

INSTALLATION CONTACTORS - FROM 40 A UP TO 63 A

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

63 A
AC

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	5
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	5
IK63-31	63 A	24 V AC/DC		30.045.234	420	
IK40-30	40 A	230 V AC 220 V DC		30.045.368	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	5
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	5
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	5
IK63-04	50 A	24 V AC/DC		30.045.611	420	

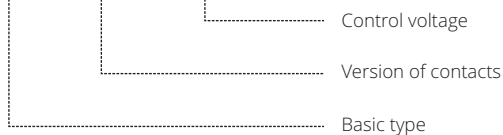


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Other control voltages are on request - define type and voltage

ORDERING DATA

IKA63 - 40 / 12 V



ORDERING DATA

INSTALLATION CONTACTORS - UP TO 63 A

GENERAL	Type	Symbol	Unit	IKA40 IKA40-R ¹⁾	IK40	IKA63 IKA63-R ¹⁾	IK63
	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)			-25 ... +70 (4NO)			
				-15 ... +70 (3NO)			
			°C	-15 ... +70 (3NO+1NC)			
				-15 ... +55 (2NO+2NC)			
	Number of contactors or switches side-by-side: ≤40 °C (40 ... 55) °C (55 ... 70) °C			no limitation	max. 3	no limitation	max. 3
				max. 2	max. 2	max. 2	max. 2
Storage temperature		°C	-40... +80				
Maximum altitude		m	2000				
U _i and U _e is reduced for 1.2 % and I _e for 0.4 % for every additional 100 m							
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	63	80	80
				40	40	63	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			
	Max. thermal current up to +55 °C	I _{th}	A	40		63	
	Max. thermal current @ +70 °C	I _{th}	A	40		50	
	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		13.3 ²⁾	
				16		24 ²⁾	
				26		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		4.8	
				6.5		8.3	
				11.2		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		11.6	
				12.7		20.1	
				22.2		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-3e, AC-7b and AC-23	I _e	A	22		30	
	Operational power for AC-3, AC-3e, AC-7b and AC-23: single-phase 230 V three-phase 230 V three-phase 400 V	P _e	kW	3.7		5	
				5.5		8.5	
				11		15	
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.	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 4) Available approvals only CE and EAC

INSTALLATION CONTACTORS - UP TO 63 A

Type	Symbol	Unit	IKA40 IKA40-R	IK40	IKA63 IKA63-R	IK63	
MAIN CIRCUIT	Rated operational current for AC-5a (at 230 V)	I_e	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	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	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	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	mm ²	1.5 ... 25				
flexible			1.5 ... 16				
Min. conductor @ thermal current @ +70 °C		mm ²	10		16		
Length of removed wire insulation		mm	10				
Screw			M5				
Screw head			PZ2				
Tightening torque		Nm	3.5				
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	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				

INSTALLATION CONTACTORS - UP TO 63 A

	Type	Symbol	Unit	IKA40 IKA40-R	IK40	IKA63 IKA63-R	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)	S	mm ²				
	flexible			1.5 ... 25			
	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
	Control mode			remote control with U_c / manual control only for types with -R			
	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 μ s acc. to standard IEC/EN 61000-4-5		kV	2			
	Coil consumption:						
	switch-on	VA/W		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:						
	make	ms		10 ... 20	15 ... 20	10 ... 20	15 ... 20
	brake			10 ... 15	35 ... 45	10 ... 15	35 ... 45
	Terminal capacity: rigid (solid and stranded)	mm ²		1 ... 2.5			
	flexible			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		h	AC-1: 2.500			
	$MTTF = 1/\lambda = B10/(0.1 n_{op})$		h	AC-3: 3.750			
	MTTF _d - Mean time to failure dangerous		h	AC-1: 3.333			
	$MTTF_d = 1/\lambda_d = B10_d/(0.1 n_{op})$		h	AC-3: 5.000			
	B10 - Number of operating cycles until 10 % of devices fail		op. c.	AC-1: 75.000			
			op. c.	AC-3: 112.500			
	B10 _d - Number of operating cycles until 10 % of device dangerous		op. c.	AC-1: 100.000			
	B10 _d = B10/ratio of dangerous failures		op. c.	AC-3: 150.000			
	λ - Failure rate		1/h	AC-1: 0.0004			
	$\lambda = (0.1 n_{op})/B10$		1/h	AC-3: 0.000266			
	λ_d - Failure rate dangerous		1/h	AC-1: 0.0003			
	$\lambda_d = (0.1 n_{op})/B10_d$		1/h	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

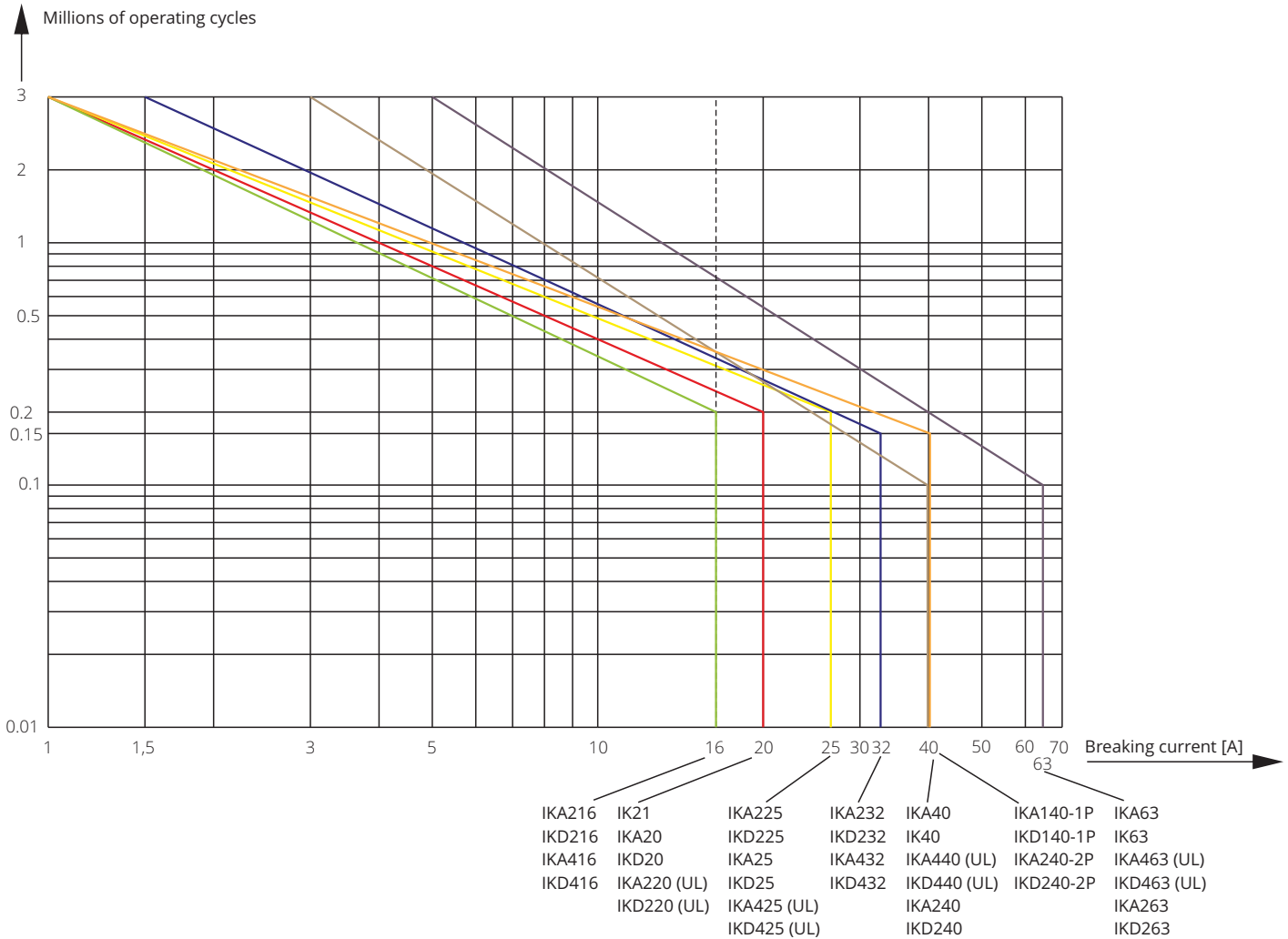
INSTALLATION CONTACTORS

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

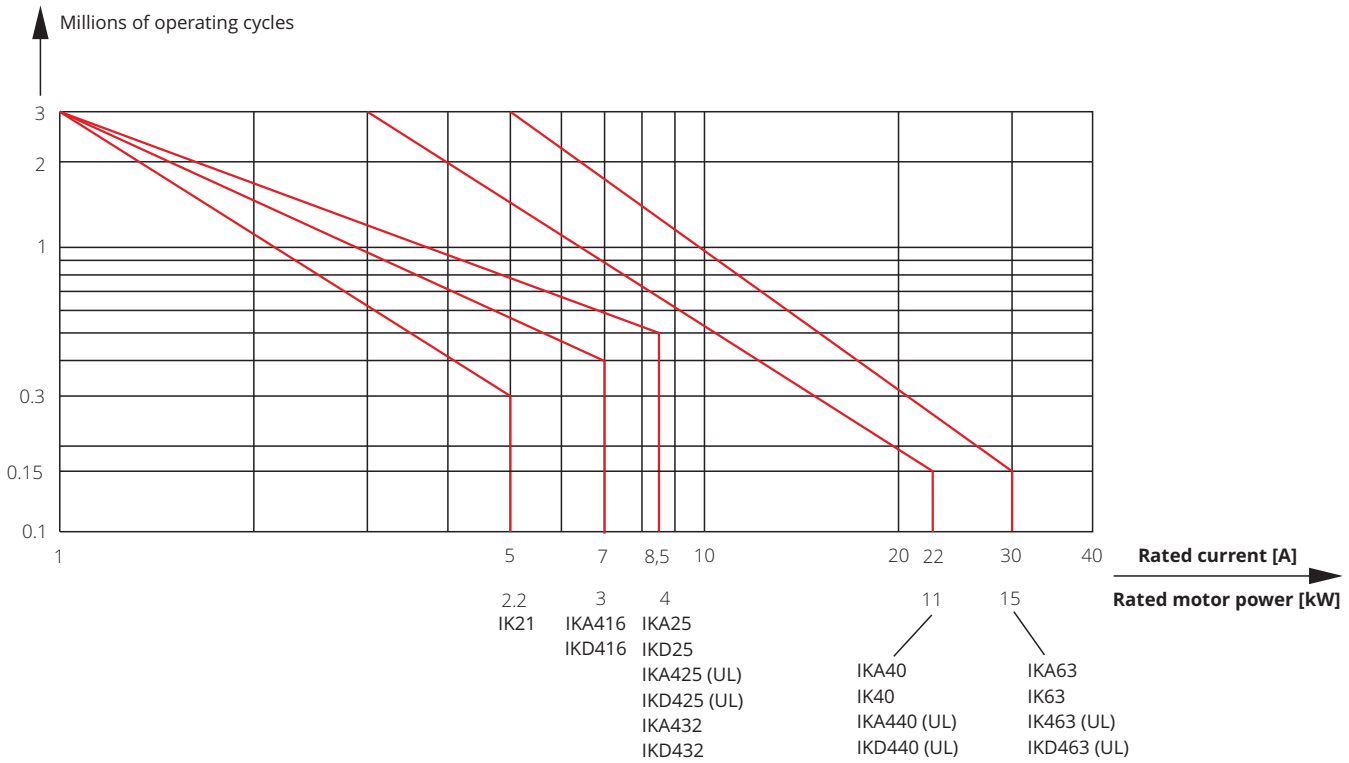


INSTALLATION CONTACTORS

Electrical endurance

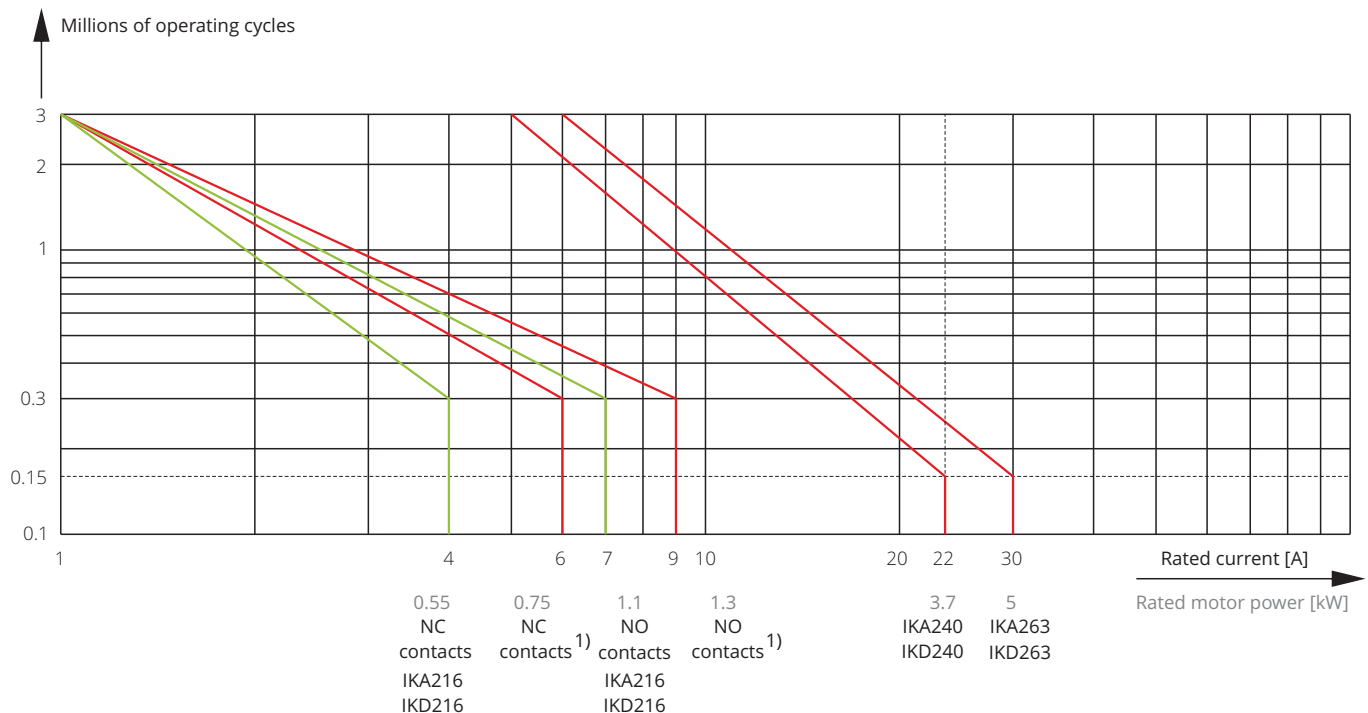
AC-3, AC-3e/400V/3-phase for IK21, IKA416, IKD416, IKA25, IKD25, IKA425 (UL), IKD425 (UL), IKA432, IKD432, IKA40, IKA63, IK63, IKA440 (UL), IKD440 (UL), IKA463 (UL), IKD463 (UL)

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

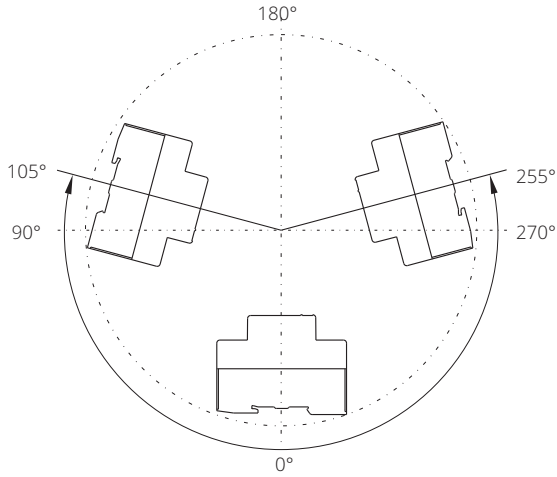


¹⁾ IKA20, IKD20, IKA220 (UL), IKD220 (UL), IKA225, IKD225, IKA232, IKD232

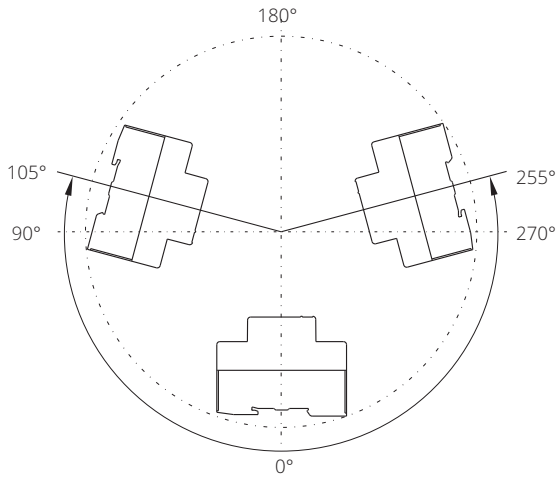
INSTALLATION CONTACTORS

Operation position

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

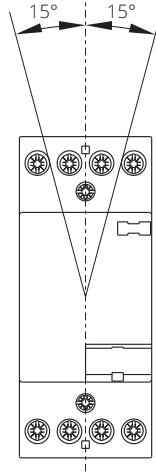


**IKA216/20/225/232-R/-T
IKA25/432-R/-T**

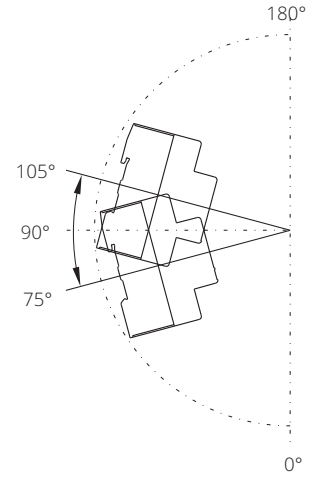


NOTE: IK21 and IKS-R/-T have no limitation

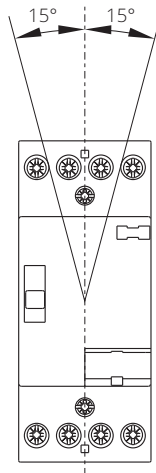
All installation contactors



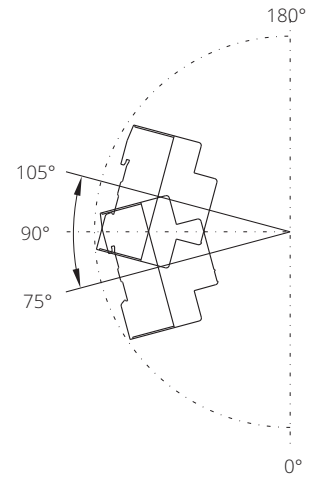
**IKD216/20/225/232/140/240/25/432
IK40/63, IKD220/425/440/463 (UL)**



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

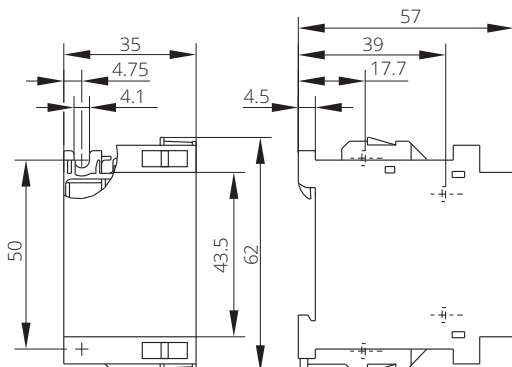


**IKD20/225/232-R/-T
IKD25/432-R/-T**

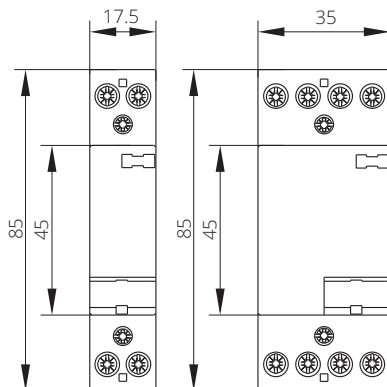


Dimensions (in millimeters)

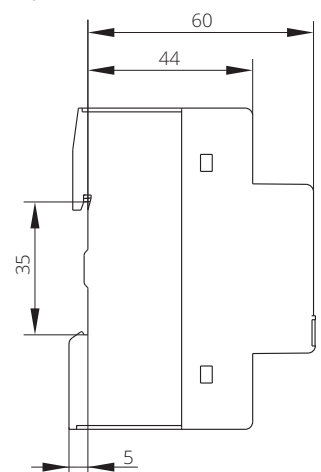
IK21



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



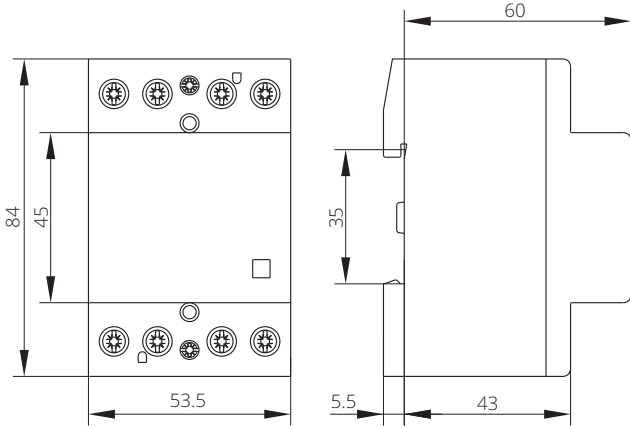
**IKA416, IKD416
IKA25, IKD25
IKA25, IKD25
IKA432, IKD432
IKA240-2P, IKD240-2P**



INSTALLATION CONTACTORS

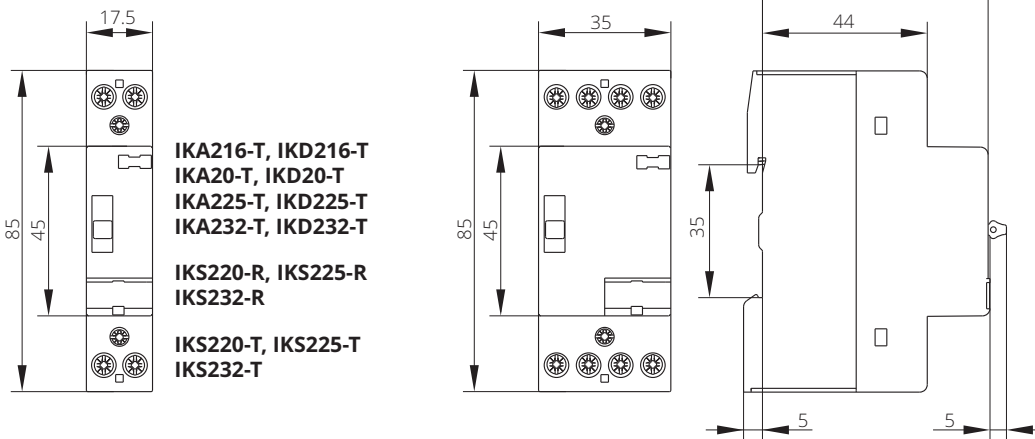
Dimensions (in millimeters unless otherwise stated)

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), IKD220 (UL)
IKA425 (UL), IKD425 (UL)

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

