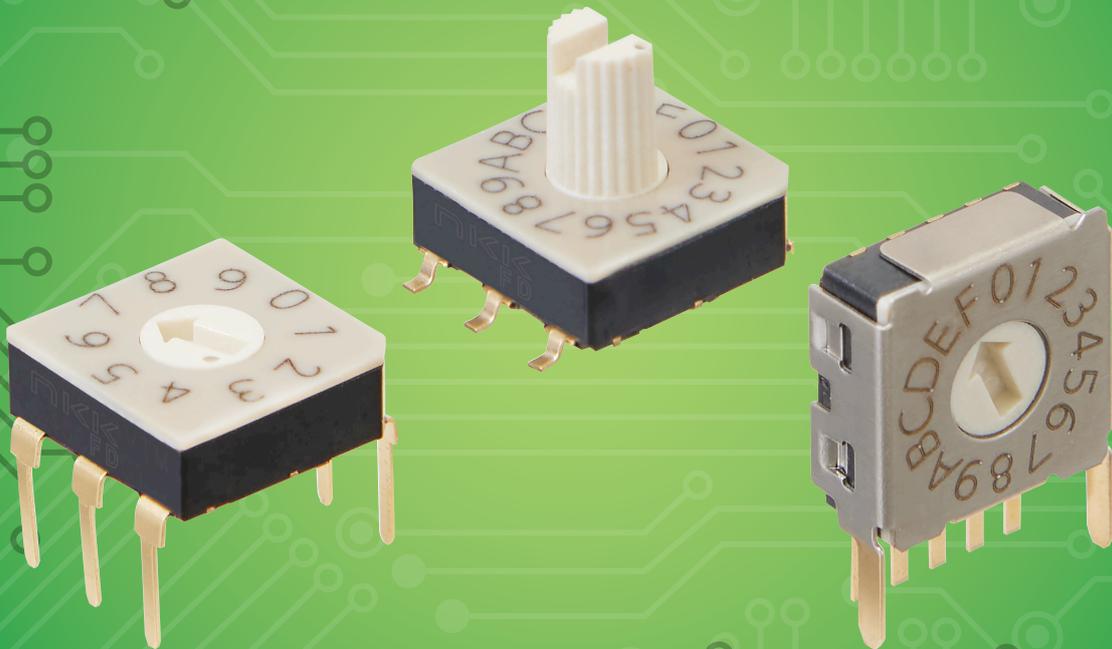


New Products

CONTACT No. 408

NKK
SWITCHES
Innovation Driving Quality

7.2 and 7.7 mm Square Rotary Switches with 3.1 to 3.3 mm Height for High-Density Mounting



FD01 Series / FD02 Series

Straight PC / SMT

Ultra-Thin DIP Rotary Switches

NKK SWITCHES CO., LTD.

7.2 and 7.7 mm Square Rotary Switches with 3.1 to 3.3 mm Height for High-Density Mounting

Inch Terminal Pitch

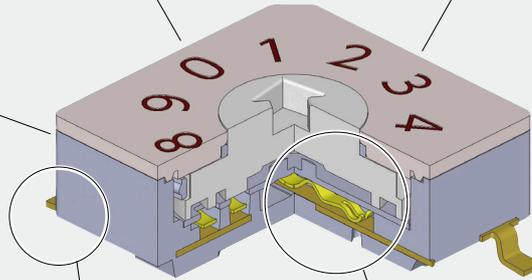
For PCBs with inch terminal spacing (FD01)

Heat-Resistant Resin

Heat-resistant resin, suitable for reflow soldering (FD02)

Gull-Wing Configuration

Gull-wing configuration for post-soldering inspections (FD02)



Space-Saving Design

Compact dimensions (7.2 and 7.7 mm square, 3.1 to 3.3 mm height) allow high-density mounting and provide space-saving benefits.

Smooth and Crisp Operation

The incorporated metal springs guarantee smooth and crisp operation.

High-Reliability Contacts

Movable contact components distribute the reaction force evenly to ensure consistent connection. High contact-reliability is achieved through gold-plated contacts.

General Specifications

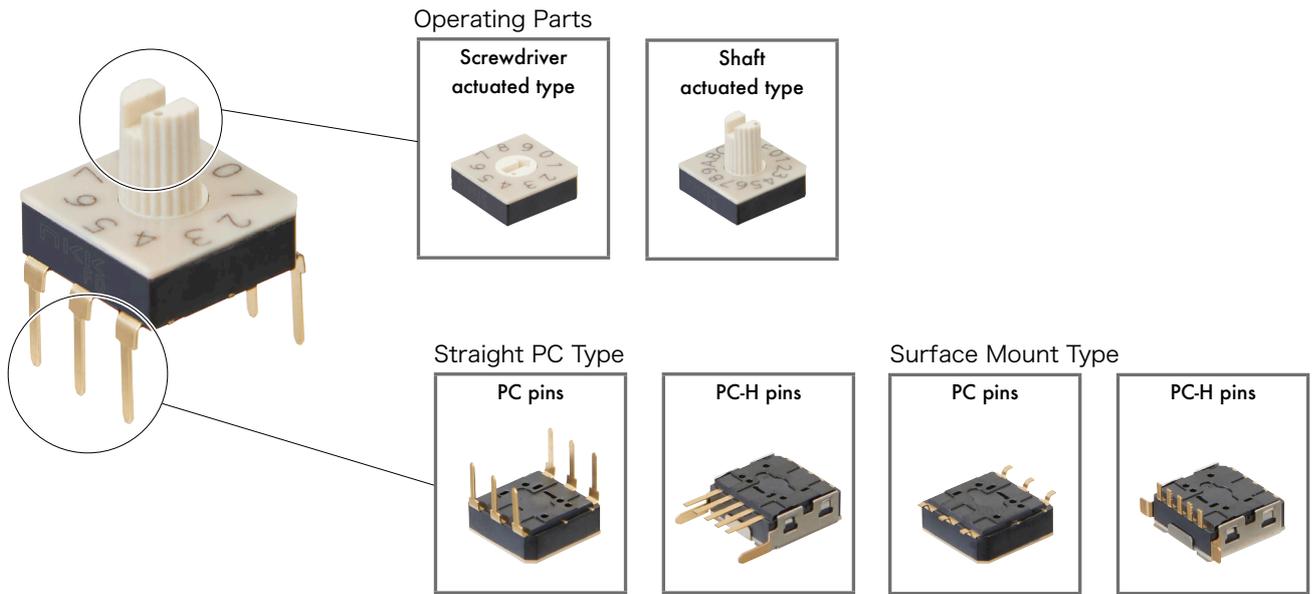
General Specifications			
Rating (Resistive Load)	0.4 VA maximum, 20 V maximum, AC/DC	Operating Temperature Range	-25°C to +85°C
Contact Resistance	100 mΩ maximum (at 20 mV, 10 mA)	Solder Heat Resistance	FD01 Series ▶ When using soldering iron: Rank B ▶ When using solder bath: Rank B FD02 Series ▶ When using soldering iron: Rank B ▶ When using reflow: Rank A Refer to instructions in the full-line catalog.
Insulation Resistance	250 V DC, 1 GΩ minimum		
Dielectric Strength	250 V AC for 1 minute minimum		
Mechanical Life	10,000 operations minimum		
Electrical Life	10,000 operations minimum		

! Each rated value/performance value is obtained through independent testing. Therefore, the same results are not guaranteed under complex conditions. For testing conditions and judgment criteria, please refer to the full-line catalog.

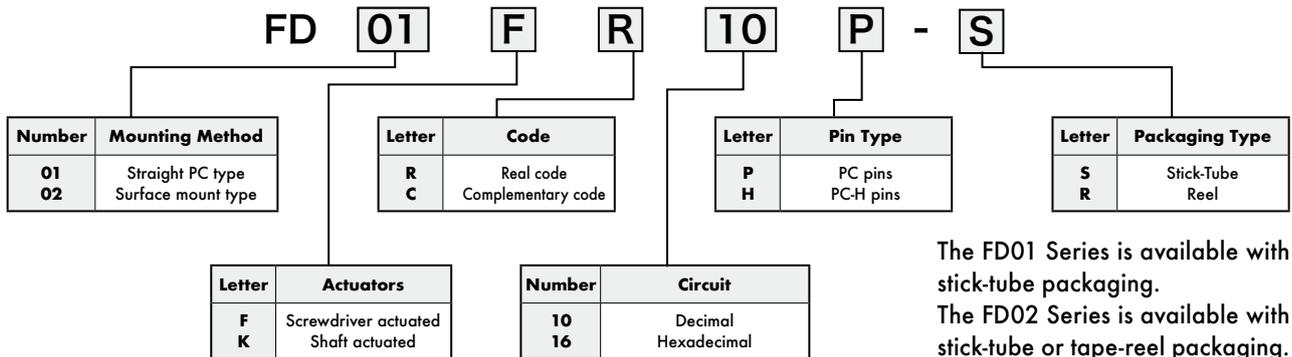
Truth Tables (Circuits & Positions) ● indicates connection to C (common).

Model	FD01FR16P		FD01FR16H		FD01KR16P		FD01FC16P		FD01FC16H							
	FD02FR16P		FD02FR16H		FD02KR16P		FD02FC16P		FD02FC16H							
Position	FD01FR10P		FD01FR10H		FD01KR10P		FD01FC10P		FD01FC10H							
	FD02FR10P		FD02FR10H		FD02KR10P		FD02FC10P		FD02FC10H							
Code	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
1		●		●		●		●		●		●		●		●
2			●	●		●	●				●	●		●	●	
4					●	●	●	●			●	●	●	●		
8									●	●	●	●	●	●	●	●
	R: Front (real) code								C: Rear (complementary) code							

► Variations



► Typical Ordering Example



►The Shaft actuated type is only available for models with "Real code" and "PC pins."

► Sales Start Date

February 8, 2024

► Screwdriver Actuated Type

PC Pin Type

► When ordering, please include the packaging type code indicated in the product code suffix.

FD01FR10P (Real code)	FD01FC10P (Complementary code)	<p>Model marking side</p> <table border="1"> <thead> <tr> <th colspan="2">Actuator type</th> </tr> <tr> <th>Real code</th> <th>Complementary code</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> </tr> </tbody> </table>	Actuator type		Real code	Complementary code				<p>PCB mounting hole dimensions drawing (View from switch mounting side)</p>
Actuator type										
Real code	Complementary code									
FD01FR16P (Real code)	FD01FC16P (Complementary code)	<p>Model marking side</p> <table border="1"> <thead> <tr> <th colspan="2">Actuator type</th> </tr> <tr> <th>Real code</th> <th>Complementary code</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> </tr> </tbody> </table>	Actuator type		Real code	Complementary code				<p>PCB mounting hole dimensions drawing (View from switch mounting side)</p>
Actuator type										
Real code	Complementary code									

PC-H Pin Type

► When ordering, please include the packaging type code indicated in the product code suffix.

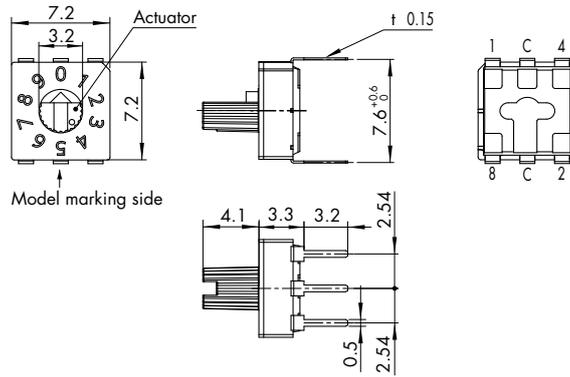
FD01FR10H (Real code)	FD01FC10H (Complementary code)	<p>Model marking side</p> <table border="1"> <thead> <tr> <th colspan="2">Actuator type</th> </tr> <tr> <th>Real code</th> <th>Complementary code</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> </tr> </tbody> </table>	Actuator type		Real code	Complementary code				<p>PCB mounting hole dimensions drawing (View from switch mounting side)</p>
Actuator type										
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FD01FR16H (Real code)	FD01FC16H (Complementary code)	<p>Model marking side</p> <table border="1"> <thead> <tr> <th colspan="2">Actuator type</th> </tr> <tr> <th>Real code</th> <th>Complementary code</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> </tr> </tbody> </table>	Actuator type		Real code	Complementary code				<p>PCB mounting hole dimensions drawing (View from switch mounting side)</p>
Actuator type										
Real code	Complementary code									

▶ Shaft Actuated Type

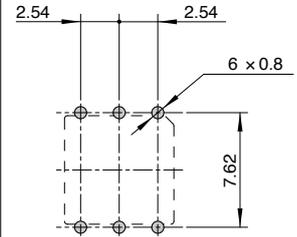
▶ When ordering, please include the packaging type code indicated in the product code suffix.

PC Pin Type

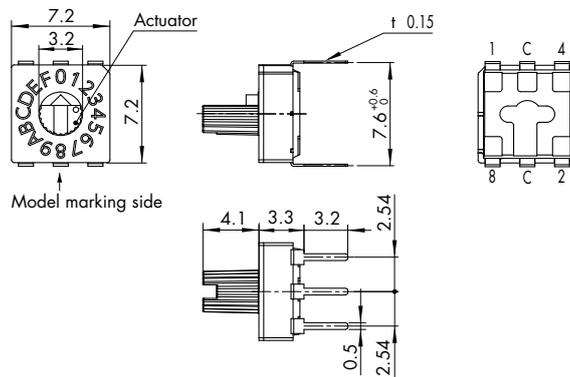
FD01KR10P (Real code)



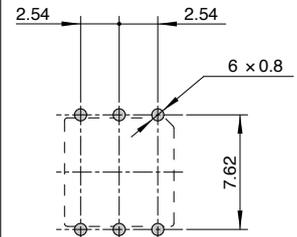
PCB mounting hole dimensions drawing (View from switch mounting side)



FD01KR16P (Real code)



PCB mounting hole dimensions drawing (View from switch mounting side)



▶ Handling Instructions

Soldering

Make sure the positions are set as follows when soldering.
Note that the positions are set this way when shipped.

- FD01FR10P, FD01FR16P, FD01FR10H,**
- FD01FR16H, FD01KR10P, FD01KR16P:** Position 0
- FD01FC10P, FD01FC10H:** Position 7
- FD01FC16P, FD01FC16H:** Position F

Mounting

Work carefully to avoid applying mechanical stress to the contacts (e.g., due to PCB warping after soldering).

Do not wash the entire switch

Use alcohol-based cleaning fluid to remove flux on the PCB side after soldering.

► Screwdriver Actuated Type

PC Pin Type

► When ordering, please include the packaging type code indicated in the product code suffix.

FD02FR10P (Real code)	FD02FC10P (Complementary code)			PCB mounting hole dimensions drawing (View from switch mounting side)
FD02FR16P (Real code)	FD02FC16P (Complementary code)			Pin flatness <p>Pin flatness not exceeding 0.1</p>

PC-H Pin Type

► When ordering, please include the packaging type code indicated in the product code suffix.

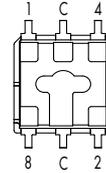
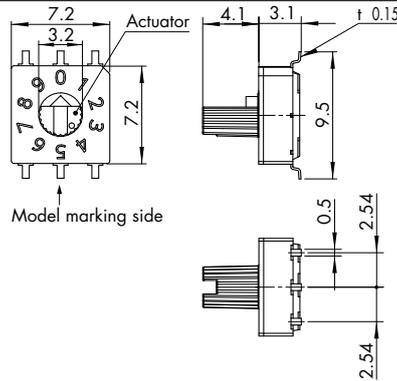
FD02FR10H (Real code)	FD02FC10H (Complementary code)			PCB mounting hole dimensions drawing (View from switch mounting side)
FD02FR16H (Real code)	FD02FC16H (Complementary code)			Pin flatness <p>Pin/mounting plate flatness not exceeding 0.1</p>

▶ Shaft Actuated Type

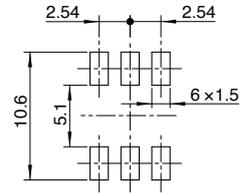
▶ When ordering, please include the packaging type code indicated in the product code suffix.

PC Pin Type

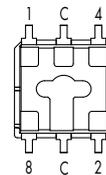
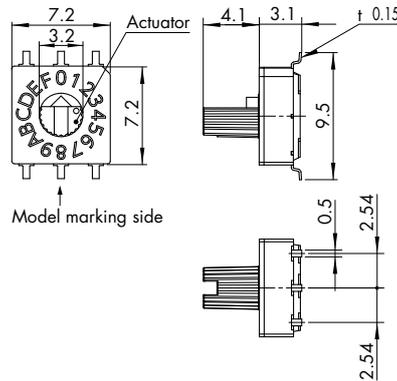
FD02KR10P
(Real code)



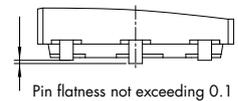
PCB mounting hole dimensions drawing
(View from switch mounting side)



FD02KR16P
(Real code)



Pin flatness



▶ Handling Instructions

Soldering

Make sure the positions are set as follows when soldering.
Note that the positions are set this way when shipped.

FD02FR10P, FD02FR16P, FD02FR10H, FD02FR16H,
FD02KR10P, FD02KR16P: Position 0
FFD02FC10P, FD02FC10H: Position 7
FD02FC16P, FD02FC16H: Position F

Mounting

Work carefully to avoid applying mechanical stress to the contacts (e.g., due to PCB warping after soldering).

Do not wash the entire switch.

Use alcohol-based cleaning fluid to remove flux on the PCB side after soldering.

► Packaging Types

The **FD01** Series is available with stick-tube packaging.
The **FD02** Series is available with stick-tube or tape-reel packaging.

Packaging type suffix codes

Stick-tube: **-S**

Tape-reel: **-R**

Stick-tube packaging

FD01: 60 units per tube for PC and PC-H pin types

FD02: 60 units per tube for PC pin types, 45 units per tube for PC-H pin types

Tape-reel packaging

FD02: 1,000 units per reel for F type PC pin types

500 units per reel for F type PC-H pin types

500 units per reel for K type PC pin types

Stick-tube Specifications	
FD01FR10P-S, FD01FC10P-S, FD01FR16P-S, FD01FC16P-S 	FD01FR10H-S, FD01FC10H-S, FD01FR16H-S, FD01FC16H-S
FD01KR10P-S, FD01KR16P-S 	FD02FR10P-S, FD02FC10P-S, FD02FR16P-S, FD02FC16P-S
FD02FR16H-S, FD02FC10H-S, FD02FR16H-S, FD02FC16H-S 	FD02KR10P-S, FD02KR16P-S

Tape-reel Specifications	
FD02FR10P-R, FD02FC10P-R, FD02FR16P-R, FD02FC16P-R 	FD02FR10H-R, FD02FC10H-R, FD02FR16H-R, FD02FC16H-R
FD02KR10P-R, FD02KR16P-R 	

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