



Modular contactors, type CR

IEC 60947-4-1 & IEC 61095

Product Guide

- Full range from 20 A - 63 A
- Ac & dc coil type
- Contact indication included
- Low heat dissipation





Modular contactors, type CR

New range Eaton contactors from 20 A up to 63 A

Contactors are frequently applied for switching of lamp loads, fans or pumps in both utility as well as industrial areas.

Eaton's new "CR" contactors are very specific due to the applied operating coil and the construction of the main contacts. All contactors with ac/dc coils ensure silent operation which is further enhanced by a low power consumption.

Optimal contacts and low heat dissipation guarantee a long lifetime of the contactor which is available in a wide range of characteristics.

Technical characteristics

- Designed according to IEC 60947-4-1 and IEC 61095 standards.
- Suitable for applications in general control, heating & lighting applications.
- Available in 20, 25, 40 & 63 A ratings with up to 4-pole contacts.
- Coil voltages: 12 V_{ac/dc}, 24 V_{ac/dc}, 48 V_{ac/dc}, 230 V_{ac}, 220 V_{dc}.
- Optional add-on auxiliary contact available.
- DIN modular profile.
- Spacers available to extend lifetime
(it is recommended to use 1 spacer between every 2 contactors installed).
- Day / night contactors available with manual override function.

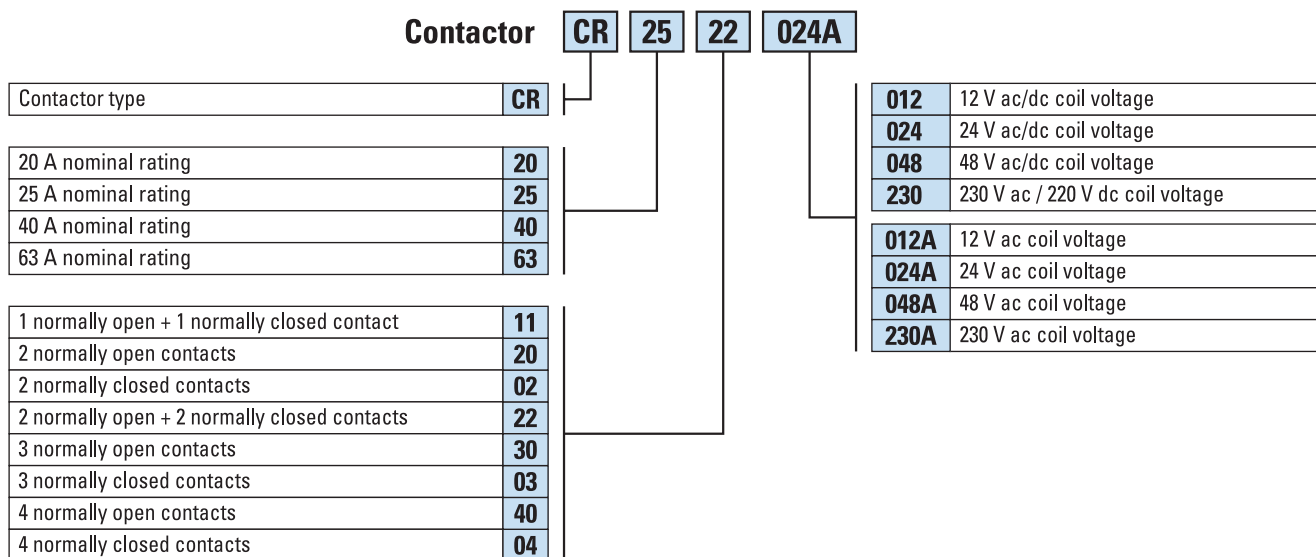
Advantages of Eaton contactors

- Low inrush power for all ac/dc types.
- Availability of combined ac/dc type contactors ensure silent operation.
- Contactors of ac/dc coil type are operable on both ac and dc voltage. The 20 A and 25 A versions are also available with ac coil. All combined ac/dc type versions are equipped with surge protection on the operating coil.
- Equipped with contact indication.
- Optimal quality of contacts and low heat dissipation ensure a long life time.



See page 5 for the technical drawings of Eaton contactors.
See page 6 for the technical details of Eaton contactors.
See page 8 for the lamp load table for Eaton contactors.

Explanation of Eaton list number system for CR contactors





CR2011230A

Contactors, 20 A - ac coil

Description	Rating	Contacts	Coil voltage ac	Coil voltage dc	Width	QPC	Eaton list number
Contactors 20 A - ac coil	20 A	1 no + 1 nc	24 V _{ac}	-	18 mm	1	CR2011024A
Contactors 20 A - ac coil	20 A	1 no + 1 nc	230 V _{ac}	-	18 mm	1	CR2011230A
Contactors 20 A - ac coil	20 A	2 nc	24 V _{ac}	-	18 mm	1	CR2002024A
Contactors 20 A - ac coil	20 A	2 nc	230 V _{ac}	-	18 mm	1	CR2002230A
Contactors 20 A - ac coil	20 A	2 no	12 V _{ac}	-	18 mm	1	CR2020012A
Contactors 20 A - ac coil	20 A	2 no	24 V _{ac}	-	18 mm	1	CR2020024A
Contactors 20 A - ac coil	20 A	2 no	48 V _{ac}	-	18 mm	1	CR2020048A
Contactors 20 A - ac coil	20 A	2 no	230 V _{ac}	-	18 mm	1	CR2020230A



CR2020024

Contactors, 20 A - ac/dc coil

Description	Rating	Contacts	Coil voltage ac	Coil voltage dc	Width	QPC	Eaton list number
Contactors 20 A - ac/dc coil	20 A	1 no + 1 nc	24 V _{ac}	24 V _{dc}	18 mm	1	CR2011024
Contactors 20 A - ac/dc coil	20 A	1 no + 1 nc	230 V _{ac}	220 V _{dc}	18 mm	1	CR2011230
Contactors 20 A - ac/dc coil	20 A	2 nc	24 V _{ac}	24 V _{dc}	18 mm	1	CR2002024
Contactors 20 A - ac/dc coil	20 A	2 nc	230 V _{ac}	220 V _{dc}	18 mm	1	CR2002230
Contactors 20 A - ac/dc coil	20 A	2 no	12 V _{ac}	12 V _{dc}	18 mm	1	CR2020012
Contactors 20 A - ac/dc coil	20 A	2 no	24 V _{ac}	24 V _{dc}	18 mm	1	CR2020024
Contactors 20 A - ac/dc coil	20 A	2 no	48 V _{ac}	48 V _{dc}	18 mm	1	CR2020048
Contactors 20 A - ac/dc coil	20 A	2 no	230 V _{ac}	220 V _{dc}	18 mm	1	CR2020230



CR2540230A

Contactors, 25 A - ac coil

Description	Rating	Contacts	Coil voltage ac	Coil voltage dc	Width	QPC	Eaton list number
Contactors 25 A - ac coil	25 A	2 no + 2 nc	24 V _{ac}	-	36 mm	1	CR2522024A
Contactors 25 A - ac coil	25 A	2 no + 2 nc	230 V _{ac}	-	36 mm	1	CR2522230A
Contactors 25 A - ac coil	25 A	3 no	24 V _{ac}	-	36 mm	1	CR2530024A
Contactors 25 A - ac coil	25 A	3 no	230 V _{ac}	-	36 mm	1	CR2530230A
Contactors 25 A - ac coil	25 A	4 nc	24 V _{ac}	-	36 mm	1	CR2504024A
Contactors 25 A - ac coil	25 A	4 nc	230 V _{ac}	-	36 mm	1	CR2504230A
Contactors 25 A - ac coil	25 A	4 no	12 V _{ac}	-	36 mm	1	CR2540012A
Contactors 25 A - ac coil	25 A	4 no	24 V _{ac}	-	36 mm	1	CR2540024A
Contactors 25 A - ac coil	25 A	4 no	48 V _{ac}	-	36 mm	1	CR2540048A
Contactors 25 A - ac coil	25 A	4 no	230 V _{ac}	-	36 mm	1	CR2540230A



CR2504024

Contactors, 25 A - ac/dc coil

Description	Rating	Contacts	Coil voltage ac	Coil voltage dc	Width	QPC	Eaton list number
Contactors 25 A - ac/dc coil	25 A	2 no + 2 nc	24 V _{ac}	24 V _{dc}	36 mm	1	CR2522024
Contactors 25 A - ac/dc coil	25 A	2 no + 2 nc	230 V _{ac}	220 V _{dc}	36 mm	1	CR2522230
Contactors 25 A - ac/dc coil	25 A	3 no	24 V _{ac}	24 V _{dc}	36 mm	1	CR2530024
Contactors 25 A - ac/dc coil	25 A	3 no	230 V _{ac}	220 V _{dc}	36 mm	1	CR2530230
Contactors 25 A - ac/dc coil	25 A	4 nc	24 V _{ac}	24 V _{dc}	36 mm	1	CR2504024
Contactors 25 A - ac/dc coil	25 A	4 nc	230 V _{ac}	220 V _{dc}	36 mm	1	CR2504230
Contactors 25 A - ac/dc coil	25 A	4 no	12 V _{ac}	12 V _{dc}	36 mm	1	CR2540012
Contactors 25 A - ac/dc coil	25 A	4 no	24 V _{ac}	24 V _{dc}	36 mm	1	CR2540024
Contactors 25 A - ac/dc coil	25 A	4 no	48 V _{ac}	48 V _{dc}	36 mm	1	CR2540048
Contactors 25 A - ac/dc coil	25 A	4 no	230 V _{ac}	220 V _{dc}	36 mm	1	CR2540230



CR4030024

Contactors, 40 A - ac/dc coil

Description	Rating	Contacts	Coil voltage ac	Coil voltage dc	Width	QPC	Eaton list number
Contactor 40 A - ac/dc coil	40 A	2 nc	230 V _{ac}	220 V _{dc}	54 mm	1	CR4002230
Contactor 40 A - ac/dc coil	40 A	2 no	24 V _{ac}	24 V _{dc}	54 mm	1	CR4020024
Contactor 40 A - ac/dc coil	40 A	2 no	230 V _{ac}	220 V _{dc}	54 mm	1	CR4020230
Contactor 40 A - ac/dc coil	40 A	3 no	24 V _{ac}	24 V _{dc}	54 mm	1	CR4030024
Contactor 40 A - ac/dc coil	40 A	3 no	230 V _{ac}	220 V _{dc}	54 mm	1	CR4030230
Contactor 40 A - ac/dc coil	40 A	4 no	12 V _{ac}	12 V _{dc}	54 mm	1	CR4040012
Contactor 40 A - ac/dc coil	40 A	4 no	24 V _{ac}	24 V _{dc}	54 mm	1	CR4040024
Contactor 40 A - ac/dc coil	40 A	4 no	48 V _{ac}	48 V _{dc}	54 mm	1	CR4040048
Contactor 40 A - ac/dc coil	40 A	4 no	230 V _{ac}	220 V _{dc}	54 mm	1	CR4040230



CR6320230

Contactors, 63 A - ac/dc coil

Description	Rating	Contacts	Coil voltage ac	Coil voltage dc	Width	QPC	Eaton list number
Contactor 63 A - ac/dc coil	63 A	2 no	230 V _{ac}	220 V _{dc}	54 mm	1	CR6320230
Contactor 63 A - ac/dc coil	63 A	4 no	24 V _{ac}	24 V _{dc}	54 mm	1	CR6340024
Contactor 63 A - ac/dc coil	63 A	4 no	230 V _{ac}	220 V _{dc}	54 mm	1	CR6340230



CRM2540230A

Day / night contactors, 20 - 25 A

Day / night contactors do have a manual override function, which enables the user to bring the contactor in either a forced "ON" or "OFF" position.

The contactor can only be brought into the forced "ON" position when it is de-energised. When the contactor is energised the operation will return into the normal/automatic position.

Description	Rating	Contacts	Coil voltage ac	Width	QPC	Eaton list number
Day / night contactor - ac coil	20 A	2 no	230 V _{ac}	18 mm	1	CRM2020230A
Day / night contactor - ac coil	25 A	4 no	230 V _{ac}	36 mm	1	CRM2540230A

Auxiliary contacts

Can be connected at the right-side of the contactor.



CRA611

Description	Contact configuration	Rating	Width	QPC	Eaton list number
Auxiliary contact for contactors	1 no + 1 nc	6 A	9 mm	1	CRA611
Auxiliary contact for contactors	2 no	6 A	9 mm	1	CRA620



CRC63

Terminal covers (sealable)

Description	Type contactor	Width	QPC	Eaton list number
Terminal cover, sealable	For 20 A	18 mm	10	CRC20
Terminal cover, sealable	For 25 A	36 mm	10	CRC25
Terminal cover, sealable	For 40 / 63 A	54 mm	10	CRC63



CRS

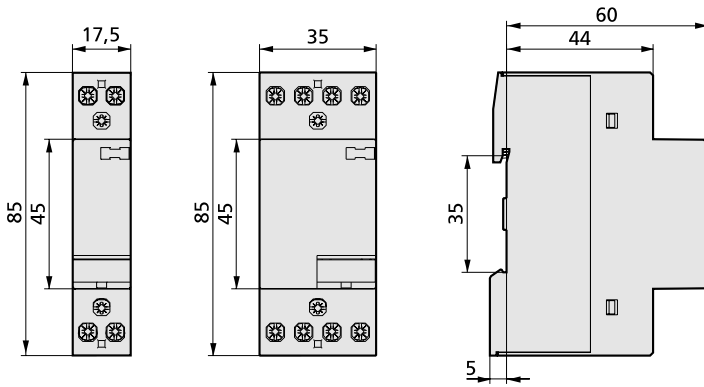
Spacer

To be installed after every 2 contactors.
Example: contactor + contactor + spacer + contactor, etc.

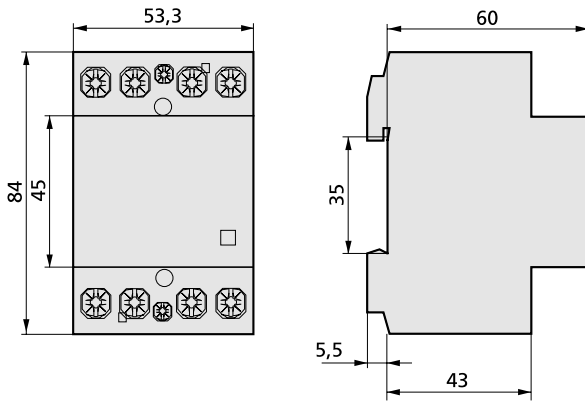
Description	Width	QPC	Eaton list number
Spacer for contactors	9 mm	10	CRS



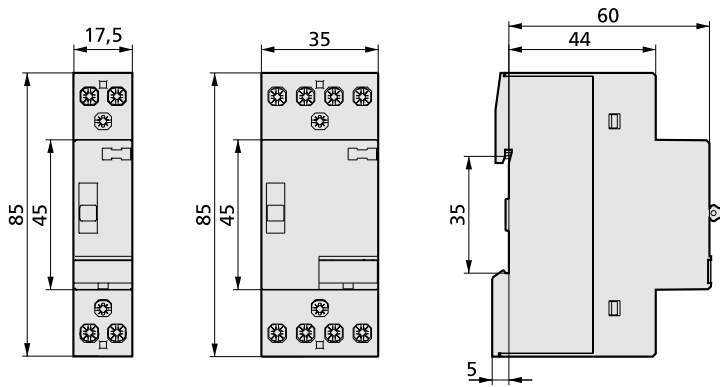
Contactors type CR, dimensional drawings



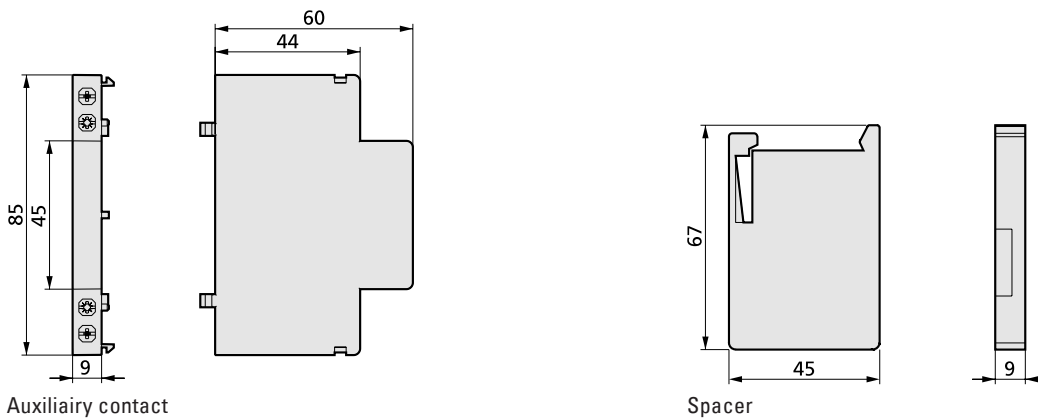
Contactors, type CR20, CR25



Contactors, type CR40, CR63



Day/Night contactors, type CRM20, CRM25



Auxiliary contact

Spacer

Contactors type CR, technical details

Products	Contactors					Aux. contact
	Rating	20 A	25 A	40 A	63 A	6 A
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 $U_e = 230 V_{ac}$	P_{max}	4 kW	9 kW	16 kW	24 kW	
AC1 / AC7a Operational power rating at $U_e = 400 V_{ac}$	P_{max}		16 kW	26 kW	40 kW	
AC3 / AC7b Operational power rating at $U_e = 230 V_{ac}$	P_{max}	1,3 kW (*1)	2,2 kW	5,5 kW	8,5 kW	
AC3 / AC7b Operational power rating at $U_e = 400 V_{ac}$	P_{max}		4 kW	11 kW	15 kW	
DC1 Rated thermal current at $U_e = 24 V_{dc}$	I_e	20 A	25 A	40 A	63 A	
DC1 Rated thermal current at $U_e = 110 V_{dc}$	I_e	1 A	2 A	4 A	4 A	
DC1 Rated thermal current at $U_e = 220 V_{dc}$	I_e	0,5 A	0,5 A	0,8 A	0,8 A	
DC1 Rated thermal current at $U_e = 24 V_{dc}$ (2-poles in series)	I_e	20 A	25 A	40 A	63 A	
DC1 Rated thermal current at $U_e = 110 V_{dc}$ (2-poles in series)	I_e	3 A	4 A	10 A	10 A	
DC1 Rated thermal current at $U_e = 220 V_{dc}$ (2-poles in series)	I_e	1,5 A	1,5 A	6 A	6 A	
DC1 Rated thermal current at $U_e = 24 V_{dc}$ (3-poles in series)		-	25 A	40 A	63 A	
DC1 Rated thermal current at $U_e = 110 V_{dc}$ (3-poles in series)		-	6 A	30 A	35 A	
DC1 Rated thermal current at $U_e = 220 V_{dc}$ (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	

Products	Contactors				Aux. contact
	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	10-20 ms	15-20 ms	15-20 ms	
Opening delay	10 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)	1,9 W / 3 VA	1 W / 2,6 VA	-	-	
Closing delay	15-25 ms	10-20 ms	-	-	
Opening delay	20 ms	20 ms	-	-	

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 mm ²	1.....6 mm ²	1.....16 mm ²	1.....16 mm ²	1.....2,5 mm ²
Terminal capacity - solid wire	1.....10 mm ²	1.....10 mm ²	1.....25 mm ²	1.....25 mm ²	1.....2,5 mm ²
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 mm ²	1.....2,5 mm ²	1.....2,5 mm ²	1.....2,5 mm ²	
Terminal capacity - solid wire	1.....2,5 mm ²	1.....2,5 mm ²	1.....2,5 mm ²	1.....2,5 mm ²	
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)	Maximum number of fittings per contactor type			
		CR 20	CR 25	CR 40	CR 63
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
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

Lighting Type	Lamp load (Watt)	Maximum number of fittings per contactor type			
		CR 20	CR 25	CR 40	CR 63
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
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
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.).

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