

Push Buttons and Operator Interface

Specifier's Guide

Type K – Rotary Cam Switch

Catalog

9003CT1301

2013

Class 9003



Schneider
Electric™

Push Buttons and Operator Interface
Class 9003, Type K - Rotary Cam Switch

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Push Buttons and Operator Interface

Class 9003, Type K - Rotary Cam Switch

General Information

The Class 9003 Type K2 rotary cam switch is a versatile means of providing inexpensive logic control. The Type K cam switch is available with:

- Up to 12 switching positions
- Worldwide Acceptance
- Attractive operator/handle appearance
- Up to 20 contacts
- Standard or custom configured sequences

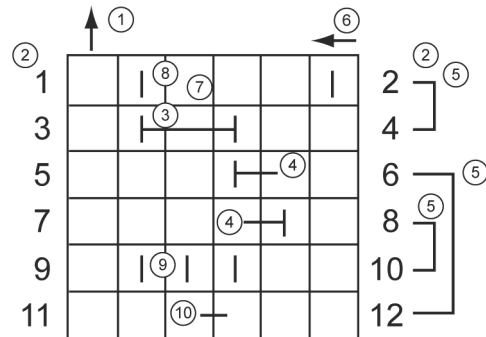
A complete rotary cam switch consists of up to four items, which includes:

- **Contact Block Assembly**—There are two ways of ordering a Class 9003 Type K rotary cam switch contact block assembly.
 1. If the desired contact sequence can be found on Pages 4 through 6, order the class and type of the device.
 2. If the contact sequence cannot be found on Pages 4 through 6, use the keysheet on Pages 9 through 11. Indicate the exact contact configuration desired. Devices will be assembled at the factory per this keysheet.
- **Operator/handle**—listed on Page 7. Operator/handle is dependent on the application and size of the rotary cam switch.
- **Legend Plate**—Many operators/handles come standard with a blank legend plate. If not included; or, if additional legend plates are needed, see Page 8.
- **Accessories**—see page 8.

Contact Sequence/Wiring

Refer to the diagrams on Pages 4 through 6, as necessary

1. The vertical arrow indicates contact status at 0° (up) handle position.
2. Terminal identification, terminals 1 and 2 are one contact.
3. Contact 3-4 is closed between 2nd and 4th position. The “H” indicates that the contact does not open while switching from one position to another.
4. Contacts 5-6 and 7-8 overlap between positions 4 and 5.
5. Jumpers installed by factory between terminals 2 and 4, 6 and 12, 8 and 10.
6. Horizontal arrow indicates spring return to previous position.
7. Contact 1-2 is open in third position.
8. Contact 1-2 is closed in second position.
9. A “1” in adjacent boxes does not assure that the contact remains closed while switching between adjacent positions.
10. Contact 11-12 closes momentarily when switching from position 3 to position 4. This contact is not closed at position 3 or at position 4.



NOTE: This illustration is for the example only—Contact your local Schneider Electric sales representative for conditions of Spring Return, Jumper options, and pricing.

Contact Ratings

The following contact rating charts are to be used when properly sizing a Class 9003 Type K rotary cam switch to a particular application. The UL ratings chart reflects the ratings to UL specifications. The UL file is E164864. The Class 9003 Type K2 is UL Listed per guide NLRV. The Electrical Ratings chart contains the contact ratings per German specification VDE 0660. The CSA file is LR 44087, Class 3211 03 or Class 3211 05.

UL Ratings

Contact Block Assembly	Maximum V	General Purpose A	Horsepower 1 PH - 2 pole 60 Hz					Horsepower 3 PH - 3 pole 60 Hz					UL	CSA	SP
			110V-120V	200V-208V	220V-240V	440V-480V	550V-600V	110V-120V	200V-208V	220V-240V	440V-480V	550V-600V			
K2	300	12	HP	HP	HP	HP	HP	HP	HP	HP	HP	HP	X		X
			0.5	1	1	—	—	1.5	2	3	—	—			

Electrical Ratings (VDE 0660)

Contact Block	Shaft Dimensions	Rated Current as Load Break Switch I _a	Continuous Current I _{th2}		In Free Air Utilization Category AC1 I _e	Utilization Category AC1						Rated Operational Current I _e				Utilization Category AC2 and AC3						Rated Operation Current I _e			Operational Voltages						
																						Utilization Category AC11									
																			1 PH												
			In Free Air	En-closed								3 PH 3 Pole		1 PH 2 Pole		3 PH 3 Pole				1 PH 2 Pole		For Y-Delta Starters				240 V	415 V	500 V	Rated Insulation Voltage	Main Switch	Emergency Stop Switch
						220 V/415 V/500 V/660 V/240 V/415 V/220 V/415 V/500 V/660 V						220 V/415 V/500 V/660 V/240 V/415 V/220 V/415 V/500 V/660 V																			
	mm	A	A	A	A	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	A	A	A	V	V	V	V		
K2	6	20	20	16	16	6	10.5	14	14	4.5	7.5	2.2	4	4	4	4	1.3	2.2	2.5	4.5	4.5	4.5	4	3	2	660	500	660	500		

■ All dimensions are in millimeters (mm). To convert to approximate inch dimensions, divide mm by 25.4.

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Contact Block Assembly

2 and 3 Contacts

Contact Sequence Wiring Diagram	Switching Angle	Panel Mounting* Type
	45°	K2B001S
	45°	K2B001UA
	45°	K2B002A
	45°	K2B002GA
	45°	K2B002NA
	45°	K2B002QA
	45°	K2B003T
	45°	K2B004T
	45°	K2B006T
	45°	K2C002LA
	45°	K2C003A
	45°	K2C003GA
	45°	K2C003NA
	45°	K2C003QA
	45°	K2C007T

4 Contacts

Contact Sequence Wiring Diagram	Switching Angle	Panel Mounting* Type
	45°	K2D002S
	45°	K2D002UA
	45°	K2D003LA
	45°	K2D004A
	45°	K2D004GA
	45°	K2D004NA
	45°	K2D004QA
	30°	K2D005T
	30°	K2D012GA
	45°	K2D012NA
	45°	K2D012QA

*Contact your local Schneider Electric sales representative for ordering information of base mounting contact block assemblies

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Contact Block Assembly (cont.)

5 and 6 Contacts

Contact Sequence Wiring Diagram	Switching Angle	Panel Mounting * Type
	45°	K2E003WA
	45°	K2E005A
	45°	K2E005NA
	45°	K2E005QA
	45°	K2F003SA
	45°	K2F006A
	45°	K2F003UA
	45°	K2F006NA
	45°	K2F006QA

6 And 7 Contacts

Contact Sequence Wiring Diagram	Switching Angle	Panel Mounting * Type
	45°	K2F013GA
	45°	K2F013NA
	45°	K2F013QA
	60°	K2F013UA
	45°	K2F022GA
	45°	K2F022NA
	45°	K2F022QA
	45°	K2G007NA
	45°	K2G007QA
	45°	K2G007A

*Contact your local Schneider Electric sales representative for ordering information for base mounting contact block assemblies

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Contact Block Assembly (cont)

8 Contacts

Contact Sequence Wiring Diagram	Switching Angle	Panel Mounting * Type
	45°	K2H004S
	45°	K2H004UA
	45°	K2H008NA
	30°	K2H008QA
	45°	K2H014GA
	45°	K2H014NA
	45°	K2H014QA
	45°	K2H032NA
	45°	K2H032QA

9 and 10 Contacts








Contact Sequence Wiring Diagram	Switching Angle	Panel Mounting * Type
	30°	K2I009NA
	30°	K2I009QA
	45°	K2I023GA
	45°	K2I023NA
	45°	K2I023QA
	45°	K2K005SA

*Contact your local Schneider Electric sales representative for ordering information of base mounting contact block assemblies

Push Buttons and Operator Interface Class 9003, Type K - Rotary Cam Switch

Operator/handle

The following operator/handles are for the Class 9003 Type K2 Rotary Cam Switches. These are single hole mounting, and are mounted in a 22 mm ($\frac{7}{8}$ in.) diameter mounting hole. All meet protection category IP-65.


Description		Style	Black Bezel Black Knob	Chrome Bezel Black Knob	Yellow Bezel Red Knob
	Bezel – Small square similar to 9001D1 and D2 operators. Does not include blank legend plate.	Knob	KAB1A	KBB1A	–
		Key *	KAB1S	KBB1S	–
	Bezel – Small round similar to 9001D3 and D4 operators. Does not include blank legend plate.	Knob	KAA1A	KBA1A	–
		Key *	KAA1S	KBA1S	–
	Bezel – Large round. Does not include blank legend plate.	Knob	KAA2B	KBA2B	KCA2L
		Key *	KAA2S	KBA2S	–
	Chrome XB2B Style Handle Standard Handle Requires KZ127 Adapter Page 239	Knob	–	XBCZ1M12	–
	Chrome XB2B Style Handle Extended Handle Requires KZ127 Adapter Page 239	Knob	–	XBCZ1C12	–
	Chrome XB2B Style Handle Key Handle (Ronis 455) Requires KZ127 Adapter Page 239	30° Key	–	XBCZ1S131	–
		45° Key		XBCZ1S141	
		60° Key		XBCZ1S161	
		90° Key		XBCZ1S191	
	Bezel – 45 x 45 mm. Includes blank legend plate.	Knob	KAC1B	KBC1B	KCC1L
		Key *	KAC1S	KBC1S	–
	Bezel – 60 x 60 mm. Includes blank legend plate.	Knob	KAD1C	KBD1C	KCD1M
		Key *	KAD1S	KBD1S	–

* Key withdrawal codes. When ordering a Key operator for a contact block assembly, the switching angle of the contact block assembly must first be known. From the chart at right, choose the appropriate suffix for the desired switching angle. This suffix is added to the end of the operator/handle's type number.


Example: 45° switching for 9003KAB1S - KAB1S16

NOTE: Key is removable in all positions. (Replacement Key is Class 9001Z18)


Class 9003 Type K2 Rotary Cam Switches with 90° switching angle and only two positions.

Description		Black Bezel Black Knob	Yellow Bezel Red Knob
	For Size K2 Bezel – 60 x 60 mm Mounting – 22 mm ($\frac{7}{8}$ inch) Marked 9-30 (see Catalog 9001CT9701) No other markings available	KAD1X	KCD1Y

4 hole mounting of the Class 9003 Types K2 rotary cam switch. They are suitable for panel or base mounting of contact block assemblies. These operators provide protection category IP-40. See Page 8 for gaskets.

Description		Black Legend Black Knob	Chrome Legend Black Knob	Yellow Legend Red Knob
	For size K2 Bezel 45 x 45 mm	KAE1B	KBE1B	KCE1L
	For size K2 Bezel 60 x 60 mm	KAF1C	KBF1C	KCF1M


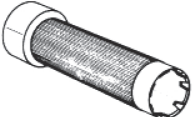
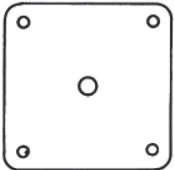

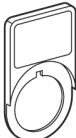

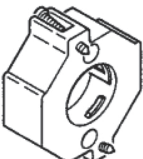
4 hole mounting of the Class 9003 Types K2 rotary cam switches with 90° switching angle and only two positions.

Description		Black Operator Black Knob	Yellow Operator Red Knob
	For size K2 Bezel 60 x 60 mm Marked 9-30 (see Catalog 9001CT9701), no other markings available.	KAF1X	KCF1Y

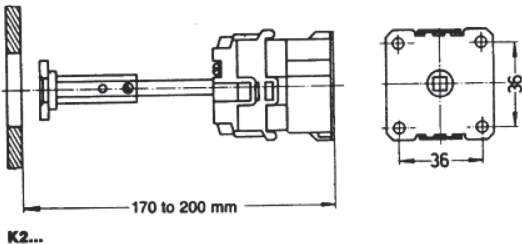
All dimensions are in millimeters (mm). To convert to approximate inch dimensions, divide mm by 25.4


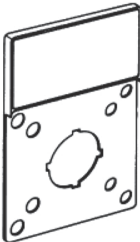
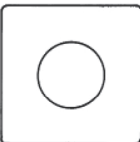
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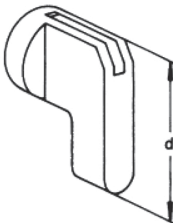
Accessories, Legends and Dimensions

Description		Type
Shrouds	Number of Contacts	
	For K2 4	KZ35
	8	KZ36
	12	KZ37
	16	KZ38
	20	KZ39
	Ring Nut Wrench – for use with D1 and D2 operators/handles listed on Page 238.	9001Z01
	Gasket used with operators/handles listed on Page 238 to provide IP-65 protection – for panel mounting contact block assemblies.	
	45 x 45 mm	KZ65
	60 x 60 mm	KZ66
	For small square bezel. See Page 238 to determine size of operator.	
	Holder with blank legend	900101Q
	Blank legend only	900101W
	Empty holder only	9001Z15
	For small round bezel. See Page 238 to determine size of operator.	
	Holder with blank legend	900101R
	Blank legend only	900101W
	Empty holder only	9001Z16
	Replacement ring nut for all K style operators/handles listed on Page 238.	KZ30
	Mounting adapter for use with Chrome XB2B Style Handle	KZ127

Base Mount

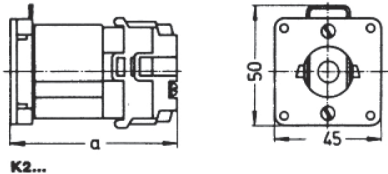


	Description	Type	
	For large round bezel. See Page 238 to determine size of operator.		
	Holder with blank legend	KZ33	
	Blank legend only	9001 01 V	
	Empty holder only	KZ34	
	Additional legend for 45 x 45 mm bezel operators. See Page 238 to determine size of operator.		
	Holder with blank legend	KZ13	
	Blank legend only	KZ76	
	Empty holder only	KZ14	
	Additional legend for 60 x 60 mm bezel operators. See Page 238 to determine size of operator.		
	Holder with blank legend	KZ15	
	Blank legend only	KZ77	
	Empty holder only	KZ16	
	Blank legend plate bezel inserts		
	Size	Color	
	45 x 45	Black	KZ17
	45 x 45	Silver	KZ18
	45 x 45	Yellow	KZ19
	60 x 60	Black	KZ20
	60 x 60	Silver	KZ21
	60 x 60	Yellow	KZ22

Replacement Knobs for K2 Operators	Description			Type
	Handle Code *	Color	Length (d)	
	A	Black	29 mm	KZ26
	B	Black	34 mm	KZ27
	C	Black	42 mm	KZ28
	D	Black	57 mm	KZ29
	L	Red	34 mm	KZ41
	M	Red	42 mm	KZ42
	N	Red	57 mm	KZ43

* Last letter of the "operator/handle" type number is the "handle code".

Panel Mount



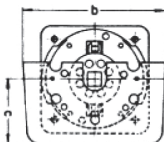
Contact Block Assembly Depth

Number of Contacts	K2 Length a* mm	Number of Contacts	K2 Length a* mm
1-2	52.5	11-12	102.5
3-4	62.5	13-14	112.5
5-6	72.5	15-16	122.5
7-8	82.5	17-18	132.5
9-10	92.5	19-20	142.5

* Dimension a for the 9003K2 is for 4 hole mounting operator/handle. Add 18 mm to dimension a when using single hole mount operator/handles.

With Shrouds

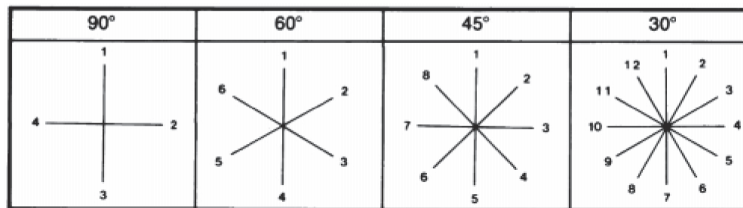
mm	K2
b	48
c	26



Type K Rotary Cam Switch Selection

Instructions

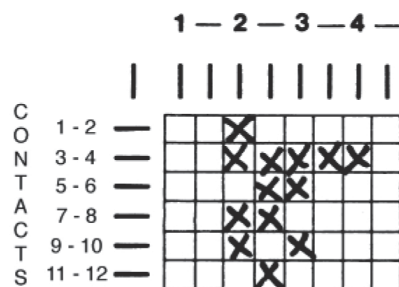
1. Choose the chart below with the switching angle as determined on the key sheet. This identifies the angular location and the position numbers for the various positions of the rotary cam switch. Zero degrees or straight up is always position 1. Use these position numbers when completing the target table on page 10.
2. Terminals on the cam switch have the same numbers as the terminal numbers on the target table. Contact 1-2 is a single contact.
3. When indicating a contact closure, place an "X" within the square as shown in the contact sequence example below.



Explanation Of Contact Sequence Example:

1. Contact 1-2 is open in all positions but position 2.
2. Contact 3-4 is closed from the 2nd through the 4th position. The contact does not open while switching from one position to another.
3. Contacts 5-6 and 7-8 overlap between positions 2 and 3.
4. Contact 9-10 is closed in positions 2 and 3. It is open momentarily while switching between positions 2 and 3.
5. Contact 11-12 closes momentarily when switching from position 2 to position 3. This contact is not closed in position 2 or position 3.
6. Position 1 is an off position.

POSITIONS



7. Based on the number of contacts, determine the price of the contact block assembly below. Prices of operators/handles, legend markings, and any accessories are listed on their respective page(s).

Type K Rotary Cam Switch Markings and Special Markings

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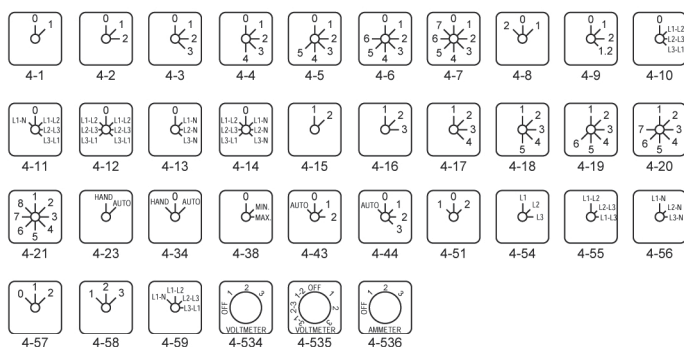
Legend Markings

The following legend markings are standard for the 45 x 45 mm and 60 x 60 mm bezel operators. To order one of these size bezel operators with a standard marking, add the code below of the desired marking as a suffix to the operator type number. Example: 9003 KBC1B 4-3.

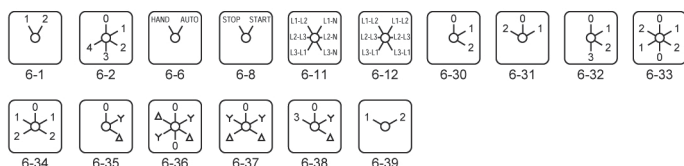
30° Marking



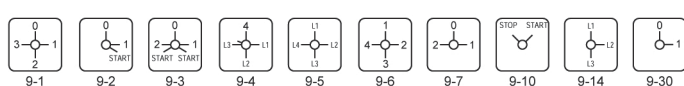
45° Marking



60° Marking



90° Marking



All other legend engraving is considered special. To order, clearly indicate the position of the desired marking. See below for the maximum characters allowed on a specially engraved legend.

Rectangular Legends

Type	Legend Size	For Operator Size	Maximum # Characters Per Position
900101Q 900101R 900101W	26 x 19 mm	—	7
900101V 9003KZ33	37 x 22 mm	—	11
9003KZ11 9003KZ13 9003KZ76	42 x 13 mm	45 x 45 mm	12
9003KZ15 9003KZ77	57 x 27 mm	60 x 60 mm	17

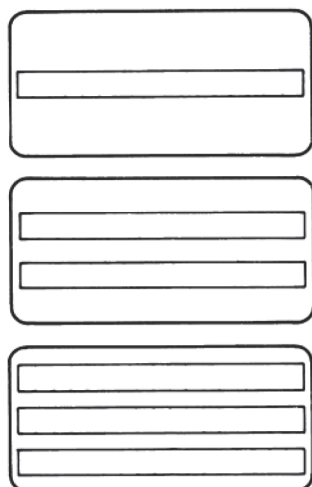
Square Legends

Type			For Bezel Size	Legend Size	Maximum # Characters Per Position
Black	Silver	Yellow			
KZ17 KAC1B KAE1B KAC1S	KZ18 KZ19 KBC1B KBE1B	KBC1S KCC1L KCE1L	45 x 45 mm	42 x 42 mm	3
KZ20 KAD1C KAF1C KAF2F KAD1S	KZ21 KZ22 KBD1C KBF1C KBF2F	KBD1S KCD1M KCF1M KCF2R	60 x 60 mm	57 x 57 mm	5
KZ23 KAG2G KAG2H	KZ24 KZ25 KBG2G	KBG2H KCG2T KCG2U	90 x 90 mm	87 x 87 mm	6

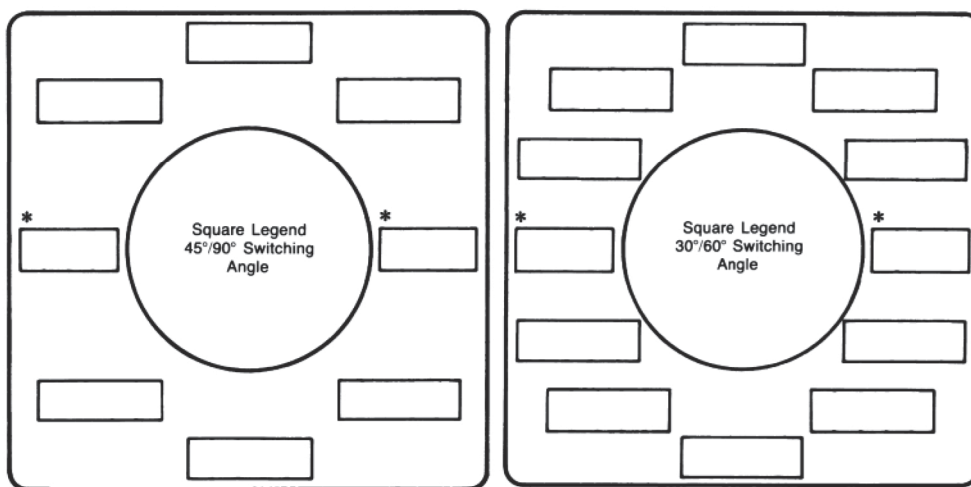
All dimensions in mm. To convert to approximate inches, divide mm by 25.4.

Positions of engravable locations on blank legends.

Rectangular Legends



Square Legends



* Maximum number of characters for these positions is one (1) less than the listed maximum in the chart above.

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