Installation contactors

Installation contactors

Installation contactors are electromagnetic switching devices for switching of all kind of electric loads. They have one position of rest, capable of making, carrying and breaking currents under normal circuit conditions including operating overload conditions.

Installation contactors are the most flexible switching devices for use in all types of applications. In electronic system provide reliable, safe and efficient management of electrical equipment.

For universal switching

- All kind of motors
- Electric heating
- Lights and lighting
- Electrical and electronic equipment

Advanced operation

- Remote control
- Manual control

Other benefits

- Silent hum-free AC/DC version with overvoltage protection
- Available also standard AC version
- Fast switching
- Wide application
- Mounting on 35 mm rail
- Sealing terminal covers
- Control voltages up to 400 V

Installation contactors ..... page 2
Installation contactors with manual control ..... page 8
Installation contactors with manual momentary control..... page 13
UL/CSA installation contactors ..... page 16
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Installation switches and installation momentary switches ..... page 21

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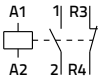
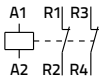
Technical characteristics ..... page 23
Dimensions ..... page 43

Installation Contactors
up to 32 A

AC-1 acc. to IEC/EN 60947-4-1 (2-pole, 1 module)

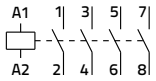
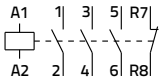
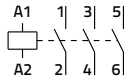
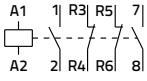
AC

Type	Rated current I_e	Control voltage at 50/60 Hz	Wiring diagram	Ordering No.	Weight (g)	Packaging (pcs)
IKA216-20	16 A	230 V		30.047.486	130	6
IKA216-20	16 A	24 V		30.047.487	130	
IKA20-20	20 A	230 V		30.046.005	130	
IKA20-20	20 A	24 V		30.046.021	130	
IKA225-20	25 A	230 V		30.046.714	130	
IKA225-20	25 A	24 V		30.046.711	130	
IKA232-20	32 A	230 V		30.046.833	130	
IKA232-20	32 A	24 V		30.046.834	130	
IKA216-11	16 A	230 V		30.047.488	130	6
IKA216-11	16 A	24 V		30.047.489	130	
IKA20-11	20 A	230 V		30.046.009	130	
IKA20-11	20 A	24 V		30.046.022	130	
IKA225-11	25 A	230 V		30.046.715	130	
IKA225-11	25 A	24 V		30.046.712	130	
IKA232-11	32 A	230 V		30.046.835	130	
IKA232-11	32 A	24 V		30.046.836	130	
IKA216-10	16 A	230 V		30.047.490	125	6
IKA216-10	16 A	24 V		30.047.491	125	
IKA20-10	20 A	230 V		30.046.457	125	
IKA20-10	20 A	24 V		30.046.837	125	
IKA225-10	25 A	230 V		30.046.713	125	
IKA225-10	25 A	24 V		30.046.710	125	
IKA232-10	32 A	230 V		30.046.838	125	
IKA232-10	32 A	24 V		30.046.839	125	
IKA216-01	16 A	230 V		30.047.492	125	6
IKA216-01	16 A	24 V		30.047.493	125	
IKA20-01	20 A	230 V		30.046.716	125	
IKA20-01	20 A	24 V		30.046.840	125	
IKA225-01	25 A	230 V		30.046.841	125	
IKA225-01	25 A	24 V		30.046.842	125	
IKA232-01	32 A	230 V		30.046.843	125	
IKA232-01	32 A	24 V		30.046.844	125	
IKA216-02	16 A	230 V		30.047.494	130	6
IKA216-02	16 A	24 V		30.047.495	130	
IKA20-02	20 A	230 V		30.046.010	130	
IKA20-02	20 A	24 V		30.046.023	130	
IKA225-02	25 A	230 V		30.046.845	130	
IKA225-02	25 A	24 V		30.046.846	130	
IKA232-02	32 A	230 V		30.046.847	130	
IKA232-02	32 A	24 V		30.046.848	130	

Installation Contactors
up to 32 A

AC-1 acc. to IEC/EN 60947-4-1 (4-pole, 2 modules)

AC

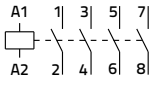
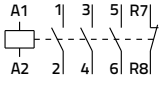
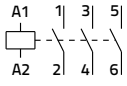
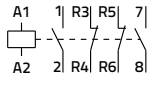
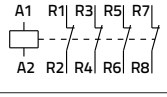
Type	Rated current I_e	Control voltage at 50/60 Hz	Wiring diagram	Ordering No.	Weight (g)	Packaging (pcs)
IKA416-40	16 A	230 V		30.047.496	230	3
IKA416-40	16 A	24 V		30.047.497	230	
IKA25-40	25 A	230 V		30.046.007	230	
IKA25-40	25 A	24 V		30.046.027	230	
IKA432-40	32 A	230 V		30.046.849	230	
IKA432-40	32 A	24 V		30.046.850	230	
IKA416-31	16 A	230 V		30.047.498	230	3
IKA416-31	16 A	24 V		30.047.499	230	
IKA25-31	25 A	230 V		30.046.013	230	
IKA25-31	25 A	24 V		30.046.028	230	
IKA432-31	32 A	230 V		30.046.851	230	
IKA432-31	32 A	24 V		30.046.852	230	
IKA416-30	16 A	230 V		30.047.500	225	3
IKA416-30	16 A	24 V		30.047.501	225	
IKA25-30	25 A	230 V		30.046.282	225	
IKA25-30	25 A	24 V		30.046.853	225	
IKA432-30	32 A	230 V		30.046.854	225	
IKA432-30	32 A	24 V		30.046.855	225	
IKA416-22	16 A	230 V		30.047.502	230	3
IKA416-22	16 A	24 V		30.047.503	230	
IKA25-22	25 A	230 V		30.046.014	230	
IKA25-22	25 A	24 V		30.046.029	230	
IKA432-22	32 A	230 V		30.046.856	230	
IKA432-22	32 A	24 V		30.046.857	230	
IKA416-04	16 A	230 V		30.047.504	230	3
IKA416-04	16 A	24 V		30.047.505	230	
IKA25-04	25 A	230 V		30.046.015	230	
IKA25-04	25 A	24 V		30.046.030	230	
IKA432-04	32 A	230 V		30.046.858	230	
IKA432-04	32 A	24 V		30.046.859	230	

Other control voltages are on request - define type and voltage

Installation Contactors
from 20 A up to 63 A

AC-1 acc. to IEC/EN 60947-4-1 (4-pole, 3 modules)

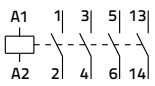
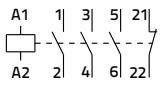
63 A AC

Type	Rated current I_e	Control voltage at 50/60 Hz	Wiring diagram	Ordering No.	Weight (g)	Packaging (pcs)
IKA40-40	40 A	230 V		30.045.518	350	5
IKA40-40	40 A	24 V		30.045.595	350	
IKA63-40	63 A	230 V		30.045.522	350	
IKA63-40	63 A	24 V		30.045.596	350	
IKA40-31	40 A	230 V		30.045.597	350	5
IKA40-31	40 A	24 V		30.045.598	350	
IKA63-31	63 A	230 V		30.045.533	350	
IKA63-31	63 A	24 V		30.045.599	350	
IKA40-30	40 A	230 V		30.045.517	340	5
IKA40-30	40 A	24 V		30.045.600	340	
IKA63-30	63 A	230 V		30.045.521	340	
IKA63-30	63 A	24 V		30.045.601	340	
IKA40-22	40 A	230 V		30.045.519	350	5
IKA40-22	40 A	24 V		30.045.602	350	
IKA63-22	63 A	230 V		30.045.523	350	
IKA63-22	63 A	24 V		30.045.603	350	
IKA40-04	40 A	230 V		30.045.511	350	5
IKA40-04	40 A	24 V		30.045.604	350	
IKA63-04	63 A	230 V		30.045.605	350	
IKA63-04	63 A	24 V		30.045.606	350	

AC-1 acc. to IEC/EN 60947-4-1 (4-pole, 2 modules)

20 A AC

SLIM CASE

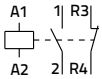
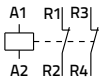
Type	Rated current I_e	Control voltage at 50/60 Hz	Wiring diagram	Ordering No.	Weight (g)	Packaging (pcs)
IK21-10	20 A	220-240 V		30.041.246	170	10
IK21-10	20 A	24 V		30.041.008	170	
IK21-01	20 A	220-240 V		30.041.245	170	10
IK21-01	20 A	24 V		30.041.249	170	

Installation Contactors
from 20 A up to 63 A

AC-1 acc. to IEC/EN 60947-4-1 (2-pole, 1 module)

32 A AC/DC

HUM-FREE

Type	Rated current I_e	Control voltage	Wiring diagram	Ordering No.	Weight (g)	Packaging (pcs)
IKD216-20	16 A	230 V AC 220 V DC		30.047.506	130	6
IKD216-20	16 A	24 V AC/DC		30.047.507	130	
IKD20-20	20 A	230 V AC 220 V DC		30.046.006	130	
IKD20-20	20 A	24 V AC/DC		30.046.024	130	
IKD225-20	25 A	230 V AC 220 V DC		30.046.860	130	
IKD225-20	25 A	24 V AC/DC		30.046.861	130	
IKD232-20	32 A	230 V AC 220 V DC		30.046.862	130	
IKD232-20	32 A	24 V AC/DC		30.046.863	130	
IKD216-11	16 A	230 V AC 220 V DC		30.047.508	130	6
IKD216-11	16 A	24 V AC/DC		30.047.509	130	
IKD20-11	20 A	230 V AC 220 V DC		30.046.011	130	
IKD20-11	20 A	24 V AC/DC		30.046.025	130	
IKD225-11	25 A	230 V AC 220 V DC		30.046.864	130	
IKD225-11	25 A	24 V AC/DC		30.046.865	130	
IKD232-11	32 A	230 V AC 220 V DC		30.046.866	130	
IKD232-11	32 A	24 V AC/DC		30.046.867	130	
IKD216-10	16 A	230 V AC 220 V DC		30.047.510	125	6
IKD216-10	16 A	24 V AC/DC		30.047.511	125	
IKD20-10	20 A	230 V AC 220 V DC		30.046.868	125	
IKD20-10	20 A	24 V AC/DC		30.046.590	125	
IKD225-10	25 A	230 V AC 220 V DC		30.046.869	125	
IKD225-10	25 A	24 V AC/DC		30.046.870	125	
IKD232-10	32 A	230 V AC 220 V DC		30.046.871	125	
IKD232-10	32 A	24 V AC/DC		30.046.872	125	
IKD216-01	16 A	230 V AC 220 V DC		30.047.512	125	6
IKD216-01	16 A	24 V AC/DC		30.047.513	125	
IKD20-01	20 A	230 V AC 220 V DC		30.046.873	125	
IKD20-01	20 A	24 V AC/DC		30.046.874	125	
IKD225-01	25 A	230 V AC 220 V DC		30.046.875	125	
IKD225-01	25 A	24 V AC/DC		30.046.876	125	
IKD232-01	32 A	230 V AC 220 V DC		30.046.877	125	
IKD232-01	32 A	24 V AC/DC		30.046.878	125	
IKD216-02	16 A	230 V AC 220 V DC		30.047.514	130	6
IKD216-02	16 A	24 V AC/DC		30.047.515	130	
IKD20-02	20 A	230 V AC 220 V DC		30.046.012	130	
IKD20-02	20 A	24 V AC/DC		30.046.026	130	
IKD225-02	25 A	230 V AC 220 V DC		30.046.879	130	
IKD225-02	25 A	24 V AC/DC		30.046.880	130	
IKD232-02	32 A	230 V AC 220 V DC		30.046.881	130	
IKD232-02	32 A	24 V AC/DC		30.046.882	130	

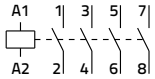
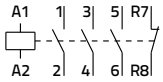
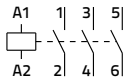
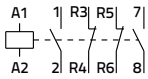
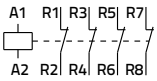
Other control voltages are on request - define type and voltage

Installation Contactors
up to 32 A

AC-1 acc. to IEC/EN 60947-4-1 (4-pole, 2 modules)

HUM-FREE

AC/DC

Type	Rated current I_e	Control voltage	Wiring diagram	Ordering No.	Weight (g)	Packaging (pcs)
IKD416-40	16 A	230 V AC		30.047.516	250	3
		220 V DC				
IKD416-40	16 A	24 V AC/DC		30.047.517	250	
IKD25-40	25 A	230 V AC		30.046.008	250	
		220 V DC				
IKD25-40	25 A	24 V AC/DC		30.046.031	250	
IKD432-40	32 A	230 V AC		30.046.883	250	
		220 V DC				
IKD432-40	32 A	24 V AC/DC		30.046.884	250	
IKD416-31	16 A	230 V AC		30.047.518	250	3
		220 V DC				
IKD416-31	16 A	24 V AC/DC		30.047.519	250	
IKD25-31	25 A	230 V AC		30.046.016	250	
		220 V DC				
IKD25-31	25 A	24 V AC/DC		30.046.032	250	
IKD432-31	32 A	230 V AC		30.046.885	250	
		220 V DC				
IKD432-31	32 A	24 V AC/DC		30.046.886	250	
IKD416-30	16 A	230 V AC		30.047.520	245	3
		220 V DC				
IKD416-30	16 A	24 V AC/DC		30.047.521	245	
IKD25-30	25 A	230 V AC		30.046.887	245	
		220 V DC				
IKD25-30	25 A	24 V AC/DC		30.046.888	245	
IKD432-30	32 A	230 V AC		30.046.889	245	
		220 V DC				
IKD432-30	32 A	24 V AC/DC		30.046.890	245	
IKD416-22	25 A	230 V AC		30.047.522	250	3
		220 V DC				
IKD416-22	25 A	24 V AC/DC		30.047.523	250	
IKD25-22	25 A	230 V AC		30.046.017	250	
		220 V DC				
IKD25-22	25 A	24 V AC/DC		30.046.033	250	
IKD432-22	32 A	230 V AC		30.046.891	250	
		220 V DC				
IKD432-22	32 A	24 V AC/DC		30.046.892	250	
IKD416-04	16 A	230 V AC		30.047.524	250	3
		220 V DC				
IKD416-04	16 A	24 V AC/DC		30.047.525	250	
IKD25-04	25 A	230 V AC		30.046.018	250	
		220 V DC				
IKD25-04	25 A	24 V AC/DC		30.046.034	250	
IKD432-04	32 A	230 V AC		30.046.893	250	
		220 V DC				
IKD432-04	32 A	24 V AC/DC		30.046.894	250	

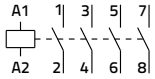
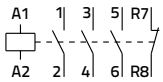
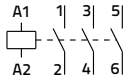
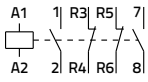
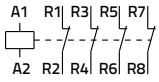
Other control voltages are on request - define type and voltage

Installation Contactors
from 32 A up to 63 A

AC-1 acc. to IEC/EN 60947-4-1 (4-pole, 3 modules)

63 A AC/DC

HUM-FREE

Type	Rated current I_e	Control voltage	Wiring diagram	Ordering No.	Weight (g)	Packaging (pcs)
IK40-40	40 A	230 V AC 220 V DC		30.045.010	420	5
IK40-40	40 A	24 V AC/DC		30.045.022	420	
IK63-40	63 A	230 V AC 220 V DC		30.045.011	420	
IK63-40	63 A	24 V AC/DC		30.045.187	420	
IK40-31	40 A	230 V AC 220 V DC		30.045.086	420	5
IK40-31	40 A	24 V AC/DC		30.045.485	420	
IK63-31	63 A	230 V AC 220 V DC		30.045.087	420	
IK63-31	63 A	24 V AC/DC		30.045.234	420	
IK40-30	40 A	230 V AC 220 V DC		30.045.268	410	5
IK40-30	40 A	24 V AC/DC		30.045.607	410	
IK63-30	63 A	230 V AC 220 V DC		30.045.608	410	
IK63-30	63 A	24 V AC/DC		30.045.609	410	
IK40-22	40 A	230 V AC 220 V DC		30.045.150	420	5
IK40-22	40 A	24 V AC/DC		30.045.172	420	
IK63-22	63 A	230 V AC 220 V DC		30.045.235	420	
IK63-22	63 A	24 V AC/DC		30.045.233	420	
IK40-04	40 A	230 V AC 220 V DC		30.045.145	420	5
IK40-04	40 A	24 V AC/DC		30.045.232	420	
IK63-04	50 A	230 V AC 220 V DC		30.045.610	420	
IK63-04	50 A	24 V AC/DC		30.045.611	420	

Other control voltages are on request - define type and voltage

Ordering data

IKA63 – 40 / 12 V

- 12 V – Control voltage
- 40 – Version of contacts
- IKA63 – Basic type

Installation Contactors with Manual Control
up to 63 A

IKA*-R and IKD*-R are upgraded version of basic types of contactors. Besides basic functions they enable manual control with a handle.

Description of the handle position:

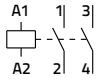
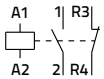
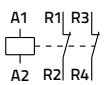
- **A:** the contactor functions as an installation contactor without manual control
- **0:** permanently switched off control voltage
- **I:** at manual shifting the handle from position **A** to I causes the contactor to close; when control voltage is applied, the handle is automatically set to position A.

Contactor with manual control enable:

- switching demending on tariff (selection of the most convenient tariff)
- switching when control voltage is not applied

AC-1 acc. to IEC/EN 60947-4-1 (2-pole, 1 module)

AC

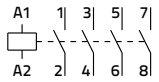
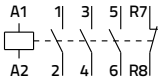
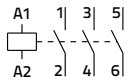
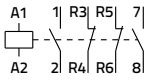
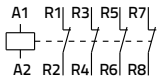
Type	Rated current I_e	Control voltage at 50/60 Hz	Wiring diagram	Ordering No.	Weight (g)	Packaging (pcs)
IKA216-20-R	16 A	230 V		30.047.526	130	6
IKA216-20-R	16 A	24 V		30.047.527	130	
IKA20-20-R	20 A	230 V		30.046.265	130	
IKA20-20-R	20 A	24 V		30.046.268	130	
IKA225-20-R	25 A	230 V		30.046.895	130	
IKA225-20-R	25 A	24 V		30.046.896	130	
IKA232-20-R	32 A	230 V		30.046.897	130	
IKA232-20-R	32 A	24 V		30.046.898	130	
IKA216-11-R	16 A	230 V		30.047.528	130	6
IKA216-11-R	16 A	24 V		30.047.529	130	
IKA20-11-R	20 A	230 V		30.046.266	130	
IKA20-11-R	20 A	24 V		30.046.269	130	
IKA225-11-R	25 A	230 V		30.046.899	130	
IKA225-11-R	25 A	24 V		30.046.900	130	
IKA232-11-R	32 A	230 V		30.046.901	130	
IKA232-11-R	32 A	24 V		30.046.902	130	
IKA216-10-R	16 A	230 V		30.047.530	125	6
IKA216-10-R	16 A	24 V		30.047.531	125	
IKA20-10-R	20 A	230 V		30.046.496	125	
IKA20-10-R	20 A	24 V		30.046.903	125	
IKA225-10-R	25 A	230 V		30.046.904	125	
IKA225-10-R	25 A	24 V		30.046.905	125	
IKA232-10-R	32 A	230 V		30.046.906	125	
IKA232-10-R	32 A	24 V		30.046.907	125	
IKA216-01-R	16 A	230 V		30.047.532	125	6
IKA216-01-R	16 A	24 V		30.047.533	125	
IKA20-01-R	20 A	230 V		30.046.908	125	
IKA20-01-R	20 A	24 V		30.046.909	125	
IKA225-01-R	25 A	230 V		30.046.910	125	
IKA225-01-R	25 A	24 V		30.046.911	125	
IKA232-01-R	32 A	230 V		30.046.912	125	
IKA232-01-R	32 A	24 V		30.046.913	125	
IKA216-02-R	16 A	230 V		30.047.534	130	6
IKA216-02-R	16 A	24 V		30.047.535	130	
IKA20-02-R	20 A	230 V		30.046.267	130	
IKA20-02-R	20 A	24 V		30.046.270	130	
IKA225-02-R	25 A	230 V		30.046.914	130	
IKA225-02-R	25 A	24 V		30.046.915	130	
IKA232-02-R	32 A	230 V		30.046.916	130	
IKA232-02-R	32 A	24 V		30.046.917	130	

Other control voltages are on request - define type and voltage

Installation Contactors with Manual Control
up to 63 A

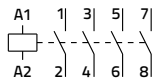
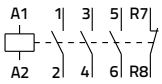
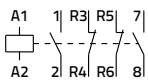
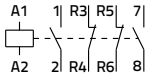
AC-1 acc. to IEC/EN 60947-4-1 (4-pole, 2 module)

AC

Type	Rated current I_e	Control voltage at 50/60 Hz	Wiring diagram	Ordering No.	Weight (g)	Packaging (pcs)
IKA416-40-R	16 A	230 V		30.047.536	230	3
IKA416-40-R	16 A	24 V		30.047.537	230	
IKA25-40-R	25 A	230 V		30.046.271	230	
IKA25-40-R	25 A	24 V		30.046.275	230	
IKA432-40-R	32 A	230 V		30.046.918	230	
IKA432-40-R	32 A	24 V		30.046.919	230	
IKA416-31-R	16 A	230 V		30.047.538	230	3
IKA416-31-R	16 A	24 V		30.047.539	230	
IKA25-31-R	25 A	230 V		30.046.272	230	
IKA25-31-R	25 A	24 V		30.046.276	230	
IKA432-31-R	32 A	230 V		30.046.920	230	
IKA432-31-R	32 A	24 V		30.046.921	230	
IKA416-30-R	16 A	230 V		30.047.540	225	3
IKA416-30-R	16 A	24 V		30.047.541	225	
IKA25-30-R	25 A	230 V		30.046.922	225	
IKA25-30-R	25 A	24 V		30.046.923	225	
IKA432-30-R	32 A	230 V		30.046.924	225	
IKA432-30-R	32 A	24 V		30.046.925	225	
IKA416-22-R	16 A	230 V		30.047.542	230	3
IKA416-22-R	16 A	24 V		30.047.543	230	
IKA25-22-R	25 A	230 V		30.046.273	230	
IKA25-22-R	25 A	24 V		30.046.277	230	
IKA432-22-R	32 A	230 V		30.046.926	230	
IKA432-22-R	32 A	24 V		30.046.927	230	
IKA416-04-R	16 A	230 V		30.047.544	230	3
IKA416-04-R	16 A	24 V		30.047.545	230	
IKA25-04-R	25 A	230 V		30.046.274	230	
IKA25-04-R	25 A	24 V		30.046.278	230	
IKA432-04-R	32 A	230 V		30.046.928	230	
IKA432-04-R	32 A	24 V		30.046.929	230	

General Use acc. to UL 60947-4-1 (4-pole, 3 modules)

63 A
AC

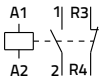
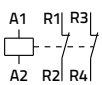
Type	Rated current I_e	Control voltage at 50/60 Hz	Wiring diagram	Ordering No.	Weight (g)	Packaging (pcs)
IKA40-40-R	40 A	230 V		30.045.506	350	5
IKA40-40-R	40 A	24 V		30.045.741	350	
IKA63-40-R	63 A	230 V		30.045.508	350	
IKA63-40-R	63 A	24 V		30.045.742	350	
IKA40-31-R	40 A	230 V		30.045.743	350	5
IKA40-31-R	40 A	24 V		30.045.744	350	
IKA63-31-R	63 A	230 V		30.045.745	350	
IKA63-31-R	63 A	24 V		30.045.746	350	
IKA40-22-R	40 A	230 V		30.045.747	350	5
IKA40-22-R	40 A	24 V		30.045.748	350	
IKA63-22-R	63 A	230 V		30.045.749	350	
IKA63-22-R	63 A	24 V		30.045.750	350	
IKA40-04-R	40 A	230 V		30.045.751	350	5
IKA40-04-R	40 A	24 V		30.045.752	350	
IKA63-04-R	63 A	230 V		30.045.753	350	
IKA63-04-R	63 A	24 V		30.045.754	350	

Installation Contactors with Manual Control
up to 63 A

AC-1 acc. to IEC/EN 60947-4-1 (2-pole, 1 module)

AC/DC

HUM-FREE

Type	Rated current I_e	Control voltage	Wiring diagram	Ordering No.	Weight (g)	Packaging (pcs)
IKD216-20-R	16 A	230 V AC 220 V DC		30.047.546	130	6
IKD216-20-R	16 A	24 V AC/DC		30.047.547	130	
IKD20-20-R	20 A	230 V AC 220 V DC		30.046.381	130	
IKD20-20-R	20 A	24 V AC/DC		30.046.506	130	
IKD225-20-R	25 A	230 V AC 220 V DC		30.046.930	130	
IKD225-20-R	25 A	24 V AC/DC		30.046.931	130	
IKD232-20-R	32 A	230 V AC 220 V DC		30.046.932	130	
IKD232-20-R	32 A	24 V AC/DC		30.046.933	130	
IKD216-11-R	16 A	230 V AC 220 V DC		30.047.548	130	6
IKD216-11-R	16 A	24 V AC/DC		30.047.549	130	
IKD20-11-R	20 A	230 V AC 220 V DC		30.046.507	130	
IKD20-11-R	20 A	24 V AC/DC		30.046.508	130	
IKD225-11-R	25 A	230 V AC 220 V DC		30.046.934	130	
IKD225-11-R	25 A	24 V AC/DC		30.046.935	130	
IKD232-11-R	32 A	230 V AC 220 V DC		30.046.936	130	
IKD232-11-R	32 A	24 V AC/DC		30.046.937	130	
IKD216-10-R	16 A	230 V AC 220 V DC		30.047.550	125	6
IKD216-10-R	16 A	24 V AC/DC		30.047.551	125	
IKD20-10-R	20 A	230 V AC 220 V DC		30.046.938	125	
IKD20-10-R	20 A	24 V AC/DC		30.046.939	125	
IKD225-10-R	25 A	230 V AC 220 V DC		30.046.940	125	
IKD225-10-R	25 A	24 V AC/DC		30.046.941	125	
IKD232-10-R	32 A	230 V AC 220 V DC		30.046.942	125	
IKD232-10-R	32 A	24 V AC/DC		30.046.943	125	
IKD216-01-R	16 A	230 V AC 220 V DC		30.047.552	125	6
IKD216-01-R	16 A	24 V AC/DC		30.047.553	125	
IKD20-01-R	20 A	230 V AC 220 V DC		30.046.944	125	
IKD20-01-R	20 A	24 V AC/DC		30.046.945	125	
IKD225-01-R	25 A	230 V AC 220 V DC		30.046.946	125	
IKD225-01-R	25 A	24 V AC/DC		30.046.947	125	
IKD232-01-R	32 A	230 V AC 220 V DC		30.046.948	125	
IKD232-01-R	32 A	24 V AC/DC		30.046.949	125	
IKD216-02-R	16 A	230 V AC 220 V DC		30.047.554	130	6
IKD216-02-R	16 A	24 V AC/DC		30.047.555	130	
IKD20-02-R	20 A	230 V AC 220 V DC		30.046.950	130	
IKD20-02-R	20 A	24 V AC/DC		30.046.951	130	
IKD225-02-R	25 A	230 V AC 220 V DC		30.046.952	130	
IKD225-02-R	25 A	24 V AC/DC		30.046.953	130	
IKD232-02-R	32 A	230 V AC 220 V DC		30.046.954	130	
IKD232-02-R	32 A	24 V AC/DC		30.046.955	130	

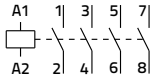
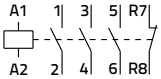
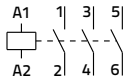
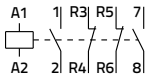
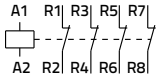
Other control voltages are on request - define type and voltage

Installation Contactors with Manual Control
up to 32 A

AC-1 acc. to IEC/EN 60947-4-1 (4-pole, 2 modules)

AC/DC

HUM-FREE

Type	Rated current I_e	Control voltage	Wiring diagram	Ordering No.	Weight (g)	Packaging (pcs)
IKD416-40-R	16 A	230 V AC		30.047.556	250	3
		220 V DC				
IKD416-40-R	16 A	24 V AC/DC		30.047.557	250	
IKD25-40-R	25 A	230 V AC		30.046.509	250	
		220 V DC				
IKD25-40-R	25 A	24 V AC/DC		30.046.510	250	
IKD432-40-R	32 A	230 V AC		30.046.956	250	
		220 V DC				
IKD432-40-R	32 A	24 V AC/DC		30.046.957	250	
IKD416-31-R	16 A	230 V AC		30.046.558	250	3
		220 V DC				
IKD416-31-R	16 A	24 V AC/DC		30.047.559	250	
IKD25-31-R	25 A	230 V AC		30.046.958	250	
		220 V DC				
IKD25-31-R	25 A	24 V AC/DC		30.046.959	250	
IKD432-31-R	32 A	230 V AC		30.046.960	250	
		220 V DC				
IKD432-31-R	32 A	24 V AC/DC		30.046.961	250	
IKD416-30-R	16 A	230 V AC		30.047.560	245	3
		220 V DC				
IKD416-30-R	16 A	24 V AC/DC		30.047.561	245	
IKD25-30-R	25 A	230 V AC		30.046.962	245	
		220 V DC				
IKD25-30-R	25 A	24 V AC/DC		30.046.963	245	
IKD432-30-R	32 A	230 V AC		30.046.964	245	
		220 V DC				
IKD432-30-R	32 A	24 V AC/DC		30.046.965	245	
IKD416-22-R	16 A	230 V AC		30.047.562	250	3
		220 V DC				
IKD416-22-R	16 A	24 V AC/DC		30.047.563	250	
IKD25-22-R	25 A	230 V AC		30.046.966	250	
		220 V DC				
IKD25-22-R	25 A	24 V AC/DC		30.046.967	250	
IKD432-22-R	32 A	230 V AC		30.046.968	250	
		220 V DC				
IKD432-22-R	32 A	24 V AC/DC		30.046.969	250	
IKD416-04-R	16 A	230 V AC		30.047.564	250	3
		220 V DC				
IKD416-04-R	16 A	24 V AC/DC		30.047.565	250	
IKD25-04-R	25 A	230 V AC		30.046.970	250	
		220 V DC				
IKD25-04-R	25 A	24 V AC/DC		30.046.971	250	
IKD432-04-R	32 A	230 V AC		30.046.972	250	
		220 V DC				
IKD432-04-R	32 A	24 V AC/DC		30.046.973	250	

Other control voltages are on request - define type and voltage

Ordering data

IKA20 – 20 – R / 12 V

- 12 V — Control voltage
- R — Manual control
- 20 — Version of contacts
- IKA20 — Basic type

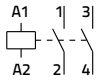
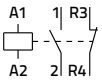
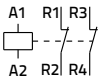
Installation Contactors with Manual Momentary Control
up to 32 A

IKA*-T and IKD*-T are upgraded version of basic types of contactors. Besides basic functions they enable manual control with a handle.
Description of the handle position:

- **A:** the contactor functions as an installation contactor
- **0:** permanently switched off control voltage
- **I:** momentary switch-on depending of manual activation

AC-1 acc. to IEC/EN 60947-4-1 (2-pole, 1 module)

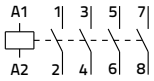
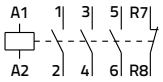
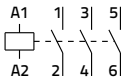
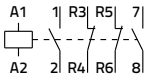
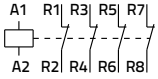
AC

Type	Rated current I_e	Control voltage at 50/60 Hz	Wiring diagram	Ordering No.	Weight (g)	Packaging (pcs)
IKA216-20-T	16 A	230 V		30.047.566	130	6
IKA20-20-T	20 A	230 V		30.046.974	130	
IKA225-20-T	25 A	230 V		30.046.975	130	
IKA232-20-T	32 A	230 V		30.046.976	130	
IKA216-11-T	16 A	230 V		30.047.567	130	6
IKA20-11-T	20 A	230 V		30.046.977	130	
IKA225-11-T	25 A	230 V		30.046.978	130	
IKA232-11-T	32 A	230 V		30.046.979	130	
IKA216-10-T	16 A	230 V		30.047.568	125	6
IKA20-10-T	20 A	230 V		30.046.980	125	
IKA225-10-T	25 A	230 V		30.046.981	125	
IKA232-10-T	32 A	230 V		30.046.982	125	
IKA216-01-T	16 A	230 V		30.047.569	125	6
IKA20-01-T	20 A	230 V		30.046.983	125	
IKA225-01-T	25 A	230 V		30.046.984	125	
IKA232-01-T	32 A	230 V		30.046.985	125	
IKA216-02-T	16 A	230 V		30.047.570	130	6
IKA20-02-T	20 A	230 V		30.046.986	130	
IKA225-02-T	25 A	230 V		30.046.987	130	
IKA232-02-T	32 A	230 V		30.046.988	130	

Installation Contactors with Manual Momentary Control
up to 32 A

AC-1 acc. to IEC/EN 60947-4-1 (4-pole, 2 modules)

AC

Type	Rated current I_e	Control voltage at 50/60 Hz	Wiring diagram	Ordering No.	Weight (g)	Packaging (pcs)
IKA416-40-T	16 A	230 V		30.047.571	230	3
IKA25-40-T	25 A	230 V		30.046.989	230	
IKA432-40-T	32 A	230 V		30.046.990	230	
IKA416-31-T	16 A	230 V		30.047.572	230	3
IKA25-31-T	25 A	230 V		30.046.991	230	
IKA432-31-T	32 A	230 V		30.046.992	230	
IKA416-30-T	16 A	230 V		30.047.573	225	3
IKA25-30-T	25 A	230 V		30.046.993	225	
IKA432-30-T	32 A	230 V		30.046.994	225	
IKA416-22-T	16 A	230 V		30.047.574	230	3
IKA25-22-T	25 A	230 V		30.046.995	230	
IKA432-22-T	32 A	230 V		30.046.996	230	
IKA416-04-T	16 A	230 V		30.047.575	230	3
IKA25-04-T	25 A	230 V		30.046.997	230	
IKA432-04-T	32 A	230 V		30.046.998	230	

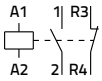
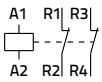
Other control voltages are on request - define type and voltage

Installation Contactors with Manual Momentary Control
up to 32 A

AC-1 acc. to IEC/EN 60947-4-1 (2-pole, 1 module)

HUM-FREE

AC/DC

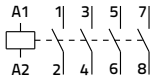
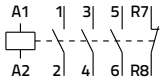
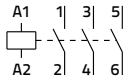
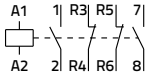
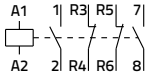
Type	Rated current I_e	Control voltage	Wiring diagram	Ordering No.	Weight (g)	Packaging (pcs)
IKD216-20-T	16 A	230 V AC 220 V DC		30.047.576	130	6
IKD20-20-T	20 A	230 V AC 220 V DC		30.046.999	130	
IKD225-20-T	25 A	230 V AC 220 V DC		30.047.000	130	
IKD232-20-T	32 A	230 V AC 220 V DC		30.047.001	130	
IKD216-11-T	16 A	230 V AC 220 V DC		30.047.577	130	6
IKD20-11-T	20 A	230 V AC 220 V DC		30.047.002	130	
IKD225-11-T	25 A	230 V AC 220 V DC		30.047.003	130	
IKD232-11-T	32 A	230 V AC 220 V DC		30.047.004	130	
IKD216-10-T	16 A	230 V AC 220 V DC		30.047.578	125	6
IKD20-10-T	20 A	230 V AC 220 V DC		30.047.005	125	
IKD225-10-T	25 A	230 V AC 220 V DC		30.047.006	125	
IKD232-10-T	32 A	230 V AC 220 V DC		30.047.007	125	
IKD216-01-T	16 A	230 V AC 220 V DC		30.047.008	125	6
IKD20-01-T	20 A	230 V AC 220 V DC		30.047.008	125	
IKD225-01-T	25 A	230 V AC 220 V DC		30.047.009	125	
IKD232-01-T	32 A	230 V AC 220 V DC		30.047.010	125	
IKD216-02-T	16 A	230 V AC 220 V DC		30.047.011	130	6
IKD20-02-T	20 A	230 V AC 220 V DC		30.047.011	130	
IKD225-02-T	25 A	230 V AC 220 V DC		30.047.012	130	
IKD232-02-T	32 A	230 V AC 220 V DC		30.047.013	130	

Installation Contactors with Manual Momentary Control
up to 32 A

AC-1 acc. to IEC/EN 60947-4-1 (4-pole, 2 modules)

AC/DC

HUM-FREE

Type	Rated current I_e	Control voltage	Wiring diagram	Ordering No.	Weight (g)	Packaging (pcs)
IKD416-40-T	16 A	230 V AC 220 V DC		30.047.581	250	3
IKD25-40-T	25 A	230 V AC 220 V DC		30.047.014	250	
IKD432-40-T	32 A	230 V AC 220 V DC		30.047.015	250	
IKD416-31-T	16 A	230 V AC 220 V DC		30.047.582	250	3
IKD25-31-T	25 A	230 V AC 220 V DC		30.047.016	250	
IKD432-31-T	32 A	230 V AC 220 V DC		30.047.017	250	
IKD416-30-T	16 A	230 V AC 220 V DC		30.047.583	245	3
IKD25-30-T	25 A	230 V AC 220 V DC		30.047.018	245	
IKD432-30-T	32 A	230 V AC 220 V DC		30.047.019	245	
IKD416-22-T	16 A	230 V AC 220 V DC		30.047.584	250	3
IKD25-22-T	25 A	230 V AC 220 V DC		30.047.020	250	
IKD432-22-T	32 A	230 V AC 220 V DC		30.047.021	250	
IKD416-04-T	16 A	230 V AC 220 V DC		30.047.585	250	3
IKD25-04-T	25 A	230 V AC 220 V DC		30.047.022	250	
IKD432-04-T	32 A	230 V AC 220 V DC		30.047.023	250	

Other control voltages are on request - define type and voltage

Ordering data

IKA20 – 20 – T / 12 V

- 12 V – Control voltage
- T – Manual momentary control
- 20 – Version of contacts
- IKA20 – Basic type

UL/CSA Installation Contactors
from 20 A up to 63 A

Special designed installation contactors for markets who required UL and CSA approval.

General Use acc. to UL 60947-4-1 (2-pole, 1 module)

AC 20 A

Type	Rated current I_e	Control voltage at 50/60 Hz	Wiring diagram	Ordering No.	Weight (g)	Packaging (pcs)
IKA220-20	20 A	230 V	A1 1 3 / A2 2 4	30.046.825	130	6
IKA220-20		120 V		30.047.024	130	
IKA220-20		24 V		30.047.025	130	
IKA220-11	20 A	230 V	A1 1 R3 / A2 2 R4	30.047.289	130	6
IKA220-11		120 V		30.047.026	130	
IKA220-11		24 V		30.047.027	130	
IKA220-10	20 A	230 V	A1 1 / A2 2	30.047.290	130	6
IKA220-10		120 V		30.047.028	125	
IKA220-10		24 V		30.047.029	125	
IKA220-01	20 A	230 V	A1 R1 / A2 R2	30.047.291	130	6
IKA220-01		120 V		30.047.030	125	
IKA220-01		24 V		30.047.031	125	
IKA220-02	20 A	230 V	A1 R1 R3 / A2 R2 R4	30.047.291	130	6
IKA220-02		120 V		30.047.032	130	
IKA220-02		24 V		30.047.033	130	

General Use acc. to UL 60947-4-1 (4-pole, 2 modules)

AC 25 A

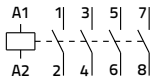
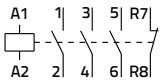
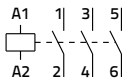
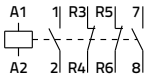
Type	Rated current I_e	Control voltage at 50/60 Hz	Wiring diagram	Ordering No.	Weight (g)	Packaging (pcs)
IKA425-40	25 A	230 V	A1 1 3 5 7 / A2 2 4 6 8	30.046.827	230	3
IKA425-40		120 V		30.047.034	230	
IKA425-40		24 V		30.047.035	230	
IKA425-31	25 A	230 V	A1 1 3 5 R7 / A2 2 4 6 R8	30.047.293	230	3
IKA425-31		120 V		30.047.036	230	
IKA425-31		24 V		30.047.037	230	
IKA425-30	25 A	230 V	A1 1 3 5 / A2 2 4 6	30.047.294	225	3
IKA425-30		120 V		30.047.038	225	
IKA425-30		24 V		30.047.039	225	
IKA425-22	25 A	230 V	A1 1 R3 R5 7 / A2 2 R4 R6 8	30.047.295	230	3
IKA425-22		120 V		30.047.040	230	
IKA425-22		24 V		30.047.041	230	
IKA425-04	25 A	230 V	A1 R1 R3 R5 R7 / A2 R2 R4 R6 R8	30.047.296	230	3
IKA425-04		120 V		30.047.042	230	
IKA425-04		24 V		30.047.043	230	

Other control voltages are on request - define type and voltage

UL/CSA Installation Contactors
from 20 A up to 63 A

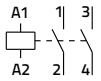
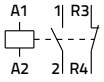
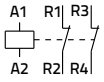
General Use acc. to UL 60947-4-1 (4-pole, 3 modules)

63 A AC

Type	Rated current I_e	Control voltage at 50/60 Hz	Wiring diagram	Ordering No.	Weight (g)	Packaging (pcs)
IKA440-40	40 A	230 V		30.045.700	350	5
IKA440-40	40 A	120 V		30.045.612	350	
IKA440-40	40 A	24 V		30.045.613	350	
IKA463-40	63 A	230 V		30.045.592	350	
IKA463-40	63 A	120 V		30.045.614	350	
IKA463-40	63 A	24 V		30.045.615	350	
IKA440-31	40 A	230 V		30.045.701	350	5
IKA440-31	40 A	120 V		30.045.616	350	
IKA463-31	40 A	24 V		30.045.617	350	
IKA463-31	63 A	230 V		30.045.702	350	
IKA463-31	63 A	120 V		30.045.618	350	
IKA463-31	63 A	24 V		30.045.619	350	
IKA440-30	40 A	230 V		30.045.703	340	5
IKA440-30	40 A	120 V		30.045.620	340	
IKA463-30	40 A	24 V		30.045.621	340	
IKA463-30	63 A	230 V		30.045.704	340	
IKA463-30	63 A	120 V		30.045.622	340	
IKA463-30	63 A	24 V		30.045.623	340	
IKA440-22	40 A	230 V		30.045.705	350	5
IKA440-22	40 A	120 V		30.045.624	350	
IKA463-22	40 A	24 V		30.045.625	350	
IKA463-22	63 A	230 V		30.045.706	350	
IKA463-22	63 A	120 V		30.045.626	350	
IKA463-22	63 A	24 V		30.045.627	350	
IKA440-04	40 A	230 V		30.045.707	350	5
IKA440-04	40 A	120 V		30.045.628	350	
IKA463-04	40 A	24 V		30.045.629	350	
IKA463-04	63 A	230 V		30.045.708	350	
IKA463-04	63 A	120 V		30.045.630	350	
IKA463-04	63 A	24 V		30.045.631	350	

General Use acc. to UL 60947-4-1 (2-pole, 1 module)

20 A AC/DC HUM-FREE

Type	Rated current I_e	Control voltage	Wiring diagram	Ordering No.	Weight (g)	Packaging (pcs)
IKD220-20	20 A	230 V AC 220 V DC		30.046.826	130	6
IKD220-20	20 A	120 V AC 110 V DC		30.047.044	130	
IKD220-20	20 A	24 V AC/DC		30.047.045	130	
IKD220-11	20 A	230 V AC 220 V DC		30.047.297	130	6
IKD220-11	20 A	120 V AC 110 V DC		30.047.046	130	
IKD220-11	20 A	24 V AC/DC		30.047.047	130	
IKD220-10	20 A	230 V AC 220 V DC		30.047.298	125	6
IKD220-10	20 A	120 V AC 110 V DC		30.047.048	125	
IKD220-10	20 A	24 V AC/DC		30.047.049	125	
IKD220-01	20 A	230 V AC 220 V DC		30.047.299	125	6
IKD220-01	20 A	120 V AC 110 V DC		30.047.050	125	
IKD220-01	20 A	24 V AC/DC		30.047.051	125	
IKD220-02	20 A	230 V AC 220 V DC		30.047.300	130	6
IKD220-02	20 A	120 V AC 110 V DC		30.047.052	130	
IKD220-02	20 A	24 V AC/DC		30.047.053	130	

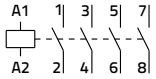
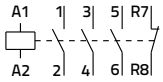
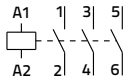
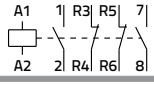
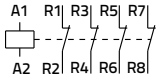
Other control voltages are on request - define type and voltage

UL/CSA Installation Contactors
from 20 A up to 63 A

General Use acc. to UL 60947-4-1 (4-pole, 2 modules)

25 A AC/DC

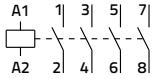
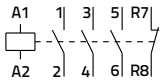
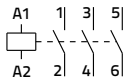
HUM-FREE

Type	Rated current I_e	Control voltage	Wiring diagram	Ordering No.	Weight (g)	Packaging (pcs)
IKD425-40	25 A	230 V AC 220 V DC		30.046.828	250	6
IKD425-40	25 A	120 V AC 110 V DC		30.047.054	250	
IKD425-40	25 A	24 V AC/DC		30.047.055	250	
IKD425-31	25 A	230 V AC 220 V DC		30.047.301	250	6
IKD425-31	25 A	120 V AC 110 V DC		30.047.056	250	
IKD425-31	25 A	24 V AC/DC		30.047.057	250	
IKD425-30	25 A	230 V AC 220 V DC		30.047.302	245	6
IKD425-30	25 A	120 V AC 110 V DC		30.047.058	245	
IKD425-30	25 A	24 V AC/DC		30.047.059	245	
IKD425-22	25 A	230 V AC 220 V DC		30.047.303	250	6
IKD425-22	25 A	120 V AC 110 V DC		30.047.060	250	
IKD425-22	25 A	24 V AC/DC		30.047.061	250	
IKD425-04	25 A	120 V AC 110 V DC		30.047.062	250	6
IKD425-04	25 A	120 V AC 110 V DC		30.047.062	250	
IKD425-04	25 A	24 V AC/DC		30.047.063	250	

General Use acc. to UL 60947-4-1 (4-pole, 3 modules)

63 A AC/DC

HUM-FREE

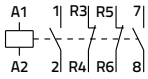
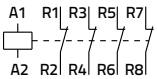
Type	Rated current I_e	Control voltage	Wiring diagram	Ordering No.	Weight (g)	Packaging (pcs)
IKD440-40	40 A	230 V AC 220 V DC		30.045.709	420	5
IKD440-40	40 A	120 V AC 110 V DC		30.045.632	420	
IKD440-40	40 A	24 V AC/DC		30.045.633	420	
IKD463-40	63 A	230 V AC 220 V DC		30.045.593	420	
IKD463-40	63 A	120 V AC 110 V DC		30.045.634	420	
IKD463-40	63 A	24 V AC/DC		30.045.635	420	
IKD440-31	40 A	230 V AC 220 V DC		30.045.710	420	5
IKD440-31	40 A	120 V AC 110 V DC		30.045.636	420	
IKD440-31	40 A	24 V AC/DC		30.045.637	420	
IKD463-31	63 A	230 V AC 220 V DC		30.045.711	420	
IKD463-31	63 A	120 V AC 110 V DC		30.045.638	420	
IKD463-31	63 A	24 V AC/DC		30.045.639	420	
IKD440-30	40 A	230 V AC 220 V DC		30.045.712	410	5
IKD440-30	40 A	120 V AC 110 V DC		30.045.640	410	
IKD440-30	40 A	24 V AC/DC		30.045.641	410	
IKD463-30	63 A	230 V AC 220 V DC		30.045.713	410	
IKD463-30	63 A	120 V AC 110 V DC		30.045.642	410	
IKD463-30	63 A	24 V AC/DC		30.045.643	410	

Other control voltages are on request - define type and voltage

UL/CSA Installation Contactors
from 20 A up to 63 A

General Use acc. to UL 60947-4-1 (4-pole, 3 modules)

63 A AC/DC HUM-FREE

Type	Rated current I_e	Control voltage	Wiring diagram	Ordering No.	Weight (g)	Packaging (pcs)
IKD440-22	40 A	230 V AC 220 V DC		30.045.714	420	5
IKD440-22	40 A	120 V AC 110 V DC		30.045.644	420	
IKD440-22	40 A	24 V AC/DC		30.045.645	420	
IKD463-22	63 A	230 V AC 220 V DC		30.045.715	420	
IKD463-22	63 A	120 V AC 110 V DC		30.045.646	420	
IKD463-22	63 A	24 V AC/DC		30.045.647	420	
IKD440-04	40 A	230 V AC 220 V DC		30.045.594	420	5
IKD440-04	40 A	120 V AC 110 V DC		30.045.648	420	
IKD440-04	40 A	24 V AC/DC		30.045.649	420	

Other control voltages are on request - define type and voltage

Ordering data

IKA440 – 40 / 12 V

- 12 V – Control voltage
- 40 – Version of contacts
- IKA440 – Basic type

Installation Contactors
Accessories

Sealing cover for 2-pole, 1 module

Type	Ordering No.	Weight (g)	Packaging (pcs)
IK20-PP	37.425.061	1	2

Sealing cover for 4-pole, 2 modules

Type	Ordering No.	Weight (g)	Packaging (pcs)
IK25-PP	37.425.062	2	2

Sealing cover for 4-pole, 3 modules

Type	Ordering No.	Weight (g)	Packaging (pcs)
IK40/63-PP	37.423.463	3	2

Ventilation modul

Type	Ordering No.	Weight (g)	Packaging (pcs)
IKV	37.425.296	13	1

Auxilliary switch

AC-15 acc. to IEC/EN 60947-5-1 (2-pole, ½ module)

Type	Rated current I_e	Wiring diagram -20	-11	-01	-10	-02	Ordering No.	Weight (g)	Packaging (pcs)
IKN20	6 A						38.046.002	30	1
IKN11	6 A	33 43	31 43	31	33	31 41	38.046.004	30	
IKN10	6 A						38.046.036	25	
IKN01	6 A	34 44	32 44	32	34	32 42	38.046.037	30	
IKN02	6 A						38.046.003	30	

Auxilliary switch

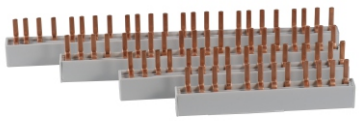
Ratings acc. to UL 508 (2-pole, ½ module)

Type	Rating code	Wiring diagram -20	-11	-02	Ordering No.	Weight (g)	Packaging (pcs)
IKN20UL	C300, Q300	33 43	31 43	31 41	38.046.050	30	1
IKN11UL	C300, Q300				38.046.049	30	
IKN02UL	C300, Q300	34 44	32 44	32 42	38.046.051	30	

4-phase busbars for installation contactors up to 32 A

- insulated

Type	Module width	Lenght (mm)	Ordering No.	Weight (g)	Packaging (pcs)
L/32-8P	4	66	38.046.061	60	10
L/32-12P	6	98	38.046.062	86	
L/32-16P	8	138	38.046.063	114	
L/32-20P	10	173	38.046.064	141	
L/32-24P	12	208	38.046.065	169	



Single pin terminals for installation contactors up to 32 A

- insulated

Type	Pin lenght	Cross-section rigid/flexible (mm^2)	Screw	Ordering No.	Weight (g)	Packaging (pcs)
S/32-1P	13.5/32 (total)	6-25/4-16	PZ2	38.046.066	12	25

Double pin terminals for installation contactors 40 -63 A

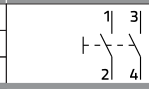
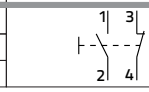
- insulated terminals for parallel connection

Type	Pin lenght	Cross-section rigid/flexible (mm^2)	Screw	Ordering No.	Weight (g)	Packaging (pcs)
S/63-2P	15	6-50/4-35	PZ2	38.046.067	22	25

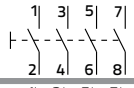
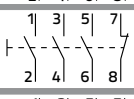
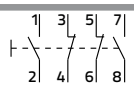
Installation Switches and Installation Momentary Switches

IKS-R installation switches are designed for manual switching of loads with a handle in the same look as the installation contactors.

AC-21 acc. to IEC/EN 60947-3 (2-pole, 1 module)

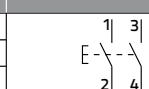
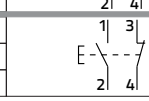
Type	Rated current I_e	Wiring diagram	Ordering No.	Weight (g)	Packaging (pcs)
IKS220-20-R	20 A		30.047.064	55	6
IKS225-20-R	25 A		30.047.065	55	
IKS232-20-R	32 A		30.047.066	55	
IKS220-11-R	20 A		30.047.067	55	6
IKS225-11-R	25 A		30.047.068	55	
IKS232-11-R	32 A		30.047.069	55	

AC-21 acc. to IEC/EN 60947-3 (4-pole, 2 modules)

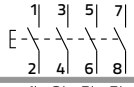
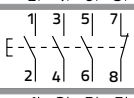
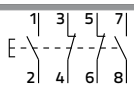
Type	Rated current I_e	Wiring diagram	Ordering No.	Weight (g)	Packaging (pcs)
IKS420-40-R	20 A		30.047.070	105	3
IKS425-40-R	25 A		30.047.071	105	
IKS432-40-R	32 A		30.047.072	105	
IKS420-31-R	20 A		30.047.073	105	3
IKS425-31-R	25 A		30.047.074	105	
IKS432-31-R	32 A		30.047.075	105	
IKS420-22-R	20 A		30.047.076	105	3
IKS425-22-R	25 A		30.047.077	105	
IKS432-22-R	32 A		30.047.078	105	

IKS-T installation momentary switches are designed for manual momentary switching of loads with a handle in the same look as the installation contactors.

AC-21 acc. to IEC/EN 60947-3 (2-pole, 1 module)

Type	Rated current I_e	Wiring diagram	Ordering No.	Weight (g)	Packaging (pcs)
IKS220-20-T	20 A		30.047.079	55	6
IKS225-20-T	25 A		30.047.080	55	
IKS232-20-T	32 A		30.047.081	55	
IKS220-11-T	20 A		30.047.082	55	6
IKS225-11-R	25 A		30.047.083	55	
IKS232-11-T	32 A		30.047.084	55	

AC-21 acc. to IEC/EN 60947-3 (4-pole, 2 modules)

Type	Rated current I_e	Wiring diagram	Ordering No.	Weight (g)	Packaging (pcs)
IKS420-40-T	20 A		30.047.085	105	3
IKS425-40-T	25 A		30.047.086	105	
IKS432-40-T	32 A		30.047.087	105	
IKS420-31-T	20 A		30.047.088	105	3
IKS425-31-T	25 A		30.047.089	105	
IKS432-31-T	32 A		30.047.090	105	
IKS420-22-T	20 A		30.047.091	105	3
IKS425-22-T	25 A		30.047.092	105	
IKS432-22-T	32 A		30.047.093	105	

Technical characteristics

Dimensions

TECHNICAL DATA

	Type	Symbol	Unit	IK21	IKA216 IKA216-R IKA216-T	IKD216 IKD216-R IKD216-T	IKA20 IKA20-R IKA20-T [1]	IKD20 IKD20-R IKD20-T [1]	IKA225 IKA225-R IKA225-T	IKD225 IKD225-R IKD225-T
GENERAL	Standards			IEC/EN 61095, IEC/EN 60947-4-1, IEC/EN 60947-5-1						
	Approvals			CE, EAC	CE		CE, CB, NF, EAC		CE	
	Module width			2	1					
	Number of poles			4	2					
	Degree of protection			IP20 (IP40 when installed in installation box - distribution board)						
	Pollution degree			3						
	Climatic conditions			95 % relative humidity						
	Ambient temperature (open)		°C	-15 ... +55 [4]						
	Storage temperature		°C	-30... +80						
	Maximum altitude U_i and U_e is reduced for 1.2 % and I_e for 0.4 % for every additional 100 m		m	2000						
	Number of contactors or switches side-by-side: ≤40 °C (40 ... 55) °C			no limitation	max. 3 max. 2					
	Noise level (operation)		dB	30	30	20	30	20	30	20
	Vibration resistance according to IEC/EN 60068-2-6	a	g	switched off: 2 (Z and X axis) / switched on: 3 (Z axis) and 1 (X axis)						
	Shock resistance according to IEC/EN 6068-2-27	a	g	switched off: 10 (Z and X axis) / switched on: 15 (Z axis) and 2 (X axis)						
	Maximum operating frequency with no load		op. c./h	3.000						
	Mechanical endurance		op. c.	3.000.000		10.000.000	3.000.000	10.000.000	3.000.000	10.000.000
	Weight		g	170	130	130	130	130	130	130
MAIN CIRCUIT	Contact reliability			≥17 V; ≥50 mA						
	Minimum distance of open contacts		mm	3.6						
	Power dissipation per pole		W	2.0	1.2	1.2	1.7	1.7	2.0	2.0
	Overload current withstand capability: 10 s		A	40	56		72			
	Maximum back-up fuse for short-circuit protection gL and gG: coordination type 1	I_v	A						25	25
	coordination type 2			20	16	16	20	20		
	Rated insulation voltage	U_i	V	415	440					
	Rated impulse withstand voltage	U_{imp}	kV	4						
	Rated operational voltage	U_e	V	400	400 [2] [3]					
	Rated frequency	f	Hz	50/60						
	Thermal current	I_{th}	A	20	16		20		25	
	Rated operational current for AC-1, AC-7a and AC-21	I_e	A	20	16		20		25	
	Operational power for AC-1, AC-7a and AC-21: single-phase 230 V	P_e	kW		3.5		4		5.4	
	three-phase 230 V			7.5						
	three-phase 400 V			13						
	Maximum operating frequency for AC-1, AC-7a and AC-21		op. c./h	600						
	Electrical endurance for AC-1, AC-7a and AC-21		op. c.	200.000						
	Rated operational current for AC-2	I_e	A	10			12		14	
	Operational power for AC-2: single-phase 230 V	P_e	kW		1.5		1.8		2.0	
	three-phase 230 V			2.5						
	three-phase 400 V			4.5						
	Maximum operating frequency for AC-2		op. c./h	120						
	Electrical endurance for AC-2		op. c.	100.000						
	Rated operational current for AC-22	I_e	A	20	16		20		25	
	Operational power for AC-22: single-phase 230 V	P_e	kW	3.7	2.9		3.7		4.6	
	three-phase 230 V			6.3						
	three-phase 400 V			11						
	Maximum operating frequency for AC-22		op. c./h	300						
	Electrical endurance for AC-22		op. c.	50.000						
	Rated operational current for AC-3, AC-7b and AC-23	I_e	A	5	NO: 7 / NC: 4		NO: 9 / NC: 6			
	Operational power for AC-3, AC-7b and AC-23: single-phase 230 V	P_e	kW	0.37	NO: 1.1 / NC: 0.55		NO: 1.3 / NC: 0.75			
	three-phase 230 V			1.1						
	three-phase 400 V			2.2						
	Maximum operating frequency for AC-3, AC-7b and AC-23		op. c./h	600						
	Electrical endurance for AC-3, AC-7b and AC-23		op. c.	300.000						

[1] Available approvals only CE

[2] Rated operational voltage between two line (phase) conductors

[3] Rated operational voltage for versions of contacts -10 and-01 is 230 V

[4] Ambient temperature (open) -25...+55 °C for version with 2NO and 4NO contacts

TECHNICAL DATA

	Type	Symbol	Unit	IK21	IKA216 IKA216-R IKA216-T	IKD216 IKD216-R IKD216-T	IKA20 IKA20-R IKA20-T	IKD20 IKD20-R IKD20-T	IKA225 IKA225-R IKA225-T	IKD225 IKD225-R IKD225-T
MAIN CIRCUIT	Rated operational current for AC-5a (at 230 V)	I_e	A	8.8					11.2	
	Maximum operating frequency for AC-5a		op. c./h	600						
	Electrical endurance for AC-5a		op. c.	100.000						
	Rated operational current for AC-5b (at 230 V)	I_e	A	8.8					9.7	
	Maximum operating frequency for AC-5b		op. c./h	600						
	Electrical endurance for AC-5b		op. c.	100.000						
	Rated operational current for AC-6a (at 230 V)	I_e	A	4					4.8	
	Maximum operating frequency for AC-6a		op. c./h	600						
	Electrical endurance for AC-6a		op. c.	100.000						
	Switching of capacitors AC-6b and AC-7c (at 230 V)	C	µF	30					36	
	Maximum operating frequency for AC-6b and AC-7c		op. c./h	600						
	Electrical endurance for AC-6b and AC-7c		op. c.	100.000						
	Rated operational current for DC-1 (L/R ≤ 1 ms): 1 pole ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC	I_e	A	20/12/6/2/0.5	16/12/8/4/0.5		20/15/10/6/0.6		25/20/15/6/0,6	
	2 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC			20/15/10/4/1.5	16/15/12/8/0.4		20/18/15/10/6		25/25/20/10/6	
	3 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC			20/20/20/6/2.5						
	4 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC			20/20/20/6/3.5						
	Maximum operating frequency for DC-1		op. c./h	300						
	Electrical endurance for DC-1		op. c.	100.000						
	Rated operational current for DC-3 (L/R ≤ 2 ms): 1 pole ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC	I_e	A	10/5/2/1/0.1					15/8/4/1.3/0.2	
	2 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC			20/10/8/4/0.4	16/10/8/4/0.4		20/10/8/4/0.4		25/16/12/5.5/0.6	
	3 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC			20/20/15/6/2.5						
	4 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC			20/20/15/6/3.5						
	Maximum operating frequency for DC-3		op. c./h	300						
	Electrical endurance for DC-3		op. c.	100.000						
	Rated operational current for DC-5 (L/R ≤ 7.5 ms): 1 pole ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC	I_e	A	10/4/1/0.3/0.06					15/5/3/0.5/0.1	
	2 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC			20/8/6/2/0.2	16/8/6/2/0.2		20/8/6/2/0.2		25/15/10/4/0.4	
	3 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC			20/20/15/5/1.5						
	4 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC			20/20/15/5/3						
	Maximum operating frequency for DC-5		op. c./h	300						
	Electrical endurance for DC-5		op. c.	100.000						
	Terminal capacity: rigid (solid and stranded)	S	mm^2	1 ... 2.5	1 ... 10					
	flexible			1 ... 2.5	1 ... 6					
	Length of removed wire insulation		mm	9						
	Screw			M3.5						
	Screw head			PZ2	PZ1					
	Tightening torque		Nm	1.2						
AUXILIARY CIRCUIT	Contact reliability			≥17 V; ≥50 mA						
	Minimum distance of open contacts		mm	3.6						
	Power dissipation per pole		W	2	1.3	1.3	1.7	1.7	2	2
	Overload current withstand capability: 10 s		A	40	56		72			
	Maximum back-up fuse for short-circuit protection gL and gG: coordination type 1	I_v	A						25	25
	coordination type 2			20	16	16	20	20		
	Rated insulation voltage	U_i	V	415	440					
	Rated impulse withstand voltage	U_{imp}	kV	4						
	Rated operational voltage	U_e	V	230/400						
	Rated frequency	f	Hz	50/60						
	Thermal current	I_{th}	A	20	16		20		25	
	Rated operational current for AC-15: single-phase 230 V	I_e	A	6						
	single-phase 400 V			4						
	Maximum operating frequency for AC-15		op. c./h	1200	600					
	Electrical endurance for AC-15		op. c.	200.000	300.000					
	Rated operational current for DC-13: 1 pole ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC	I_e	A	6/4/1/0.3/0.05						
	2 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC			6/6/4/1/0.1						
	3 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC			6/6/6/3/1						
	4 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC			6/6/6/4/2						

TECHNICAL DATA

	Type	Symbol	Unit	IK21	IKA216 IKA216-R IKA216-T	IKD216 IKD216-R IKD216-T	IKA20 IKA20-R IKA20-T	IKD20 IKD20-R IKD20-T	IKA225 IKA225-R IKA225-T	IKD225 IKD225-R IKD225-T
AUXILIARY CIRCUIT	Maximum operating frequency for DC-13		op. c./h	300						
	Electrical endurance for DC-13		op. c.	200.000						
	Terminal capacity: rigid (solid and stranded) flexible	S	mm^2	 1 ... 2.5 1 ... 2.5	 1 ... 10 1 ... 6					
	Length of removed wire insulation		mm	9						
	Screw			M3.5						
	Screw head		mm	PZ2	PZ1					
	Tightening torque			1.2						
COIL	Range of control voltage for switch-on	U_c	%	85 ... 110						
	Range of control voltage for drop out	U_c	%	AC: 75 ... 20 / DC: 75 ... 10 (where is applicable)						
	Kind of voltage			AC	AC	AC/DC	AC	AC/DC	AC	AC/DC
	Standard control voltages	U_c	V	12, 24, 48, 120, 230, 400	12, 24, 48, 120, 230					
	Frequency of AC control voltage	f	Hz	50/60	50/60	40 ... 500	50/60	40 ... 500	50/60	40 ... 500
	Control mode			remote control with U_c / manual control only for types with -R and -T						
	Impulse duration of control voltage: minimum maximum			 permanent permanent						
	Minimum duration between two impulses of control voltage		ms	AC: 150 / DC: 500 (where is applicable)						
	Surge immunity withstand voltage 1.2/50 µs acc. to standard IEC/EN 61000-4-5		kV	2						
	Coil consumption: switch-on operation		VA/W	 30/25 5/1.5	 12/10 2.8/1.2	 2.1/2.1 2.1/2.1	 12/10 2.8/1.2	 2.1/2.1 2.1/2.1	 12/10 2.8/1.2	 2.1/2.1 2.1/2.1
	Delays: make brake		ms	 7 ... 20 10 ... 20	 15 ... 25 10 ... 30	 15 ... 45 20 ... 50	 15 ... 25 10 ... 30	 15 ... 45 20 ... 50	 15 ... 25 10 ... 30	 15 ... 45 20 ... 50
	Terminal capacity: rigid (solid and stranded) flexible		mm^2	 1 ... 2.5 1 ... 2.5						
	Length of removed wire insulation		mm	9	7					
	Screw			M3.5	M3					
	Screw head			PZ2	PZ1					
	Tightening torque		Nm	1.2	0.6					
SAFETY	MTTF - Mean time to failure MTTF = $1/\lambda = B10/(0.1\ n_{op})$		h	AC-1: 5.000 AC-3: 7.500						
	$MTTF_d$ - Mean time to failure dangerous $MTTFd = 1/\lambda_d = B10_d/(0.1\ n_{op})$		h	AC-1: 6.666 AC-3: 10.000						
	B10 - Number of operating cycles until 10 % of devices fail		op. c.	AC-1: 150.000 AC-3: 225.000						
	$B10_d$ - Number of operating cycles until 10 % of device dangerous $B10_d$ = B10/ratio of dangerous failures		op. c.	AC-1: 200.000 AC-3: 300.000						
	λ - Failure rate $\lambda = (0.1\ n_{op})/B10$		1/h	AC-1: 0.0002 AC-3: 0.000133						
	λ_d - Failure rate dangerous $\lambda_d = (0.1\ n_{op})/B10_d$		1/h	AC-1: 0.00015 AC-3: 0.0001						
	Ratio of dangerous failures		%	75						
	n_{op} - Operating cycles (operating cycles/h)		op. c./h	300						

TECHNICAL DATA

	Type	Symbol	Unit	IKA232 IKA232-R IKA232-T	IKD232 IKD232-R IKD232-T	IKA416 IKA416-R IKA416-T	IKD416 IKD416-R IKD416-T	IKA25 IKA25-R IKA25-T [1]	IKD25 IKD25-R IKD25-T [1]	IKA432 IKA432-R IKA432-T	IKD432 IKD432-R IKD432-T
GENERAL	Standards			IEC/EN 61095, IEC/EN 60947-4-1, IEC/EN 60947-5-1							
	Approvals			CE				CE, CB, NF, EAC		CE	
	Module width			1		2					
	Number of poles			2		4					
	Degree of protection			IP20 (IP40 when installed in installation box - distribution board)							
	Pollution degree			3							
	Climatic conditions			95 % relative humidity							
	Ambient temperature (open)		°C	-15 ... +55 [4]							
	Storage temperature		°C	-30... +80							
	Maximum altitude U_i and U_e is reduced for 1.2 % and I_e for 0.4 % for every additional 100 m		m	2000							
	Number of contactors or switches side-by-side: ≤40 °C (40 ... 55) °C			max. 3 max. 2							
	Noise level (operation)		dB	30	20	30	20	30	20	30	20
	Vibration resistance according to IEC/EN 60068-2-6	a	g	switched off: 2 (Z and X axis) / switched on: 3 (Z axis) and 1 (X axis)							
	Shock resistance according to IEC/EN 6068-2-27	a	g	switched off: 10 (Z and X axis) / switched on: 15 (Z axis) and 2 (X axis)							
	Maximum operating frequency with no load		op. c./h	3.000							
	Mechanical endurance		op. c.	3.000.000	10.000.000	3.000.000	10.000.000	3.000.000	10.000.000	3.000.000	10.000.000
	Weight		g	130	130	230	250	230	250	230	250
MAIN CIRCUIT	Contact reliability			≥17 V; ≥50 mA							
	Minimum distance of open contacts		mm	3.6							
	Power dissipation per pole		W	2.5	2.5	1.3	1.3	2.2	2.2	2.5	2.5
	Overload current withstand capability: 10 s		A	72				68			
	Maximum back-up fuse for short-circuit protection gL and gG: coordination type 1 coordination type 2	I_v	A	32	32	 16	 16	25	25	32	32
	Rated insulation voltage	U_i	V	440							
	Rated impulse withstand voltage	U_{imp}	kV	4							
	Rated operational voltage	U_e	V	400 [2][3]		400					
	Rated frequency	f	Hz	50/60							
	Thermal current	I_{th}	A	32		16		25		32	
	Rated operational current for AC-1, AC-7a and AC-21	I_e	A	32		16		25		32	
	Operational power for AC-1, AC-7a and AC-21: single-phase 230 V three-phase 230 V three-phase 400 V	P_e	kW	7		3.5 6 10.5		5.4 9 16		7 12 21	
	Maximum operating frequency for AC-1, AC-7a and AC-21		op. c./h	600							
	Electrical endurance for AC-1, AC-7a and AC-21		op. c.	NO: 150.000 / NC: 100.000		200.000				150.000	
	Rated operational current for AC-2	I_e	A	16		10		14		16	
	Operational power for AC-2: single-phase 230 V three-phase 230 V three-phase 400 V	P_e	kW	2.4		1.5 2.5 4.5		2 3.6 6		2.4 4.1 7.2	
	Maximum operating frequency for AC-2		op. c./h	120							
	Electrical endurance for AC-2		op. c.	100.000							
	Rated operational current for AC-22	I_e	A	32		16		25		32	
	Operational power for AC-22: single-phase 230 V three-phase 230 V three-phase 400 V	P_e	kW	5.9		2.9 5.1 8.8		4.6 8 13.8		5.9 10.2 17.7	
	Maximum operating frequency for AC-22		op. c./h	300							
	Electrical endurance for AC-22		op. c.	50.000							
	Rated operational current for AC-3, AC-7b and AC-23	I_e	A	NO: 9 / NC: 6		7		8.5			
	Operational power for AC-3, AC-7b and AC-23: single-phase 230 V three-phase 230 V three-phase 400 V	P_e	kW	NO: 1.3 / NC: 0.75		1.1 1.5 3		1.3 2.2 4			
	Maximum operating frequency for AC-3, AC-7b and AC-23		op. c./h	600							
	Electrical endurance for AC-3, AC-7b and AC-23		op. c.	300.000		500.000					

[1] Available approvals only CE

[2] Rated operational voltage between two line (phase) conductors

[3] Rated operational voltage for versions of contacts -10 and-01 is 230 V

[4] Ambient temperature (open) -25...+55 °C for version with 2NO and 4NO contacts

TECHNICAL DATA

	Type	Symbol	Unit	IKA232 IKA232-R IKA232-T	IKD232 IKD232-R IKD232-T	IKA416 IKA416-R IKA416-T	IKD416 IKD416-R IKD416-T	IKA25 IKA25-R IKA25-T	IKD25 IKD25-R IKD25-T	IKA432 IKA432-R IKA432-T	IKD432 IKD432-R IKD432-T
MAIN CIRCUIT	Rated operational current for AC-5a (at 230 V)	I_e	A	13		8.8		11.2		13	
	Maximum operating frequency for AC-5a		op. c./h	600							
	Electrical endurance for AC-5a		op. c.	100.000							
	Rated operational current for AC-5b (at 230 V)	I_e	A	11		8.8		9.7		11	
	Maximum operating frequency for AC-5b		op. c./h	600							
	Electrical endurance for AC-5b		op. c.	100.000							
	Rated operational current for AC-6a (at 230 V)	I_e	A	6		4		2.8		6	
	Maximum operating frequency for AC-6a		op. c./h	600							
	Electrical endurance for AC-6a		op. c.	100.000							
	Switching of capacitors AC-6b and AC-7c (at 230 V)	C	µF	40		30		36		40	
	Maximum operating frequency for AC-6b and AC-7c		op. c./h	600							
	Electrical endurance for AC-6b and AC-7c		op. c.	100.000							
	Rated operational current for DC-1 (L/R ≤ 1 ms):										
	1 pole ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC	I_e	A	32/25/15/6/0.6		16/12/8/4/0.5		25/20/15/6/0.6		32/25/15/6/0.6	
	2 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC			32/32/20/10/6		16/15/12/8/4		25/25/20/10/6		32/32/20/10/6	
	3 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC							25/25/25/20/15		32/32/32/20/15	
	4 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC							25/25/25/20/15		32/32/32/20/15	
	Maximum operating frequency for DC-1		op. c./h	300							
	Electrical endurance for DC-1		op. c.	100.000							
	Rated operational current for DC-3 (L/R ≤ 2 ms):										
	1 pole ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC	I_e	A	20/10/4/1.3/0.2		10/5/2/1/0.1		15/8/4/1.3/0.2		20/10/4/1.3/0.2	
	2 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC			32/18/12/5.5/0.6		16/10/8/4/0.4		25/16/12/5.5/0.6		32/18/12/5.5/0.6	
	3 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC					16/16/16/10/2		25/25/25/15/3		32/32/25/15/3	
	4 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC					16/16/16/12/6		25/25/25/20/8		32/32/25/20/8	
	Maximum operating frequency for DC-3		op. c./h	300							
	Electrical endurance for DC-3		op. c.	100.000							
	Rated operational current for DC-5 (L/R ≤ 7.5 ms):										
	1 pole ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC	I_e	A	18/6/3/0.5/0.1		10/4/1/0.3/0.06		15/5/3/0.5/0.1		18/6/3/0.5/0.1	
	2 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC			32/16/10/4/0.4		16/8/6/2/0.2		25/15/10/4/0.4		32/16/10/4/0.4	
	3 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC					16/16/12/8/1		25/25/20/12/2		32/28/20/12/2	
	4 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC					16/16/12/12/3		25/25/25/15/5		32/32/25/15/5	
	Maximum operating frequency for DC-5		op. c./h	300							
	Electrical endurance for DC-5		op. c.	100.000							
	Terminal capacity:										
	rigid (solid and stranded)	S	mm^2	1 ... 10							
	flexible			1 ... 6							
	Length of removed wire insulation		mm	9							
	Screw			M3.5							
	Screw head			PZ1							
	Tightening torque		Nm	1.2							
AUXILIARY CIRCUIT	Contact reliability			≥17 V; ≥50 mA							
	Minimum distance of open contacts		mm	3.6							
	Power dissipation per pole		W	2.5	2.5	1.3	1.3	2.2	2.2	2.5	2.5
	Overload current withstand capability:										
	10 s		A	72		56		68			
	Maximum back-up fuse for short-circuit protection gL and gG:										
	coordination type 1	I_v	A	32	32			25	25	32	32
	coordination type 2					16	16				
	Rated insulation voltage	U_i	V	440							
	Rated impulse withstand voltage	U_{imp}	kV	4							
	Rated operational voltage	U_e	V	230/400							
	Rated frequency	f	Hz	50/60							
	Thermal current	I_{th}	A	32		16		25		32	
	Rated operational current for AC-15:										
	single-phase 230 V	I_e	A	6							
	single-phase 400 V			4							
	Maximum operating frequency for AC-15		op. c./h	600							
	Electrical endurance for AC-15		op. c.	300.000		500.000					
	Rated operational current for DC-13:										
	1 pole ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC	I_e	A	6/4/1/0.3/0.05							
	2 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC			6/6/4/1/0.1							
	3 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC					6/6/6/3/1					
	4 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC					6/6/6/4/2					

TECHNICAL DATA

	Type	Symbol	Unit	IKA232 IKA232-R IKA232-T	IKD232 IKD232-R IKD232-T	IKA416 IKA416-R IKA416-T	IKD416 IKD416-R IKD416-T	IKA25 IKA25-R IKA25-T	IKD25 IKD25-R IKD25-T	IKA432 IKA432-R IKA432-T	IKD432 IKD432-R IKD432-T
AUXILIARY CIRCUIT	Maximum operating frequency for DC-13		op. c./h	300							
	Electrical endurance for DC-13		op. c.	200.000							
	Terminal capacity: rigid (solid and stranded)	S	mm^2	1 ... 10							
	Terminal capacity: flexible	S	mm^2	1 ... 6							
	Length of removed wire insulation		mm	9							
	Screw			M3.5							
	Screw head		mm	PZ1							
	Tightening torque			1.2							
COIL	Range of control voltage for switch-on	U_c	%	85 ... 110							
	Range of control voltage for drop out	U_c	%	AC: 75 ... 20 / DC: 75 ... 10 (where is applicable)							
	Kind of voltage			AC	AC/DC	AC	AC/DC	AC	AC/DC	AC	AC/DC
	Standard control voltages	U_c	V	12, 24, 48, 120, 230		12, 24, 48 120, 230, 400	12, 24, 48 120, 230	12, 24, 48 120, 230, 400	12, 24, 48 120, 230	12, 24, 48 120, 230, 400	12, 24, 48, 120, 230
	Frequency of AC control voltage	f	Hz	50/60	40 ... 500	50/60	40 ... 500	50/60	40 ... 500	50/60	40 ... 500
	Control mode			remote control with U_c / manual control only for types with -R and -T							
	Impulse duration of control voltage: minimum			permanent							
	Impulse duration of control voltage: maximum			permanent							
	Minimum duration between two impulses of control voltage		ms	AC: 150 / DC: 500 (where is applicable)							
	Surge immunity withstand voltage 1,2/50 µs acc. to standard IEC/EN 61000-4-5		kV	2							
	Coil consumption: switch-on		VA/W	12/10	2.1/2.1	33/25	2.6/2.6 [1]	33/25	2.6/2.6 [1]	33/25	2.6/2.6 [1]
	Coil consumption: operation		VA/W	2.8/1.2	2.1/2.1	5.5/1.6	2.6/2.6 [1]	5.5/1.6	2.6/2.6 [1]	5.5/1.6	2.6/2.6 [1]
	Delays: make		ms	15 ... 25	15 ... 45	10 ... 30	15 ... 45	10 ... 30	15 ... 45	10 ... 30	15 ... 45
	Delays: brake		ms	10 ... 30	20 ... 50	10 ... 30	20 ... 70	10 ... 30	20 ... 70	10 ... 30	20 ... 70
	Terminal capacity: rigid (solid and stranded)		mm^2	1 ... 2.5							
	Terminal capacity: flexible		mm^2	1 ... 2.5							
	Length of removed wire insulation		mm	7							
	Screw			M3							
	Screw head			PZ1							
	Tightening torque		Nm	0.6							
SAFETY	MTTF - Mean time to failure MTTF = $1/\lambda = B10/(0.1\ n_{op})$		h	AC-1: 3.750 AC-3: 7.500		AC-1: 5.000 AC-3: 12.500				AC-1: 3.750	
	$MTTF_d$ - Mean time to failure dangerous $MTTFd = 1/\lambda_d = B10_d/(0.1\ n_{op})$		h	AC-1: 5.000 AC-3: 10.000		AC-1: 6.666 AC-3: 16.666				AC-1: 5.000	
	B10 - Number of operating cycles until 10 % of devices fail		op. c.	AC-1: 112.500 for NO AC-3: 225.000		AC-1: 150.000 AC-3: 375.000				AC-1: 112.500	
	$B10_d$ - Number of operating cycles until 10 % of device dangerous $B10_d$ = B10/ratio of dangerous failures		op. c.	AC-1: 150.000 for NO AC-3: 300.000		AC-1: 200.000 AC-3: 500.000				AC-1: 150.000	
	λ - Failure rate $\lambda = (0.1\ n_{op})/B10$		1/h	AC-1: 0.000266 for NO AC-3: 0.000133		AC-1: 0.0002 AC-3: 0.00008				AC-1: 0.000266	
	λ_d - Failure rate dangerous $\lambda_d = (0.1\ n_{op})/B10_d$		1/h	AC-1: 0.0002 for NO AC-3: 0.0001		AC-1: 0.00015 AC-3: 0.00006				AC-1: 0.0002	
	Ratio of dangerous failures		%	75							
	n_{op} - Operating cycles (operating cycles/h)		op. c./h	300							

[1] Coil consumption for version -04 is 3.8 VA/3.8 W

TECHNICAL DATA

	Type	Symbol	Unit	IKA40	IK40	IKA63	IK63
GENERAL	Standards			IEC/EN 61095, IEC/EN 60947-4-1, IEC/EN 60947-5-1			
	Approvals			CE, CB, NF, EAC			
	Module width			3			
	Number of poles			4			
	Degree of protection			IP20 (IP40 when installed in installation box - distribution board)			
	Pollution degree			3			
	Climatic conditions			95 % relative humidity			
	Ambient temperature (open)		°C	-15 ... +55 [3]			
	Storage temperature		°C	-30... +80			
	Maximum altitude U_i and U_e is reduced for 1.2 % and I_e for 0.4 % for every additional 100 m		m	2000			
	Number of contactors or switches side-by-side: ≤40 °C (40 ... 55) °C			 no limitation no limitation	 max. 3 max. 2	 no limitation no limitation	 max. 3 max. 2
	Noise level (operation)		dB	30	20	30	20
	Vibration resistance according to IEC/EN 60068-2-6	a	g	switched off: 2 (Z and X axis) / switched on: 3 (Z axis) and 1 (X axis)			
	Shock resistance according to IEC/EN 6068-2-27	a	g	switched off: 10 (Z and X axis) / switched on: 15 (Z axis) and 2 (X axis)			
	Maximum operating frequency with no load		op. c./h	3.000			
	Mechanical endurance		op. c.	3.000.000	10.000.000	3.000.000	10.000.000
	Weight		g	350	420	350	420
MAIN CIRCUIT	Contact reliability			≥17 V; ≥50 mA			
	Minimum distance of open contacts		mm	3.6			
	Power dissipation per pole		W	4	4	8	8
	Overload current withstand capability: 10 s		A	176		240	
	Maximum back-up fuse for short-circuit protection gL and gG: coordination type 1 (at prospective current 3 kA) coordination type 2 (at prospective current 3 kA)	I_v	A	63 40	63 40	80 63	80 63
	Rated insulation voltage	U_i	V	440			
	Rated impulse withstand voltage	U_{imp}	kV	6			
	Rated operational voltage	U_e	V	400			
	Rated frequency	f	Hz	50/60			
	Thermal current	I_{th}	A	40		63	
	Rated operational current for AC-1, AC-7a and AC-21	I_e	A	40		63 [1]	
	Operational power for AC-1, AC-7a and AC-21: single-phase 230 V three-phase 230 V three-phase 400 V	P_e	kW	 8.7 16 26		 13.3 [2] 24 [2] 40 [2]	
	Maximum operating frequency for AC-1, AC-7a and AC-21		op. c./h	600			
	Electrical endurance for AC-1, AC-7a and AC-21		op. c.	100.000			
	Rated operational current for AC-2	I_e	A	25		32	
	Operational power for AC-2: single-phase 230 V three-phase 230 V three-phase 400 V	P_e	kW	 3.7 6.5 11.2		 4.8 8.3 14.4	
	Maximum operating frequency for AC-2		op. c./h	120			
	Electrical endurance for AC-2		op. c.	50.000			
	Rated operational current for AC-22	I_e	A	40		63	
	Operational power for AC-22: single-phase 230 V three-phase 230 V three-phase 400 V	P_e	kW	 7.4 12.7 22.2		 11.6 20.1 34.9	
	Maximum operating frequency for AC-22		op. c./h	300			
	Electrical endurance for AC-22		op. c.	50.000			
	Rated operational current for AC-3, AC-7b and AC-23	I_e	A	22		30	
	Operational power for AC-3, AC-7b and AC-23: single-phase 230 V three-phase 230 V three-phase 400 V	P_e	kW	 3.7 5.5 11		 5 8.5 15	
	Maximum operating frequency for AC-3, AC-7b and AC-23		op. c./h	600			
	Electrical endurance for AC-3, AC-7b and AC-23		op. c.	150.000			

[1] I_e (AC-1) for IK63-04 is 50 A

[2] Rated power (AC-1) for IK63-04:
single-phase 230 V = 10.9 kW
three-phase 230 V = 18.9 kW
three-phase 400 V = 32.9 kW

[3]) Ambient temperature (open) -25...+55 °C for version with 4NO contacts

TECHNICAL DATA

	Type	Symbol	Unit	IKA40	IK40	IKA63	IK63
MAIN CIRCUIT	Rated operational current for AC-5a (at 230 V)	I_e	A	20		32	
	Maximum operating frequency for AC-5a		op. c./h	600			
	Electrical endurance for AC-5a		op. c.	100.000			
	Rated operational current for AC-5b (at 230 V)	I_e	A	17.6		22	
	Maximum operating frequency for AC-5b		op. c./h	600			
	Electrical endurance for AC-5b		op. c.	100.000			
	Rated operational current for AC-6a (at 230 V)	I_e	A	10.8		17.2	
	Maximum operating frequency for AC-6a		op. c./h	600			
	Electrical endurance for AC-6a		op. c.	100.000			
	Switching of capacitors AC-6b and AC-7c (at 230 V)	C	µF	220		330	
	Maximum operating frequency for AC-6b and AC-7c		op. c./h	600			
	Electrical endurance for AC-6b and AC-7c		op. c.	100.000			
	Rated operational current for DC-1 (L/R ≤ 1 ms):						
	1 pole ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC			40/25/18/4/1.2		63/26/20/4/1.2	
	2 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC	I_e	A	40/38/32/10/8		63/42/34/10/8	
	3 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC			40/40/40/30/20		63/63/60/35/30	
	4 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC			40/40/40/40/40		63/63/63/63/63	
	Maximum operating frequency for DC-1		op. c./h	300			
	Electrical endurance for DC-1		op. c.	100.000			
	Rated operational current for DC-3 (L/R ≤ 2 ms):						
	1 pole ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC			22/10/5/1.5/0.3		25/11/5/1.5/0.3	
	2 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC	I_e	A	40/20/16/5/1		45/22/18/5/1	
	3 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC			40/40/32/15/4		63/45/35/18/5	
	4 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC			40/40/40/40/10		63/63/63/63/10	
	Maximum operating frequency for DC-3		op. c./h	300			
	Electrical endurance for DC-3		op. c.	100.000			
	Rated operational current for DC-5 (L/R ≤ 7.5 ms):						
	1 pole ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC			20/8/4/1/0.2		25/10/5/1/0.2	
	2 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC	I_e	A	40/18/14/5/0.8		45/20/15/5/0.8	
	3 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC			40/40/28/12/3		63/44/30/15/4	
	4 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC			40/40/40/35/8		63/63/60/45/10	
	Maximum operating frequency for DC-5		op. c./h	300			
	Electrical endurance for DC-5		op. c.	100.000			
	Terminal capacity:						
	rigid (solid and stranded)	S	mm^2	1.5 ... 25			
	flexible			1.5 ... 16			
	Length of removed wire insulation		mm	10			
	Screw			M5			
	Screw head			PZ2			
	Tightening torque		Nm	3.5			
AUXILIARY CIRCUIT	Contact reliability			≥17 V; ≥50 mA			
	Minimum distance of open contacts		mm	3.6			
	Power dissipation per pole		W	4	4	8	8
	Overload current withstand capability:						
	10 s		A	176		240	
	Maximum back-up fuse for short-circuit protection gL and gG:						
	coordination type 1 (at prospective current 3 kA)	I_v	A	63	63	80	80
	coordination type 2 (at prospective current 3 kA)			40	40	63	63
	Rated insulation voltage	U_i	V	440			
	Rated impulse withstand voltage	U_{imp}	kV	4			
	Rated operational voltage	U_e	V	230/400			
	Rated frequency	f	Hz	50/60			
	Thermal current	I_{th}	A	40		63	
	Rated operational current for AC-15:						
	single-phase 230 V	I_e	A	6			
	single-phase 400 V			4			
	Maximum operating frequency for AC-15		op. c./h	1.200			
	Electrical endurance for AC-15		op. c.	150.000			
	Rated operational current for DC-13:						
	1 pole ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC			6/4/1/0.3/0.05			
	2 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC	I_e	A	6/6/4/1/0.1			
	3 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC			6/6/6/3/1			
	4 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC			6/6/6/4/2			

TECHNICAL DATA

	Type	Symbol	Unit	IKA40	IK40	IKA63	IK63
AUXILIARY CIRCUIT	Maximum operating frequency for DC-13		op. c./h	300			
	Electrical endurance for DC-13		op. c.	200.000			
	Terminal capacity: rigid (solid and stranded) flexible	S	mm^2	1.5 ... 25 1.5 ... 16			
	Length of removed wire insulation		mm	10			
	Screw			M5			
	Screw head		mm	PZ2			
	Tightening torque			3.5			
COIL	Range of control voltage for switch-on	U_c	%	85 ... 110			
	Range of control voltage for drop out	U_c	%	AC: 75 ... 20 / DC: 75 ... 10 (where is applicable)			
	Kind of voltage			AC	AC/DC	AC	AC/DC
	Standard control voltages	U_c	V	12, 24, 48, 120, 230, 400	12, 24, 48, 120, 230	12, 24, 48, 120, 230, 400	12, 24, 48, 120, 230
	Frequency of AC control voltage	f	Hz	50/60	40 ... 500	50/60	40 ... 500
	Control mode			remote control with U_c / manual control only for types with -R			
	Impulse duration of control voltage: minimum maximum			permanent permanent			
	Minimum duration between two impulses of control voltage		ms	AC: 150 / DC: 500 (where is applicable)			
	Surge immunity withstand voltage 1.2/50 µs acc. to standard IEC/EN 61000-4-5		kV	2			
	Coil consumption: switch-on operation		VA/W	15.4/6 7.7/3	5/5 [1] 5/5 [1]	15.4/6 7.7/3	5/5 [1] 5/5 [1]
	Delays: make brake		ms	10 ... 20 10 ... 15	15 ... 20 35 ... 45	10 ... 20 10 ... 15	15 ... 20 35 ... 45
	Terminal capacity: rigid (solid and stranded) flexible		mm^2	1 ... 2.5 1 ... 2.5			
	Length of removed wire insulation		mm	8			
	Screw			M3			
	Screw head			PZ1			
	Tightening torque		Nm	0.6			
SAFETY	MTTF - Mean time to failure $MTTF = 1/\lambda = B10/(0.1\ n_{op})$		h	AC-1: 2.500 AC-3: 3.750			
	$MTTF_d$ - Mean time to failure dangerous $MTTFd = 1/\lambda_d = B10_d/(0.1\ n_{op})$		h	AC-1: 3.333 AC-3: 5.000			
	B10 - Number of operating cycles until 10 % of devices fail		op. c.	AC-1: 75.000 AC-3: 112.500			
	$B10_d$ - Number of operating cycles until 10 % of device dangerous $B10_d = B10$/ratio of dangerous failures		op. c.	AC-1: 100.000 AC-3: 150.000			
	λ - Failure rate $\lambda = (0.1\ n_{op})/B10$		1/h	AC-1: 0.0004 AC-3: 0.000266			
	λ_d - Failure rate dangerous $\lambda_d = (0.1\ n_{op})/B10_d$		1/h	AC-1: 0.0003 AC-3: 0.0002			
	Ratio of dangerous failures		%	75			
	n_{op} - Operating cycles (operating cycles/h)		op. c./h	300			

[1] Coil consumption for version -22 and -04 is 6.1 VA/6.1 W

TECHNICAL DATA

	Type	Symbol	Unit	IKA220	IKD220	IKA425	IKD425
GENERAL	Standards			UL 60947-4-1A, C22.2 No. 60947-4-1A-07, IEC/EN 61095, IEC/EN 60947-4-1			
	Approvals			CE, UL, CSA			
	Module width			1		2	
	Number of poles			2		4	
	Degree of protection			IP20 (IP40 when installed in installation box - distribution board)			
	Pollution degree			3			
	Ambient temperature (closed)			5 °F ... 104 °F / -5 °C ... +40 °C [1]			
	Storage temperature			-22 °F ... 176 °F / -30 °C ... +80 °C			
	Maximum altitude U_i and U_e is reduced for 1.2 % and I_e for 0.4 % for every additional 100 m		m	2000			
	Number of contactors or switches side-by-side: ≤40 °C (40 ... 55) °C			no limitation			
	Noise level (operation)		dB	30	20	30	20
	Vibration resistance according to IEC/EN 60068-2-6	a	g	switched off: 2 (Z and X axis) / switched on: 3 (Z axis) and 1 (X axis)			
	Shock resistance according to IEC/EN 6068-2-27	a	g	switched off: 10 (Z and X axis) / switched on: 15 (Z axis) and 2 (X axis)			
	Maximum operating frequency with no load		op. c./h	3.000			
	Mechanical endurance		op. c.	3.000.000	10.000.000	3.000.000	10.000.000
	Weight		g	130	130	230	250
MAIN CIRCUIT	Contact reliability			≥17 V; ≥50 mA			
	Minimum distance of open contacts			0.118 in /3.6 mm			
	Power dissipation per pole		W	1.7	1.7	2	2
	Overload current withstand capability: 10 s		A	72		68	
	Maximum back-up fuse for short-circuit protection gL and gG: coordination type 1 (at prospective current 3 kA) coordination type 2 (at prospective current 3 kA)	I_v	A			25	25
				20	20		
	Maximum back-up fuse for short-circuit protection KS acc. to UL and CSA	I_v	A	20	20	25	25
	Rated insulation voltage	U_i	V	IEC: 440 ; UL/CSA: 480			
	Rated impulse withstand voltage	U_{imp}	kV	4			
	Rated operational voltage	U_e	V	IEC: 230 ; UL/CSA: 240		IEC: 400 ; UL/CSA: 480	
	Rated frequency	f	Hz	50/60			
	Thermal current	I_{th}	A	20		25	
	Rated operational current for AC-1, AC-7a and AC-21	I_e	A	20		20	
	Operational power for AC-1, AC-7a and AC-21: single-phase 230 V three-phase 230 V three-phase 400 V	P_e	kW	4		5.4	
						9	
						16	
	Maximum operating frequency for AC-1, AC-7a and AC-21		op. c./h	600			
	Electrical endurance for AC-1, AC-7a and AC-21		op. c.	200.000			
	Rated operational current for AC-2	I_e	A	12		14	
	Operational power for AC-2: single-phase 230 V three-phase 230 V three-phase 400 V	P_e	kW	1.8		2	
						3.6	
						6	
	Maximum operating frequency for AC-2		op. c./h	120			
	Electrical endurance for AC-2		op. c.	100.000			
	Rated operational current for AC-22	I_e	A	20		25	
	Operational power for AC-22: single-phase 230 V three-phase 230 V three-phase 400 V	P_e	kW	3.7		4.6	
						8	
						13.8	
	Maximum operating frequency for AC-22		op. c./h	300			
	Electrical endurance for AC-22		op. c.	50.000			
	Rated operational current for AC-3, AC-7b and AC-23	I_e	A	NO: 9 / NC: 6		8.5	
	Operational power for AC-3, AC-7b and AC-23: single-phase 230 V three-phase 230 V three-phase 400 V	P_e	kW	NO: 1.3 / NC: 0.75		1.3	
						2.2	
						4	
	Maximum operating frequency for AC-3, AC-7b and AC-23		op. c./h	600			
	Electrical endurance for AC-3, AC-7b and AC-23		op. c.	300.000		500.000	

[1] Ambient temperature (open) -13 ... 104 °F / -25 ... +40 °C for version with 2NO and 4NO contacts

TECHNICAL DATA

	Type	Symbol	Unit	IKA220	IKD220	IKA425	IKD425
MAIN CIRCUIT	Rated motor power acc. to standards UL and CSA:						
	single-phase 120 V	P_e	HP	1/3	1/3	1/3	1/3
	single-phase 208 V			3/4	3/4	3/4	3/4
	single-phase 240 V			1	1	1	1
	three-phase 120 V					1	1
	three-phase 208 V					2	2
	three-phase 240 V					3	3
	three-phase 460 V					5	5
	Maximum operating frequency for motors acc. to UL and CSA		op. c./h	360			
	Electrical endurance for motors according to UL and CSA		op. c.	300.000		500.000	
	General use according to standards UL and CSA:						
	single-phase 240 V	I_e	A	20	20		
	three-phase 480 V					25	25
	Maximum operating frequency for general use acc. to UL and CSA		op. c./h	360			
	Electrical endurance for general use acc. to UL and CSA		op. c.	200.000			
	Switching of discharge lamps acc. to standards UL and CSA:						
	single-phase 240 V - standard ballast	I_e	A	20	20		
	three-phase 480 V - standard ballast					25	25
	Maximum operating frequency for discharge lamps acc. to UL and CSA		op. c./h	360			
	Electrical endurance for discharge lamps acc. to UL and CSA		op. c.	100.000			
	Rated operational current for AC-5a (at 230 V)	I_e	A	8.8		11.2	
	Maximum operating frequency for AC-5a		op. c./h	600			
	Electrical endurance for AC-5a		op. c.	100.000			
	Rated operational current for AC-5b (at 230 V)	I_e	A	8.8		9.7	
	Maximum operating frequency for AC-5b		op. c./h	600			
	Electrical endurance for AC-5b		op. c.	100.000			
	Rated operational current for AC-6a (at 230 V)	I_e	A	4		4.8	
	Maximum operating frequency for AC-6a		op. c./h	600			
	Electrical endurance for AC-6a		op. c.	100.000			
	Switching of capacitors AC-6b and AC-7c (at 230 V)	C	µF	30		36	
	Maximum operating frequency for AC-6b and AC-7c		op. c./h	600			
	Electrical endurance for AC-6b and AC-7c		op. c.	100.000			
	Rated operational current for DC-1 (L/R ≤ 1 ms):						
	1 pole ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC	I_e	A	20/15/10/6/0.6		25/20/15/6/0.6	
	2 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC			25/18/15/10/6		25/25/20/10/6	
	3 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC					25/25/25/20/15	
	4 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC					25/25/25/20/15	
	Maximum operating frequency for DC-1		op. c./h	300			
	Electrical endurance for DC-1		op. c.	100.000			
	Rated operational current for DC-3 (L/R ≤ 2 ms):						
	1 pole ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC	I_e	A	10/5/2/1/0.1		15/8/4/1.3/0.2	
	2 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC			20/10/8/4/0.4		25/10/8/4/0.4	
	3 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC					25/25/25/15/3	
	4 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC					25/25/25/20/8	
	Maximum operating frequency for DC-3		op. c./h	300			
	Electrical endurance for DC-3		op. c.	100.000			
	Rated operational current for DC-5 (L/R ≤ 7.5 ms):						
	1 pole ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC	I_e	A	10/4/1/0.3/0.06		15/5/3/0.5/0.1	
	2 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC			20/8/6/2/0.2		25/15/10/4/0.4	
	3 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC					25/25/20/12/2	
	4 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC					25/25/25/15/5	
	Maximum operating frequency for DC-5		op. c./h	300			
	Electrical endurance for DC-5		op. c.	100.000			
	Terminal capacity:						
	rigid (solid and stranded)	S		16 ... 10 AWG / 1 ... 10 mm^2			
	flexible			16 ... 8 AWG / 1 ... 6 mm^2			
	Length of removed wire insulation			0.354 in / 9 mm			
	Screw			M3.5			
	Screw head			PZ1			
	Tightening torque			10.62 lb-in / 1.2 Nm			
AUXILIARY CIRCUIT	Contact reliability			≥17 V; ≥50 mA			
	Minimum distance of open contacts			0.118 in /3.6 mm			
	Power dissipation per pole		W	1.7		2.2	
	Overload current withstand capability:						
	10 s			72		68	
	Maximum back-up fuse for short-circuit protection gL and gG:						
	coordination type 1 (at prospective current 3 kA)	I_v	A			25	25
	coordination type 2 (at prospective current 3 kA)			20	20		

TECHNICAL DATA

	Type	Symbol	Unit	IKA220	IKD220	IKA425	IKD425
AUXILIARY CIRCUIT	Maximum back-up fuse for short-circuit protection K5 acc. to UL and CSA	U_i	V	20	20	25	25
	Rated insulation voltage	U_i	V	IEC: 440 ; UL/CSA: 480			
	Rated impulse withstand voltage	U_{imp}	kV	4			
	Rated operational voltage	U_e	V	IEC: 230/100 ; UL/CSA: 240 (AC), 250 (DC)			
	Rated frequency	f	Hz	50/60			
	Thermal current	I_{th}	A	20		25	
	Rated operational current for AC-15:	I_e	A				
	single-phase 230 V			6			
	single-phase 400 V			4			
	Maximum operating frequency for AC-15		op. c./h	600			
	Electrical endurance for AC-15		op. c.	300.000		500.000	
	Switching of auxiliary loads according to standard UL and CSA			B300, P300			
	Maximum operating frequency for auxiliary loads according to UL and CSA		op. c./h	360			
	Electrical endurance for auxiliary loads according to UL and CSA		op. c.	100.000			
	Rated operational current for DC-13:	I_e	A				
	1 pole ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC			6/4/1/0.3/0.05			
	2 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC			6/6/4/1/0.1			
	3 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC			6/6/6/3/1			
	4 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC			6/6/6/4/2			
	Maximum operating frequency for DC-13		op. c./h	300			
	Electrical endurance for DC-13		op. c.	200.000			
	Terminal capacity:	S					
	rigid (solid and stranded)			16...10 AWG / 1...10 mm^2			
	flexible			16... 8 AWG / 1...6 mm^2			
	Length of removed wire insulation			0.354 in / 9 mm			
	Screw			M3.5			
	Screw head			PZ1			
	Tightening torque			10.62 lb-in / 1.2 Nm			
COIL	Range of control voltage for switch-on	U_c	%	85 ... 110			
	Range of control voltage for drop out	U_c	%	AC: 75 ... 20 / DC: 75 ... 10 (where is applicable)			
	Kind of voltage			AC	AC/DC	AC	AC/DC
	Standard control voltages	U_c	V	12, 24, 48, 110, 120, 127, 208, 230, 240			
	Frequency of AC control voltage	f	Hz	50/60			
	Control mode			remote control with U_c			
	Impulse duration of control voltage:						
	minimum			permanent			
	maximum			permanent			
	Minimum duration between two impulses of control voltage		ms	AC: 150 / DC: 500 (where is applicable)			
	Surge immunity withstand voltage 1.2/50 µs acc. to standard IEC/EN 61000-4-5		kV	2			
	Coil consumption:		VA/W				
	switch-on			12/10	2.1/2.1	33/25	2.6/2.6 [1]
	operation			2.8/1.2	2.1/2.1	5.5/1.6	2.6/2.6 [1]
	Delays:		ms				
	make			15 ... 25	15 ... 45	10 ... 30	15 ... 45
	brake			10 ... 30	20 ... 50	10 ... 30	20 ... 70
	Terminal capacity:						
	rigid (solid and stranded)			16 ... 14 AWG / 1 ... 2.5 mm^2			
	flexible			16 ... 14 AWG / 1 ... 2.5 mm^2			
	Length of removed wire insulation			0.276 in / 7 mm			
	Screw			M3			
	Screw head			PZ1			
	Tightening torque			5.31 lb-in / 0.6 Nm			
SAFETY	MTTF - Mean time to failure		h	General Use: 4.166			
	$MTTF = 1/\lambda = B10/(0.1\ n_{op})$			Motor: 6.250		Motor: 10.416	
	$MTTF_d$ - Mean time to failure dangerous		h	General Use: 5.555			
	$MTTFd = 1/\lambda_d = B10_d/(0.1\ n_{op})$			Motor: 8.333		Motor: 13.888	
	B10 - Number of operating cycles until 10 % of devices fail		op. c.	General Use: 150.000			
				Motor: 225.000		Motor: 375.000	
	$B10_d$ - Number of operating cycles until 10 % of device dangerous		op. c.	General Use: 200.000			
	$B10_d = B10$/ratio of dangerous failures			Motor: 300.000		Motor: 500.000	
	λ - Failure rate		1/h	General Use: 0.00024			
	$\lambda = (0.1\ n_{op})/B10$			Motor: 0.00016		Motor: 0.000096	
	λ_d - Failure rate dangerous		1/h	General Use: 0.00018			
	$\lambda_d = (0.1\ n_{op})/B10_d$			Motor: 0.00012		Motor: 0.000072	
	Ratio of dangerous failures		%	75			
	n_{op} - Operating cycles (operating cycles/h)		op. c./h	360			

[1] Coil consumption for contact version -04 is 3.8 VA / 3.8 W

Installation Contactors UL/CSA
up to 63 A

TECHNICAL DATA

	Type	Symbol	Unit	IKA440	IKD440	IKA463	IKD463
GENERAL	Standards			UL 60947-4-1A, C22.2 No. 60947-4-1A-07, IEC/EN 61095, IEC/EN 60947-4-1			
	Approvals			CE, UL, CSA			
	Module width			3			
	Number of poles			4			
	Degree of protection			IP20 (IP40 when installed in installation box - distribution board)			
	Pollution degree			3			
	Ambient temperature (open)			[1]			[2]
	Storage temperature			-22 °F ... 176 °F / -30 °C ... +80 °C			
	Maximum altitude U_i and U_e is reduced for 1.2 % and I_e for 0.4 % for every additional 100 m		m	2000			
	Number of contactors or switches side-by-side: ≤40 °C (40 ... 55) °C			no limit	max. 3	no limit	max. 3
	Noise level (operation)		dB	30	20	30	20
	Vibration resistance according to IEC/EN 60068-2-6	a	g	switched off: 2 (Z and X axis) / switched on: 3 (Z axis) and 1 (X axis)			
	Shock resistance according to IEC/EN 6068-2-27	a	g	switched off: 10 (Z and X axis) / switched on: 15 (Z axis) and 2 (X axis)			
	Maximum operating frequency with no load		op. c./h	3.000			
	Mechanical endurance		op. c.	3.000.000	10.000.000	3.000.000	10.000.000
	Weight		g	350	420	350	420
MAIN CIRCUIT	Contact reliability			≥17 V; ≥50 mA			
	Minimum distance of open contacts			0.118 in /3.6 mm			
	Power dissipation per pole		W	4	4	8	8
	Overload current withstand capability: 10 s		A	176		240	
	Maximum back-up fuse for short-circuit protection gL and gG: coordination type 1 (at prospective current 3 kA) coordination type 2 (at prospective current 3 kA)	I_v	A	63 40	63 40	80 63	80 63
	Maximum back-up fuse for short-circuit protection KS acc. to UL and CSA	I_v	A	60	60	70	70
	Rated insulation voltage	U_i	V	IEC: 440 ; UL/CSA: 480			
	Rated impulse withstand voltage	U_{imp}	kV	4			
	Rated operational voltage	U_e	V	IEC: 400 ; UL/CSA: 480			
	Rated frequency	f	Hz	50/60			
	Thermal current	I_{th}	A	40		63	
	Rated operational current for AC-1, AC-7a and AC-21	I_e	A	40		63	
	Operational power for AC-1, AC-7a and AC-21: single-phase 230 V three-phase 230 V three-phase 400 V	P_e	kW	8.7 16 26		13.3 24 40	
	Maximum operating frequency for AC-1, AC-7a and AC-21		op. c./h	600			
	Electrical endurance for AC-1, AC-7a and AC-21		op. c.	100.000			
	Rated operational current for AC-2	I_e	A	25		32	
	Operational power for AC-2: single-phase 230 V three-phase 230 V three-phase 400 V	P_e	kW	3.7 6.5 11.2		4.8 8.3 14.4	
	Maximum operating frequency for AC-2		op. c./h	120			
	Electrical endurance for AC-2		op. c.	50.000			
	Rated operational current for AC-22	I_e	A	40		63	
	Operational power for AC-22: single-phase 230 V three-phase 230 V three-phase 400 V	P_e	kW	7.4 12.7 22.2		11.6 20.1 34.9	
	Maximum operating frequency for AC-22		op. c./h	300			
	Electrical endurance for AC-22		op. c.	50.000			
	Rated operational current for AC-3, AC-7b and AC-23	I_e	A	22		30	
	Operational power for AC-3, AC-7b and AC-23: single-phase 230 V three-phase 230 V three-phase 400 V	P_e	kW	3.7 5.5 11		5 8.5 15	
	Maximum operating frequency for AC-3, AC-7b and AC-23		op. c./h	600			
	Electrical endurance for AC-3, AC-7b and AC-23		op. c.	150.000			

[1] Surrounding air temperature for 4NO contacts version -13 °F...104 °F / -25 °C ... 40 °C, for others contacts version 5 °F ... 104 °F / -15 °C ... +40 °C
[2] Surrounding air temperature for 4NO contacts version -13 °F...95 °F / -25 °C ... 35 °C, for others contacts version 5 °F ... 95 °F / -15 °C ... +35 °C

TECHNICAL DATA

	Type	Symbol	Unit	IKA440	IKD440	IKA463	IKD463
MAIN CIRCUIT	Rated motor power acc. to standards UL and CSA:						
	single-phase 120 V	P_e	HP	1	1	2	2
	single-phase 208 V			2	2	3	3
	single-phase 240 V			3	3	5	5
	three-phase 120 V			3	3	5	5
	three-phase 208 V			7 1/2	7 1/2	10	10
	three-phase 240 V			7 1/2	7 1/2	10	10
	three-phase 460 V			15	15	20	20
	Maximum operating frequency for motors acc. to UL and CSA		op. c./h	360			
	Electrical endurance for motors according to UL and CSA		op. c.	150.000			
	General use according to standards UL and CSA:						
	single-phase 240 V	I_e	A				
	three-phase 480 V			40	40	63	63
	Maximum operating frequency for general use acc. to UL and CSA		op. c./h	360			
	Electrical endurance for general use acc. to UL and CSA		op. c.	100.000			
	Switching of discharge lamps acc. to standards UL and CSA:						
	single-phase 240 V - standard ballast	I_e	A				
	three-phase 480 V - standard ballast			30	30	40	40
	Maximum operating frequency for discharge lamps acc. to UL and CSA		op. c./h	360			
	Electrical endurance for discharge lamps acc. to UL and CSA		op. c.	100.000			
	Rated operational current for AC-5a (at 230 V)	I_e	A	20		32	
	Maximum operating frequency for AC-5a		op. c./h	600			
	Electrical endurance for AC-5a		op. c.	100.000			
	Rated operational current for AC-5b (at 230 V)	I_e	A	17.6		22	
	Maximum operating frequency for AC-5b		op. c./h	600			
	Electrical endurance for AC-5b		op. c.	100.000			
	Rated operational current for AC-6a (at 230 V)	I_e	A	10.8		17.2	
	Maximum operating frequency for AC-6a		op. c./h	600			
	Electrical endurance for AC-6a		op. c.	100.000			
	Switching of capacitors AC-6b and AC-7c (at 230 V)	C	µF	220		330	
	Maximum operating frequency for AC-6b and AC-7c		op. c./h	600			
	Electrical endurance for AC-6b and AC-7c		op. c.	100.000			
	Rated operational current for DC-1 (L/R ≤ 1 ms):						
	1 pole ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC	I_e	A	40/25/18/4/1.2		63/26/20/4/1.2	
	2 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC			40/38/32/10/8		63/42/34/10/8	
	3 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC			40/40/40/30/20		63/63/60/35/30	
	4 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC			40/40/40/40/40		63/63/63/63/63	
	Maximum operating frequency for DC-1		op. c./h	300			
	Electrical endurance for DC-1		op. c.	100.000			
	Rated operational current for DC-3 (L/R ≤ 2 ms):						
	1 pole ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC	I_e	A	22/10/5/1.5/0.3		25/11/5/1.5/0.3	
	2 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC			40/20/16/5/1		45/22/18/5/1	
	3 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC			40/40/32/15/4		63/45/35/18/5	
	4 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC			40/40/40/40/10		63/63/63/63/10	
	Maximum operating frequency for DC-3		op. c./h	300			
	Electrical endurance for DC-3		op. c.	100.000			
	Rated operational current for DC-5 (L/R ≤ 7.5 ms):						
	1 pole ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC	I_e	A	20/8/4/1/0.2		25/10/5/1/0.2	
	2 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC			40/18/14/5/0.8		45/20/15/5/0.8	
	3 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC			40/40/28/12/3		63/44/30/15/4	
	4 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC			40/40/40/35/8		63/63/60/45/10	
	Maximum operating frequency for DC-5		op. c./h	300			
	Electrical endurance for DC-5		op. c.	100.000			
	Terminal capacity:						
	rigid (solid and stranded)	S		14 ... 10 AWG / 1.5 ... 25 mm^2			
	flexible			14 ... 4 AWG / 1.5 ... 16 mm^2			
	Length of removed wire insulation			0.394 in / 10 mm			
	Screw			M5			
	Screw head			PZ2			
	Tightening torque			30.98 lb-in / 3.5 Nm			
AUXILIARY CIRCUIT	Contact reliability			≥17 V; ≥50 mA			
	Minimum distance of open contacts			0.118 in /3.6 mm			
	Power dissipation per pole		W	4		8	
	Overload current withstand capability:						
	10 s			176		240	
	Maximum back-up fuse for short-circuit protection gL and gG:						
	coordination type 1 (at prospective current 3 kA)	I_v	A	63	63	80	80
	coordination type 2 (at prospective current 3 kA)			40	40	63	63

TECHNICAL DATA

	Type	Symbol	Unit	IKA440	IKD440	IKA463	IKD463
AUXILIARY CIRCUIT	Maximum back-up fuse for short-circuit protection K5 acc. to UL and CSA	I_v	A	60	60	70	70
	Rated insulation voltage	U_i	V	IEC: 440 ; UL/CSA: 480			
	Rated impulse withstand voltage	U_{imp}	kV	4			
	Rated operational voltage	U_e	V	IEC: 230/100 ; UL/CSA: 240 (AC), 250 (DC)			
	Rated frequency	f	Hz	50/60			
	Thermal current	I_{th}	A	40		63	
	Rated operational current for AC-15:	I_e	A				
	single-phase 230 V			6			
	single-phase 400 V			4			
	Maximum operating frequency for AC-15		op. c./h	1.200			
	Electrical endurance for AC-15		op. c.	150.000			
	Switching of auxiliary loads according to standard UL and CSA			B300, P300			
	Maximum operating frequency for auxiliary loads according to UL and CSA		op. c./h	360			
	Electrical endurance for auxiliary loads according to UL and CSA		op. c.	100.000			
	Rated operational current for DC-13:	I_e	A				
	1 pole ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC			6/4/1/0.3/0.05			
	2 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC			6/6/4/1/0.1			
	3 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC			6/6/6/3/1			
	4 poles in series ... 24 V DC/48 V DC/60 V DC/110 V DC/ 220 V DC			6/6/6/4/2			
	Maximum operating frequency for DC-13		op. c./h	300			
	Electrical endurance for DC-13		op. c.	200.000			
	Terminal capacity:	S					
	rigid (solid and stranded)			4 ...10 AWG / 1.5... 25 mm^2			
	flexible			4 ... 10 AWG / 1.5...16 mm^2			
	Length of removed wire insulation			0.394 in / 10 mm			
	Screw			M5			
	Screw head			PZ2			
	Tightening torque			30.98 lb-in / 3.5 Nm			
COIL	Range of control voltage for switch-on	U_c	%	85 ... 110			
	Range of control voltage for drop out	U_c	%	AC: 75 ... 20 / DC: 75 ... 10 (where is applicable)			
	Kind of voltage			AC	AC/DC	AC	AC/DC
	Standard control voltages	U_c	V	12, 24, 48, 110, 120, 127, 208, 230, 240			
	Frequency of AC control voltage	f	Hz	50/60			
	Control mode			remote control with U_c			
	Impulse duration of control voltage:						
	minimum			permanent			
	maximum			permanent			
	Minimum duration between two impulses of control voltage		ms	AC: 150 / DC: 500 (where is applicable)			
	Surge immunity withstand voltage 1,2/50 µs acc. to standard IEC/EN 61000-4-5		kV	2			
	Coil consumption:		VA/W				
	switch-on			15.4/6	5/5 [1)]	15.4/6	5/5 [1)]
	operation			7.7/3	5/5 [1)]	7.7/3	5/5 [1)]
	Delays:		ms				
	make			10 ... 20	15 ... 20	10 ... 20	15 ... 20
	brake			10 ... 15	35 ... 45	10 ... 15	35 ... 45
	Terminal capacity:						
	rigid (solid and stranded)			16 ... 14 AWG / 1 ... 2.5 mm^2			
	flexible			16 ... 14 AWG / 1 ... 2.5 mm^2			
	Length of removed wire insulation			0.315 in / 8 mm			
	Screw			M3			
	Screw head			PZ1			
	Tightening torque			5.31 lb-in / 0.6 Nm			
SAFETY	MTTF - Mean time to failure		h	General Use: 2.083			
	MTTF = $1/\lambda = B10/(0.1\ n_{op})$			Motor: 3.125			
	$MTTF_d$ - Mean time to failure dangerous		h	General Use: 2.777			
	$MTTFd = 1/\lambda_d = B10_d/(0.1\ n_{op})$			Motor: 4.166			
	B10 - Number of operating cycles until 10 % of devices fail		op. c.	General Use: 75.000			
				Motor: 112.500			
	$B10_d$ - Number of operating cycles until 10 % of device dangerous		op. c.	General Use: 100.000			
	$B10_d = B10$/ratio of dangerous failures			Motor:150.000			
	λ - Failure rate		1/h	General Use: 0.00048			
	$\lambda = (0.1\ n_{op})/B10$			Motor: 0.00032			
	λ_d - Failure rate dangerous		1/h	General Use: 0.00036			
	$\lambda_d = (0.1\ n_{op})/B10_d$			Motor: 0.00024			
	Ratio of dangerous failures		%	75			
	n_{op} - Operating cycles (operating cycles/h)		op. c./h	360			

[1)] Coil consumption for -22 and -04 is 6.1 VA/6.1 W

IKN , IKN-UL – Auxiliary switch

TECHNICAL DATA

	Type	Symbol	Unit	IKN	IKN-UL
GENERAL	Standards			IEC/EN 60947-5-1	UL508, C22.2 No. 14, IEC/EN 60947-5-1
	Approvals			CE, CB, NF, EAC	CE, UL, CSA
	Module width			0.5	0.5
	Number of poles			2	2
	Degree of protection			IP20 [1]	IP20 [1]
	Pollution degree			3	3
	Climatic conditions			95 % relative humidity	
	Ambient temperature: open			-25 °C ... +55 °C	
	closed				-13 °F ... 104 °F / -25 °C ... +40 °C
	Storage temperature			-30 °C ... +80 °C	-22 °F ... 176 °F / -30 °C ... +80 °C
	Maximum altitude U_i and U_e is reduced for 1.2 % and I_e for 0.4 % for every additional 100 m		m	2000	2000
	Mechanical endurance		op. c.	3.000.000	3.000.000
	Weight			30 g	0.08 lb / 30 g
AUXILIARY CIRCUIT	Contact reliability			≥12 V; ≥5 mA	≥12 V; ≥5 mA
	Minimum distance of open contacts			3.6 mm	0.142 in /3.6 mm
	Power dissipation per pole		W	0.3	0.3 (at I_{th} = 6 A)
	Maximum back-up fuse for short-circuit protection gL and gG: coordination type 2 (at prospective current 3 kA)	I_v	A	6	6
	Maximum back-up fuse for short-circuit protection KS acc. to UL and CSA	I_v	A		6
	Rated insulation voltage	U_i	V	500	500
	Rated impulse withstand voltage	U_{imp}	kV	4	4
	Rated operational voltage	U_e	V	230/400	IEC: 230 /400
					UL: C300 (120 VAC, 240 VAC)
					UL: Q300 (125 VDC, 250 VDC)
	Rated frequency	f	Hz	50/60	50/60
	Thermal current	I_{th}	A	6	IEC: 6 ; UL: 2.5
	Rated operational current for AC-15: single-phase 230 V	I_e	A	6	6
	single-phase 400 V			4	4
	Electrical endurance for AC-15		op. c.	50.000	50.000
	Switching of auxiliary loads acc. to standard UL and CSA				C300, Q300
	Electrical endurance for auxiliary loads acc. UL and CSA		op. c.		50.000
	Rated operational current for DC-13: 1 pole ... 24 VDC/ 48 VDC / 60 VDC / 110 VDC / 220 VDC	I_e	A	6/4/1/0.3/0.05	6/4/1/0.3/0.05
	2 poles in series ... 24 VDC/ 48 VDC / 60 VDC / 110 VDC / 220 VDC			6/6/4/1/0.1	6/6/4/1/0.1
	Electrical endurance for DC-13		op. c.	50.000	50.000
	Switching of auxiliary loads acc. to standard UL and CSA				C300, Q300
	Electrical endurance for auxiliary loads acc. UL and CSA		op. c.		50.000
	Terminal capacity: rigid (solid and stranded)	S		1 ... 2.5 mm^2	16 ... 14 AWG / 1 ... 2.5 mm^2
	flexible			1 ... 2.5 mm^2	16 ... 14 AWG / 1 ... 2.5 mm^2
	Length of removed wire insulation			7 mm	0.276 in / 7 mm
	Screw			M3	M3
	Screw head			PZ1	PZ1
	Tightening torque			0.8 Nm	7.08 lb-in / 0.8 Nm
SAFETY	MTTF - Mean time to failure $MTTF = 1/\lambda = B10/(0.1\ n_{op})$		h	833	694
	$MTTF_d$ - Mean time to failure dangerous $MTTFd = 1/\lambda_d = B10_d/(0.1\ n_{op})$		h	1.666	1.388
	B10 - Number of operating cycles until 10 % of devices fail		op. c.	25.000	25.000
	$B10_d$ - Number of operating cycles until 10 % of device dangerous $B10_d$ = B10/ratio of dangerous failures		op. c.	50.000	50.000
	λ - Failure rate $\lambda = (0.1\ n_{op})/B10$		1/h	0.0012	0.00144
	λ_d - Failure rate dangerous $\lambda_d = (0.1\ n_{op})/B10_d$		1/h	0.0006	0.00072
	Ratio of dangerous failures		%	50	50
	n_{op} - Operating cycles (operating cycles/h)		op. c./h	300	360

[1] IP40 when installed in installation box - distribution boards

TECHNICAL DATA

	Type	Symbol	Unit	IKS220-R IKS220-T	IKS225-R IKS225-T	IKS232-R IKS232-T	IKS420-R IKS42-T	IKS425-R IKS425-T	IKS432-R IKS432-T
GENERAL	Standards			IEC/EN 60947-3					
	Approvals			CE					
	Module width			2			4		
	Number of poles			2			4		
	Degree of protection			IP20 (IP40 when installed in installation box - distribution board)					
	Pollution degree			3					
	Climatic conditions			95 % relative humidity					
	Ambient temperature (open)		°C	-25 ... +55					
	Storage temperature		°C	-30... +80					
	Maximum altitude U_i and U_e is reduced for 1.2 % and I_e for 0.4 % for every additional 100 m		m	2000					
	Number of contactors or switches side-by-side: ≤40 °C (40 ... 55) °C			no limitation					
	Maximum operating frequency with no load		op. c./h	600					
	Mechanical endurance		op. c.	1.000.000					
	Weight		g	55			105		
MAIN CIRCUIT	Contact reliability			≥17 V; ≥50 mA					
	Minimum distance of open contacts		mm	3.6					
	Power dissipation per pole		W	1.7	2	2.5	1.7	2	2.5
	Overload current withstand capability: 10 s			72			68		
	Maximum back-up fuse for short-circuit protection gL and gG: coordination type 1 (at prospective current 3 kA)	I_v	A	20	25	32	20	25	32
	Rated insulation voltage	U_i	V	440					
	Rated impulse withstand voltage	U_{imp}	kV	4					
	Rated operational voltage	U_e	V	230					
	Rated frequency	f	Hz	50/60					
	Thermal current	I_{th}	A	20	25	32	20	25	32
	Rated operational current for AC-1, AC-7a and AC-21	I_e	A	20	25	32	20	25	32
	Operational power for AC-1, AC-7a and AC-21: single-phase 230 V	P_e	kW	4	5.4	7	4	5.4	7
	three-phase 230 V						7	9	12
	Maximum operating frequency for AC-1, AC-7a and AC-21		op. c./h	300					
	Electrical endurance for AC-1, AC-7a and AC-21		op. c.	100.000					
	Rated operational current for AC-22	I_e	A	20	25	32	20	25	32
	Operational power for AC-22: single-phase 230 V	P_e	kW	3.7	4.6	5.9	3.7	4.6	5.9
	three-phase 230 V						6.2	8	10.2
	Maximum operating frequency for AC-1, AC-7a and AC-21		op. c./h	300					
	Electrical endurance for AC-1, AC-7a and AC-21		op. c.	50.000					
	Rated operational current for AC-5a (at 230 V)	I_e	A	8.8	11	13	8.8	11	13
	Maximum operating frequency for AC-5a		op. c./h	300					
	Electrical endurance for AC-5a (at 230 V)		op. c.	100.000					
	Rated operational current for AC-5b (at 230 V)	I_e	A	8.8	9.7	11	8.8	9.7	11
	Maximum operating frequency for AC-5b		op. c./h	300					
	Electrical endurance for AC-5b (at 230 V)		op. c.	100.000					
	Rated operational current for AC-6a (at 230 V)	I_e	A	4	4.8	6	4	4.8	6
	Maximum operating frequency for AC-6a		op. c./h	300					
	Electrical endurance for AC-6a (at 230 V)		op. c.	100.000					
	Switching of capacitors AC-6b and AC-7c (at 230 V)	C	µF	30	36	40	30	36	40
	Maximum operating frequency for AC-6b and AC-7c		op. c./h	300					
	Electrical endurance for AC-6b and AC-7c		op. c.	100.000					
	Terminal capacity: rigid (solid and stranded)	S	mm^2	1 ... 10					
	flexible			1 ... 6					
	Length of removed wire insulation		mm	9					
	Screw			M3.5					
	Screw head			PZ1					
	Tightening torque		Nm	1.2					

Diagram 1

AC-1/230V/1-phase for IKA216, IKD216, IKA20, IKD20, IKA220 (UL), IKD220 (UL), IKA225, IKD225, IKA232, IKD232, IKA440 (UL), IKD440 (UL), IKA463 (UL), IKD463 (UL)
AC-1/400V/3-phase for IK21, IKA416, IKD416, IKA25, IKD25, IKA425 (UL), IKD425 (UL), IKA432, IKD432, IKA40, IK40, IKA63, IK63

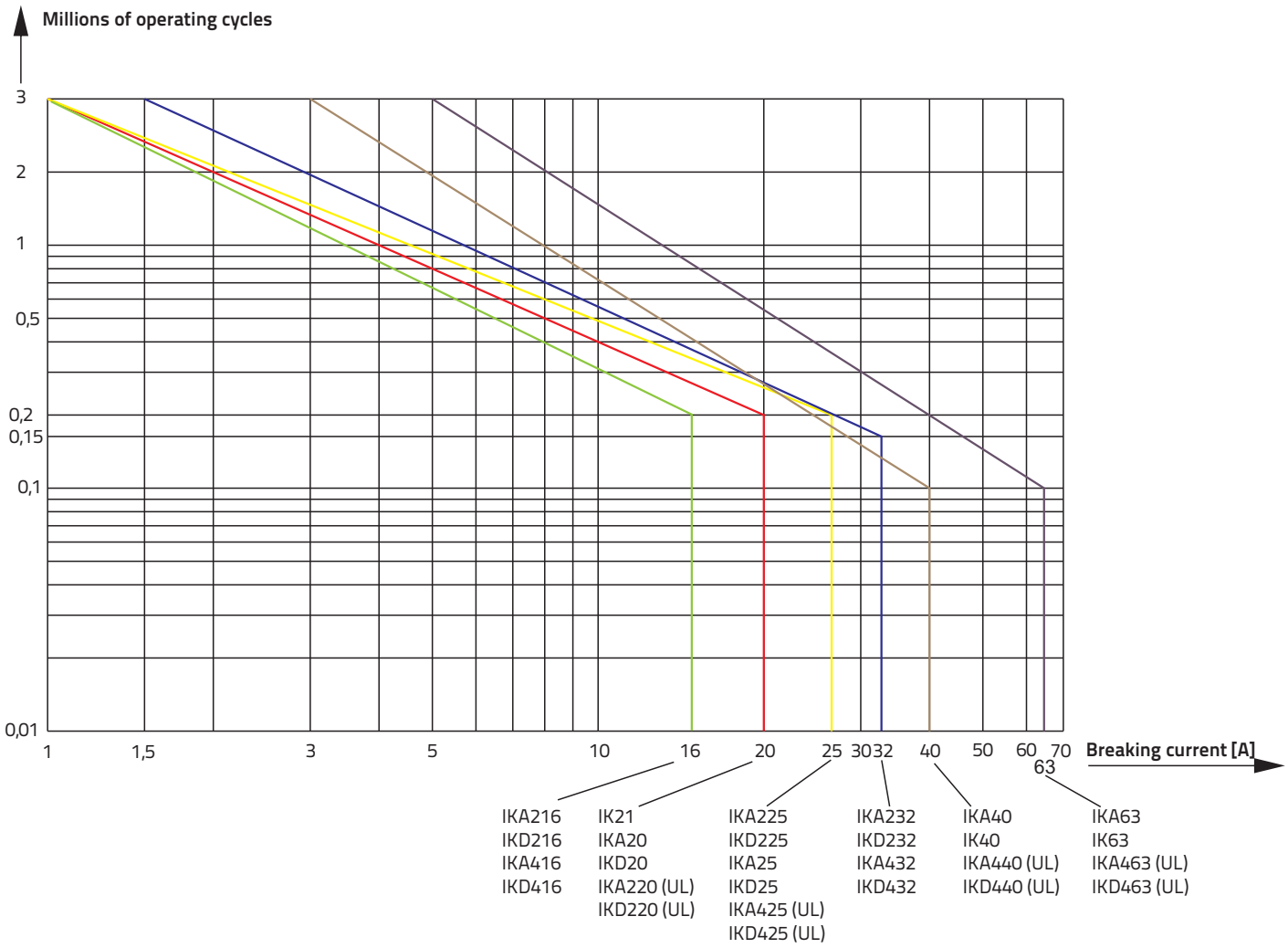


Diagram 2

AC-3/400V/3-phase for IK21, IKA416, IKD416, IKA25, IKD25, IKA425 (UL), IKD425 (UL), IKA432, IKD432, IKA40, IKA63, Ik63, IKA440 (UL), IKD440 (UL), IKA463 (UL), IKD463 (UL)

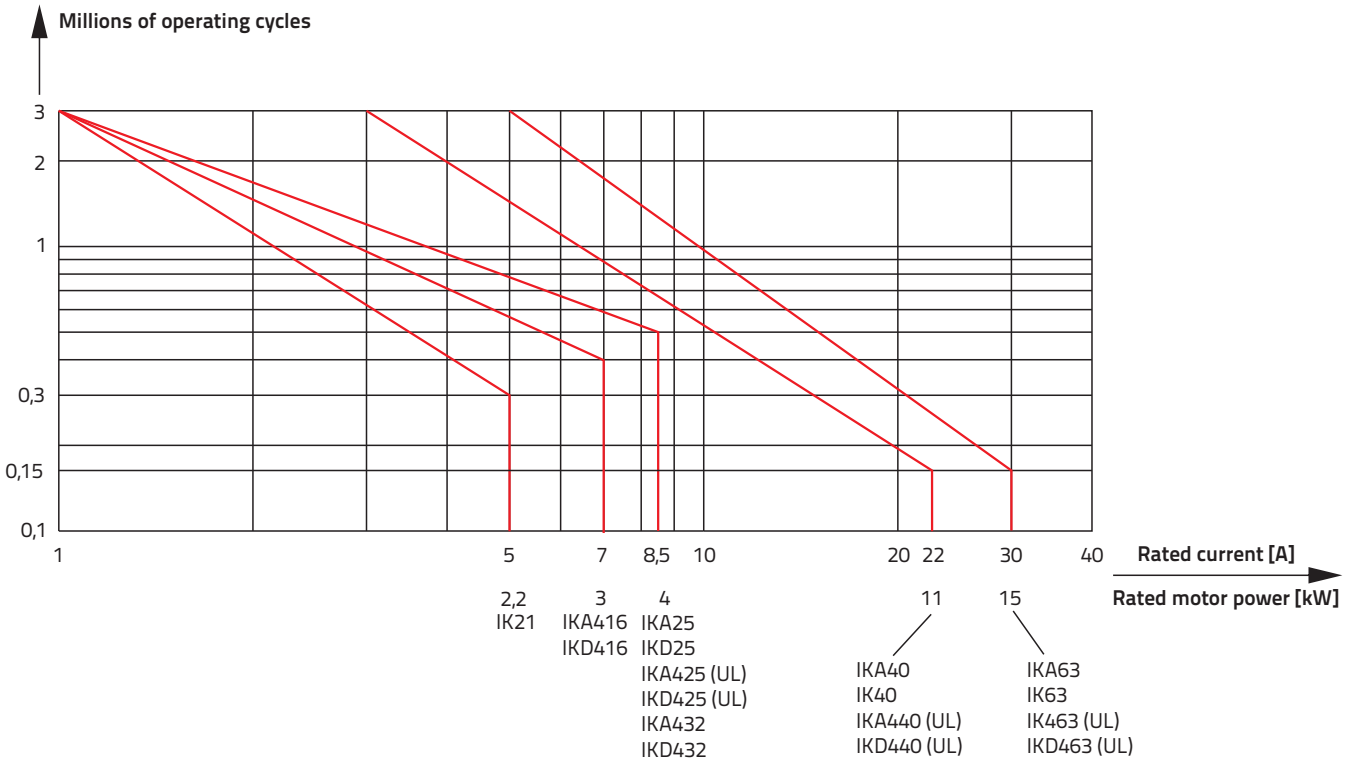
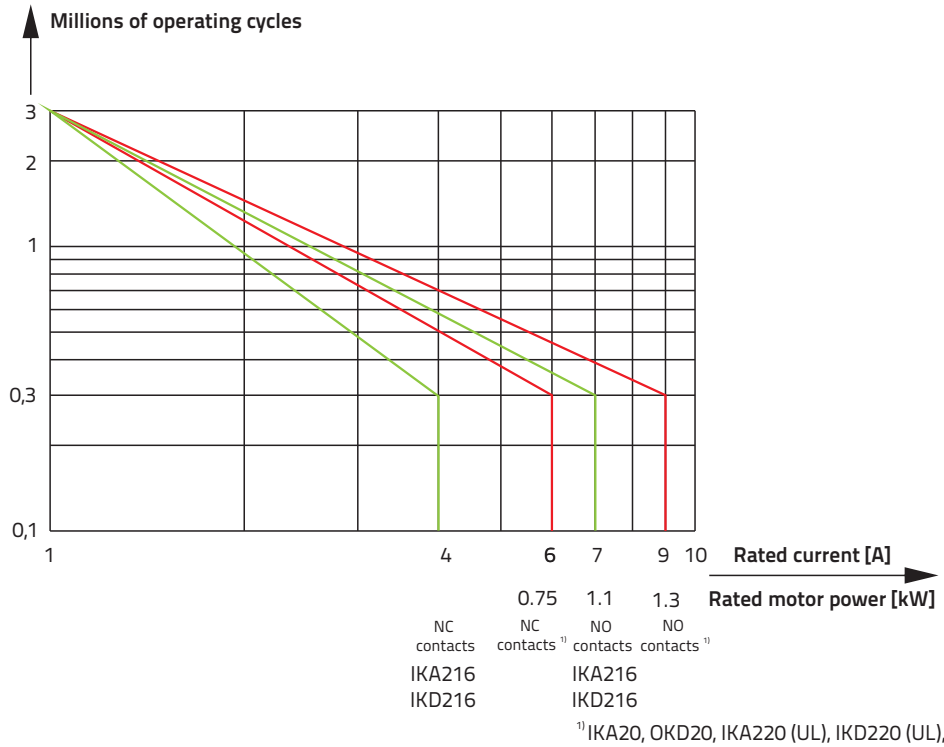


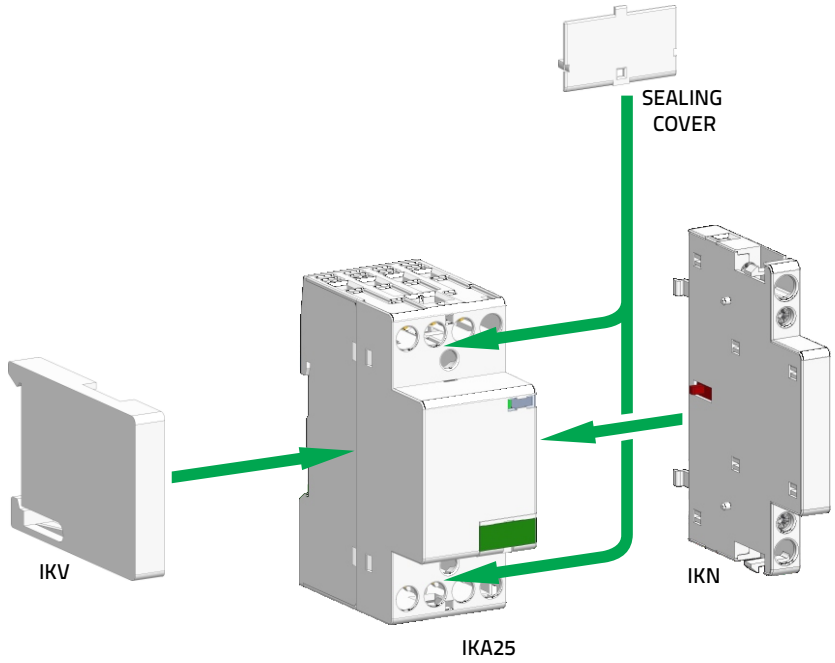
Diagram 3

AC-3/230V/1-phase for IKA216, IKD216, IKA20, IKD20, IKA220 (UL), IKD220 (UL), IKA225, IKD225, IKA232, IKD232



1) IKA20, OKD20, IKA220 (UL), IKD220 (UL), IKA225, IKA232, IKD232

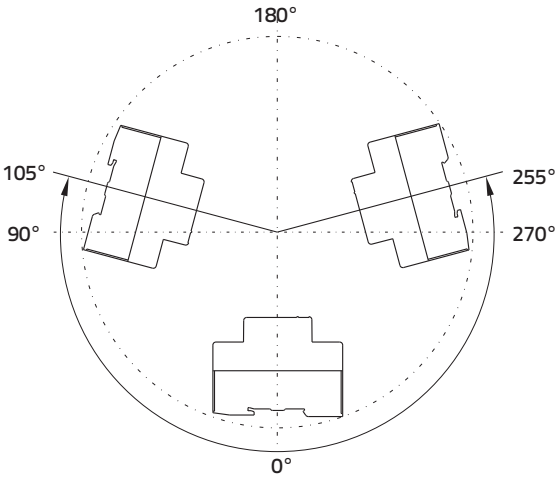
Mounting positions of accessories



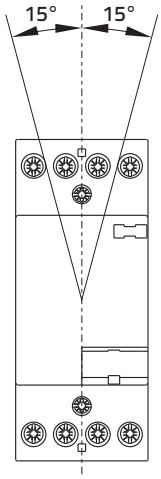
Installation Contactors
Operating Position, Dimensions

Operation position

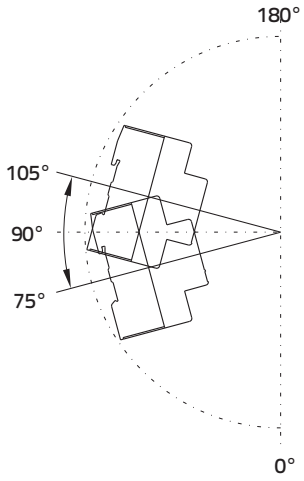
IKA216/20/225/232/ 25/432/ 40/ 63
IKA220/425/ 440/ 463 (UL)



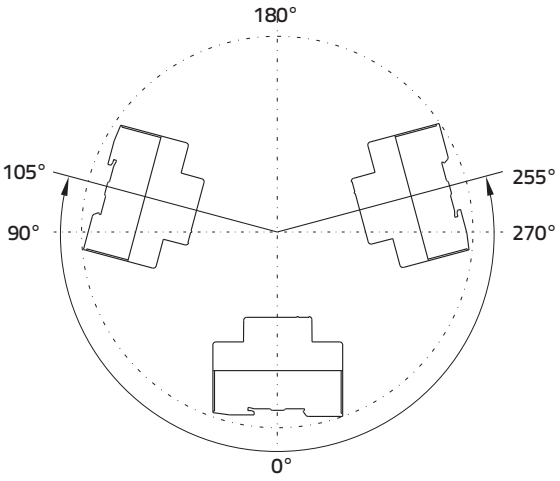
All installation contactors



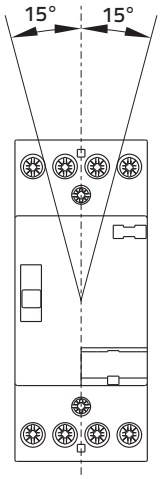
IKD216/20/225/232/ 25/432
IK40/63, IKD220/425/440/463 (UL)



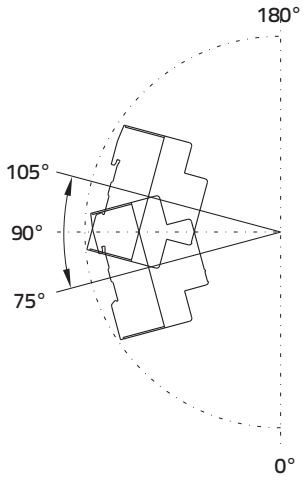
IKA216/20/225/232-R/-T
IKA25/432-R/-T



IKA/D216/20/225/232-R/-T
IKA/D416/25/432-R/-T



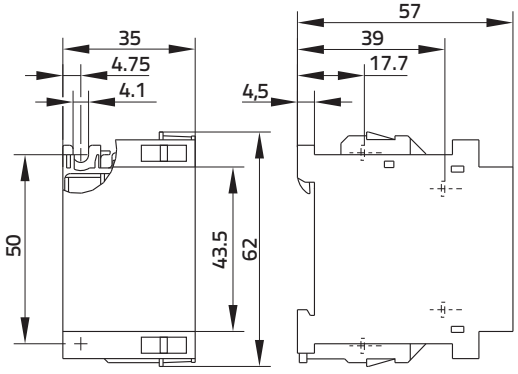
IKD20/225/232-R/-T
IKD25/432-R/-T



NOTE: IK21 and IKS-R/-T have no limitation

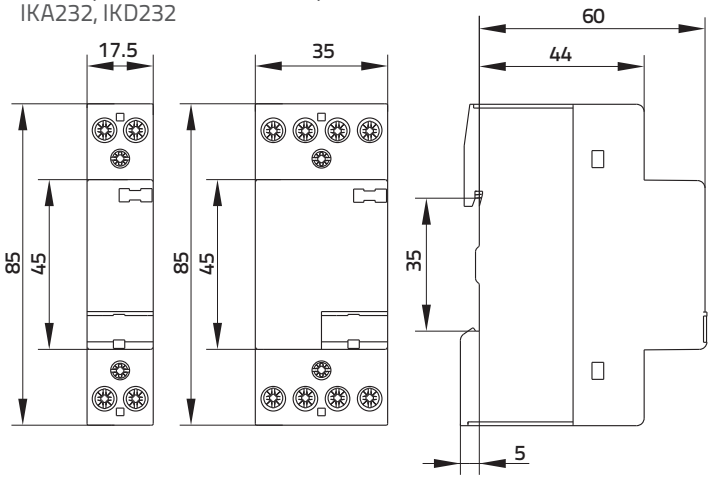
Dimension (in milimeters)

IK21



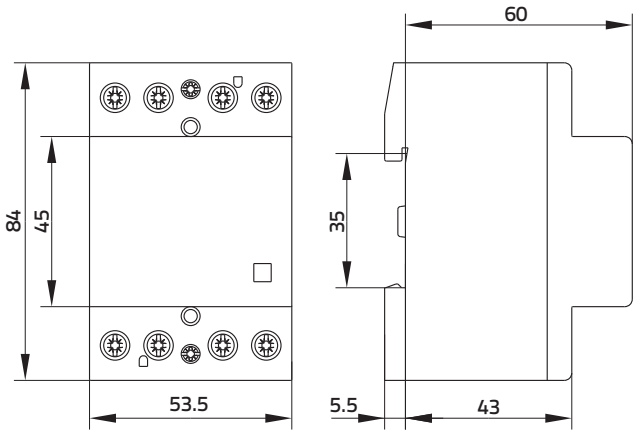
IKA216, IKD216
IKA20, IKD20
IKA225, IKD225
IKA232, IKD232

IKA416, IKD416
IKA25, IKD25
IKA432, IKD432

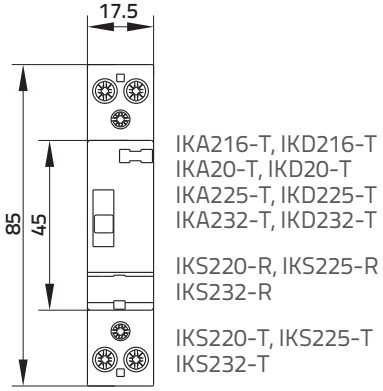


Dimensions (in milimeters unless otherwise stated)

IK40, IK63
IKA40, IKA63



IKA216-R, IKD216-R
IKA20-R, IKD20-R
IKA225-R, IKD225-R
IKA232-R, IKD232-R

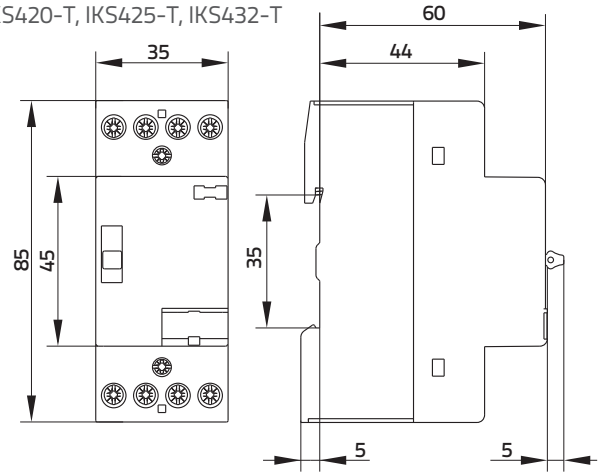


IKA216-T, IKD216-T
IKA20-T, IKD20-T
IKA225-T, IKD225-T
IKA232-T, IKD232-T

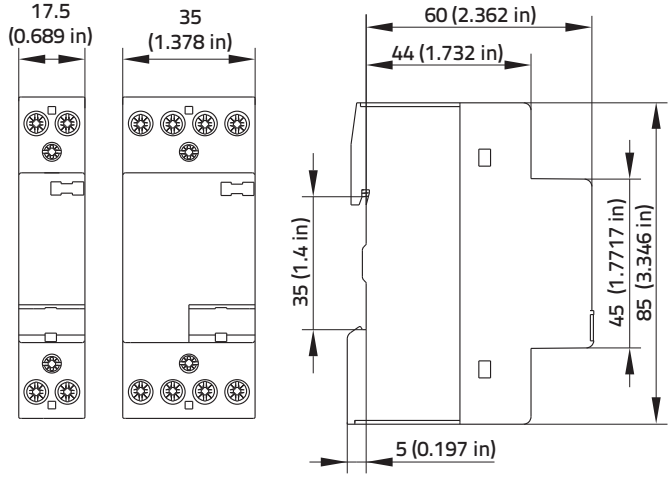
IKS220-R, IKS225-R
IKS232-R

IKS220-T, IKS225-T
IKS232-T

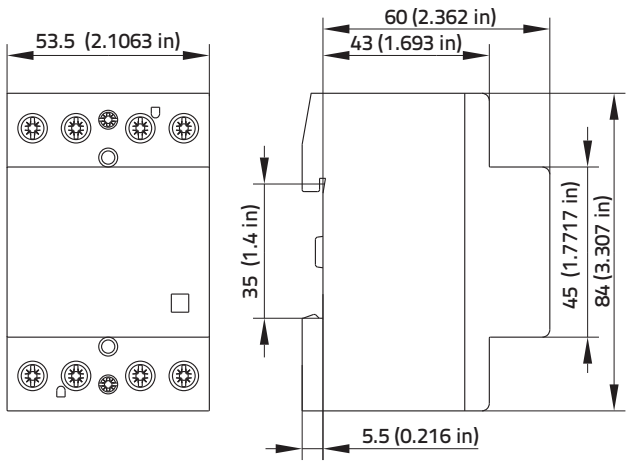
IKA416-R, IKD416-R, IKA416-T, IKD416-T
IKA25-R, IKD25-R, IKA25-T, IKD25-T
IKA432-R, IKD432-R, IKA432-R, IKD432-T
IKS420-R, IKS425-R, IKS432-R
IKS420-T, IKS425-T, IKS432-T



IKA220 (UL) IKA425 (UL)
IKD220 (UL) IKD425 (UL)

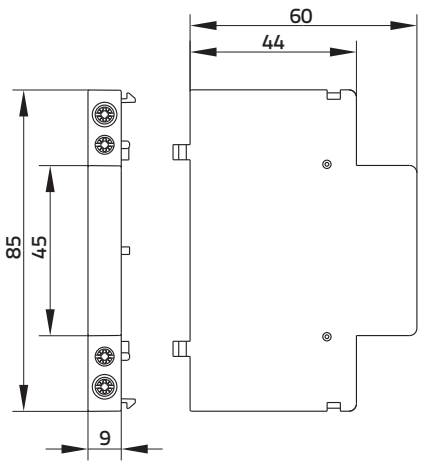


IKA440 (UL), IKD440 (UL)
IKA463 (UL), IKD463 (UL)

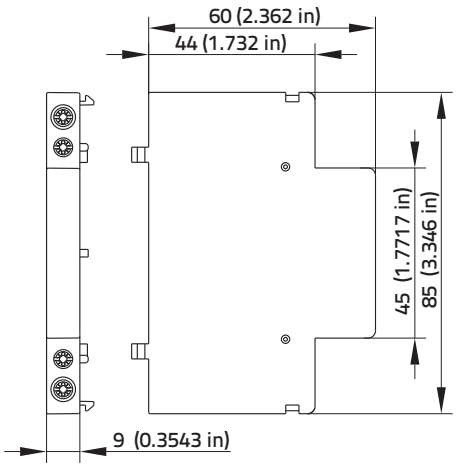


Dimensions (in milimeters unless otherwise stated)

IKN



IKN-UL



IKV