

Shanghai Liangxin Electrical Co., Ltd.

NDR3E-65/95 Electronic Overload Relay

# Product Specification

(IPD-ENG-DEV-T22 A1 2016-09-23)

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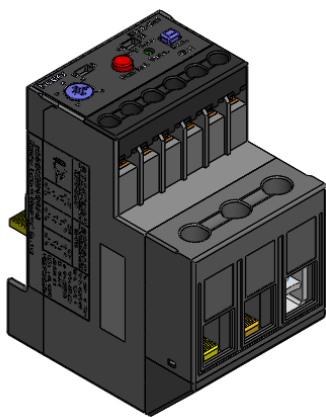
Revision information					
Version	Revised contents and reasons	Date	Prepared	Reviewed	Approved
0	New addition	20200922	Tingting Wang	Yipeng Yu	Xingfeng Wang

## 1、Application

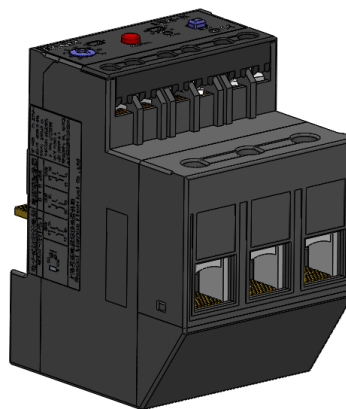
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NDR3E-65/95 electronic overload relays provide the overload、 phase failure and unbalance protection for three-phase AC motors in the circuit with the AC 50Hz/60Hz, the rated voltage up to 690V and the current from 20A to 95A,they can be used as motor starters with the NDC3-40~95 AC contactors.

## 2、Product Pictures



NDR3E-65



NDR3E-95

## 3、Model and implication

ND R 3 E - □ □ / □ / □  
1 2 3 4 5 6 7 8

SN	SN description	NDR3E model
1	Enterprise code	ND: <b>Nader</b> brand low-voltage electrical appliance
2	Product code	R: Relay
3	Design SN	3
4	Overload mode	E: Electronic
5	Product basic-type code	65、95
6	Setting range code	See Table 1
7	Rated operating voltage of the auxiliary contact	0:230V(AC-15) 230V (DC-13) 1:400V(AC-15) 230V (DC-13)
8	Rated power supply	1: AC110V (±15%) 50HZ/60HZ 2: AC220V (±15%) 50HZ/60HZ 3: AC380V (±15%) 50HZ/60HZ

Table 1

Setting range code	Setting current range/A	short circuit protection device		Matched with the NDC3-09~38 contactor (To be directly plugged with the contactor)
		aM/A	gG/A	
11 (65 frame)	20-50	100	160	NDC3-40~80
12 (65 frame)	32-80	100	160	
11 (95 frame)	40-110	140	200	NDC3-95

Table 1 Current specification details

## 4、Main technical parameters

Product basic-type code			NDR3E-65	NDR3E-95
Setting current range			20~80A	40~110A
Rated insulation voltage and frequency			690V, 50Hz/60Hz	
Tripping class			10/20 (adjustable)	
Main circuit wiring capacity	Flexible conductor (1 piece) without terminals	Minimum/maximum cross section	2.5/25 mm <sup>2</sup>	4/35 mm <sup>2</sup>
	Flexible conductor (1 piece) with terminals		2.5/25 mm <sup>2</sup>	4/35 mm <sup>2</sup>
	Solid conductor (1 piece) without terminals		2.5/25 mm <sup>2</sup>	4/35 mm <sup>2</sup>
Terminal tightening torque of the main circuit			4N.m	6N.m
Auxiliary power voltage			110V, 220/230V, 380/400V (50Hz/60Hz)	
Auxiliary contact type			1NC+1NO (electrical without isolation) NDR3E-□□/0/□ 1NC+1NO (electrical isolation) NDR3E-□□/1/□	
Rated working voltage of the auxiliary contact			AC-15 230V/0.75A 400V/0.47A DC-13 230V/0.1A	
Auxiliary circuit	Flexible conductor	Minimum/maximum cross section	1/2.5 mm <sup>2</sup>	

wiring capacity	(1 piece) without terminals		
	Flexible conductor (1 piece) with terminals		1/2.5 mm <sup>2</sup>
	Solid conductor (1 piece) without terminals		1/2.5 mm <sup>2</sup>
Auxiliary terminal tightening torque			0.8N.m

Table 2 Main technical parameters

## Action features

Action features	SN	Setting current	Action time	Initial conditions	Ambient air temperature ℃
Load balance of each phase	1	1.05In	>2h	Cold state	-25℃~60℃
	2	1.2In	<2h	Following the sequence 1 test	
	3	1.5In	<4min（class 10） <8min（class 20）	Following the sequence 1 test	
	4	7.2In	Class 10: 4s< Tp≤10s	Cold state	
			Class 20 : 6s< Tp≤20s	Cold state	
Phase failure protection	When the one or two-phase current satisfies I≥0.8In and the other-phase failure		3~8s	Cold state or warm state	
Phase unbalance protection	When the phase unbalance rate is ≥60%		30~40s	Cold state or warm state	
Locking function	Conditions				
	When the one or two-phase current satisfies I≥0.8In with the other-phase current is 0 ,the automatic reset function locked after failure for consecutive three times, it is necessary to perform the manual reset				
	When the overload current satisfies I≥4In and the fault time is ≥ 8min,the automatic reset function locked after failure for consecutive three times, it is necessary to perform the manual reset				

Table 3 Main action features

Operating condition	Indicator status
Normal	Green light constantly on
Overload, test	Green light equal slow flashing
Unbalance	
Phase failure	
Overload tripped	Red light constantly on
phase failure tripped	Red light fast flashing
Unbalance tripped	Red light low flashing
Locked	Red light and green light alternately flashing

Table 4 Indicator status and working condition

## 5、Working conditions

Ambient temperature:  $-25^{\circ}\text{C} \sim +60^{\circ}\text{C}$ ;

Extreme operating temperature:  $-40^{\circ}\text{C} \sim +70^{\circ}\text{C}$ ;

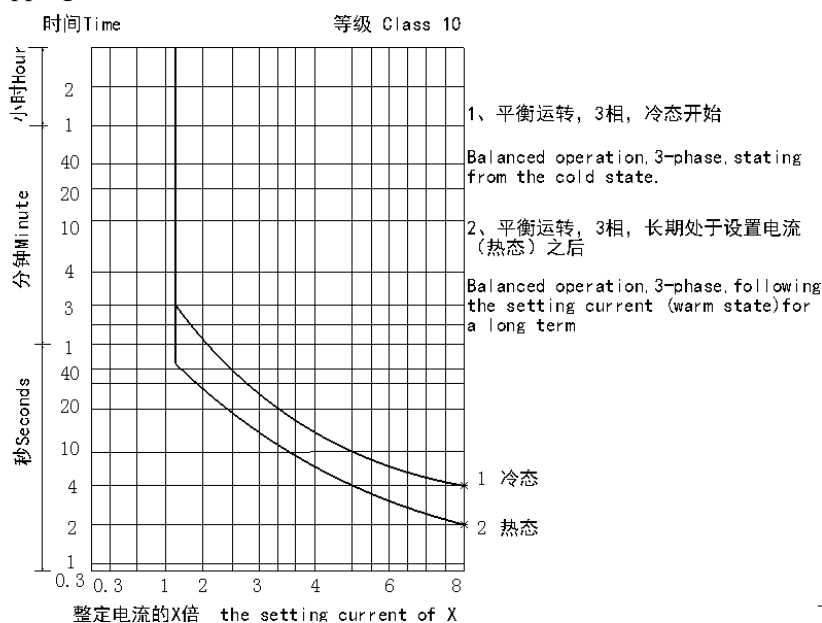
Storage temperature:  $-60^{\circ}\text{C} \sim +80^{\circ}\text{C}$ ;

Altitude: The altitude of the installation site is lower than 3,000m. Negotiate with the manufacture when the altitude is up to from 3000m to 5000m

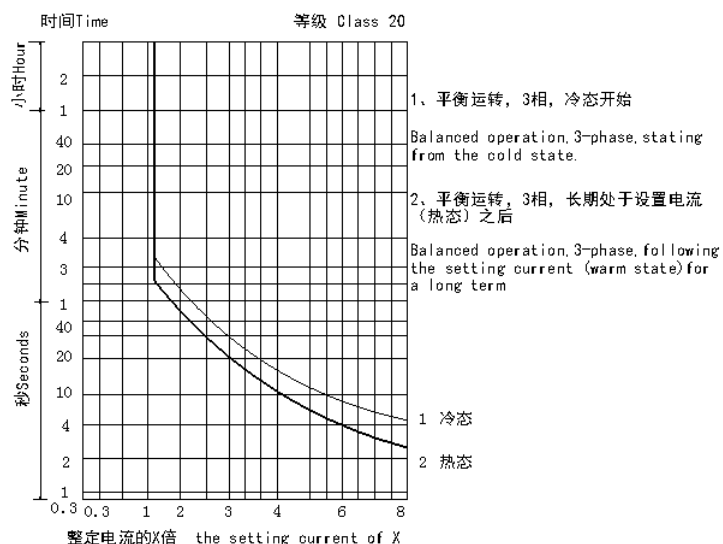
Pollution level: level 3

## 6、Time-Current curves

Tripping characteristic curve of the class 10



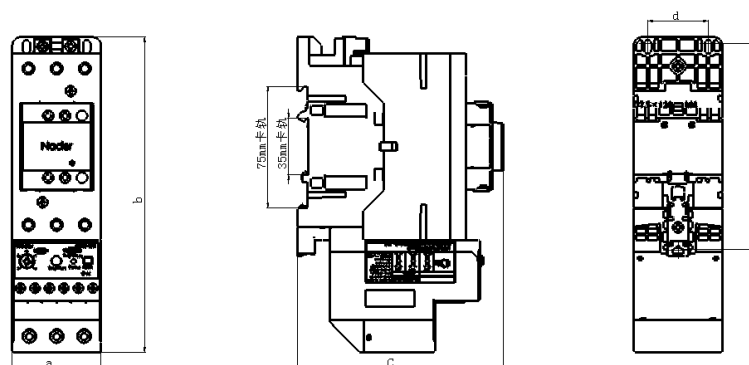
Tripping characteristic curve of the class 20



## 7、Outline and installation dimensions

### 7.1 Installation dimensions of NDR3E-65 with NDC3(GV)-4011(S) ~8011(S) contactor

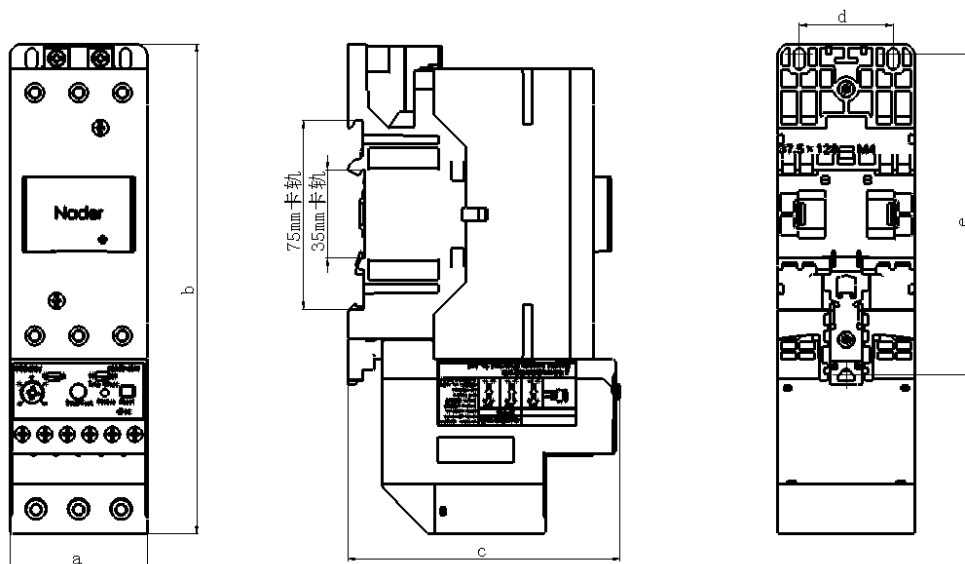
Installation dimensions of NDR3E-95 with NDC3(GV)-9511(S) contactor



Type	a	b	c	d	e
NDC3-4011 (S) ~8011 (S) +NDR3E-65	$55 \pm 0.8$	$195.5 \pm 1.5$	$121.4 \pm 0.8$	$37.5 \pm 0.8$	$128 \pm 1$
NDC3GV-4011 (S) ~8011 (S) +NDR3E-65	$55 \pm 0.8$	$195.5 \pm 1.5$	$127.9 \pm 0.8$	$37.5 \pm 0.8$	$128 \pm 1$
NDC3-9511 (S) +NDR3E-95	$70 \pm 0.8$	$203.5 \pm 1.5$	$132 \pm 0.8$	$60 \pm 0.8$	$128 \pm 1$
NDC3GV-9511 (S) +NDR3E-95	$70 \pm 0.8$	$203.5 \pm 1.5$	$140.6 \pm 0.8$	$60 \pm 0.8$	$128 \pm 1$

### 7.2 Installation dimensions of NDR3E-65 with NDC3(GV)-40 ~80 contactor

Installation dimensions of NDR3E-95 with NDC3 (GV) -95 contactor



Type	a	b	c	d	e
NDC3-40~80+NDR3E-65	$55 \pm 0.8$	$195.5 \pm 1.5$	$108.8 \pm 1$	$37.5 \pm 0.8$	$128 \pm 1$
NDC3GV-40~80+NDR3E-65	$55 \pm 0.8$	$195.5 \pm 1.5$	$115.3 \pm 1$	$37.5 \pm 0.8$	$128 \pm 1$
NDC3-95+NDR3E-95	$70 \pm 0.8$	$203.5 \pm 1.5$	$120.8 \pm 1$	$60 \pm 0.8$	$128 \pm 1$
NDC3GV-95+NDR3E-95	$70 \pm 0.8$	$203.5 \pm 1.5$	$129.4 \pm 1$	$60 \pm 0.8$	$128 \pm 1$

## 8、Installation method

Plugged with the contactor

## 9、Packaging and storage

Each product uses a small package and is then placed in a large package. the packaged product should be stored in a warehouse with a smooth air ,no temperature above the  $+80^{\circ}\text{C}$ ,no less than  $-60^{\circ}\text{C}$ ,and no acid 、alkaline or other corrosive gases in the stored ambient air

## 10、Environment

Product design meets ROHS requirements.

## 11、Notices

11.1 The product shall be installed and used in places without obvious vibration or shock.

11.2 Reliable installation is required to prevent the product from the abnormal over-heat damage due to the poor wiring

11.3 Connect the A1 、A2 power supply for normal use

11.4 The product is set to the manual reset state when deliver.