



3 & 4 Position Selector Switches Contact Target Tables for Selector Switches with Overlapping Contacts

(Bulletin No. 800H & 800T)

Product Data

Overview

Bulletin 800H and 800T, 3 & 4 position selector switches can be assembled with a variety of operators and contact blocks to achieve the desired target arrangement. This publication can be used as a means to select operators and contact blocks that provide overlapping contacts between positions.

Operators with an overlapping cam allow selector switch contacts to *make* before the contacts of the previous position *break*. The overlap will occur in both directions.

Potential Applications

Metering

A typical application for a selector switch with overlapping contacts is a metering application where individual monitoring of each phase is required. The transformers in the metering unit must be either shorted or loaded for proper operation. An **open** will provide high voltages that can damage the meter.

A selector switch with overlapping contacts will provide the shorting action required when switching between phases.

PLC Controllers

When a selector switch is used in conjunction with a PLC controller, it may be necessary to prevent an open circuit between the selector switch positions.

An example would be a OFF-HAND-AUTO motor control circuit. As the switch changes state from the HAND to AUTO position, a momentary “open” may occur. The momentary “open” could cause the motor to drop out.

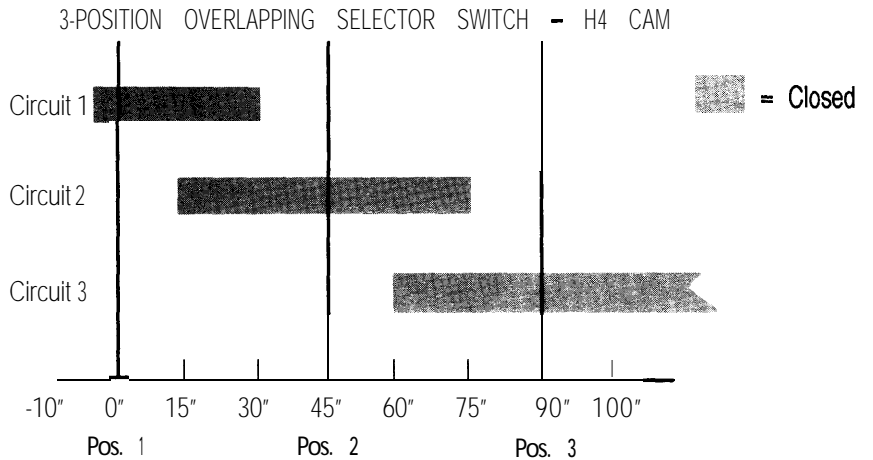
A selector switch with an overlapping cam will prevent the contacts from momentarily opening as the selector switch is operated from the HAND to AUTO or AUTO to HAND position.

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Timing Table Examples

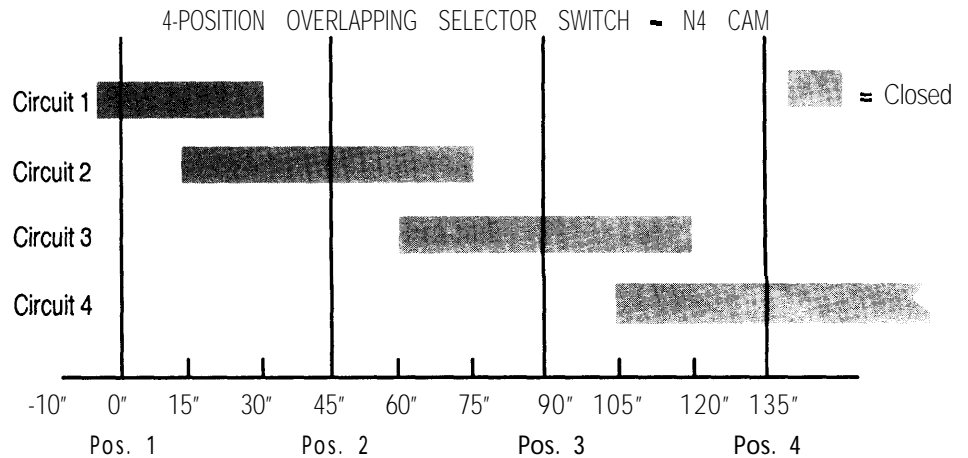
The following tables demonstrate the operation of the contact overlap in both 3 and 4 position selector switches. In both examples the contact overlap occurs when switching between any two adjacent positions. The tables can be used as building blocks for other combinations of overlapping selector switches.

3-POSITION



	TARGET TABLE ①			ACTUATOR COLOR	CATALOG NUMBER	CONTACT OPERATION
	Pos. 1	Pos. 2	Pos. 3			
Circuit 1	X	0	0	White	800T-XD1 ②	N.O.
Circuit 2	0	X	0	Black	800T-XD3	N.O.E.M.
Circuit 3	0	0	X	White	800T-XD2 ②	N.C.

4-POSITION



	TARGET TABLE ①				ACTUATOR COLOR	CATALOG NUMBER	CONTACT OPERATION
	Pos. 1	Pos. 2	Pos. 3	Pos. 4			
Circuit 1	X	0	0	0	Black	800T-XD2 ②	N.C.
Circuit 2	0	X	0	0	White	800T-XD1 ②	N.O.
Circuit 3	0	0	X	0	Black	800T-XD1 ②	N.O.
Circuit 4	0	0	0	X	White	800T-XD2 ②	N.C.

① The bidirectional arrow represents the overlap position(s).

② When Catalog Number 800T-XD1 and 800T-XD2 are used on the same side of the actuator they can be replaced by (1) 800T-XA.

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Table 1
 3-POSITION

Tables 1 and 2 list the available configurations of overlapping contacts. Up to a maximum of four contact blocks can be used if required. Instructions for adding contact blocks using the modular suffix codes can be found in Publications 800T-2.2 and 800T-2.7

ACTUATOR COLOR	CONTACT BLOCK		WIRING SYMBOL	CIRCUIT OPERATION	OPERATOR POSITION VIEWED FROM FRONT		
	Catalog Number Suffixes				X = Contact Closed O = Contact Open		
					CAM AND INDEX CODE H4		
	800T-						
White (Side 1)	XA	XD1	A	N.O.	X	O	O
		XD2	B	N.C.	O	O	X
	XD3		Az	N.O.E.M.	INVALID		
	XD4		Bz	N.C.L.B.	INVALID		
Black (Side 2)	XA	XD1	A	N.O.	INVALID		
		XD2	B	N.C.	INVALID		
	XD3		Az	N.O.E.M.	O	X	O
	XD4		Bz	N.C.L.B.	INVALID		

Table 2
 4-POSITION

ACTUATOR COLOR	CONTACT BLOCK		WIRING SYMBOL	CIRCUIT OPERATION	OPERATOR POSITION VIEWED FROM FRONT			
	Catalog Number Suffixes				X = Contact Closed O = Contact Open			
					CAM AND INDEX CODE N4			
	800T-							
White (Side 1)	XA	XD1	A	N.O.	O	X	O	O
		XD2	B	N.C.	O	O	O	X
	XD3		Az	N.O.E.M.	INVALID			
	XD4		Bz	N.C.L.B.	INVALID			
Black (Side 2)	XA	XD1	A	N.O.	O	O	X	O
		XD2	B	N.C.	X	O	O	O
	XD3		Az	N.O.E.M.	INVALID			
	XD4		Bz	N.C.L.B.	INVALID			

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Table 3
3-POSITION

OPERATOR SELECTION				
Type	Operator Function	800T Type 4/1 3 Catalog Number	800H Type 4/4X Catalog Number	800H Type 7&9 Catalog Number
Standard Operator (Standard color is black)	Maintained	800T-J2 1	800H-JR2 1	800H-JP2 1
	Spring return from left	800T-J4 1	800H-JR4 1	800H-JP4 1
	Spring return from right	800T-J5 1	800H-JR5 1	800HJP5 1
	Spring return from left and right	800T-J91 1	800H-JR91 1	800H-JP91 <input type="checkbox"/>
Knob Lever Operator (Standard color is black)	Maintained	800T-J1 1		800H-JP17 1
	Spring return from left	800T-J18 1		800H-JP18 1
	Spring return from right	800T-J19 1		800H-JP18 1
	Spring return from left and right	800T-J20 1		800H-JP20 <input type="checkbox"/>
Coin Slot Operator (Available in black only)	Maintained	800T-J6 1		
	Spring return from left	800T-J7 1		
	Spring return from right	800T-J8 <input type="checkbox"/>		
	Spring return from left and right	800T-J10 1		
Wing Lever Operator (Standard color is gray)	Maintained	800T-JG11		800H-JP11 1
	Spring return from left	800T-JG15		800H-JP15 <input type="checkbox"/>
	Spring return from right	800T-JG16		800H-JP16 1
	Spring return from left and right	800T-JG141		800H-JP141 <input type="checkbox"/>
Cylinder Lock 2 3				
Maintained Position				
Locking Position				
Left Center Right All		800T-J41 1		800H-JP41 1
		800T-J42 1		800H-JP42 1
		800T-J43 1		800H-JP43 1
		800T-J44 1		800H-JP44 1
Left Center		800T-J45		
Right & Left		800T-J46		
Right & Center		800T-J47		
Spring Return form Left				
Center Right Right & Center		800T-J50		800H-JP50 1
		800T-J52		800H-Jp52 <input type="checkbox"/>
		800T-J51		
Spring Return form Right				
Left Center Left & Center		800T-J69 1		800H-JP69 1
		800T-J38 1		800H-JP38 1
		800T-J73 1		
Spring Return form Both				
Center		800T-J631 1		800H-J631 1

1 The Catalog number as listed is incomplete. Add the desired cam-block suffix from Table 4.

Key is only removable in locking position(s) available.

3 The Bulletin 800H NEMA Type 4/4X is not available in cylinder lock.

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Table 4
3-POSITION

Table 4 displays the most common overlap configurations. They are pre-configured and may be ordered by specifying the corresponding cam suffix with any of the operators from Table 3. Additional contact blocks can be added. To specify configurations not listed, reference Tables 1 and 2 and consult Publications 800T-2.2 and 800H-2.7 for ordering assistance.

CAM SUFFIX SELECTION Overlapping Contact Configurations						
SIDE	ACTUATOR COLOR	CIRCUIT OPERATION	OPERATOR POSITION VIEWED FROM FRONT X = Contact Closed O = Contact Open			CAM SUFFIX
1	White	N.O.	X	O	O	KH4DGXX
2	Black	N.O.E.M.	O	X	O	
2	White	N.C.	O	O	X	KH4EGXX
	Black	N.O.E.M.	O	X	O	
1	White	N.O.	X	O	O	KH4AGXX
2	Black	N.O.E.M.	O	X	O	
1	White	N.C.	O	O	X	

The bi-directional arrow represents the overlap position(s).

Ordering Instructions for
3-POSITION Selector Switches

If overlapping contacts are required in a three position selector switch, specify cam KH4 which has been specifically designed for overlap applications. When cam KH4 is specified along with the proper contact blocks, the overlap configurations in the table above are achieved.

Cam KH4 is designed to be used with Bulletin 800T NEMA Type 4/13 Bulletin 800H NEMA Type 4/4X and Bulletin 800H NEMA Type 7&9 devices. To order a complete three position selector switch with overlapping contacts follow the steps listed below.

1. Select the required operator from Table 3 on Page 4.
 Example: 800 T- J2.
2. Select a cam suffix from Table 4 that meets the application requirements. Example: KH4AGXX
3. To complete the catalog number, add the cam suffix to the operator you selected in Step 1. Example: 800T-J2KH4AGXX

Using the modular suffix configuration as described in Publications 800T-2.2 and 800H-2.7 other contact arrangements can be ordered.

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Table 5
4-POSITION

OPERATOR SELECTION				
Operator Function	Type of Operator	800T Type 4/1 3 Catalog Number	800H Type 4/4X Catalog Number ³	800H Type 7&9 Catalog Number
Maintained Position	Standard Knob Knob Lever Wing Lever	800T-N2 800T-N17 800T-NG11 800T-N3 800T-N32 800T-N33 800T-N34 800T-N61	800H-NR2	800H-NP2 1 800H-NP17 1 800H-NP11 1 800H-NP31 1 800H-NP32 1 800H-NP33 1 800H-NP34 1 800H-NP61 1
	Cylinder Locking Position Pos. 1 Pos. 2 Pos. 3 Pos. 4 All			
Spring Return Position 1 To Position 2	Standard Knob Knob Lever Wing Lever	800T-N3 800T-N29 800T-NG1 3 800T-N 132 800T-N 133 800T-N134 800T-N 154	800H-NR3	800H-NP3 800H-NP29 800H-NP13 800H-NP132 800H-NP133 800H-NP13 800H-NP154
	Cylinder Locking Position Pos. 2 Pos. 3 Pos. 4 All			
Spring Return Position 4 To Position 3	Standard Knob Knob Lever Wing Lever	800T-N9 800T-N30 800T-NG14 800T-N231 800T-N232 800T-N233 800T-N251	800H-NR9	800H-NP9 800H-NP30 800H-NP14 800H-NP231 800H-NP232 800H-NP233 800H-NP251 • B
	Cylinder Locking Position Pos. 1 Pos. 2 Pos. 3 All			

The Catalog number as listed is incomplete. Add the desired cam-block suffix from Table 4.

Key is only removable in locking position(s) available.

³ The Bulletin 800H NEMA Type 4/4X is not available in cylinder lock.

Table 6
4-POSITION

Table 6 below lists and displays the most common overlap configurations. These are pre-configured and may be ordered by specifying the corresponding cam suffix with any of the operators from Table 5. Additional contact blocks can be added. To specify configurations not listed reference Table 2 and consult Publications 800T-2.2 and 800H-2.7 for ordering assistance.

CAM SUFFIX SELECTION					
Overlapping Contact Configurations					
SIDE	ACTUATOR COLOR	CIRCUIT OPERATION	OPERATOR POSITION VIEWED FROM FRONT X = Contact Closed 0 = Contact Open		CAM SUFFIX
2	White	N.O.	0	X	0
1	Black	N.O.	0	0	X
1	White	N.C.	0	0	0
2	Black	N.C.	X	0	0
2	White	N.O.	0	X	0
2	Black	N.O.	0	0	X
1	White	N.C.	0	0	0

The bi-directional arrow represents the overlap position(s).

Ordering Instructions for Four Position Selector Switches

If overlapping contacts are required in a four position selector switch specify cam KN4 which has been specifically designed for overlap applications. When the KN4 cam is specified along with the proper contact blocks, the overlap configurations in the Table 6 are achieved.

Cam KN4 is designed to be used with Bulletin 800T NEMA Type 4/13, Bulletin 800H NEMA Type 4/4X and Bulletin 800H NEMA Type 7&9 devices. To order a complete three position selector switch with overlapping contacts follow the steps listed below.

1. Select the required operator from Table 5.
Example: 800T-N2.
2. Select a cam suffix from Table 6 that meets the application requirements. Example: KN4AAXX
3. To complete the catalog number, add the cam suffix to the operator you selected in Step 1. Example: 800T-N2KN4AAXX

Using the modular suffix configuration as described in Publications 800T-2.2 and 800H-2.7 other contact arrangements can be ordered.



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