

## Motor contactor CEM

**Application**

Contactors are used to remotely control and protect (in combination with overload relays) electric motors and other electric loads with nominal power up to 160kW (at 400V AC3 duty).

**Advantages**

- Mounting on DIN rail and mounting plates
- High technical performance
- Low power loss (current heat loss)
- Protection against direct contact from front (IEC 536) IP20
- Wide range of accessories
- Surge suppressor (as option)
- Control voltage 24VAC, 48VAC, 110VAC, 230VAC, 400VAC



**Ordering:**

CEM9.01-230V-50/60Hz

I(AC3)[A]      Coil voltage

No. of NO   No. of NC - Number and Type of auxiliary contacts

**Contactors CEM up to 132 kW Technical Data**

type	CEM 9	CEM 12	CEM 18	CEM 25	CEM 32	CEM 40	CEM 50	CEM 65	CEM 80	CEM 95	CEM 105	CEM 112E	CEM 150E	CEM 180E	CEM 250E	CEM 300E			
<b>Standards</b>	IEC/EN 60 947, DIN VDE 0660																		
Rated insulation voltage Ui (V) to IEC/EN 60 947, DIN VDE 0660	1000 V																		
Rated impulse withstand voltage Uimp	6 kV								8 kV										
Rated operational frequency	25 - 400 Hz																		
Degree of protection	Protection against direct contact from the front when actuated by a perpendicular test finger (IEC 536)																		
Main circuits	IP20								IP00										
Control circuits and auxiliary contacts	IP20																		
Ambient temperature	-25 to +55 °C																		
Operating temperature																			
Storage temperature	-55 to +80 °C																		
<b>Altitude</b>																			
Normal values	up to 3000 m																		
90 % Ie/80 % Ue	3000 to 4000 m																		
80 % Ie/75 % Ue	4000 to 5000 m																		
Overvoltage category/Pollution degree	III/3																		
Climatic proofing	acc. to IEC 60721-2																		
<b>Main circuits</b>																			
Number of poles	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3			
Rated operation voltage Ue	690 V								1000 V										
<b>Conv. thermal current Ith at ≤ 55°C</b>																			
Rated operational current Ie/AC-1	25 A	25 A	32 A	45 A	60 A	60 A	90 A	110 A	110 A	140 A	140 A	180 A	225 A	225 A	350 A	410 A			
<b>AC-3 Duty</b>																			
Rated operational power																			
230 V kW	2,2	3	4	6,5	9	11	15	18,5	22	25	30	30	45	55	75	90			
<b>400 V kW</b>	<b>4</b>	<b>5,5</b>	<b>7,5</b>	<b>11</b>	<b>15</b>	<b>18,5</b>	<b>22</b>	<b>30</b>	<b>37</b>	<b>45</b>	<b>55</b>	<b>55</b>	<b>75</b>	<b>90</b>	<b>132</b>	<b>160</b>			
415-440 V kW	4,5	5,5	9	12,5	15	22	30	37	45	55	55	55	90	110	150	185			
500 V kW	5,5	7,5	10	15	18,5	25	30	40	45	55	65	75	90	110	160	200			
690 V kW	5,5	7,5	10	15	18,5	30	33	45	45	55	65	80	80	132	200	200			
Short circuit rating max. fuse gG (A)	25	35	35	50	63	80	100	125	125	160	200	224	250	250	400	500			
<b>max. electrical operating frequency</b>																			
AC-1	Ops/h	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	600	600	600	600			
AC-3	Ops/h	1200	1200	1200	1200	1200	1200	1200	1200	1200	600	600	600	600	600	600			
AC-4	Ops/h	360	360	360	360	360	360	200	200	200	200	200	150	150	150	150			
no load	Ops/h	9000	9000	9000	9000	9000	9000	5000	5000	5000	5000	5000	4000	4000	4000	4000			
Mechanical life span	Ops x 10 <sup>6</sup>															10			
Electrical life span	Ops x 10 <sup>6</sup>	1,6	1,8	1,2								1,1	1,0						
<b>Control circuit</b>																			
Rated insulation voltage	Ui (V)															1000 V			
Nominal voltages	Us 50 Hz (V)															24 - 690 V			
Nominal voltages	Us 60 Hz (V)															24 - 690 V			
Nominal voltages	Us DC (V)															12 - 440 V			
<b>Pick-up and drop-out values</b>																			
Pick-up x	Us (V)	0,8 - 1,1			0,8 - 1,1			0,8 - 1,1			0,8 - 1,1			0,8 - 1,1					
Drop-out x	Us (V)	0,35 - 0,55			0,4 - 0,6			0,4 - 0,6			0,4 - 0,6			0,3 - 0,5					
<b>Power consumption of the coil 50/60 Hz</b>																			
Pick-up	(VA)	70			98			255			213			214			229		
	(cos φ)	0,85			0,69			0,32			0,71			0,68			0,73		
Sealing	(VA)	4...7,2			6,6...12,3			13,1...19,1			14,8			14,5			14,1		
	(cos φ)	0,28			0,34			0,54			0,26			0,27			0,26		
<b>Power consumption of the coil, DC coils</b>																			
Pick-up	(W)	3,8...7,5			240			340			166			154			171		
Sealing	(W)	3,8...7,5			6			6,5			2,4			2,4			2,5		

**Contactors CEM up to 132 kW Technical Data**

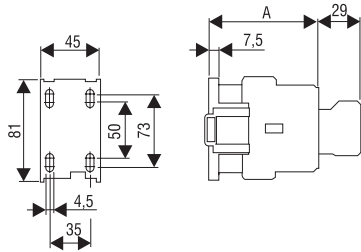
Type	CEM 9 to CEM 18	CEM25	CEM32 and CEM40	CEM50 and CEM80	CEM95 and CEM105	CEM112E and CEM 150E	CEM180E	CEM250E and CEM300E	
<b>Main terminal capacity (mm<sup>2</sup>)</b>									
Solid, stranded and finely stranded without end sleeve		2x (1... 2,5) 2x (2,5...6)	2x (1... 2,5) 2x (2,5... 10)						
Finely stranded with end sleeve		2x (0,25...2,5) 2x (2,5...6) 2x (13...16)	2x (1...2,5) 2x (2,5...10) 2x (13...17)						
<b>One conductor on top</b>									
Stranded				0,75...16	1...35	1,5...50			
Stranded with end sleeve				0,75...16	1...35	1,5...50			
Stranded without end sleeve				1...16	1,5...35	2,5...50			
Finely stranded				1...16	1,5...35	2,5...50			
<b>One conductor on bottom</b>									
Solid				1...16	2,5...35	4...35			
Stranded with end sleeve				1... 16	2,5...35	4...35			
Stranded without end sleeve				1,5...16	6...35	6...35			
Finely stranded				1,5...16	6...35	6...35			
<b>Two conductors on top</b>									
Solid				0,75...16	1...35	1,5...50			
Stranded with end sleeve				0,75...16	1...35	1,5...50			
Stranded without end sleeve				1...16	1,5...35	2,5...50			
Finely stranded				1...16	1,5...35	2,5...50			
<b>Two conductors on bottom</b>									
Solid				1...16	2,5...35	4...35			
Stranded with end sleeve				1...16	2,5...35	4...35			
Stranded without end sleeve				1,5...16	6...35	6...35			
Finely stranded				1,5...16	6...35	6...35			
Solid and stranded with end sleeve Bar							2 x (25...70) 2 x (15x3)	2 x (50...120) 2 x (20x3)	2 x (50...150) 2 x (30x5)
<b>Tightening torque (N.m)</b>		1...1,9	1,6...3	2,5...4	4...6	5...6,5	10	13	17

**Auxiliary contacts**

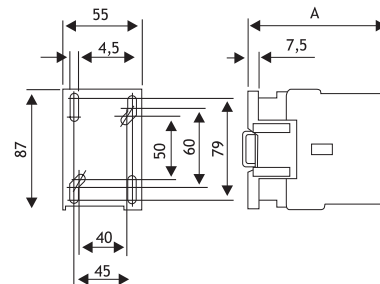
Type		CEM9	CEM12	CEM18	BCXMF...	BCXMLE ...
<b>Rated insulation voltage Ui</b>						
acc. IEC/EN 60 947	(V)		1000			1000
<b>Rated operational voltage Ue</b>						
	(V)		690			690
<b>Conv. thermal current Ith</b>						
	(A)		20			10
<b>Rated operational current Ie</b>						
AC-15	220 - 240 V	(A)	10			6
	380 - 400 V	(A)	6			4
	415 V	(A)	5			3,5
	500 V	(A)	4			2,5
DC-13	24 V	(A)	6			6
	48 V	(A)	4			4
	110 V	(A)	2			2
	220 V	(A)	0,7			0,7
<b>Making capacity Im</b>						
AC-15/AC-11	Ue ≤ 400 V 50/60 Hz	(A)	250			90
DC-13/DC-11	Ue ≤ 220 V DC	(A)	250			90
<b>Breaking capacity Ic</b>						
AC-15/AC-11	Ue ≤ 400 V 50/60 Hz	(A)	250			60
DC-13/DC-11	Ue ≤ 220 V DC	(A)	2			0,95
<b>Short circuit protection</b>						
max. fuse gG	(A)		16			10
<b>Control circuit reliability</b>						
			Ie min = 5 mA, Ue min = 17 V			
Electrical life span	Ops		10 <sup>6</sup>			
Mechanical life span	Ops		15 x 10 <sup>6</sup>			

Dimensions

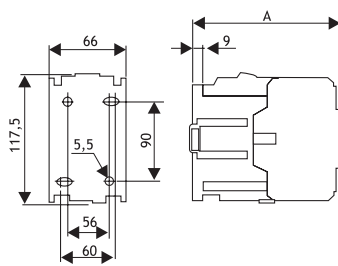
	AC	DC
CAEM4	A=85	A=115
CEM9	A=85	A=115
CEM12	A=85	A=115
CEM18	A=85	A=115
CEM25	A=87	A=117



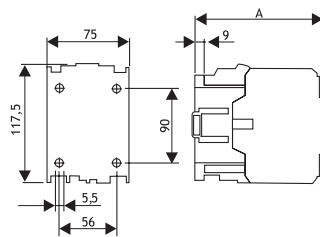
	AC	DC
CEM32	A=98	A=134
CEM40	A=98	A=134



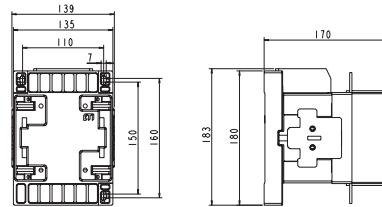
	AC	DC
CEM50	A=116	A=144
CEM65	A=116	A=144
CEM80	A=116	A=144



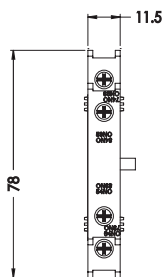
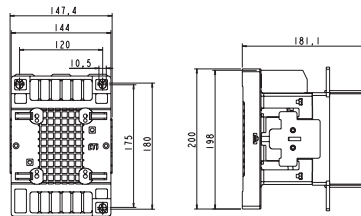
	AC	DC
CEM95	A=126	A=154
CEM105	A=126	A=154



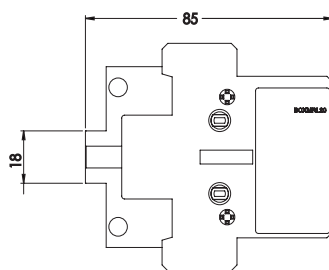
CEM180(E)



CEM250(E)  
CEM300(E)



BCXMF



BCXMLE

