Features

- Control coil voltages of contactors:
  - **RIK21**:
    AC: 24 V, 230 V AC: 50/60 Hz,
  - **RIK20** ❶, **RIK25** ❶, **RIK40** ❶, **RIK63** ❶:
    AC/DC: 24 V, 230 V AC: 50/60 Hz,
- Setting up contacts of contactors:
  - **RIK20**, **RIK25**, **RIK40**, **RIK63**:
    can be used as main or auxiliary contacts,
  - **RIK25**, **RIK40**, **RIK63**:
    additional auxiliary contacts **RIKN** ❷,
    mounted on the side of the contactor.
- Silent operation.
- Protection against direct contact IP 20.
- Compliance with standards:
  IEC/EN 61095, IEC/EN 60947-4-1,
  IEC/EN 60947-5-1, VDE 0660, VDE 0637.
- Recognitions, certifications, directives:
  RoHS, CE

❶ RIK20, RIK25, RIK40, RIK63: contactors with a varistor for overvoltage protection and a rectifier enable DC and AC voltage control
❷ RIKN available in versions: RIKN-20 (2 NO) and RIKN-11 (1 NO + 1 NC)
❸ RIKN can not be mounted on contactors RIK20
❹ RIKN increase by 9 mm the width of contactors RIK25, RIK40, RIK63
❺ Recommended ventilation distance between group of contactors mounted side-by-side is 0,5 module width (9 mm)
❻ The data for 1-phase power are valid for contactors RIK..-22 (2 NO + 2 NC)

		RIK21	RIK20	RIK25	RIK40	RIK63	RIKN
							
		three-pole	double-pole	four-pole	four-pole	four-pole	auxiliary contacts ❷
General data							
Mechanical life (cycles)		3×10^6	10^7	10^7	10^7	10^7	3×10^6
Module width		2	1 ❸	2	3	3	0,5
Dimensions (L x W x H)		62 x 35 x 57 mm	85 x 17,5 x 65 mm	85 x 35 x 65 mm ❹	84 x 53,5 x 65,5 mm ❹	84 x 53,5 x 65,5 mm ❹	85 x 9 x 60 mm
Weight		170 g	130 g	250 g	420 g	420 g	30 g
Ambient temperature	storage	-40…+80 °C	-40…+80 °C	-40…+80 °C	-40…+80 °C	-40…+80 °C	-30…+80 °C
	operating	-15…+55 °C	-15…+55 °C	-15…+55 °C	-15…+55 °C	-15…+55 °C	-25…+55 °C
	operating		-25…+70 °C (2 NO)	-25…+70 °C (4 NO)	-25…+70 °C (4 NO)	-25…+70 °C (4 NO)	
	operating				-15…+70 °C (3 NO + 1 NC)	-15…+70 °C (3 NO + 1 NC)	
Cover protection category (PN-EN 60529)		IP 20	IP 20	IP 20	IP 20	IP 20	IP 20
Number of contactors mounted side-by-side ❺	≤ +40 °C	no limitation	max. 3	max. 3	max. 3	max. 3	❹
	+40...+55 °C		max. 2	max. 2	max. 2	max. 2	
Max. operating frequency	DC1	300 cycles/hour	300 cycles/hour	300 cycles/hour	300 cycles/hour	300 cycles/hour	–
	AC1 / AC3 / AC5b / AC6b	600 cycles/hour	600 cycles/hour	600 cycles/hour	600 cycles/hour	600 cycles/hour	–
	AC15	1 200 cycles/hour	600 cycles/hour	600 cycles/hour	1 200 cycles/hour	1 200 cycles/hour	–
	no load	3 000 cycles/hour	3 000 cycles/hour	3 000 cycles/hour	3 000 cycles/hour	3 000 cycles/hour	–
Contact reliability		17 V (≥ 50 mA)	17 V (≥ 50 mA)	17 V (≥ 50 mA)	17 V (≥ 50 mA)	17 V (≥ 50 mA)	12 V (≥ 5 mA)
Min. distance of open contacts		3,6 mm	3,6 mm	3,6 mm	3,6 mm	3,6 mm	3,6 mm
Power dissipation per pole		2 W	1,7 W	2,2 W	4 W	8 W	0,3 W
Overvoltage protection		–	430 V	430 V	430 V	430 V	–
Overload current withstand capability		40 A	72 A	68 A	176 A	240 A	–
Max. back-up fuse for short-circuit protection gL **Iv**	coordination type 1	–	–	25 A	63 A	80 A	–
	coordination type 2	20 A	20 A	–	40 A	63 A	6 A
Output circuit – main contacts data							
Insulation rated voltage **Ui**		415 V	440 V	440 V	440 V	440 V	500 V
Rated surge voltage **Uimp**		4 000 V	4 000 V	4 000 V	6 000 V	6 000 V	4 000 V
Rated thermal current **Ith**		20 A	20 A	25 A	40 A	63 A (maks. 55 °C) 50 A (maks. 75 °C)	6 A
Rated operational voltage **Ue**		400 V	400 V	400 V	400 V	400 V	230 V, 400 V
Rated frequency **f**		50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
AC1 / AC7a				**non-inductive or slightly inductive loads, resistance furnaces, heaters / slightly inductive loads in household appliances (mixers, blenders)**			
Rated operational current **Ie**		20 A	20 A	25 A	40 A	63 A	–
Operational power **Pe**	• 1-phase motor 230 V	–	4 kW	5,4 kW	8,7 kW	13,3 kW	–
	• 3-phase motor 230 V	7,5 kW	–	9 kW	16 kW	24 kW	–
	400 V	13 kW	–	16 kW	26 kW	40 kW	–
Electrical life (cycles)		2×10^5	2×10^5	2×10^5	10^5	10^5	–
AC3 / AC7b				**squirrel-cage motors: starting, switches off motors during running time / motor-loads in household appliances (fans, central vacuum)**			
Rated operational current **Ie**		5 A	9 A / 6 A (NO/NC)	8,5 A	22 A	30 A	–
Operational power **Pe**	• 1-phase motor 230 V	0,37 kW	1,3 kW / 0,75 kW (NO/NC)	1,3 kW ❻	3,7 kW ❻	5 kW ❻	–
	• 3-phase motor 230 V	1,1 kW	–	2,2 kW	5,5 kW	8,5 kW	–
	400 V	2,2 kW	–	4 kW	11 kW	15 kW	–
Electrical life (cycles)		3×10^5	3×10^5	5×10^5	$1,5 \times 10^5$	$1,5 \times 10^5$	–

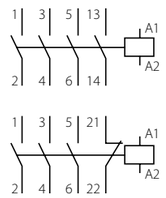
Mounting

Installation contactors **RIK** are designed for:
- direct mounting on 35 mm rail mount acc. to PN-EN 60715,
- operational position – see page 11 "Mounting positions",
- application site – mounted in switchboards.

		RIK21	RIK20	RIK25	RIK40	RIK63	RIKN
Output circuit – main contacts data							
AC6b							**switching of capacitor banks**
Switching of capacitors **C**	230 V	30 µF	30 µF	36 µF	220 µF	330 µF	–
Electrical life (cycles)		10^5	10^5	10^5	10^5	10^5	–
DC1 (L/R ≤ 1 ms)							**non-inductive or slightly inductive loads, resistance furnaces, heaters**
Rated operational current **Ie**							
• 1 pole	U_e = 24 V DC	20 A	20 A	25 A	40 A	63 A	–
	U_e = 48 V DC	12 A	15 A	20 A	25 A	26 A	–
	U_e = 60 V DC	6 A	10 A	15 A	18 A	20 A	–
	U_e = 110 V DC	2 A	6 A	6 A	4 A	4 A	–
	U_e = 220 V DC	0,5 A	0,6 A	0,6 A	1,2 A	1,2 A	–
• 2 poles	U_e = 24 V DC	20 A	20 A	25 A	40 A	63 A	–
connected in series	U_e = 48 V DC	15 A	18 A	25 A	38 A	42 A	–
	U_e = 60 V DC	10 A	15 A	20 A	32 A	34 A	–
	U_e = 110 V DC	4 A	10 A	10 A	10 A	10 A	–
	U_e = 220 V DC	1,5 A	6 A	6 A	8 A	8 A	–
• 3 poles	U_e = 24 V DC	20 A	–	25 A	40 A	63 A	–
connected in series	U_e = 48 V DC	20 A	–	25 A	40 A	63 A	–
	U_e = 60 V DC	20 A	–	25 A	40 A	60 A	–
	U_e = 110 V DC	6 A	–	20 A	30 A	35 A	–
	U_e = 220 V DC	2,5 A	–	15 A	20 A	30 A	–
• 4 poles	U_e = 24 V DC	20 A	–	25 A	40 A	63 A	–
connected in series	U_e = 48 V DC	20 A	–	25 A	40 A	63 A	–
	U_e = 60 V DC	20 A	–	25 A	40 A	63 A	–
	U_e = 110 V DC	6 A	–	20 A	40 A	63 A	–
	U_e = 220 V DC	3,5 A	–	15 A	40 A	63 A	–
Electrical life (cycles)		10^5	10^5	10^5	10^5	10^5	–
DC3 (L/R ≤ 2 ms)							**shunt-motors: starting, plugging, inching, dynamic breaking of motors**
Rated operational current **Ie**							
• 1 pole	U_e = 24 V DC	–	–	15 A	22 A	25 A	–
	U_e = 48 V DC	–	–	8 A	10 A	11 A	–
	U_e = 60 V DC	–	–	4 A	5 A	5 A	–
	U_e = 110 V DC	–	–	1,3 A	1,5 A	1,5 A	–
	U_e = 220 V DC	–	–	0,2 A	0,3 A	0,3 A	–
• 2 poles	U_e = 24 V DC	20 A	20 A	25 A	40 A	45 A	–
connected in series	U_e = 48 V DC	10 A	10 A	16 A	20 A	22 A	–
	U_e = 60 V DC	8 A	8 A	12 A	16 A	18 A	–
	U_e = 110 V DC	4 A	4 A	5,5 A	5 A	5 A	–
	U_e = 220 V DC	0,4 A	0,4 A	0,6 A	1 A	1 A	–
• 3 poles	U_e = 24 V DC	20 A	–	25 A	40 A	63 A	–
connected in series	U_e = 48 V DC	20 A	–	25 A	40 A	45 A	–
	U_e = 60 V DC	15 A	–	25 A	32 A	35 A	–
	U_e = 110 V DC	6 A	–	15 A	15 A	18 A	–
	U_e = 220 V DC	2,5 A	–	3 A	4 A	5 A	–
• 4 poles	U_e = 24 V DC	20 A	–	25 A	40 A	63 A	–
connected in series	U_e = 48 V DC	20 A	–	25 A	40 A	63 A	–
	U_e = 60 V DC	15 A	–	25 A	40 A	63 A	–
	U_e = 110 V DC	6 A	–	20 A	40 A	63 A	–
	U_e = 220 V DC	3,5 A	–	8 A	10 A	10 A	–
Electrical life (cycles)		10^5	10^5	10^5	10^5	10^5	–

Connections diagrams ❶

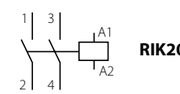
three-pole



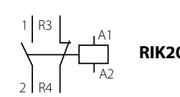
RIK21-10

RIK21-01

double-pole



RIK20-20



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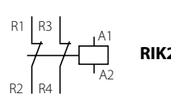
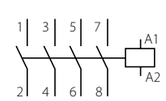
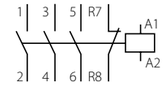


RIK20-02

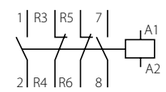
four-pole



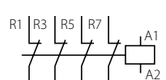
RIK25-40
RIK40-40
RIK63-40



RIK25-31
RIK40-31
RIK63-31

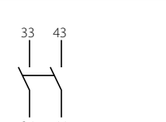


RIK25-22
RIK40-22
RIK63-22



RIK40-04

auxiliary contacts



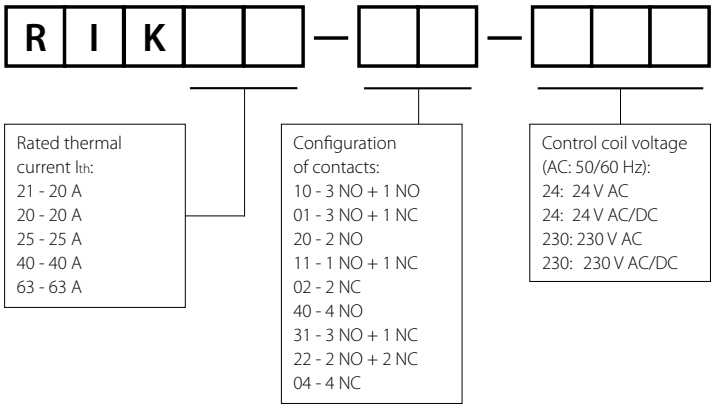
RIKN-20 **RIKN-11**

❶ RIK20, RIK25, RIK40, RIK63: contactors with a varistor for overvoltage protection and a rectifier enable DC and AC voltage control
❼ RIK20, RIK25: contactors can be controlled by AC voltage with frequency 40 ... 400 Hz

		RIK21	RIK20	RIK25	RIK40	RIK63	RIKN
Output circuit – main contacts data							
DC5 (L/R ≤ 7,5 ms)							**series-motors: starting, plugging, inching, dynamic breaking of motors**
Rated operational current **Ie**							
• 1 pole	Ue = 24 V DC	–	–	15 A	20 A	25 A	–
	Ue = 48 V DC	–	–	5 A	8 A	10 A	–
	Ue = 60 V DC	–	–	3 A	4 A	5 A	–
	Ue = 110 V DC	–	–	0,5 A	1 A	1 A	–
	Ue = 220 V DC	–	–	0,1 A	0,2 A	0,2 A	–
• 2 poles	Ue = 24 V DC	20 A	20 A	25 A	40 A	45 A	–
connected in series	Ue = 48 V DC	8 A	8 A	15 A	18 A	20 A	–
	Ue = 60 V DC	6 A	6 A	10 A	14 A	15 A	–
	Ue = 110 V DC	2 A	2 A	4 A	5 A	5 A	–
	Ue = 220 V DC	0,2 A	0,2 A	0,4 A	0,8 A	0,8 A	–
• 3 poles	Ue = 24 V DC	20 A	–	25 A	40 A	63 A	–
connected in series	Ue = 48 V DC	20 A	–	25 A	40 A	44 A	–
	Ue = 60 V DC	15 A	–	20 A	28 A	30 A	–
	Ue = 110 V DC	5 A	–	12 A	12 A	15 A	–
	Ue = 220 V DC	1,5 A	–	2 A	3 A	4 A	–
• 4 poles	Ue = 24 V DC	20 A	–	25 A	40 A	63 A	–
connected in series	Ue = 48 V DC	20 A	–	25 A	40 A	63 A	–
	Ue = 60 V DC	15 A	–	25 A	40 A	60 A	–
	Ue = 110 V DC	5 A	–	15 A	35 A	45 A	–
	Ue = 220 V DC	3 A	–	5 A	8 A	10 A	–
Electrical life (cycles)		10^5	10^5	10^5	10^5	10^5	–
Connections (mounting)							
Max. cross section of the cables (rigid / flexible) **S**		1...2,5 mm² / 1...2,5 mm²	1...10 mm² / 1...6 mm²	1...10 mm² / 1...6 mm²	1,5...25 mm² / 1,5...16 mm²	1,5...25 mm² / 1,5...16 mm²	1...2,5 mm² / 1...2,5 mm²
Screws (type / head)		M3,5 / PZ2	M3,5 / PZ1	M3,5 / PZ1	M5 / PZ2	M5 / PZ2	M3 / PZ1
Max. tightening moment for the terminal		1,2 Nm	1,2 Nm	1,2 Nm	3,5 Nm	3,5 Nm	0,8 Nm
Output circuit – auxiliary contacts data							
Insulation rated voltage **Ui**		415 V	440 V	440 V	440 V	440 V	500 V
Rated surge voltage **Uimp**		4 000 V	4 000 V	4 000 V	4 000 V	4 000 V	4 000 V
Rated thermal current **Ith**		20 A	20 A	25 A	40 A	63 A	6 A
Rated operational voltage **Ue**		230/400 V	230/400 V	230/400 V	230/400 V	230/400 V	230 V, 400 V
AC15							**control of AC electromagnetic loads**
Rated operational current (1-phase) **Ie**	230 V	6 A	6 A	6 A	6 A	6 A	6 A
	400 V	–	4 A	4 A	4 A	4 A	4 A
Electrical life (cycles)		2 x 10^5	3 x 10^5	5 x 10^5	1,5 x 10^5	1,5 x 10^5	0,5 x 10^5
Input circuit – coil data							
Control voltage **Uc**		AC: 24 V, 230 V	AC/DC ❶: 24 V, 230 V	AC/DC ❶: 24 V, 230 V	AC/DC ❶: 24 V, 230 V	AC/DC ❶: 24 V, 230 V	–
Range of control voltage **Uc**		0,85 ... 1,1 Uc	0,85 ... 1,1 Uc	0,85 ... 1,1 Uc	0,85 ... 1,1 Uc	0,85 ... 1,1 Uc	–
Rated frequency **f**		AC: 50/60 Hz	AC: 50/60 Hz ❼	AC: 50/60 Hz ❼	AC: 50/60 Hz	AC: 50/60 Hz	–
Surge immunity test (IEC/EN 61000-4-5)		2 000 V (1,2 / 50 µs)	2 000 V (1,2 / 50 µs)	2 000 V (1,2 / 50 µs)	2 000 V (1,2 / 50 µs)	2 000 V (1,2 / 50 µs)	–
Coil consumption	switch-on	30 VA / 25 W	2,1 VA / 2,1 W	2,6 VA / 2,6 W	5 VA / 5 W	5 VA / 5 W	–
	switch-on				6,1 VA / 6,1 W (2 NO + 2 NC, 4 NC)	6,1 VA / 6,1 W (2 NO + 2 NC, 4 NC)	
	operation	5 VA / 1,5 W	2,1 VA / 2,1 W	2,6 VA / 2,6 W	5 VA / 5 W	5 VA / 5 W	–
	operation				6,1 VA / 6,1 W (2 NO + 2 NC, 4 NC)	6,1 VA / 6,1 W (2 NO + 2 NC, 4 NC)	
Delays	make	7 ... 20 ms	15 ... 45 ms	15 ... 45 ms	15 ... 20 ms	15 ... 20 ms	–
	break	10 ... 20 ms	20 ... 50 ms	20 ... 70 ms	35 ... 45 ms	35 ... 45 ms	–
Max. cross section of the cables (rigid / flexible) **S**		1...2,5 mm² / 1...2,5 mm²	1...2,5 mm² / 1...2,5 mm²	1...2,5 mm² / 1...2,5 mm²	1...2,5 mm² / 1...2,5 mm²	1...2,5 mm² / 1...2,5 mm²	–
Screws (type / head)		M3,5 / PZ2	M3,5 / PZ1	M3,5 / PZ1	M3 / PZ1	M3 / PZ1	–
Max. tightening moment for the terminal		1,2 Nm	0,6 Nm	0,6 Nm	0,6 Nm	0,6 Nm	–

Selection table

Type of installation contactor	Ordering code of installation contactor	Configuration of contacts	Control coil voltage	Additional auxiliary contacts
RIK21	RIK21-10-24	3 NO + auxiliary contact 1 NO	24 V AC	–
	RIK21-01-24	3 NO + auxiliary contact 1 NC	24 V AC	
	RIK21-10-230	3 NO + auxiliary contact 1 NO	230 V AC	
	RIK21-01-230	3 NO + auxiliary contact 1 NC	230 V AC	
RIK20	RIK20-20-24	2 NO	24 V AC/DC	–
	RIK20-11-24	1 NO + 1 NC	24 V AC/DC	
	RIK20-02-24	2 NC	24 V AC/DC	
	RIK20-20-230	2 NO	230 V AC/DC	
	RIK20-11-230	1 NO + 1 NC	230 V AC/DC	
	RIK20-02-230	2 NC	230 V AC/DC	
RIK25	RIK25-40-24	4 NO	24 V AC/DC	RIKN-20 (2 NO) RIKN-11 (1 NO + 1 NC)
	RIK25-31-24	3 NO + 1 NC	24 V AC/DC	
	RIK25-22-24	2 NO + 2 NC	24 V AC/DC	
	RIK25-40-230	4 NO	230 V AC/DC	
	RIK25-31-230	3 NO + 1 NC	230 V AC/DC	
	RIK25-22-230	2 NO + 2 NC	230 V AC/DC	
RIK40	RIK40-40-24	4 NO	24 V AC/DC	RIKN-20 (2 NO) RIKN-11 (1 NO + 1 NC)
	RIK40-31-24	3 NO + 1 NC	24 V AC/DC	
	RIK40-22-24	2 NO + 2 NC	24 V AC/DC	
	RIK40-04-24	4 NC	24 V AC/DC	
	RIK40-40-230	4 NO	230 V AC/DC	
	RIK40-31-230	3 NO + 1 NC	230 V AC/DC	
	RIK40-22-230	2 NO + 2 NC	230 V AC/DC	
	RIK40-04-230	4 NC	230 V AC/DC	
RIK63	RIK63-40-24	4 NO	24 V AC/DC	RIKN-20 (2 NO) RIKN-11 (1 NO + 1 NC)
	RIK63-31-24	3 NO + 1 NC	24 V AC/DC	
	RIK63-22-24	2 NO + 2 NC	24 V AC/DC	
	RIK63-04-24	4 NC	24 V AC/DC	
	RIK63-40-230	4 NO	230 V AC/DC	
	RIK63-31-230	3 NO + 1 NC	230 V AC/DC	
	RIK63-22-230	2 NO + 2 NC	230 V AC/DC	
	RIK63-04-230	4 NC	230 V AC/DC	



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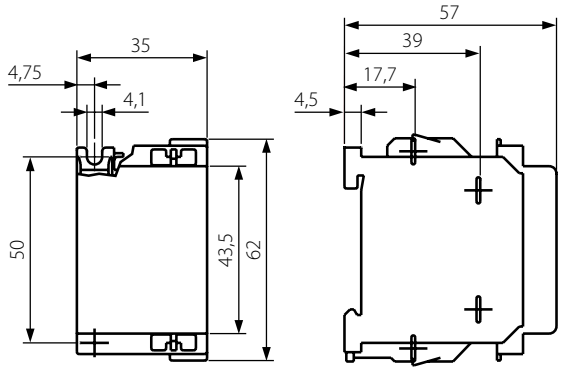
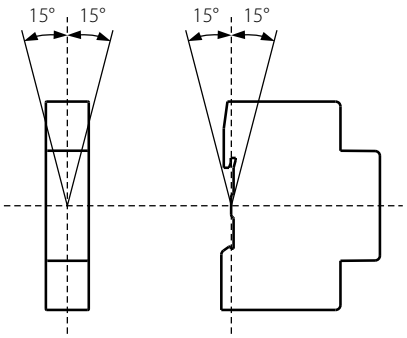
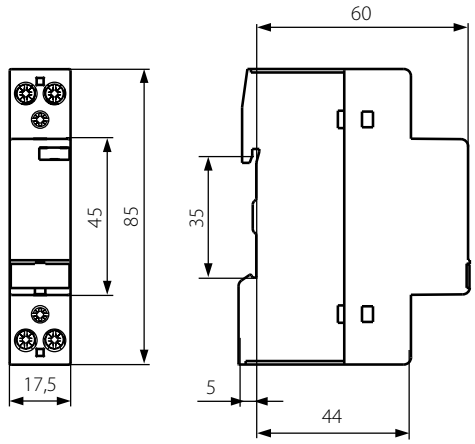
contactors RIK21



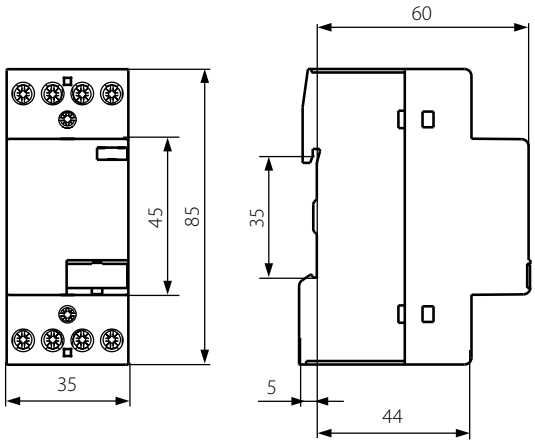
mounting positions RIK20, RIK25, RIK40, RIK63 ❸



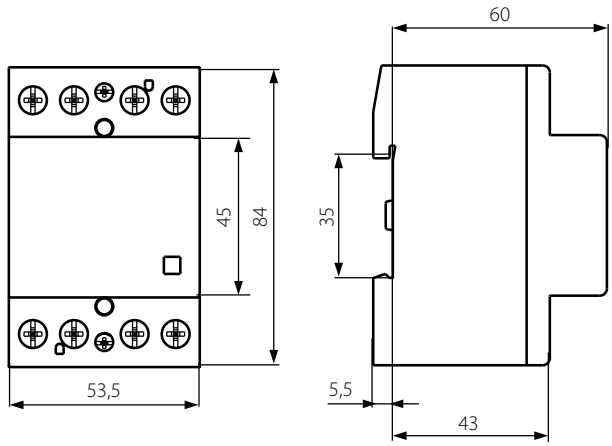
contactors RIK20



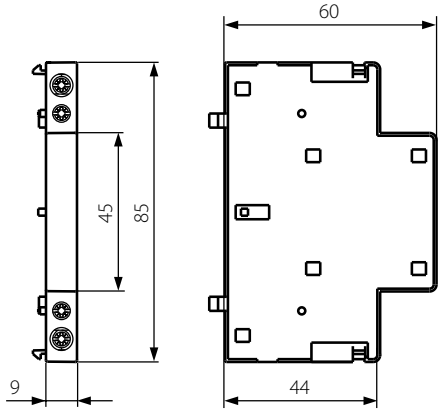
contactors RIK25



contactors RIK40, RIK63



auxiliary contacts RIKN ❹



❹ RIKN increase by 9 mm the width of contactors RIK25, RIK40, RIK63
❸ RIK21: mounting position of contactor is optional

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Maximum number of lamps on each pole contactor at 230 V 50 Hz

		Power [W]	Current [A]	Capacitance [µF]	RIK21	RIK20	RIK25	RIK40	RIK63
Incandescent lamps and tungsten halogen lamps									
		15	0,07	–	130	130	130	260	330
		25	0,11	–	80	80	80	160	200
		40	0,18	–	50	50	50	100	125
		60	0,26	–	33	33	33	65	85
		75	0,33	–	26	26	26	53	66
		100	0,44	–	20	20	20	40	50
		150	0,65	–	13	13	13	26	33
		200	0,87	–	10	10	10	20	25
		300	1,3	–	6	6	6	13	16
		500	2,17	–	3	3	3	8	10
		1000	4,35	–	1	1	1	4	5
Energy saving lamps									
		3	0,03	–	50	50	60	150	200
		5	0,04	–	45	45	55	135	180
		7	0,055	–	40	40	50	120	160
		8	0,065	–	35	35	45	110	150
		9	0,075	–	30	30	40	100	140
		10	0,08	–	30	30	40	100	140
		11	0,09	–	30	30	40	100	140
		12	0,1	–	25	25	35	95	120
		14	0,11	–	25	25	35	90	120
		15	0,12	–	20	20	30	85	115
		16	0,13	–	20	20	30	80	105
		18	0,145	–	18	18	26	70	95
		20	0,16	–	17	17	22	65	85
		21	0,17	–	15	15	20	60	80
		23	0,185	–	15	15	20	60	70
		24	0,195	–	15	15	20	55	70
		30	0,16	–	15	15	20	55	70
Metal halide lamps									
	uncorrected	35	0,35	–	18	18	22	43	60
		70	1	–	10	10	12	23	32
		150	1,8	–	5	5	7	12	18
		250	3	–	3	3	4	7	10
		400	3,5	–	3	3	3	6	9
		1000	9,5	–	1	1	1	2	3
		2000	16,5	–	–	–	–	1	1
	parallel correction	35	0,23	6	5	5	6	36	50
		70	0,45	12	2	2	3	18	25
		150	0,75	20	1	1	1	11	15
		250	1,26	33	–	–	–	6	9
		400	2	35	–	–	–	6	8
		1000	5	95	–	–	–	2	3
		2000	10,5	148	–	–	–	1	2
	with electronic control gear ❾	20	0,1	–	9	9	9	18	20
		35	0,2	–	6	6	6	11	13
		70	0,36	–	5	5	5	10	12
		150	0,7	–	4	4	4	8	10

❾ (PCI) + 50...125 I_n lamp for 0,6 ms

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