

Contactors for capacitor banks CEM CN



CEM 25CN



CEM 32CN



CEM 50CN



CEM 60CN



CEM 80CN

Application

Contactors for capacitor switching were specially designed for power factor correction capacitor operation (utilization category AC-6b).

Capacitors are pre-charged through resistors that reduce the peak current to the contactor when CEM_CN special contactors are switched on.

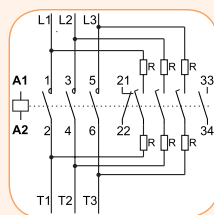
After the pre-charge, the main contactors close allowing passage of rated current.

Advantages

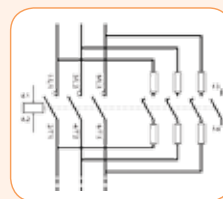
- Mounting on DIN rails and on mounting plates
- Technical specification according to IEC 60947-4
- Built-in pre-charge resistors
- High reliability
- Reduced dimensions
- Standard control voltage 230V AC

Capacitor duty contactor CEM_CN

Type	Code No.	Rated oper. power 380/415V (kVar)	Aux. contacts built-in	Weight [g]	Packaging [pcs]
CEM7,5CN.11-230V-50HZ	004643800	7,5	1NC+1NO	345	1
CEM10CN.11-230V-50HZ	004643801	10	1NC+1NO	345	1
CEM18CN.10-230V-50HZ	004644130	15	1NO	619	1
CEM25CN.10-230V-50HZ	004645130	20	1NO	619	1
CEM32CN.10-230V-50HZ	004646130	25	1NO	670	1
CEM50CN.10-230V-50HZ	004648140	40	1NO	1370	1
CEM65CN.10-230V-50HZ	004649140	50	1NO	1389	1
CEM80CN.10-230V-50HZ	004650140	61	1NO	1700	1



CEM7,5CN...CEM10CN



CEM18CN...CEM65CN

Operating principle:

When capacitor bank being switched on, the capacitors are uncharged and the system sees them as a short circuit for a quick period of time. The in-rush current is the result of this little short circuit and usually lasts for some milliseconds. It may reach 100 times the rated current, being one of the main reasons for the short life of a capacitor.

The CEM CN contactor is assembled with damping resistors which limit the high in-rush current when the capacitors are switched on. They are assembled with an early-make contact block, which is switched on before the main contacts, thus, limiting the in-rush current.

However, the damping resistors don't influence the final load, since they are switched off after 5 milliseconds, leaving only the capacitors in parallel with your inductive load, providing the proper power factor correction. This process increases the lifetime of the capacitors and also prevents net distortions.

Capacitor duty contactors

Capacitor duty contactor CEM CN (230 V 50/60 Hz)


			CEM7,5CN.11- 230V-50HZ	CEM10CN.11- 230V-50HZ	CEM18CN.10- 230V-50HZ	CEM25CN.10- 230V-50HZ	CEM32CN.10- 230V-50HZ	CEM50CN.10- 230V-50HZ	CEM65CN.10- 230V-50HZ	CEM80CN.10- 230V-50HZ
Voltage(V)/ rated power (kVAr)	220-230V	kVAr	4 (230V)	5 (230V)	8	11	15	25	30	35
	380-415V	kVAr	7,5 (400V)	10 (400V)	15	20	25	40	50	61
	440V	kVAr	7,5	10	16	23	30	45	60	71
AC-6b (t° = 55°C)	480V	kVAr	9 (500V)	18 (500V)	17	25	33	50	65	77
	660-690V	kVAr	11	22	25	34	45	65	87	106
AC-6b utilization category(I _u)	(55°C)	A	11	22	21	30	40	60	77	93
AC-6b utilization category(I _u)	(70°C)	A	-	-	15	22	34	50	62	67
Recommended max. fuse (gL/gG)	A		25	35	35	50	63	100	125	160
Cross section	mm ²		2,5...10	1,5...6	6	2 x 10	2 x 16	2 x 35	2 x 35	35
Tightening torque	N.m.		1,2	1,2	1 ... 1,7	1,6 ... 3	2,5 ... 4	4 ... 6	4 ... 6	5 ... 6,5
Max electrical operating frequency op/h**			240			120				
Auxiliary contacts built-in			1xNO, 1xNC	1xNO, 1xNC	1xNO	1xNO	1xNO	1xNO	1xNO	1xNO
Electrical lifespan	..x10 ³		150	200	100					
Dimensions (W/H/D)	mm		45/101/108	45/101/108	45/113/129	45/113/129	55/125/140	66/185/158	66/185/158	75/185/167
Code No.			004643800	004643801	004644130	004645130	004646130	004648140	004649140	004650140
Weight	g		345	345	619	619	670	1370	1389	1700

*Accessories (aux. contacts for CEM18CN - CEM80CN and other accessories) can be found in ETICON, page 212

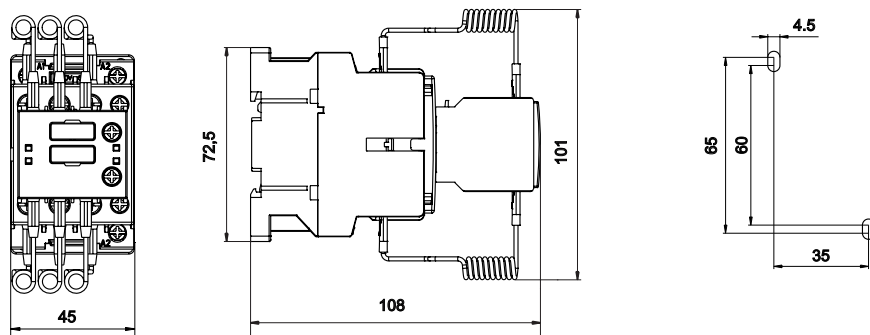
**Recharge time should not be less than 1 minute

			CEM7,5CN.11- 230V-50HZ	CEM10CN.11- 230V-50HZ
Capacitor rating in AC 6b at operating voltage 50/60Hz	230V	(kVAr)	4	5
	400 V	(kVAr)	7,5	10
	690V	(kVAr)	11	15
Rated operational current I _e /AC-6b et	400 V	(A)	11	14
Insulation rating U _i		(V)	690	690
Permissible ambient temperature		(°C)	-25 ... +55	-25 ... +55
Coil voltage tolerances			0,85-1,1 U _n	0,85-1,1 U _n
Maximum permissible fuse ratings main circuit gL/gG auxilliary circuit		(A)	25	35
		(A)	16	16
Frequency of switch. operations		s/h	240	240
Electrical endurance		min	200000	200000
Sizes of connecting conductors				
- main circuit multi-wire conductor		(mm ²)	1,5-6	1,5-6
multi-wire conductor with cable shoe		(mm ²)		
Terminal screw/Screw head			M4/PZ2	M4/PZ2
Tightening torque		(Nm)	1,2	1,2

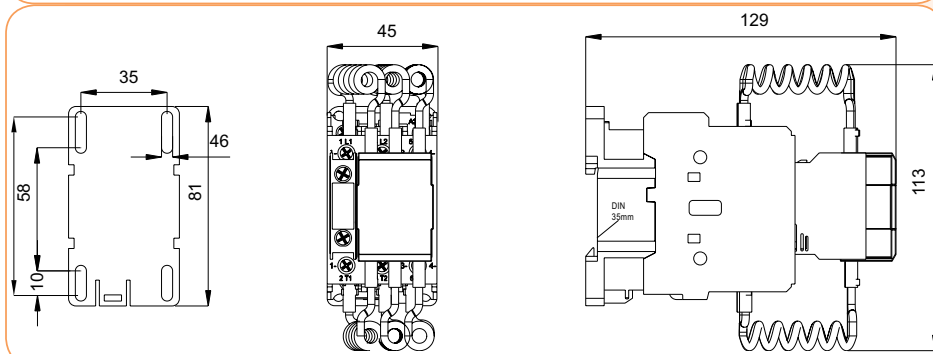
Auxiliary contact block - lateral - for CEM7,5 and CEM10CN

Type	Code No.	Description	For use with	Wiring diagram	Weight [g]	Packaging [pcs]
BCM1E11	004643802	1NO + 1NC	CEM7,5CN & CEM10CN		50	2

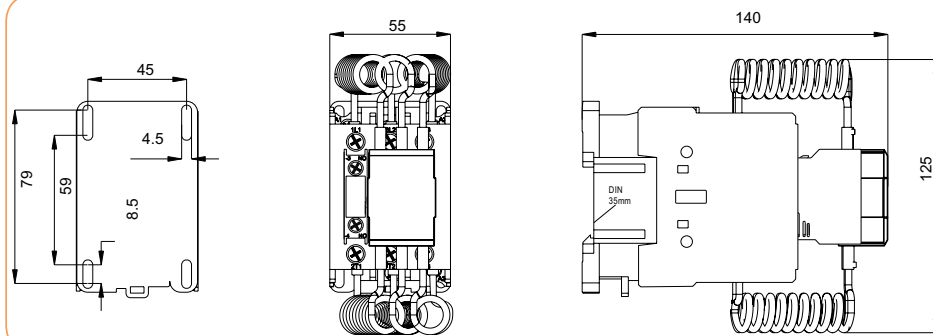
CEM 7,5CN, CEM 10CN



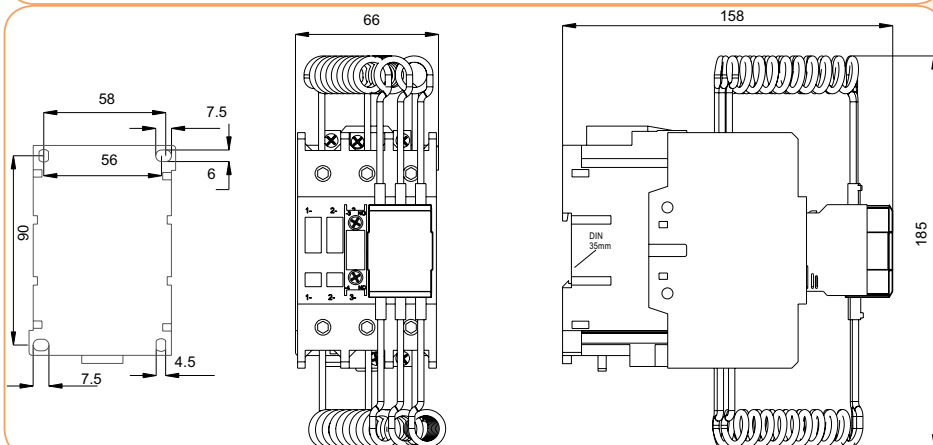
CEM 18CN, CEM 25CN



CEM 32CN



CEM 50CN, CEM 65CN



CEM 80CN

