

Motor contactor CES

ETICON CES SERIES

IEC 60947-4-1

Contact reliability

Contactors are used to remotely control and protect (in combination with overload relays) electric motors and other electric loads with nominal power up to 200kW (at 400V AC3 duty)

Auxiliary contacts

CES 6 to CES 45:

Up to 4 auxiliary contact blocks with 1 NO or 1 NC contact can be snapped onto the basic units (front).

CES 65 to CES 105:

Maximum 4 auxiliary contact blocks with 1 NO + 1 NC contacts (lateral) assembled.

When the contactors are energized, the NC contacts open before the NO contacts close.

CES 65..400 NOT POSSIBLE TO MOUNT ON DIN RAIL



Ordering:

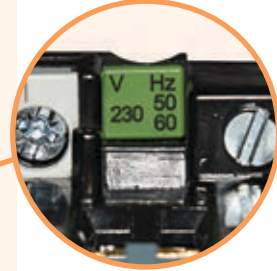
CES 9 . 0 1 - 230V - 50/60Hz  
 1 2 3 4 5 6

- 1 - Contactor type
- 2 - Rated operational current  $I_e$  (AC3)
- 3 - Number and type NO auxiliary contacts
- 4 - Number and type NC auxiliary contacts
- 5 - Coil voltage
- 6 - Frequency

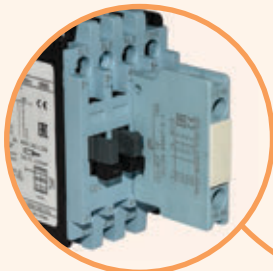
Advantages



→ Terminal clamps allow connection of different cross section cables.



→ Different voltage range of control circuit (coils).



→ Possible to mount auxiliary contacts on top



→ Design allows to mount contactor on DIN rail TH 35 or directly on panel



→ Overload relays (bimetal) tripping class 10



→ Possible to mount overload relay directly on contactor or DIN rail TH 35 with mounting adapter



CES 65...140

**Motor contactor CES 140; 160A(AC1); 140A/75kW(AC3, 400V)**

Type	Code No.	Wiring diagram	Weight [g]	Packaging [pcs]
CES 140.22-230V-50/60Hz	004646568		3.300	1

Included side mounted auxiliary contacts 2xNO+2xNC



CES 170...205

**Motor contactor CES 170; 210A(AC1); 170A/90kW(AC3, 400V)**

Type	Code No.	Wiring diagram	Weight [g]	Packaging [pcs]
CES 170.22-230V-50/60Hz	004646569		4.800	1

Included side mounted auxiliary contacts 2xNO+2xNC

**Motor contactor CES 205; 220A(AC1); 205A/110kW(AC3, 400V)**

Type	Code No.	Wiring diagram	Weight [g]	Packaging [pcs]
CES 205.22-230V-50/60Hz	004646570		4.800	1

Included side mounted auxiliary contacts 2xNO+2xNC



CES 250...300

**Motor contactor CES 250; 300A(AC1); 250A/132kW(AC3, 400V)**

Type	Code No.	Wiring diagram	Weight [g]	Packaging [pcs]
CES 250.22-230V-50/60Hz	004646571		6.200	1

Included side mounted auxiliary contacts 2xNO+2xNC

**Motor contactor CES 300; 320A(AC1); 300A/160kW(AC3, 400V)**

Type	Code No.	Wiring diagram	Weight [g]	Packaging [pcs]
CES 300.22-230V-50/60Hz	004646572		6.200	1

Included side mounted auxiliary contacts 2xNO+2xNC



CES 400

**Motor contactor CES 400; 500A(AC1); 400A/200kW(AC3, 400V)**

Type	Code No.	Wiring diagram	Weight [g]	Packaging [pcs]
CES 400.22-230V-50/60Hz	004646573		6.800	1

Included side mounted auxiliary contacts 2xNO+2xNC

Technical data										
Contactor	Type			CES 6	CES 9	CES 12	CES 18	CES 25	CES 32	
<b>Load ratings of the contactors with AC</b>										
Thermal load	10 s current <sup>1)</sup>			A	90	90	96	96	176	176
Power loss per conducting path	at I <sub>e</sub> /AC-3			W	0.6	0.6	1.1	1.1	1.6	1.6
<b>AC-1 duty, switching resistive load<sup>2)</sup></b>										
Rated operational currents I <sub>e</sub>	at 40 °C to at 55 °C to	690 V	A	25	25	25	25	38	38	
		690 V	A	20	20	20	20	32	32	
Minimum conductor cross-section at I <sub>e</sub> load	at 40 °C at 55 °C			mm <sup>2</sup>	4	4	4	4	10	10
				mm <sup>2</sup>	4	4	4	4	10	10
<b>AC-2 and AC-3 duty</b>										
Rated operational currents I <sub>e</sub>	up to	400 V	A	6	9	12	18	25	32	
		500 V	A	6	9	12	16	17	32	
		690 V	A	6	6.6	8.8	12.2	12.2	27	
Max. rating of slipping or squirrel-cage motors at 50 and 60 Hz	at	230 V	kW	1.5	2.4	3.3	4	5.5	8.5	
		400 V	kW	2.2	4	5.5	7.5	11	15	
		500 V	kW	3	5.5	7.5	9	11	21	
		690 V	kW	4	5.5	7.5	11	11	23	
<b>AC-4 duty (contact endurance approx. 200.000 operating cycles I<sub>a</sub> = 6 x I<sub>e</sub>)</b>										
Rated operational currents I <sub>e</sub>	up to	400 V	A	3.1	3.3	4.3	7.7	8.5	15.6	
		690 V	A	3.1	3.3	4.3	7.7	8.5	15.6	
Ratings of squirrel-cage motors at 50 and 60 Hz	at	230 V	kW	0.8	0.85	1.15	2	2.2	4.3	
Max. permitted rated operational current I <sub>e</sub> /AC-4 = ^ I <sub>e</sub> /AC-3 up to 500 V with endurance and operating frequency		400 V	kW	1.15	1.4	1.9	3.5	4	7.5	
		690 V	kW	1.9	2.4	3.3	6	6.6	13	
<b>Contactor</b>										
<b>Load ratings of the contactors with AC</b>										
Thermal load	10 s current <sup>1)</sup>			A	400	400	360	500	800	800
Power loss per conducting path	at I <sub>e</sub> /AC-3			W	2.0	2.5	3.5	6	7.5	10
<b>AC-1 duty, switching resistive load<sup>2)</sup></b>										
Rated operational currents I <sub>e</sub>	at 40 °C to at 55 °C to	690 V	A	65	65	90	100	105	105	
		690 V	A	55	55	80	90	100	105	
Minimum conductor cross-section at I <sub>e</sub> load	at 40 °C at 55 °C			mm <sup>2</sup>	16	16	35	35	50	50
				mm <sup>2</sup>	16	16	25	35	35	35
<b>AC-2 and AC-3 duty</b>										
Rated operational currents I <sub>e</sub>	up to	400 V	A	40	45	65	75	85	105	
		500 V	A	32	38	40	63	75	85	
		690 V	A	27	27	40	63	75	75	
		1000 V	A	--	--	6	6	30	30	
Max. rating of slipping or squirrel-cage motors at 50 and 60 Hz	at	230 V	kW	11	15	18.5	22	26	37	
		400 V	kW	18.5	22	30	37	45	55	
		500 V	kW	21	25	30	41	50	59	
		690 V	kW	23	23	39	56	67	67	
1000 V	A	--	--	--	--	39	39			
<b>AC-4 duty (contact endurance approx. 200.000 operating cycles I<sub>a</sub> = 6 x I<sub>e</sub>)</b>										
Rated operational currents I <sub>e</sub>	up to	400 V	A	18.5	24	28	34	42	54	
		690 V	A	18.5	24	28	34	42	54	
		1000 V	A	--	--	--	23	23	34	
Ratings of squirrel-cage motors at 50 and 60 Hz	at	230 V	kW	5.2	7.3	8.5	10.3	12	16.3	
Max. permitted rated operational current I <sub>e</sub> /AC-4 = ^ I <sub>e</sub> /AC-3 up to 500 V with endurance and operating frequency		400 V	kW	9	12.6	14.7	17.9	22	28.4	
		690 V	kW	15.5	20.8	24.3	29.5	38	49	
		1000 V	kW	--	--	--	30	30	45	
<b>Contactor</b>										
<b>Load ratings of the contactors with AC</b>										
Thermal load	10 s current <sup>1)</sup>			A	1140	1360	1640	2500	2500	3400
Power loss per conducting path	at I <sub>e</sub> /AC-3			W	14	14	20	16	23	40
<b>AC-1 duty, switching resistive load<sup>2)</sup></b>										
Rated operational currents I <sub>e</sub>	at 40 °C to at 55 °C to	690 V	A	170	230	240	325	325	425	
		690 V	A	160	210	220	300	300	400	
Minimum conductor cross-section at I <sub>e</sub> load	at 40 °C at 55 °C			mm <sup>2</sup>	70	120	120	185	185	2x150
				mm <sup>2</sup>	70	95	120	185	185	240
<b>AC-2 and AC-3 duty</b>										
Rated operational currents I <sub>e</sub>	up to	500 V	A	140	170	205	250	300	400	
		690 V	A	110	170	170	250	250	400	
		1000 V	A	42	68	68	95	95	180	
Max. rating of slipping or squirrel-cage motors at 50 and 60 Hz	at	230 V	kW	45	56	66	82	96	131	
		400 V	kW	75	95	115	142	168	232	
		500 V	kW	98	118	145	178	210	289	
		690 V	kW	105	163	163	245	245	397	
1000 V	A	65	90	90	132	132	250			
<b>AC-4 duty (contact endurance approx. 200.000 operating cycles I<sub>a</sub> = 6 x I<sub>e</sub>)</b>										
Rated operational currents I <sub>e</sub>	up to	690 V	A	68	75	96	110	125	150	
		1000 V	A	34	42	42	57	57	80	
Ratings of squirrel-cage motors at 50 and 60 Hz	at	230 V	kW	21	23	30	35	40	49	
Max. permitted rated operational current I <sub>e</sub> /AC-4 = ^ I <sub>e</sub> /AC-3 up to 500 V with endurance and operating frequency		400 V	kW	36	40	52	61	69	85	
		690 V	kW	63	69	90	105	119	147	
		1000 V	kW	45	55	55	75	75	110	

<sup>1)</sup> Acc. to IEC 60947-4-1.

<sup>2)</sup> Industrial furnaces and electric heaters with resistance heating for example (higher current during heating-up allowed for).