

TYPICAL SWITCH ORDERING EXAMPLE

DR

ACTUATORS	
PCB Mount	
F	Screwdriver Actuated
K	Shaft Actuated
S	Dial Actuated (for straight terminals only)
Panel or PCB Mount	
A	Knob Actuated

F

R

POSITIONS	
10	Decimal
16	Hexadecimal

10

P

PC TERMINALS	
P	Straight
H	Right Angle

P

BRACKETS	
No Code	No Bracket (supplied w/ standard hardware)
B	With Bracket (order hardware separately)
For DRA model only	

DESCRIPTION FOR TYPICAL ORDERING EXAMPLE

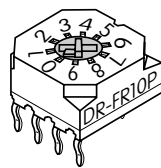
DRFR10P

■ General Specifications ■ Dimensions 1 ■ Dimensions 2

ACTUATORS

F **Screwdriver Actuated**

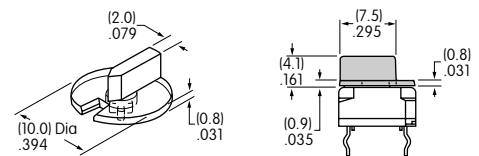
Adjusted with a flat or Phillips tipped screwdriver or Snap-in Knob AT4061.



AT4061
Optional Snap-in Knob for "F" Actuator

Polyamide

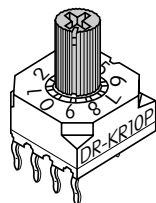
Black knob with clear flange



Install knob before mounting on PCB for right angle type; it should not be removed once mounted. When mounting, align slit in knob with white pointer on actuator.

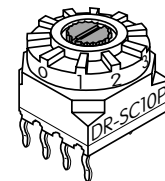
K **Shaft Actuated**

Adjusted by hand or with a flat or Phillips tipped screwdriver.



S **Dial Actuated**

Adjusted by hand or with a flat tipped screwdriver.



Actuators are fully rotational and operate either clockwise or counterclockwise. Real coded devices have orange actuators. Complement coded have red actuators.



GENERAL SPECIFICATIONS

Electrical Capacity (Resistive Load)

Switching Rating:	100mA @ 5V DC
Nonswitching Rating:	100mA @ 50V DC

Other Ratings

Contact Resistance:	80 milliohms maximum for all 4 contacts closed 30 milliohms maximum for 1 contact closed
Insulation Resistance:	1,000 megohms minimum @ 250V DC
Dielectric Strength:	250V AC minimum
Mechanical Life:	20,000 detent operations minimum
Electrical Life:	20,000 detent operations minimum
Note: A detent operation is one actuator position operation or stepping. 20,000 detent operations = 1,250 cycles for hexadecimal devices or 2,000 cycles for decimal devices. A cycle is one 360° rotation.	
Nominal Operating Torque:	80 ~ 320 grams-cm (1.1 ~ 4.4 ounce-in)
Contact Timing:	Shorting (Avoid possible false signal by turning off power before switching.)

Materials & Finishes

Shaft & Bushing (DRA only):	Brass with nickel plating
Actuator:	Glass fiber reinforced polyester (PBT)
Housing & Case:	Glass fiber reinforced polyester (PBT)
O-rings:	Nitrile butadiene rubber
Base:	Glass fiber reinforced polyester (PBT)
Movable Contact:	Copper with gold plating
Stationary Contacts:	Phosphor bronze with gold plating over nickel plating
Terminals:	Phosphor bronze with gold strike over nickel plating

Environmental Data

Operating Temp Range:	-25°C through +75°C (-13°F through +167°F)
Humidity:	90 ~ 95% for 96 hours @ 40°C (104°F)
Vibration:	10 ~ 55Hz with peak-to-peak amplitude of 1.5mm traversing the frequency range and returning in 1 minute; 3 right angled directions for 2 hours
Shock:	50g acceleration (tested in 3 right angled directions, with 3 shocks in each direction)

Installation

Mounting Torque for DRA:	15kgf/cm (13lb/in) for double nut; 7kgf/cm (6lb/in) for single nut
Knob Installation Force:	4kg maximum (8.8lb) for DRA model; 3kg maximum (6.6lb) for DRF model
Soldering Time & Temperature:	3 seconds @ 350°C manual soldering or 5 seconds @ 270°C solder pot
Process Seal:	See Supplement Index for specific processing data.

Standards & Certifications

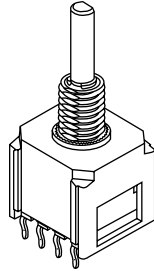
Flammability Standards:	UL 94V-0 rated actuator, case, & base
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ACTUATORS (CONTINUED)

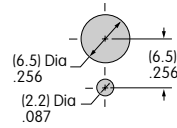
A Knob Actuated

Adjusted with knob
AT433, AT4103, or AT4104
(to be ordered separately)



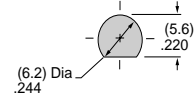
Actuators are fully rotational and operate either clockwise or counterclockwise.

Panel Mounting With Locking Ring



Maximum Effective Panel Thickness:
1.5mm (.059")

Panel Mounting With D-flat

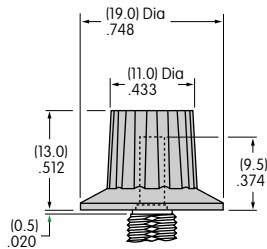


Maximum Effective Panel Thickness:
2.3mm (.091")

AT433 Plain Black

Polyacetal

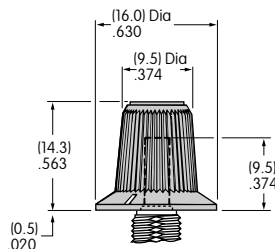
Black only



AT4103 Small Color Tipped

Polyester Base: Black

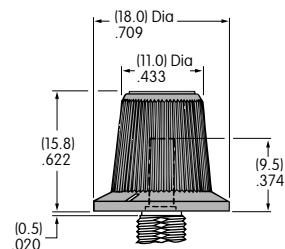
Polyamide Tip Colors:
A, B, C, E, F, G, H



AT4104 Large Color Tipped

Polyester Base: Black

Polyamide Tip Colors:
A, B, C, E, F, G, H



All actuator knobs must be ordered separately.

Color Codes: **B** White **C** Red **E** Yellow **F** Green **G** Blue **H** Gray

TRUTH TABLES (CIRCUITS & POSITIONS)

Actuator Position ● = on		10 Decimal									16 Hexadecimal																	
		0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	
R Real Coded Model Numbers: DRFR, DRKR, DRSR, DRAR	1		●			●		●		●			●		●		●		●		●		●		●		●	
	2			●			●		●			●		●			●		●			●		●		●		●
	4				●		●		●			●		●			●		●			●		●		●		●
	8					●		●		●			●		●			●		●		●		●		●		●
C Complement Coded Model Numbers: DRFC, DRKC, DRSC, DRAC	1	●		●		●		●		●		●		●		●		●		●		●		●		●		●
	2	●	●		●	●		●	●		●	●		●	●		●	●		●	●		●	●		●	●	
	4	●	●	●	●		●	●	●		●	●	●		●	●	●		●	●	●		●	●	●		●	●
	8	●	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●		●	●	●	●	●	●	●

Terminal numbers are actually on switch.

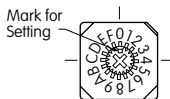
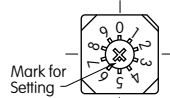


Series DR

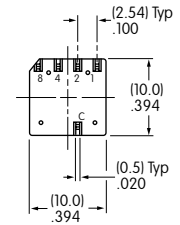
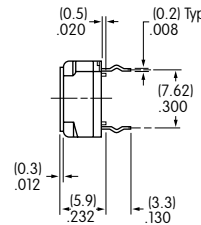
10mm Washable DIP Rotary Switches

TYPICAL SWITCH DIMENSIONS

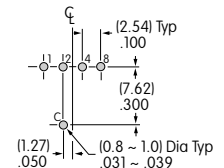
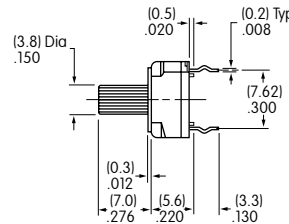
P Straight PC Terminals



Screwdriver Actuated

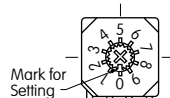
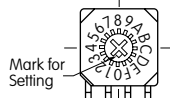


Shaft Actuated

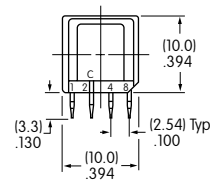
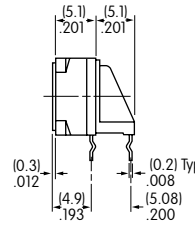


DRFR10P

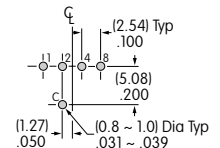
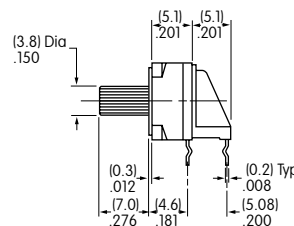
H Right Angle PC Terminals



Screwdriver Actuated

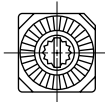
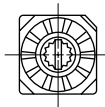


Shaft Actuated

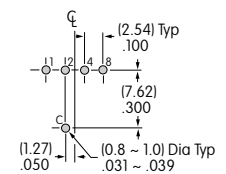
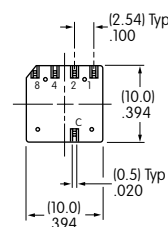
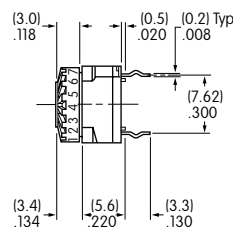


DRKR10H

P Straight PC Terminals



Dial Actuated



DRSR10P



Series DR

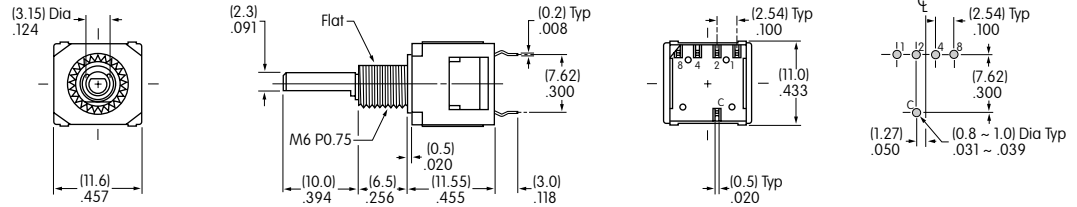
10mm Washable DIP Rotary Switches

TYPICAL SWITCH DIMENSIONS

P Straight PC Terminals • Panel Mount



DRAR10P

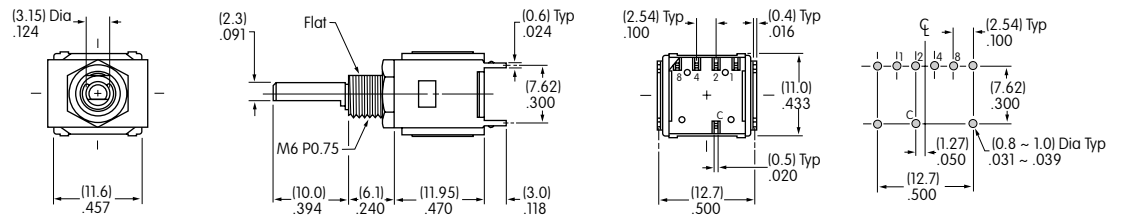


Shown in Position 0 with shaft flat rotated 180° from bushing flat.

PB Straight PC Terminals • With Bracket



DRAR10PB



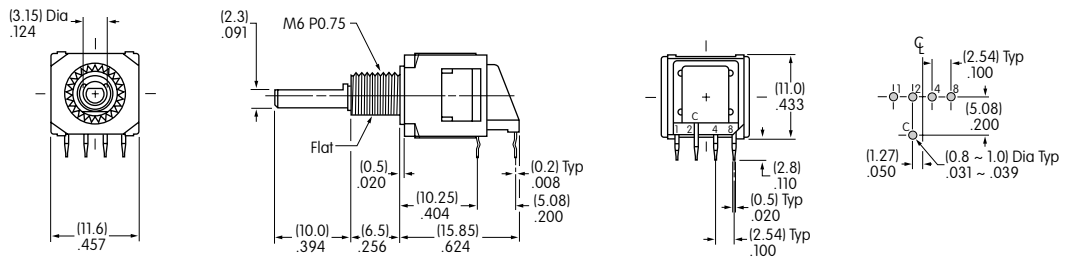
Shown in Position 0 with shaft flat rotated 180° from bushing flat.

(Hardware is not supplied with bracketed models.)

H Right Angle PC Terminals • Panel Mount



DRAR10H

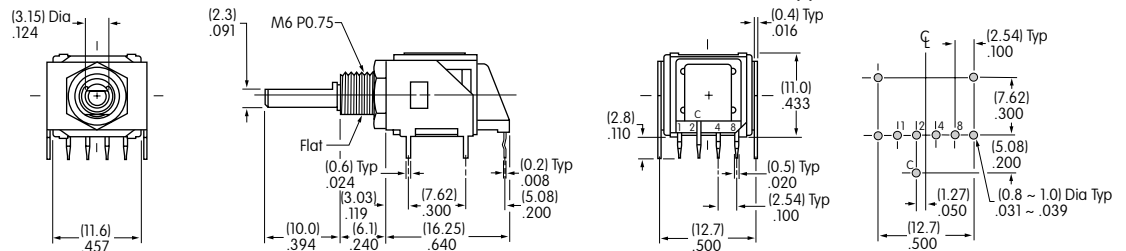


Shown in Position 0 with shaft flat rotated 180° from bushing flat.

HB Right Angle PC Terminals • With Bracket



DRAR10HB

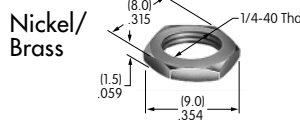


Shown in Position 0 with shaft flat rotated 180° from bushing flat.

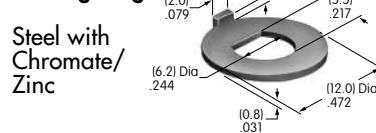
(Hardware is not supplied with bracketed models.)

STANDARD HARDWARE FOR PANEL MOUNT

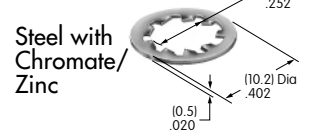
AT513M (2 supplied)
Metric Hexagon Nut



AT515M (1 supplied)
Locking Ring

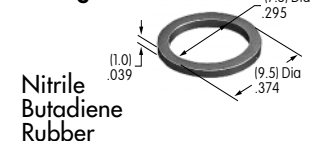


AT509 (1 supplied)
Lockwasher



OPTIONAL O-RING

AT085
O-ring



Nitrile
Butadiene
Rubber

Hardware can be ordered separately for bracketed models.