CONTACTORS KNL

KNL6, KNL9, KNL12, KNL16, KNL22, KNL30

- Adaptable to various control requirements with ability of mounting from one to four additional auxiliary contacts.
- Versatile product capable of adaptation to different control requirements with capability of mounting from one to four additional auxiliary contacts. (just for KNL6)
- Capability of incorporating RC suppressor to prevent voltage peaks at switch-off of control coil.
- Uniform marking of connection terminals in compliance with European standards EN 50 005 and EN 50 011.
- Covered terminals - finger protection according to VDE 0106 and VBG 4.
- Capability of quick fitting to 35 mm wide mounting rail according to EN 60 715.
- Open and funnel-shaped connection terminals - providing fast and simple connection.
- Combination head screws; standard or posidrive screwdrivers can be used.
- Specially shaped contact surfaces - high contact reliability even at low voltages (just for KNL6) and auxiliary contact make for KNL9 - KNL30.
- Uniform and easily exchangeable coils for the whole system.
- Capability of including mechanical interlock. (just for KNL9 - KNL30)
- Possibility of individual marking on a special plate - simple identification of a contactor in the circuit.
- Auxiliary contacts make or break which also serve as pushbuttons. (just for KNL9 - KNL30)
- Uniform contactor width - 45 mm.
- Third terminal of coil.

CONTACTOR RELAYS

Type	Arrangement of contacts and terminal designation	AC 15 Rated operational current I_e 230V	400V	500V	690V	Conventional thermal current I_{th}
KNL6-22	A1 13 21 31 43 / A2 14 22 32 44	6A	4A	2A	1A	20A
KNL6-31	A1 13 21 33 43 / A2 14 22 34 44					
KNL6-40	A1 13 23 33 43 / A2 14 24 34 44					

MOTOR CONTACTORS

Type	Arrangement of contacts and terminal designation	Auxiliary contacts	AC 3 Rated power of three-phase motors - normal load P_m (kW) 230V	400V	500V	690V	Conventional thermal current I_{th}
KNL9-10		13	2,2	4	5,5	5,5	
KNL12-10			3	5,5	5,5	7,5	25
KNL16-10		14	4	7,5	7,5	7,5	
KNL9-01	A1 1 3 5 / A2 2 4 6	21	2,2	4	5,5	5,5	
KNL12-01			3	5,5	5,5	7,5	25
KNL16-01		22	4	7,5	7,5	7,5	
KNL22-00			5,5	11	11	11	35
KNL30-00			7,5	15	15	15	

Standard control voltages:

Volts	24	42	48	110/125	220/240	380/400	440	500
50/60 Hz	B7	D7	E7	F7	M7	Q7	R7	S7
Volts	12	24	48	60	72	110	125	220
U 0,8 to 1,1 Uc	JD	BD	ED	ND	SD	FD	GD	MD

CONTACTORS KNL

KNL6, KNL9, KNL12, KNL16, KNL22, KNL30

CONTACTOR RELAYS

Standards				VDE 0660, IEC 947-5-1				
Approvals				CSA, NEMKO				
Climatic class				damp heat, constant, after IEC 68-2-3				
Ambient temperature	open		°C	- 25 . . . + 55				
	enclosed		°C	- 25 . . . + 40				
Weight			g	300				
Rated insulation voltage		U_i	V	690				
Conventional thermal current I_{th} = rated operating current Ie at AC1		I_{th}	A	20				
Rated operating current AC 15		U_e	V	230	400	500	690	
		I_e	A	6	4	2	1	
Rated operating current DC 13		U_e	V	24	60	110	220	
		I_e	A	10	4	0,9	0,4	
Short-circuit protection - max. current of fuse		I_v	A	20				
Coil consumption	switch-on	P_c	VA	66				
			W	48				
	operation		VA	8				
			W	2,5				
Standard A.C. control voltages 50/60 Hz		U_c	V	24				
				110/115				
				220/230				
				380/400				
Operating range		Uc	%	85 . . . 110				
Operating position				Attachment to vertical or horizontal level permitted deviation ±20°				
Maximum operating frequency			op.c./h	6000				
Endurance	mehanical		op.c.	10×10^6				
	electrical			see diagram 1				
Terminal capacity	solid	S	mm^2	0,75 . . . 4				
	multi-stranded			0,5 . . . 2,5				

MOTOR CONTACTORS

						KNL9	KNL12	KNL16	KNL22	KNL30
General	Type									
	Standards					IEC 947-4-1, VDE 0660				
	Approvals					CSA, NEMKO				
	Climatic class					damp heat, constant, after IEC 68-2-3 damp heat, cyclic, after IEC 68-2-30				
	Ambient temperature		open		°C	-25 . . . +55				
			enclosed		°C	-25 . . . +45				
	Weight				g	300			320	
Main contacts	Rated insulation voltage			U_i	V	690				
	Conventional thermal current			I_{th}	A	25	25	25	35	35
	AC3	Rated power of threephase motors -normal load	230 V	P_m	kW	2,2	3	4	5,5	7,5
			400 V			4	5,5	7,5	11	15
			500 V			5,5	5,5	7,5	11	15
			690 V			5,5	7,5	7,5	11	15
	AC4	Rated power of threephase motors- heavy load	230 V	P_m	kW	0,75	1,1	1,5	2,2	4
			400 V			1,5	2,2	3	4	6,5
			500 V			1,5	2,2	3	4	6,5
			690 V			1,5	2,2	3	4	6,5
	Electrical endurance of contacts		AC3			see diagram 2				
			AC4			see diagram 3				
	Rated operational current at: 24/110/220 V	DC1	1 [1]		A	15 / 6 / 4			28 / 7 / 4	
			2 [1]			18 / 12 / 8			30 / 23 / 13	
			3 [1]			20 / 15 / 10			30 / 25 / 20	
		DC2, DC3	1 [1]			12 / 2 / 0,75			18 / 2 / 1	
	[1] numbers of poles in series	DC4	2 [1]			15 / 8 / 1,5			23 / 13 / 2	
		DC5	3 [1]			18 / 12 / 6			28 / 18 / 9	
	Mechanical endurance				op.c./h	10^7				
	Short-circuit protection - max. fuse rating gL			Iv	A	25	25	35	50	50
	Terminal capacity		solid	S	mm^2	0,75 . . . 4			2,5 . . . 10	
			multi-stranded			0,5 . . . 2,5			1,5 . . . 6	

CONTACTORS KNL

KNL6, KNL9, KNL12, KNL16, KNL22, KNL30

					KNL9	KNL12	KNL16	KNL22	KNL30
Auxiliary contacts	Type								
	Rated insulation voltage		U_i	V		690			-
	Conventional thermal current I_{th} = rated operational current Ie at AC1		I_{th}	A		20			-
	AC15 Rated operating current	230 V	I_e	A		6			-
		400 V				4			-
		500 V				2			-
		690 V				1			-
	DC13 Rated operating current	24 V	I_e	A		10			-
		60 V				4			-
		110 V				0,9			-
		220 V				0,4			-
	Short-circuit protection - max. fuse rating gL		Iv	A		20			-
	Terminal capacity	solid	S	mm^2		0,75 . . . 4			
		multi-stranded				0,5 . . . 2,5			
Magnetic system	Coil consumption	switch-on	P_C	VA		66			
				W		48			
		operation		VA		8			
				W		2,5			
	Standard A.C. control voltages		U_C	V		Coil control voltage, dual voltage coil, dual-frequency coil 50/60 Hz 24 110/115 220/230 380/400			
	Range of control voltage		Uc	%		85 - 110			
	Operating frequency - max.			op.c./h		3000			
	Operating position					mounting on vertical or horizontal level,permitted deviation ±20°			

DIAGRAM 1

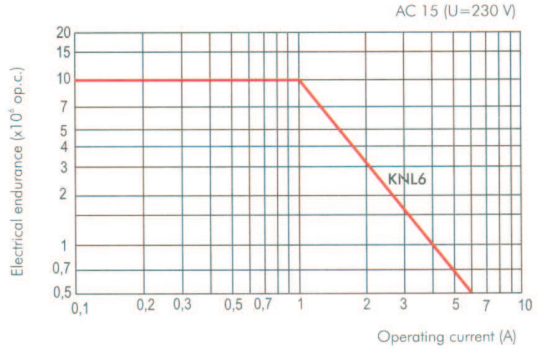


DIAGRAM 2

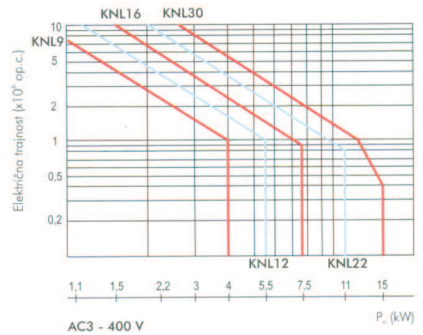
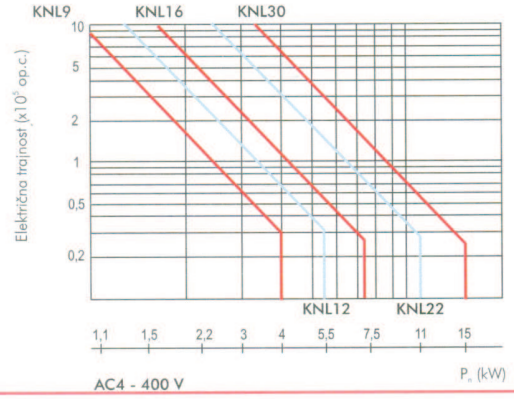


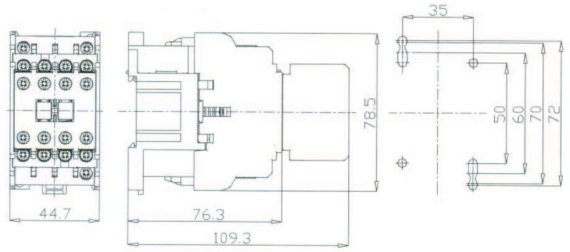
DIAGRAM 3



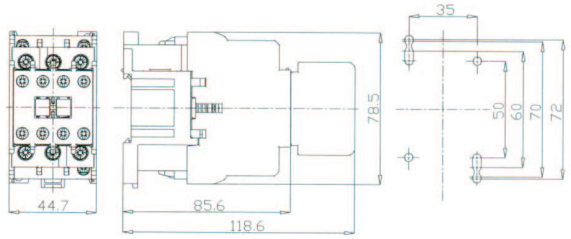
CONTACTORS KNL

KNL6, KNL9, KNL12, KNL16, KNL22, KNL30

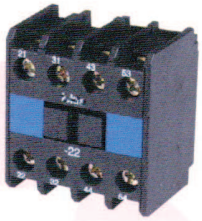
KNL6, KNL9, KNL12, KNL16



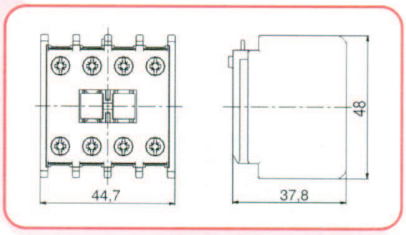
KNL22, KNL30



ACCESSORIES

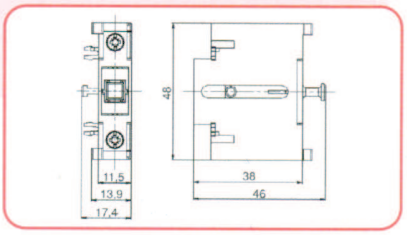


Two- and four-pole auxiliary contact modules
(mounting on basic contactor)
NDL1, NDL2, NDL3



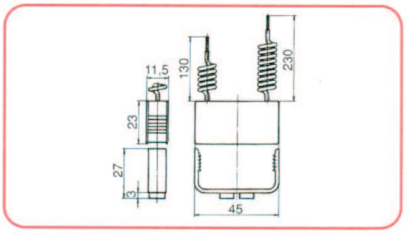
Type	Version	AC 15 Rated operational current Ie (A)			
		230 V	400 V	500 V	690 V
NDL1 (for KNL6)	-20, -11, -02, -40, -31, -22, -13, -04	6	4	2	1
NDL2 (for KNL9, KNL12,KNL16)	-11, -02, -22, -31, -13, -40, -04				
NDL3 (for KNL22, KNL30)	-11, -02, -22, -31, -13				

Single-pole auxiliary contact for
side mounting + push button
NPL1, NPL2



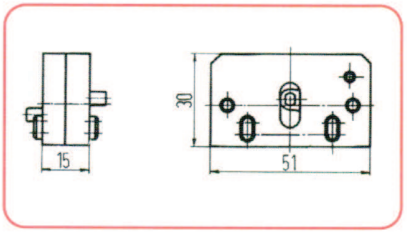
Type	Version	AC 15 Rated operational current Ie (A)			
		230 V	400 V	500 V	690 V
NPL1 (just for KNL9, KNL12, KNL16)	-10, -01	6	4	2	1
NPL2 (just for KNL22, KNL30) -	-10, -01				

RC suppressor



Type	RC1	RC2	RC3	RC4
Control voltage range Ue (V)	24 ... 48	48 ... 250	250 ... 380	380 ... 500

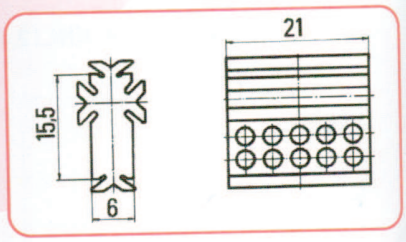
Mechanical interlock MBL

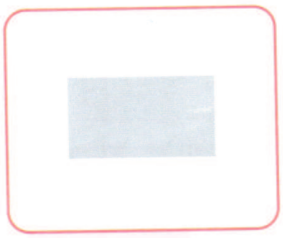


CONTACTORS KNL

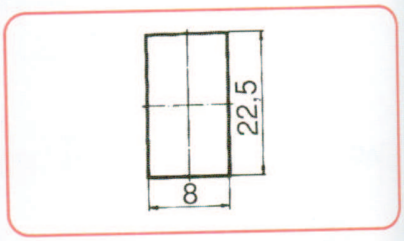
KNL6, KNL9, KNL12, KNL16, KNL22, KNL30

Distance spacer DZ

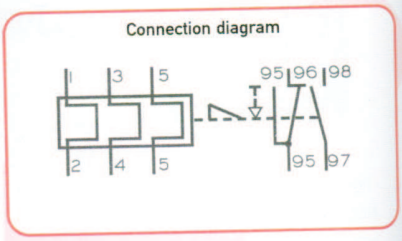




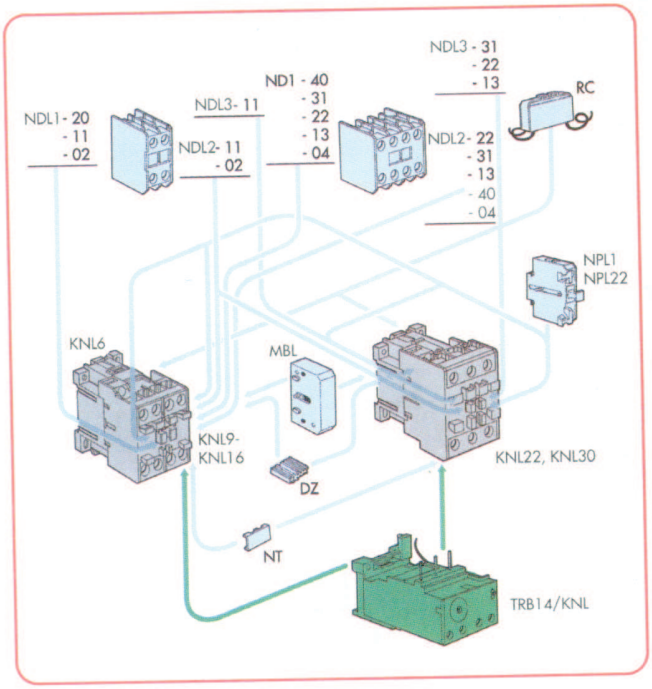
Identification plate
NT



Overload relay TRB14/KNL



OVERLOAD RELAY				
Type	AC 15 Rated operational current I_e (A)			Relay setting range (A)
	230 V	400 V	500 V	0,15 - 0,25 0,24 - 0,4 0,38 - 0,63 0,6 - 1,0 0,96 - 1,6 1,5 - 2,5 2,4 - 4,0 3,8 - 6,3 6,0 - 10,0 9,6 - 16,0 15 - 25 24 - 40 (just for KNL22,KNL30)
TRB14 / KNL	3 A	2 A	1 A	



ORDERING DATA:

Type designation and height of control voltages should be given when ordering.

KNL16-10- 220/230 - 50/60

- control voltage (see page 70), frequency
- type