

## GENERAL ELECTRICAL & MECHANICAL SPECIFICATION

Switch Rating:	150mA @ 250V ac/dc (resistive load only)
	350mA @ 110V ac/dc
	1A @ 12V ac/dc
Life:	>10,000 Cycles
Operating Temperature:	-30°C to +85 °C
Proof Voltage:	1,000Vac (Initial)
Insulation Resistance:	>999MΩ at 500Vdc (Initial)
Contact Resistance:	<20 mΩ (Initial)
Operating Torque (nominal):	7.2 cNm
End Stop Torque (nominal):	1.2 Nm
Wafer:	Polyphenylene Sulphide (PPS)
Lock Housing:	Zinc Alloy Bright Cr Plated
Contact/Terminal Material:	Brass, CZ108 Ag Plated
Keys:	Mild Steel Ni Plated



## GENERAL FEATURES

- Made in UK.
- Multi-wafer Lock switch.
- Switch indexed 30°, 45°, 60° or 90°.
- Contacts are non-shorting (BBM) or shorting (MBB).
- Keys removable at 60° or 90° angles.
- Two keys per lock. Additional keys to order.
- Keys to pass (common combination) or differ.
- Solder or printed circuit terminals.
- Two part construction. The lock is inserted into the panel from the rear and secured by screwing on the bezel from the front of the panel.

## STANDARD CIRCUITRY AND KEY WITHDRAWAL POSITIONS

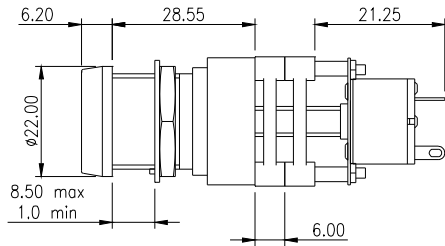
INDEXING ANGLE	STANDARD CIRCUITS NON SHORTING CONTACTS SOLDER TERMINALS						TOTAL SWITCH MOVEMENT	KEY FREE POSITIONS				
	1 POLE	2 POLE	3 POLE	4 POLE	5 POLE	6 POLE		KRA	5-RAL (OOKEY DIFFERS)		8-RAL (OOKEY DIFFERS)	
								(OOKEY DIFFERS) (KEY FREE 60° STEPS)	-001 (KEY FREE 90° STEPS)	-002 (KEY FREE 60° STEPS)	-001 (KEY FREE 90° STEPS)	-002 (KEY FREE 60° STEPS)
30°	2 WAY	2 WAY	2 WAY	2 WAY	2 WAY	2 WAY	0°-30°	1	1		1	
	3 WAY	3 WAY	3 WAY	3 WAY	3 WAY		0°-60°	1+3	1	1+3	1	1+3
	4 WAY	4 WAY	4 WAY	4 WAY			0°-90°		1/1+4		1/1+4	
	5 WAY	5 WAY	5 WAY				0°-120°	1+3+5	1/1+4	1+3+5	1/1+4	1+3+5
	6 WAY	6 WAY					0°-150°		1/1+4		1/1+4	
	7 WAY	7 WAY					0°-180°	1+3+5+7	1+7/1+4+7	1+3+5+7	1+7/1+4+7	1+3+5+7
	8 WAY						0°-210°					
	9 WAY						0°-240°	1+3+5+7+9		1+3+5+7+9		1+3+5+7+9
	10 WAY						0°-270°		1+4+7+10		1+4+7+10	
	11 WAY						0°-300°					
	12 WAY						0°-330°					
							0°-360° NoStop	1+3+5+7+9+11	1+7/1+4+7+10	1+3+5+7+9+11	1+7/1+4+7+10	1+3+5+7+9+11
45°	2 WAY	2 WAY	2 WAY	2 WAY			0°-45°		1		1	
	3 WAY	3 WAY	3 WAY	3 WAY			0°-90°		1/1+4		1/1+4	
	4 WAY	4 WAY					0°-135°					
	5 WAY	5 WAY					0°-180°	1+7	1+7/1+4+7		1+7/1+4+7	
	6 WAY	6 WAY					0°-225°					
	7 WAY	7 WAY					0°-270°		1+4+7+10		1+4+7+10	
	8 WAY						0°-315°					
	8 WAY						0°-360° NoStop	1+7	1+4+7+10		1+4+7+10	
60°	2 WAY	2 WAY	2 WAY	2 WAY	2 WAY		0°-60°	1/1+3	1	1+3	1	1+3
	3 WAY	3 WAY	3 WAY	3 WAY			0°-120°	1+3+5	1	1+3+5	1	1+3+5
	4 WAY	4 WAY					0°-180°	1+3+5+7	1+7/1+4+7	1+3+5+7	1+7/1+4+7	1+3+5+7
	5 WAY	5 WAY					0°-240°	1+3+5+7+9		1+3+5+7+9		1+3+5+7+9
	6 WAY	6 WAY					0°-300°					
	6 WAY	6 WAY		2 WAY			0°-360° NoStop	1+3+5+7+9+11	1+7/1+4+7+10	1+3+5+7+9+11	1+7/1+4+7+10	1+3+5+7+9+11
90°	2 WAY	2 WAY	2 WAY				0°-90°		1/1+4		1/1+4	
	3 WAY	3 WAY					0°-180°	1+7	1+7/1+4+7		1+7/1+4+7	
	4 WAY	4 WAY					0°-270°		1+7/1+4+7+10		1+7/1+4+7+10	
	4 WAY	4 WAY					0°-360° NoStop	1+7	1+7/1+4+7+10		1+7/1+4+7+10	

# RA LOCK SWITCHES

## MULTIWAFER RAL LOCKSWITCH

**5-RAL-001 (Keys free at 90° intervals)**

**5-RAL-002 (Keys free at 60° intervals)**



### DESCRIPTION

**LOCK TYPE:** 5 Discs

**LOCK MOVEMENT:** 60° or 90° Steps.

**LOCK COMBINATIONS:** 200 differs or all to pass (same key for all locks).

**KEY TYPE:** Flat, double entry (key can be inserted into the lock only one way up).

**MASTER KEY SYSTEM AVAILABLE:** Yes.

**MAXIMUM PANEL THICKNESS:** 8.5mm.

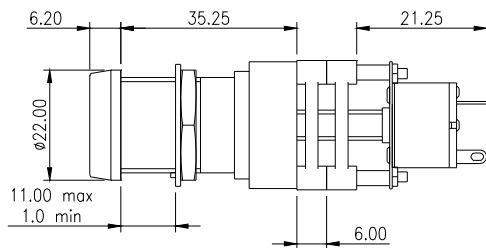
**MODULE INDEXING ANGLES:** 30°, 45°, 60°, 90°

**MAXIMUM NUMBER OF WAFERS:** 6 or 2 plus 2 pole mains switch

## MULTIWAFER RAL LOCKSWITCH

**8-RAL-001 (Keys free at 90° intervals)**

**8-RAL-002 (Keys free at 60° intervals)**



### DESCRIPTION

**LOCK TYPE:** 8 Discs

**LOCK MOVEMENT:** 60° or 90° Steps.

**LOCK COMBINATIONS:** 2000 differs or all to pass (same key for all locks).

**KEY TYPE:** Flat, double entry (key can be inserted into the lock only one way up).

**MASTER KEY SYSTEM AVAILABLE:** Yes.

**MAXIMUM PANEL THICKNESS:** 11.0mm.

**MODULE INDEXING ANGLES:** 30°, 45°, 60°, 90°

**MAXIMUM NUMBER OF WAFERS:** 6 or 2 plus 2 pole mains switch

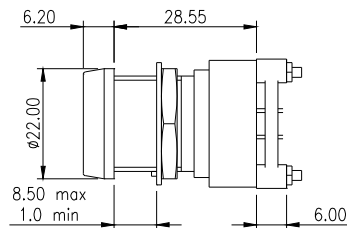
## IMPULSION SINGLE WAFER RAL LOCKSWITCH

**5-RAL-004**

DOUBLE IMPULSION

**5-RAL-005**

SINGLE IMPULSION



### DESCRIPTION

**LOCK TYPE:** 5 Disc Impulsion

**LOCK MOVEMENT:** 60°.

**LOCK COMBINATIONS:** 200 differs or all to pass (same key for all locks).

**KEY TYPE:** Flat, double entry (key can be inserted into the lock only one way up).

**MASTER KEY SYSTEM AVAILABLE:** Yes.

**MAXIMUM PANEL THICKNESS:** 8.5mm.

**MAXIMUM NUMBER OF WAFERS:** 1

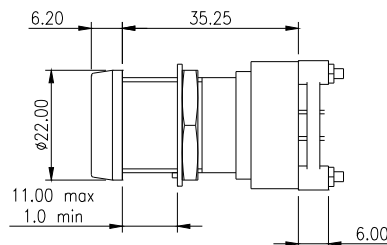
## IMPULSION SINGLE WAFER RAL LOCKSWITCH 8 DISC

**8-RAL-004**

DOUBLE IMPULSION

**8-RAL-005**

SINGLE IMPULSION



### DESCRIPTION

**LOCK TYPE:** 8 Disc Impulsion

**LOCK MOVEMENT:** 60°.

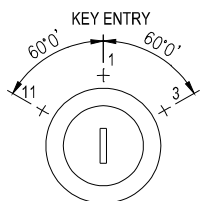
**LOCK COMBINATIONS:** 2000 differs or all to pass (same key for all locks).

**KEY TYPE:** Flat, double entry (key can be inserted into the lock only one way up).

**MASTER KEY SYSTEM AVAILABLE:** Yes.

**MAXIMUM PANEL THICKNESS:** 11.0mm.

**MAXIMUM NUMBER OF WAFERS:** 1



DOUBLE IMPULSION

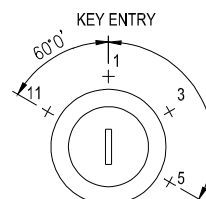
5-RAL-004 8RAL-004

Indexing Movements Available

60° C.W and 60° A.C.W

60° C.W only. 60° A.C.W only

Key Free at key entry only. (PSN1)



SINGLE IMPULSION

5-RAL-005 8RAL-005

Indexing Movements Available

60° A.C.W (Impulsion) and 60° to

240° C.W (Non-Impulsion).

Key Free at positions 1, 3 and 5

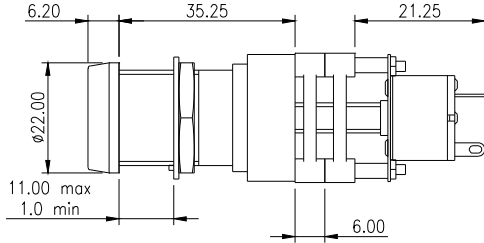
# RA LOCK SWITCHES

## LIMITED ACCESS IMPULSION SINGLE WAFER

### RAL LOCKSWITCH

#### 8-RAL-003

Keys free at Key entry (PSN1)  
& Position 'A' (PSN11) only.



#### DESCRIPTION

**LOCK TYPE:** 8 Disc

**LOCK MOVEMENT:** 60°.

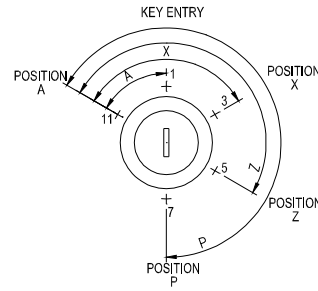
**LOCK COMBINATIONS:** 50 different sets of 4 keys (A/XZ/P) per lock or 1 set of 4 keys to pass all locks.

**KEY TYPE:** Flat, double entry (key can be inserted into the lock only one way up).

**MASTER KEY SYSTEM AVAILABLE:** No.

**MAXIMUM PANEL THICKNESS:** 11.0mm.

**MAXIMUM NUMBER OF WAFERS:** 6



### LOCK MOVEMENT DETAILS

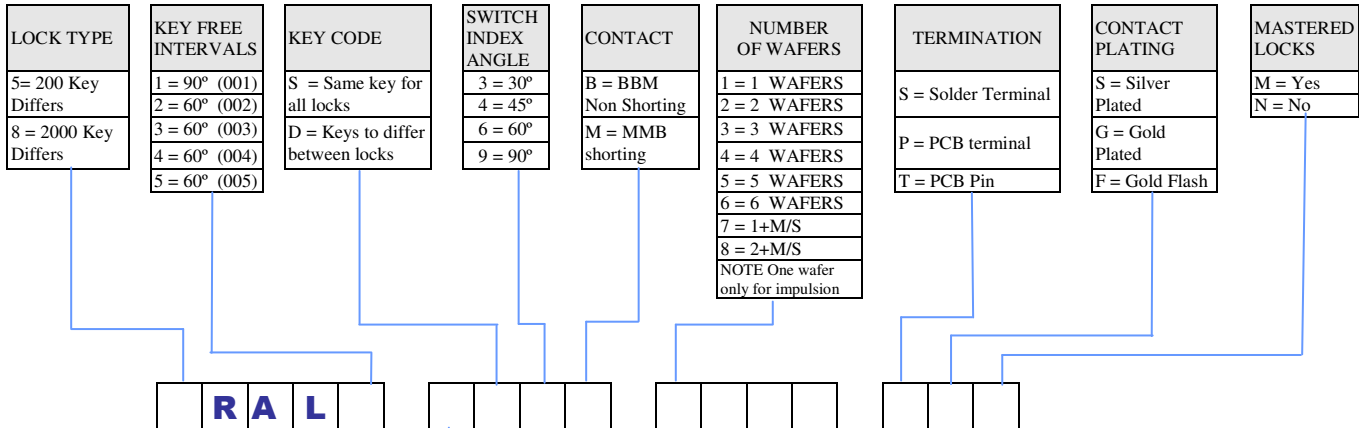
Key 'A' – Movement 60° ACW from key entry

Key 'X' – Movement 60° ACW and 60° CW from key entry

Key 'Z' – Movement 60° ACW and 120° CW from key entry

Key 'P' – Movement 60° ACW and 180° CW from key entry

Key free available at key entry and Position 'A' only.



CODE LETTER	TOTAL LOCK MOVEMENT	KEY WITHDRAW POSITION	KEY FREE INCREMENTS Impulsion			
			90° (001)	60° (002)	60° (004)	60° (005)
A	0° to 90°	1	X			
B	0° to 90°	1,4	X			
C	0° to 180°	1,7	X			
D	0° to 180°	1,4,7	X			
E	0° to 270°	1,4,7,10	X			
F	0° to 360° NO STOP	1,4,7,10	X			
G	0° to 60°	1,3		X		
H	0° to 120°	1,3,5		X		
J	0° to 180°	1,3,5,7		X		
K	0° to 240°	1,3,5,7,9		X		
L	0° to 360° NO STOP	1,3,5,7,9,11		X		
M	0° to 60°	1			X	
N	0° ← 60°	1				X
P	300° → 0°	1				X X
R	300° → 0 ← 60°	1				X
S	300° → 0° TO 120°	1,3,5				X

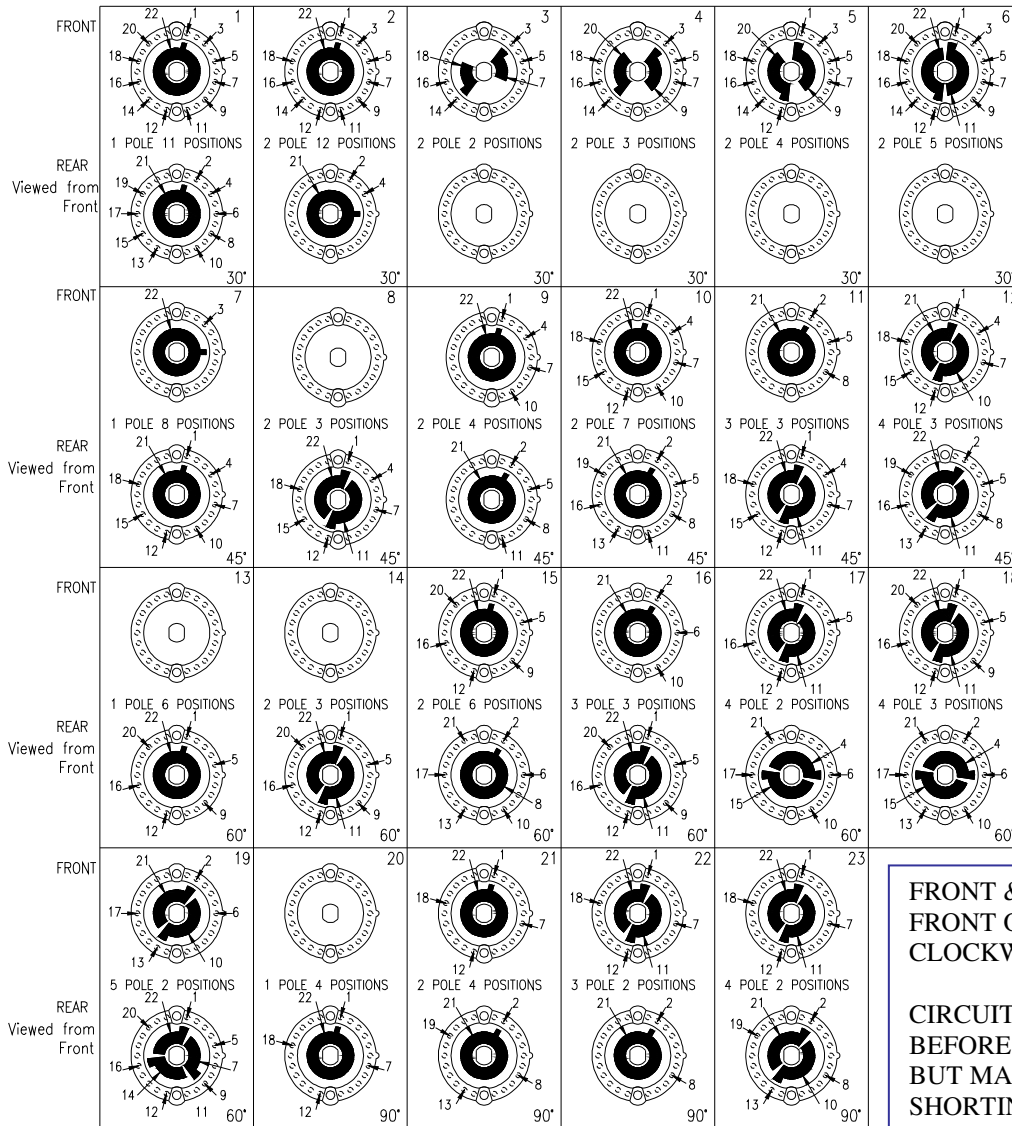
CODE	INDEXING ANGLE	POLES PER WAFER	MAX POS PER WAFER
A	30°	1	12
B	30°	2	09
C	30°	3	05
D	30°	4	04
E	30°	5	03
F	30°	6	02
G	45°	1	08
H	45°	2	07
K	45°	3	03
L	45°	4	03
M	60°	1	06
N	60°	2	06
P	60°	3	03
R	60°	4	03
S	60°	5	02
T	90°	1	04
W	90°	2	04
X	90°	3	02
Y	90°	4	02
Z	To Drawing		To Drawing

### ORDERING CODE

Build your part number by filling in the empty boxes with the appropriate numbers and letter

# RA LOCK SWITCHES

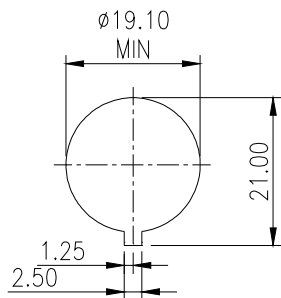
## TYPICAL WAFER LAYOUTS 30° 45° 60° 90°



FRONT & REAR WAFERS VIEWED FROM FRONT OF SWITCH IN EXTREME COUNTER CLOCKWISE POSITION.

CIRCUITRY IS SHOWN HERE AS BREAK BEFORE MAKE (BBM – NON-SHORTING) BUT MAKE BEFORE BREAK (MBB-SHORTING) CIRCUITRY MAY ALSO BE SPECIFIED.

### TYPICAL PANEL PIERCING DIMENSIONS



### LOCK MOVEMENT DESCRIPTION

