

# Contactors

## MOTOR CONTACTORS

### KNL95, KNL115, KNL145, KNL180, KNL250, KNL400, KNL500, KNL630/1000



- Contactors are used for switching electric motors and other resistive inductive and capacitive loads
- Three and four-pole versions up to 1000 A for AC-1 utilization category
- Three and four-pole versions up to 630 A for AC-3 utilization category
- AC/DC control voltages
- A wide variety of snap-on auxiliary switch blocks and accessories
- Fixing to the vertical and horizontal surface by  $\pm 30^\circ$  deviation

#### TECHNICAL DATA

#### MOTOR CONTACTORS

				KNL95	KNL115	KNL145	KNL180	KNL250			
GENERAL	Type										
	Standards			IEC/EN 60947-4-1, UL 508							
	Approvals			UL, GOST							
	Ambient temperature			°C		-50 ... +70					
	Storage temperature			°C		-60 ... +80					
	Mechanical endurance			op. c.		10 x 10 <sup>6</sup>					
	Max. mechanical operating frequency with no load			op. c./h		2400					
	Weight			kg	5.96	5.96	6.10	10.60	10.80		
MAIN CIRCUIT	Rated insulation voltage	$U_i$		V	1000						
	Thermal current at $\leq 40^\circ\text{C}$	$I_{th}$		A	125	160	250	275	350		
	Rated frequency	$f$		Hz	50/60						
	Rated power at $\leq 40^\circ\text{C}$	AC-1	230 V	$P_e$	kW	47	57	91	95	124	
			400 V			82	98	150	160	214	
			500 V			103	129	196	213	282	
			690 V			142	173	270	298	380	
	Rated motor power at $\leq 55^\circ\text{C}$	AC-3	three-phase	$P_m$	kW	27.6	33	46	57	83	
						400 V	50	61	80	100	140
						500 V	56	80	100	123	176
						690 V	74	100	120	144	212
	1000 V	46	63	75	103	156					
	Rated motor power AC-4	three-phase	$P_m$	kW	23	25	31	36	52		
	Rated motor power acc. to UL	three-phase	240 V	$P_m$	HP	30	40	50	75	100	
			480 V			50	75	100	150	200	
			600 V			75	100	125	150	250	
	Rated motor power AC-4	$\leq 400$ V	$P_m$	kW	23	25	31	36	52		
	Electrical endurance AC-3 / AC-4	$x 10^6$		op. c.	1.1/0.2	1.1/0.2	1.1/0.2	1/0.2	1/0.2		
	Rated operational current at: 24/110/220 V	DC-1 L/R $\leq 1$ ms	1 <sup>1)</sup>	$I_e$	A	70/8/6	160/100/-	220/110/-	260/120/-	350/160/-	
			2 <sup>1)</sup>			100/80/40	160/130/130	220/150/150	260/170/150	350/300/250	
3 <sup>1)</sup>			100/85/55			160/130/130	220/150/150	260/170/170	350/300/300		
1 <sup>1)</sup> Number of poles in series	DC-3 – DC-5 L/R $\leq 15$ ms	1 <sup>1)</sup>	$I_e$	A	40/3/1	140/70/-	160/80/-	180/90/-	280/150/-		
		2 <sup>1)</sup>			60/40/7	140/100/80	160/120/90	180/140/100	280/250/200		
		3 <sup>1)</sup>			80/60/35	140/120/100	160/140/120	180/160/140	180/280/250		
Max. back-up fuse for short-circuit protection Coordination type 2	gG	$I_v$	A	160	200	250	315	400			
	aM			100	125	160	200	250			
Terminal capacity	rigid	$S$	mm <sup>2</sup>	70	70	120	150	240			
	busbar		mm	20 x 3 (1 x or 2 x)	20 x 3 (1 x or 2 x)	25 x 3 (1 x or 2 x)	25 x 3 (1 x or 2 x)	30 x 4 (1 x or 2 x)			
Screw				M6	M6	M8	M8	M10			
Wrench jaw opening			mm	10	10	13	13	17			
Tightening torque			Nm	3	3	6	6	10			

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MAGNETIC SYSTEM	Type						
	Coil consumption	switch-on	$P_c$	VA	300		
				W	300		
		operation		VA	10		
				W	10		
	Make / Break delay	make	AC/DC	ms	13-25/60-90	60 - 100	80 - 120
		break			8 - 12	25 - 60	30 - 75
Range of control voltage	$U_c$	%	85 ... 110				
Control voltages	$U_c$	V	24 to 480				
Connection		fast-on	2/ 2.8 x 0.8 or 6.3 x 0.8				

### TECHNICAL DATA

### MOTOR CONTACTORS

		KNL400	KNL500	KNL630	KNL630/1000				
GENERAL	Type								
	Standards	IEC/EN 60947-4-1, UL 508							
	Ambient temperature	°C -50 ... +70							
	Storage temperature	°C -60 ... +80							
	Mechanical endurance	op. c.	10 x 10 <sup>6</sup>	5 x 10 <sup>6</sup>					
	Max. mechanical operating frequency with no load	op. c/h	2400	1200					
	Weight	kg	10.80	20.80	21.50	25.62			
MAIN CIRCUIT	Rated insulation voltage	$U_i$	V	1000					
	Thermal current at ≤ 40°C	$I_{th}$	A	550	700	800	1000		
	Rated frequency	$f$	Hz	50/60					
	Rated power at ≤ 40°C	AC-1	$P_e$	kW	230 V	200	252	288	350
					400 V	345	438	500	600
					500 V	452	575	655	750
					690 V	598	755	860	1000
	Rated motor power	three-phase	$P_m$	kW	230 V	130	156	198	-
					400 V	225	290	335	-
					500 V	271	367	368	-
					690 V	352	416	440	-
					1000 V	208	312	368	-
	Rated motor power AC-4	≤ 400 V	$P_m$	kW	76	99	119	-	
	Electrical endurance AC-3 / AC-4	x 10 <sup>6</sup>	op. c.	0.7/0.2	0.7/0.2	0.7/0.2	-		
	Rated operational current at: 75/110/220 V	DC-1 L/R ≤ 1ms	$I_e$	A	1 1)	400/250/-	650/320/-	800/460/-	-
					2 1)	400/400/350	650/550/450	800/800/700	-
					3 1)	400/400/400	650/600/600	800/800/800	-
1) Number of poles in series	DC-3 – DC-5 L/R ≤ 1ms	$I_e$	A	1 1)	350/200/-	550/320/-	800/460/-	-	
				2 1)	350/350/280	650/550/450	800/800/700	-	
				3 1)	350/350/350	650/550/550	800/800/800	-	
Max. back-up fuse for short-circuit protection Coordination type 2	gG	$I_v$	A	630	800	1000	-		
	aM			400	500	630	-		
Terminal capacity	rigid	$S$	mm <sup>2</sup>	2 x 150	2 x 240		-		
	busbar		mm	30 x 5 (1 x or 2 x)	50 x 5 (1 x or 2 x)	60 x 5 (1x or 2x)	-		
Screw				M10	M10	M12	2-M12		
Wrench jaw opening			mm	17	17	19	19		
Tightening torque			Nm	10	10	14	14		

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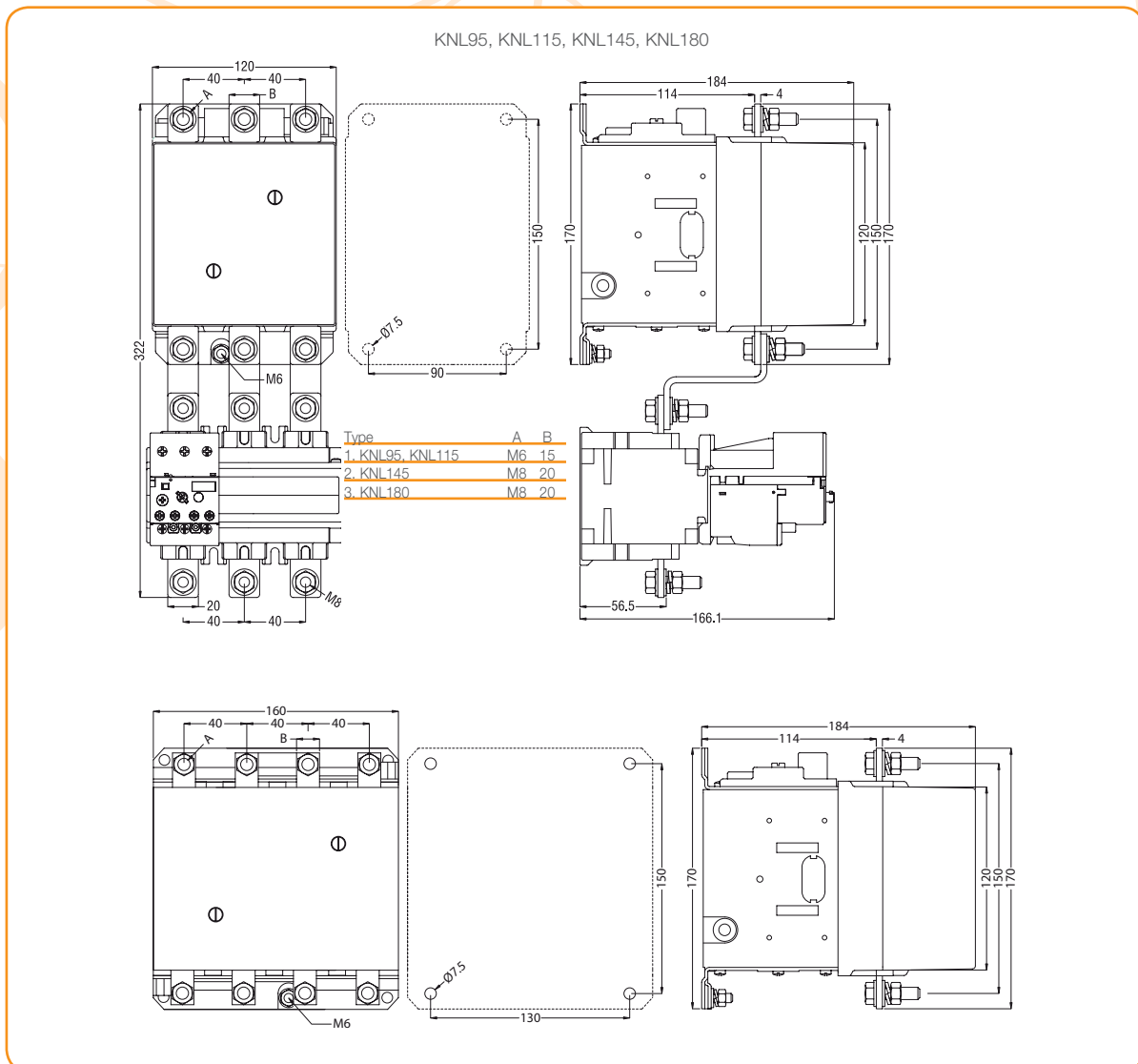
KNL95, KNL115, KNL145, KNL180, KNL250, KNL400, KNL500, KNL630/10000

MAGNETIC SYSTEM	Type			KNL400	KNL500	KNL630	KNL1000
	Coil consumption	switch-on	$P_c$	VA	300		400
W				300		400	
operation		VA		10		18	
		W		10		18	
Make / Break delay	make		ms	80 - 120		110 - 180	
	break			30 - 75		60 - 100	
Range of control voltage		$U_c$	%	85 ... 110			
Control voltages		$U_c$	V	24 to 480		48 to 480	
Connection			fast-on	2/ 2.8 x 0.8 or 6.3 x 0.8			

### STANDARD CONTROL VOLTAGES (AC)

V	24	48	60	110/125	220/240	380/415	440/480
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### DIMENSIONS

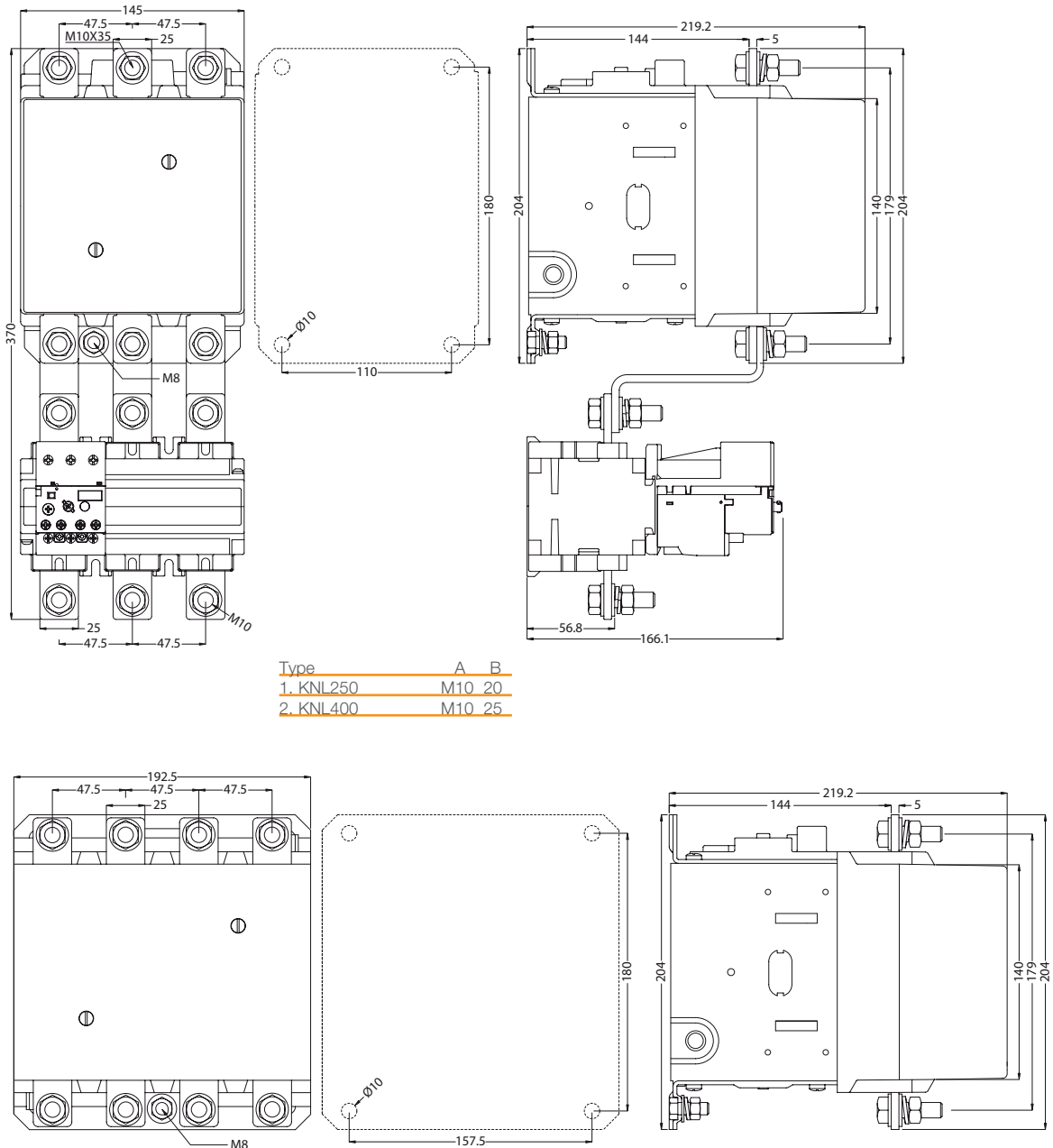


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KNL250, KNL400

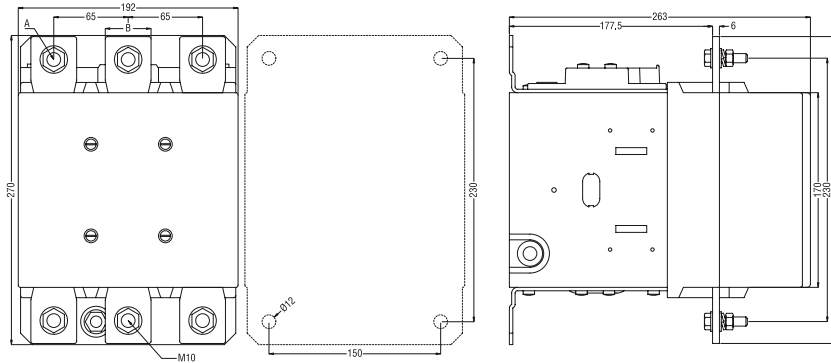


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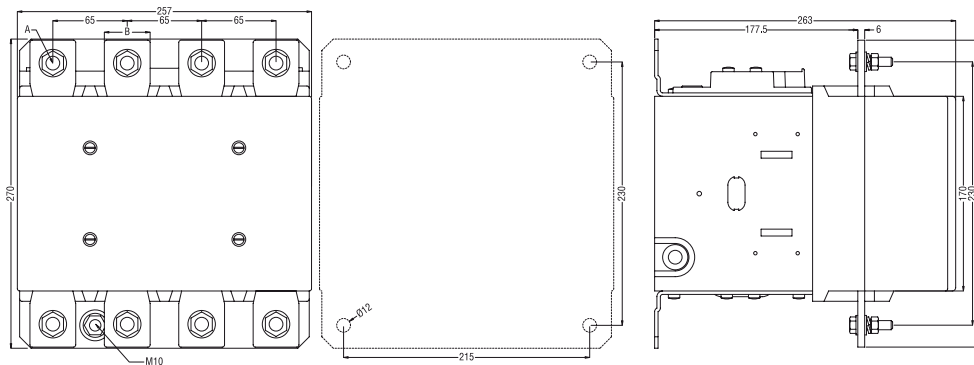
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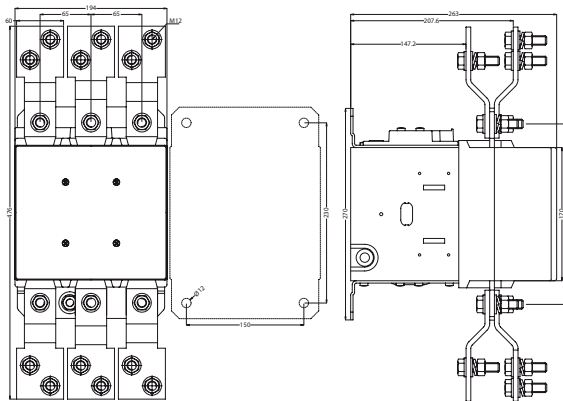
KNL500, KNL630



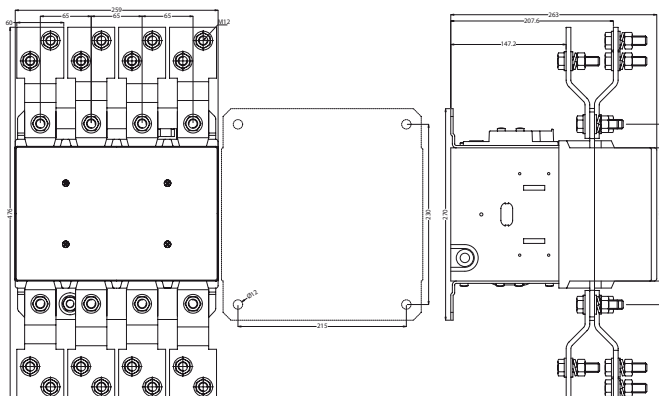
Type	A	B	C
1. KNL500	M10	35	265
2. KNL630	M12	40	270



KNL630/1000



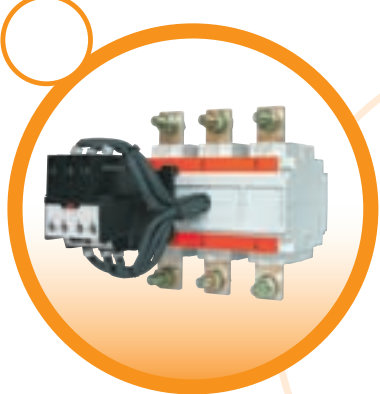
Type	A	B	C
B500	M10	35	265
B630	M12	40	270



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## KNL CONTACTORS

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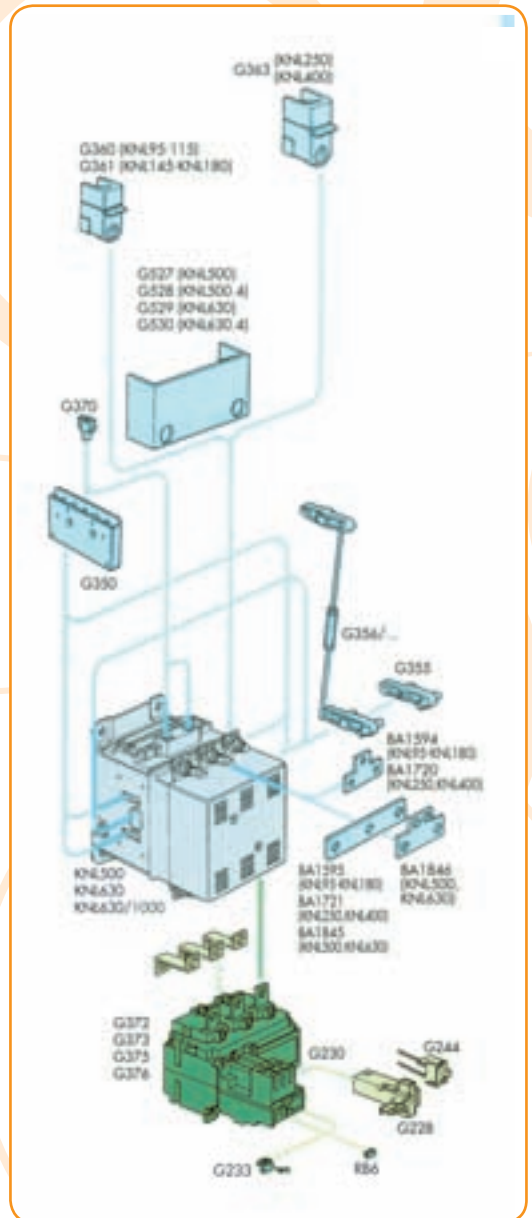


### ACCESSORIES

**BRA180, BRA400**  
Thermal overload relay

Type	Setting ranges (A)
BRA180	60 - 100; 75 - 125; 90 - 150; 120 - 200
BRA400	150 - 250; 180 - 300; 250 - 420
BRA25.5+G230+C.T.	300 - 500; 480 - 800

Description	Characteristic	Reference code	
<b>SNAP-ON AUXILIARY SWITCH BLOCKS</b>			
Auxiliary contacts	2NO + 1NC or 1NO + 2NC	G350	
Mechanical interlock	Side-by-side contactors	G355	
	One on top of other contactors		
	L(mm)	225 - 365	G356/1
		265 - 305	G356/2
		305 - 345	G356/3
		345 - 385	G356/4
	390 - 425	G356/5	
	470 - 500	G356/6	
Main terminal covers	for KNL 95, KNL 115	G360	
	for KNL 145, KNL 180	G361	
	for KNL 250, KNL 400	G363	
	for KNL 500	G527	
	for KNL 500.4	G528	
	for KNL 630	G529	
	for KNL 630.4	G530	
Bars for 3 poles star connection	for KNL 95 - KNL 180	BA1595	
	for KNL 250 - KNL 400	BA1721	
	for KNL 500 - KNL 630	BA1846	
Bars for 2 poles parallel connection	for KNL 95 - KNL 180	BA1594	
	for KNL 250 - KNL 400	BA1720	
	for KNL 500 - KNL 630	BA1845	
Adapter	for screw terminal	G370	
Identification plate		BA126/2	
<b>THERMAL OVERLOAD RELAY</b>			
Adapter for mounting on contactor	BRA 180		
	KNL 95 - KNL 180	G372	
	KNL 250 - KNL 400	G373	
	BRA 400		
	KNL 145 - KNL 180	G375	
	KNL 250 - KNL 400	G376	
Electric reset	all types	G228	
Sealing kit	all types	G233	
Start button	all types	G244	
Identification plate	all types	RB6	



### ORDERING DATA

The type designation and control voltage are stated when ordering the contactors.

KNL95 - 00 - 220/240 - 50/60

