

Contactors type CR, technical data

Products	Contactors				Aux. contact
Rating	20 A	25 A	40 A	63 A	6A
General					
Standards	IEC 60947-4-1, IEC 61095				IEC 60947-5-1
Nominal operating voltage 1-phase U _e 1-ph.	230 V	230 V	230 V	230 V	230 V
Nominal operating voltage 3-phase U _e 3-ph.	400 V	400 V	400 V	-	-
Overvoltage protection on coil	430 V (*5)	430 V (*5)	430 V	430 V	
Mechanical endurance (switching cycles)	3.000.000	3.000.000	3.000.000	3.000.000	3.000.000
Protection class (acc. DIN 40 050, IEC 529)	IP20	IP20	IP20	IP20	IP20
Permissible ambient temperature	-5...+55 °C	-5...+55 °C	-5...+55 °C	-5...+40 °C	-5...+55 °C
Storage temperature	-30...+80 °C	-30...+80 °C	-30...+80 °C	-30...+80 °C	-30...+80 °C
Contact rating					
Rated insulation voltage U _i	440 V	440 V	500 V	500 V	500 V
Frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz'	50/60 Hz
Rated impulse withstand voltage U _{imp}	4 kV	4 kV	4 kV	4 kV	4 kV
Rated thermal current I _{th}	20 A	25 A	40 A	63 A	6 A
AC1 / AC7a Rated operational current I _e	20 A	25 A	40 A	63 A	-
AC1 / AC7a Operational power rating at U _e = 230 Vac P _{max}	4 kW	9 kW	16 kW	24 kW	-
AC1 / AC7a Operational power rating at U _e = 400 Vac P _{max}	16 kW	26 kW	40 kW	-	-
AC3 / AC7b Operational power rating at U _e = 230 Vac P _{max}	1,3 kW (*1)	2,2 kW	5,5 kW	8,5 kW	-
AC3 / AC7b Operational power rating at U _e = 400 Vac P _{max}	4 kW	11 kW	15 kW	-	-
DC1 Rated thermal current at U _e = 24 Vdc I _e	20 A	25 A	40 A	63 A	-
DC1 Rated thermal current at U _e = 110 Vdc I _e	1A	2A	4A	4A	-
DC1 Rated thermal current at U _e = 220 Vdc I _e	0,5 A	0,5 A	0,8 A	0,8 A	-
DC1 Rated thermal current at U _e = 24 Vdc (2-poles in series) I _e	20 A	25 A	40 A	63 A	-
DC1 Rated thermal current at U _e = 110 Vdc (2-poles in series) I _e	3 A	4 A	10 A	10 A	-
DC1 Rated thermal current at U _e = 220 Vdc (2-poles in series) I _e	1,5 A	1,5 A	6 A	6 A	-
DC1 Rated thermal current at U _e = 24 Vdc (3-poles in series)	-	25 A	40 A	63 A	-
DC1 Rated thermal current at U _e = 110 Vdc (3-poles in series)	-	6:00 AM	30 A	35 A	-
DC1 Rated thermal current at U _e = 220 Vdc (3-poles in series)	-	2,5 A	20 A	30 A	-
Electrical endurance					
Maximum operating cycles at AC1 / AC7a application	200.000 x	200.000 x	100.000 x	100.000 x	-
Maximum operating cycles at AC3 / AC7b application	300.000 x	500.000 x	150.000 x	150.000 x	-
Maximum operating cycles at AC5a application	100.000 x	100.000 x	100.000 x	100.000 x	-
Maximum operating cycles at AC5b application	100.000 x (*2)	100.000 x (*2)	100.000 x (*3)	100.000 x (*4)	-
Maximum operating cycles per hour	600 x	600 x	600 x	600 x	600 x
Power dissipation per contact at I _n	1,7 W	2,2 W	4 W	8 W	-
Maximum back-up fuse	25 A gL	35 A gL	63 A gL	80 A gL	-
Rating	20 A	25 A	40 A	63 A	6 A
Operating coil (for combined ac/dc types only – CR.....)					
Coil inrush power (for all voltage ratings)	2,5 W	3 W	5 W	5 W	-
Coil consumption (for all voltage ratings)	2,5 W	3 W	5 W	5 W	-
Closing delay	15-25 ms	15-30 ms	15-20 ms	15-20 ms	-
Opening delay	35-45 ms	50-80 ms	35-45 ms	35-45 ms	-
Operating coil (for ac types only – CR.....A)					
Coil inrush power (for all voltage ratings)	13 W / 15 VA	17 W / 27 VA			-
Coil consumption (for all voltage ratings)	2 W / 5 VA	1 W / 2.7 VA	-	-	-
Closing delay	15 ms	15-25 ms	-	-	-
Opening delay	10 ms	35-45 ms	-	-	-

12.6 Technical data

Control and switching devices dimensions and data

Contactors type CR, technical data (continued)

Products	Contactors				Aux. contact
Dimensions					
Width	18 mm	35 mm	54 mm	54 mm	9 mm
Height	85 mm	85 mm	85 mm	85 mm	85 mm
Depth	60 mm	60 mm	60 mm	60 mm	60 mm
Terminals for main & auxiliary contacts					
Terminal capacity – fine stranded wire	1.....6 mm²	1.....6 mm²	1.....16 mm²	1.....16 mm²	1....2,5 mm²
Terminal capacity – solid wire	1.....10 mm²	1.....10 mm²	1.....25 mm²	1.....25 mm²	1....2,5 mm²
Terminal screw size	M3,5	M3,5	M5	M5	M3
Terminal screw head type (Pozidrive)	PZ Size 1	PZ Size 1	PZ Size 2	PZ Size 2	PZ Size 1
Maximum torque	1,2 Nm	1,2 Nm	2,0 Nm	2,0 Nm	0,8 Nm
Terminals for operating coils					
Terminal capacity – fine stranded wire	1....2,5 mm²	1....2,5 mm²	1.....2,5 mm²	1.....2,5 mm²	
Terminal capacity – solid wire	1.....2,5 mm²	1.....2,5 mm²	1.....2,5 mm²	1.....2,5 mm²	
Terminal screw size	M3	M3	M3	M3	
Terminal screw head type (Pozidrive)	PZ Size 1	PZ Size 1	PZ Size 1	PZ Size 1	
Maximum torque	0,6 Nm	0,6 Nm	0,6 Nm	0,6 Nm	

Remarks:

*1) Only applicable for normally open contact(s)

*2) At 1,5 kW

*3) At 3 kW

*4) At 5 kW

*5) For CR... types only (combined ac/dc types), NOT for CR...A types

Contactors type CR, lamp load table

Lighting Type	Lamp load (Watt) CR 20	CR 25	CR 40	CR 63	Maximum number of fittings per contactor type
Incandescent lamp					
	15	86	110	228	480
	25	52	72	180	290
	40	32	50	122	195
	60	21	33	86	130
	75	17	26	69	104
	100	13	20	52	78
	150	8	13	34	52
	200	6	10	26	39
	250	5	8	20	31
	300	4	6	17	26
	500	2	4	10	15
	1000	1	2	5	7
Energy saving lamp					
	3	42	52	83	120
	5	42	52	83	120
	7	42	52	83	120
	9	36	45	72	104
	11	33	41	65	94
	15	30	37	59	85
	20	29	36	57	82
	23	28	35	56	81

Contactors type CR, lamp load table (continued)

Lighting Type	Lamp load (Watt) CR 20	CR 25	CR 40	CR 63	Maximum number of fittings per contactor type
Fluorescent lamp – conventional supply					
Single fitting – Uncompensated (inductive)	18	22	24	90	140
	24	22	24	90	140
	36	17	20	65	95
	58	14	17	45	70
Single fitting – Compensated (capacitive)	18	7	8	48	73
	24	7	8	48	73
	36	7	8	48	73
	58	4	5	31	47
Double fitting – Series compensated	2 x 18	30	40	100	150
	2 x 24	24	31	78	118
	2 x 36	17	24	65	95
	2 x 58	10	14	40	60
Fluorescent lamp – HF electronic					
Single fitting – HF Electronic	18	25	31	49	71
	24	18	22	35	50
	36	14	17	27	39
	58	8	10	16	23
Double fitting – HF Electronic	2 x 18	12	15	24	35
	2 x 24	9	11	17	25
	2 x 36	7	8	13	19
	2 x 58	4	5	8	11
Compact fluorescent lamp					
Conventional supply	5	38	48	77	121
	7	27	34	54	86
	9	21	26	42	67
	11	17	21	35	55
Electronic supply	5	39	49	78	124
	7	39	49	78	124
	9	30	38	61	96
	11	25	31	50	79
High pressure mercury vapour lamp					
Uncompensated	50	14	18	38	55
	80	10	13	29	42
	125	7	9	20	29
	250	4	5	10	15
	400	2	3	7	10
Parallel compensated	50	4	5	31	47
	80	4	5	27	41
	125	3	4	22	33
	250	1	2	12	18
	400	1	1	9	13
Halogen metal vapour lamp					
Uncompensated	35	18	22	43	60
	70	10	12	23	32
	150	5	7	12	18
	250	3	4	7	10
	400	3	3	6	9
Parallel compensated	35	5	6	36	50
	70	2	3	18	25
	150	1	1	11	15
	250	-	1	6	9
	400	-	1	6	8

12.6

Technical data

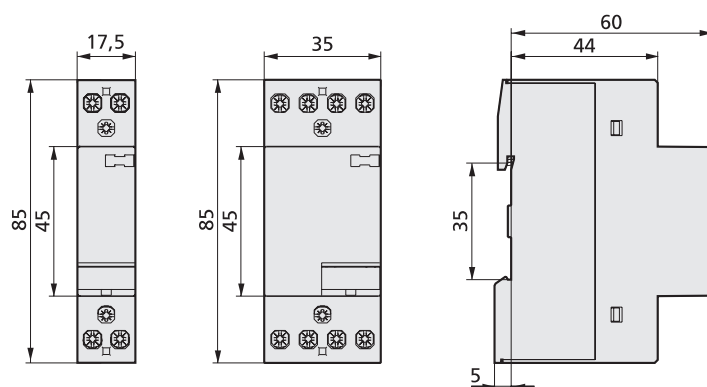
Control and switching devices dimensions and data

Contactors type CR, lamp load table (continued)

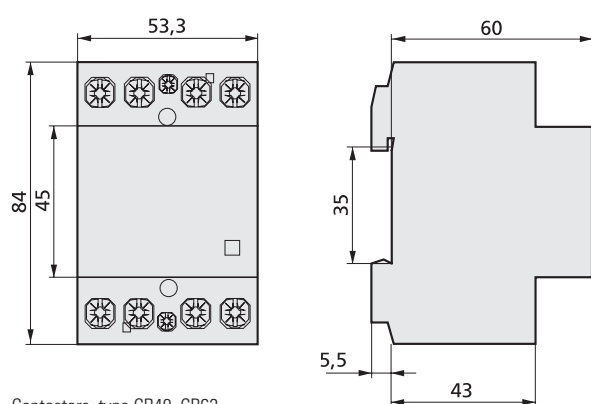
Lighting Type	Lamp load (Watt) CR 20	CR 25	CR 40	CR 63	Maximum number of fittings per contactor type
Low pressure sodium vapour lamp					
Uncompensated	18	22	27	71	90
	35	7	9	23	30
	55	7	9	23	30
	90	4	5	14	19
	135	3	4	10	13
	180	3	4	10	13
Parallel compensated	18	6	7	44	66
	35	1	1	11	16
	55	1	1	11	16
	90	1	1	8	12
	135	-	-	4	7
	180	-	-	4	7
High pressure sodium vapour lamp					
Uncompensated	150	5	6	17	22
	250	3	4	10	13
	400	2	2	6	8
	1000	-	1	3	3
Parallel compensated	150	1	1	11	16
	250	-	1	6	10
	400	-	-	4	6
	1000	-	-	2	3

General remarks:

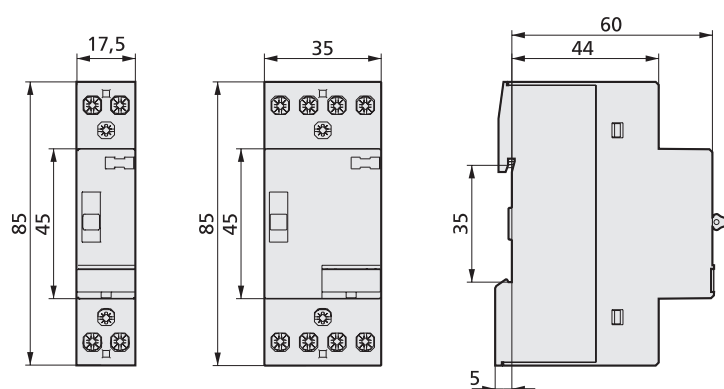
- 1) In case a 4-pole contactor is used (3 ph. + neutral) the above mentioned quantity of lamps need to be multiplied by 1,5 to obtain the maximum quantity of fittings for the contactor. The total quantity of fitting need to be split equally across the 3 poles.
- 2) In case multiple contactors are installed in one panel it is required to multiply the above mentioned fittings by the applicable load factor according the IEC 60439-1.
- 3) It is recommended to install one spacer between each 2 contactors installed (eg contactor, contactor, spacer, contactor, etc.)



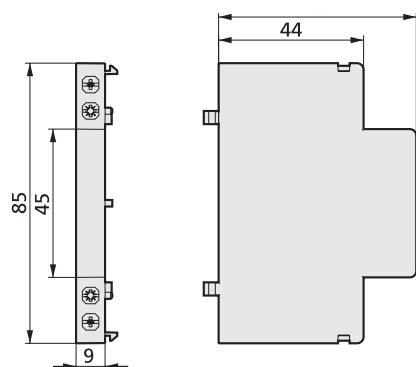
Contactors, type CR20, CR25



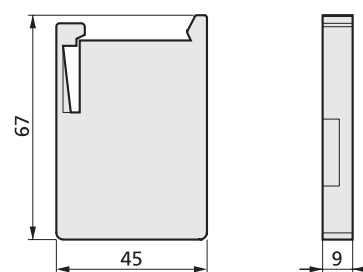
Contactors, type CR40, CR63



Day/Night contactors, type CRM20, CRM25



Auxiliary contact



Spacer