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Project 01NK27936

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REPORT

on

COMPONENT - MOTOR CONTROLLERS, MAGNETIC

ZHEJIANG CHINT ELECTRICS CO LTD
Wenzhou, China

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DESCRIPTION

PRODUCT COVERED:

USR, CNR Definite Purpose AC Contactor - Model NCK3 followed by -20, -25, -30, -32, -40, -50, -60, -75, or -90; may be followed by /3, /2, or /1; may be followed by 0 or 1; may be followed by 0 or 1.

Accessory - Auxiliary Contact - Model AX-10, maybe followed by /11 or /22.

GENERAL:

These devices are definite purpose, open type, AC operated contactors with normally open main contacts.

RATINGS:

Three Phase Ratings

Model	Voltage	FLA	LRA	Res. Load	HP(single phase)	HP(three phase)
NCK3-20/2, -25/2	120V	/	/	35	2	/
	240	25	150		3	/
	277 V	25	150		/	/
	480 V	25	125		/	/
	600 V	25	100		/	/
NCK3-30/2, -32/2	120V	/	/	40	2	/
	240	32	200		3	/
	277 V	32	200		/	/
	480 V	32	150		/	/
	600 V	32	120		/	/
NCK3-40/2	120V	/	/	50	2	/
	240	40	240		3	/
	277 V	40	240		/	/
	480 V	40	200		/	/
	600 V	40	160		/	/
NCK3-20, -25	120V	/	/	/	2	/
	240/277 V	25	150	35	5	10
	480 V	25	125		/	15
	600 V	25	100		/	20
NCK3-30, -32	120V	/	/	/	2	/
	240/277 V	32	200	40	5	10
	480 V	32	150		/	15
	600 V	32	120		/	20
NCK3-40	120V	/	/	/	3	/
	240/277 V	40	240	50	7.5	10
	480 V	40	200		/	20
	600 V	40	160		/	25
NCK3-50	240/277 V	50	300	65		
	480 V	50	250			
	600 V	50	200			
NCK3-60	240/277 V	60	360	75		
	480 V	60	300			
	600 V	60	240			
NCK3-75	240/277 V	75	450	90		
	480 V	75	375			
	600 V	75	300			
NCK3-90	240/277 V	90	540	120		
	480 V	90	450			
	600 V	90	360			

Coil Voltage - 24V-480V ac.

Standard Short Circuit Rating - 5000 A, 600 V ac.

Auxiliary Contact :NCF8-11C rated Pilot Duty: B600, Q600.

Auxiliary Contact: AX-10, 15A, 250 VAC, Pilot duty , 6000 cycles , B300 ,Q300 for NCK3-20-40

Single Phase Ratings:

Model	Rated voltage V	FLA	LRA	Res. Current	Advance endurance cycles
NCK3- 25 (20) /1	240/277	25	150	35A	N/A
	480		125		
	600		100		
NCK3- 32 (30) /1	240/277	32	200	40A	N/A
	480		150		
	600		120		
NCK3-40/1	240/277	40	240	50A	N/A
	480		200		
	600		160		
NCK3-40/1	240/277	40	240	N/A	100K for load type Definite Purpose only

Model	HP(single phase)	
	120	240
NCK3- 25 (20) /1	1	2
NCK3- 32 (30) /1	1	2
NCK3-40/1	2	3

Coil voltage: 24VAC~240VAC

Single Phase Ratings:

Model	Rated voltage V	FLA	LRA	Res. Current	Advance endurance cycles
NCK3- 25 (20) /1	240/277	25	150	35A	N/A
	480		125		
	600		100		
NCK3- 32 (30) /1	240/277	32	200	40A	N/A
	480		150		
	600		120		
NCK3-40/1	240/277	40	240	50A	N/A
	480		200		
	600		160		
NCK3-40/1	240/277	40	240	N/A	100K for load type Definite Purpose only

Model HP(single phase)
 120 240

NCK3- 25 (20) /1	1	2
NCK3- 32 (30) /1	1	2
NCK3-40/1	2	3

Coil voltage: 24VAC~240VAC

Model	Voltage Vac	Single phase HP	Three phase HP
NCK3-50	110/120	3	/
	200/208	7.5	15
	240/277	10	15
	480	/	25
	600	/	25
NCK3-60	110/120	5	/
	200/208	7.5	25
	240/277	10	25
	480	/	30
	600	/	30
NCK3-75	110/120	5	/
	200/208	10	20
	240/277	15	25
	480	/	50
	600	/	50
NCK3-90	110/120	7.5	/
	200/208	15	25
	240/277	20 (88A FLA)	30
	480	/	60
	600	/	60 (62A FLA)

Single Phase Ratings

Model	Voltage	Ampere, Load	Electrical cycles
NCK3-25 (20) /1	600	35, Res.	250K
NCK3-25 (20) /2	600	35, Res.	250K
NCK3-32 (30) /1	600	40, Res.	250K
NCK3-32 (30) /2	600	40, Res.	250K
NCK3-40/1	600	50, Res.	250K
NCK3-40/2	600	50, Res.	250K
NCK3-25 (20) /1	600/347V	30A, Tungsten	6000
NCK3-25 (20) /2	600/347V	30A, Tungsten	6000
NCK3-32 (30) /1	600/347V	40A, Tungsten	6000
NCK3-32 (30) /2	600/347V	40A, Tungsten	6000
NCK3-40/1	600/347V	50A, Tungsten	6000
NCK3-40/2	600/347V	50A, Tungsten	6000
NCK3-25 (20) /1	600/347V	30A, Standard Ballast	6000
NCK3-25 (20) /2	600/347V	30A, Standard Ballast	6000
NCK3-32 (30) /1	600/347V	40A, Standard Ballast	6000
NCK3-32 (30) /2	600/347V	40A, Standard Ballast	6000
NCK3-40/1	600/347V	50A, Standard Ballast	6000
NCK3-40/2	600/347V	50A, Standard Ballast	6000

Three Phase Ratings

Model	Voltage	Ampere, Load	Electrical cycles
NCK3-50/3	600	65, Res	250K
NCK3-60/3	600	75, Res	250K
NCK3-75/3	600	90, Res	250K
NCK3-90/3	600	120, Res	250K
NCK3-50/3	600/347V	60A, Tungsten	6000
NCK3-50/3	600/347V	60A, Standard Ballast	6000

For NCK3 series:

High-available short Circuit Rating (Circuit breaker) - 100KA RMS, 480V
 High-available short Circuit Rating (Class J fuse) - 100KA RMS, 600V

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NOMENCLATURE:

They are designated

$$\frac{N}{I} \quad \frac{C}{II} \quad \frac{K}{III} \quad \frac{3}{IV} - \frac{30}{V} / \frac{3}{VI} \quad \frac{1}{VII} \quad \frac{0}{VIII}$$

- I. Code
N - Company Code
- II. Designation
C - AC contactor
- III. Application
K - Air -conditioning
- IV. Design
3 - Design sequence No.
- V. Operational Current Rating
20,25 - 25 Amps
30,32 - 32 Amps
40 - 40 Amps
50 - 50 Amps
60 - 60 Amps
75 - 75 Amps
90 - 90 Amps
- VI. Number of Poles of main contact
Blank - 3 poles, also blank in items VII and VIII
/3 - 3 poles
/2 - 2 poles
/1 - 1 pole
- VII. Number of Poles of NO Aux. Contact
Blank - NO auxiliary contacts not provided, also blank in items VI and VIII
0 - NO auxiliary contacts not provided
1 - 1 set of NO auxiliary contacts
- VIII. Number of Poles of NC Aux. Contact
Blank - NC auxiliary contacts not provided, also blank in items VI and VII
0 - NC auxiliary contacts not provided
1 - 1 set of NC auxiliary contacts

NOMENCLATURE: (CONT'D)

AX	-	10	/	1	1
I		II		III	IV

I: Auxiliary Contact Assembly

II: Design Sequence Number

III: Numbers of NO Contacts

1:1 NO Contact

2:2 NO Contact

IV: Numbers of NC Contacts

1:1 NC Contact

2:2 NC Contact

TECHNICAL CONSIDERATIONS (NOT FOR FIELD REPRESENTATIVE'S USE):

USR - Indicates these products were investigated under the Standard for UL 60947-4-1, 3rd edition.

CNR - Indicates these products were investigated under the Standard for Industrial Control Equipment, CSA C22.2 No. 60947-4-1-14, 2nd edition..

Spacings have been evaluated in accordance with the Standard for UL 60947-4-1, Low Voltage Switchgear and Controlgear - Part 4-1: Contactors and motor-starters - Electromechanical Contactors and Motor-Starters, Third Edition, and CSA C22.2 No. 60947-4-1-14, Low Voltage Switchgear and Controlgear - Part 4-1: Contactors and motor-starters - Electromechanical Contactors and Motor-Starters, Second Edition, Table DVD.1.6.1.

Use - For use only in complete products where the acceptability of the combination is determined by UL LLC.

CONDITIONS OF ACCEPTABILITY

1. These devices should be used within their Recognized ratings as specified below.
2. Open type devices should be mounted in enclosures having adequate strength and thickness and in the intended manner and with acceptable spacings being provided.
3. The terminals are not suitable for field wiring. They are to be factory wired only and the suitability of the connection (including spacings between factory connectors) shall be determined.

CONSTRUCTION DETAILS:

General - Reference may be made to accompanying photographs and itemized descriptive pages for the essential details of construction.

Corrosion Protection - All parts of the device are constructed of corrosion resistant material or are suitably plated or painted as a protection against corrosion.

Tolerance - Unless specified otherwise, the indicated dimensions are nominal.

Marking - Ink-stamped adhesive backed labels secured to or printed on the devices designated with the Recognized Company's name or file number, model number, rated 94-V0, 130°C in volts, amperes, the number of phases, and, if necessary the frequency. Devices may be marked appropriately for the intended use; in amperes, volt-amperes or watts, horsepower, or any combination thereof.

"60/75°C, Cu wire only", or equivalent.

"Terminal Torque 35 in.-lbs (see Ratings)", or equivalent. Torque marking may be provided loose with the equipment.

The following statement or the equivalent shall be included on the main marking, on a separate label, or on a wiring diagram publication packaged with the device:

Standard Short Circuit Marking (Not necessary if high fault rating is provided) - "Suitable For Use On A Circuit Capable Delivering Not More Than 5000 rms Symmetrical Amperes, 600 Volts Maximum. When Protected by UL Listed Fuses, or Not More Than 5000 rms Symmetrical Amperes, 480 Volts Maximum. When Protected by UL Listed Circuit Breaker.", or equivalent.

High-available fault current:

Fuse protection:

"Suitable For Use On A Circuit Capable Delivering Not More Than 100,000 rms Symmetrical Amperes, 600 Volts Maximum. When Protected by Class J Fuses Having An a Ampere maximum, a Volts Maximum.", or equivalent.

a:See the following table

Cat. No.	Fuse (A/Vac)
NCK3-25 (20)	80/600
NCK3-32 (30)	80/600
NCK3-40	100/600
NCK3-50	200/600
NCK3-60	200/600
NCK3-75	200/600
NCK3-90	200/600

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Circuit Breaker protection:

"Suitable For Use On A Circuit Capable Delivering Not More Than 100,000 rms Symmetrical Amperes, 480 Volts Maximum. When Protected by A b ampere Circuit Breaker Having An Interrupting Rating Not Less Than 100KA_rms Symmetrical Amperes, 480 Volts Maximum".

b:See the following table

Cat. No.	Circuit Breaker (A/Vac)
NCK3-25 (20)	50/480
NCK3-32 (30)	50/480
NCK3-40	70/480
NCK3-50	100/480
NCK3-60	100/480
NCK3-75	125/480
NCK3-90	125/480

For High fault rating marking - "WARNING" and the following or equivalent: "The opening of the branch-circuit protective device may be an indication that a fault current has been interrupted. To reduce the risk of fire or electric shock, current-carrying parts and other components of the controller shall be examined and replaced if damaged." In Canada, the equivalent French marking is "AVERTISSEMENT - Le déclenchement du dispositif de protection de la dérivation peut signifier qu'un courant de fuite a été interrompu. Pour réduire les risques d'incendie et de choc électrique, les pièces porteuses de courant et autres pièces de la commande doivent être examinées et remplacées au besoin."

(Effective July 11, 2007) All definite purpose contactors with FLA/LRA ratings shall be marked to indicate "hermetic refrigeration compressor" or "herm. refrig. comp." or equivalent. This marking is to appear where the FLA/LRA rating appears.