

Modular Contactors for Lighting, Heating & PV Solar

Series R20, R25, R40 & R63 (20 to 63A)



Modular Contactors, low noise

Rated Current	Heating Power AC1 at	Type	coil voltage		Pack pcs.	Weight kg/pc.	Wiring Diagram
			24	230			
400V A	1-phase 230V kW	3-phase 400V kW	↓	24V 50/60Hz	12	0,12	
			220-240V 50Hz, 230-264V 60Hz				

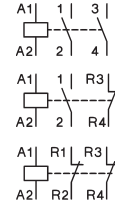
One-pole 1 module (17,5mm), AC-operated (low noise)

20	4,6	-	R20-10 24	12	0,12
20	4,6	-	R20-10 230	12	0,12

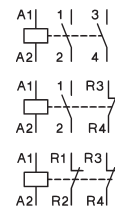


Two-pole 1 module (17,5mm), AC-operated (low noise)

20	4,6	-	R20-20 24	12	0,12
20	4,6	-	R20-20 230	12	0,12
20	4,6	-	R20-11 24	12	0,12
20	4,6	-	R20-11 230	12	0,12
20	4,6	-	R20-02 24	12	0,12
20	4,6	-	R20-02 230	12	0,12

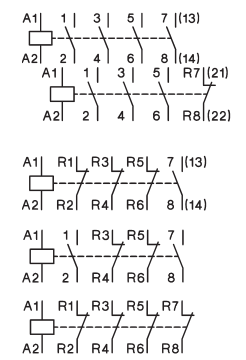


25	5,5	-	R25-20 24	12	0,14
25	5,5	-	R25-20 230	12	0,14
25	5,5	-	R25-11 24	12	0,14
25	5,5	-	R25-11 230	12	0,14
25	5,5	-	R25-02 24	12	0,14
25	5,5	-	R25-02 230	12	0,14



Four-pole 2 modules (35mm)¹⁾, AC-operated (low noise)

25	5,7	17	R25-40 24	6	0,21
25	5,7	17	R25-40 230	6	0,21
25	5,7	17	R25-31 24	6	0,21
25	5,7	17	R25-31 230	6	0,21
25	5,7	17	R25-13 24	6	0,21
25	5,7	17	R25-13 230	6	0,21
25	5,7	-	R25-22 24	6	0,21
25	5,7	-	R25-22 230	6	0,21
25	5,7	17	R25-04 24	6	0,21
25	5,7	17	R25-04 230	6	0,21



Modular Contactors for Lighting, Heating & PV Solar

Series R20, R25, R40 & R63 (20 to 63A)



Modular Contactors, hum free



Rated Current	Heating Power AC1 at		Type	coil voltage		Pack pcs.	Weight kg/pc.	Wiring Diagram
	1-phase	3-phase		24VM	230VM			
400V	230V	400V		24V 50/60Hz, 24V DC	220-240V 50/60Hz, 220V DC			
A	kW	kW		↓				

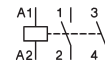
One-pole 1 module (17,5mm), AC-operated (hum free)

20	4,6	-	R20-10 24VM	12	0,12
20	4,6	-	R20-10 230VM	12	0,12

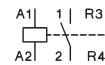


Two-pole 1 module (17,5mm), AC-operated (hum free)

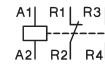
20	4,6	-	R20-20 24VM	12	0,12
20	4,6	-	R20-20 230VM	12	0,12



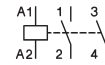
20	4,6	-	R20-11 24VM	12	0,12
20	4,6	-	R20-11 230VM	12	0,12



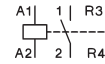
20	4,6	-	R20-02 24VM	12	0,12
20	4,6	-	R20-02 230VM	12	0,12



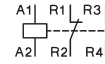
25	5,5	-	R25-20 24VM	12	0,14
25	5,5	-	R25-20 230VM	12	0,14



25	5,5	-	R25-11 24VM	12	0,14
25	5,5	-	R25-11 230VM	12	0,14

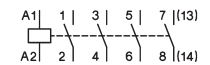


25	5,5	-	R25-02 24VM	12	0,14
25	5,5	-	R25-02 230VM	12	0,14

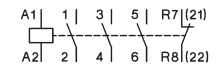


Four-pole 2 modules (35mm)¹⁾, AC-operated (hum free)

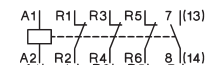
25	5,7	17	R25-40 24VM	6	0,21
25	5,7	17	R25-40 230VM	6	0,21



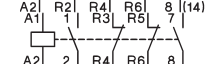
25	5,7	17	R25-31 24VM	6	0,21
25	5,7	17	R25-31 230VM	6	0,21



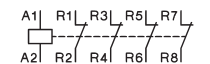
25	5,7	17	R25-13 24VM	6	0,21
25	5,7	17	R25-13 230VM	6	0,21



25	5,7	-	R25-22 24VM	6	0,21
25	5,7	-	R25-22 230VM	6	0,21



25	5,7	17	R25-04 24VM	6	0,21
25	5,7	17	R25-04 230VM	6	0,21



Modular Contactors, low noise

Rated Current	Heating Power AC1 at	Type	coil voltage	Pack pcs.	Weight kg/pc.	Wiring Diagram
AC1	1-phase 3-phase	24	24V 50/60Hz			
400V	230V 400V	230	220-240V 50Hz, 230-264V 60Hz			
A	kW kW	↓				

Two-pole 2 modules (35mm), AC-operated (low noise)



40	9	-	R40-20 24	6	0,23	
40	9	-	R40-20 230	6	0,23	
40	9	-	R40-02 24	6	0,23	
40	9	-	R40-02 230	6	0,23	
63	14,3	-	R63-20 24	6	0,23	
63	14,3	-	R63-20 230	6	0,23	
63	14,3	-	R63-02 24	6	0,23	
63	14,3	-	R63-02 230	6	0,23	

Four-pole 3 modules (52,5mm)¹⁾, AC-operated (low noise)



40	9	27,5	R40-40 24	4	0,35	
40	9	27,5	R40-40 230	4	0,35	
40	9	27,5	R40-31 24	4	0,35	
40	9	27,5	R40-31 230	4	0,35	
40	9	-	R40-22 24	4	0,35	
40	9	-	R40-22 230	4	0,35	
40	9	27,5	R40-04 24	4	0,35	
40	9	27,5	R40-04 230	4	0,35	
63	14,3	43	R63-40 24	4	0,36	
63	14,3	43	R63-40 230	4	0,36	
63	14,3	43	R63-31 24	4	0,36	
63	14,3	43	R63-31 230	4	0,36	
63	14,3	-	R63-22 24	4	0,36	
63	14,3	-	R63-22 230	4	0,36	
63	14,3	43	R63-04 24	4	0,36	
63	14,3	43	R63-04 230	4	0,36	

Auxiliary Contact Block 1/2 module (8,8mm)²⁾ for contactor R25, R40, R63 (4p.) max. 1 piece for contactor R40 and R63 (2p.) max. 1 piece



Rated current	AC15	AC15	AC1	Type	Pack pcs.	Weight kg/pc.	Wiring Diagram
230V	400V	400V	400V				
A	A	A	for contactor				
3	2	10	R25 ³⁾ , R40, R63	RH11	3	0,026	
3	2	10	R25-..VM (4p.)	RH11-1	3	0,026	

Accessories



	Type	Pack pcs.	Weight kg/pc.
RC-unit 2x for R20.. to R63.. for 12V to 250V AC 220nF / 100 Ohm not for R20-.., R25-..VM	RC-R 230	2	0,05
Spacing piece 1/2 module (8,8mm) for R20.. to R63.. for ambient temperature >40°C	P730	10	0,012
Sealing cover for R25.. (4p.)	P721	10	0,002
Sealing cover for R40.., R63..	P690	10	0,003

- 1) Sealable with Sealing Cover P690, available aux. contact block RH11
- 2) Contacts suitable for electronic circuits, according to IEC60947-5-4 for rated voltage 24V DC (test ratings 17V DC, 5mA Mirror contacts acc. IEC60947-4-1 Annex F.
- 3) AC-operated R25-.., 4-pole

Modular Contactors

Switching of lamps

Lamp Type	Power W	Current A	Capacitors μF	Max. lamps per pole at 230V 50Hz and max. 60°C			
				R20..	R25..	R40..	R63..
Incandescent lamps	60	0,27	-	36	50	92	129
	100	0,45	-	21	30	55	77
	200	0,91	-	10	15	27	38
	300	1,36	-	7	10	19	26
	500	2,27	-	4	6	11	16
	1000	4,5	-	2	3	6	8
Fluorescent lamps uncompensated or serial compensated	11	0,16	1,3	60	75	210	310
	18	0,37	2,7	25	30	90	140
	24	0,35	2,5	25	30	90	140
	36	0,43	3,4	20	25	70	140
	58	0,67	5,3	14	17	45	70
	65	0,67	5,3	13	16	40	65
	85	0,8	5,3	11	14	35	60
	Fluorescent lamps dual-connection	11	0,07	-	2 x 100	2 x 110	2 x 220
18		0,11	-	2 x 50	2 x 55	2 x 130	2 x 200
24		0,14	-	2 x 40	2 x 44	2 x 110	2 x 160
36		0,22	-	2 x 30	2 x 33	2 x 70	2 x 100
58		0,35	-	2 x 20	2 x 22	2 x 45	2 x 70
65		0,35	-	2 x 15	2 x 16	2 x 40	2 x 60
85		0,47	-	2 x 10	2 x 11	2 x 30	2 x 40
Fluorescent lamps parallel compensated		11	0,09	2	33	43	67
	18	0,13	2	25	32	50	80
	24	0,16	3	25	32	50	80
	36	0,27	4	22	32	50	80
	58	0,45	7	14	18	36	46
	65	0,5	7	14	18	36	46
	85	0,6	8	12	16	33	44
	Fluorescent lamps with electronic fluorescent lamp ballast	18	0,09	-	40	40	100
36		0,16	-	20	20	52	75
58		0,25	-	15	15	30	55
80		0,4	-	7	10	20	30
2 x 18		0,17	-	20	20	50	60
2 x 28		0,25	-	15	15	37	45
2 x 36		0,32	-	10	10	25	30
2 x 58		0,49	-	7	7	15	20
2 x 80		0,7	-	4	4	8	10
Transformers for metal halid low voltage lamps		20	0,09	-	40	52	110
	50	0,22	-	20	24	50	80
	75	0,33	-	13	16	35	54
	100	0,43	-	10	12	27	43
	150	0,65	-	7	9	19	29
	200	0,87	-	5	5	14	23
	300	1,3	-	3	4	9	14
Mercury-vapour lamps (high-pressure lamps), uncompensated e. g. H ₁ , HPL	50	0,61	-	16	21	38	55
	80	0,8	-	12	16	29	40
	125	1,15	-	8	11	20	28
	250	2,15	-	4	6	11	15
	400	3,25	-	3	4	7	10
	700	5,4	-	1	2	4	6
	1000	7,5	-	1	1	3	4
Mercury-vapour lamps (high-pressure lamps), compensated e. g. H ₂ , HPL	50	0,28	7	14	18	36	50
	80	0,41	8	12	16	31	44
	125	0,65	10	10	13	25	35
	250	1,22	18	5	7	14	19
	400	1,95	25	4	5	10	14
	700	3,45	45	2	3	6	8
	1000	4,8	60	1	2	4	6

Modular Contactors

Switching of lamps

Lamp Type	Power W	Current A	Capacitors μF	Max. lamps per pole at 230V 50Hz and max. 60°C				
				R20..	R25..	R40..	R63..	
Metal halide lamps uncompensated e. g. HQI, HPI, C	35	0,53	-	22	24	57	65	
	70	1	-	12	14	30	35	
	150	1,8	-	6	8	17	18	
	250	3	-	4	5	10	12	
	400	3,5	-	3	4	8	10	
	1000	9,5	-	1	1	3	4	
	2000	16,5	-	-	-	2	2	
	400V per pole	2000	10,5	-	-	2	2	
		3500	18	-	-	1	1	
	Metal halide lamps compensated e. g. HQI, HPI, C	35	0,25	6	16	21	42	58
70		0,45	12	8	11	21	29	
150		0,75	20	5	7	13	18	
250		1,5	33	3	4	9	11	
400		2,1	35	2	4	9	10	
1000		5,8	95	1	1	3	4	
2000		11,5	148	-	-	2	2	
400V per pole		2000	6,6	58	-	-	3	4
		3500	11,6	100	-	-	2	3
Metal halide lamps with electronic fluorescent with electronic fluorescent lamp ballast (e. g.: PCI) 50-125 x I _{n lamp} for 0,6ms		20	0,1	integrated	9	9	18	20
	28	0,15	integrated	-	-	-	18	
	35	0,2	integrated	6	6	11	13	
	70	0,36	integrated	5	5	10	12	
	150	0,7	integrated	4	4	8	10	
Sodium-vapour lamps (low pressure lamps), uncompensated	35	1,5	-	7	9	22	30	
	55	1,5	-	7	9	22	30	
	90	2,4	-	4	6	13	19	
	135	3,3	-	3	4	10	14	
	150	3,3	-	3	4	10	14	
	180	3,3	-	3	4	10	14	
	200	3,3	-	3	4	10	14	
Sodium-vapour lamps (low pressure lamps), compensated	35	0,31	20	5	6	15	18	
	55	0,42	20	5	6	15	18	
	90	0,63	30	3	4	10	12	
	135	0,94	45	2	3	7	8	
	150	1	40	2	3	8	9	
	180	1,16	40	2	3	8	9	
	200	1,32	25	-	-	10	12	
Sodium-vapour lamps (high pressure lamps), uncompensated	150	1,8	-	5	8	17	22	
	250	3	-	4	5	10	13	
	330	3,7	-	3	4	8	10	
	400	4,7	-	2	3	6	8	
	1000	10,3	-	1	1	3	4	
Sodium-vapour lamps (high pressure lamps), compensated	150	0,83	20	5	7	20	25	
	250	1,5	33	3	4	12	15	
	330	2	40	2	3	10	13	
	400	2,4	48	2	2	8	12	
	1000	6,3	106	1	1	4	6	
Sodium-vapour lamps (high pressure lamps) with serial electronic (e. g.: PCI) 50-125 x I _{n lamp} for 0,6ms	20	0,1	integrated	9	9	18	20	
	35	0,2	integrated	6	6	11	13	
	70	0,36	integrated	5	5	10	12	
	150	0,7	integrated	4	4	8	10	
LED-Lamps consider the inrush current of the lamp ballast and the cosφ of the lamp	max. inrush current of contactor [A]			195A	233A	424A	565A	
	$\frac{\text{inrush current of contactor}}{\text{inrush current of lamp/EVG}} =$			max. lamps per pole at 230V 50Hz and max. 60°C ($I_{nLED} \leq I_{th}$)				

Modular Contactors

Data according to IEC60 947-4-1, IEC 60947-5-1, VDE 0660-5-1

Type	2-pole				4-pole			RH11
	R20 (VM) ⁷⁾	R25 (VM) ⁷⁾	R40	R63	R25 (VM) ⁷⁾	R40	R63	
Main Contacts ^{4) 5) 6)}								
Rated insulation voltage U_i ¹⁾								
	V~	440	440	440	440	440	440	440
Rated operation voltage U _e	V~	440	440	440	440	440	440	440
Frequency of operations z AC1, AC3	1/h	300	300	600	600	300	600	600
Mechanical life	S x 10 ⁶	1	1	1	1	1	1	1
Utilization category AC1 / AC7a								
Switching of resistive load								
Rated operational current I _e (=I _{th}) open	A	20	25	40	63	25	40	63
Contact life	S x 10 ⁶	0,1	0,1	0,1	0,1	0,1	0,1	0,1
Minimum Switch Voltage	V/mA	24/100	24/100	24/100	24/100	24/100	24/100	24/100
Short time current	10s-current A	72	72	216	240	72	216	240
Power loss per pole at I _e /AC1	W	2	3	3	7	2	3	7
Utilization category AC2 and AC3 / AC7b								
Switching of three-phase motors								
Rated operational current I _e	A	-	-	-	-	9	27	30
Rated operational power of three-phase motors	220V kW	-	-	-	-	2,2	7,5	8
50-60Hz	230-240V kW	-	-	-	-	2,5	8	8,5
	380-415V kW	-	-	-	-	4	12,5	15
2-pole motors	230V kW	1,1 ²⁾	1,3	2,6	5	-	-	-
Contact life	S x 10 ⁶	0,15	0,15	0,15	0,15	0,15	0,15	0,15
Power consumption of coils								
AC operated	inrush VA	7 - 9	7 - 9	20 - 25	20 - 25	20 - 25	33 - 45	33 - 45
	sealed VA	2,2 - 4,2	2,2 - 4,2	4 - 6	4 - 6	4 - 6	6 - 8	6 - 8
	W	0,8 - 1,6	0,8 - 1,6	1,5 - 2,5	1,5 - 2,5	1,5 - 2,5	2,6	2,6
AC and DC-operated	W	2 - 3	2 - 3	-	-	3 - 4	-	-
Operation range of coils								
in multiples of control voltage U _s (-40° - +40°C)		0,85	0,85	0,85 1,1	0,85	0,85	0,85 -	0,85
Noise level (operation) acc. to EN ISO 3744								
from front, distance 0,5 m	dB	16 (0) ⁷⁾	16 (0) ⁷⁾	8	8	8 (0) ⁷⁾	< 4	< 4
Type		R20	R25 (2p.)	R25 (4p.)	R25-..VM	R40 (2p./4p.)	R63 (2p./4p.)	RH11
Maximum ambient temperature								
Operation	open °C				-40 to + 60			
	enclosed °C				-40 to + 40			
Storage	°C				-50 to + 90			
Short circuit protection								
max. fuse Coordination-type "1"gL (gG)	A	35	35	35	35	63	80	-
Rated short circuit current	"I _r " kA	3	3	3	3	3	3	-
	"I _q " kA	3	3	10	10	10	10	-
Switching time at control voltage U _s ±10%								
	make time ms	7 - 16	7 - 16	9 - 15	17 - 50	11 - 15	11 - 15	-
	release time ms	6 - 12	6 - 12	4 - 8	17 - 23	6 - 13	6 - 13	-
	arc duration ms	10 - 15	10 - 15	10 - 15	10 - 15	10 - 15	10 - 15	-
Cable cross-sections								
Main connector	solid or stranded mm ²	1,5 - 10	1,5 - 10	1,5 - 10	1,5 - 10	2,5 - 25	2,5 -	0,5 - 2,5 ³⁾
	flexible mm ²	1,5 - 6	1,5 - 6	1,5 - 6	1,5 - 6	2,5 - 16	2,5	0,5 - 2,5 ³⁾
	flexible with multicore cable end mm ²	1,5 - 6	1,5 - 6	1,5 - 6	1,5 - 6	2,5 - 16	2,5 - 16	0,5 - 1,5
Clamps per pole		1	1	1	1	1	1	2
Magnetic coil	solid or stranded mm ²	0,75 -	0,75 -	0,75 -	0,75 -	0,75 -	0,75 -	-
	flexible mm ²	0,5 - 2,5	0,5 - 2,5	0,5 - 2,5	0,5 - 2,5	0,5 - 2,5	0,5 - 2,5	-
	flexible with multicore cable end mm ²	0,5 - 1,5	0,5 - 2,5	0,5 - 1,5	0,5 - 1,5	0,5 - 1,5	0,5 - 1,5	-
Clamps per pole		1	1	1	1	1	1	-
Auxiliary Contacts ^{4) 5) 6)}								
Rated insulation voltage U_i ¹⁾								
	V AC	-	-	440	440	440	440	440
Thermal rated current I_{th}	40°C A	-	-	25	25	40	63	10
Ambient temperature	60°C A	-	-	25	25	40	63	6

1) Suitable for: earthed-neutral systems, overvoltage category I to II pollution degree 3 (standard-industry): U_{imp} = 4kV.

2) AC7b motor 2-pole 230V 1,1kW

3) Maximum cable cross-section with prepared conductor

4) Rated frequency 50/60Hz

5) Max. occ. switching overvoltage <4kV

6) Duty cycle: 100%

7) 0 dB for contactors type "VM" (AC/DC operated)

Modular Contactors

Data according to IEC60 947-4-1, IEC 60947-5-1, VDE 0660-5-1

Type	R20	R25 (2p.)	R25 (4p.)	R25-..VM	R40 (2p./4p.)	R63 (2p./4p.)	RH11
Utilization category AC15							
Rated operational current I_e	220-240V A	-	3	3	3	3	3
	380-415V A	-	2	2	2	2	2
	440V A	-	1,6	1,6	1,6	1,6	1,6
Utilization category DC13							
Rated operational current I_e	24-60V A	-	2	2	2	2	2
per pole	110V A	-	0,4	0,4	0,4	0,4	0,4
	220V A	-	0,1	0,1	0,1	0,1	0,1
Short circuit protection							
short-circuit current 1kA, contact welding not accepted							
max. fuse size	gL (gG) A	-	10	10	10	10	10

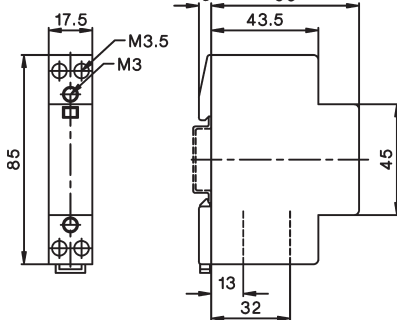
Data according to UL508



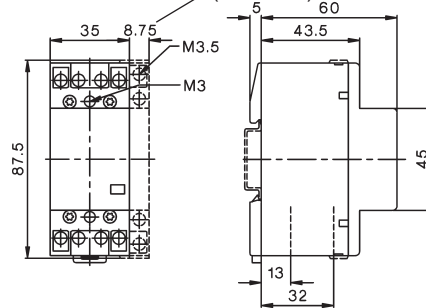
Main Contacts (cULus)	Type	R20	R25 (2p.)	R25 (4p.)	R40 (2p./4p.)	R63 (2p./4p.)	RH11
Rated operational current "General Use"	A	20	25	25	40	63	10
Rated operational power of three-phase motors at 60Hz (3ph)	110-120V hp	-	-	1	2	3	-
	200-208V hp	-	-	2	5	7½	-
	220-240V hp	-	-	3	7½	10	-
	265-277V hp	-	-	3	7½	10	-
Rated operational power of AC motors at 60Hz (1ph)	110-120V hp	½	½	½	1	1½	-
	200-208V hp	1	1	1	2	3	-
	220-240V hp	1½	1 ½	1½	3	5	-
	265-277V hp	1½	2	2	3	5	-
Fuses Suitable for use on a capability of delivering not more than	A	40	40	40	80	80	-
	rms A	5000	5000	5000	5000	5000	-
	V	300	300	300	300	300	300
Rated operation voltage	V~	300	300	300	300	300	300
Auxiliary Contacts (cULus)	heavy pilot duty AC	-	-	-	-	-	C300

Dimensions

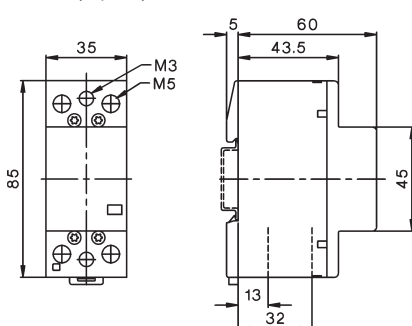
R20-..., R25-... (2-pole)
RC-R 230



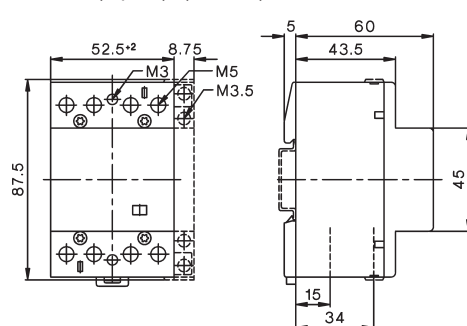
R25-... (4-pole) (+RH11)
R25-..VM (+RH11-1)



R40-... (2-pole)
R63-... (2-pole)



R40-... (4-pole) (+RH11)
R63-... (4-pole) (+RH11)



Aux. contact block
RH11, RH11-1

