



RADE KONČAR

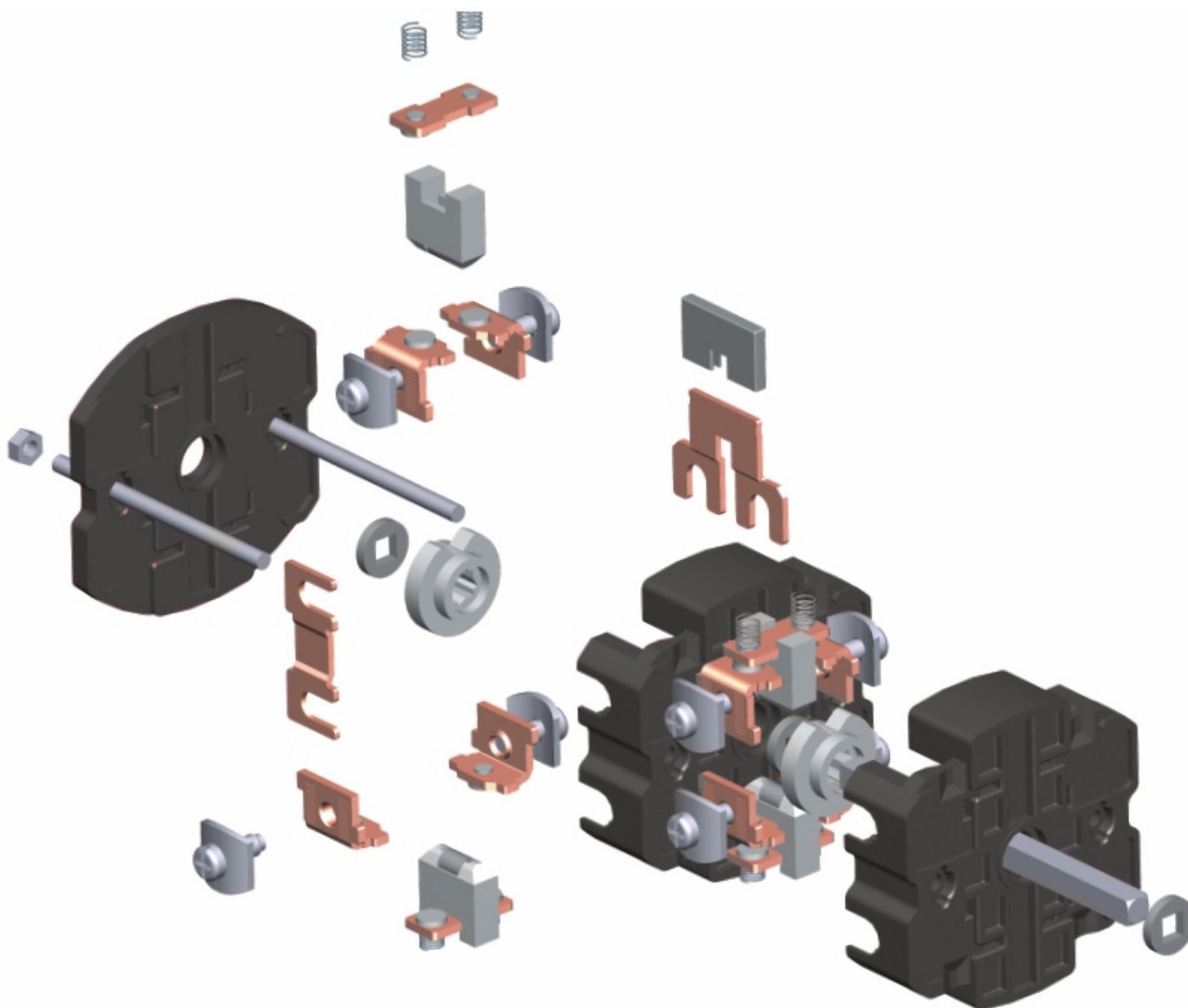
KONTAKTORI I RELEI



Safe and affordable

ROTARY CAM SWITCHES

Type BS



QUALITY MANAGEMENT SYSTEM

ISO 9001 Quality management system

Models for quality assurance in design / development, production and distribution of low - voltage switching devices.

The **RADE KONCAR - KONTAKTORI I RELEI D.O.O.** Quality Managements System has been certified by TÜV CERT- Certification Body of TÜV Rheinland.

The Certificate No. TRBA 100 0891 issued until April 2024 confirms that the quality system is in conformance with requirements of the standard ISO 9001: 2015 and refers to our product categories: Contactors, Thermal overload relays, Rotary cam switches, Pilot devices, Moulded case circuit breakers, Electronic time relays.

Certificate

Standard **ISO 9001:2015**

Certificate Registr. No. **TRBA 100 0891**

TÜV RHEINLAND-BULGARIA EOOD certifies:

Certificate Holder **RADE KONCAR-KONTAKTORI I RELEI D.O.O.**
MK-1000 Skopje
54, III Makedonska brigada Blvd.
R. of North Macedonia

Scope **Design, manufacture and sale of low-voltage switchgear and controlgear components, retro-reflective registration plates for motor vehicles and other information marking plates.**

Proof has been furnished by means of an audit that the requirements of BDS EN ISO 9001:2015 are met.

Validity The certificate is valid from **03.04.2021** until **02.04.2024**.
First certification: 2003



23.03.2021

[Signature]
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Rotary Cam Switches series BS

ROTARY CAM SWITCHES “BS”

Rotary cam switches series “BS” are intended for multiple switching operations in main as well as in auxiliary circuits. As motor switches they are designed for direct-online starting and stopping of single-phase and three-phase motors. They also come out as star-delta switches, reversing switches, pole-change over motor switches. In auxiliary circuits they are assembled in compliance with the switching program according to preference: switches for control, signalling and measuring circuits. Switches, selector switches and step switches e.g. for transformers and welding apparatuses. Group switches e.g. for switching operations of resistors and heaters. Control switch with automatic return. The advantages of rotary cam switches are: high making and breaking capacities, electrical and mechanical endurance and small dimensions. Rotary cam switches comply with international standards such as: IEC 60947-3 and EN 60947-3. The rotary cam switches “BS 16” to “BS 63” can have 24 contacts (12 switching elements) maximum and can be made with turning angle of 30, 45, 60 and 90 degrees. The rotary cam switches “BS 80” and “BS 100” can have 24 contacts (12 switching elements) maximum and can be made with turning angle of 45, 60 and 90 degrees. The rotary cam switches “BS” 125 to “BS 630” can have 18 contacts (9 switching elements) maximum and can be made with turning angle of 60 and 90 degrees.

UTILIZATION CATEGORY

Category	Utilization
AC-20	Connecting and disconnecting under no-load conditions
AC-21	ON-OFF switching of resistive loads, including moderate overloads
AC-22	Switching of mixed resistive and inductive loads, including moderate overloads
AC-2	Starting slip-ring motors and plugging
AC-23	Switching of motor loads or other highly inductive loads
AC-3	Starting squirrel-cage motor and switching off motors when running
AC-4	Starting squirrel-cage motors, plugging, inching, reversing
AC-15	Control switch for switching magnetic devices, contactors, valves

ORDERING INFORMATION

When ordering please define:

- 1.- Switch type
- 2.- Number of schematic diagram
- 3.- Mounting form (for front “U” or rear mount “O”)
- 4.- Front part - Optional:

PS - (handle black and front plate model PS) - on request.

LK - (red knob and yellow plate for main emergency on - off switch).

ES - (handle-red and front plate-yellow)

EXAMPLE:

1	2	3
BS 25	10	U

Type - **BS 25**, schematic diagram - **10**, mounting form - **U**, with standard **black** handle and front plate standard **gray**.

1	2	3	4
BS 40	10	U	PS

Type - **BS 40**, schematic diagram - **10**, mounting form - **U**, with black handle and PS front plate.

1	2	4
BS 63	10	LK

Type - **BS 63**, schematic diagram - **10**, Main emergency on-off switch with 3 padlock facility in “0” position - **LK**








TECHNICAL DATA

TYPE			BS 16	BS 25	BS 32	BS 40	BS 63	BS 80	BS 100	BS 125	BS 200	BS 400	BS 630
Rated insulation voltage U_i		V	690							690			
Rated impulse withstand voltage U_{imp}		kV	6							8			
Rated thermal current I_{th}		A	20	25	32	40	63	80	100	125	200	400	630
Max. fuse size for short circuit protection gL 10 kA		A	20	25	32	40	63	80	100	125	200	400	630
Rated Short-time Withstand current I_{cw}	1 sek	A	250	400	600	800	800	1000	1800	2100	3000		
	3 sek	A	150	250	400	530	700	800	900	1300	1700		
	10 sek	A	80	140	240	290	350	400	450	700	850		
	30 sek	A	50	90	150	200	250	250	300	400	500		
	60 sek	A	40	70	120	150	150	160	200	300	400		
Rated operational current I_e AC1 / AC21		A	20	25	32	40	63	70	75	120	200	400	630
Rated operational current I_e AC15	110V	A	10	20	25	40	50	-	-	-	-	-	-
	220/230V	A	8	20	25	30	40	-	-	-	-	-	-
	380/400V	A	6	16	20	25	40	-	-	-	-	-	-
	660/690V	A		8	8.5	8.5	10	-	-	-	-	-	-
Motor switch in utilization category													
AC3	220/230V	kW	3	5.5	7.5	9	11	12	19	26	37	37	37
	3-phase 380/400V	kW	5	7.5	11	15	18.5	22	32	41	60	60	60
	500/690V	kW	-	11	15	19	22	28	42	55	75	75	75
1-phase 2 poles	110V	kW	0.8	1.5	2.5	2.5	3	-	-	-	-	-	-
	220/230V	kW	2.2	3	4.8	5.5	6	-	-	-	-	-	-
	380/400V	kW	3	5.5	6.5	7.5	11	-	-	-	-	-	-
AC23	220/230V	kW	5	6.5	8	9	15	18.5	22	26	37	37	37
	3-phase 380/400V	kW	7.5	11	15	18.5	22	32	37	41	60	60	60
	500/690V	kW	-	11	18.5	22	30	45	55	55	75	75	75
1-phase 2 poles	110V	kW	0.8	1.5	2.5	3	3.5	-	-	-	-	-	-
	220/230V	kW	2.5	3.7	5	6	9	-	-	-	-	-	-
	380/400V	kW	3.7	5.5	7.5	9	15	-	-	-	-	-	-
AC4	220/230V	kW	1.5	2.5	3	5	6	7	9.5	17	17		
	3-phase 380/400V	kW	3	4	5.5	8	11	12	16	30	30		
	500/690V	kW	-	4	7.5	8	11	12	16	32	32		
Mechanical endurance switching cycles		10 ⁶	3	3	3	3	2	1	1	0.3	0.1	0.05	0.05
Terminal screw			M3.5	M3.5	M4	M5	M5	2xM5	2xM5	M8	M10	M12	M16
Screw head			PZ2	PZ2	PZ2	PZ2	PZ2						
Tightening torque			0.8	0.8	1.2	1.8	2						
Cable cross-section	Rigid	mm ²	2x(1-4) 1-6*	2x(1-4) 1-6*	2x(2.5-6) 1-10*	2x(2.5-10)	2x(4-16)	6-25 2x(6-16)	6-25 2x(6-16)	16-35	70-95 ⁽²⁾	70-240	70-240
	Flexible		2x(1-4)	2x(1-4)	2x(2.5-6) 1-10*	2x(2.5-10)	2x(4-16)					△	△






(1) Valid for neutral earthed systems, overvoltage category III, pollution degree 3

(*) Only for diagrams without inside links

△ Connection valid to connect copper bars

STANDARD MOUNTING FORMS					
Mounting form	Marking	Switch type	Protection		Outlook
			Front	Rear	
Front mounting	U	BS 16 BS 25 BS 32 BS 40 BS 63	IP 40	IP 20	
		BS 80 BS 100 BS 125 BS 200 BS 400 BS 630	IP 40	IP 00	
Front mounting without indicating plate cover	M	BS 16 BS 25 BS 32 BS 40 BS 63	IP 40	IP 20	
		BS 80 BS 100	IP 40	IP 00	
Rear mounting	O	BS 16 BS 25 BS 32 BS 40 BS 63	IP 40	IP 20	
		BS 80 BS 100	IP 40	IP 00	
Mounting on rail * maximum up to 4 elements	L	BS 16 BS 25 BS 32	IP 40	IP 20	
Switch with door interlock device. Door opening only in “0”	S8	BS 125 BS 200 BS 400 BS 630	IP 40	IP 00	
Switch in insulated enclosures	PN	PNBS 16 PNBS 25	IP 65		
Switch in insulated enclosures	PNG	PNGBS 25 PNGBS 32 PNGBS 40	IP 65		

STANDARD MOUNTING FORMS

Mounting form	Marking	Switch type	Protection		Outlook
			Front	Rear	
Switch in insulated enclosures	PNG LK	PNGBS 25 .. LK PNGBS 32 .. LK PNGBS 40 .. LK	IP 65		
Switch in insulated enclosures	PN1	PN1BS 16 PN1BS 25	IP 55		
Switch in insulated enclosures	PN2	PN2BS 32 PN2BS 40 PN2BS 63	IP 55		
Switch in insulated enclosures	PN3	PN3BS 80 PN3BS 100	IP 54		
Switch in insulated enclosures	PN4	PN4BS 80 PN4BS 100 PN4BS 125 PN4BS 200	IP 54		

FRONT PLATES MODEL EXAMPLES

FRONT PLATE BS



FRONT PLATE PS



"ES" - GENERAL EMERGENCY ON - OFF SWITCH



GENERAL EMERGENCY ON - OFF SWITCH VERSION "LK" WITH PADLOCKING ONLY IN "0"

- Emergency switch have to make electrical separation between el. supply and electrical equipment.
- Control handle according the Standards is Red, and the plate behind the handle yellow.
- Emergency switch is able to lock in the open position "0" up to three padlocks.



LK 1

BS 16 .. LK - BS 25 .. LK



LK 2

BS 25 .. LK - BS 63 .. LK



LK 3

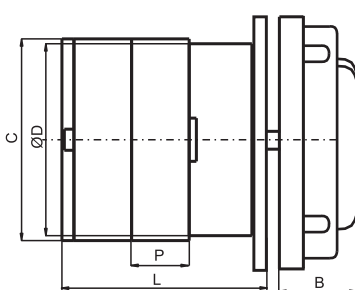
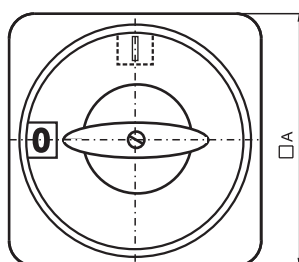
BS 80 .. LK - BS 100 .. LK



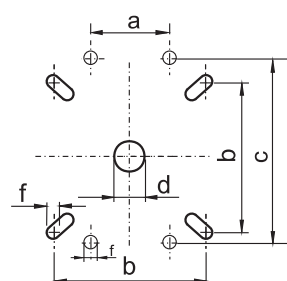
LK 4

BS 125 .. LK - BS 200 .. LK

DIMENSIONAL DRAWINGS VERSION "LK" (mm)



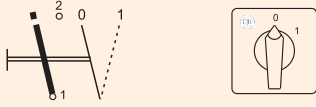
DRILLING PLAN



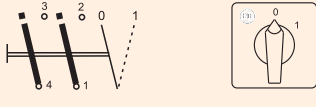
TYPE	□A	C	ØD	P	B	L(*)	b	d	f	a	c
BS 16 .. LK BS 25 .. LK	49	45.2	38.6	12.8	35	45.3	36	10	3.2		
BS 32 .. LK	72	53	38.6	12.8	32	49.8	58	10	4.2		
BS 40 .. LK	72	61	56.4	17.5	32	68.1	58	10	4.2		
BS 63 .. LK	72	68.6	56.4	20.5	32	63	58	10	4.2		
BS 80 .. LK BS 100 .. LK	105	84	80	25	44	92.5	85	14	5.3		
BS 125 .. LK BS 200 .. LK BS 400 .. LK BS 630 .. LK	130	110	110	30 39	121 62	139		18	5.3	30	90

(*) L for 2 elements

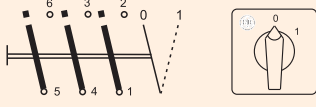
Switches with 60° switching

1 pole / 1 element					
Type	Order number	Thermal current I _{th}	Connection diagram	Weight [g]	Packing [pcs]
BS 16 90 U	602367R	16A		65	1
BS 25 90 U	602368	25A		70	
BS 32 90 U	602460	32A		90	
BS 40 90 U	602378	40A		155	
BS 63 90 U	602247	63A		245	
BS 80 90 U	602383	80A		360	
BS 100 90 U	602653	100A		410	

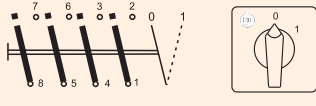


2 poles / 1 element					
Type	Order number	Thermal current I _{th}	Connection diagram	Weight [g]	Packing [pcs]
BS 16 91 U	602363R	16A		60	1
BS 25 91 U	602484	25A		75	
BS 32 91 U	602373	32A		95	
BS 40 91 U	602377	40A		160	
BS 63 91 U	602248	63A		250	
BS 80 91 U	602850	80A		365	
BS 100 91 U	602851	100A		420	



3 poles / 2 elements (3 elements for BS 400; 5 elements for BS 630)					
Type	Order number	Thermal current I _{th}	Connection diagram	Weight [g]	Packing [pcs]
BS 16 10 U	602361R	16A		95	1
BS 25 10 U	600338	25A		100	
BS 32 10 U	602375	32A		140	
BS 40 10 U	602379	40A		240	
BS 63 10 U	602033	63A		375	
BS 80 10 U	602380	80A		550	
BS 100 10 U	602384	100A		635	
BS 125 10 U	602463	125A		1330	
BS 200 10 U	600267	200A		1820	
BS 400 10 U	601804	400A		2900	
BS 630 10 U	602307	630A		4420	



4 poles / 2 elements (4 elements for BS 400; 6 elements for BS 630)					
Type	Order number	Thermal current I _{th}	Connection diagram	Weight [g]	Packing [pcs]
BS 16 92 U	602481R	16A		100	1
BS 25 92 U	602506	25A		105	
BS 32 92 U	601903	32A		145	
BS 40 92 U	602578	40A		245	
BS 63 92 U	602577	63A		380	
BS 80 92 U	602510	80A		560	
BS 100 92 U	602852	100A		640	
BS 125 92 U	603798	125A		1405	
BS 200 92 U	600268	200A		2200	
BS 400 92 U	602134	400A		3060	
BS 630 92 U	602135	630A		4650	



Changeover switches with "0" - 60° switching



1 pole / 1 element

Type	Order number	Thermal current I _{th}	Connection diagram	Weight [g]	Packing [pcs]
BS 16 51 U	602364R	16A		85	1
BS 25 51 U	602370	25A		90	
BS 32 51 U	601891	32A		120	
BS 40 51 U	601907	40A		185	
BS 63 51 U	602249	63A		275	
BS 80 51 U	603228	80A		390	
BS 100 51 U	602385	100A		445	



2 poles / 2 elements (4 elements for BS 400; 6 elements for BS 630)

Type	Order number	Thermal current I _{th}	Connection diagram	Weight [g]	Packing [pcs]
BS 16 52 U	602365R	16A		100	1
BS 25 52 U	601867	25A		105	
BS 32 52 U	602374	32A		165	
BS 40 52 U	602513	40A		245	
BS 63 52 U	602250	63A		380	
BS 80 52 U	602849	80A		560	
BS 100 52 U	631245	100A		640	
BS 125 52 U	604770	125A		1545	
BS 200 52 U	600269	200A		2010	
BS 400 52 U	602136	400A		3050	
BS 630 52 U	602137	630A		4630	



3 poles / 3 elements (6 elements for BS 400; 9 elements for BS 630)

Type	Order number	Thermal current I _{th}	Connection diagram	Weight [g]	Packing [pcs]
BS 16 53 U	602366R	16A		140	1
BS 25 53 U	602369	25A		145	
BS 32 53 U	602372	32A		190	
BS 40 53 U	602419	40A		345	
BS 63 53 U	602251	63A		450	
BS 80 53 U	602381	80A		790	
BS 100 53 U	602386	100A		795	
BS 125 53 U	602512	125A		1943	
BS 200 53 U	600270	200A		2737	
BS 400 53 U	602046	400A		5060	
BS 630 53 U	602048	630A		7580	




4 poles / 4 elements

Type	Order number	Thermal current I _{th}	Connection diagram	Weight [g]	Packing [pcs]
BS 16 75 U	602710R	16A		180	1
BS 25 75 U	602569	25A		185	
BS 32 75 U	602503	32A		375	
BS 40 75 U	602405	40A		460	
BS 63 75 U	602444	63A		565	
BS 80 75 U	602571	80A		1015	
BS 100 75 U	602859	100A		1030	

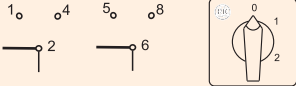
Multi-step switches with "0"

1 pole / 1 element

Type	Order number	Thermal current I _{th}	Connection diagram	Weight [g]	Packing [pcs]
BS 16 107 U	602584R	16A		70	1
BS 25 107 U	603556	25A		75	
BS 32 107 U	609340	32A		95	
BS 40 107 U	609341	40A		160	
BS 63 107 U	609342	63A		250	
BS 80 107 U	609343	80A		365	
BS 100 107U	609344	100A		420	

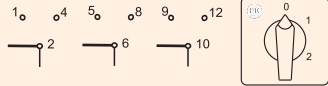


2 poles / 2 elements

Type	Order number	Thermal current I _{th}	Connection diagram	Weight [g]	Packing [pcs]
BS 16 123 U	603795R	16A		130	1
BS 25 123 U	631215	25A		135	
BS 32 123 U	609345	32A		165	
BS 40 123 U	609346	40A		250	
BS 63 123 U	609347	63A		375	
BS 80 123 U	609348	80A		550	
BS 100 123U	609349	100A		630	



3 poles / 3 elements

Type	Order number	Thermal current I _{th}	Connection diagram	Weight [g]	Packing [pcs]
BS 16 135 U	609350	16A		135	1
BS 25 135 U	602727	25A		140	
BS 32 135 U	609351	32A		190	
BS 40 135 U	607194	40A		345	
BS 63 135 U	604704	63A		450	
BS 80 135 U	603276	80A		790	
BS 100 135U	609352	100A		795	



Changeover switches without "0" - 90° switching



1 pole / 1 element

Type	Order number	Thermal current I _{th}	Connection diagram	Weight [g]	Packing [pcs]
BS 16 54 U	602448R	16A		85	1
BS 25 54 U	603550	25A		90	
BS 32 54 U	609843	32A		120	
BS 40 54 U	609844	40A		185	
BS 63 54 U	605974	63A		275	
BS 80 54 U	609845	80A		390	
BS 100 54 U	609846	100A		445	



2 poles / 2 elements

Type	Order number	Thermal current I _{th}	Connection diagram	Weight [g]	Packing [pcs]
BS 16 55 U	602522R	16A		100	1
BS 25 55 U	602623	25A		105	
BS 32 55 U	603971	32A		145	
BS 40 55 U	609847	40A		245	
BS 63 55 U	603415	63A		380	
BS 80 55 U	609353	80A		560	
BS 100 55 U	607718	100A		640	



3 poles / 3 elements

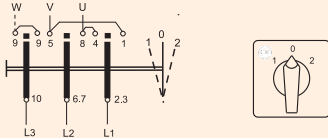
Type	Order number	Thermal current I _{th}	Connection diagram	Weight [g]	Packing [pcs]
BS 16 56 U	603438R	16A		140	1
BS 25 56 U	601873	25A		145	
BS 32 56 U	603823	32A		190	
BS 40 56 U	609354	40A		345	
BS 63 56 U	609355	63A		450	
BS 80 56 U	609356	80A		790	
BS 100 56 U	603516	100A		795	




4 poles / 4 elements

Type	Order number	Thermal current I _{th}	Connection diagram	Weight [g]	Packing [pcs]
BS 16 69 U	602523R	16A		180	1
BS 25 69 U	602567	25A		185	
BS 32 69 U	603824	32A		375	
BS 40 69 U	631194	40A		460	
BS 63 69 U	605886	63A		565	
BS 80 69 U	606439	80A		1015	
BS 100 69 U	609357	100A		1030	

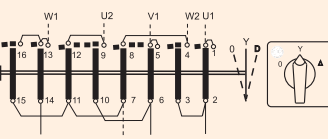
Motor Switches

Motor reversing switches - 3 elements					
Type	Order number	Thermal current Ith	Connection diagram	Weight [g]	Packing [pcs]
BS 16 11 U	602547R	16A		140	1
BS 25 11 U	602546	25A		145	
BS 32 11 U	601887	32A		190	
BS 40 11 U	602598	40A		345	
BS 63 11 U	602356	63A		450	
BS 80 11 U	606732	80A		790	
BS 100 11 U	603307	100A		795	
BS 125 11 U	602813	125A		2020	
BS 200 11 U	600271	200A		2395	

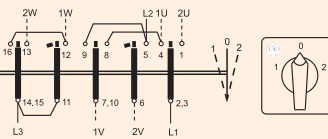


Motor reversing switches - 3 elements					
Type	Order number	Thermal current Ith	Connection diagram	Weight [g]	Packing [pcs]
BS 16 26 U	609358	16A		140	1
BS 25 26 U	602947	25A		145	
BS 32 26 U	603938	32A		190	
BS 40 26 U	602660	40A		345	



Star-delta switch - 4 elements					
Type	Order number	Thermal current Ith	Connection diagram	Weight [g]	Packing [pcs]
BS 16 12 U	602847R	16A		170	1
BS 25 12 U	602479	25A		175	
BS 32 12 U	602797	32A		270	
BS 40 12 U	602376	40A		435	
BS 63 12 U	602355	63A		600	
BS 80 12 U	602382	80A		1090	
BS 100 12 U	602387	100A		1130	



Motor control switches (Dahlander) - 4 elements (Δ-0-YY)					
Type	Order number	Thermal current Ith	Connection diagram	Weight [g]	Packing [pcs]
BS 16 13 U	602919R	16A		180	1
BS 25 13 U	602465	25A		185	
BS 32 13 U	603284	32A		375	
BS 40 13 U	602794	40A		460	
BS 63 13 U	609359	63A		565	
BS 80 13 U	609360	80A		1015	
BS 100 13 U	609361	100A		1030	



Motor Switches



Motor control switches (Dahlander) - 4 elements (0-Δ-YY)

Type	Order number	Thermal current I _{th}	Connection diagram	Weight [g]	Packing [pcs]
BS 16 19 U	603440R	16A		170	1
BS 25 19 U	602455	25A		175	
BS 32 19 U	602632	32A		270	
BS 40 19 U	602521	40A		435	
BS 63 19 U	609362	63A		600	
BS 80 19 U	603806	80A		1090	
BS 100 19 U	609363	100A		1130	




Motor control switches (Dahlander) - 6 elements (YY-Δ-0-Δ-YY)

Type	Order number	Thermal current I _{th}	Connection diagram	Weight [g]	Packing [pcs]
BS 16 20 U	607918R	16A		205	1
BS 25 20 U	602508	25A		210	
BS 32 20 U	609365	32A		270	
BS 40 20 U	609366	40A		465	

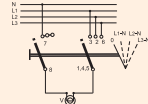


Start and run switches - 2 elements


Type	Order number	Thermal current I _{th}	Connection diagram	Weight [g]	Packing [pcs]
BS 16 15 U	601842R	16A		95	1
BS 25 15 U	602477	25A		100	
BS 32 15 U	603760	32A		140	
BS 40 15 U	602825	40A		240	
BS 63 15 U	609367	63A		375	
BS 80 15 U	609368	80A		550	
BS 100 15 U	609369	100A		635	

Voltmeter switches

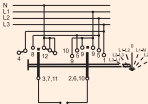
To measure 3 phase voltages L1-N, L2-N, L3-N - 2 elements

Type	Order number	Thermal current I _{th}	Connection diagram	Weight [g]	Packing [pcs]
BS 16 68 U	607665R	16A		100	1
BS 25 68 U	602711	25A		105	
BS 32 68 U	609371	32A		145	
BS 40 68 U	609372	40A		245	

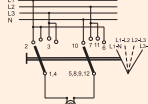
To measure 3 line voltages L1-L2/L2-L3/L3-L1 - 2 elements

Type	Order number	Thermal current I _{th}	Connection diagram	Weight [g]	Packing [pcs]
BS 16 67 U	631276	16A		105	1
BS 25 67 U	609373	25A		105	
BS 32 67 U	609374	32A		145	
BS 40 67 U	609375	40A		245	

To measure 3 phase and 3 line voltages - 3 elements

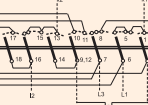
Type	Order number	Thermal current I _{th}	Connection diagram	Weight [g]	Packing [pcs]
BS 16 66 U	602846R	16A		140	1
BS 25 66 U	609376	25A		145	
BS 32 66 U	609377	32A		190	
BS 40 66 U	609378	40A		345	

To measure 1 phase and 3 line voltages - 3 elements

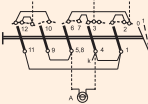
Type	Order number	Thermal current I _{th}	Connection diagram	Weight [g]	Packing [pcs]
BS 16 60 U	604270R	16A		140	1
BS 25 60 U	609379	25A		145	
BS 32 60 U	609380	32A		190	
BS 40 60 U	609381	40A		345	

Ammeter switches

2 pole, 0 position, 3 current (with current transformers) - 6 elements

Type	Order number	Thermal current I _{th}	Connection diagram	Weight [g]	Packing [pcs]
BS 16 97 U	609849	16A		200	1
BS 25 97 U	609382	25A		205	
BS 32 97 U	609383	32A		265	
BS 40 97 U	609384	40A		460	

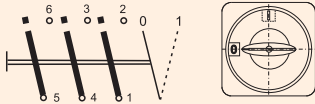
1 pole and 3 currents (with current transformers) - 4 elements

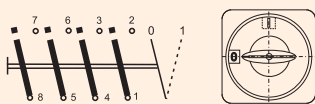
Type	Order number	Thermal current I _{th}	Connection diagram	Weight [g]	Packing [pcs]
BS 16 98 U	602511R	16A		165	1
BS 25 98 U	609385	25A		170	
BS 32 98 U	609386	32A		380	
BS 40 98 U	609387	40A		425	



General emergency ON-OFF switches version "LK" with padlocking only in 0

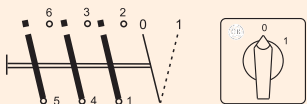


3 poles					
Type	Order number	Thermal current I _{th}	Connection diagram	Weight [g]	Packing [pcs]
BS 16 10 LK	605908R	16A		135	1
BS 25 10 LK	602824	25A		140	
BS 32 10 LK	602488	32A		180	
BS 40 10 LK	600991	40A		280	
BS 63 10 LK	602646	63A		425	
BS 80 10 LK	602666	80A		600	
BS 100 10LK	603435	100A		685	
BS 125 10LK	605696	125A		1330	
BS 200 10LK	605697	200A		1820	
BS 400 10LK	609388	400A		2900	
BS 630 10LK	607474	630A		4420	

4 poles					
Type	Order number	Thermal current I _{th}	Connection diagram	Weight [g]	Packing [pcs]
BS 16 92 LK	609484	16A		100	1
BS 25 92 LK	603720	25A		105	
BS 32 92 LK	604366	32A		145	
BS 40 92 LK	631250	40A		245	
BS 63 92 LK	602715	63A		380	
BS 80 92 LK	607246	80A		560	
BS 100 92LK	602714	100A		640	
BS 125 92LK	609389	125A		1405	
BS 200 92LK	606782	200A		1900	
BS 400 92LK	609390	400A		2980	
BS 630 92LK	609391	630A		4500	

General emergency ON-OFF switches version "ES"



3 poles					
Type	Order number	Thermal current I _{th}	Connection diagram	Weight [g]	Packing [pcs]
BS 16 10 ES	609392	16A		95	1
BS 25 10 ES	605417	25A		100	
BS 32 10 ES	602712	32A		140	
BS 40 10 ES	602982	40A		240	
BS 63 10 ES	602713	63A		375	
BS 80 10 ES	602765	80A		550	
BS 100 10ES	605416	100A		635	

Rotary cam switches in insulated enclosures



PNBS 16, PNBS 25



PNGBS 25, PNGBS 32,
PNGBS 40



PNGBS 25..LK, PNGBS 32..LK,
PNGBS 40..LK



PN1BS 16, PN1BS 25

	Degree of protection	Type	No.	
Number of elements 1-3	IP 65	PNBS 16 PNBS 25 *	.. ..	. .
Number of diagram - (90, 91,10, 92, 51, 52, 53, 54, 55, 56, 11, 15, 66, 67, 135)				
Front part: Black handle and front plate gray - standard				
Number of elements 1-3 for BS 25, BS 32, BS 32 .. LK	IP 65	PNGBS 25 PNGBS 32 PNGBS 40	......	...
Number of elements 1-2 for BS 40, BS 40 .. LK				
			PNGBS 25 PNGBS 32 PNGBS 40	......	LK LK LK
Number of diagram for PNGBS 25 - (90, 91,10, 92, 51, 52, 53, 54, 55, 56, 11, 15)				
Number of diagram for PNGBS 32 - (90, 91,10, 92, 51, 52, 53, 54, 55, 56, 11, 15)				
Number of diagram for PNGBS 40 - (90, 91,10, 92, 51, 52, 54, 55)				
Front part: Black handle and front plate gray - standard				
Number of elements 4-6	IP 55	PN1BS 16 PN1BS 25	....	..
No. of diagram - (12, 13, 75, 69, 19, 97, 98)				
Front part: Black handle and front plate gray - standard				

NOTES:

Color of enclosures is grey (RAL 7035)

* Only with connection cable up to 2.5 mm²

No. - Number of diagram

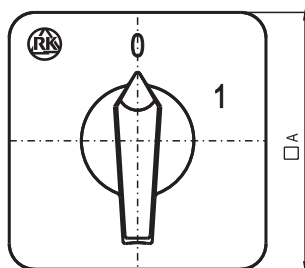
Rotary cam switches in insulated enclosures

PN2BS 32, PN2BS 40,
PN2BS 63, PN2BS 63 LK

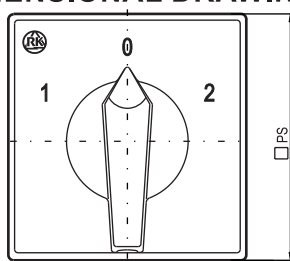
	Degree of protection	Type	No.	
Number of elements 4-5 for BS 32 Number of elements 3-5 for BS 40 Number of elements 1-4 for BS 63, BS 63 .. LK	IP 55	PN2BS 32 PN2BS 40 PN2BS 63 PN2BS 63	..	..
Number of diagram for PN2BS 32 - (75, 69, 13, 12, 19, 97, 98) Number of diagram for PN2BS 40 - (53, 75, 56, 69, 11, 13, 12, 26, 19, 97, 98) Number of diagram for PN2BS 63 - (90, 91, 10, 92, 51, 52, 53, 75, 54, 55, 56, 69, 11, 13, 12, 26, 19, 15, 207, 98) Front part: Black handle and front plate gray - standard				
Number of elements 1-3 for BS 80, BS 80 .. LK, BS 100, BS 100 .. LK	IP 54	PN3BS 80 PN3BS 100 PN3BS 80 PN3BS 100	..	..
Number of diagram - (90, 91, 10, 92, 51, 52, 53, 54, 55, 56, 11, 26, 15,) Front part: Black handle and front plate gray - standard				
Number of elements 4 for BS 80 Number of elements 4 for BS 100 Number of elements 1-3 for BS 125, BS 125 .. LK Number of elements 1-2 for BS 200, BS 200 .. LK	IP 54	PN4BS 80 PN4BS 100 PN4BS 125 PN4BS 200 PN4BS 125 PN4BS 200	..	..
Number of diagram for PN4BS 80, 100 - (12, 13, 19, 75, 98) Number of diagram for PN4BS 125 - (10, 11, 51, 52, 53, 54, 55, 56, 92) Number of diagram for PN4BS 200 - (10, 51, 52, 54, 55, 92) Front part: Black handle and front plate gray - standard <u>No. - Number of diagram</u>				

PN3BS 80, PN3BS 100,
PN3BS 80 LK
PN3BS 100 LKPN4BS 80, PN4BS 100
PN4BS 125, PN4BS 200
PN4BS 125 LK
PN4BS 200 LK

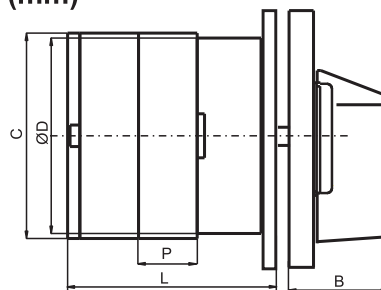
DIMENSIONAL DRAWINGS (mm)



Front Plate Standard



Front Plate PS

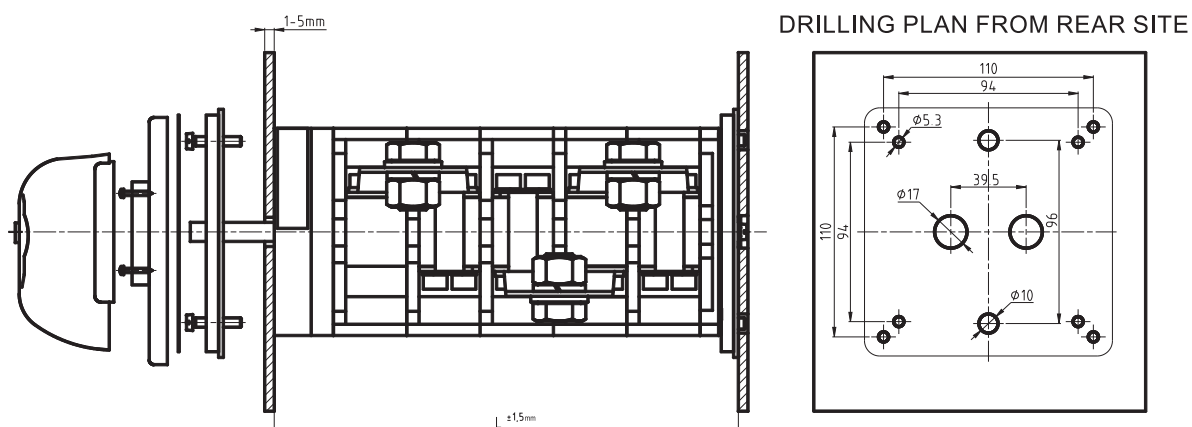


TYPE	MARKING		NUMBER OF ELEMENTS (L/mm)															
	□A	□PS	B	C	ØD	P	1	2	3	4	5	6	7	8	9	10	11	12
BS 16	51,2	48	27,2	45,2	38,6	12,8	32,5	45,3	58,1	70,9	83,7	96,5	109,3	122,1	134,9	147,7	160,5	173,3
BS 25																		
BS 32	72	65	33	53	38,6	12,8	37	49,8	62,6	75,4	88,2	101	113,8	126,6	139,4	152,2	165	177,8
BS 40	72	65	33	61	56,4	17,5	50,6	68,1	85,6	103,1	120,6	138,1	155,6	173,1	190,6	208,1	225,6	243,1
BS 63	72	65	33	68,6	56,4	20,5	42,5	63	83,5	104	124,5	145	165,5	186	206,5	227	247,5	268
BS 80	105	90	41	84	80	25	67,5	92,5	117,5	142,5	167,5	192,5	217,5	242,5	267,5	292,5	317,5	342,5
BS 100																		
BS 125	130	130	62	110	110	30	91	121	151	181								
BS 200						39	100	139	178	217								
BS 400						39	100	139	178	217	-	295						
BS 630						39	-	139	178	-	256	295	-	-	412			

(*) For the switch with 5-9 elements see the dimensional drawing on page 13.

FRONT MOUNTING "U"		<p>DRILLING PLAN</p>	<table> <tr> <th>TYPE</th><th>a</th><th>b</th><th>a1</th><th>b1</th><th>c</th><th>d</th><th>f</th></tr> <tr> <td>BS 16</td><td rowspan="2"></td><td rowspan="2">34-36 *36</td><td rowspan="2"></td><td rowspan="2"></td><td rowspan="2">30</td><td rowspan="2">10</td><td rowspan="2">3.2</td></tr> <tr> <td>BS 25</td></tr> <tr> <td>BS 32</td><td rowspan="3">58</td><td rowspan="3">48</td><td rowspan="3"></td><td rowspan="3"></td><td>30</td><td rowspan="3">10</td><td rowspan="3">3.2</td></tr> <tr> <td>BS 40</td><td>45</td></tr> <tr> <td>BS 63</td><td></td></tr> <tr> <td>BS 80</td><td rowspan="2">85</td><td rowspan="2">68-74 *72</td><td rowspan="2"></td><td rowspan="2"></td><td rowspan="2">40</td><td rowspan="2">14</td><td rowspan="2">5.3</td></tr> <tr> <td>BS 100</td></tr> <tr> <td>BS 125</td><td rowspan="4"></td><td rowspan="4"></td><td rowspan="4">90</td><td rowspan="4">30</td><td rowspan="4">18</td><td rowspan="4">5.3</td><td rowspan="4"></td></tr> <tr> <td>BS 200</td></tr> <tr> <td>BS 400</td></tr> <tr> <td>BS 630</td></tr> </table>	TYPE	a	b	a1	b1	c	d	f	BS 16		34-36 *36			30	10	3.2	BS 25	BS 32	58	48			30	10	3.2	BS 40	45	BS 63		BS 80	85	68-74 *72			40	14	5.3	BS 100	BS 125			90	30	18	5.3		BS 200	BS 400	BS 630
TYPE	a	b	a1	b1	c	d	f																																													
BS 16		34-36 *36			30	10	3.2																																													
BS 25																																																				
BS 32	58	48			30	10	3.2																																													
BS 40					45																																															
BS 63																																																				
BS 80	85	68-74 *72			40	14	5.3																																													
BS 100																																																				
BS 125			90	30	18	5.3																																														
BS 200																																																				
BS 400																																																				
BS 630																																																				
FRONT MOUNTING "M"		<p>DRILLING PLAN</p>	<table> <tr> <th>TYPE</th><th>h</th><th>d</th><th>g</th></tr> <tr> <td>BS 16</td><td rowspan="2">13.5</td><td>10</td><td rowspan="2">3.5</td></tr> <tr> <td>BS 25</td><td>10</td></tr> <tr> <td>BS 32</td><td rowspan="3">16.2</td><td rowspan="3">10</td><td rowspan="3">4</td></tr> <tr> <td>BS 40</td></tr> <tr> <td>BS 63</td></tr> <tr> <td>BS 80</td><td rowspan="2">20</td><td rowspan="2">14</td><td rowspan="2">4.5</td></tr> <tr> <td>BS 100</td></tr> </table>	TYPE	h	d	g	BS 16	13.5	10	3.5	BS 25	10	BS 32	16.2	10	4	BS 40	BS 63	BS 80	20	14	4.5	BS 100																												
TYPE	h	d	g																																																	
BS 16	13.5	10	3.5																																																	
BS 25		10																																																		
BS 32	16.2	10	4																																																	
BS 40																																																				
BS 63																																																				
BS 80	20	14	4.5																																																	
BS 100																																																				
REAR MOUNTING "O"		<p>DRILLING PLAN</p>	<table> <tr> <th>TYPE</th><th>a</th><th>b</th><th>f</th><th>k</th></tr> <tr> <td>BS 16</td><td rowspan="2">36</td><td rowspan="2">36</td><td rowspan="2">4.2</td><td rowspan="2">15.5</td></tr> <tr> <td>BS 25</td></tr> <tr> <td>BS 32</td><td rowspan="3">58</td><td rowspan="3">48</td><td rowspan="3">4.5</td><td rowspan="3">17</td></tr> <tr> <td>BS 40</td></tr> <tr> <td>BS 63</td></tr> <tr> <td>BS 80</td><td rowspan="2">85</td><td rowspan="2">68</td><td rowspan="2">5.3</td><td rowspan="2">20.5</td></tr> <tr> <td>BS 100</td></tr> </table>	TYPE	a	b	f	k	BS 16	36	36	4.2	15.5	BS 25	BS 32	58	48	4.5	17	BS 40	BS 63	BS 80	85	68	5.3	20.5	BS 100																									
TYPE	a	b	f	k																																																
BS 16	36	36	4.2	15.5																																																
BS 25																																																				
BS 32	58	48	4.5	17																																																
BS 40																																																				
BS 63																																																				
BS 80	85	68	5.3	20.5																																																
BS 100																																																				

Dimensional drawings for “U” type BS 125 - 630 with 5-9 elements (mm)

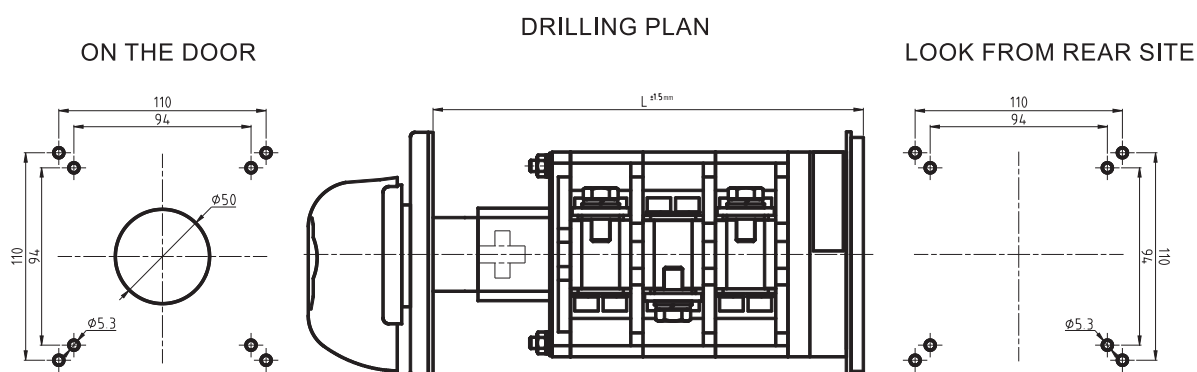


Size	Number of elements - L (mm)				
	5	6	7	8	9
BS 125	191	251	281	311	341
BS 200	236	305	344	383	422
BS 400	236	305	344	383	422
BS 630	236	305	-	383	422

Note

- For the switch with 5-9 elements the front plate is also mounted at the back side

DIMENSIONAL DRAWINGS FOR “S8” FOR BS 125 - 630



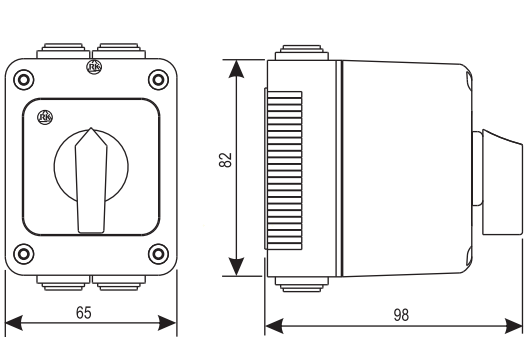
Size	Number of elements - L (mm)				
	1	2	3	4	5
BS 125	150	180	210	240	270
BS 200	159	198	237	276	315
BS 400	159	198	237	276	315
BS 630	-	198	237	-	315

SWITCHES SERIES BS 125 - BS 630

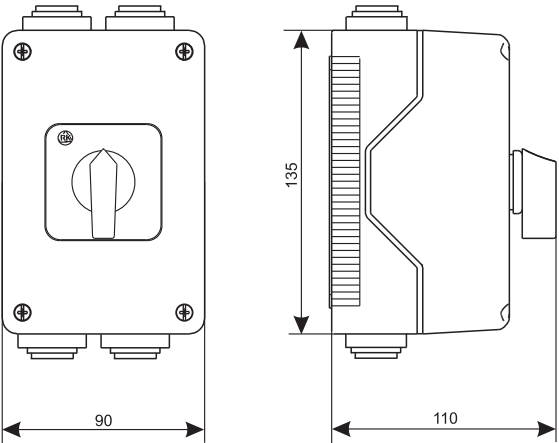
CODE	Number of elements			
	BS 125	BS 200	BS 400	BS 630
10	2	2	3	5
92	2	2	4	6
52	2	2	4	6
53	3	3	6	9
11	3	3		

DIMENSION DRAWINGS (mm)

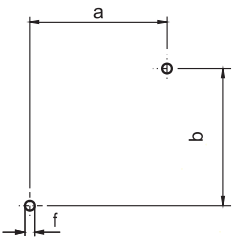
PNBS 16, 25



PNGBS 25, 32, 40



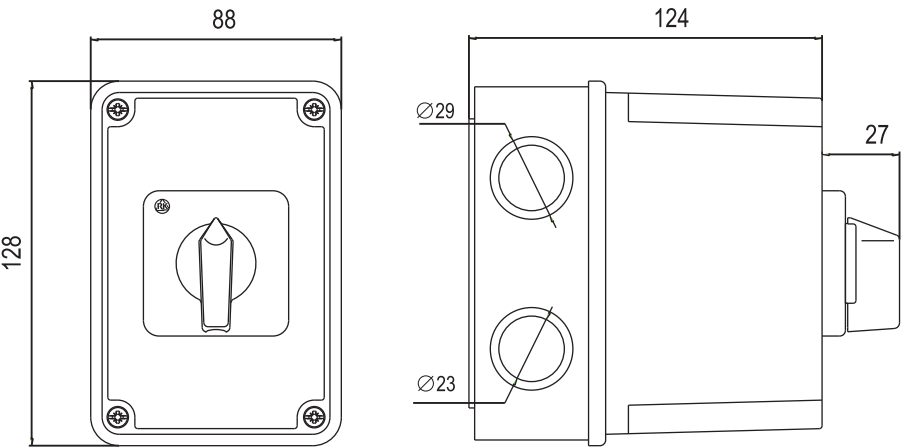
DRILLING PLAN



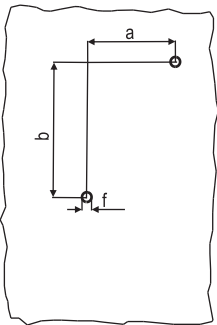
TYPE	a	b	f
PNBS 16 *	44	48	4,3
PNBS 25 *			
PNGBS 25	48	100	4,3
PNGBS 32 (LK)			
PNGBS 40 (LK)			

NOTES
* Color of enclosures is grey (RAL 7035)
* Only with connections cable up to 2.5 mm²

PN1BS 16, 25

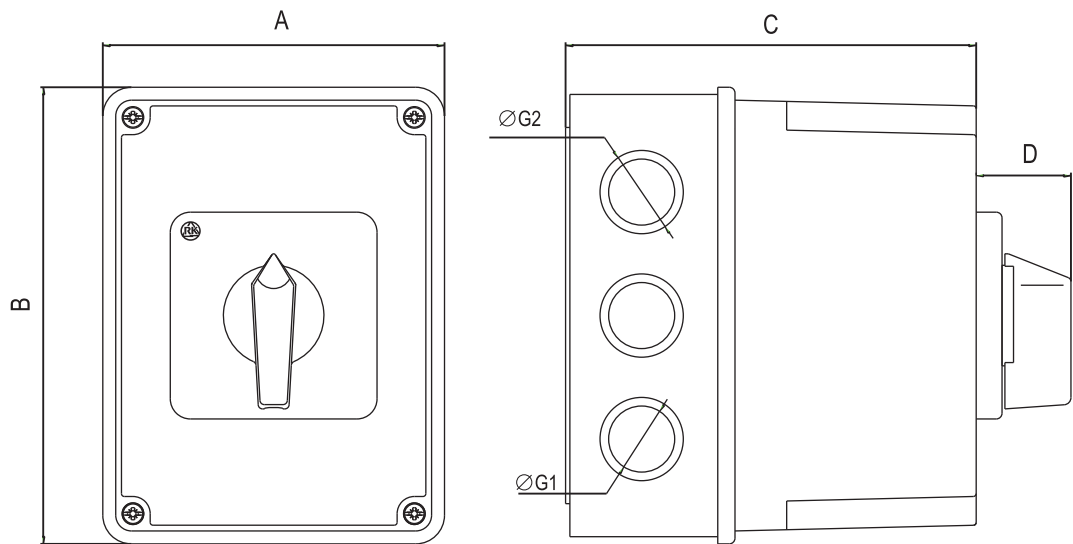


DRILLING PLAN



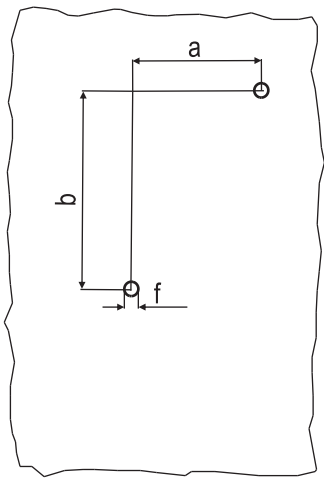
TYPE	a	b	f
PN1BS 16	42	82	4,3
PN1BS 25			

DIMENSION DRAWINGS (mm)



TYPE	MARKING					
	A	B	C	D	ØG1	ØG2
PN2BS 32 PN2BS 40 PN2BS 63	119	159	143	33	23	29
PN3BS 80 PN3BS 100	155	201	148	41	29	37
PN4BS 80 PN4BS 100	210	260	168	41	29	37
PN4BS 125 PN4BS 200	210	260	168	57	29	37

DRILLING PLAN



TYPE	a	b	f
PN2BS 32 PN2BS 40 PN2BS 63	72	112	4,5
PN3BS 80 PN3BS 100	98	144	4,5
PN4BS 80 PN4BS 100 PN4BS 125 PN4BS 200	140	194	4,3

Contents: List of Codes according pages in the catalogue

CODE	Page	Description	CODE	Page	Description	CODE	Page	Description
01	26	1 pole with self return	24	46	2 pole reversing switch	53	55	3 pole Changeover switch 1-0-2, Motor sw.
02	26	2 pole with self return	25	48	2 pole reversing switch return tu "0"	54	27	1 pole Changeover switch 1-2
03	26	3 pole with self return	26	48	3 pole reversing switch return tu "0"	55	27	2 pole Changeover switch 1-2
04	26	4 pole with self return	27	48	3 pole reversing switch with contactor	56	27	3 pole Changeover switch 1-2
05	25	1 pole with 90° switching	28	50	Star-Delta 0 ↔ Y-D	57	26	3 pole current changeover switch 1-2
06	25	2 pole with 90° switching	29	50	Star-Delta Y → 0 ↔ Y-D	58	44	Ammeter switch 2 p/L 1-L2-L3
07	25	3 pole with 90° switching	31	51	Star-Delta with contactor	60	46	Voltmeter switch without "0" 3 line voltage, 1 phase
08	25	4 pole with 90° switching	32	56	D-YY - with contactor	62	28	10 pole Changeover switch 1-2
09	25	3 pole with 360° rotation	33	55	D-YY - with contactor	66	42	Voltmeter switch with "0" 3 line voltage, 3 phase
10	25	3 pole switch	34	56	3 speed 0-D-Y-YY	67	43	Voltmeter switch with "0" 3 line voltage
11	46	3 pole reversing switch	35	57	3 speed 0-D-YY-Y	68	43	Voltmeter switch with "0" 3 phase voltage
12	49	Star-Delta switch 0-Y-D	36	57	3 speed 0-Y-D-YY	69	27	4 pole Changeover switch 1-2
13	52	Dahlander D-0-YY	37	25	7 pole switch	70	27	5 pole Changeover switch 1-2
14	47	Motor reversing 1- 0 ↔ 2	38	25	8 pole switch	71	27	6 pole Changeover switch 1-2
15	58	Switch for starting 1 f.M	39	25	9 pole switch	72	27	7 pole Changeover switch 1-2
16	58	Switch for starting 1 f.M reversing	40	25	10 pole switch	73	27	8 pole Changeover switch 1-2
17	58	Switch for starting 1 f.M permanent start	41	25	11 pole switch	74	27	9 pole Changeover switch 1-2
18	56	3 speed, with contactor	42	25	12 pole switch	75	27	4 pole Changeover switch 1-0-2
19	52	Dahlander 0 - D - YY	43	27	11 pole Changeover switch 1-2	76	27	5 pole Changeover switch 1-0-2
20	53	Dahlander YY-D-0-D-YY	44	27	12 pole Changeover switch 1-2	77	27	6 pole Changeover switch 1-0-2
21	53	Star-Delta switch D-Y-0-Y-D	49	51	Star-Delta with contact in "0"	78	27	7 pole Changeover switch 1-0-2
22	54	Motor control switch 0-1-2	51	27	1 pole Changeover switch 1-0-2	79	27	8 pole Changeover switch 1-0-2
23	54	M. control switch 2-1-0-1-2	52	27	2 pole Changeover switch 1-0-2	80	27	9 pole Changeover switch 1-0-2

Contents: List of Codes according pages in the catalogue

CODE	Page	Description	CODE	Page	Description	CODE	Page	Description
81	27	10 pole Changeover switch 1-0-2	104	32	Multi-step switch without "0" 1 pole, 10 position	127	36	Multi-step switch with "0" 2 pole, 6 position
82	28	Multi-step switch without "0" 1 pole, 3 position	105	34	Multi-step switch without "0" 1 pole, 11 position	128	36	Multi-step switch with "0" 2 pole, 7 position
83	29	Multi-step switch without "0" 1 pole, 4 position	106	33	Multi-step switch without "0" 1 pole, 12 position	129	37	Multi-step switch with "0" 2 pole, 8 position
84	29	Multi-step switch without "0" 1 pole, 5 position	107	33	Multi-step switch with "0" 1 pole, 2 position	130	37	Multi-step switch with "0" 2 pole, 9 position
85	30	Multi-step switch without "0" 1 pole, 6 position	108	34	Multi-step switch with "0" 1 pole, 3 position	131	38	Multi-step switch with "0" 2 pole, 10 position
86	28	Multi-step switch without "0" 2 pole, 3 position	109	35	Multi-step switch with "0" 1 pole, 4 position	132	38	Multi-step switch with "0" 2 pole, 11 position
87	29	Multi-step switch without "0" 2 pole, 4 position	110	35	Multi-step switch with "0" 1 pole, 5 position	133	30	Multi-step switch without "0" 3 pole, 7 position
88	29	Multi-step switch without "0" 2 pole, 5 position	111	36	Multi-step switch with "0" 1 pole, 6 position	134	31	Multi-step switch without "0" 3 pole, 8 position
89	30	Multi-step switch without "0" 2 pole, 6 position	112	36	Multi-step switch with "0" 1 pole, 7 position	135	33	Multi-step switch with "0" 3 pole, 2 position
90	25	1 pole switch	113	37	Multi-step switch with "0" 1 pole, 8 position	136	34	Multi-step switch with "0" 3 pole, 3 position
91	25	2 pole switch	114	37	Multi-step switch with "0" 1 pole, 9 position	137	35	Multi-step switch with "0" 3 pole, 4 position
92	25	4 pole switch	115	38	Multi-step switch with "0" 1 pole, 10 position	138	35	Multi-step switch with "0" 3 pole, 5 position
93	28	Multi-step switch without "0" 3 pole, 3 position	116	38	Multi-step switch with "0" 1 pole, 11 position	139	36	Multi-step switch with "0" 3 pole, 6 position
94	29	Multi-step switch without "0" 3 pole, 4 position	117	30	Multi-step switch without "0" 2 pole, 7 position	140	36	Multi-step switch with "0" 3 pole, 7 position
95	29	Multi-step switch without "0" 3 pole, 5 position	118	31	Multi-step switch without "0" 2 pole, 8 position	141	28	Multi-step switch without "0" 4 pole, 3 position
96	34	Multi-step switch without "0" 3 pole, 6 position	119	31	Multi-step switch without "0" 2 pole, 9 position	142	29	Multi-step switch without "0" 4 pole, 4 position
97	45	Ammeter switch 2 p/0-1-2-3	120	32	Multi-step switch without "0" 2 pole, 10 position	143	28	Multi-step switch without "0" 4 pole, 5 position
98	44	Ammeter switch 1 p/0-1-2-3	121	32	Multi-step switch without "0" 2 pole, 11 position	144	30	Multi-step switch without "0" 4 pole, 6 position
99	25	5 pole switch	122	33	Multi-step switch without "0" 2 pole, 12 position	145	33	Multi-step switch with "0" 4 pole, 2 position
100	25	6 pole switch	123	33	Multi-step switch with "0" 2 pole, 2 position	146	34	Multi-step switch with "0" 4 pole, 3 position
101	30	Multi-step switch without "0" 1 pole, 7 position	124	34	Multi-step switch with "0" 2 pole, 3 position	147	35	Multi-step switch with "0" 4 pole, 4 position
102	31	Multi-step switch without "0" 1 pole, 8 position	125	25	Multi-step switch with "0" 2 pole, 4 position	148	35	Multi-step switch with "0" 4 pole, 5 position
103	31	Multi-step switch without "0" 1 pole, 9 position	126	35	Multi-step switch with "0" 2 pole, 5 position	149	28	Multi-step switch without "0" 5 pole, 3 position

Contents: List of Codes according pages in the catalogue

CODE	Page	Description	CODE	Page	Description
150	29	Multi-step switch without "0" 5 pole, 4 position	203	26	Spring return switch 3 pole 1→0←2
151	33	Multi-step switch with "0" 5 pole, 2 position	204	45	Spring return switch 1↔ 2 1 make and 1 break
152	34	Multi-step switch with "0" 5 pole, 3 position	205	45	Spring return switch 1 ↔ 2 2 make and 2 break
153	35	Multi-step switch with "0" 5 pole, 4 position	206	45	Spring return switch 1 ↔ 2 3 make and 3 break
154	28	Multi-step switch without "0" 6 pole, 3 position	207	46	Spring return switch 1 ↔ 2 1 make right and 1 break left
155	29	Multi-step switch without "0" 6 pole, 4 position	208	46	Control switch 1 →↔ 2
156	33	Multi-step switch with "0" 6 pole, 2 position	209	46	Control switch 1 →↔ 2
157	34	Multi-step switch with "0" 6 pole, 3 position	210	46	Switch with spring return left and right
158	35	Multi-step switch with "0" 6 pole, 4 position	251	39	Gang switch with "0" 1 pole 2 gang
159	28	Multi-step switch without "0" 7 pole, 3 position	252	39	Gang switch with "0" 2 pole 2 gang
160	33	Multi-step switch with "0" 7 pole, 2 position	253	40	Gang switch with "0" 3 pole 2 gang
161	34	Multi-step switch with "0" 7 pole, 3 position	254	39	Gang switch with "0" 1 pole 3 gang
162	29	Multi-step switch without "0" 8 pole, 3 position	255	40	Gang switch with "0" 2 pole 3 gang
163	33	Multi-step switch with "0" 8 pole, 2 position	256	40	Gang switch with "0" 3 pole 3 gang
164	35	Multi-step switch with "0" 8 pole, 3 position	257	41	Gang switch 1 pole 2 gang
175	33	Multi-step switch with "0" 9 pole, 2 position	258	41	Gang switch 2 pole 2 gang
176	33	Multi-step switch with "0" 10 pole, 2 position	259	41	Gang switch 3 pole 2 gang
177	33	Multi-step switch with "0" 11 pole, 2 position	260	42	Gang switch 2 pole 2 gang
178	33	Multi-step switch with "0" 12 pole, 2 position	275	26	Switch with 90° switching 4 pole 1 pole preclose
182	27	11 pole Changeover switch 1-0-2	276	26	Switch with 90° switching 4 pole 3 pole preclose
183	27	12 pole Changeover switch 1-0-2	277	26	Switch with 90° switching 5 pole 2 pole preclose
201	26	Spring return switch 1 pole 1→0←2	278	26	Switch with 90° switching 5 pole 3 pole preclose
202	26	Spring return switch 2 pole 1→0←2			

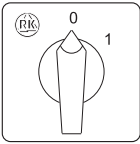
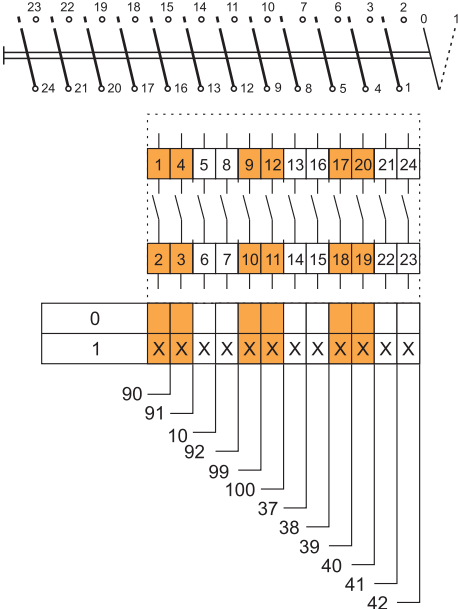
Diagrams for rotary cam switches

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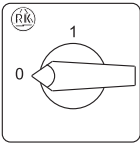
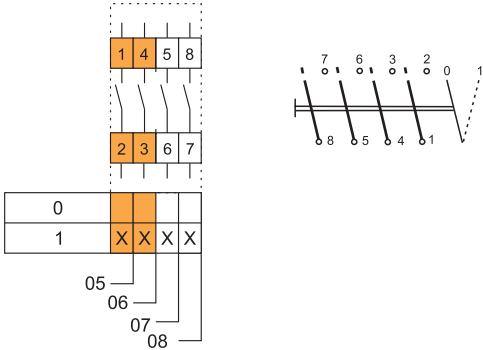
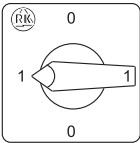
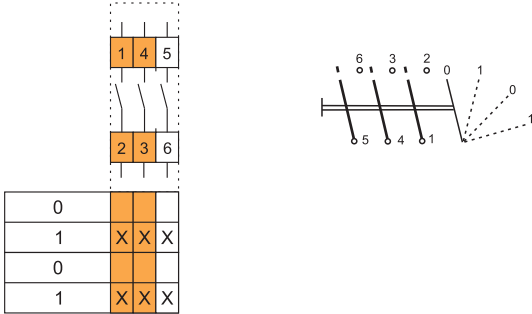
SWITCHES WITH 60° SWITCHING	25
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CHANGEOVER SWITCHES WITH "0" - 60° SWITCHING	27
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FUNCTION	Escutcheon plate	CODE	No.of elem.	Connection diagram
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SWITCHES WITH 60° SWITCHING

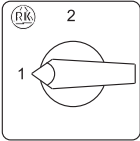
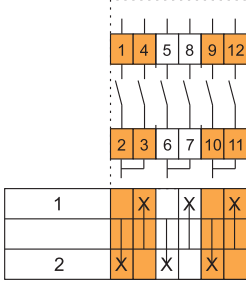
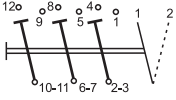
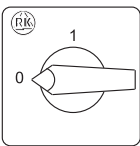
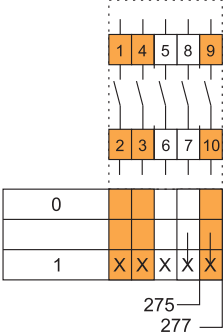
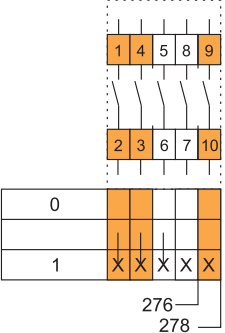
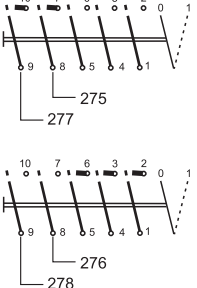
1 pole		90	1	
2 pole		91	1	
3 pole		10	2	
4 pole		92	2	
5 pole		99	3	
6 pole		100	3	
7 pole		37	4	
8 pole		38	4	
9 pole		39	5	
10 pole		40	5	
11 pole		41	6	
12 pole		42	6	

SWITCHES WITH 90° SWITCHING

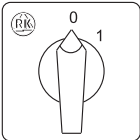
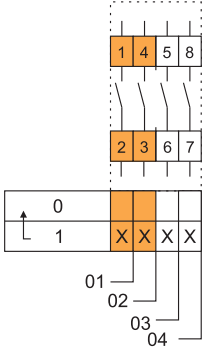

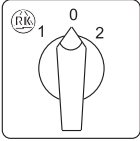
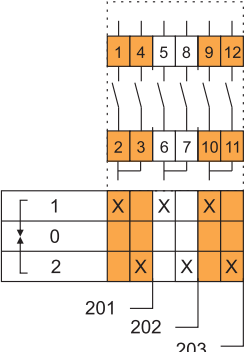
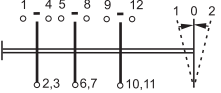
1 pole		05	1	
2 pole		06	1	
3 pole		07	2	
4 pole		08	2	
3 pole (360° rotation)		09	2	

FUNCTION	Escutcheon plate	CODE	No. of elem.	Connection diagram
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SWITCHES WITH 90° SWITCHING

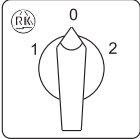
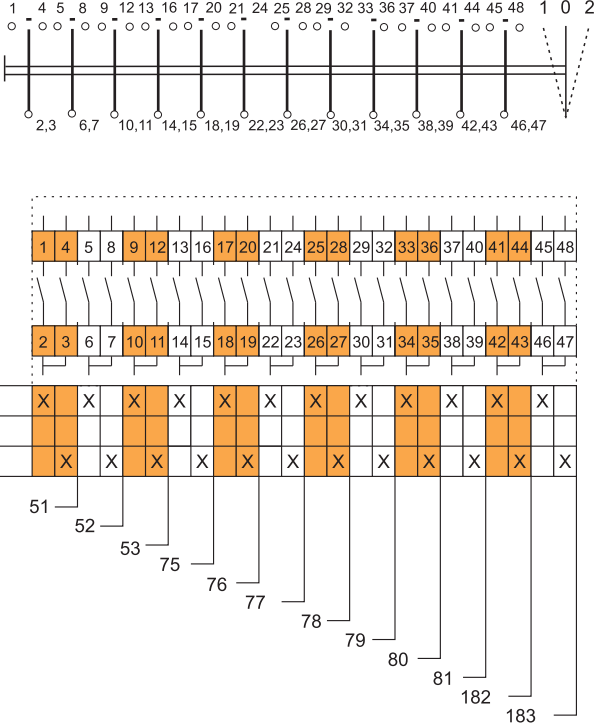
<p>3 pole current change over switch</p> 	<p>57</p> <p>3</p>	 
<p>4 pole 1 pole preclose</p> <p>5 pole 2 pole preclose</p> <p>4 pole 3 pole preclose</p> <p>5 pole 3 pole preclose</p> 	<p>275</p> <p>277</p> <p>276</p> <p>278</p> <p>2</p> <p>3</p> <p>2</p> <p>3</p>	  

SWITCHES SPRING RETURN WITH 30° SWITCHING

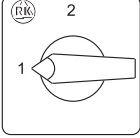
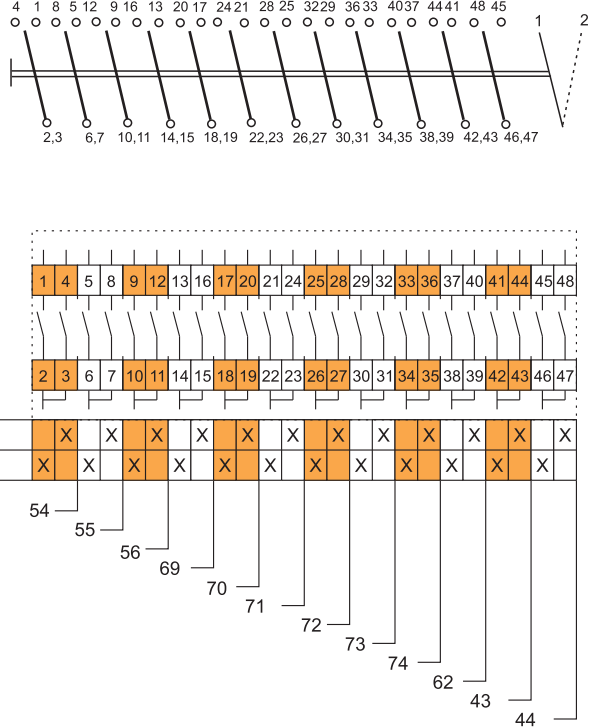
<p>1 pole</p> <p>2 pole</p> <p>3 pole</p> <p>4 pole</p> 	<p>01</p> <p>02</p> <p>03</p> <p>04</p> <p>1</p> <p>1</p> <p>2</p> <p>2</p>	 
<p>1 pole</p> <p>2 pole</p> <p>3 pole</p> <p>With spring return to "0"</p> 	<p>201</p> <p>202</p> <p>203</p> <p>1</p> <p>2</p> <p>3</p>	 

FUNCTION	Escutcheon plate	CODE	No.of elem.	Connection diagram
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CHANGEOVER SWITCHES WITH “0” - 60° SWITCHING

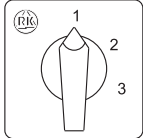
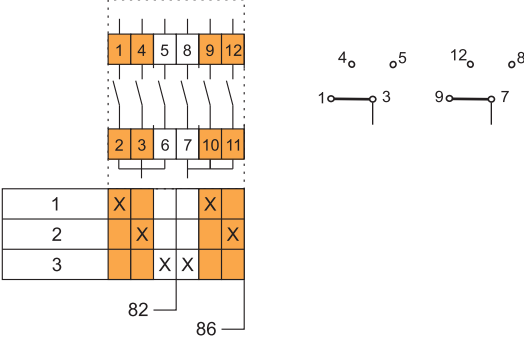
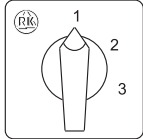
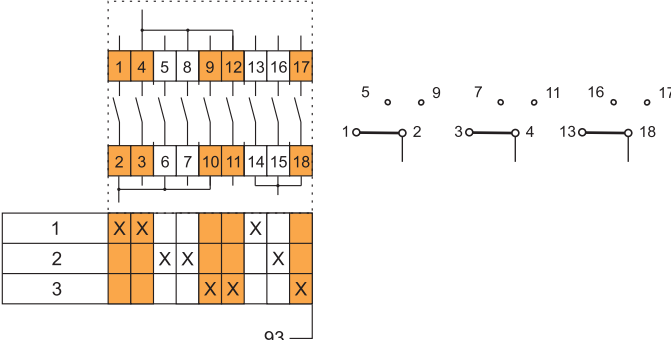
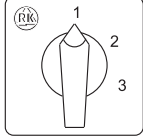
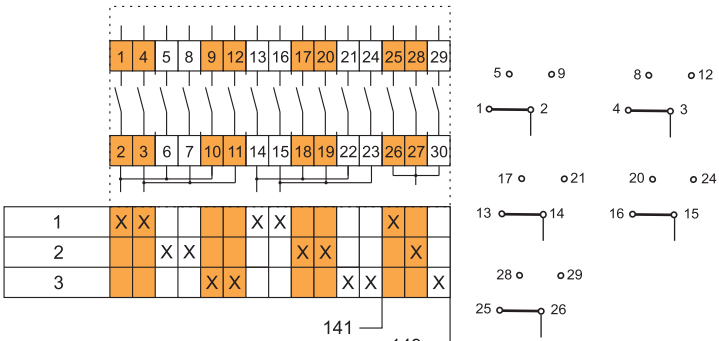
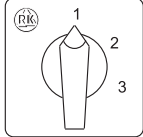
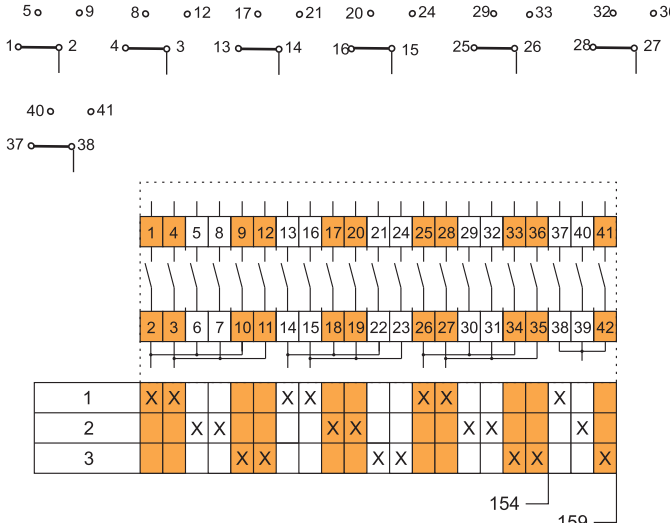
1 pole		51	1	
2 pole		52	2	
3 pole		53	3	
4 pole		75	4	
5 pole		76	5	
6 pole		77	6	
7 pole		78	7	
8 pole		79	8	
9 pole		80	9	
10 pole		81	10	
11 pole		182	11	
12 pole		183	12	

CHANGEOVER SWITCHES WITHOUT “0” - 90° SWITCHING

1 pole		54	1	
2 pole		55	2	
3 pole		56	3	
4 pole		69	4	
5 pole		70	5	
6 pole		71	6	
7 pole		72	7	
8 pole		73	8	
9 pole		74	9	
10 pole		62	10	
11 pole		43	11	
12 pole		44	12	

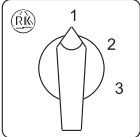
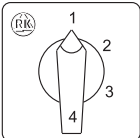
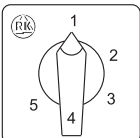
FUNCTION	Escutcheon plate	CODE	No.of elem.	Connection diagram
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MULTI-STEP SWITCHES WITHOUT “0”

<p>1 pole 2 pole</p> <p>3 positions</p> 	<p>82 86</p>	<p>2 3</p>	
<p>3 pole</p> <p>3 positions</p> 	<p>93</p>	<p>5</p>	
<p>4 pole 5 pole</p> <p>3 positions</p> 	<p>141 149</p>	<p>6 8</p>	
<p>6 pole 7 pole</p> <p>3 positions</p> 	<p>154 159</p>	<p>9 11</p>	

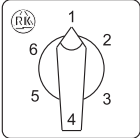
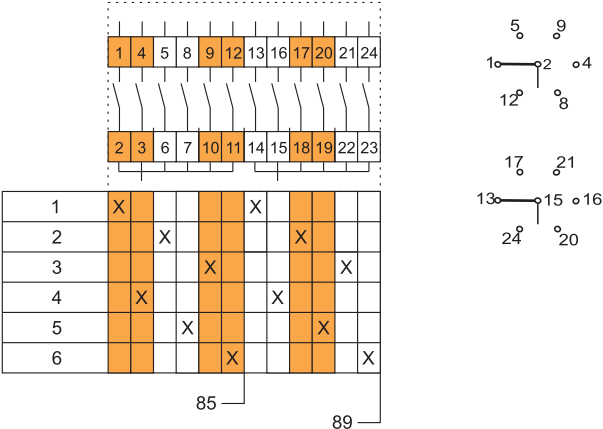
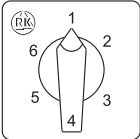
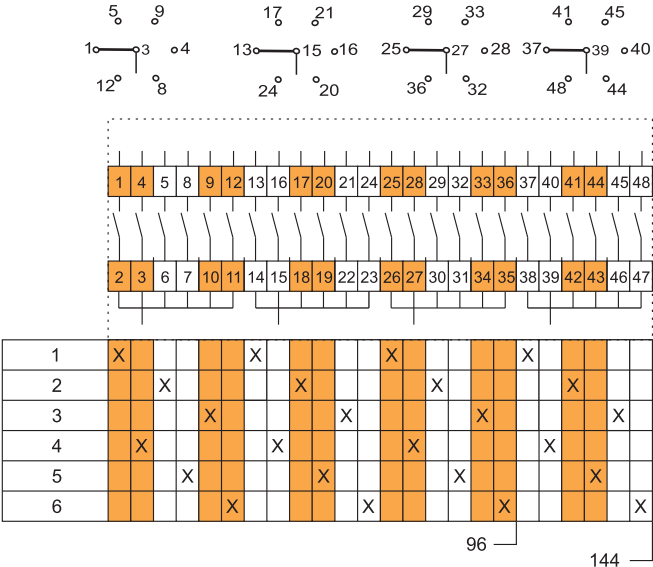
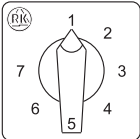
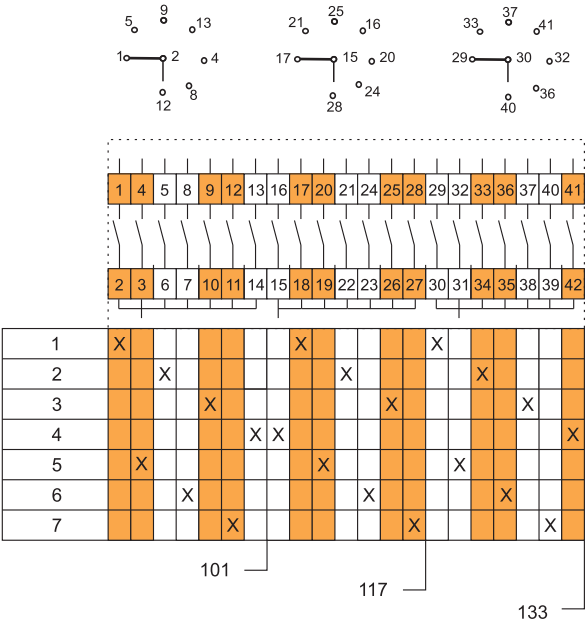
FUNCTION	Escutcheon plate	CODE	No.of elem.	Connection diagram
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MULTI-STEP SWITCHES WITHOUT “0”

<div>8 pole</div> <div>3 positions</div>		<div>162</div>	<div>12</div>	<div> <div> <div> <div>5 0 9 8 0 12 17 0 21 20 0 24 29 0 33 32 0 36</div> <div> <div>1 2</div> <div>4 3</div> <div>13 14</div> <div>16 15</div> <div>25 26</div> <div>28 27</div> </div> </div> <div> <div>41 0 45 44 0 48</div> <div> <div>37 38</div> <div>40 39</div> </div> </div> </div> <div> <div> <div> <div>1 4 5 8 9 12 13 16 17 20 21 24 25 28 29 32 33 36 37 40 41 44 45 48</div> <div> <div>2 3 6 7 10 11 14 15 18 19 22 23 26 27 30 31 34 35 38 39 42 43 46 47</div> </div> </div> <div> <div> <div>1 X X X X X X X X X X X X X X X X</div> <div>2 X X X X X X X X X X X X X X X X</div> <div>3 X X X X X X X X X X X X X X X X</div> </div> </div> </div> </div></div>
<div>1 pole</div> <div>4 positions</div> <div>2 pole</div> <div>3 pole</div> <div>4 pole</div> <div>5 pole</div> <div>6 pole</div>		<div>83</div> <div>87</div> <div>94</div> <div>142</div> <div>150</div> <div>155</div>	<div>2</div> <div>4</div> <div>6</div> <div>8</div> <div>10</div> <div>12</div>	<div> <div> <div> <div>5 0 8 13 0 16 21 0 24 29 0 32 37 0 40 45 0 48</div> <div> <div>1 3</div> <div>4 9</div> <div>11 12</div> <div>17 19</div> <div>20 25</div> <div>27 28</div> <div>33 35</div> <div>36 41</div> <div>43 44</div> </div> </div> <div> <div> <div> <div>1 4 5 8 9 12 13 16 17 20 21 24 25 28 29 32 33 36 37 40 41 44 45 48</div> <div> <div>2 3 6 7 10 11 14 15 18 19 22 23 26 27 30 31 34 35 38 39 42 43 46 47</div> </div> </div> <div> <div> <div>1 X X X X X X X X X X X X X X X X</div> <div>2 X X X X X X X X X X X X X X X X</div> <div>3 X X X X X X X X X X X X X X X X</div> <div>4 X X X X X X X X X X X X X X X X</div> </div> </div> <div> <div>83</div> <div>87</div> <div>94</div> <div>142</div> <div>150</div> <div>155</div> </div> </div> </div></div></div>
<div>1 pole</div> <div>5 positions</div> <div>2 pole</div> <div>3 pole</div> <div>4 pole</div>		<div>84</div> <div>88</div> <div>95</div> <div>143</div>	<div>3</div> <div>5</div> <div>8</div> <div>10</div>	<div> <div> <div> <div>5 9 17 12 25 29 37 32</div> <div> <div>1 3</div> <div>4 8</div> <div>13 11</div> <div>16 20</div> <div>21 23</div> <div>24 28</div> <div>33 32</div> <div>36 40</div> </div> </div> <div> <div> <div> <div>1 4 5 8 9 12 13 16 17 20 21 24 25 28 29 32 33 36 37 40</div> <div> <div>2 3 6 7 10 11 14 15 18 19 22 23 26 27 30 31 34 35 38 39</div> </div> </div> <div> <div> <div>1 X X X X X X X X X X X X X X X X</div> <div>2 X X X X X X X X X X X X X X X X</div> <div>3 X X X X X X X X X X X X X X X X</div> <div>4 X X X X X X X X X X X X X X X X</div> <div>5 X X X X X X X X X X X X X X X X</div> </div> </div> <div> <div>84</div> <div>88</div> <div>95</div> <div>143</div> </div> </div> </div></div></div>

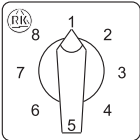
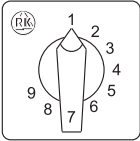
FUNCTION	Escutcheon plate	CODE	No.of elem.	Connection diagram
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MULTI-STEP SWITCHES WITHOUT “0”

<div>1 pole</div> <div>2 pole</div> <div>6 positions</div>		<div>85</div> <div>89</div>	<div>3</div> <div>6</div>	
<div>3 pole</div> <div>4 pole</div> <div>6 positions</div>		<div>96</div> <div>144</div>	<div>9</div> <div>12</div>	
<div>1 pole</div> <div>2 pole</div> <div>3 pole</div> <div>7 positions</div>		<div>101</div> <div>117</div> <div>133</div>	<div>4</div> <div>7</div> <div>11</div>	


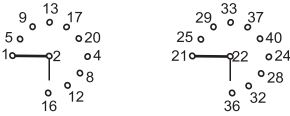
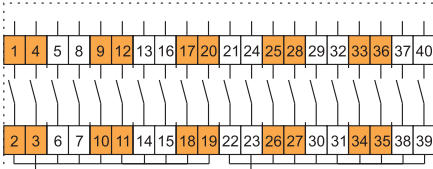
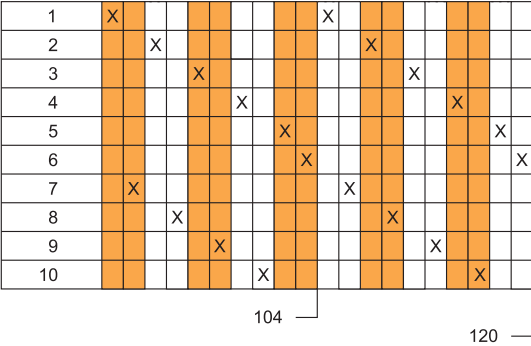
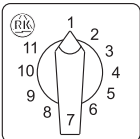
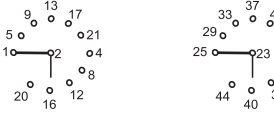
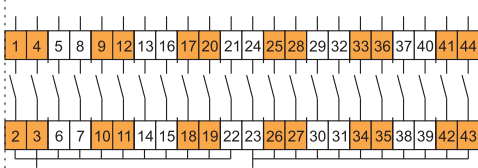
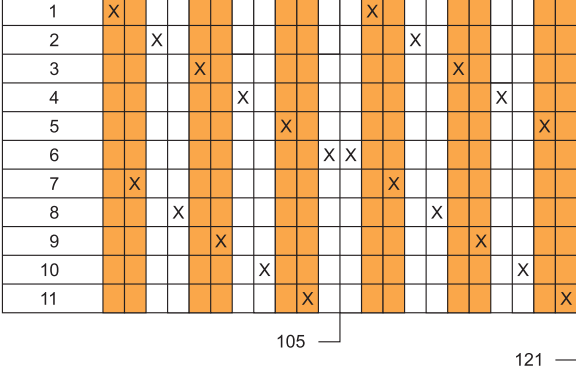
FUNCTION	Escutcheon plate	CODE	No. of elem.	Connection diagram
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MULTI-STEP SWITCHES WITHOUT “0”

<div>1 pole</div> <div>2 pole</div> <div>3 pole</div> <div>8 positions</div>		<div>102</div> <div>118</div> <div>134</div>	<div>4</div> <div>8</div> <div>12</div>	<div> </div> <div> </div> <div> </div>
<div>1 pole</div> <div>2 pole</div> <div>9 positions</div>		<div>103</div> <div>119</div>	<div>5</div> <div>9</div>	<div> </div> <div> </div> <div> </div>

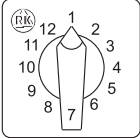
FUNCTION	Escutcheon plate	CODE	No.of elem.	Connection diagram
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MULTI-STEP SWITCHES WITHOUT “0”

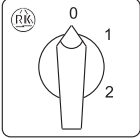
<div>1 pole</div> <div>2 pole</div> <div>10 positions</div>		<div>104</div> <div>120</div>	<div>5</div> <div>10</div>	<div>  </div> <div>  </div> <div>  </div>
<div>1 pole</div> <div>2 pole</div> <div>11 positions</div>		<div>105</div> <div>121</div>	<div>6</div> <div>11</div>	<div>  </div> <div>  </div> <div>  </div>

FUNCTION	Escutcheon plate	CODE	No.of elem.	Connection diagram
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MULTI-STEP SWITCHES WITHOUT “0”

1 pole	12 positions	106	6	<div>  </div>
2 pole		122	12	

MULTI-STEP SWITCHES WITH “0”

1 pole	2 positions	107	1	<div>  </div>
2 pole		123	2	
3 pole		135	3	
4 pole		145	4	
5 pole		151	5	
6 pole		156	6	
7 pole		160	7	
8 pole		163	8	
9 pole		175	9	
10 pole		176	10	
11 pole		177	11	
12 pole		178	12	

FUNCTION	Escutcheon plate	CODE	No.of elem.	Connection diagram
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MULTI-STEP SWITCHES WITH "0"

1 pole 2 pole	3 positions		108 124	2 3	<table><tr><td>0</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1</td><td>X</td><td></td><td></td><td>X</td><td></td></tr><tr><td>2</td><td></td><td></td><td>X</td><td>X</td><td></td></tr><tr><td>3</td><td></td><td>X</td><td></td><td></td><td>X</td></tr></table>	0						1	X			X		2			X	X		3		X			X																																																								
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2			X	X																																																																																	
3		X			X																																																																																
3 pole	3 positions		136	5	<table><tr><td>0</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1</td><td>X</td><td>X</td><td></td><td></td><td></td><td>X</td><td></td><td></td></tr><tr><td>2</td><td></td><td></td><td>X</td><td>X</td><td></td><td></td><td></td><td>X</td></tr><tr><td>3</td><td></td><td></td><td></td><td>X</td><td>X</td><td></td><td>X</td><td></td></tr></table>	0									1	X	X				X			2			X	X				X	3				X	X		X																																													
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2			X	X				X																																																																													
3				X	X		X																																																																														
4 pole 5 pole	3 positions		146 152	6 8	<table><tr><td>0</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1</td><td>X</td><td>X</td><td></td><td></td><td></td><td>X</td><td>X</td><td></td><td></td><td>X</td><td></td><td></td><td></td><td></td></tr><tr><td>2</td><td></td><td></td><td>X</td><td>X</td><td></td><td></td><td>X</td><td>X</td><td></td><td></td><td>X</td><td></td><td></td><td>X</td></tr><tr><td>3</td><td></td><td></td><td></td><td>X</td><td>X</td><td></td><td></td><td>X</td><td>X</td><td></td><td>X</td><td>X</td><td></td><td></td></tr></table>	0															1	X	X				X	X			X					2			X	X			X	X			X			X	3				X	X			X	X		X	X																						
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6 pole 7 pole	3 positions		157 161	9 11	<table><tr><td>0</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1</td><td>X</td><td>X</td><td></td><td></td><td></td><td>X</td><td>X</td><td></td><td></td><td>X</td><td>X</td><td></td><td></td><td>X</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>2</td><td></td><td></td><td>X</td><td>X</td><td></td><td></td><td>X</td><td>X</td><td></td><td></td><td>X</td><td>X</td><td></td><td></td><td>X</td><td></td><td></td><td></td><td>X</td></tr><tr><td>3</td><td></td><td></td><td></td><td>X</td><td>X</td><td></td><td></td><td>X</td><td>X</td><td></td><td></td><td>X</td><td>X</td><td></td><td></td><td>X</td><td>X</td><td></td><td></td></tr></table>	0																				1	X	X				X	X			X	X			X						2			X	X			X	X			X	X			X				X	3				X	X			X	X			X	X			X	X		
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3				X	X			X	X			X	X			X	X																																																																				

FUNCTION	Escutcheon plate	CODE	No.of elem.	Connection diagram
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MULTI-STEP SWITCHES WITH “0”

<div>8 pole</div> <div>3 positions</div>		<div>164</div>	<div>12</div>	
<div>1 pole</div> <div>2 pole</div> <div>3 pole</div> <div>4 pole</div> <div>5 pole</div> <div>6 pole</div>	<div>4 positions</div>	<div>109</div> <div>125</div> <div>137</div> <div>147</div> <div>153</div> <div>158</div>	<div>2</div> <div>4</div> <div>6</div> <div>8</div> <div>10</div> <div>12</div>	
<div>1 pole</div> <div>2 pole</div> <div>3 pole</div> <div>4 pole</div>	<div>5 positions</div>	<div>110</div> <div>126</div> <div>138</div> <div>148</div>	<div>3</div> <div>5</div> <div>8</div> <div>10</div>	

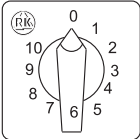
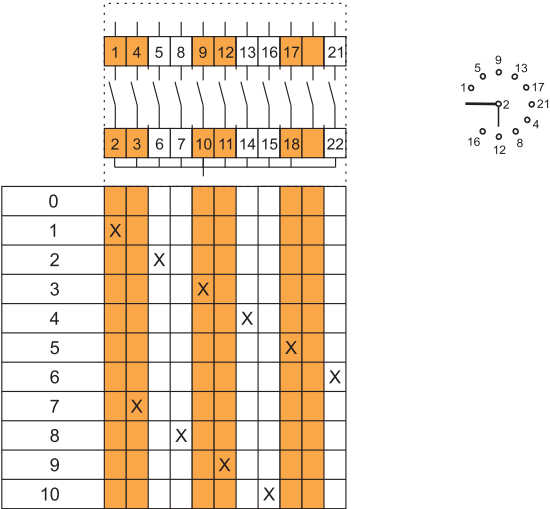

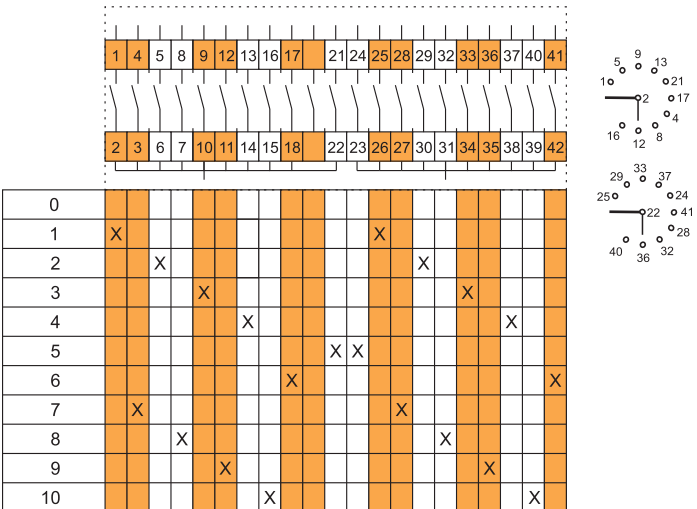
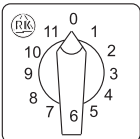
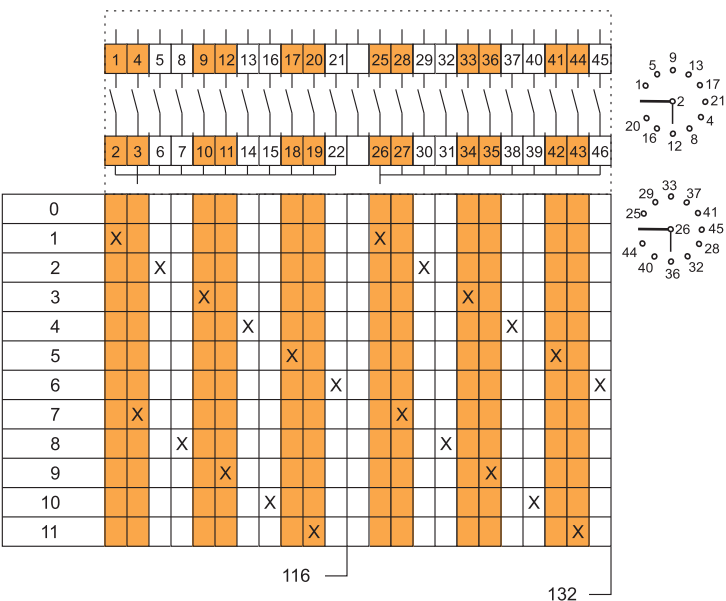
FUNCTION	Escutcheon plate	CODE	No. of elem.	Connection diagram
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MULTI-STEP SWITCHES WITH “0”

<div>1 pole</div> <div>6 positions</div> <div> </div> <div>111</div> <div>4</div> <div> </div>	<div>2 pole</div> <div>6 positions</div> <div> </div> <div>127</div> <div>7</div> <div> </div>	<div>1 pole</div> <div>7 positions</div> <div> </div> <div>112</div> <div>4</div> <div> </div>
<div>3 pole</div> <div>6 positions</div> <div> </div> <div>139</div> <div>11</div> <div> </div>	<div>2 pole</div> <div>7 positions</div> <div> </div> <div>128</div> <div>8</div> <div> </div>	<div>3 pole</div> <div>7 positions</div> <div> </div> <div>140</div> <div>12</div> <div> </div>

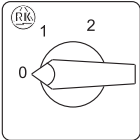
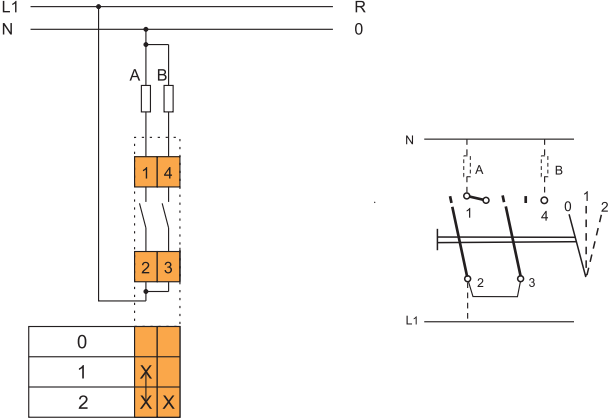
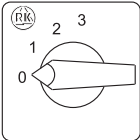
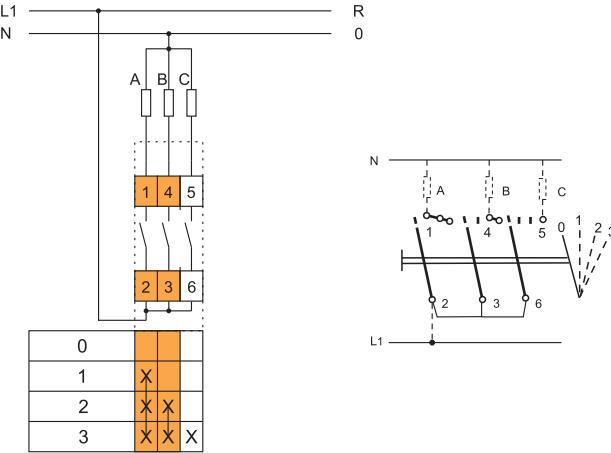
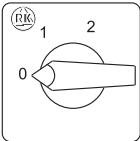
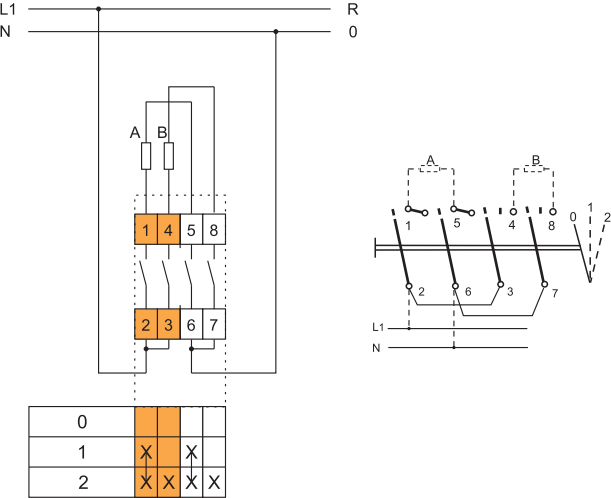
FUNCTION	Escutcheon plate	CODE	No.of elem.	Connection diagram
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MULTI-STEP SWITCHES WITH “0”

<div>1 pole</div> <div>10 positions</div>		115	6	
<div>2 pole</div> <div>10 positions</div>		131	11	
<div>1 pole</div> <div>11 positions</div> <div>2 pole</div>		116 132	6 12	 <div>116</div> <div>132</div>

FUNCTION	Escutcheon plate	CODE	No.of elem.	Connection diagram
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GANG SWITCHES

<p>1 pole</p> <p>2 GANG Switching sequence: 0, A, A+B</p>		<p>251</p>	<p>1</p>	
<p>1 pole</p> <p>3 GANG Switching sequence: 0, A, A+B, A+B+c</p>		<p>254</p>	<p>2</p>	
<p>2 pole</p> <p>2 GANG Switching sequence: 0, A, A+B</p>		<p>252</p>	<p>2</p>	

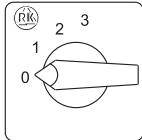
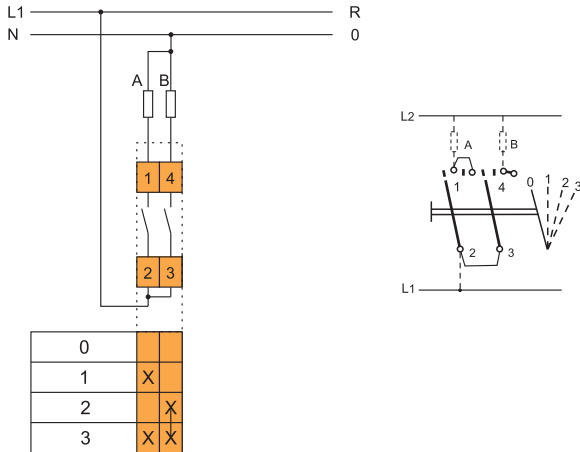
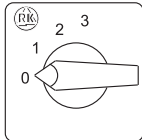
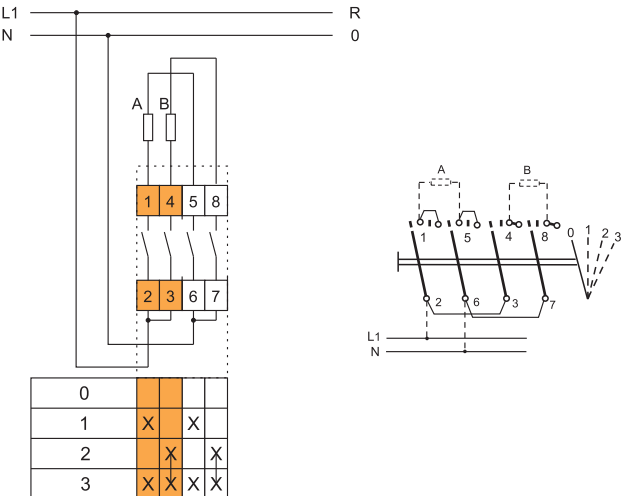
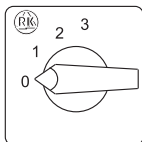
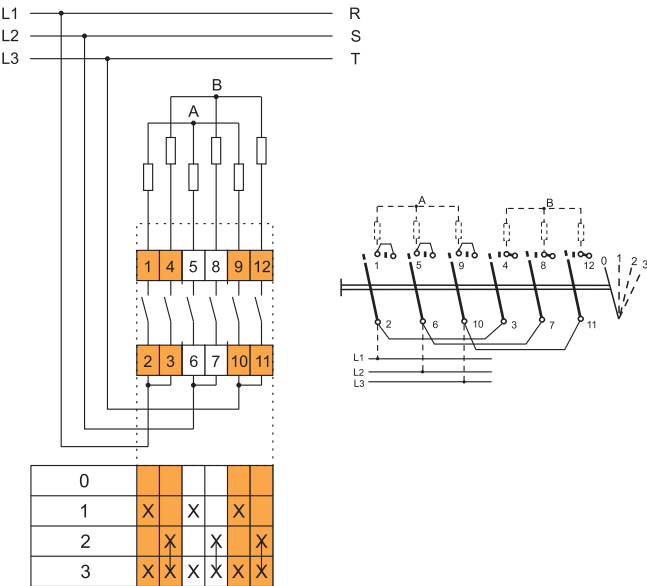
FUNCTION	Escutcheon plate	CODE	No.of elem.	Connection diagram
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GANG SWITCHES

<div>2 pole</div> <div>3 GANG Switching sequence: 0, A, A+B, A+B+C</div>		255	3	<div><div><div>L1 N</div><div>R 0</div></div><div><div><div>A</div><div>B</div><div>C</div></div><div><div>1 4 5 8 9 12</div><div>2 3 6 7 10 11</div></div></div><div><table><tr><td>0</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1</td><td>X</td><td></td><td></td><td></td><td>X</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>2</td><td>X</td><td>X</td><td></td><td></td><td>X</td><td>X</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>3</td><td>X</td><td>X</td><td>X</td><td></td><td>X</td><td>X</td><td>X</td><td></td><td></td><td></td><td></td></tr></table></div><div><div><div>A</div><div>B</div><div>C</div></div><div><div>1 8 4 9 5 12</div><div>2 7 3 10 6 11</div></div><div><div>L1</div><div>N</div></div></div></div>	0												1	X				X							2	X	X			X	X						3	X	X	X		X	X	X																								
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<div>3 pole</div> <div>2 GANG Switching sequence: 0, A, A+B</div>		253	3	<div><div><div>L1 L2 L3</div><div>R S T</div></div><div><div><div>B</div><div>A</div></div><div><div>1 4 5 8 9 12</div><div>2 3 6 7 10 11</div></div></div><div><table><tr><td>0</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1</td><td>X</td><td></td><td></td><td></td><td>X</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>2</td><td>X</td><td>X</td><td></td><td></td><td>X</td><td>X</td><td></td><td></td><td></td><td></td><td></td></tr></table></div><div><div><div>A</div><div>B</div></div><div><div>1 5 9 4 8 12</div><div>2 6 10 3 7 11</div></div><div><div>L1</div><div>L2</div><div>L3</div></div></div></div>	0												1	X				X							2	X	X			X	X																																					
0																																																																								
1	X				X																																																																			
2	X	X			X	X																																																																		
<div>3 pole</div> <div>3 GANG Switching sequence: 0, A, A+B, A+B+C</div>		256	5	<div><div><div><div>C</div><div>B</div><div>A</div></div><div><div>1 4 5 8 9 12 13 16 17</div><div>2 3 6 7 10 11 14 15 18</div></div></div><div><table><tr><td>0</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1</td><td>X</td><td></td><td></td><td></td><td>X</td><td></td><td></td><td></td><td>X</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>2</td><td>X</td><td>X</td><td></td><td></td><td>X</td><td>X</td><td></td><td></td><td>X</td><td>X</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>3</td><td>X</td><td>X</td><td>X</td><td></td><td>X</td><td>X</td><td>X</td><td></td><td>X</td><td>X</td><td>X</td><td></td><td></td><td></td><td></td><td></td></tr></table></div><div><div><div>A</div><div>B</div><div>C</div></div><div><div>1 8 13 4 9 16 5 12 17 0</div><div>2 7 14 3 10 15 6 11 18</div></div><div><div>L1</div><div>L2</div><div>L3</div></div></div><div><div><div>L1</div><div>L2</div><div>L3</div></div><div><div>R</div><div>S</div><div>T</div></div></div></div>	0																	1	X				X				X								2	X	X			X	X			X	X							3	X	X	X		X	X	X		X	X	X					
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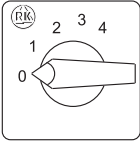
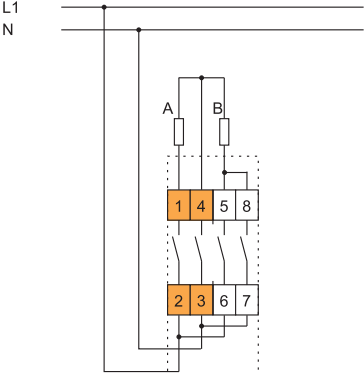
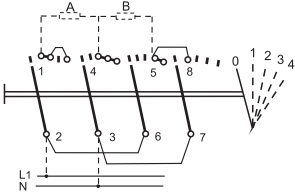
FUNCTION	Escutcheon plate	CODE	No. of elem.	Connection diagram
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GANG SWITCHES

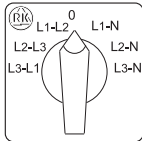
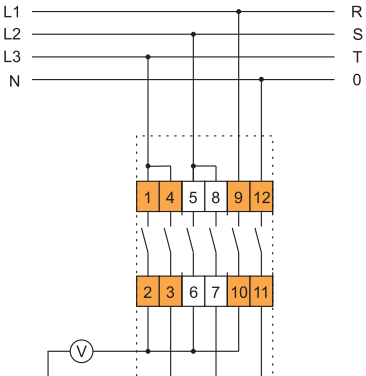
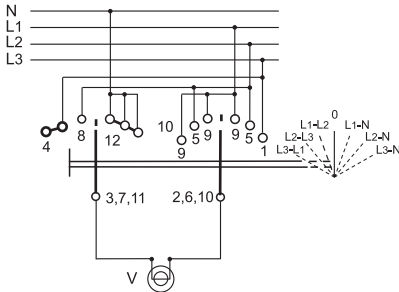
<p>1 pole</p> <p>2 GANG</p> <p>Switching sequence: 0, A, B,A+B</p>		257	1	 <table><tr><td>0</td><td></td><td></td></tr><tr><td>1</td><td>X</td><td></td></tr><tr><td>2</td><td></td><td>X</td></tr><tr><td>3</td><td>X</td><td>X</td></tr></table>	0			1	X		2		X	3	X	X								
0																								
1	X																							
2		X																						
3	X	X																						
<p>2 pole</p> <p>2 GANG</p> <p>Switching sequence: 0, A, B, A+B</p>		258	2	 <table><tr><td>0</td><td></td><td></td><td></td></tr><tr><td>1</td><td>X</td><td></td><td>X</td></tr><tr><td>2</td><td></td><td>X</td><td>X</td></tr><tr><td>3</td><td>X</td><td>X</td><td>X</td></tr></table>	0				1	X		X	2		X	X	3	X	X	X				
0																								
1	X		X																					
2		X	X																					
3	X	X	X																					
<p>3 pole</p> <p>2 GANG</p> <p>Switching sequence: 0, A, B, A+B</p>		259	3	 <table><tr><td>0</td><td></td><td></td><td></td><td></td></tr><tr><td>1</td><td>X</td><td></td><td>X</td><td>X</td></tr><tr><td>2</td><td></td><td>X</td><td></td><td>X</td></tr><tr><td>3</td><td>X</td><td>X</td><td>X</td><td>X</td></tr></table>	0					1	X		X	X	2		X		X	3	X	X	X	X
0																								
1	X		X	X																				
2		X		X																				
3	X	X	X	X																				

FUNCTION	Escutcheon plate	CODE	No.of elem.	Connection diagram
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GANG SWITCHES

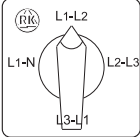
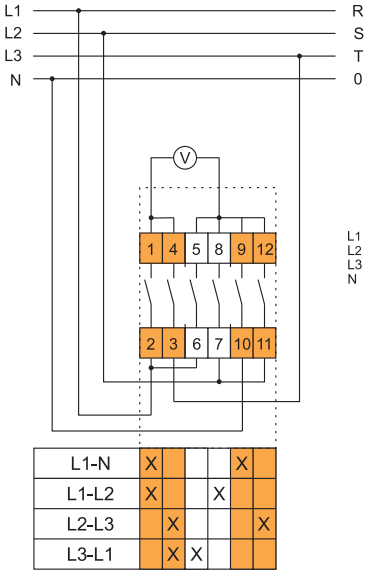
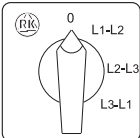
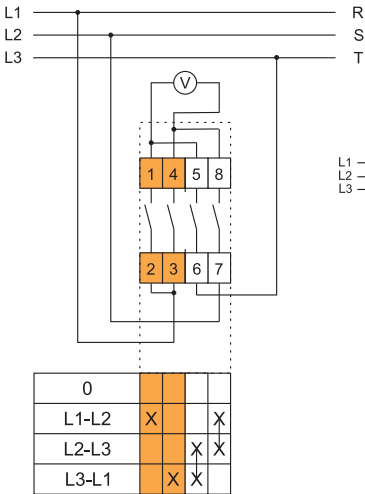
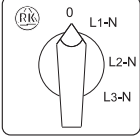
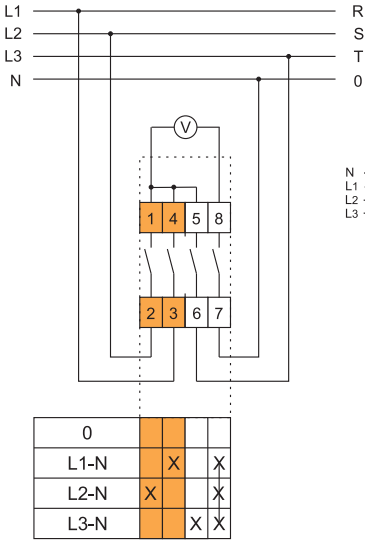
<p>2 pole</p> <p>2 GANG Switching sequence: 0, A+B, series, A, B A+B parallel</p>		<p>260</p>	<p>2</p>	<div> <div>  </div> <div>  </div> <div> <table border="1"> <tr><td>0</td><td></td><td></td><td></td><td></td></tr> <tr><td>1</td><td>X</td><td></td><td></td><td>X</td></tr> <tr><td>2</td><td>X</td><td>X</td><td></td><td></td></tr> <tr><td>3</td><td></td><td>X</td><td>X</td><td></td></tr> <tr><td>4</td><td>X</td><td>X</td><td>X</td><td></td></tr> </table> </div> </div>	0					1	X			X	2	X	X			3		X	X		4	X	X	X	
0																													
1	X			X																									
2	X	X																											
3		X	X																										
4	X	X	X																										

VOLTMETER SWITCHES

3 line voltage and 3 phase voltage		66	3	<div><div></div><div><table><tr><td>L3-L1</td><td></td><td>X</td><td></td><td>X</td></tr><tr><td>L2-L3</td><td></td><td>X</td><td>X</td><td></td></tr><tr><td>L1-L2</td><td></td><td></td><td>X</td><td>X</td></tr><tr><td>0</td><td></td><td></td><td></td><td></td></tr><tr><td>L1-N</td><td></td><td></td><td></td><td>X</td><td>X</td></tr><tr><td>L2-N</td><td></td><td></td><td>X</td><td></td><td>X</td></tr><tr><td>L3-N</td><td>X</td><td></td><td></td><td></td><td>X</td></tr></table></div><div></div></div>	L3-L1		X		X	L2-L3		X	X		L1-L2			X	X	0					L1-N				X	X	L2-N			X		X	L3-N	X				X
L3-L1		X		X																																						
L2-L3		X	X																																							
L1-L2			X	X																																						
0																																										
L1-N				X	X																																					
L2-N			X		X																																					
L3-N	X				X																																					

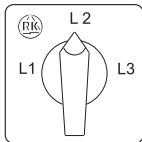
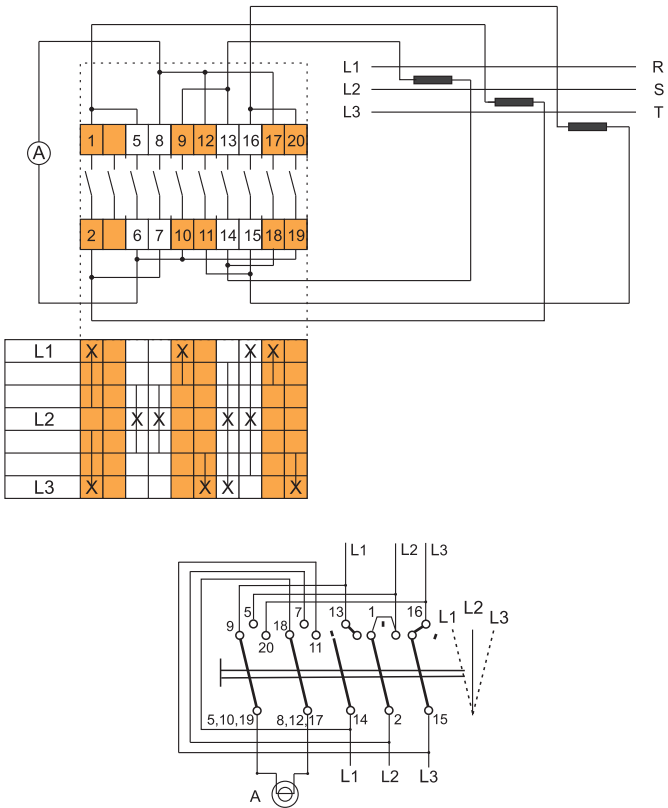
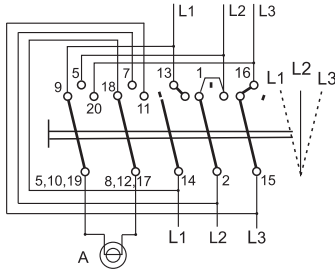
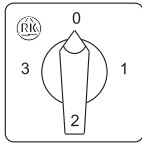
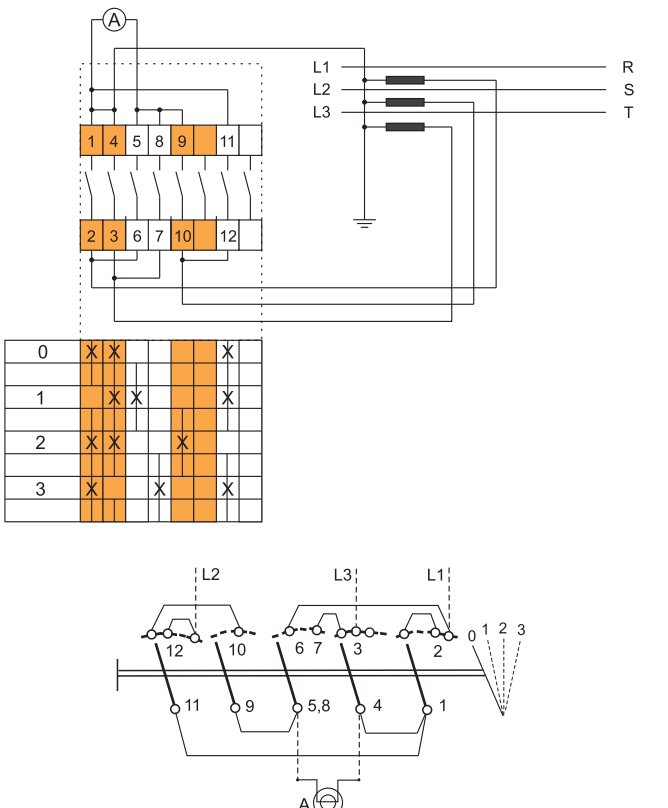
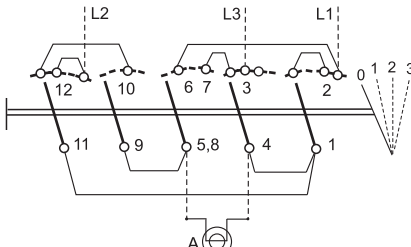
FUNCTION	Escutcheon plate	CODE	No.of elem.	Connection diagram
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VOLTMETER SWITCHES

<div>3 line voltage and 1 phase voltage</div>	<div>  </div>	<div>60</div>	<div>3</div>	<div>  </div>
<div>3 line voltage</div>	<div>  </div>	<div>67</div>	<div>2</div>	<div>  </div>
<div>3 phase voltage</div>	<div>  </div>	<div>68</div>	<div>2</div>	<div>  </div>

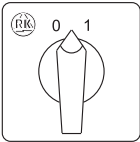
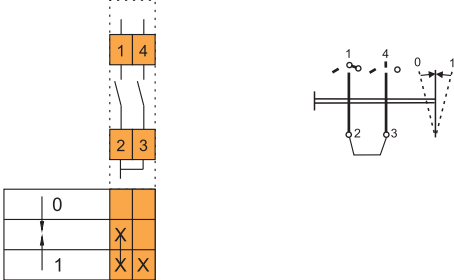

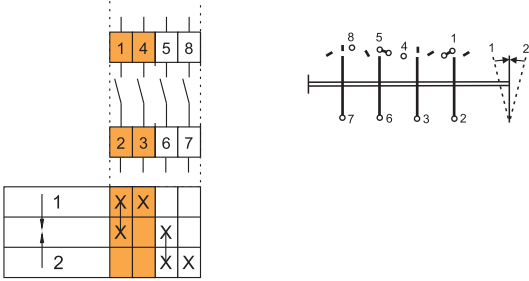

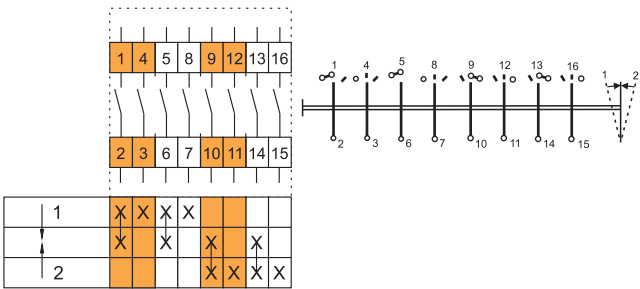
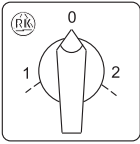
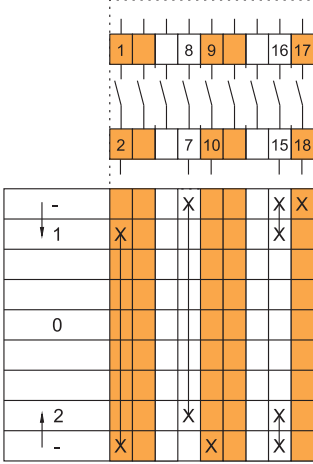
FUNCTION	Escutcheon plate	CODE	No.of elem.	Connection diagram
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AMMETER SWITCHES

<div>2 pole 3 currents (with or without current transformers)</div>	<div></div>	<div>58</div>	<div>5</div>	<div><table><tr><td>L1</td><td>X</td><td></td><td></td><td>X</td><td></td><td></td><td>X</td><td>X</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>L2</td><td></td><td></td><td></td><td></td><td>X</td><td>X</td><td></td><td></td><td></td><td></td><td>X</td><td>X</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>L3</td><td>X</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>X</td><td>X</td><td></td><td></td><td></td><td></td><td>X</td><td></td><td></td><td></td><td></td><td></td></tr></table></div>	L1	X			X			X	X													L2					X	X					X	X									L3	X								X	X					X					
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L2					X	X					X	X																																																							
L3	X								X	X					X																																																				
<div>1 pole 3 currents (with current transformer)</div>	<div></div>	<div>98</div>	<div>4</div>	<div><table><tr><td>0</td><td>X</td><td>X</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>X</td></tr><tr><td>1</td><td></td><td></td><td>X</td><td>X</td><td></td><td></td><td></td><td></td><td></td><td></td><td>X</td></tr><tr><td>2</td><td>X</td><td>X</td><td></td><td></td><td></td><td>X</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>3</td><td>X</td><td></td><td></td><td></td><td>X</td><td></td><td></td><td></td><td></td><td></td><td>X</td></tr></table></div>	0	X	X									X	1			X	X							X	2	X	X				X						3	X				X						X															
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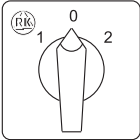
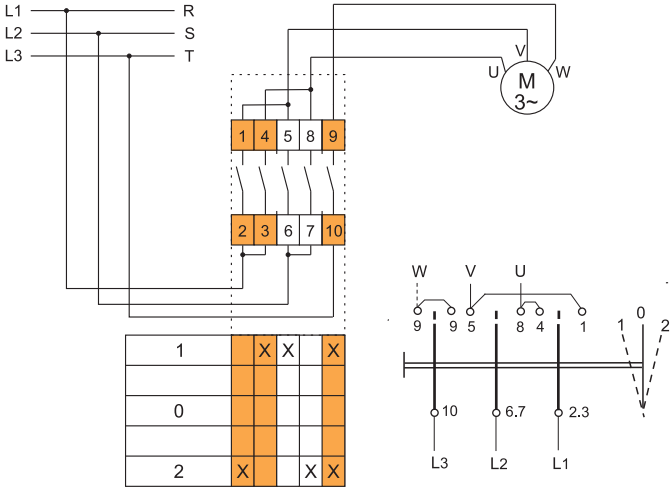
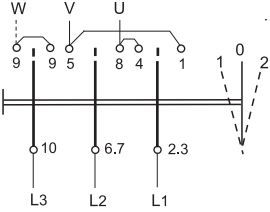
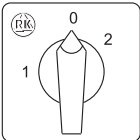
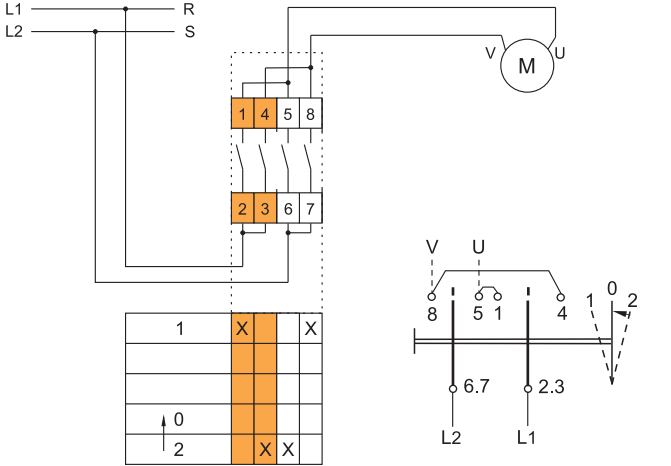
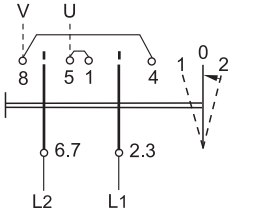
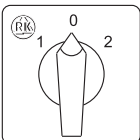
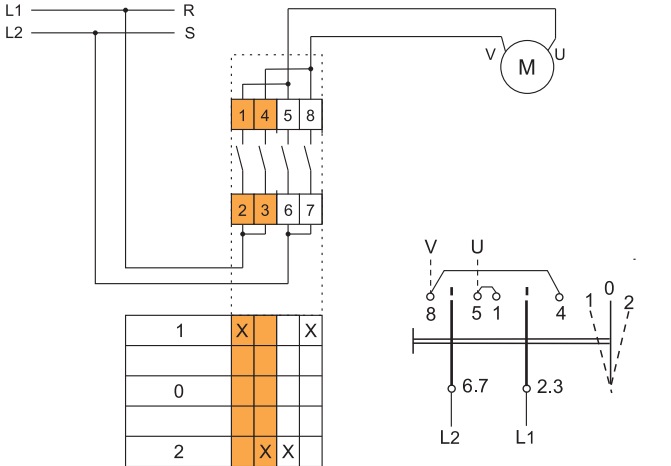
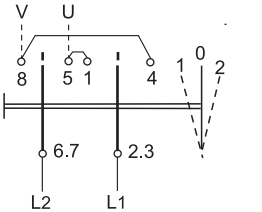
FUNCTION	Escutcheon plate	CODE	No.of elem.	Connection diagram
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CONTROL SWITCHES (with spring return)

<p>1 make right and 1 break left</p>		<p>207</p>	<p>1</p>	
<p>1 make, 1 break right 1 make, 1 break left</p>		<p>208</p>	<p>2</p>	
<p>2 makes, 2 breaks right 2 makes, 2 breaks left</p>		<p>209</p>	<p>4</p>	
<p>Switch with spring return left and right</p>		<p>210</p>	<p>5</p>	

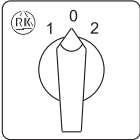
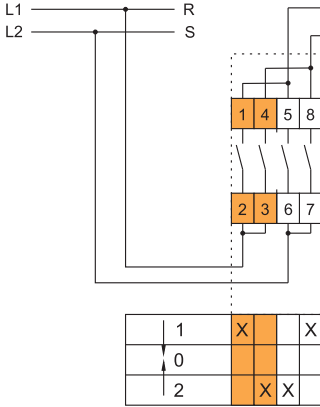
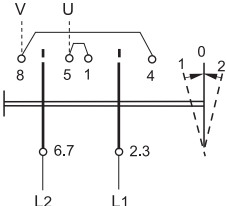
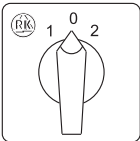
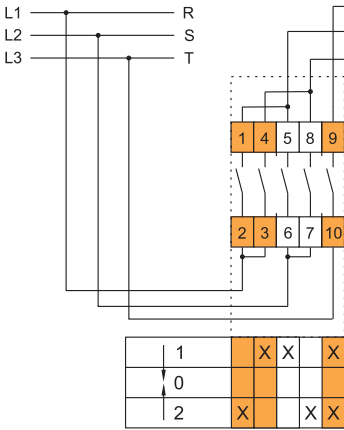
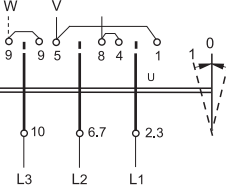
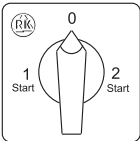
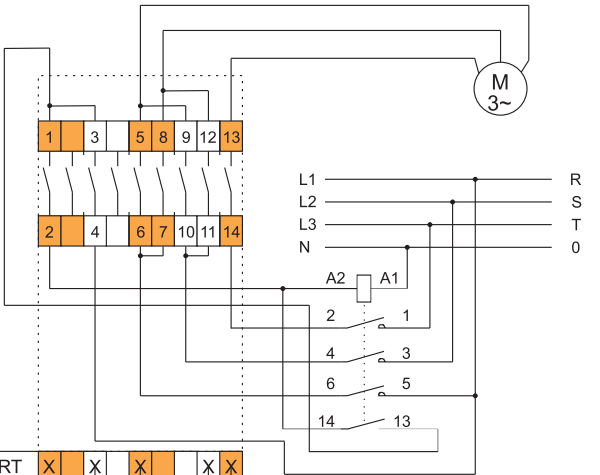
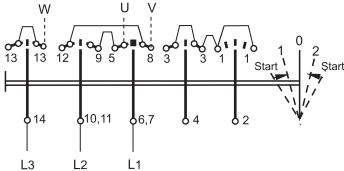
FUNCTION	Escutcheon plate	CODE	No. of elem.	Connection diagram
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MOTOR REVERSING SWITCHES

3 pole		11	3	 
2 pole return from 2 to "0"		14	2	 
2 pole		24	2	 

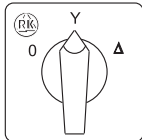
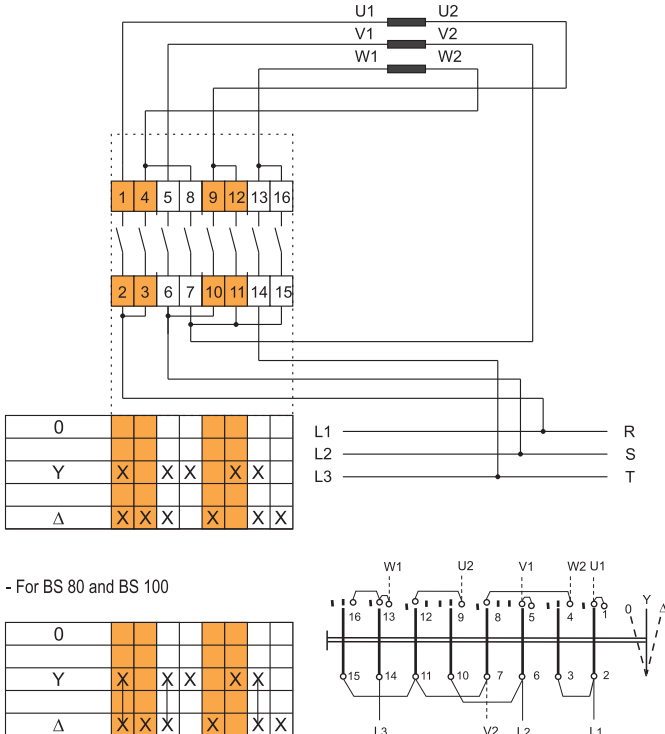
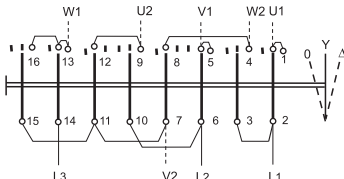
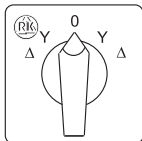
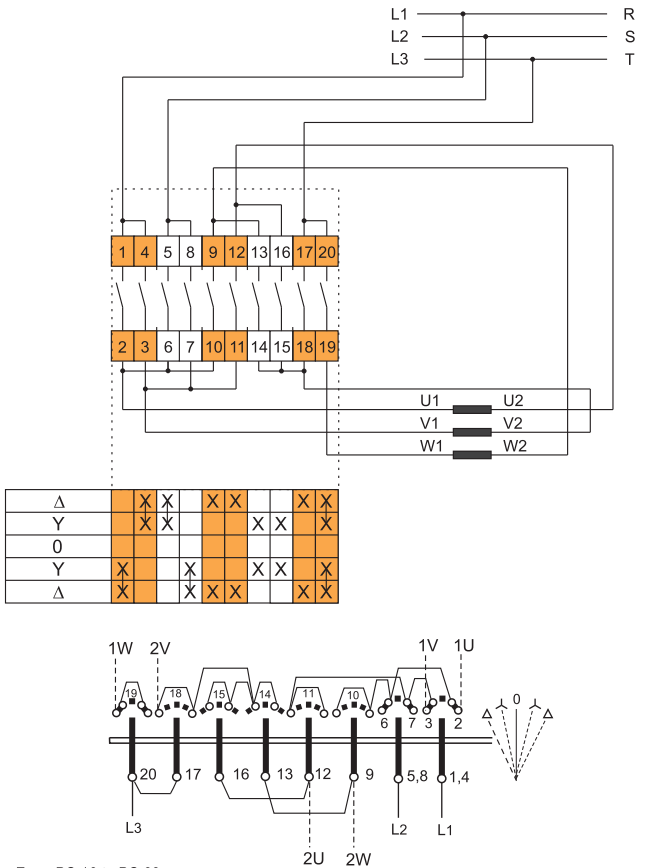
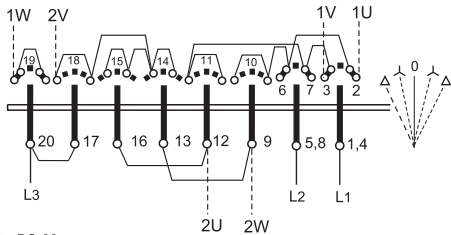
FUNCTION	Escutcheon plate	CODE	No. of elem.	Connection diagram
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MOTOR REVERSING SWITCHES

<div>2 pole return tu "0"</div>		25	2	<div>   </div>
<div>3 pole return to "0"</div>		26	3	<div>   </div>
<div>3 pole with contactor</div>		27	5	<div>   </div>

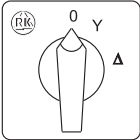
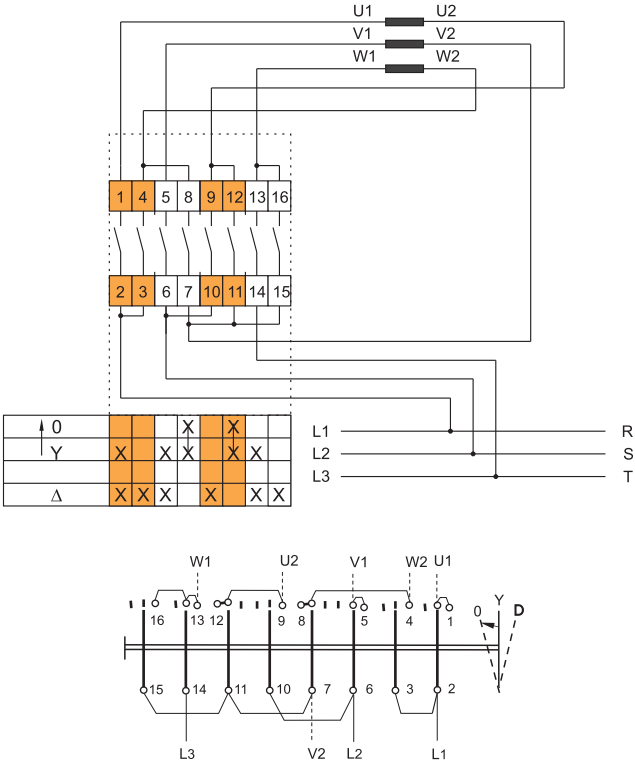

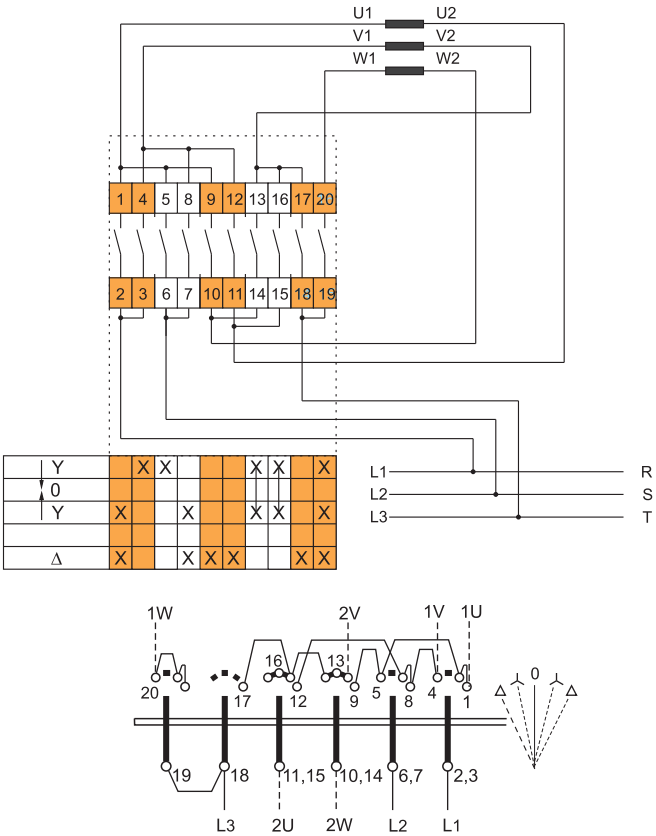
FUNCTION	Escutcheon plate	CODE	No.of elem.	Connection diagram
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STAR - DELTA SWITCHES

Standard version		12	4	 <p>U1 U2 V1 V2 W1 W2</p> <p>1 4 5 8 9 12 13 16 2 3 6 7 10 11 14 15</p> <table><tr><td>0</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>Y</td><td>X</td><td></td><td>X</td><td>X</td><td></td><td>X</td><td>X</td></tr><tr><td>Δ</td><td>X</td><td>X</td><td>X</td><td></td><td>X</td><td>X</td><td>X</td></tr></table> <p>L1 L2 L3 R S T</p> <p>- For BS 80 and BS 100</p> <table><tr><td>0</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>Y</td><td>X</td><td></td><td>X</td><td>X</td><td></td><td>X</td><td>X</td></tr><tr><td>Δ</td><td>X</td><td>X</td><td>X</td><td></td><td>X</td><td>X</td><td>X</td></tr></table> 	0								Y	X		X	X		X	X	Δ	X	X	X		X	X	X	0								Y	X		X	X		X	X	Δ	X	X	X		X	X	X		
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Y	X		X	X		X	X																																															
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0																																																						
Y	X		X	X		X	X																																															
Δ	X	X	X		X	X	X																																															
Reversing		21	5	 <p>L1 L2 L3 R S T</p> <p>U1 U2 V1 V2 W1 W2</p> <p>1 4 5 8 9 12 13 16 17 20 2 3 6 7 10 11 14 15 18 19</p> <table><tr><td>Δ</td><td></td><td>X</td><td>X</td><td></td><td>X</td><td>X</td><td></td><td>X</td><td>X</td></tr><tr><td>Y</td><td></td><td>X</td><td>X</td><td></td><td>X</td><td>X</td><td></td><td>X</td><td>X</td></tr><tr><td>0</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>Y</td><td>X</td><td></td><td></td><td>X</td><td></td><td>X</td><td>X</td><td>X</td><td>X</td></tr><tr><td>Δ</td><td>X</td><td></td><td>X</td><td>X</td><td>X</td><td></td><td></td><td>X</td><td>X</td></tr></table>  <p>1W 2V 1V 1U 2U 2W</p> <p>- From BS 16 to BS 63</p>	Δ		X	X		X	X		X	X	Y		X	X		X	X		X	X	0										Y	X			X		X	X	X	X	Δ	X		X	X	X			X	X
Δ		X	X		X	X		X	X																																													
Y		X	X		X	X		X	X																																													
0																																																						
Y	X			X		X	X	X	X																																													
Δ	X		X	X	X			X	X																																													

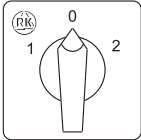
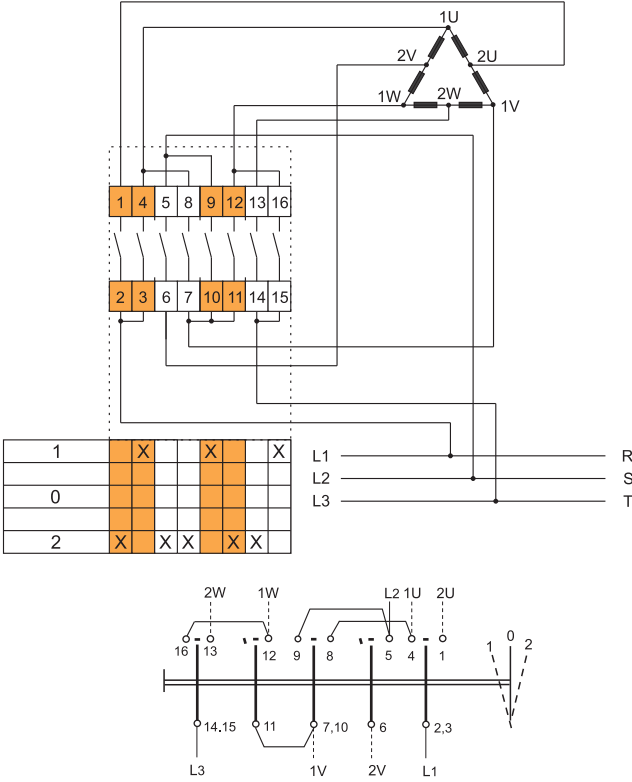
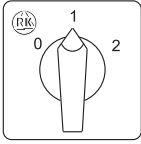
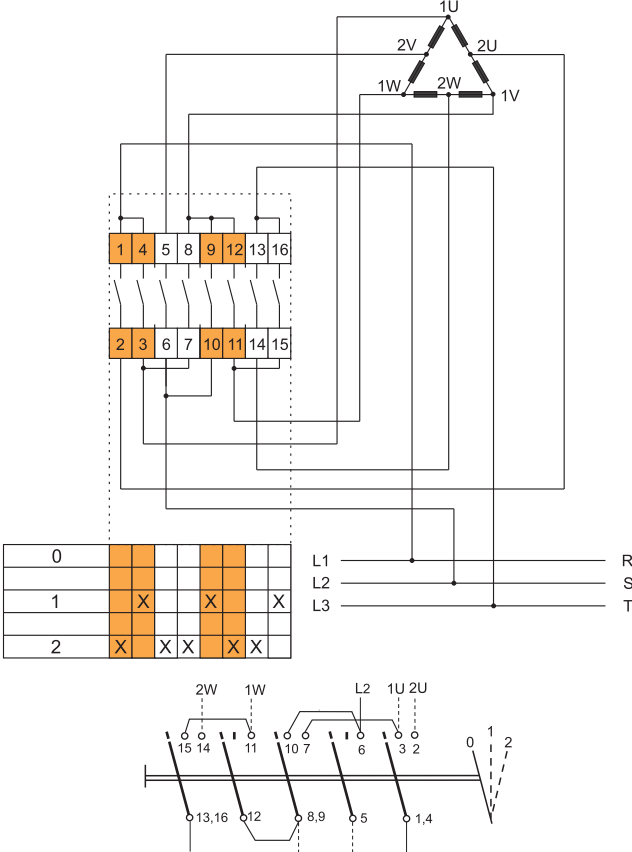
FUNCTION	Escutcheon plate	CODE	No.of elem.	Connection diagram
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STAR - DELTA SWITCHES

<p>Return from Y to "0"</p>		<p>28</p>	<p>4</p>	
<p>Counter current braking</p>		<p>29</p>	<p>5</p>	

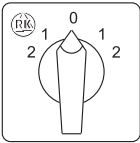
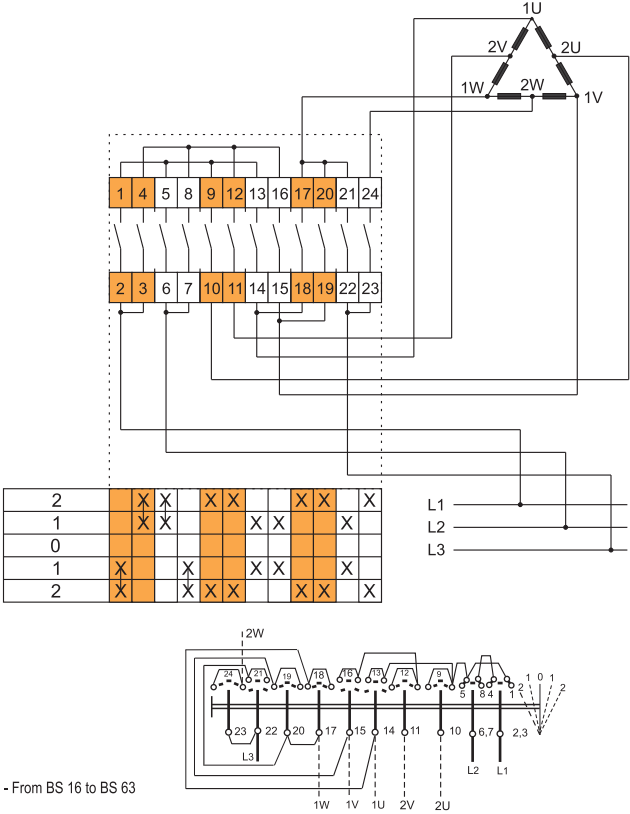
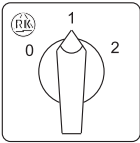
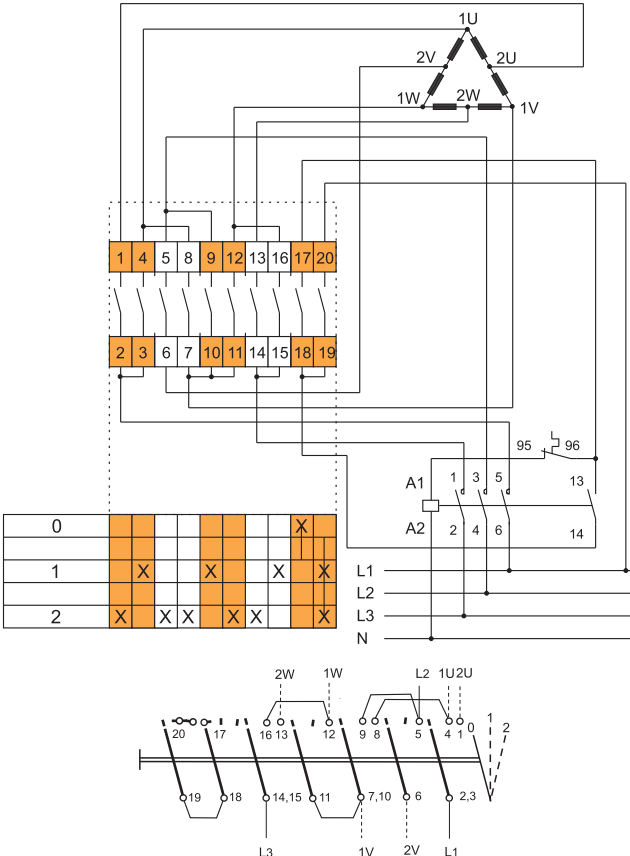
FUNCTION	Escutcheon plate	CODE	No. of elem.	Connection diagram
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MOTOR CONTROL SWITCHES (Dahlander)

<p>With center "0" (Δ - 0 - YY)</p>		<p>13</p> <p>4</p>	
<p>Standard version (0 - Δ - YY)</p>		<p>19</p> <p>4</p>	

FUNCTION	Escutcheon plate	CODE	No.of elem.	Connection diagram
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MOTOR CONTROL SWITCHES (Dahlander)

<p>Reversing Switching sequence: (YY - Δ - 0 - Δ - YY)</p> 	<p>20</p>	<p>6</p>	 <p>- From BS 16 to BS 63</p>
<p>With contactor Switching sequence: (0 - Δ - YY)</p> 	<p>32</p>	<p>5</p>	

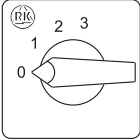
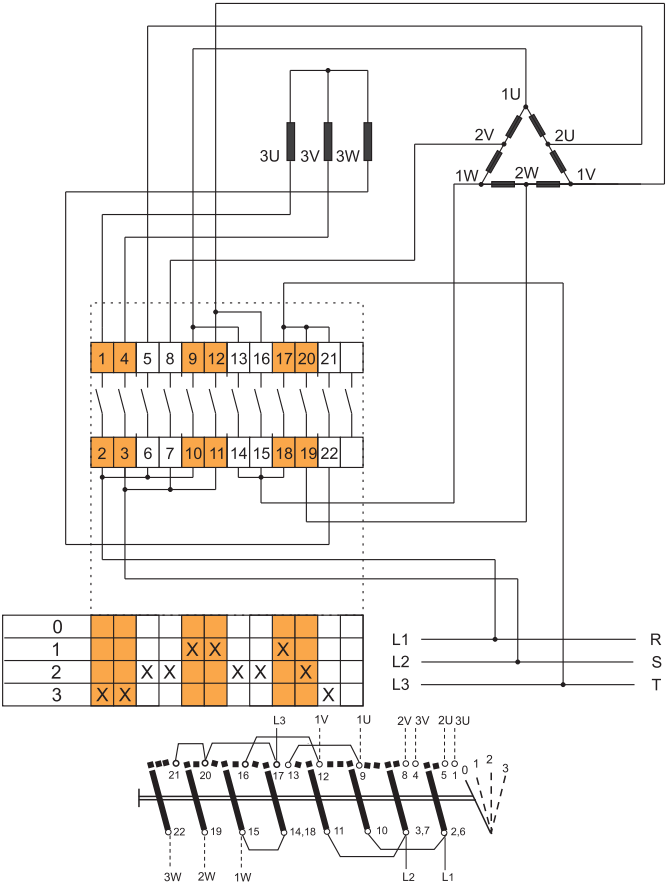
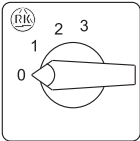
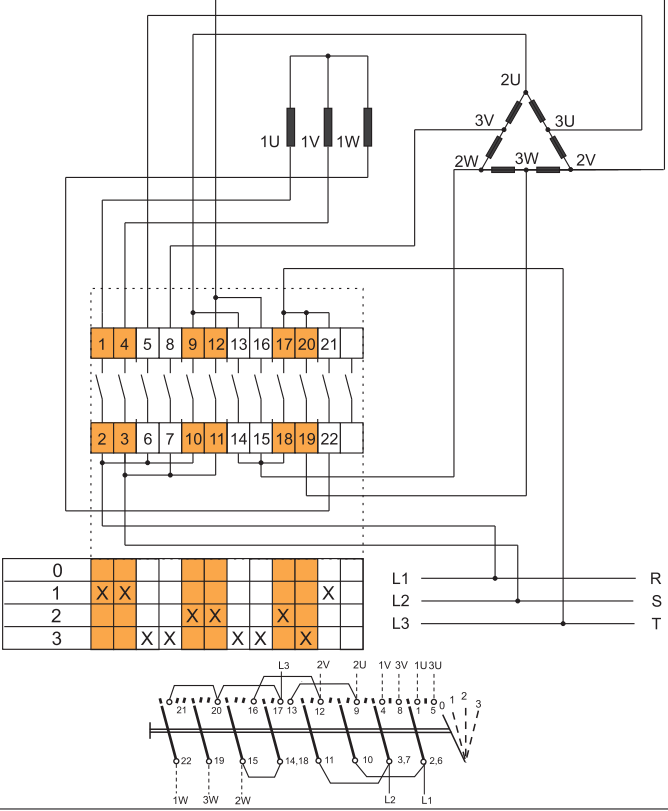
FUNCTION	Escutcheon plate	CODE	No. of elem.	Connection diagram
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MOTOR CONTROL SWITCHES (Separate windings)

2 speed, 2 winding		22	3	
2 speed, reversing, 2 windings		23	5	

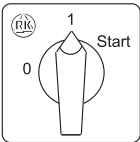
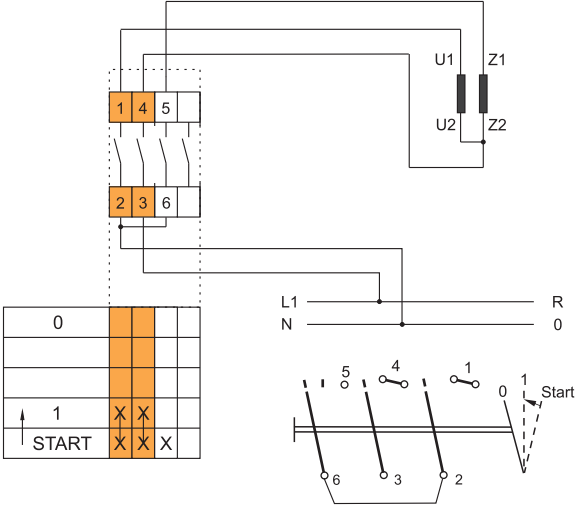

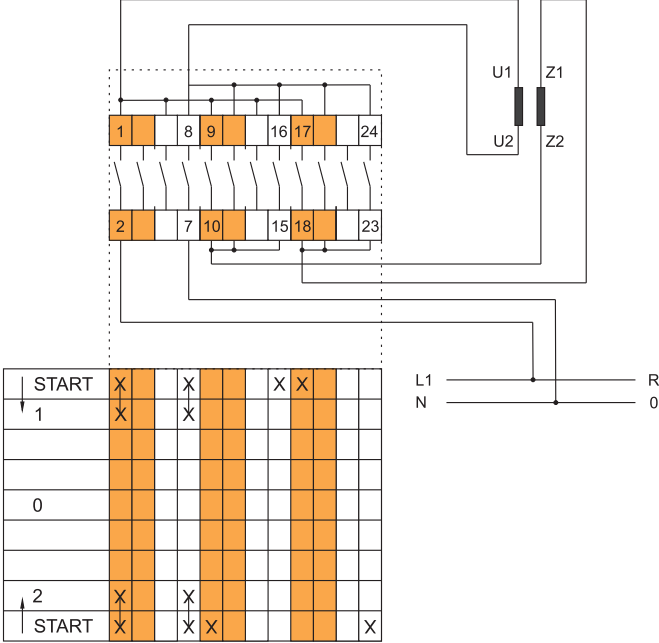
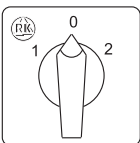
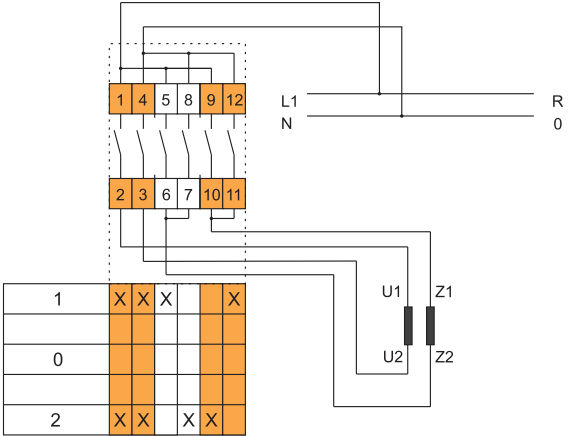
FUNCTION	Escutcheon plate	CODE	No.of elem.	Connection diagram
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SWITCHES FOR 3-SPEED MOTOR CONTROL

<p>3 speed, 2 winding (1. and 2. speed Dahlander) (0-Δ-YY-Y)</p>		35	6	
<p>3 speed, 2 winding (2. and 3. speed Dahlander) (0-Y-Δ-YY)</p>		36	6	

FUNCTION	Escutcheon plate	CODE	No.of elem.	Connection diagram
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START AND RUN SWITCHES


Standard version		15	2	
Reversing		16	6	
Reversing permanent start winding		17	3	

Voltage ____V/50Hz	Power ____kW	Current ____A	Utilization category AC ____	Mounting form <input type="checkbox"/> U Front <input type="checkbox"/> O Rear
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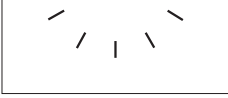
☐ **Note: Standard combination of front parts.**

Optional	Optional	Optional	Optional
Model of front plate	Color of Handle	Color of front plate	Emergency on-off switch with padlocking only in "0"
<input type="checkbox"/> Standard <input type="checkbox"/> PS <input type="checkbox"/> M	<input type="checkbox"/> Black <input type="checkbox"/> Blue <input type="checkbox"/> Red	<input type="checkbox"/> Grey <input type="checkbox"/> Yellow	<input type="checkbox"/> LK

Arrangement of position marks on front plate



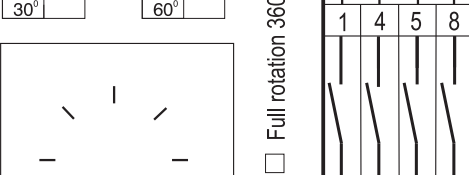
☐ 30°
 ☐ 60°



☐ 45°
 ☐ 90°

Additional requirements

Contact scheme and jumpers (pre-wired)

1	4	5	8	9	12	13	16	17	20	21	24	25	28	29	32	33	36	37	40	41	44	45	48
																							
2	3	6	7	10	11	14	15	18	19	22	23	26	27	30	31	34	35	38	39	42	43	46	47

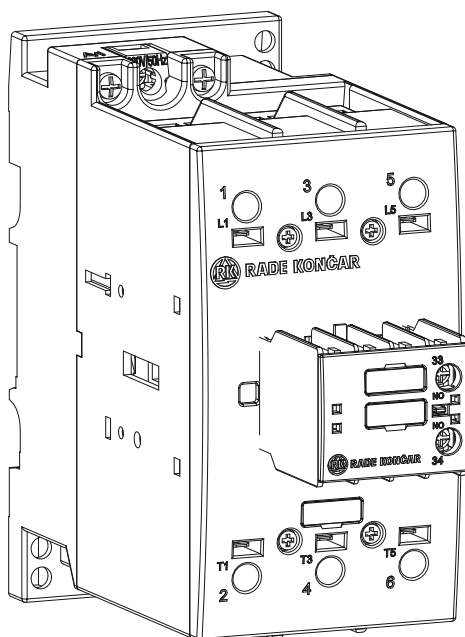
[illegible]

Note:	1			X		X		X		X		X		X
	2					X		X		X	X		X	
	<div style="display: flex; justify-content: space-around; text-align: center;"> <div>Contact closed</div> <div>Contact closed no break</div> <div>Contact closed with break</div> <div>Overlapping of contacts</div> <div>Passing contact</div> <div>Self return 30° max.</div> </div>													

Order no.			
Purchaser			
Address			
Telephone	E-mail	Date	

NEW PRODUCTS

NEW MOTOR CONTACTORS **CNN 150, CNN 110** AND CONTACTORS FOR CAPACITOR SWITCHING **CNNK 80, CNNK 75**



New series of contactors CNN and CNNK

In the year 2020 we started a project to develop a new product in our production program. We are starting to develop new series of motor contactors CNN 150 and CNN 110 and new contactors for capacitor switching CNNK 80 and CNNK 75. Our project is in cooperation and co-finance with the Fund for innovation and technology development of North Macedonia. The new products will be available in 2022.

Visit us at www.radekoncar.com.mk for updates.



RADE KONČAR

KONTAKTORI I RELEI

PRODUCTION PROGRAM



Motor Contactors



Contactors for capacitor switching



Thermal Overload Relays



Molded Case Circuit Breaker



Miniature Circuit Breaker



Motor Protection Circuit Breaker



Pushbuttons and Indicator Lights



Electronic Time Relays

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11.2021