

# INSTALLATION CONTACTORS - UP TO 40 A

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

Type	Rated current I <sub>e</sub>	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	6	
IKA232-20	32 A	24 V	30.046.834	130		
IKA216-11	16 A	230 V		30.047.488		130
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	6	
IKA232-11	32 A	24 V	30.046.836	130		
IKA216-10	16 A	230 V		30.047.490		125
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	6	
IKA232-10	32 A	24 V	30.046.839	125		
IKA216-01	16 A	230 V		30.047.492		125
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	6	
IKA232-01	32 A	24 V	30.046.844	125		
IKA216-02	16 A	230 V		30.047.494		130
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	6	
IKA232-02	32 A	24 V	30.046.848	130		

AC



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

Type	Rated current I <sub>e</sub>	Control voltage at 50/60 Hz	Wiring diagram	Ordering No.	Weight (g)	Packaging (pcs)
IKA140-1P	40 A	230 V		30.047.814	123	6
IKA140-1P	40 A	24 V		30.047.815	123	

AC



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

Type	Rated current I <sub>e</sub>	Control voltage	Wiring diagram	Ordering No.	Weight (g)	Packaging (pcs)
IKD140-1P	40 A	230 V AC 220 V DC		30.047.816	123	6
IKD140-1P	40 A	24 V AC/DC		30.047.817	123	

AC/DC

ORDERING DATA

# INSTALLATION CONTACTORS - WITH MANUAL CONTROL

UP TO 32 A

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

AC

Type	Rated current I <sub>e</sub>	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	6
IKA232-20-R	32 A	24 V		30.046.898	130	
IKA216-11-R	16 A	230 V		30.047.528	130	
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	6
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	
IKA216-10-R	16 A	24 V		30.047.531	125	
IKA20-10-R	20 A	230 V		30.046.496	125	6
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	6
IKA232-01-R	32 A	24 V		30.046.913	125	
IKA216-02-R	16 A	230 V		30.047.534	130	
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	6
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



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ORDERING DATA

# INSTALLATION CONTACTORS - WITH MANUAL MOMENTARY CONTROL

UP TO 32 A

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

Type	Rated current I <sub>e</sub>	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	

AC



3

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

Type	Rated current I <sub>e</sub>	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	

AC



ORDERING DATA

Other control voltages are on request - define type and voltage

# INSTALLATION CONTACTORS - UP TO 32 A

Type	Symbol	Unit	IKA232	IKD232	IKA416	IKD416	IKA25	IKD25	IKA432	IKD432
			IKA232-R IKA232-T <sup>1)</sup>	IKD232-R IKD232-T <sup>1)</sup>	IKA416-R IKA416-T <sup>1)</sup>	IKD416-R IKD416-T <sup>1)</sup>	IKA25-R IKA25-T <sup>1)</sup>	IKD25-R IKD25-T <sup>1)</sup>	IKA432-R IKA432-T <sup>1)</sup>	IKD432-R IKD432-T <sup>1)</sup>
Standards			IEC/EN 61095, IEC/EN 60947-4-1, IEC/EN 60947-5-1							
Approvals			CE, CB, EAC		CE, EAC		CE, CB, NF, EAC		CE, CB, EAC	
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							
Operating ambient temperature	°C		-25 ... +70 (2NO)				-25 ... +70 (4NO)			
			-15 ... +70 (1NO)				-15 ... +70 (3NO)			
			-15 ... +70 (1NO+1NC) <sup>4)</sup>				-15 ... +70 (3NO+1NC)			
			-15 ... +55 (2NC)				-15 ... +55 (2NO+2NC)			
			-15 ... +55 (1NC)				-15 ... +55 (4NC)			
Number of contactors or switches side-by-side:			max. 3							
	≤40 °C		max. 2							
	(40 ... 55) °C (55 ... 70) °C		max. 1 (ventilation modules or least 9 mm free space on each side)							
Storage temperature		°C	-40... +80							
Maximum altitude		m	2000							
U <sub>i</sub> and U <sub>e</sub> is reduced for 1.2 % and I <sub>e</sub> for 0.4 % for every additional 100 m										
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
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	I <sub>v</sub>	A	32	32			25	25	32	32
					16	16				
coordination type 2										
Rated insulation voltage	U <sub>i</sub>	V	440							
Rated impulse withstand voltage	U <sub>imp</sub>	kV	4							
Rated operational voltage	U <sub>e</sub>	V	400 <sup>2)3)</sup>				400			
Rated frequency	f	Hz	50/60							
Max. thermal current up to +55 °C	I <sub>th</sub>	A	32		16		25		32	
Max. thermal current @ +70 °C	I <sub>th</sub>	A	32		25		16		20	
Rated operational current for AC-1, AC-7a and AC-21	I <sub>e</sub>	A	32		16		25		32	
Operational power for AC-1, AC-7a and AC-21:	P <sub>e</sub>	kW	7		3,5		5,4		7	
			single-phase 230 V		three-phase 230 V		three-phase 400 V		single-phase 230 V	
			three-phase 230 V		three-phase 400 V		three-phase 230 V		three-phase 400 V	
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 <sub>e</sub>	A	16		10		14		16	
Operational power for AC-2:	P <sub>e</sub>	kW	2,4		1,5		2		2,4	
			single-phase 230 V		three-phase 230 V		three-phase 400 V		single-phase 230 V	
			three-phase 230 V		three-phase 400 V		three-phase 230 V		three-phase 400 V	
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 <sub>e</sub>	A	32		16		25		32	
Operational power for AC-22:	P <sub>e</sub>	kW	5,9		2,9		4,6		5,9	
			single-phase 230 V		three-phase 230 V		three-phase 400 V		single-phase 230 V	
			three-phase 230 V		three-phase 400 V		three-phase 230 V		three-phase 400 V	
Maximum operating frequency for AC-22		op. c./h	300							
Electrical endurance for AC-22		op. c.	50,000							
Rated operational current for AC-23	I <sub>e</sub>	A	NO: 9 / NC: 6		7		8,5			
Operational power for AC-3, AC-3e, AC-7b and AC-23:	P <sub>e</sub>	kW	NO: 1,3 / NC: 0,75		1,1		1,3			
			single-phase 230 V		three-phase 230 V		three-phase 400 V		single-phase 230 V	
			three-phase 230 V		three-phase 400 V		three-phase 230 V		three-phase 400 V	
Maximum operating frequency for AC-23		op. c./h	3							
Electrical endurance for AC-23		op. c.	4							

1) Available approvals only CE and EAC

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

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

4) For IKD232, IKD232-R, IKD232-T ..... -15 ... +55 (1NO+1NC)

# INSTALLATION CONTACTORS - UP TO 32 A

Type	Symbol	Unit	IKA232	IKD232	IKA416	IKD416	IKA25	IKD25	IKA432	IKD432
			IKA232-R IKA232-T	IKD232-R IKD232-T	IKA416-R IKA416-T	IKD416-R IKD416-T	IKA25-R IKA25-T	IKD25-R IKD25-T	IKA432-R IKA432-T	IKD432-R IKD432-T
Maximum operating frequency for AC-3, AC-3e, AC-7b and AC-23		op. c./h					600			
Electrical endurance for AC-3, AC-3e, AC-7b and AC-23		op. c.	300.000				500.000			
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	$\mu$ F	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 $\leq$ 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 $\leq$ 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	
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	
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	
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	
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 <sup>2</sup>					1 ... 10			
flexible							1 ... 6			
Min. conductor @ rhermal current @ +70 °C		mm <sup>2</sup>	6		2.5		4		6	
Length of removed wire insulation		mm					9			
Screw							M3.5			
Screw head							PZ1			
Tightening torque		Nm					1.2			
Contact reliability							$\geq$ 17 V; $\geq$ 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	16		16	25	25	32
coordination type 2										
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			

MAIN CIRCUIT

AUXILIARY CIRCUIT

TECHNICAL DATA

# INSTALLATION CONTACTORS - UP TO 32 A

AUXILIARY CIRCUIT	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
	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 <sup>2</sup>	1 ... 10				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 <sub>c</sub>	%	85 ... 110							
	Range of control voltage for drop out	U <sub>c</sub>	%	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 <sub>c</sub>	V	12, 24, 48, 120, 230	120, 230	12, 24, 48, 120, 230, 400	120, 230	120, 230, 400	120, 230	120, 230, 400	12, 24, 48, 120, 230, 400
	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 <sub>c</sub> / manual control only for types with -R and -T							
	Impulse duration of control voltage: minimum 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 operation		VA/W	12/10 2.8/1.2	2.1/2.1 2.1/2.1	33/25 5.5/1.6	2.6/2.6 <sup>1)</sup> 2.6/2.6 <sup>1)</sup>	33/25 5.5/1.6	2.6/2.6 <sup>1)</sup> 2.6/2.6 <sup>1)</sup>	33/25 5.5/1.6	2.6/2.6 <sup>1)</sup> 2.6/2.6 <sup>1)</sup>
	Delays: make brake		ms	15 ... 25 10 ... 30	15 ... 45 20 ... 50	10 ... 30 10 ... 30	15 ... 45 20 ... 70	10 ... 30 10 ... 30	15 ... 45 20 ... 70	10 ... 30 10 ... 30	15 ... 45 20 ... 70
	Terminal capacity: rigid (solid and stranded) flexible		mm <sup>2</sup>	1 ... 2.5				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/λ = B10/(0.1 n <sub>op</sub> )		h	AC-1: 3.750 AC-3: 7.500	AC-1: 5.000 AC-3: 12.500				AC-1: 3.750		
	MTTF <sub>d</sub> - Mean time to failure dangerous MTTF <sub>d</sub> = 1/λ <sub>d</sub> = B10 <sub>d</sub> /(0.1 n <sub>op</sub> )		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 <sub>d</sub> - Number of operating cycles until 10 % of device dangerous B10 <sub>d</sub> = 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 λ = (0.1 n <sub>op</sub> )/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 <sub>d</sub> - Failure rate dangerous λ <sub>d</sub> = (0.1 n <sub>op</sub> )/B10 <sub>d</sub>		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 <sub>op</sub> - Operating cycles (operating cycles/h)		op. c./h	300							

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

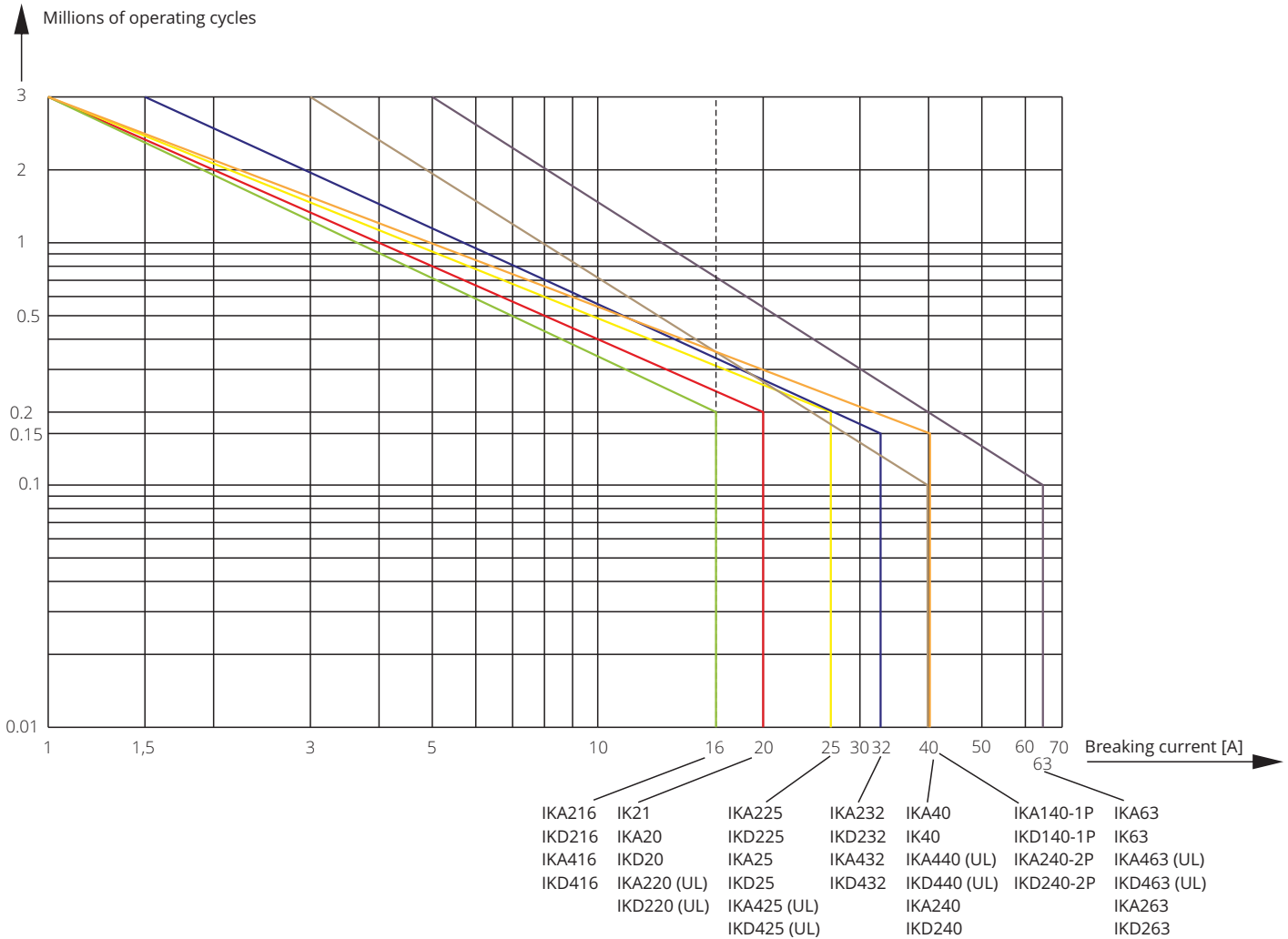
# INSTALLATION CONTACTORS

## Electrical endurance

**AC-1/230V/1-phase** for IKA20, IKD20, IKA216, IKD216, IKA220 (UL), IKD220 (UL), IKA225, IKD225, IKA232, IKD232, IKA440 (UL), IKD440 (UL), IKA463 (UL), IKD463 (UL), IKA140-1P, IKD140-1P, IKA240-2P, IKD240-2P, IKA240, IKD240, IKD263, IKD263

**AC-1/400V/3-phase** for IK21, IKA25, IKD25, IKA416, IKD416, IKA425 (UL), IKD425 (UL), IKA432, IKD432, IKA40, IK40, IKA63, IK63

Diagram 1

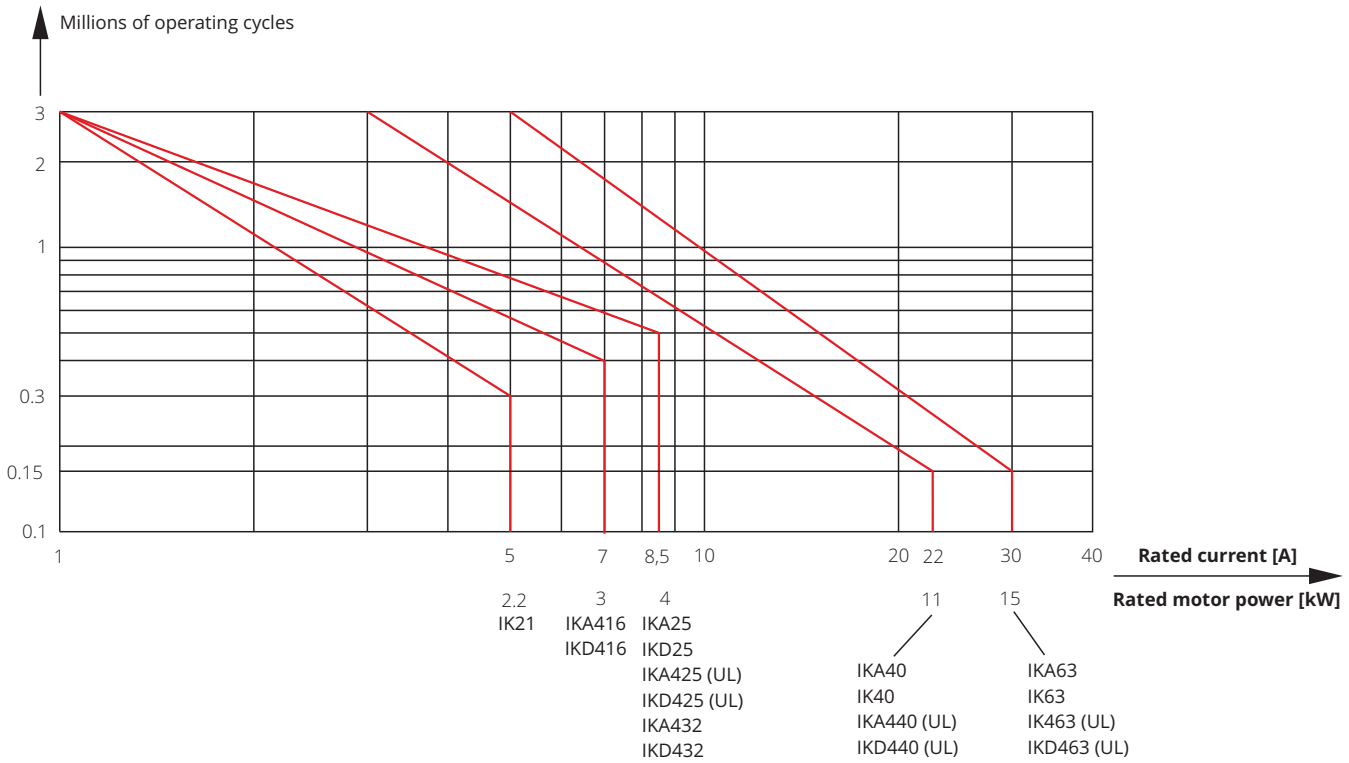


# INSTALLATION CONTACTORS

## Electrical endurance

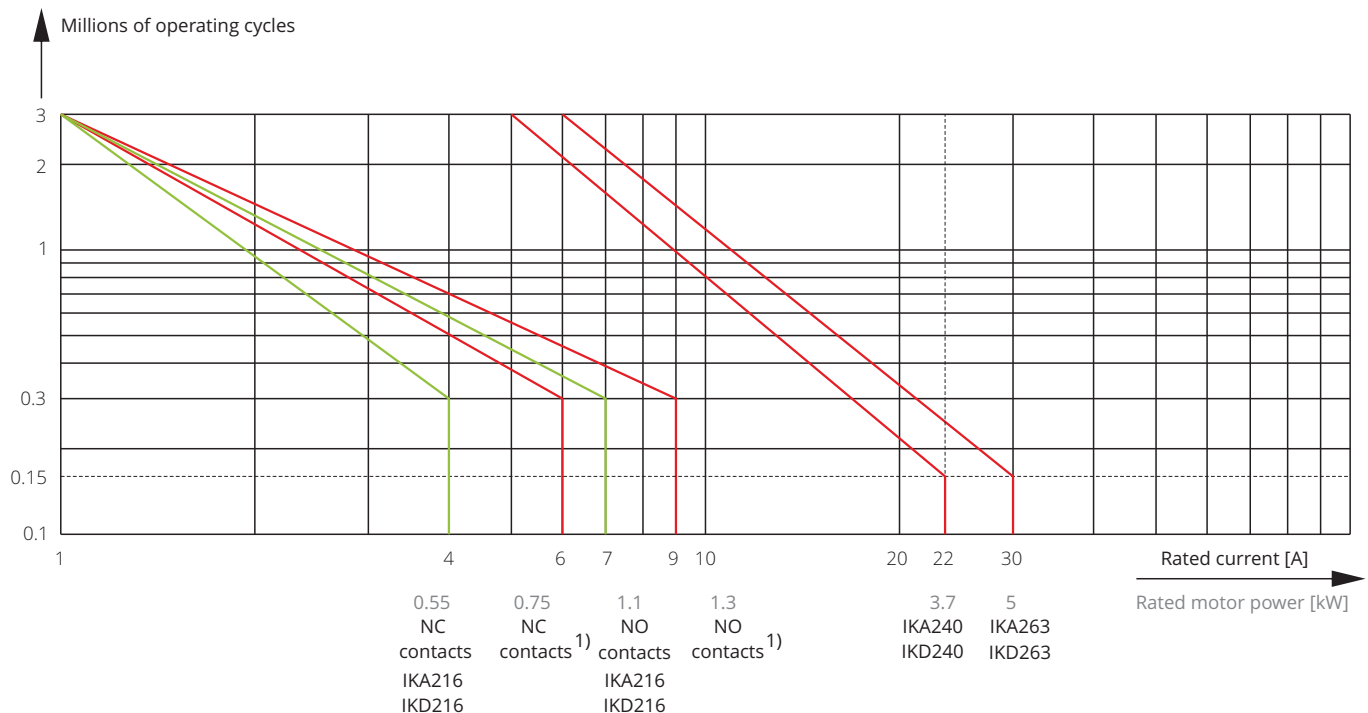
**AC-3, AC-3e/400V/3-phase** for IK21, IKA416, IKD416, IKA25, IKD25, IKA425 (UL), IKD425 (UL), IKA432, IKD432, IKA40, IKA63, IK63, IKA440 (UL), IKD440 (UL), IKA463 (UL), IKD463 (UL)

Diagram 2



**AC-3, AC-3e/230V/1-phase** for IKA216, IKD216, IKA20, IKD20, IKA220 (UL), IKD220 (UL), IKA225, IKD225, IKA232, IKD232, IKA240, IKD240, IKA263, IKD263

Diagram 3

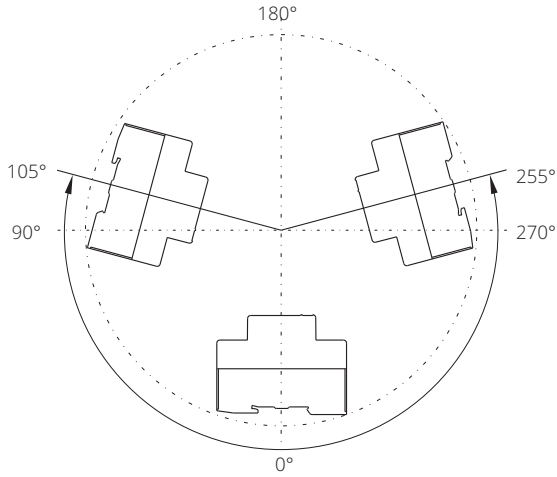


<sup>1)</sup> IKA20, IKD20, IKA220 (UL), IKD220 (UL), IKA225, IKD225, IKA232, IKD232

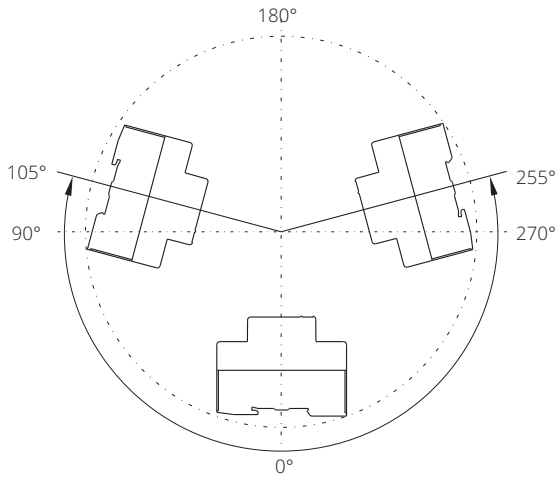
# INSTALLATION CONTACTORS

## Operation position

**IKA216/20/225/232/140/240/25/432/40/63  
IKA220/425/440/463 (UL)**

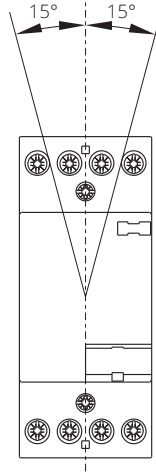


**IKA216/20/225/232-R/-T  
IKA25/432-R/-T**

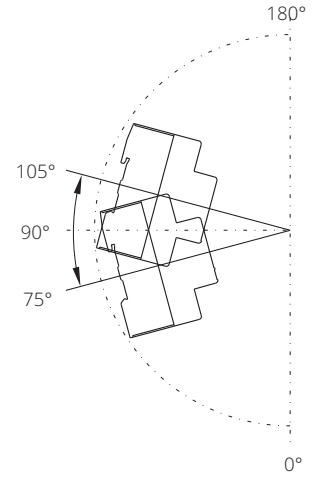


**NOTE:** IK21 and IKS-R/-T have no limitation

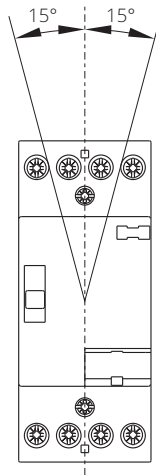
**All installation contactors**



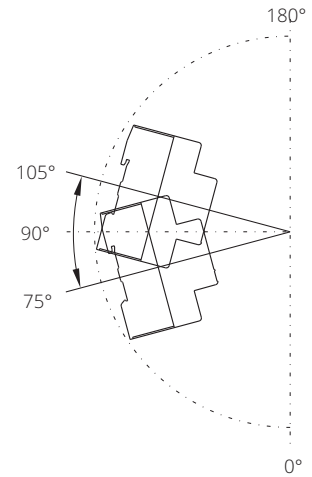
**IKD216/20/225/232/140/240/25/432  
IK40/63, IKD220/425/440/463 (UL)**



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

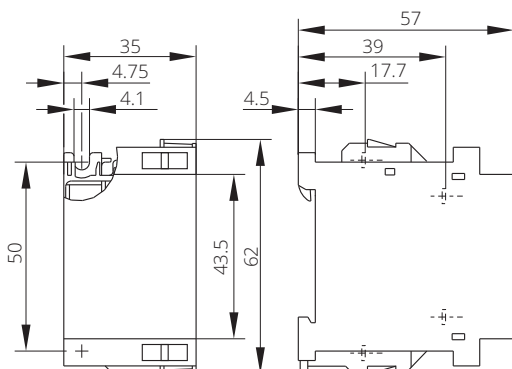


**IKD20/225/232-R/-T  
IKD25/432-R/-T**

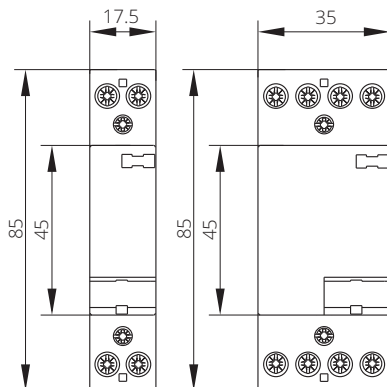


## Dimensions (in millimeters)

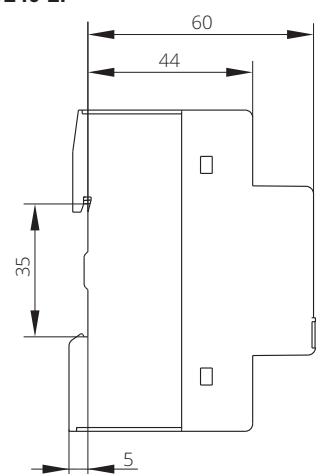
**IK21**



**IKA216, IKD216  
IKA20, IKD20  
IKA225, IKD225  
IKA232, IKD232  
IKA140-1P  
IKD140-1P**



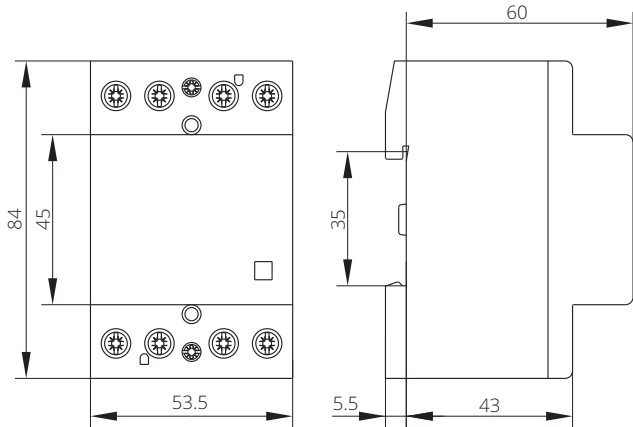
**IKA416, IKD416  
IKA25, IKD25  
IKA25, IKD25  
IKA432, IKD432  
IKA240-2P, IKD240-2P**



# INSTALLATION CONTACTORS

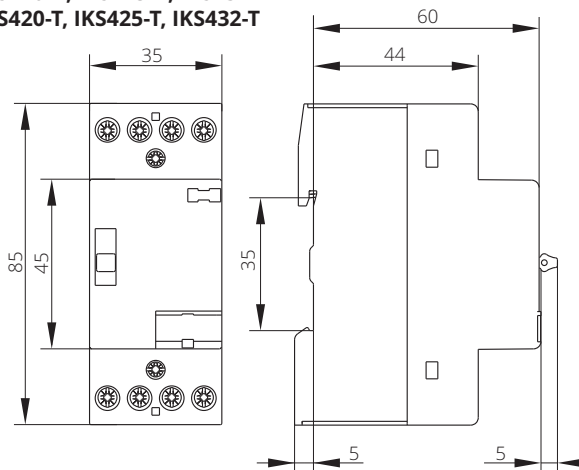
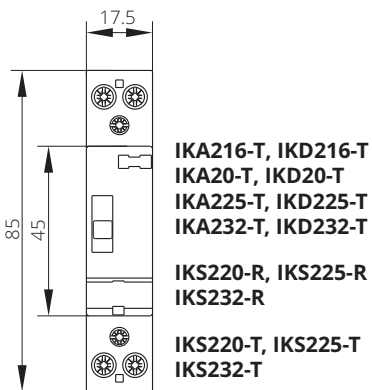
Dimensions (in millimeters unless otherwise stated)

**IK40, IK63  
IKA40, IKA63**



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

**IKA416-R, IKD416-R, IKA416-T, IKD416-T  
IKA25-R, IKD25-R, IKA25-T, IKD25-T  
IKA432-R, IKD432-R, IKA432-T, 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)**

