

General Specifications

Electrical Capacity (Resistive Load)

Logic Level: 0.4VA maximum @ 28V AC/DC maximum
(Applicable Range 0.1mA ~ 0.1A @ 20mV ~ 28V)
Note: Find additional explanation of operating range in Supplement section

Other Ratings

Contact Resistance: 100 milliohms maximum
Insulation Resistance: 100 megohms minimum @ 500V DC
Dielectric Strength: 500V AC minimum for 1 minute minimum
Mechanical Life: 30,000 cycles minimum
Electrical Life: 10,000 cycles minimum
Nominal Operating Torque: 0.02Nm (0.177 lb•in)
Contact Timing: Nonshorting
Indexing: 45° for 3-position, 4-position & 5-position

Materials & Finishes

Housing: Glass fiber reinforced polyester (PBT)
Base: Glass fiber reinforced polyamide
Rotor: Polyacetal
Movable Contactor: Beryllium copper with gold plating
Stationary Contacts: Phosphor bronze with gold plating
Terminals: Phosphor bronze with gold plating
Mounting Bracket: Steel with tin plating

Environmental Data

Operating Temperature Range: -25°C through +70°C (-13°F through +158°F)
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 (490m/s²) acceleration (tested in 6 right angled directions, with 5 shocks in each direction)

PCB Processing

Soldering: Wave Soldering Recommended: Preheat temperature 110°C; Preheat time 40 seconds; Peak Temperature 270°C; Peak Time 6 seconds; Thickness of PCB 1.6mm; 2 Cycles.
Manual Soldering Recommended: Temperature 390°C for 4 seconds, 2 cycles.
Cleaning: Automated cleaning. See Cleaning Specifications in Supplement section.

Standards & Certifications

The NR01 Series rotaries have not been tested for UL recognition or CSA certification. These switches are designed for use in a low-voltage, low-current, logic-level circuit. When used as intended in a logic-level circuit, the results do not produce hazardous energy.

Note: Values are determined by NKK's individual specification tests in a controlled environment, and do not certify that the product supports simultaneous multiple conditions.

Distinctive Characteristics

Totally sealed construction with internal o-ring, gasket between base and housing, and insert-molded terminals, gives protection for automated processing techniques.

Detent mechanism, with its spring-operated steel ball, gives distinct feel and crisp actuation for accurate switch setting.

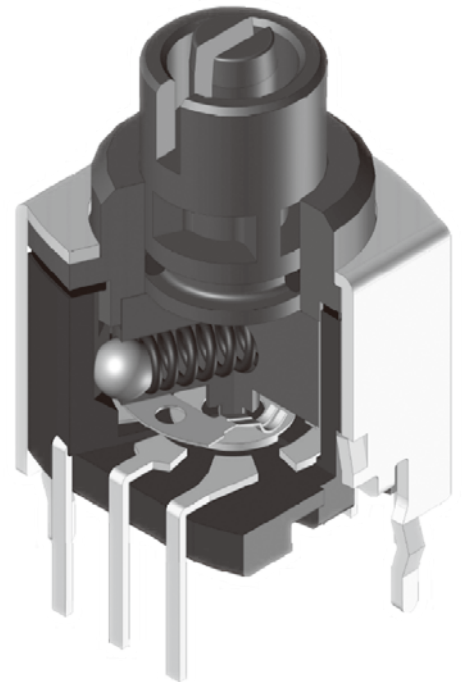
Subminiature size and compact body contributes to high density mounting.

Bifurcated, self-wiping contact mechanism provides unequalled logic-level reliability and smoother, positive detent actuation.

Crimped bracket legs ensure secure PCB mounting and prevent dislodging during automated wave soldering.

Molded-in terminals prevent entry of flux and other contaminants.

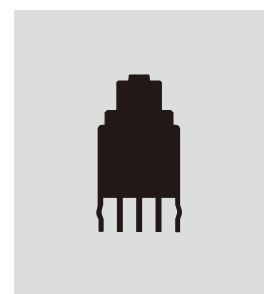
.100" x .100" (2.54mm x 2.54mm) terminal spacing conforms to standard PC board grid spacing.



Applications

- Power Control Equipment
- Measuring Devices
- Telecommunication Equipment
- Medical Equipment
- Teaching Pendant

Actual Size



TYPICAL SWITCH ORDERING EXAMPLE

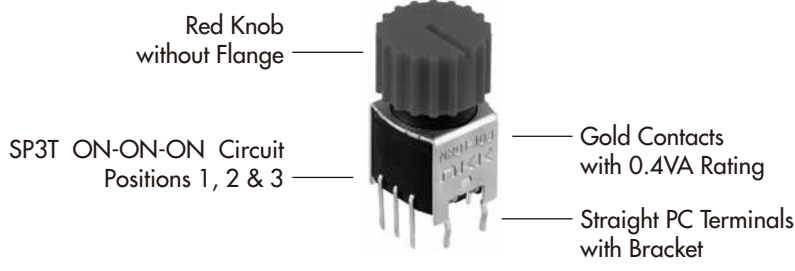
NR01 **1** **03** **A** **N** **G** **13** — **1** **C**

Pole		Contact Timing		Contact Material		PC Terminals		Colors	
1	Single Pole	N	Nonshorting	G	Gold Rated 0.4VA @ 28V AC/DC	13	Straight with Bracket	A	Black
								C	Red
								H	Gray

Circuits, Positions & Indexing						
Code	Pos. 1	Pos. 2	Pos. 3	Pos. 4	Pos. 5	Index
03	ON	ON	ON	—	—	45°
04	ON	ON	ON	ON	—	45°
05	ON	ON	ON	ON	ON	45°

Knobs	
No Code	
	Without Knob
1	Knob Without Flange
2	Knob With Flange

DESCRIPTION FOR
TYPICAL ORDERING EXAMPLE
NR01103ANG13-1C



POLES & CIRCUITS

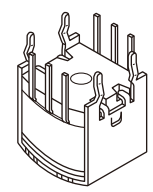
Pole	Model	Actuator Positions					Connected Terminals					Throw & Schematics
		Pos 1	Pos 2	Pos 3	Pos 4	Pos 5	Pos 1	Pos 2	Pos 3	Pos 4	Pos 5	
SP3T	NR01103	ON	ON	ON	—	—	C-2	C-3	C-4	—	—	
SP4T	NR01104	ON	ON	ON	ON	—	C-2	C-3	C-4	C-5	—	
SP5T	NR01105	ON	ON	ON	ON	ON	C-1	C-2	C-3	C-4	C-5	

CONTACT MATERIAL & RATING

G Gold over Bronze or Copper
Logic Level
0.4VA @ 28V AC/DC maximum

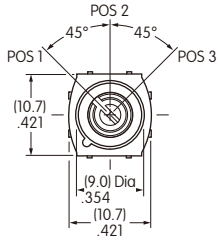
TERMINALS

13 Straight PC with Bracket

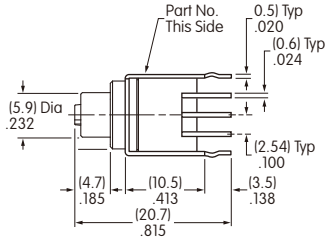


TYPICAL SWITCH DIMENSIONS

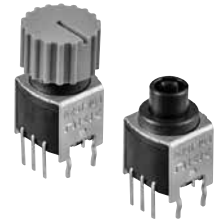
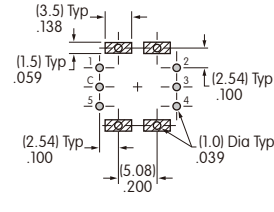
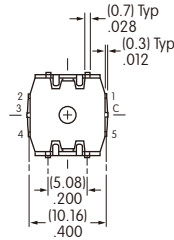
45° Indexing • SP3T • Straight PC



Actuator shown in Position 1

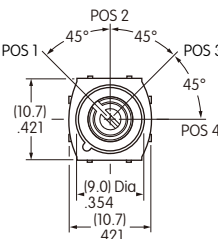


Terminals 1 & 5 are support pins

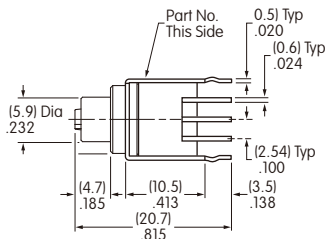


NR01103ANG13-1C

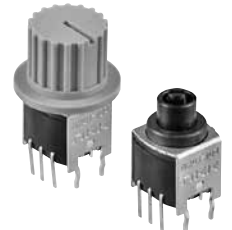
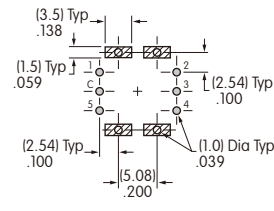
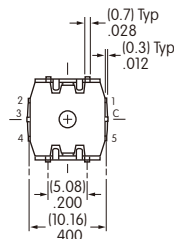
45° Indexing • SP4T • Straight PC



Actuator shown in Position 1

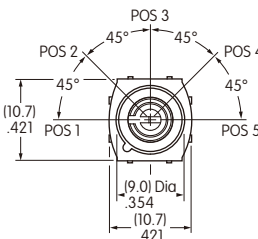


Terminal 1 is a support pin

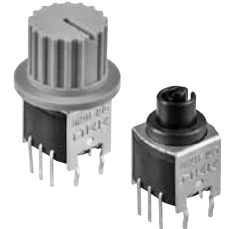
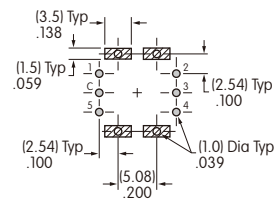
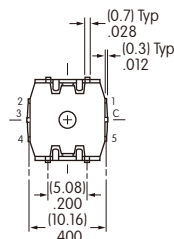
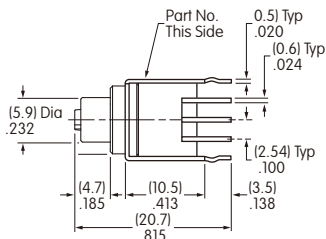


NR01104ANG13-2C

45° Indexing • SP5T • Straight PC



Actuator shown in Position 1



NR01105ANG13-2C

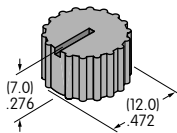
KNOBS

No Code

Without Knob

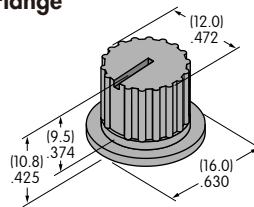
1 AT3008 Without Flange

Material: Glass fiber reinforced polyamide



2 AT3009 With Flange

Material: Glass fiber reinforced polyamide



Knob Colors

- A** Black
- C** Red
- H** Gray

MOUNTING & INSTALLATION

Knob Installation

To prevent knob from disassembling from the switch, it is recommended to use the type with a flange. Mount the knob with the flange (AT3009, assembled to switch) beneath the panel, as shown in illustration.

