Hexadecimal Complement (white actuator)

Pos.	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
$\overline{C}$	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
$\overline{1}$	X		X		X		X		X		X		X		X	
$\overline{2}$	X	X			X	X			X	X			X	X		
$\overline{4}$	X	X	X	X					X	X	X	X				
$\overline{8}$	X	X	X	X	X	X	X	X								

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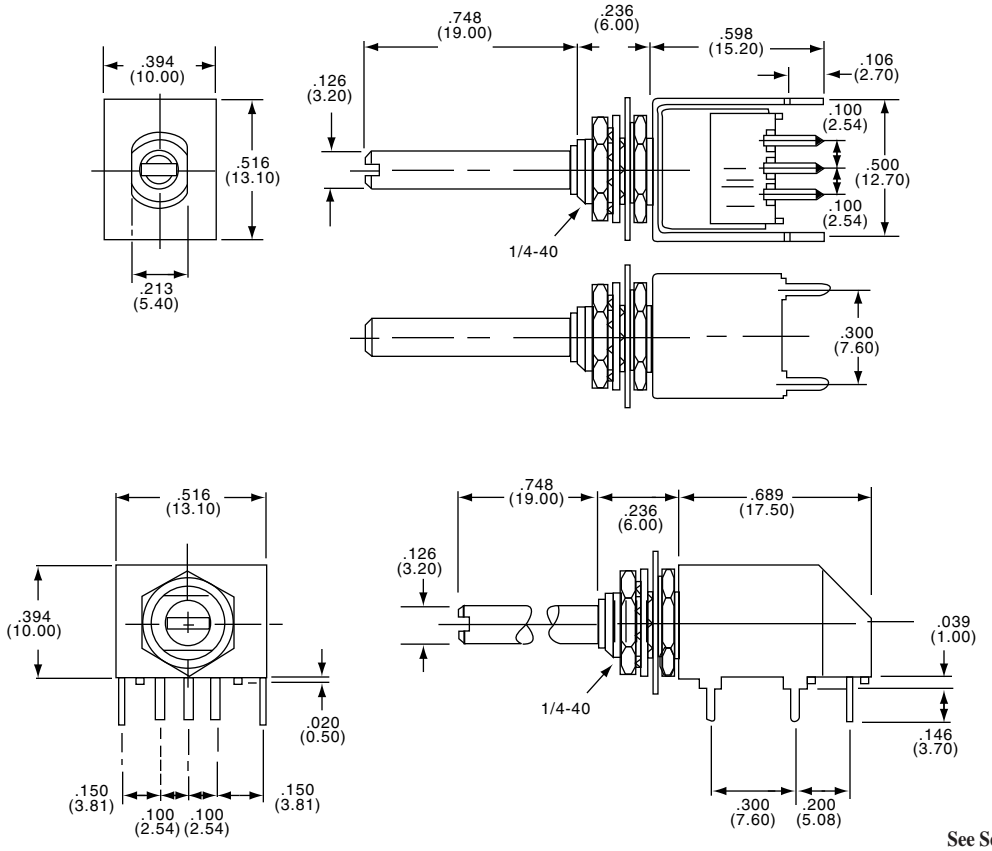
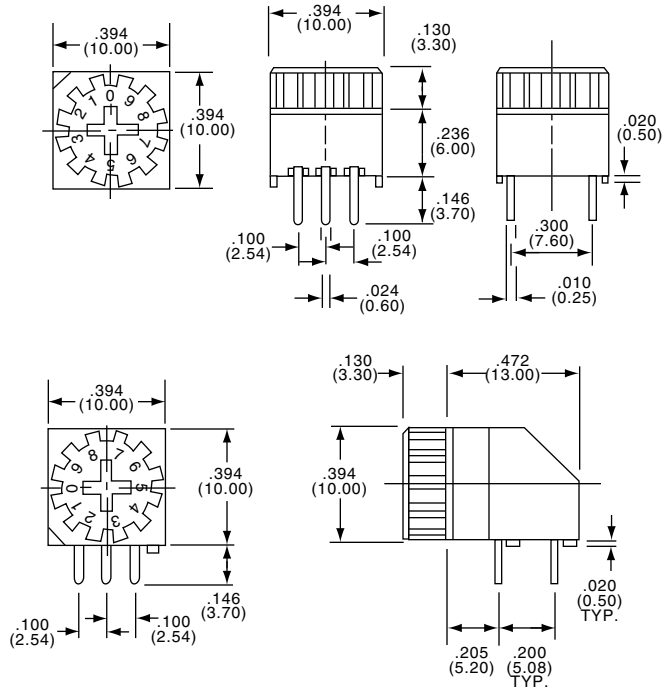
Rotary DIP Switches, Unsealed, Through Hole, Metal Shaft or Wheel Actuator

"S" METAL SHAFT ACTUATOR



See Section K for knob selection

"W" WHEEL ACTUATOR



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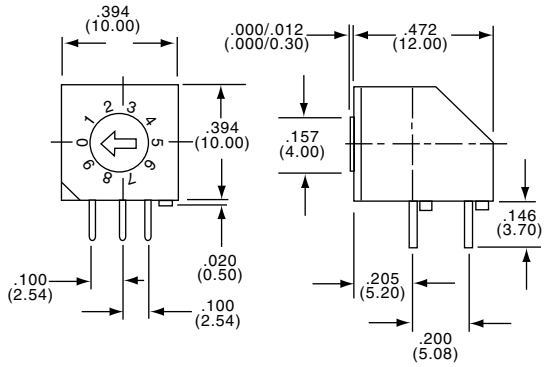
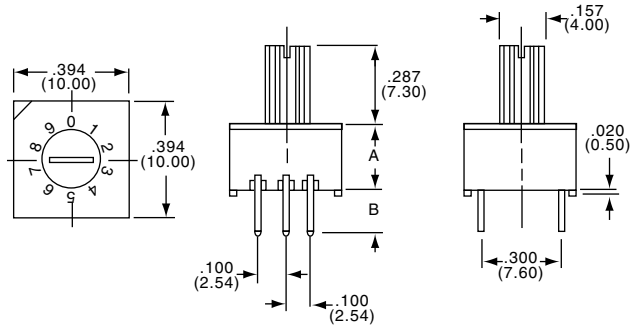
Rotary DIP Switches, Unsealed, Through-Hole, Flush and Mini Shaft Actuator

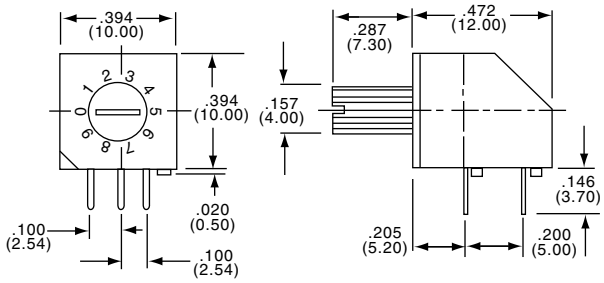
"D" FLUSH ACTUATOR



DIM.	DR	RC, *RA, RR
A	.236 (6.00)	.256 (6.50)
B	.146 (3.70)	.126 (3.20)

"M" MINI-SHAFT ACTUATOR





DIM.	DR	RR
A	.236 (6.00)	.256 (6.50)
B	.146 (3.70)	.126 (3.20)

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