

# Mini Contactor Relays 4-pole J7KNA-AR

## Main contactor

- AC & DC operated
- 4-, 6- and 8-pole versions in different configurations
- Mirror contacts
- Screw fixing and snap fitting (35 mm DIN rail)
- Rated current = 10A ( $I_{th}$ )
- Suitable for electronic devices (DIN 19240)
- Finger proof (BGV A2)

## Accessories

- 2- and 4-pole additional auxiliary contacts in different configurations



## Approved Standards

Standard	Guide No (US,C)
UL	NKCR, NKCR7
IEC 947-5-1	see page 95
VDE 0660	
EN 60947-5-1	

## Ordering Information

### ■ Model Number Legend

#### 1. Mini Contactor Relays

J7KNA-□□-□□-□□□□

1    2    3    4

- 1) Mini Contactor
- 2) AR: Contactor Relay
- 3) Combination of NO / NC contacts
  - 22: 2 NO 2 NC
  - 31: 3 NO 1 NC
  - 40: 4 NO 0 NC
- 4) Coil voltage (AC operated)
  - 24: AC24V 50/60Hz
  - 48: AC48V 50Hz
  - 110: AC110-115V 50Hz, AC120-125V 60Hz
  - 230: AC220-230V 50Hz, AC240V 60Hz
  - 240: AC230-240V 50Hz
  - 400: AC380-400V 50Hz, AC440V 60Hz
  - 415: AC400-415V 50Hz
  - 550: AC525-550V 50Hz, AC600V 60Hz
 Coil voltage (DC operated)
  - 24D: DC24V
  - 48D: DC48V
  - 60D: DC60V
  - 110D: DC110V
  - 125D: DC125V
  - 24VS: DC24V with diode
  - 48VS: DC48V with diode
  - 110VS: DC110V with diode
  - 125VS: DC125V with diode

#### 2. Aux. Contact Modules for Mini Motor Contactor Relays

J73KN-□□-□□-□

1    2    3    4

- 1) Auxiliary Contact Modules
- 2) A: for mini contactor relays
- 3) Combination of NO/NC contacts
  - 11: 1 NO 1 NC
  - 02: 0 NO 2 NC
  - 22: 2 NO 2 NC
  - 40: 4 NO 0 NC

## ■ System overview


### Mini Contactor Relays 4-pole

AC Operated

	Contacts		Distinc. Number acc. to DIN EN 50011	Ratings		Thermal Rated Current $I_{th}$ A	Type	Pack	Weight
	NO	NC		AC15 230V A	400V A				
	4-pole, With Screw Terminals								
	4	-	40E	3	2	10	J7KNA-AR-40 24	10	0,16
							J7KNA-AR-40 230		
	3	1	31E	3	2	10	J7KNA-AR-31 24	10	0,16
							J7KNA-AR-31 230		
	2	2	22E	3	2	10	J7KNA-AR-22 24	10	0,16
							J7KNA-AR-22 230		

1) Other coil voltages see page 10

### DC Solenoid Operated

	Contacts		Distinc. Number acc. to DIN EN 50011	Ratings		Thermal Rated Current $I_{th}$ A	Type	Pack	Weight
	NO	NC		AC15 230V A	400V A				
	4-pole, With Screw Terminals								
	4	-	40E	3	2	10	J7KNA-AR-40 24D (-VS) <sup>1)</sup>	10	0,19
	3	1	31E	3	2	10	J7KNA-AR-31 24D (-VS) <sup>1)</sup>	10	0,19
	2	2	22E	3	2	10	J7KNA-AR-22 24D (-VS) <sup>1)</sup>	10	0,19

1) with built-in coil suppressor (diode + zener diode)

### Auxiliary Contact Blocks for Contactor Relays J7KNA-AR

	Contacts		Ratings		Thermal Rated Current $I_{th}$ A	Type	Pack	Weight
	NO	NC	AC15 230V A	400V A				
	1	1	3	2	10	J73KN-A-11	10	0,04
	-	2	3	2	10	J73KN-A-02	10	0,04
	4	-	3	2	10	J73KN-A-40	10	0,04
	2	2	3	2	10	J73KN-A-22	10	0,04

## ■ System overview

### Mini Contactor Relays 4-pole

#### AC Operated

Wiring Diagrams	Distinc. Number acc. to DIN EN 50011	Auxiliary Contact Blocks Type	Auxiliary Contact Blocks NO NC		Contactor Relay with Auxiliary Contact Block Distinc. Number according to DIN EN 50011	Contactor Relay with Auxiliary Contact NO NC		Contacts suitable for Electronic Circuits according to DIN 19240 for rated voltage 24V DC (test ratings 17V DC, 5mA) Mirror contacts
4-pole, With Screw Terminals								
	40E	J73KN-A-11	1	1	51E	5	1	Preferable combinations with distinctive letter „E“ according to DIN EN 50011
		J73KN-A-02	0	2	42E	4	2	
		J73KN-A-40	4	0	80E	8	0	
		J73KN-A-22	2	2	62E	6	2	
	31E	J73KN-A-11	1	1	42Y	4	2	
		J73KN-A-02	0	2	33Y	3	3	
		J73KN-A-40	4	0	71Y	7	1	
		J73KN-A-22	2	2	53Y	5	3	
	22E	J73KN-A-11	1	1	33Y	3	3	
		J73KN-A-02	0	2	24Y	2	4	
		J73KN-A-40	4	0	62Y	6	2	
		J73KN-A-22	2	2	44Y	4	4	

#### DC Solenoid Operated

Wiring Diagrams	Distinc. Number acc. to DIN EN 50011	Auxiliary Contact Blocks Type	Auxiliary Contact Blocks NO NC		Contactor Relay with Auxiliary Contact Block Distinc. Number according to DIN EN 50011	Contactor Relay with Auxiliary Contact NO NC		
4-pole, With Screw Terminals								
	40E	J73KN-A-11	1	1	51E	5	1	Preferable combinations with distinctive letter „E“ according to DIN EN 50011
		J73KN-A-02	0	2	42E	4	2	
		J73KN-A-40	4	0	80E	8	0	
		J73KN-A-22	2	2	62E	6	2	
	31E	J73KN-A-11	1	1	42Y	4	2	
		J73KN-A-02	0	2	33Y	3	3	
		J73KN-A-40	4	0	71Y	7	1	
		J73KN-A-22	2	2	53Y	5	3	
	22E	J73KN-A-11	1	1	33Y	3	3	
		J73KN-A-02	0	2	24Y	2	4	
		J73KN-A-40	4	0	62Y	6	2	
		J73KN-A-22	2	2	44Y	4	4	

### Auxiliary Contact Blocks for Contactor Relays J7KNA-AR

Wiring diagrams				Contacts suitable for Electronic Circuits according to DIN 19240 for rated voltage 24V DC (test ratings 17V DC, 5mA) Mirror contacts
J73KN-A-11	J73KN-A-02	J73KN-A-40	J73KN-A-22	

# Specifications

## ■ Coil Voltages

Suffix to contactor type e.g. <b>J7KNA-AR-40-24</b>	Voltage Marking at the coil		Rated Control Voltage $U_s$ range for			
	for 50Hz V	for 60Hz V	50Hz		60Hz	
			min V.	max V.	min V.	max V.
12	12	12	11	12	12	12
<b>24</b>	<b>24</b>	<b>24</b>	<b>22</b>	<b>24</b>	<b>24</b>	<b>24</b>
42	42	42	38.5	42	42	42
48	48-50	48	48	50	48	50
60	60	60	52	66	54	60
90	90-95	100-105	90	95	100	105
95	95-100	105-110	95	100	105	110
100	100	110-115	100	105	110	115
105	105-110	115-120	105	110	115	120
110	110-115	120-125	110	115	120	125
200	200	210-220	195	205	210	220

Suffix to contactor type e.g. <b>J7KNA-AR-40- 230</b>	Voltage Marking at the coil		Rated Control Voltage $U_s$ range for			
	for 50Hz V	for 60Hz V	50Hz		60Hz	
			min V.	max V.	min V.	max V.
210	205-215	220-230	205	215	220	230
220	210-220	230-240	210	220	230	240
<b>230</b>	<b>220-230</b>	<b>240</b>	<b>220</b>	<b>230</b>	<b>240</b>	<b>250</b>
240	230-240		230	240	250	260
400	380-400	440	380	400	415	440
500	475-500	520-545	475	500	520	545
550	525-550	600	525	550	570	600

Standard voltages in bold type letters. Coil not exchangeable

## Engineering data and Characteristics

### Mini Contactor Relays

Data according to IEC 947-5-1, VDE 0660, EN 60947-5-1

Auxiliary Contacts		Type	AC J7KNA-AR...	DC J7KNA-AR...D	DC + Diode J7KNA-AR...VS	J73KN-A...
<b>Rated insulation voltage <math>U_i</math></b>		V AC	690 <sup>*1</sup>	690 <sup>*1</sup>	690 <sup>*1</sup>	690 <sup>*1</sup>
<b>Thermal rated current <math>I_{th}</math> to 690V</b>						
Ambient temperature	40°C	A	10	10	10	10
	60°C	A	6	6	6	6
<b>Power loss per pole</b>	at $I_{th}$	W	0.5	0.5	0.5	0.5
<b>Utilization category AC15</b>						
Rated operational current $I_e$	220-240V	A	3	3	3	3
	380-415V	A	2	2	2	2
	440V	A	1.6	1.6	1.6	1.6
	500V	A	1.2	1.2	1.2	1.2
	660-690V	A	0.6	0.6	0.6	0.6
<b>Utilization category DC13</b>						
Rated operational current $I_e$	60V	A	2	2	2	2
	110V	A	0.4	0.4	0.4	0.4
	220V	A	0.1	0.1	0.1	0.1
<b>Maximum ambient temperature</b>						
Operation	open	°C	-40 to +60 (+90) <sup>*2</sup>			
	enclosed	°C				
Storage		°C	-40 to +90			
<b>Short circuit protection</b> short-circuit current 1kA, contact welding not accepted						
max. fuse size	gL (gG)	A	20	20	20	20
<b>Power consumption of coils</b>						
AC operated	inrush	VA	25	-	-	-
	sealed	VA	4 - 5	-	-	-
		W	1.2	-	-	-
DC operated	inrush	W	-	2.5	2.5	-
	sealed	W	-	2.5	2.5	-
<b>Operation range of coils</b> in multiples of control voltage $U_s$			0.85 - 1.1	0.8 - 1.1	0.8 - 1.1	-
<b>Switching time at control voltage <math>U_c \pm 10\%</math><sup>*3,*4</sup></b>						
AC operated	make time	ms	15 - 25	-	-	-
	release time	ms	8 - 25	-	-	-
	arc duration	ms	10 - 15	-	-	-
DC operated	make time	ms	-	15 - 19	15 - 19	-
	release time	ms	-	8 - 25	8 - 25	-
	arc duration	ms	-	10 - 15	10 - 15	-
<b>Cable cross-section</b>						
all connectors	solid	mm <sup>2</sup>	0.75 - 2.5	0.75 - 2.5	0.75 - 2.5	0.75 - 2.5
	flexible	mm <sup>2</sup>	0.75 - 2.5	0.75 - 2.5	0.75 - 2.5	0.75 - 2.5
	flexible with multicore cable end	mm <sup>2</sup>	0.5 - 1.5	0.5 - 1.5	0.5 - 1.5	0.5 - 2.5
Clamps per pole			2	2	2	2
	solid or stranded	AWG	18 - 14	18 - 14	18 - 14	18 - 14

\*1) Suitable at 690V for: earthed-neutral systems, overvoltage category I to IV, pollution degree 3 (standard-industry):  $U_{imp} = 8kV$ .  
Data for other conditions on request.

\*2) With reduced control voltage range 0.9 up to 1.0 x  $U_s$  and with reduced thermal rated current  $I_{th}$  to  $I_e/AC15$

\*3) Summary switching time = release time + arc duration

\*4) Release time of NC make time of NO increase when suppressor units for voltage peak protection are used (Varistor, RC-units, Diode units).

## Mini Contactor Relays for North America

Data according to UL508

Main Contacts (cULus)		Type	J7KNA-AR...	J73KN-A...
Rated operational current "General Use"		A	10	10
Rated operational power of three-phase motors at 60Hz (3ph)	115V	hp	-	-
	200V	hp	-	-
	230V	hp	-	-
	460V	hp	-	-
	575V	hp	-	-
Rated operational power of of AC motors at 60Hz (1ph)	115V	hp	-	-
	200V	hp	-	-
	230V	hp	-	-
Fuses		A	-	-
Suitable for use on a capability of delivering not more than rms		A	-	-
		V	-	-
Rated voltage		V AC	600	600
<b>Auxiliary Contacts (cULus)</b>				
	heavy pilot duty	AC	A600	A600
	standard pilot duty	DC	Q600	Q600

## ■ Dimensions

AC and DC operated  
with screw terminals

Auxiliary Contact Blocks

J7KNA-AR...

J73KN-A...



Do not use/install these products before having read the applicable precautions as listed in Cat. No. J09-EN-01 available from [www.europe.omron.com](http://www.europe.omron.com) or on request from OMRON local sales office.

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