

Installation Contactors RIC & RAC

1 Characteristics

- Rated operational current: 16 ... 63 A
- Coil voltages: UC 24, 36, 110, 230 V / AC 48, 400 V
- Hum-free (UC versions)
- Integrated suppressor VDR
- 1 ... 4 contacts NO or NC
- Double break contacts
- Status indicator
- RAC with manual actuating (On-Off-Auto)
- Extendable with auxiliary contacts



2 Ordering code

2.1 One-pole contactors

Contact	RIC16
1 NO	RIC16-100/ UC230V
1 NC	RIC16-010/ UC230V

2.2 Two-pole contactors

Contacts	RIC16	RIC20	RIC25	RIC32	RAC20
2 NO	RIC16-200/ UC230V	RIC20-200/ UC24V UC36V UC110V UC230V		RIC32-200/ UC230V	RAC20-200/ UC24V UC230V
2 NC	RIC16-020/ UC230V	RIC20-020/ UC24V UC36V UC230V		RIC32-020/ UC230V	RAC20-020/ UC24V UC230V
1 NO + 1 NC	RIC16-110/ UC230V	RIC20-110/ UC24V UC36V UC230V		RIC32-110/ UC230V	RAC20-110/ UC24V UC230V
2 CO			RIC25-002/ UC24V		

2.3 Four-pole contactors

Contacts	RIC16	RIC25	RIC32	RIC40 RIC63	RAC25 RAC40 RAC63
4 NO	RIC16-400/ UC230V	RIC25-400/ UC24V UC36V UC230V AC48V AC400V	RIC32-400/ UC230V	RIC40-400/ UC24V RIC63-400/ UC230V	RAC25-400/ UC24V UC230V
4 NC	RIC16-040/ UC230V	RIC25-040/ UC24V UC36V UC230V AC400V	RIC32-040/ UC230V	RIC40-040/ UC24V RIC63-040/ AC230V	
2 NO + 2 NC	RIC16-220/ UC230V	RIC25-220/ UC24V UC36V UC72V UC110V UC230V AC400V	RIC32-220/ UC230V	RIC40-220/ UC24V RIC63-220/ UC230V	RAC25-220/ UC24V UC230V
3 NO + 1 NC	RIC16-310/ UC230V		RIC32-310/ UC230V		RAC40-310/ RAC63-310/ AC230V

2.4 Auxiliary contacts

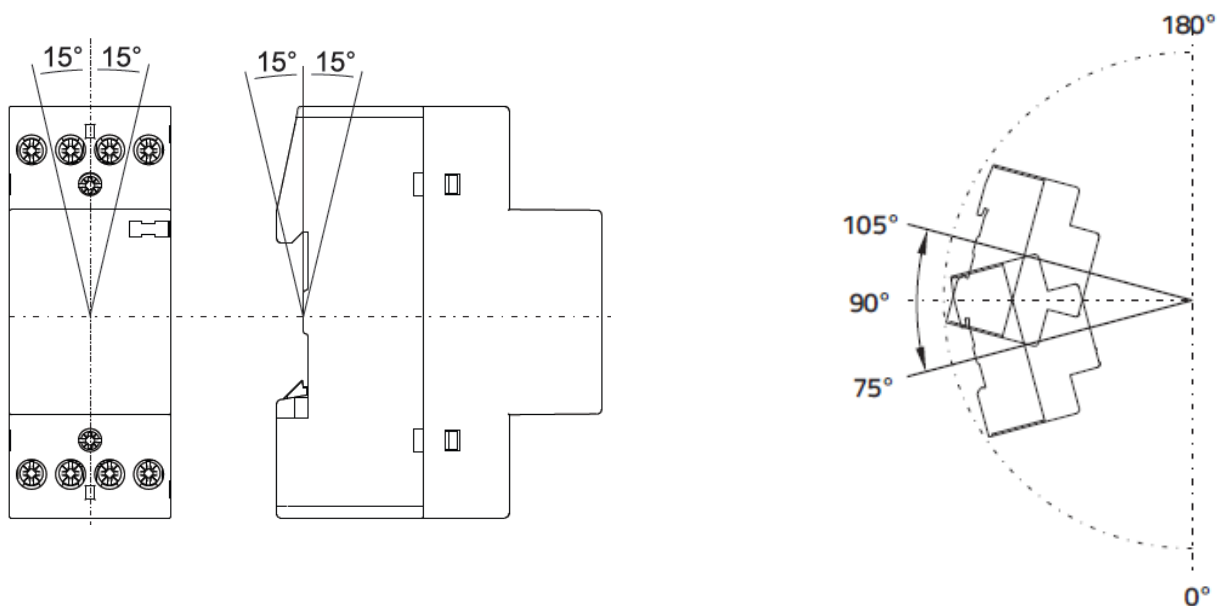
Contacts	RIC-AUX*
2 NO	RIC-AUX20
2 NC	RIC-AUX02
1 NO + 1 NC	RIC-AUX11

* RIC-AUX are compatible to RIC 25/32/40/63 only

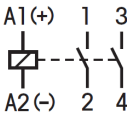
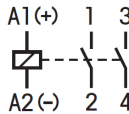
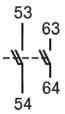
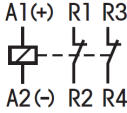
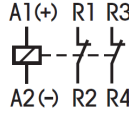
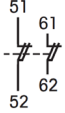
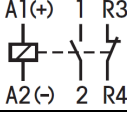
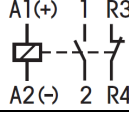
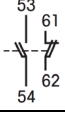
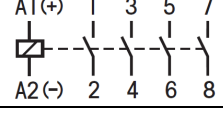
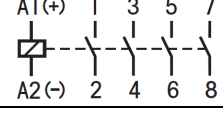
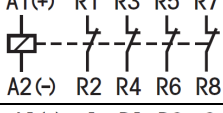
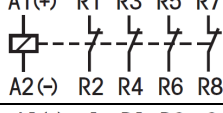
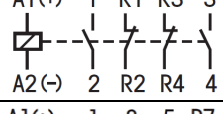
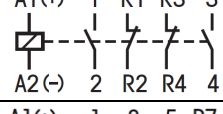
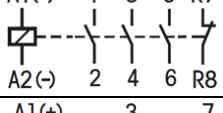
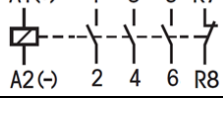
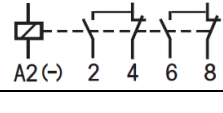
3 Mounting

If several contactors are mounted side by side, the spacer RIC-DIST should be installed after every second contactor for purpose of heat dissipation.

3.1 Mounting position



4 Pin assignment

	RIC	RAC	RIC-AUX
RICxx-200			
RICxx-020			
RICxx-110			
RICxx-400			
RICxx-040			
RICxx-220			
RICxx-310			
RICxx-002			

5 Technical information

5.1 General data

5.1.1 Mechanical data

	RIC16 (2 pole) RIC20 RAC20 RIC32 (2 pole)	RIC16 (4 pole) RIC25 RAC25 RIC32 (4 pole)	RIC40 RAC40	RIC63 RAC63	RIC-AUX
Mounting	DIN rail				
Connection	Screw terminals				
Protection class	IP20				
Pollution degree	3				
Housing material	PA6				
Module width	1	2	3	3	0.5
Dimensions W x H x D [mm]	17.5 x 65.5 x 85	35 x 65.5 x 85	54.5 x 65.5 x 85	54.5 x 65.5 x 85	8 x 65.5 x 85
Main terminals, rigid [mm ²]	1 ... 10	1 ... 10	1 ... 25	1 ... 25	1 ... 2.5
Main terminals, flexible [mm ²]	1 ... 6	1 ... 6	1 ... 16	1 ... 16	1 ... 1.5
Coil terminals, rigid / flexible [mm ²]	1 ... 2.5	1 ... 2.5	1 ... 2.5	1 ... 2.5	-
Torque main terminals [Nm]	1.2	1.2	3.5	3.5	0.8
Torque coil terminals [Nm]	0.6	0.6	0.6	0.6	-
Weight [g]	140	270	420	420	50

5.1.2 Environmental conditions

	RIC16 RIC20 RAC20	RIC25 RAC25 RIC32	RIC40 RAC40	RIC63 RAC63	RIC-AUX
Storage temperature	-30 °C ... +80 °C				
Operating temperature	-5 °C ... +55 °C				
Relative humidity	≤95%, non-condensing				

5.2 Electrical data

5.2.1 Supply

	RIC16 UC RIC20 UC RAC20 UC	RIC25 UC RIC32 UC	RIC40 UC	RIC63 UC	RAC40 AC RAC63 AC
Rated voltages U _N [V]	24, 36, 230	24, 36, 230	24, 230	24, 230	230
Frequency [Hz]	DC, 40...500	DC, 40...500	DC, 40...500	DC, 40...500	50...60
Operating voltage range	0.85 ... 1.1 x U _N				
Coil consumption [VA/W]	2.1 / 2.1	2.6 / 2.6	5 / 5	5 / 5	7.7 / 3
Make delay [ms]	15...45	15...45	15...20	15...20	10...20
Brake delay [ms]	20...50	20...70	35...45	35...45	10...15

5.2.2 Main contacts

	RIC16	RIC20 RAC20	RIC25 RAC25	RIC32	RIC40 RAC40	RIC63 RAC63	RIC-AUX
Rated operational voltage [V]	400 / 230 (RICxx-110)		400				
Rated insulation voltage [V]	440						415
Rated impulse withstand voltage [kV]	4						
Thermal current AC1 I _{th} [A]	16	20	25	32	40	63	6

	RIC16	RIC20 RAC20	RIC25 RAC25	RIC32	RIC40 RAC40	RIC63 RAC63	RIC-AUX
Inrush current 100ms / 300us [A]	50	50 / 180	60 / 280	60	170 / 970	240 / 1500	-
Mechanical endurance	10'000'000						
Electrical endurance AC-1 at I_{th}	200'000	200'000	200'000	200'000	100'000	100'000	50'000
Electrical endurance AC-3 at I_{th}	300'000	300'000	500'000	500'000	150'000	150'000	50'000
Electrical endurance DC-1 at I_{th}	100'000	100'000	100'000	100'000	100'000	100'000	50'000
Contact material	AgNi	AgNi	AgNi	AgNi	AgSnO ₂	AgSnO ₂	AgNi
Minimal load at 24 V [mA]	50	50	50	50	50	50	5
Distance of open contacts [mm]	3.6	3.6	3.6	3.6	3.6	3.6	-
Max. back-up fuse [A]	16	20	25	32	63	80	6
Safety – MTTF _d (AC-3) [h]	10'000	10'000	16'666	16'666	5'000	5'000	-
Safety – B10 _d (AC-3) [op. c.]	300'000	300'000	500'000	500'000	150'000	150'000	-

5.3 Typical performance

5.3.1 AC

	RIC16	RIC20 RAC20	RIC25 RAC25	RIC32	RIC40 RAC40	RIC63 RAC63
Rated operational current AC-1 [A] Rated operational current AC-7a [A] Rated operational current AC-21 [A] Rated operational current AC-22 [A]	16	20	25	32	40	63
Rated operational current AC-2 [A]	10	12	14	16	25	32
Rated operational current AC-3 [A] Rated operational current AC-7b [A] Rated operational current AC-23 [A]	7 (NO) 4 (NC)	9 (NO) 6 (NC)	8.5	8.5	22	30
Rated operational current AC-6a [A]	4	4	2.8	6	10.8	17.2

5.3.2 DC

	RIC16		RIC20 RAC20		RIC25 RAC25 RIC32		RIC40 RAC40		RIC63 RAC63	
	1	2	1	2	1	2	1	2	1	2
Contacts in series										
Rated op. current DC-1 24 V [A]	16	16	20	20	25	25	40	40	63	63
Rated op. current DC-1 48 V [A]	12	15	15	18	20	25	24	38	26	42
Rated op. current DC-1 110 V [A]	4	8	6	10	6	10	4	10	4	10
Rated op. current DC-1 220 V [A]	0.5	4	0.6	6	0.6	6	1.2	8	1.2	8
Rated op. current DC-3 24 V [A]	10	16	10	20	15	25	22	40	25	45
Rated op. current DC-3 48 V [A]	5	10	5	10	8	16	10	20	11	22
Rated op. current DC-3 110 V [A]	1	4	1	4	1.3	5.5	1.5	5	1.5	5
Rated op. current DC-3 220 V [A]	0.1	0.4	0.1	0.4	0.2	0.6	0.3	1	0.3	1
Rated op. current DC-5 24 V [A]	10	16	10	20	15	25	20	40	25	45
Rated op. current DC-5 48 V [A]	4	8	4	8	5	15	8	18	10	20
Rated op. current DC-5 110 V [A]	0.3	2	0.3	2	0.5	4	1	5	1	5
Rated op. current DC-5 220 V [A]	0.06	0.2	0.06	0.2	0.1	0.4	0.2	0.8	0.2	0.8

5.3.3 Lamp loads

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

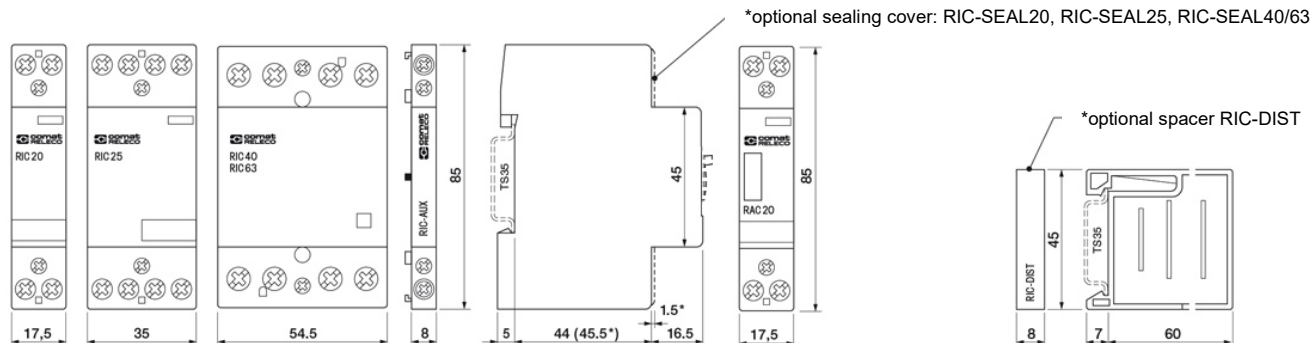
Load	Power [W]	Current [I]	RIC16 RIC20 RAC20	RIC25 RAC25 RIC32	RIC40 RAC40	RIC63 RAC63
Incandescent lamps and halogen lamps	20	0.09	100	110	200	250
	25	0.11	80	88	160	200
	30	0.13	67	73	133	167
	35	0.15	57	63	114	143
	46	0.20	43	48	87	109
	50	0.22	40	44	80	100
	57	0.25	35	39	70	88
	60	0.26	33	37	67	83
	75	0.33	27	29	53	67
	100	0.44	20	22	40	50
	150	0.65	13	15	27	33
300	1.30	7	7	13	17	
Transformators for low-voltage halogen lamps (electromagnetic and electronic)	30	0.13	33	40	90	143
	40	0.17	25	30	68	108
	50	0.22	20	24	54	86
	60	0.26	17	20	45	72
	70	0.30	14	17	39	61
	100	0.44	10	12	27	43
	150	0.65	7	8	18	29
	200	0.87	5	6	14	22
300	1.30	3	4	9	14	
Compact fluorescent lamps with internal ballasts	7	0.08	64	86	236	300
	9	0.10	50	67	183	233
	11	0.12	41	55	150	191
	13	0.14	35	46	127	162
	18	0.20	25	33	92	117
	26	0.27	17	23	63	81
Fluorescent lamps with external electromagnetic ballasts	18	0.09	39	53	139	200
	2x18	0.17	21	28	74	106
	21	0.11	32	43	114	164
	2x21	0.22	16	22	57	82
	28	0.14	25	34	89	129
	2x28	0.27	13	18	46	67
	35	0.17	21	28	74	106
	2x35	0.34	10	14	37	53
	54	0.26	13	18	48	69
	2x54	0.52	7	9	24	35
	58	0.25	14	19	50	72
	2x58	0.48	7	10	26	38
80	0.40	9	12	31	45	
2x80	0.76	5	6	16	24	

Load	Power [W]	Current [I]	RIC16 RIC20 RAC20	RIC25 RAC25 RIC32	RIC40 RAC40	RIC63 RAC63
LED-Lamps Power supplies for LEDs N: Number of lamps or power supplies In: Current consumption per lamp or power supply	-	-	N = 2,4 A / In	N = 3,8 A / In	N = 11 A / In	N = 18 A / In

6 Operation

The contactor RAC can be manually locked in the position "On" or "Off".
 In position "Auto", the contactor is conventionally operated by coil.

7 Dimension



8 Accessories

Article	Description
RIC-DIST	Spacer 8mm
RIC-SEAL20	Sealing cover RIC/RAC20 & RIC16/32 (2 pole)
RIC-SEAL25	Sealing cover RIC/RAC25 & RIC16/32 (4 pole)
RIC-SEAL40/63	Sealing cover RIC/RAC40 & RIC/RAC63

9 Standards

IEC/EN 60947-4-1	Low voltage switchgear - general establishments
IEC/EN 60947-5-1	Low voltage switchgear - control circuit devices and switching elements
IEC/EN 61095	Electromechanical contactors for household and similar purposes
CE	European Conformity
EAC	EurAsian Conformity
RoHS	Restriction of Hazardous Substances