



**RBC SERIES
BREAKER
CONTROL
SWITCHES
SPRING RETURN
& STAY - PUT
TYPE**



**90° MOVEMENT
PISTOL GRIP
HANDLE**



**45° MOVEMENT
EE TYPE HANDLE**



**60° MOVEMENT
LEVER HANDLE**

**16, 20, 25, 32, 40, & 50A AT 660V A.C.
1 1.5 2 2.5 3.0 & 3.5A AT 220V D. C. RES.**

**CONFORMS TO IS 13947
(PART 5/SEC 1) : 1993
IEC PUB 94 - 7 - 5 - 1 (1990)
(SUPERSEDING IS 6875
[ALL PARTS])**



16 AMP.

50 AMP.



32 AMP.



25 AMP.



40 AMP.

FEATURES

- ★ LOST MOTION (BELL ALARM) CONTACTS
- ★ SEQUENCE LOCKING DEVICE
- ★ LOCKABLE HANDLES
- ★ PISTOL GRIP & LEVER HANDLES
- ★ PUSH-PULL INTERLOCK SYSTEM
- ★ DISCREPANCY SWITCH, ETC.
- ★ TEE & LEVER LOCK HANDLES
- ★ TOGGLE KNOB & BALL HANDLE
- ★ 30°, 45°, 60° & 90° THROW



RECOM 'RBC' Control Switches are essentially recommended for use in variety of industrial applications like (a) Control of TRIP/CLOSE circuits in Circuit Breakers (b) CONTROL operations in Machine Tools and (c) Switching of control/instrumentation circuits in Switchgear, Controlger, Relay Panel and other machineries. Equipments /plants for steel, textile, process control, cement, paper, chemicals, fertilizers, shipbuilding, railways, mining etc. Versatile design of these switches make possible a wide variety of switching arrangements to suit specific programmes specification requirements. These Control Switches are improved/new version and incorporate internationally accepted design of Cam Operated silver-alloy Butt contacts with double-break feature, dust protected and assembled on packet principle (stacking type and manually operated by a pistol grip handle through a sturdy mechanism.

ELECTRICAL DATA / SPECIFICATION

RBC Control Switches	RBC 16	RBC 20	RBC 25	RBC 32	RBC 40	RBC 50
Current Amps. lth (Thermal)	16	20	25	32	40	50
Current Amps Continuous	12	16	20	25	32	40
Voltage Operational A. C. & D. C.	660	660	660	660	660	660
High Voltage Test	2.5KV r. m. s.	2.5KV r. m. s.	2.5KV r. m. s.	2.5KV r. m. s.	2.5KV r. m. s.	2.5KV r. m. s.
Frequency of Operation	200	200	200	200	200	200
Switching cycles per hour (max)						
Temperature conditions ambient degree centre (max.)	55	55	55	55	55	55
Breaking Capacity A. C. at 440V 0.3 pf. lag	(Over 50,000 Operations)					

Breaking Capacity D. C. per single cell. As per Table given below:

Volt. D. C.	BREAKING CAPACITY IN AMPS																							
	(RBC) Resistive Current in Amps.						(RBC) Inductive Current in Amps.																	
							10 m. s. TC					20 m. s. TC					40 m. s. TC							
	16	20	25	32	40	50	16	20	25	32	40	50	16	20	25	32	40	50	16	20	25	32	40	50
50	10	15	20	25	32	40	5	10	15	20	25	30	2.5	5.0	15	17.5	20	25	1.5	3.0	4.0	6.0	7.5	10
125	1.5	2.0	2.5	3.0	4.0	5.0	0.5	1.0	2.0	3.0	4.0	5.0	0.35	0.5	1.0	2.0	3.0	5.0	0.15	0.35	0.5	0.75	1.5	2.0
250	0.75	1.0	1.5	2.0	2.5	3.0	0.25	0.5	1.0	1.5	2.0	2.5	0.15	0.3	0.75	1.0	1.5	2.0	0.15	0.25	0.35	0.50	0.65	0.75

For Breaking Higher D. C. at different Time Constants at above voltages Switches are assembled with TWO or more contacts in series A maximum of two contacts in series in recommended.

MOUNTING :

'RBC' Control Switches are manufactured in open execution and suitable for mounting on a panel thickness upto 4mm.

- a) At 4 corner holes with 4 Screws of size M4.5 at 49.5 CRS (70mm PCD) for Breaker application for 25, 32, 40 and 50A Switches.
- b) At 4 corner holes with 4 Screws of size M5 at 60CRS for other applications for 25, 32, 40 and 50A Switches
- c) At 4 corner holes with M3.5 screws at 36PCD for 16 and 20A switches

DUST PROTECTION:

Control Switches are ideally recommended for use in power station locations/industrial applications for dust protection because of contact/housing design.

COMPONENT SPECIFICATIONS:

Control switch is an assembly of component parts viz.

- a) Packets - Moulded from Glass Filled Nylon which is an engineering thermoplastic material having excellent properties like - high insulation, anti-tracking, self extinguishing, fire retardant and impact/fracture proof.
- b) Mechanism Housing - The mechanism housing is also moulded from same material as switching packets and contain other parts which provide indexing positions.
- c) Contact/Terminals - Fixed and moving contacts parts are of brass (electrical grade) suitably electroplated on which Bimetal Button contacts Silver-Alloy (Silver Cadmium Oxide-Ag Cd O) are rivetted for make break operations. Each packet contains two electrically independent contacts. The outside ends of the fixed contacts are recessed type designed for connections by means of M3.5 or M4 size panhead screw and clamped tight by arched spring washers. Terminals are suitable to carry wires upto 4mm sw. or 4mm crimped terminals.
- d) Cams - These are moulded from engineering plastic and variety of standard Cam profiles are available to satisfy standard as well as any odd switching combination.
- e) Contact Springs - Each moving contact is assisted by a part of springs of stainless steel to provide uniform contact pressure ensuring higher contact life.
- f) Other Parts - Above components are assembled by means of suitable hardware and fitted with mounting plate. The indexing mechanism and Cams in the contact assembly are operated by a steel shaft with a suitable handle.

ORDERING 'RBC' SWITCHES

Considering the variables in this range, it is necessary to provide complete information with your inquiry/order, preferably in 'Switch Order Sheet' available on request, for expeditious handling.

The essential information required is:

- ★ breaking current
- ★ Voltage ★ AC or DC System
- ★ L/R Ratio or Time Constant
- ★ Type of Load

- ★ Switching Sequence in each of the position Control/Selector Switches and for Breaker Control Switches in Trip-Neutral-Close and Lost Motion Contacts and Sequence Locking Device.
- ★ No. of Positions
- ★ Indexing Degree
- ★ Mounting ★ Type of Handle
- ★ Extra features-Locks and locking positions.

NON-LOCKABLE

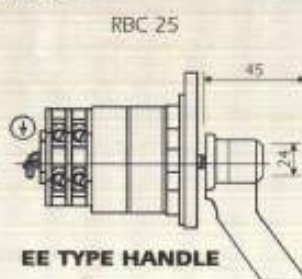


**PISTOL GRIP HANDLE
LENGTH CHART**

PACKETS	1	2	3	EACH
RBC 16	65	75	85	10
RBC 25	84	96	108	12
RBC 32/40	72	85	98	13
RBC 50	80	95	100	15



LEVER HANDLE



EE TYPE HANDLE

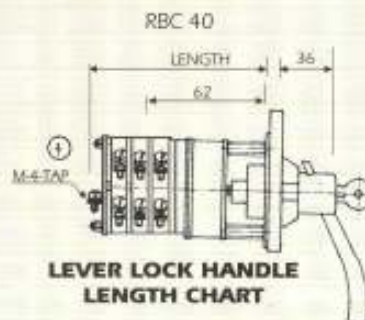
PANEL CUT OUT



NOTE A = 4-HOLES 52 Ø AT 49.5-CRS
B = 4-HOLES 45 Ø AT 60-CRS

- 1) FOR **SL** (SEQUENCE LOCKING) FEATURE ADD 12.5MM
- 2) A PAIR OF **LM** (LOST MOTION) CONTACTS ARE HOUSED PER PACKET
- 3) A MAX OF TEN PACKETS ARE RECOMMENDED TO HOUSE MAIN & LM CONTACTS

LOCKABLE

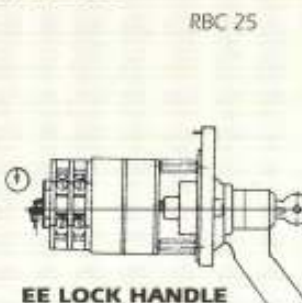


**LEVER LOCK HANDLE
LENGTH CHART**

PACKETS	1	2	3	EACH
RBC 16	85	95	105	10
RBC 25	102	114	126	12
RBC 32/40	90	103	116	13
RBC 50	105	120	135	15



TEE LOCK HANDLE



EE LOCK HANDLE

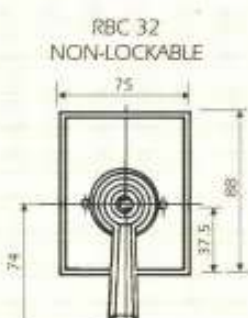
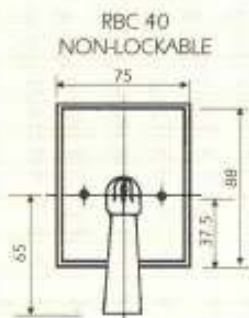
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FRONT VIEW



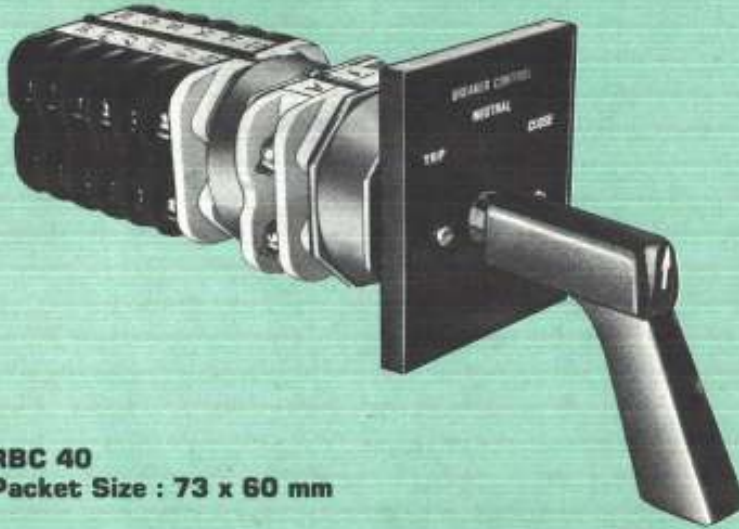
ALL THE ABOVE TYPE OF HANDLES & LOCK ASSEMBLIES ARE COMMON FOR ENTIRE RANGE OF RECOM R B C CONTROL SWITCHES

RELIABLE ELECTRONIC COMP. PVT. LTD.

Representatives, Dealers & Stockists
located at principal cities of India.
Details of their Name, Address,
Telephone nos., etc., available on request.



recom[®]



RBC 40
Packet Size : 73 x 60 mm



RBC 25
Packet Size : 56 mm Dia

RBC CONTROL SWITCHES

SPRING RETURN & STAY PUT



RBC 25



RBC 40

GENERAL

RECOM 'RBC' Control Switches are essentially recommended for use in variety of industrial applications like (a) Control of TRIP/CLOSE circuits in Circuit Breakers (b) CONTROL operations in Machine Tools and (c) Switching of control/instrumentation circuits in Switchgear, Controlgear, Relay Panel and other machineries, equipments/plants for steel, textile, process control, cement, paper, chemicals, fertilizers, shipbuilding, railways, mining, etc. Versatile design of these switches make possible a

wide variety of switching arrangements to suit specific programmes/specification requirements. These Control Switches are improved/new version and incorporate internationally accepted design of Cam Operated silver-alloy Butt contacts with double-break feature, dust protected and assembled on packet principle (stacking type) and manually operated by a pistol grip handle through a sturdy mechanism.

SPECIFICATION/ELECTRICAL DATA

'RBC' Control Switches comply with IS:6875 Part I, II and III - 1983 (based on IEC 337-1-1970) for utilisation categories AC 11 and DC 11 for continuous ratings

ELECTRICAL DATA

'RBC' Control Switches	RBC40	RBC25
Current Amps. Ith (Thermal)	40	25
Current Amps. Continuous	32	20
Voltage Operational A.C. and D.C.	660	660
High Voltage Test	2.5 KV r.m.s.	2.5 KV r.m.s.
Frequency of Operation - Switching cycles per hour (max.)	200	200
Temperature conditions ambient (max.)	55°	55°
Breaking Capacity A.C. at 440V 0.3 pf. lag.	5 lakhs at 40A 1.25 Million at 25A	5 lakhs at 25A 1.25 Million at 16A

Breaking Capacity D.C. As per table

BREAKING CAPACITY IN AMPS									
Voltage	No. of contacts in series	Resistive		Inductive					
		RBC 40	RBC 25	10 m.s. TC		20 m.s. TC		40 m.s. TC	
				RBC 40	RBC 25	RBC 40	RBC 25	RBC 40	RBC 25
50	1	32	20	32	20	20	15	7.5	6
	2	-	-	-	-	32	20	20	14
	3	-	-	-	-	-	-	25	20
125	1	5	3	5	2.5	3	1.5	2	1
	2	32	20	25	15	15	10	7.5	5
	3	-	-	32	20	32	20	15	10
250	1	1	1	1	0.5	0.75	0.3	0.5	0.2
	2	7.5	5	4	2	2	1	1	0.5
	3	32	20	15	10	5	4	2	1

RANGE

'RBC' Control Switches (also called Selector switches) are manufactured incorporating following features/arrangements:

1) Spring Return Switches:

- Basic Type - As a standard the switching angle is 45° and operate (spring return) on either side of the Neutral position. On request other switching angles of 30°, 60° and 90° are provided.
- Lost Motion Device - This device is incorporated in basic spring return switches to operate a separate assembly of contacts added at the rear portion. These contacts are set to close or open by resetting arrangement when the handle is operated to the extreme opposite direction from the original (Neutral).
- Sequence Locking Device - This mechanical device is incorporated in basic spring return switches to prevent two consecutive operations in the clockwise direction from Neutral position (Trip-Free arrangement).
- Auxiliary switching - Control Switches are recommended for auxiliary switching in circuit breakers. These are with standard Spring Return to Neutral mechanism having normally open and normally close contact combination as required. On the operating shaft a suitable lever is fixed which is linked to the circuit breaker mechanism. Details to be provided by the user.

2) Stayput Switches:

A wide range is manufactured to suit variety of switching combinations. Standard range consist of switching combinations like ON-OFF, 2, 4, 6, 8 and upto 12 ways with switching angles 90°, 60°, 45° and 30°

3) Stayput/Spring Return Switches:

Spring return arrangement is incorporated in standard stayput switches. Only one spring return position on either side of 0° is possible at the extreme end of the stayput positions.

4) Handles:

- Pistol Grip Handle - MK II - This handle is supplied as a standard for all spring return switches, stayput switches and combination of stayput/spring return switches of 40A ratings.
- Pistol Grip Handle - This pistol grip handle is supplied as a standard on all 25A rated switches.

c) Knob (Wing type) - This handle is supplied as a standard for all stayput switches of 3/4 packets assembly. For higher packets, pistol grip handle in either (a) or (b) above is recommended.

5) Centre Key Locking:

This attachment consist of barrel type lock with key in the centre. It is lockable and key is removable only in the locked position (0°, 90°, 180° and 270°) and available in two types of handles (1) Lever shape (2) Wing (Knob/Tee) shape. While ordering switches, correct choice of the handle to be specified.

6) Indicating/Escutcheon Plate:

This plate consist of two parts viz:

- Plain plate made of anodised aluminium of size 83 x 70 with white letters on black background. Standard markings available mentioned elsewhere.
- Shroud moulded from engineering plastic of black colour of size 88 x 75 in which the plain plate is seated and is fixed by 2 screws for non-lock & lock switches.

All switches are supplied with these indicating plates with standard markings. Plates with non-standard markings are also supplied as per specific requirements.

7) Mounting:

'RBC' Control Switches are manufactured in open execution and suitable for mounting on a panel thickness upto 4mm.

- At 4 corner holes with 4 screws of size M4.5 at 49.5 CRS (70mm PCD) for breaker application.
- At 4 corner holes with 4 screws of size M5 at 60 CRS for other applications.

Refer panel cutout and dimension details.

8) Dust Protection:

Control switches are ideally recommended for use in power station locations/industrial applications for dust protection because of contact/housing design.

COMPONENT SPECIFICATIONS

Control switch is an assembly of component parts viz:

- Packets - Moulded from Glass Filled Nylon which is an engineering thermoplastic material having excellent properties like - high insulation, anti-tracking, self extinguishing, fire retardant and impact/fracture proof.
- Mechanism Housing - The mechanism housing is also moulded from same material as switching packets and contain other parts which provide indexing positions.
- Contacts/Terminals - Fixed and moving contact parts are of brass (electrical grade) suitably electroplated on which Bimetal Button contacts Silver-Alloy (Silver Cadmium Oxide - Ag Cd O) are rivetted for make/break operations. Each packet contains two electrically independent contacts. The outside ends of the fixed contacts are

recessed type designed for connections by means of M4 size panhead screws and clamped tight by arched spring washers. Terminals are suitable to carry wires upto 4mm sq. or 4 mm crimped terminals.

- Cams - These are moulded from engineering plastic and variety of standard Cam profiles are available to satisfy standard as well as any odd switching combination.
- Contact Springs - Each moving contact is assisted by a pair of springs of stainless steel to provide uniform contact pressure ensuring higher contact life.
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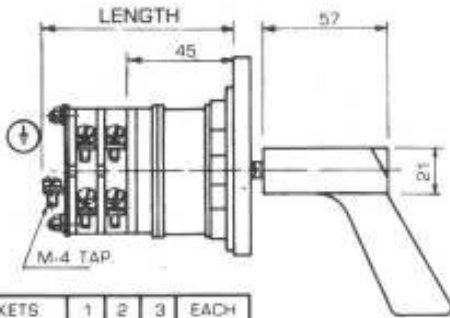
- ★ Breaking current
- ★ Voltage ★ AC or DC System
- ★ L/R Ratio or Time Constant
- ★ Type of Load

- ★ Switching Sequence in each of the positions for multiposition Control/Selector Switches and for Breaker Control Switches in Trip-Neutral-Close and Lost Motion Contacts and Sequence Locking Device.
- ★ No. of Positions
- ★ Indexing Degree
- ★ Mounting ★ Type of Handle
- ★ Extra features— Locks and locking positions.

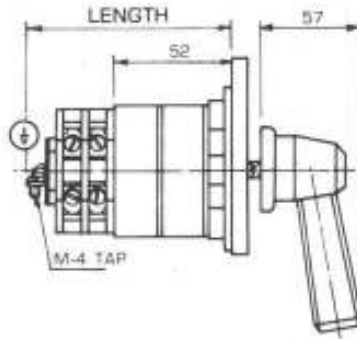
DIMENSIONS

NON-LOCKABLE

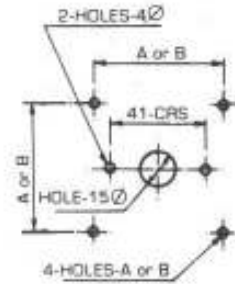
RBC 40



RBC 25



PANEL CUT OUT

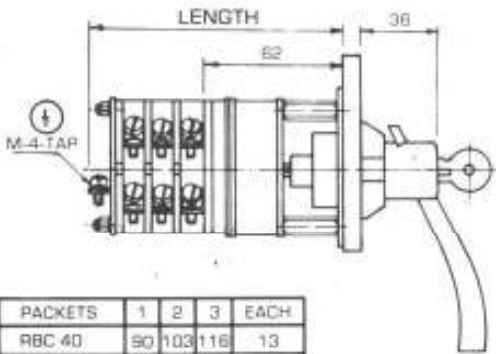


PACKETS	1	2	3	EACH
RBC 40	72	85	98	13
RBC 25	84	96	108	12

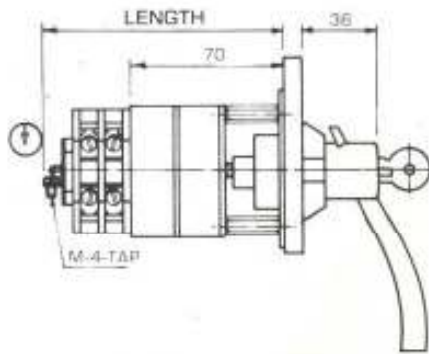
NOTE A = 4-HOLES 5.2 Ø AT 49.5-CRS
B = 4-HOLES 4.5 Ø AT 60-CRS

LOCKABLE

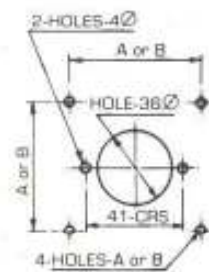
RBC 40



RBC 25



PANEL CUT OUT

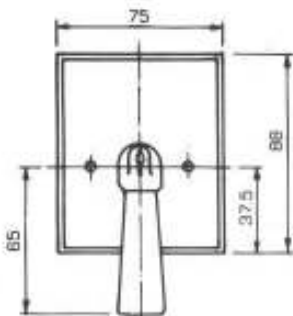


PACKETS	1	2	3	EACH
RBC 40	90	103	116	13
RBC 25	102	114	126	12

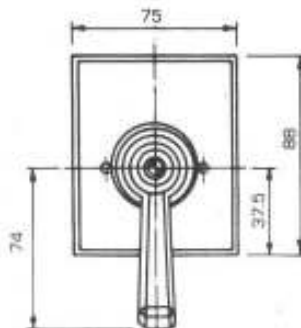
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FRONT VIEW

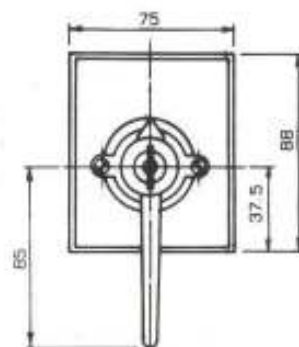
**RBC 40
NON-LOCKABLE**



**RBC 25
NON-LOCKABLE**



**RBC 40/25
LOCKABLE**



Manufactured by:
**RELIABLE ELECTRONIC
COMPONENTS PRIVATE LTD.**

