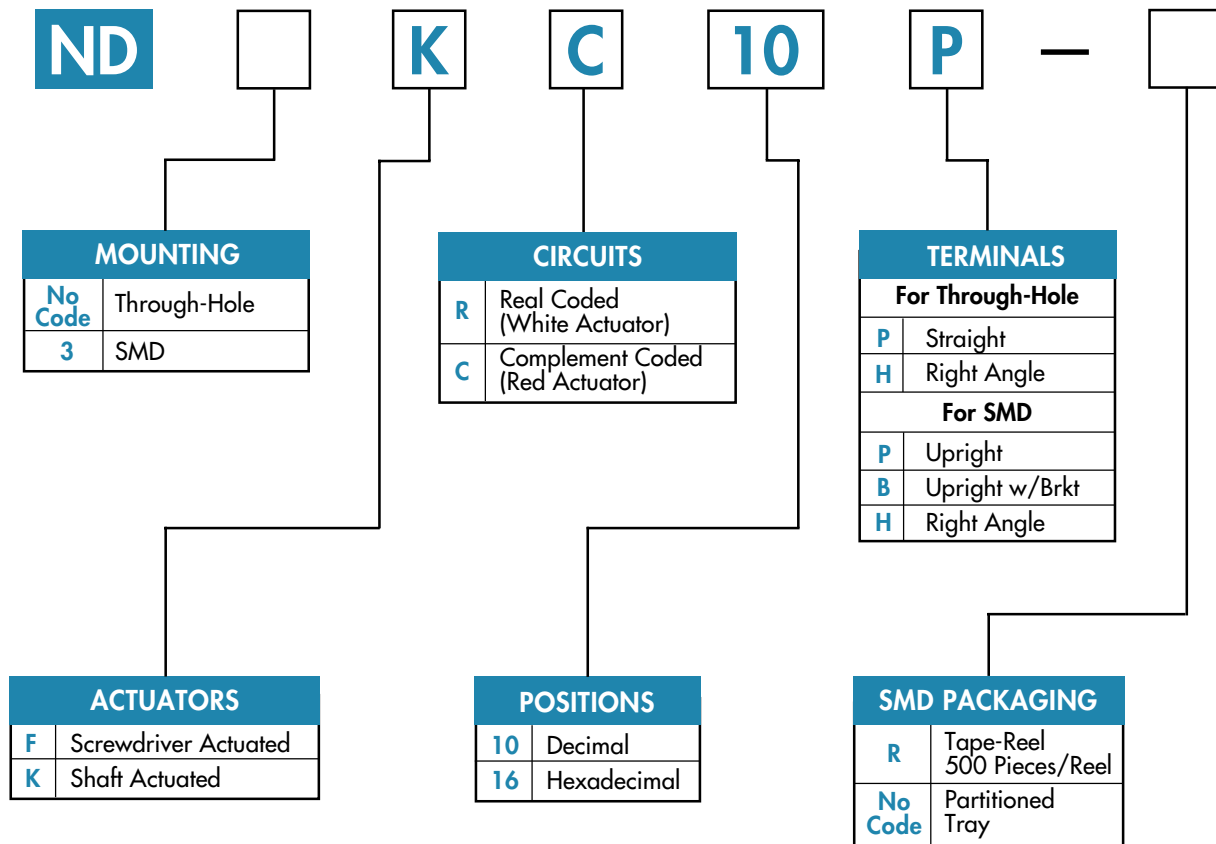




Series ND

8mm Washable DIP Rotary Switches

TYPICAL SWITCH ORDERING EXAMPLE



DESCRIPTION FOR TYPICAL ORDERING EXAMPLE

NDKC10P





GENERAL SPECIFICATIONS

Electrical Capacity (Resistive Load)

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

Other Ratings

Contact Resistance:	80 milliohms maximum for circuit; 30 milliohms maximum for contact point
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:	.061 kgf/cm (.846 oz/in)
Contact Timing:	Nonshorting (break-before-make)

Materials & Finishes

Actuator:	Glass fiber reinforced polyamide
Housing:	Glass fiber reinforced polyamide
O-ring:	Nitrile butadiene rubber
Base:	Glass fiber reinforced polyamide
Movable Contact:	Beryllium copper with gold plating over nickel
Stationary Contacts:	Brass with gold plating over nickel
Terminals:	Brass with gold plating over nickel

Environmental Data

Operating Temp Range:	-25°C through +75°C (-13°F through +167°F) for ND; -25°C through +85°C (-13°F through +185°F) for ND3
Humidity:	90 ~ 95% humidity for 96 hours @ 40°C (104°F)
Vibration:	10 ~ 55Hz with peak-to-peak amplitude of 1.5mm traversing the frequency range & returning in 1 minute; 3 right angled directions for 2 hours
Shock:	50g acceleration (tested in 6 right angled directions, with 5 shocks in each direction)

Installation

Soldering Time & Temperature:	For ND: 3 seconds @ 350°C manual solder or 5 seconds @ 270°C solder pot For ND3: 3 seconds @ 350°C manual solder or See Supplement Index (page Z1) for automated SMT methods.
Process Seal:	See Supplement Index for specific processing data.

Standards & Certifications

Flammability Standards:	UL 94V-0 rated housing & base
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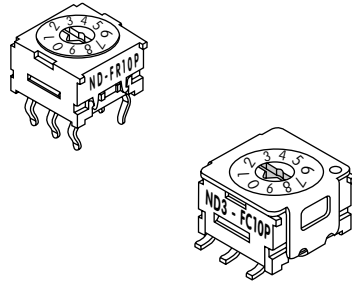


Series ND

8mm Washable DIP Rotary Switches

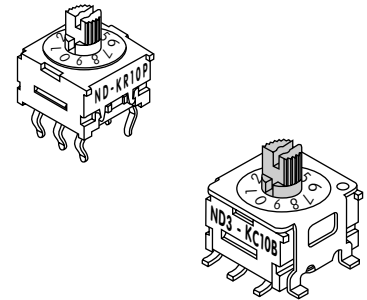
ACTUATORS

F Screwdriver Actuated



Actuator colors:
white for real coded &
red for complement coded.

K Shaft Actuated



Actuator colors:
white for real coded &
red for complement coded.

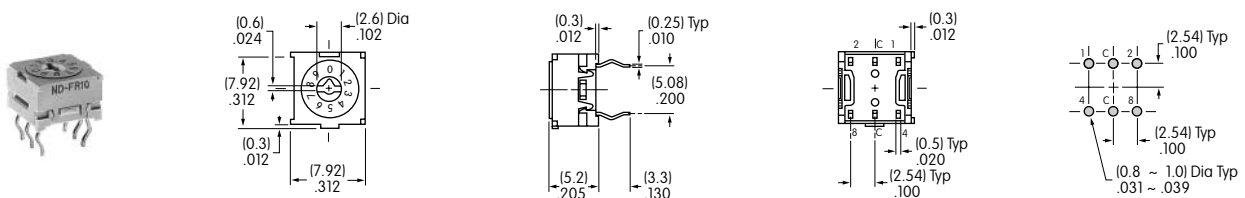
Actuators are fully rotational in either direction.

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: NDFR, NDKR, ND3FR, ND3KR	1		●		●		●		●		●		●		●		●		●		●		●		●		●
	2			●	●			●	●				●	●			●	●				●	●			●	●
	4					●	●	●	●						●	●	●	●					●	●	●	●	
	8									●	●								●	●	●	●	●	●	●	●	●
C Complement Coded Model Numbers: NDFC, NDKC, ND3FC, ND3KC	1	●		●		●		●		●		●		●		●		●		●		●		●		●	
	2	●	●			●	●			●	●	●	●			●	●			●	●			●	●		
	4	●	●	●	●					●	●	●	●	●						●	●	●	●				
	8	●	●	●	●	●	●	●	●			●	●	●	●	●	●	●									

TYPICAL SWITCH DIMENSIONS

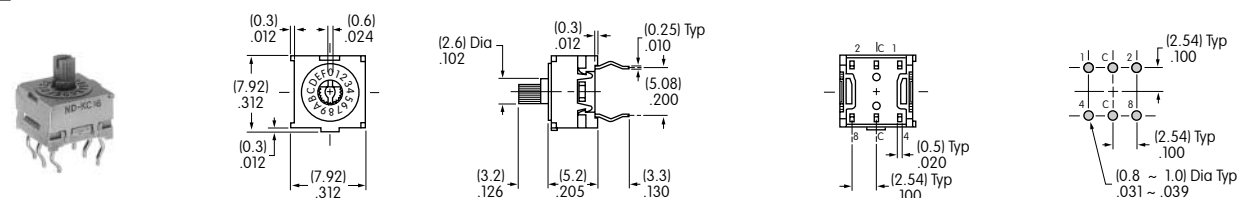
P Screwdriver Actuated • Straight PC • Through-Hole



NDFR10P

Terminal numbers not on switch.

P Shaft Actuated • Straight PC • Through-Hole



NDKC16P

Terminal numbers not on switch.

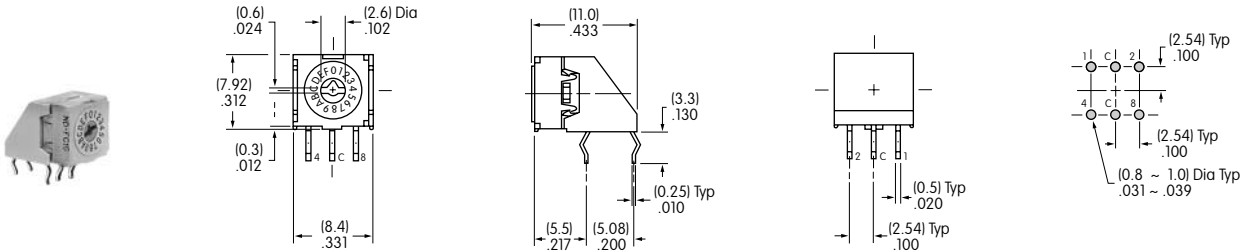


Series ND

8mm Washable DIP Rotary Switches

TYPICAL SWITCH DIMENSIONS

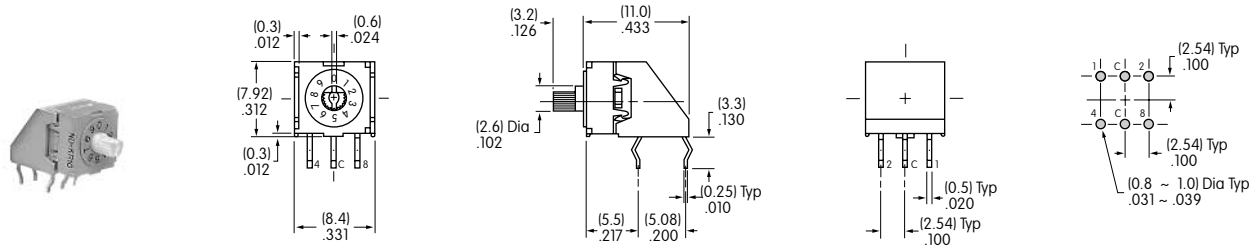
H Screwdriver Actuated • Right Angle PC • Through-Hole



ND3FC16H

Terminal numbers on terminal cover.

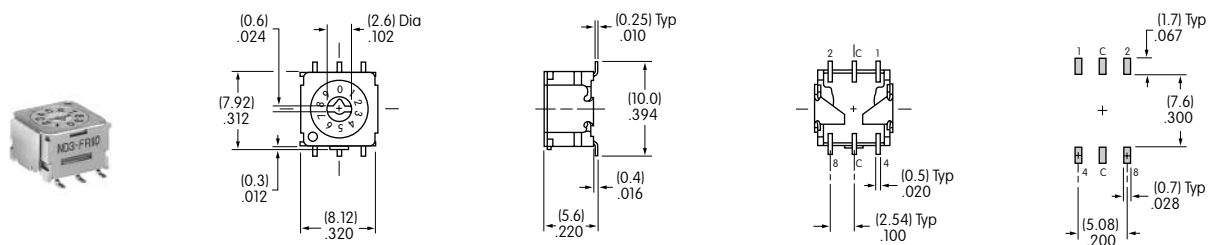
H Shaft Actuated • Right Angle PC • Through-Hole



ND3KR10H

Terminal numbers on terminal cover.

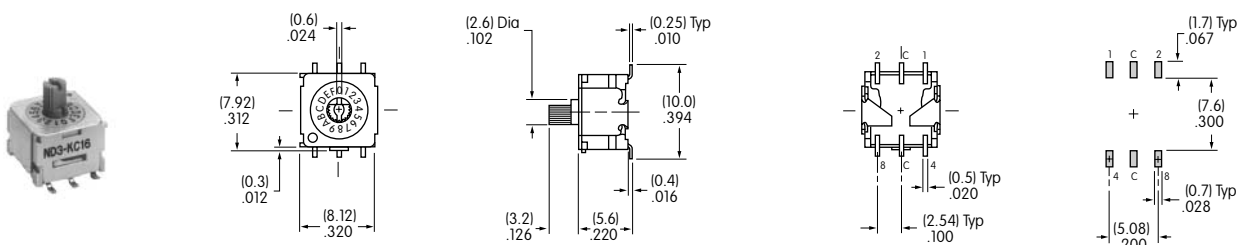
P Screwdriver Actuated • Upright SMD



ND3FR10P

Terminal numbers not on switch.

P Shaft Actuated • Upright SMD



ND3KC16P

Terminal numbers not on switch.

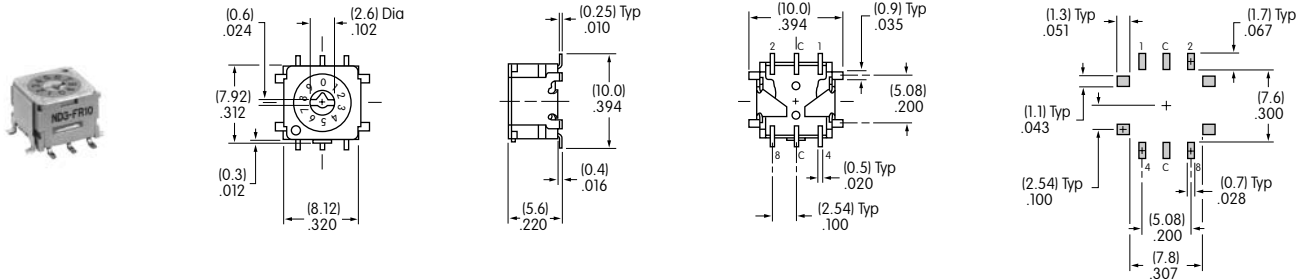


Series ND

8mm Washable DIP Rotary Switches

TYPICAL SWITCH DIMENSIONS

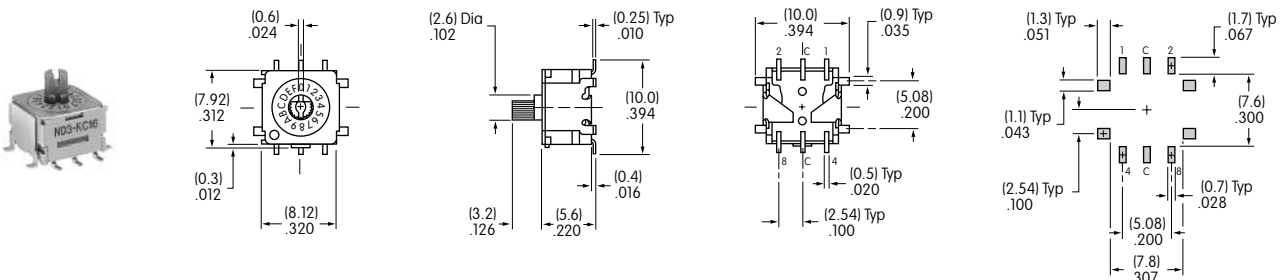
B Screwdriver Actuated • Upright SMD Bracket



ND3FR10B

Terminal numbers not on switch.

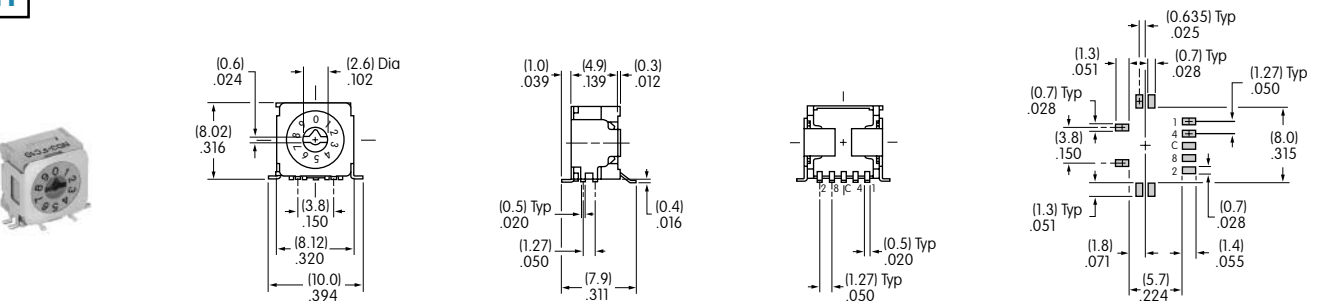
B Shaft Actuated • Upright SMD Bracket



ND3KC16B

Terminal numbers not on switch.

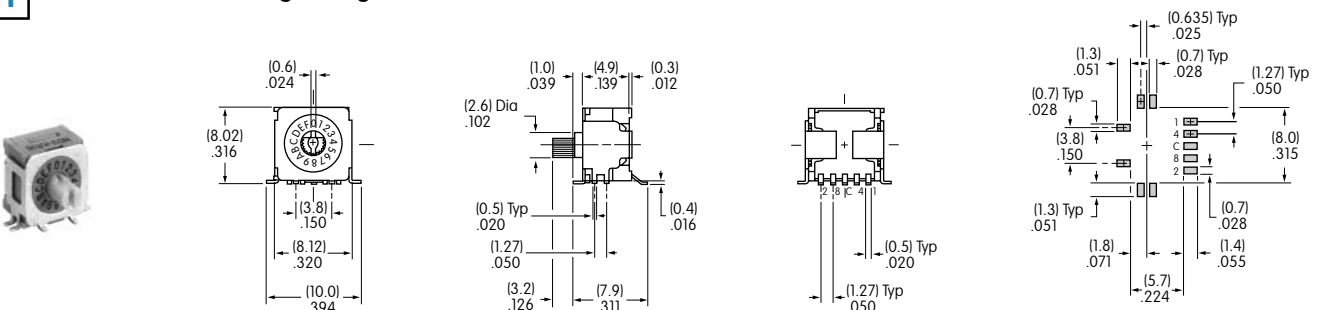
H Screwdriver Actuated • Right Angle SMD



ND3FC10H

Terminal numbers not on switch.

H Shaft Actuated • Right Angle SMD



ND3KR16H

Terminal numbers not on switch.