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Step relay RBC

1 Characteristics

- **Rated current: 20 … 32 A**
- **Coil voltage AC 230 V**
- **2 … 4 contacts, NC or NO**
- **Extendable with auxiliary contacts**
- **Double break contacts**
- **Status indicator**
- **manually switchable**

2 Order code

2.1 Two-pole contactors

Contacts	RBC20	
2 NO	**RBC20-200/**	AC230V
2 NC	**RBC20-020/**	AC230V
1 NC + 1 NO	**RBC20-110/**	AC230V

2.2 Four-pole contactors

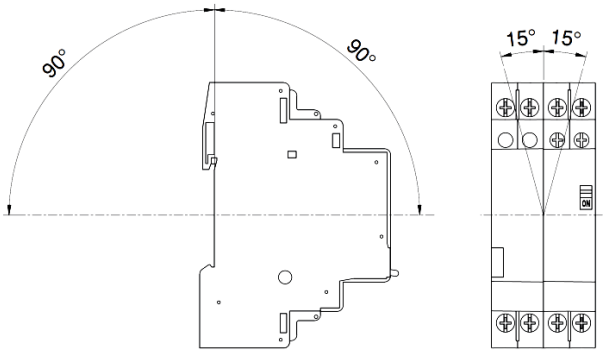
Contacts	RBC32	
4 NO	**RBC32-400/**	AC230V
4 NC	**RBC32-040/**	AC230V
2 NC + 2 NO	**RBC32-220/**	AC230V

2.3 Auxiliary contacts

Contacts	RBC-AUX
2 NO	**RBC -AUX20**
1 NC + 1 NO	**RBC -AUX11**

3 Mounting

3.1 Mounting position



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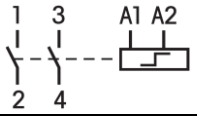
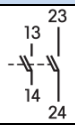
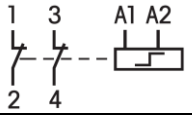
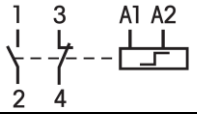
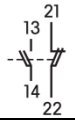
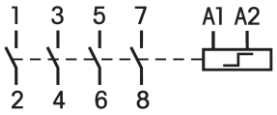
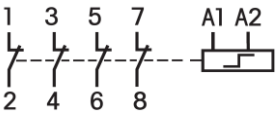
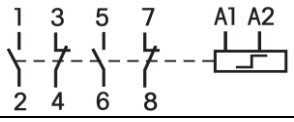
4 Pin assignment

RBC		RBC-AUX	
RBCxx-200		**RBC-AUX20**	
RBCxx-020			
RBCxx-110		**RBC-AUX11**	
RBCxx-400			
RBCxx-040			
RBCxx-220			

5 Technical information

5.1 General data

5.1.1 Mechanical data

	RBC20	RBC32	RBC-AUX
Mounting	DIN rail		
Connection	Screw terminals		
Protection class	IP20		
Housing material	Technyl PA6		
Module width	1	2	0.5
Dimensions W x H x D [mm]	18 x 60 x 90	35 x 60 x 90	8 x 60 x 90
Conductor cross-section main terminals, rigid [mm^2]	1 ... 10	1 ... 10	1 ... 4
Conductor cross-section main terminals, flexible [mm^2]	1 ... 10	1 ... 10	1 ... 4
Conductor cross-section coil terminals, rigid / flexible [mm^2]	1 ... 4	1 ... 4	-
Torque main terminals [Nm]	1.2	1.2	0.8
Torque coil terminals [Nm]	0.6	0.6	-
Weight [g]	132	192	30

5.1.2 Environmental conditions

	RBC20	RBC32	RBC-AUX
Storage temperature	-30 °C ... +80 °C		
Operating temperature	-25 °C ... +55 °C		
Relative humidity	≤ 95 % non-condensing		

5.2 Electrical data

5.2.1 Supply

	RBC20	RBC32
Rated voltage U_N [V]	230	
Frequency [Hz]	50 / 60	
Operating voltage range	0.9 ... 1.1 x U_N	
Coil consumption inrush [VA/W]	18 / 13	
Coil consumption hold [VA/W]	9 / 4	
Min. impulse duration at U_c [ms]	50	
Min. impulse duration at 0.85 U_c [ms]	100	
Min. pause between two impulses [ms]	150	
Max. number of impulses per minute	15	7.5
Max. impulse duration	1 h	

5.3 Main contacts

	RBC20	RBC32	RBC-AUX
Rated voltage [V]	400	400	230
Thermal current AC1, I_{th} [A]	20	32	6
Rated operational voltage [V]	10…440		
Mechanical endurance	1 x 10^6		
Electrical endurance AC-1 at I_{th}	1 x 10^5		
Electrical endurance AC-3 at I_{th}	1 x 10^5		
Electrical endurance DC-1 at I_{th}	1 x 10^5		
Contact material	AgNi		
Minimal load at 10 V [mA]	100	100	5
Distance of open contacts [mm]	3		
Max. back-up fuse [A]	20	32	6

5.4 Typical performance

5.4.1 AC

	RBC20	RBC32
Rated operational current AC-1 [A] Rated operational current AC-7a [A]	20	32
Rated operational current AC-3 [A] Rated operational current AC-7b [A]	7	12
Rated operational current AC-2 [A]	10	16

5.4.2 DC

	RBC20		RBC32			
Contacts in series	**1**	**2**	**1**	**2**	**3**	**4**
Rated operational current DC-1 24 V [A]	20	20	32	32	32	32
Rated operational current DC-1 48 V [A]	15	18	25	28	32	32
Rated operational current DC-1 110 V [A]	5	8	7	12	22	25
Rated operational current DC-1 220 V [A]	0.5	4	0.7	16	18	20
Rated operational current DC-3 24 V [A]	10	20	18	32	32	32
Rated operational current DC-3 48 V [A]	5	10	10	18	30	32

	RBC20		RBC32			
Contacts in series	**1**	**2**	**1**	**2**	**3**	**4**
Rated operational current DC-3 110 V [A]	1	3	1.2	5	18	22
Rated operational current DC-3 220 V [A]	0.1	0.4	0.3	0.8	4	10
Rated operational current DC-5 24 V [A]	10	20	18	32	32	32
Rated operational current DC-5 48 V [A]	4	8	6	16	28	30
Rated operational current DC-5 110 V [A]	0.3	2	0.8	4	16	18
Rated operational current DC-5 220 V [A]	0.05	0.2	0.1	0.6	3	8

5.4.3 Lamp loads

Maximum number of lamps per contact at 230V, utilization category AC-5a.
The following information applies to 100 000 cycles..

Load	Power [W]	Current [I]	RBC20	RBC32
Incandescent lamps and **halogen lamps**	20	0.09	100	175
	25	0.11	80	140
	30	0.13	67	117
	35	0.15	57	100
	46	0.20	43	76
	50	0.22	40	70
	57	0.25	35	61
	60	0.26	33	58
	75	0.33	27	47
	100	0.44	20	35
	150	0.65	13	23
	300	1.30	7	12
Transformators for low-voltage halogen lamps (electromagnetic and electronic)	30	0.13	50	100
	40	0.17	38	75
	50	0.22	30	60
	60	0.26	25	50
	70	0.30	21	43
	100	0.44	15	30
	150	0.65	10	20
	200	0.87	8	15
	300	1.30	5	10
Compact fluorescent lamps with internal ballasts	7	0.08	71	143
	9	0.10	56	111
	11	0.12	45	91
	13	0.14	38	77
	18	0.20	28	56
	26	0.27	19	38
Fluorescent lamps with external electromagnetic ballasts	18	0.09	67	133
	2x18	0.17	35	71
	21	0.11	55	109
	2x21	0.22	27	55
	28	0.14	43	86
	2x28	0.27	22	44
	35	0.17	35	71
	2x35	0.34	18	35

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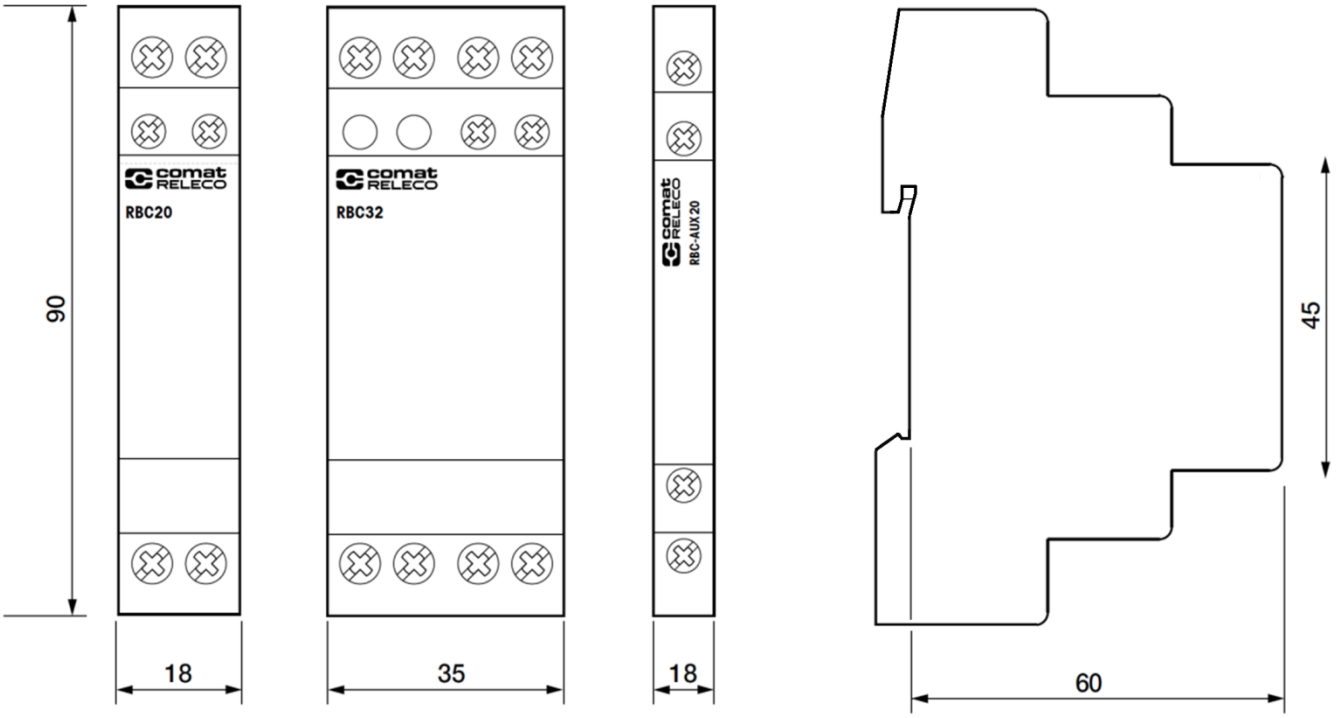
Load	Power [W]	Current [I]	RBC20	RBC32
	54	0.26	12	23
	2x54	0.52	21	43
	58	0.25	24	48
	2x58	0.48	13	25
	80	0.40	15	30
	2x80	0.76	8	16
LED-Lamps **Power supplies** for LEDs N: Number of lamps or power supplies In: Current consumtion per lamp or power supply	-	-	N = 6 A / In	N = 12 A / In

6 Operation

On each electrical impulse, the bistable contactor RBC switches from one state to each other. It keeps its state until the next impulse.
It can be manually switched as well. In addition, the impulse control can be manually turned on or off.

7 Dimensions



8 Standards

IEC/EN 60947-4-1, VDE 0660	Low voltage switchgear, general establishments
IEC/EN 60947-5-1	Control circuit devices and switching elements
IEC/EN 61095, VDE 0637	Electromechanical contactors for household and similar purposes

CE, CB, NF, RoHS