

FUSE

CATALOGUE



GRL

Since 1992, GRL Electric Co.,Ltd is a professional manufacturer specialized in fuse link、 busbar system、 low voltage switch disconnecter、 fuse switch、 knife switch developing & manufacturing.

low voltage busbar system、 switch disconnecter、 fuse link

GRL

Humanistic mission

Win-win with customer
Mutual progress for workers
Shareholder satisfaction
Society satisfaction

Industry mission

Based on the manufacturing and sales of isolation switch, busbar system, and fuses, we make a contribution to the safety, reliability and efficiency of the electrical industry, and assume social responsibilities.

Vision

To be a respected brand of electric connection system all over the world

Orientation

We are committed to serve medium-end and high-end clients who pursue high quality products and agile supply chain, as well as the challenging area with innovation

Fuse Selection Guide

The main function of fuse is to cut off the circuit in time when the circuit fails, so as to protect the discrete components or the whole circuit. The following are the relevant conditions that users need to consider when selecting fuse



Normal working conditions and installation conditions

Ambient air humidity: -5 °C to +40 °C

Altitude: ≤ 2000m

Atmospheric conditions: Humidity: The relative humidity of the air at the installation site does not exceed 50% when the maximum temperature is +40°C; higher relative humidity is allowed at lower temperatures, and the monthly average minimum humidity of the wettest month does not exceed +25°C, the monthly average maximum relative humidity of the month does not exceed 90%. Due to temperature changes

Measures must be taken when condensation occurs on the product.

Pollution level: III

Installation category: III

Environment temperature

Refers to the temperature of the air directly surrounding the fuse link and should not be confused with room temperature.

In many practical occasions, the temperature of the fuse-link is quite high. This is because the fuse-link is configured in the support/base of different structures and the entire fuse is enclosed in the power distribution/control cabinet.

Fuse Derating Guidelines

Fuse Current Rating Fuse Derating Factor

2 - 1.5 amps 0.50%

1 - 1.5 amps 0.45

0.5 - 0.75 amps 0.40

0.375 amps 0.35

0.25 amps 0.30

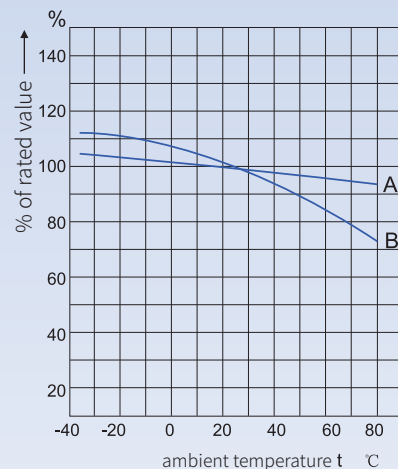
0.125 amps 0.25

Derate a fuse by multiplying the rated current by the derating factor.

Derate an additional 0.5%/C above 250C

Keep in mind that a fuse holder, if used should be derated as well. When selecting a fuse holder be sure that the holder can withstand the maximum fuse rating for voltage and current. The fuse holder could melt trying to with stand the power dissipated by the fuse before the fuse opens.

No derating data has been found for a Fuse Holder; How ever in many cases a connector is derated to 25% of its maximum Dielectric Withstanding Voltage. Or the dielectric should with stand Ambient Temp + Ohmic heating Temp + 50C



temperature correction curve

e.g. In a certain application, the ambient temperature is 20°C, and the rated current of the ordinary fuse-link is $I_n=63A$. Now that the above fuse is used in a high-temperature environment of 60°C, the operating current must be additionally reduced. From the above figure----temperature correction curve A shows that the percentage of the rated value at 60°C is 0.95. In order to ensure that the fuse-link does not malfunction, the rated current value of the fuse-link should be re-selected: $I_n = \frac{63A}{0.95} = 66.32A$

According to the fuse link standard current registration selection $I_n=80A$

Curve B: Fast Type for Semiconductor Period Protection(aR)

Curve A: Ordinary type for line protection(gG)

misoperation

Misoperation is often caused by incomplete analysis of the designed circuit. In the "factors to be considered in the selection of fuse links". We must pay attention to its Items 1), 3) and 6) including normal working current, ambient temperature and overload. For example, a common cause of misoperation during normal operation is that the starting current of motor circuit, surge current and harmonic current of capacitor circuit and air temperature around fuse link.

breaking capacity

It is the maximum allowable short-circuit current that the fuse link can fuse reliably under the rated voltage. In case of short circuit, much larger instantaneous current will pass through the fuse link than its normal operation. Safe operation requires that the fuse link cuts off the circuit in a complete state (no burst).

The breaking capacity of the GRL fuse link is up to 120ka. Reliable current limiting characteristics prevent the equipment in the electrical circuit from being damaged.

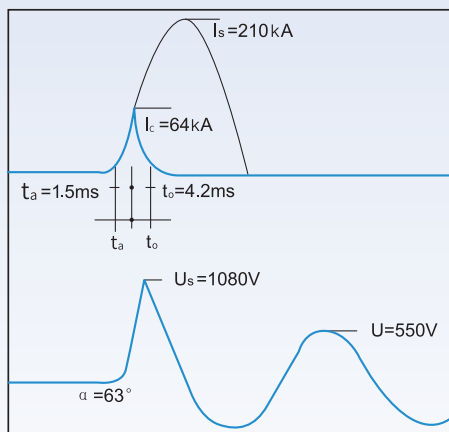
Waveform diagram

I_s - Maximum asymmetric current peak with expected current I_p of 100kA (effective value).

(the impact coefficient in short circuit circuit is taken as 1.5)

I_c - breaking current U_s - Arc voltage U - Supply voltage

t_a - Melting time t_o - Arcing time α - zero crossing arc ignition angle



Fuse holder

In many practical applications, fuse links are installed on the fuse holder. They can not be used as switches - they are not used to turn on or cut off loads.

factors to be considered in the selection of fuse links

- * Rated current
- * Rated voltage
- * ambient temperature
- * fusing time fault current
- * impulse current, Surge current, harmonic current, Starting current, transient value
- * Structure size, wiring mode and visual indication

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RT16(NT/NH) Fuse

AC500V/AC690V/DC440
2A-630A



○ The cover plate is formed with reinforced rib

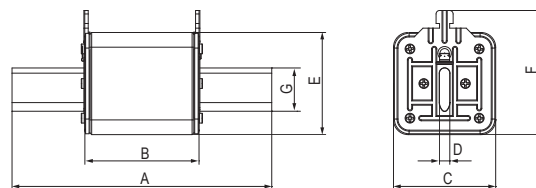
○ Alluminum cover plate, no vortex loss

○ High purity silica sand, quick arc extinguish

Fuse (with 1 indicator)



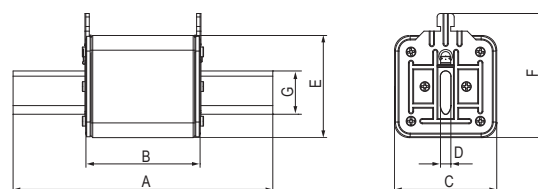
Item No.	Rated Current In	Rated Voltage Un	Breaking Capacity (with Fuse)	Overall Dimensions mm						
				A	B	C	D	E	F	G
RT16-00 (NT00/NH00)	In:2A, 4A, 6A, 8A, 10A, 12A, 16A, 20A, 25A, 32A, 40A, 50A, 63A, 80A, 100A, 125A, 160A(500VAC/250VDC);	500VAC 690VAC 250VDC	120kA(500VAC) 50kA(690VAC) 100kA(250VDC)	78±0.5	50	29	6	47	58	15
	In:2A, 4A, 6A, 8A, 10A, 12A, 16A, 20A, 25A, 32A, 40A, 50A, 63A, 80A, 100A(690VAC)									
RT16-1(NT1/NH1)	In:40A, 50A, 63A, 80A, 100A, 125A, 160A, 200A, 225A, 250A (500VAC/440VDC);	500VAC 690VAC 440VDC	120kA(500VAC) 50kA(690VAC) 100kA(440VDC)	134±0.5	66	46	6	46	60	20
	In:40A, 50A, 63A, 80A, 100A, 125A, 160A, 200A(690VAC)									
RT16-2(NT2/NH2)	In:80A, 100A, 125A, 160A, 200A, 250A, 315A, 350A, 400A(500VAC/440VDC);	500VAC 690VAC 440VDC	120kA(500VAC) 50kA(690VAC) 100kA(440VDC)	150±0.5	66	59	6	59	72	25
	In: 80A, 100A, 125A, 160A, 200A, 250A, 315A (690VAC)									
RT16-3(NT3/NH3)	In: 315A, 400A, 500A, 630A (500VAC/440VDC);	500VAC 690VAC 440VDC	120kA(500VAC) 50kA(690VAC) 100kA(440VDC)	150±0.5	66	68	6	68	83	32
	In: 315A, 400A, 500A(690VAC)									



Fuse (with double indicator)



Item No.	Rated Current In	Rated Voltage Un	Breaking Capacity (with Fuse)	Overall Dimensions mm						
				A	B	C	D	E	F	G
RT16-00 (NT00/NH00)	In: 2A, 4A, 6A, 8A, 10A, 12A, 16A, 20A, 25A, 32A, 40A, 50A, 63A, 80A, 100A, 125A, 160A(500VAC/250VDC);	500VAC 690VAC 250VDC	120kA(500VAC) 50kA(690VAC) 100kA(250VDC)	78±0.5	50	29	6	47	58	15
	In: 2A, 4A, 6A, 8A, 10A, 12A, 16A, 20A, 25A, 32A, 40A, 50A, 63A, 80A, 100A(690VAC)									
RT16-1(NT1/NH1)	In: 40A, 50A, 63A, 80A, 100A, 125A, 160A, 200A, 225A, 250A (500VAC/440VDC);	500VAC 690VAC 440VDC	120kA(500VAC) 50kA(690VAC) 100kA(440VDC)	134±0.5	66	46	6	46	60	20
	In: 40A, 50A, 63A, 80A, 100A, 125A, 160A, 200A(690VAC)									
RT16-2(NT2/NH2)	In: 80A, 100A, 125A, 160A, 200A, 250A, 315A, 350A, 400A(500VAC/440VDC);	500VAC 690VAC 440VDC	120kA(500VAC) 50kA(690VAC) 100kA(440VDC)	150±0.5	66	59	6	59	72	25
	In: 80A, 100A, 125A, 160A, 200A, 250A, 315A (690VAC)									
RT16-3(NT3/NH3)	In: 315A, 400A, 500A, 630A (500VAC/440VDC);	500VAC 690VAC 440VDC	120kA(500VAC) 50kA(690VAC) 100kA(440VDC)	150±0.5	66	68	6	68	83	32
	In: 315A, 400A, 500A(690VAC)									



DNRX1 DNRX1D-1000

Fuse Alarm Impactor



Order No.:
Model No.:DNRX1、 DNRX1D-1000

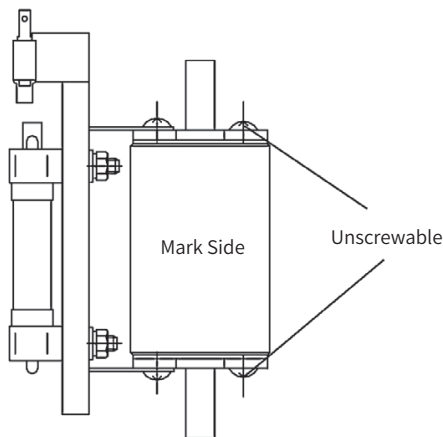
Name and Discription	Fuse Alarm Impactor
Rated voltage	AC1000V
Reference Standard	GB/T 13539

Product description

DNRX1, DNRX1D-1000 Fuse Alarm Impactor, rated voltage AC1000V, it can be directly connected to the fuse link in parallel. When the fuse link is blown,Fuse Alarm Impactor acts at the same time, pushing the micro switch,driving other auxiliary electrical appliances to work, to reminds the operation staff pay attention to it.

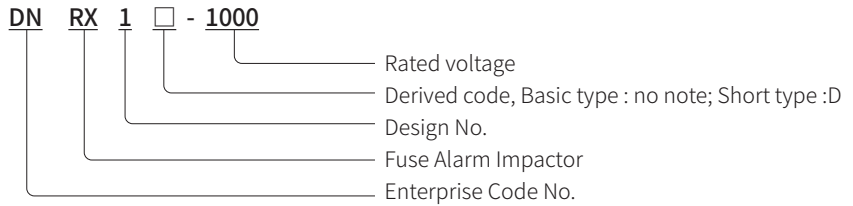
Installation

Fuse Alarm Impactor is installed in parallel with the fuse link. Adjust the Fuse Alarm Impactor connecting plate to the same height as the cover plates at both ends of the fuse link , loose the screws of the fuse link, insert the connecting plates into the cover plates, and then tight the screws, as shown in Figure.



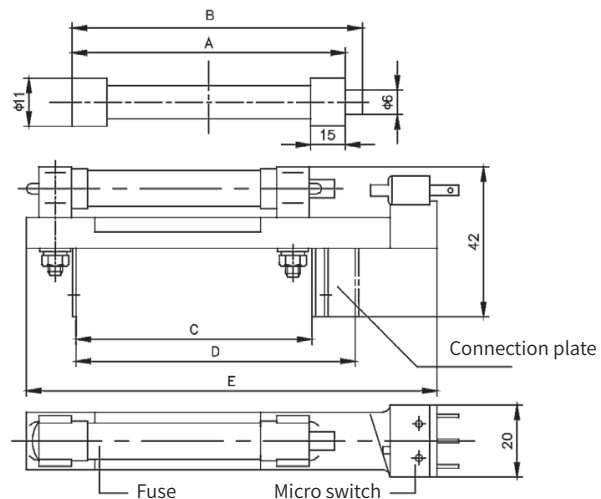
DNRX1-1000 Fuse Alarm Impactor must be installed on the left side

Model No. And Meaning



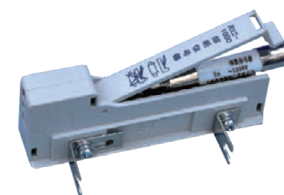
Model No.	Dimensions mm				
	A	B	C	D	E
DNRX1	80	88	65.5	77.5	114
DNRX1D	60	68	62.5	73.5	90

Note: C and D dimensions can be adjusted according to the actual height of the fuse link.



DNRX2-1000

Fuse Alarm Impactor



Order No.:
Model No.:DNRX2-1000

Product description

DNRX2 Fuse Alarm Impactor, rated voltage AC1000V, it can be directly connected to the fuse link in parallel, when the fuse link is blown, Fuse Alarm Impactor acts at the same time, pushing the micro switch, driving other auxiliary electrical appliances to work, to reminds the operation staff pay attention to it.

Installation

Fuse Alarm Impactor is installed in parallel with the fuse link, it is plug-in type which can be directly inserted into the protrusion of the fuse link cover, as shown in Figure 1. The Screw-connected type Impactor is to adjust the Fuse Alarm Impactor connecting plate to the same height as the cover plates at both ends of the fuse link, loose the screws of the fuse link, insert the connecting plates into the cover plates, and then tight the screws, as shown in Figure 2.

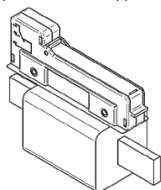


Figure 1, Plug-in Type Fuse Alarm Impactor installation method

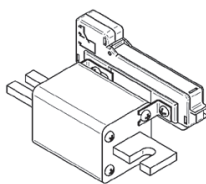


Figure 2, Screw-connected Type Fuse Alarm Impactor installation method

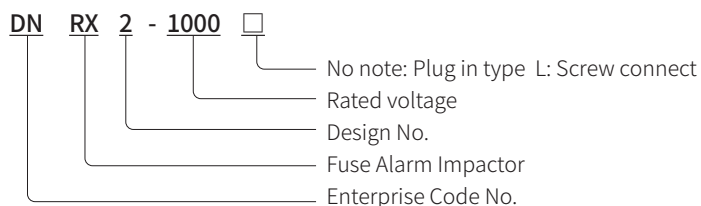
Fuse Alarm Impactor Parameters

Name and Discription	Fuse Alarm Impactor
Rated voltage V	AC1000V
Minium Operating Voltage V	12
Suitable Fuse	DNRX1D-1000

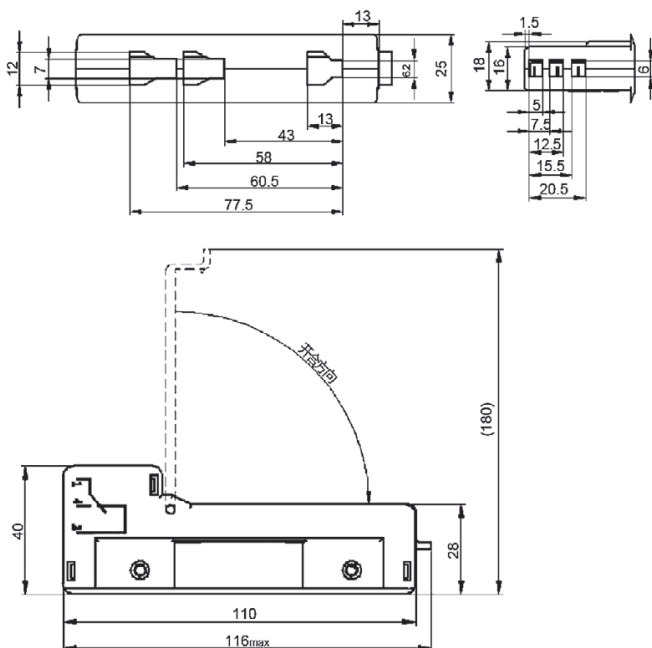
Small Micro Switch Parameters

Rated operational voltage V	250V
Mechanical life (times)	200000
Rated Current A	1
Reference Standard	GB/T 13539

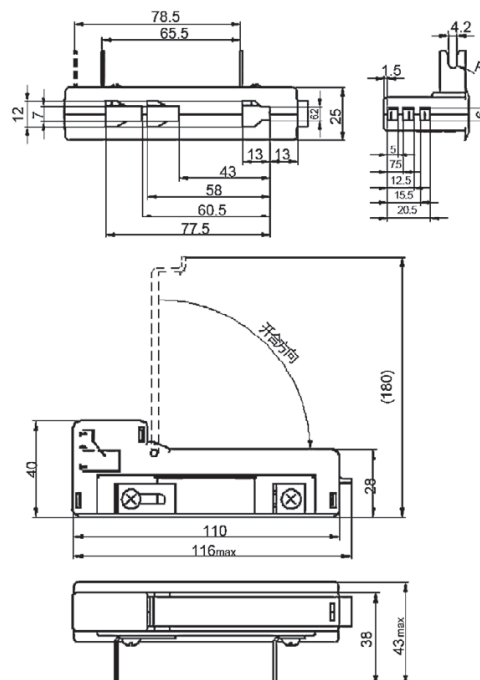
Model No. And Meaning



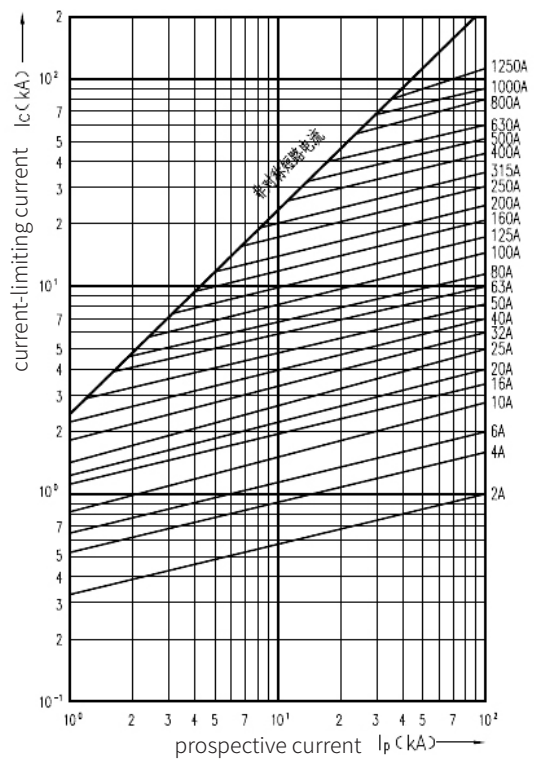
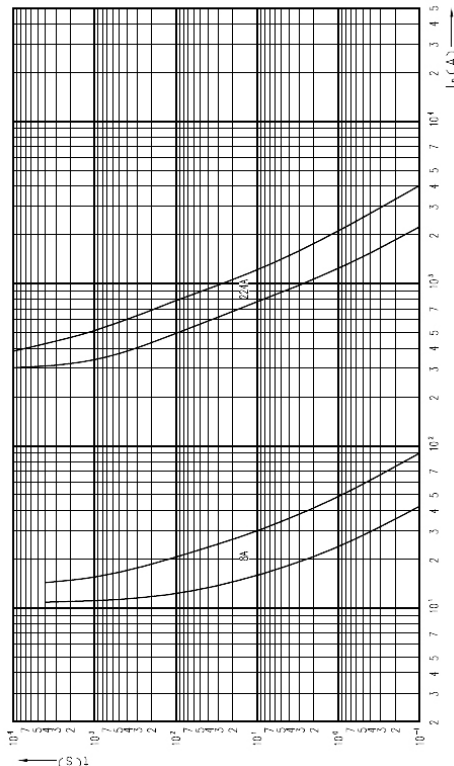
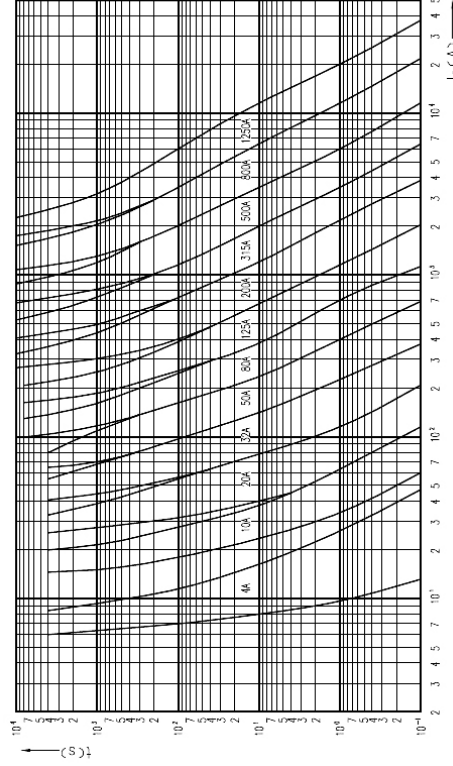
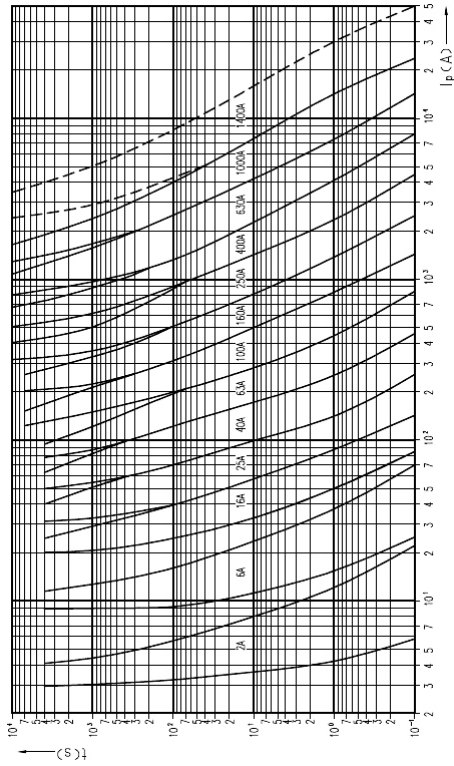
DNRX2-1000 Fuse Alarm Impactor Shape and Installation Dimensions



DNRX2-1000/L Fuse Alarm Impactor Shape and Installation Dimensions

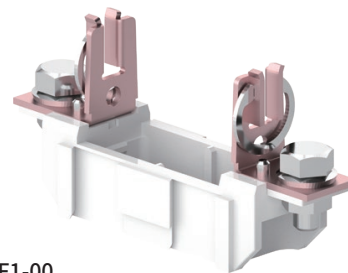


Fuse Curve Chart

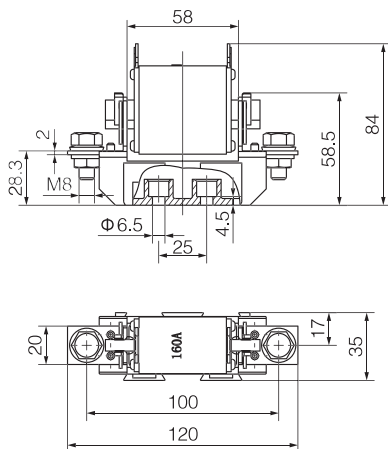


DNF1

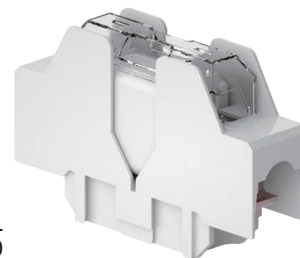
Fuse Holder



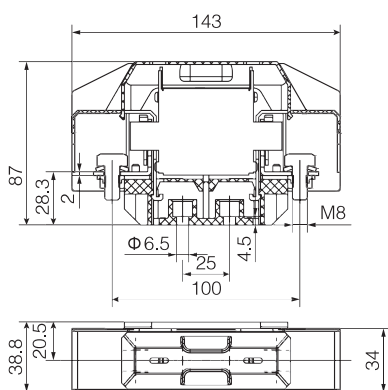
Item No.:DN56300
Product Model:DNF1-00



Rated Current I_n	160A(500VAC,250VDC)/100A(690VAC)
Rated Voltage U_n	500VAC/690VAC/250VDC
Rated Insulation Voltage U_i	690V
Rated Impulse Withstand Voltage U_{imp}	6kV
Breaking Capacity(with Fuse)	120kA(500VAC)/50kA(690VAC)/100kA(250VDC)
Fuse Size	00
Feature	1P, without touch protection device
Type	Fixed Type
Reference standard	IEC 60269-1, IEC 60269-2, GB/T 13539.2



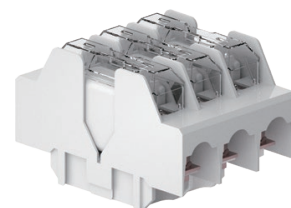
Order No.:DN56301
Model No.:DNF1-00



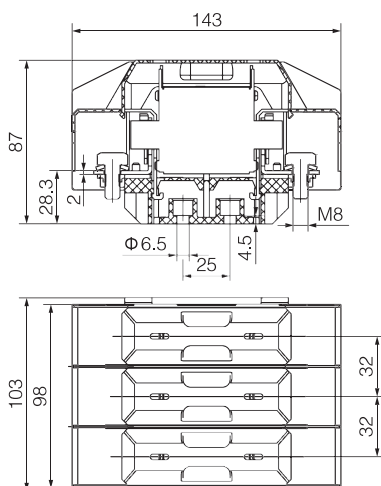
Rated current I_n	160A(500VAC,250VDC)/100A(690VAC)
Rated voltage U_e	500VAC/690VAC/250VDC
Rated Insulation Voltage U_i	690V
Rated impulse withstand voltage U_{imp}	6kV
Break capacity (with fuse link)	120kA(500VAC)/50kA(690VAC)/100kA(250VDC)
Fuse link size	00
Feature	1pole ,with protective cover
Type	Fixed Type
Reference standard	IEC 60269-1, IEC 60269-2, GB/T 13539.2

DNF1

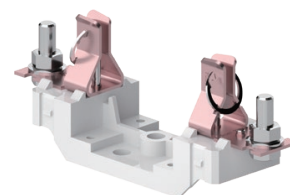
Fuse Holder



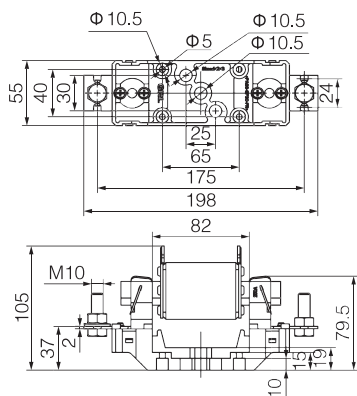
Order No.:DN56302
Model No.:DNF1-00



Rated current I_n	160A(500VAC,250VDC)/100A(690VAC)
Rated voltage U_e	500VAC/690VAC/250VDC
Rated Insulation Voltage U_i	690V
Rated impulse withstand voltage U_{imp}	6kV
Break capacity (with fuse link)	120kA(500VAC)/50kA(690VAC)/100kA(250VDC)
Fuse link size	00
Feature	3 pole, with protective cover
Type	Fixed Type
Reference standard	IEC 60269-1, IEC 60269-2, GB/T 13539.2



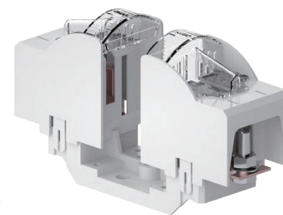
Order No.:DN56310
Model No.:DNF1-1



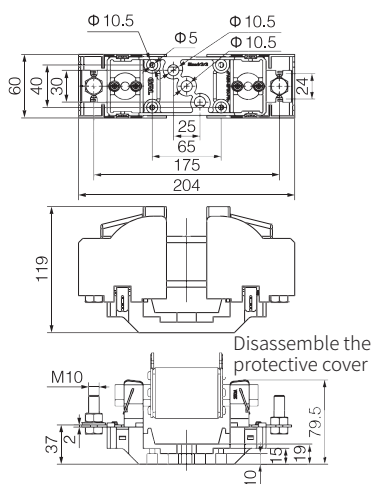
Rated current I_n	250A(500VAC,440VDC)/200A(690VAC)
Rated voltage U_e	500VAC/690VAC/440VDC
Rated Insulation Voltage U_i	690V
Rated impulse withstand voltage U_{imp}	6kV
Break capacity (with fuse link)	120kA(500VAC)/50kA(690VAC)/100kA(440VDC)
Fuse link size	1
Feature	1 pole, without protective cover
Type	Fixed Type
Reference standard	IEC 60269-1, IEC 60269-2, GB/T 13539.2

DNF1

Fuse Holder



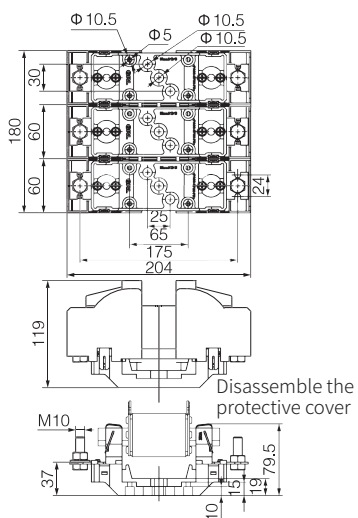
Order No.:DN56311
Model No.:DNF1-1



Rated current I_n	250A(500VAC,440VDC)/200A(690VAC)
Rated voltage U_e	500VAC/690VAC/440VDC
Rated Insulation Voltage U_i	690V
Rated impulse withstand voltage U_{imp}	6 kV
Break capacity (with fuse link)	120kA(500VAC)/50kA(690VAC)/100kA(440VDC)
Fuse link size	1
Feature	1pole ,with protective cover
Type	Fixed Type
Reference standard	IEC 60269-1, IEC 60269-2, GB/T 13539.2



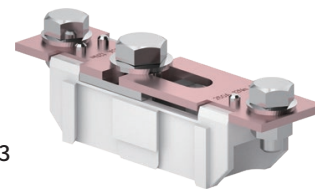
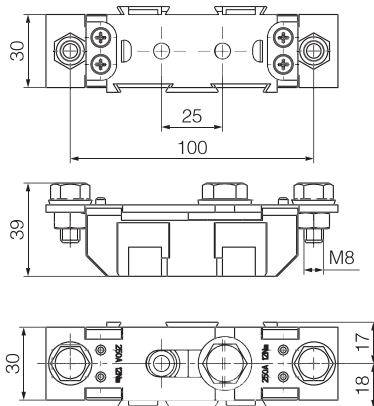
Order No.:DN56312
Model No.:DNF1-1



Rated current I_n	250A(500VAC,440VDC)/200A(690VAC)
Rated voltage U_e	500VAC/690VAC/440VDC
Rated Insulation Voltage U_i	690V
Rated impulse withstand voltage U_{imp}	6 kV
Break capacity (with fuse link)	120kA(500VAC)/50kA(690VAC)/100kA(440VDC)
Fuse link size	1
Feature	3 pole, with protective cover
Type	Fixed Type
Reference standard	IEC 60269-1, IEC 60269-2, GB/T 13539.2

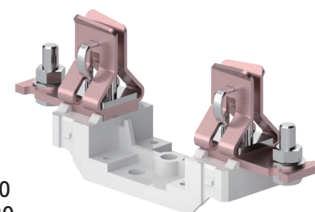
DNF1

Fuse Holder

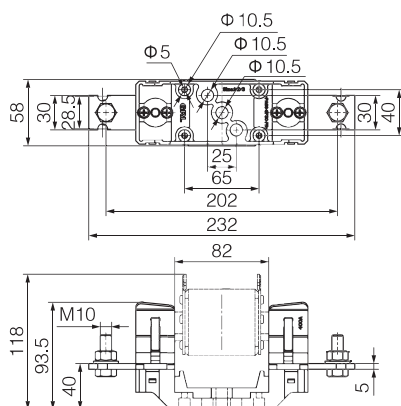


Order No.:DN56313
Model No.:DNF1-1

Rated current I_n	250A(500VAC,440VDC)/200A(690VAC)
Rated voltage U_e	500VAC/690VAC/440VDC
Rated Insulation Voltage U_i	690V
Rated impulse withstand voltage U_{imp}	6 kV
Break capacity (with fuse link)	120kA(500VAC)/50kA(690VAC)/100kA(440VDC)
Fuse	Neutral link ,without fuse link
Feature	break type, without protective cover
Type	Fixed Type
Reference standard	IEC 60269-1, IEC 60269-2, GB/T 13539.2



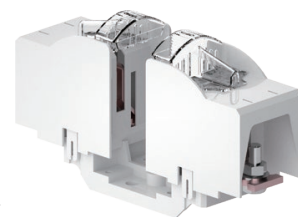
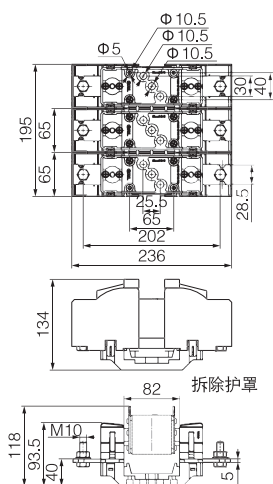
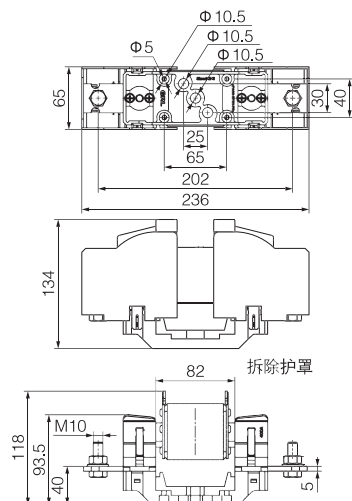
Order No.:DN56320
Model No.:DN56320



Rated current I_n	400A(500VAC,440VDC)/315A(690VAC)
Rated voltage U_e	500VAC/690VAC/440VDC
Rated Insulation Voltage U_i	690V
Rated impulse withstand voltage U_{imp}	6 kV
Break capacity (with fuse link)	120kA(500VAC)/50kA(690VAC)/100kA(440VDC)
Fuse link size	2
Feature	1 pole, without protective cover
Type	Fixed Type
Reference standard	IEC 60269-1, IEC 60269-2, GB/T 13539.2

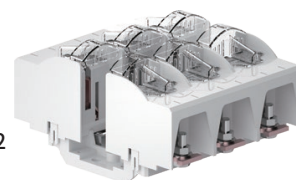
DNF1

Fuse Holder



Order No.:DN56321
Model No.:DNF1-2

Rated current I_n	400A(500VAC,440VDC)/315A(690VAC)
Rated voltage U_e	500VAC/690VAC/440VDC
Rated Insulation Voltage U_i	690V
Rated impulse withstand voltage U_{imp}	6 kV
Break capacity (with fuse link)	120kA(500VAC)/50kA(690VAC)/ 100kA(440VDC)
Fuse link size	2
Feature	1 pole, with protective cover
Type	Fixed Type
Reference standard	IEC 60269-1, IEC 60269-2, GB/T 13539.2

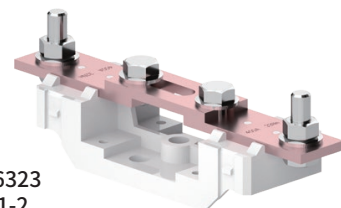
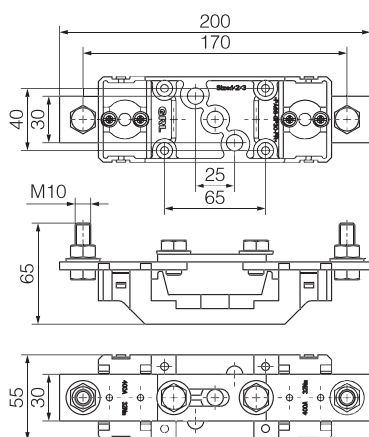


Order No.:DN56322
Model No.:DNF1-2

Rated current I_n	400A(500VAC,440VDC)/315A(690VAC)
Rated voltage U_e	500VAC/690VAC/440VDC
Rated Insulation Voltage U_i	690V
Rated impulse withstand voltage U_{imp}	6 kV
Fuse link size	2
Feature	3 pole, with protective cover
Type	Fixed Type
Reference standard	IEC 60269-1, IEC 60269-2, GB/T 13539.2

DNF1

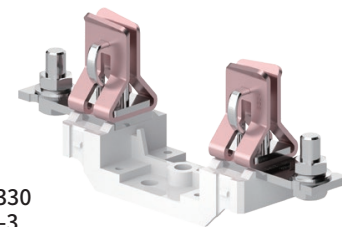
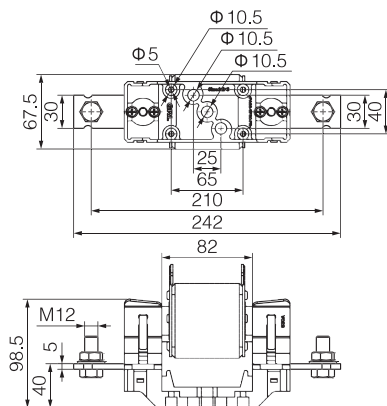
Fuse Holder



Order No.:DN56323

Model No.:DNF1-2

Rated current I_n	400A(500VAC,440VDC)/315A(690VAC)
Rated voltage U_e	500VAC/690VAC/440VDC
Rated Insulation Voltage U_i	690V
Rated impulse withstand voltage U_{imp}	6 kV
Feature	Feature neutral link,break type,without protective cover
Type	Fixed Type
Reference standard	IEC 60269-1, IEC 60269-2, GB/T 13539.2



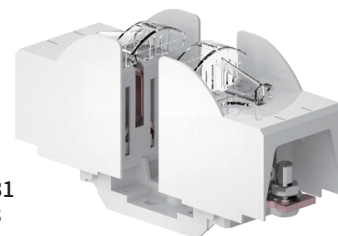
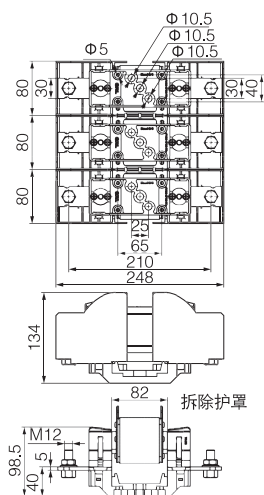
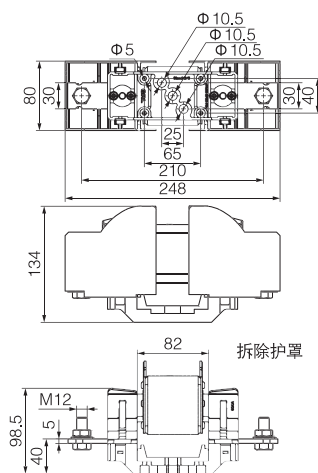
Order No.:DN56330

Model No.:DNF1-3

Rated current I_n	630A(500VAC,440VDC)/500A(690VAC)
Rated voltage U_e	500VAC/690VAC/440VDC
Rated Insulation Voltage U_i	690V
Rated impulse withstand voltage U_{imp}	6 kV
Fuse link size	3
Feature	1 pole, without protective cover
Type	Fixed Type
Reference standard	IEC 60269-1, IEC 60269-2, GB/T 13539.2

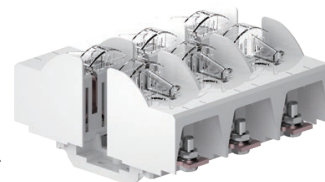
DNF1

Fuse Holder



Order No.:DN56331
Model No.:DNF1-3

Rated current I_n	630A(500VAC,440VDC)/500A(690VAC)
Rated voltage U_e	500VAC/690VAC/440VDC
Rated Insulation Voltage U_i	690V
Rated impulse withstand voltage U_{imp}	6 kV
Break capacity (with fuse link)	120kA(500VAC)/50kA(690VAC)/ 100kA(440VDC)
Fuse link size	3
Feature	1 pole, with protective cover
Type	Fixed Type
Reference standard	IEC 60269-1, IEC 60269-2, GB/T 13539.2

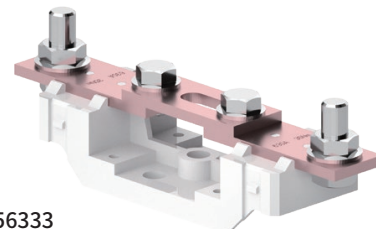


Order No.:DN56332
Model No.:DNF1-3

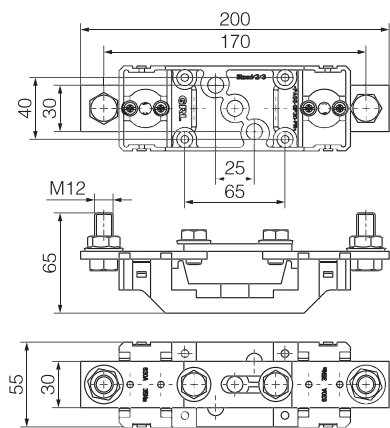
Rated current I_n	630A(500VAC,440VDC)/500A(690VAC)
Rated voltage U_e	500VAC/690VAC/440VDC
Rated Insulation Voltage U_i	690V
Rated impulse withstand voltage U_{imp}	6 kV
Break capacity (with fuse link)	120kA(500VAC)/50kA(690VAC)/ 100kA(440VDC)
Fuse link size	3
Feature	3 pole, with protective cover
Type	Fixed Type
Reference standard	IEC 60269-1, IEC 60269-2, GB/T 13539.2

DNF1

Fuse Holder



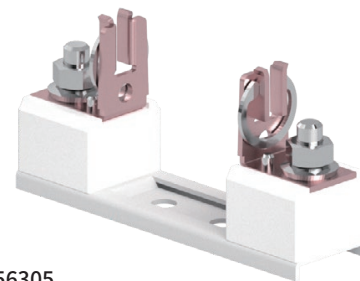
Order No.:DN56333
Model No.:DNF1-3



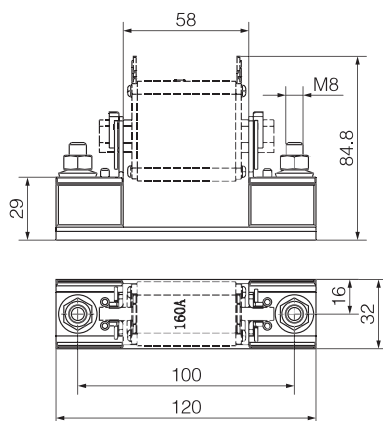
Rated current I_n	630A(500VAC,440VDC)/500A(690VAC)
Rated voltage U_e	500VAC/690VAC/440VDC
Rated Insulation Voltage U_i	690V
Rated impulse withstand voltage U_{imp}	6 kV
Feature	break type,without protective cover
Type	Fixed Type
Reference standard	IEC 60269-1, IEC 60269-2, GB/T 13539.2

DNF2

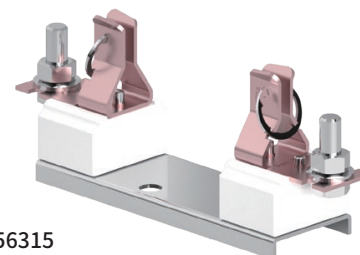
Fuse Holder



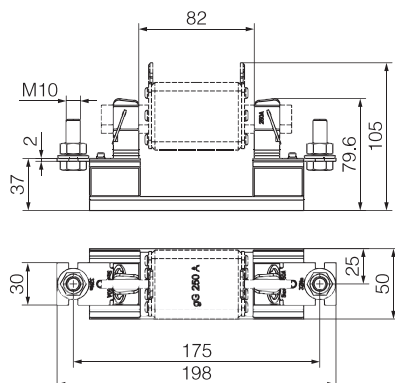
Order No.:DN56305
Model No.:DNF2-00



Rated current I_n	160A(500VAC,250VDC)/100A(690VAC)
Rated voltage U_e	500VAC/690VAC/250VDC
Rated Insulation Voltage U_i	690V
Rated impulse withstand voltage U_{imp}	6 kV
Break capacity (with fuse link)	120kA(500VAC)/50kA(690VAC)/100kA(250VDC)
Fuse link size	00
Feature	1 pole
Type	Fixed Type
Reference standard	IEC 60269-1, IEC 60269-2, GB/T 13539.2



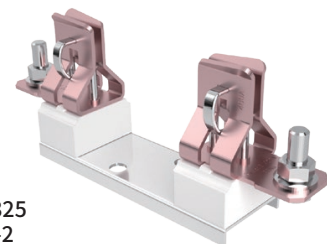
Order No.:DN56315
Model No.:DNF2-1



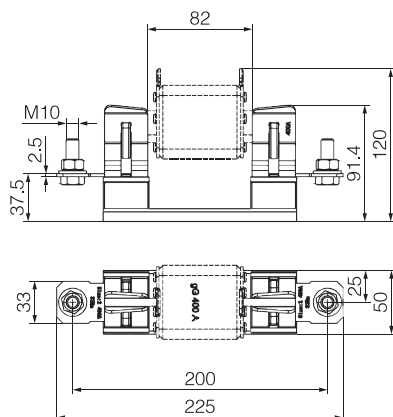
Rated current I_n	250A(500VAC,440VDC)/200A(690VAC)
Rated voltage U_e	500VAC/690VAC/440VDC
Rated Insulation Voltage U_i	690V
Rated impulse withstand voltage U_{imp}	6 kV
Break capacity (with fuse link)	120kA(500VAC)/50kA(690VAC)/100kA(440VDC)
Fuse link size	1
Feature	1 pole
Type	Fixed Type
Reference standard	IEC 60269-1, IEC 60269-2, GB/T 13539.2

DNF2

Fuse Holder



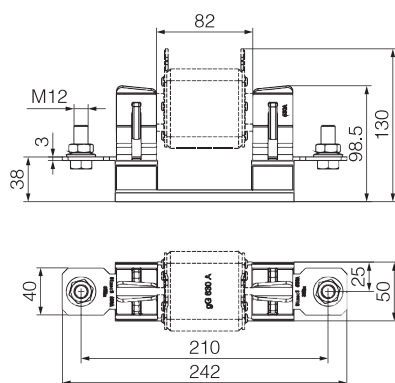
Order No.:DN56325
Model No.:DNF2-2



Rated current I_n	400A(500VAC,440VDC)/315A(690VAC)
Rated voltage U_e	500VAC/690VAC/440VDC
Rated Insulation Voltage U_i	690V
Rated impulse withstand voltage U_{imp}	6 kV
Break capacity (with fuse link)	120kA(500VAC)/50kA(690VAC)/100kA(440VDC)
Fuse link size	2
Feature	1 pole
Type	Fixed Type
Reference standard	IEC 60269-1, IEC 60269-2, GB/T 13539.2



Order No.:DN56335
Model No.:DNF2-3



Rated current I_n	630A(500VAC,440VDC)/500A(690VAC)
Rated voltage U_e	500VAC/690VAC/440VDC
Rated Insulation Voltage U_i	690V
Rated impulse withstand voltage U_{imp}	6 kV
Break capacity (with fuse link)	120kA(500VAC)/50kA(690VAC)/100kA(440VDC)
Fuse link size	3
Feature	1 pole
Type	Fixed Type
Reference standard	IEC 60269-1, IEC 60269-2, GB/T 13539.2