GRL

High Voltage Current-Limiting Fuse Series

Product Catalog

XRNP1-12/(0.5～4)-50
High Voltage Current-Limiting Fuse

Scope of Application

This document specifies the model, specifications, markings, operating conditions, technical parameters, dimensions, maintenance, and ordering guidelines for XRNP1-12/(0.5~4)-50 voltage transformer protection fuses.

Applications: AC 50Hz, rated voltage 12kV, rated current ⩽4A, for overload/short-circuit protection of voltage transformers.

Standards: GB/T 15166.2, IEC 60282-1.

Model Designation

X R N P 1 - 12 / □ - 50

- 50 — Max Breaking Capacity (kA)
- □ — Same family series rated current (A)
- 12 — Rated Voltage (kV)
- 1 — Design Code
- P — For Voltage Transformer Protection
- N — Indoor Type
- R — High Voltage Fuse
- X — Current-Limiting Type

Structure

Cylindrical design with ceramic housing, contacts, fusible element, quartz sand filler.

This product features a plug-in structure for easy installation and convenient replacement. With its compact and lightweight design, the fuse base incorporates a locking elastic clamp on the contact socket to ensure reliable installation. The fuse tube, constructed from high-strength ceramic material, offers excellent high-temperature resistance and reliable insulation performance, ensuring safety and dependability in high-current applications.

Through precision crimping of end caps, the connection strength between the tube and caps is enhanced, improving sealing integrity and overall product reliability. Utilizing pure silver fuse elements of varying diameters, the device delivers stable performance characteristics, low temperature rise, and exceptional breaking reliability during operation.

Operating Conditions

1. Ambient temperature: -25°C to +40°C
2. Altitude ⩽1000m
3.No corrosive/flammable gases or excessive humidity
4. Minimal vibration

XRNP1-12/(0.5～4)-50
High Voltage Current-Limiting Fuse

Technical Parameters

Rated Voltage (kV)	Model	Rated Current (A)	Diameter ϕ (mm)	Length (mm)	Breaking Capacity (kA)	Frequency (Hz)
12	XRNP1-12	0.5、1、2、3.15、4	Φ25.4	195	50	50

Current Characteristics of Fuses

The fuse's pre-arcing time-current characteristics conform to the curve shown in Figure 1 when the ambient air temperature is between 15°C and 30°C, while its cut-off current characteristics are illustrated in Figure 2.

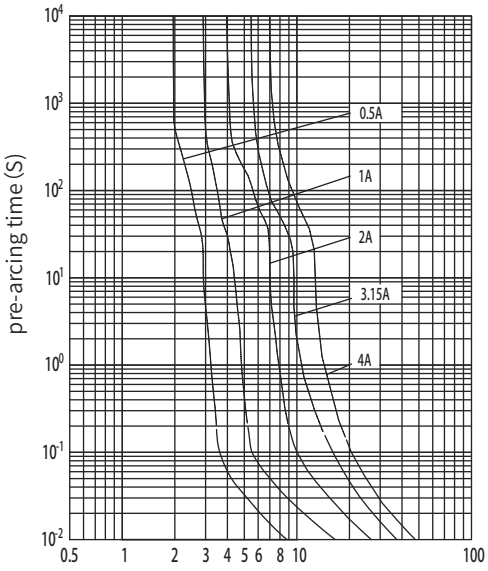


Figure 1 Pre-arcing Time-Current Characteristic Curve

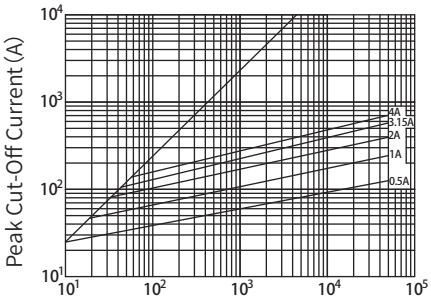
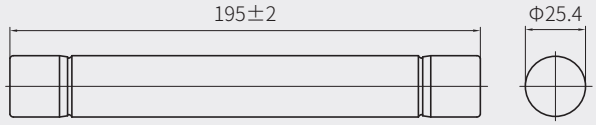


Figure 2 Cut-off Current Characteristics

Outline and Installation Dimensions

Fuse Outline Dimensions(mm)



Operation and Maintenance

1.Fuses should be stored in protective boxes before use. Any fuse that has been dropped or subjected to severe mechanical impact must be inspected for damage to the fuse base, fuse body, metal components, and ceramic tube, cleaned, and have its resistance measured before installation.

2.Fuses are generally installed horizontally but may be mounted in any orientation (horizontal or tilted). Tighten all adjustable connections to prevent overheating at contact points during operation.

3.Due to the exceptionally fine fuse element's sensitivity to corona effects, corona discharge may corrode the element over months or years, eventually triggering fuse operation. This risk can be significantly reduced by ensuring the fuse base is kept away from grounded metal frameworks, particularly avoiding the use of flanged conduits near the fuse base.

4.Always replace blown fuses with new units of identical model, specifications, and parameters. Never substitute with other devices.

5.Fuse replacement must be performed under de-energized conditions. Fuses shall not be used for switching unloaded circuits.

6.For three-phase installations, replace all three fuses if one operates, unless it is confirmed that only the activated fuse carried fault current.

7.Store products in well-ventilated areas with relative humidity ⩽85%, protected from rainwater ingress.

8.Stacking limits:Fuse bases: Maximum 4 layers，Fuses: Maximum 5 layers，Elevate containers ⩾50mm above ground.

Ordering Instructions

1.When placing orders, specify the exact product name, model, specifications, quantity, and whether fuse accessories are required.

2.Fuse ordering codes and models are listed in the table.

Rated Voltage (kV)	Ordering Code	Model	Rated Current (A)	Diameterϕ (mm)	Length (mm)
12		XRNP1-12/0.5-50	0.5	Φ25.4	195
		XRNP1-12/1-50	1		
		XRNP1-12/2-50	2		
		XRNP1-12/3.15-50	3.15		
		XRNP1-12/4-50	4		

XRNT1-12/(6.3～200)-50
High Voltage Current-Limiting Fuse

Scope of Application

XRNT1-12/(6.3-200)-50 High-Voltage Current-Limiting Backup Fuse for Transformer Protection (hereinafter referred to as "the fuse") is suitable for indoor high-voltage power systems with AC 50Hz, rated voltage 12kV, and rated current up to 200A. Under specified operational conditions, it reliably interrupts fault currents ranging from the minimum breaking current (approximately 3.5–6 times rated current, In) to the rated breaking current of 50kA, serving as a protection component against overload and short-circuit faults in power transformers and other electrical equipment within power systems.

Product Features:Reliable interruption of fault currents from minimum breaking current to rated breaking current (50kA)，High breaking capacity, stable characteristics, and low power consumption，Compatible with other switchgear (e.g., load switches, vacuum contactors)，Essential protection component for power transformers, electrical equipment, high-voltage switchgear, ring main units, and high/low-voltage prefabricated substations

Compliant Standards:GB/T 15166.2、IEC 60282-1

Model Designation

Fuse Model Designations and Their Meanings:

X R N T 1 - 12 / □ - 50

- 50: Max Breaking Capacity (kA)
- □: Same family series rated current (A)
- 12: Rated Voltage (kV)
- 1: Design Code
- T: For Transformer Protection
- N: Indoor Type
- R: High Voltage Fuse
- X: Current-Limiting Type

Equivalent Fuse Model Interpretations:

S □ □ □ J - 12 / □ - 50

- 50: Max Breaking Capacity (kA)
- □: Same family series rated current (A)
- 12: Rated Voltage (kV)
- J: Insertion Type Compliant with German DIN Standard
- □: Striker Type: N=None; D=Spring Type;
- □: Fuse Length (mm): O=192; L=292; M=442; Q=537
- □: Fuse Diameter (mm): D=51; F, K (High-Strength Ceramic)=76; X=88
- S: For Transformer Protection

XRNT1-12/(6.3～200)-50
High Voltage Current-Limiting Fuse

Operating Conditions

1. Ambient temperature: -25°C to +40°C
2. Altitude ⩽1000m
3. No corrosive/flammable gases or excessive humidity
4. Minimal vibration

Structure

The fuse features a cylindrical design compliant with German DIN standard insertion-type structure. It consists of ceramic housing, contact caps, fusible element, support core, quartz sand filler, and striker mechanism.

The fuse structure is simple, cost-effective, easy to install and replace, with stable characteristics, high breaking capacity, and excellent current-limiting effect.

The fuse tube contains a precision-engineered variable cross-section fusible element, systematically wound on the support core. The tube is fully filled with high-purity quartz sand as arc-quenching medium. When overload or short-circuit current flows through the fusible element for a specified duration, the narrow-neck sections of the ribbon element melt and vaporize first, generating arcs. The quartz sand rapidly quenches the arcs to interrupt the circuit.

Technical Parameters

Rated Voltage (kV)	Model	Equivalent Models	Rated Current (A)	Diameterφ (mm)	Length (mm)	Breaking Capacity (kA)	Frequency (Hz)
6/12	XRNT1-12	SDLDJ-12	6.3、10、16、20、25、31.5、40、50	Φ51	292	50	50
		SFLDJ-12	63、80、100	Φ76			
		SKLDJ-12	125				
		SXLDJ-12	150、160、200	Φ88			

Rated Voltage: The application range is defined by two distinct voltage values. The lower value (here 6kV) represents the minimum voltage, while the higher value indicates the maximum operating voltage.

Current Characteristics of Fuses

The fuse's pre-arcing time-current characteristics conform to the curve shown in Figure 1 when the ambient air temperature is between 15°C and 30°C, while its cut-off current characteristics are illustrated in Figure 2.

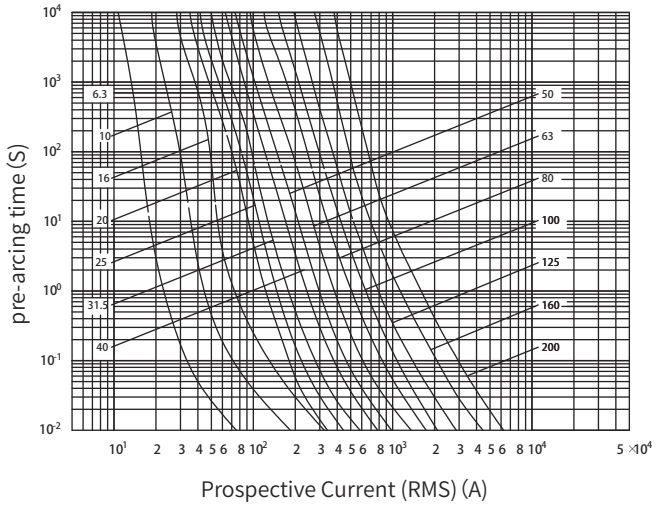


Figure 1 XRNT1-12 Pre-arcing Time-Current Characteristic Curve

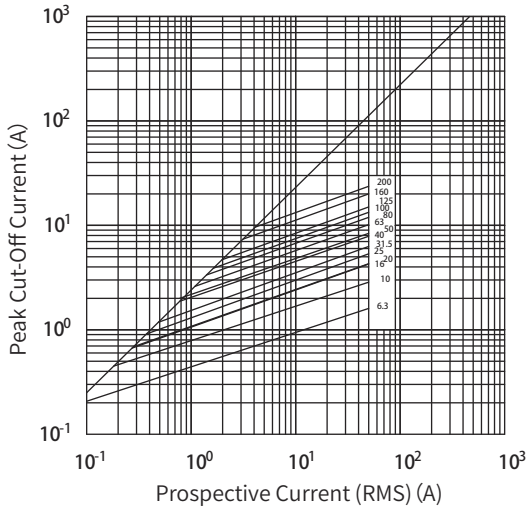


Figure 2 XRNT1-12 Cut-off Current Characteristics

XRNT1-12/(6.3～200)-50
High Voltage Current-Limiting Fuse

Outline and Installation Dimensions

Fuse Outline Dimensions: See Figure 3 and Table 2
Striker Operation Schematic: See Figure 4
Fuse Installation Schematic: See Figure 5

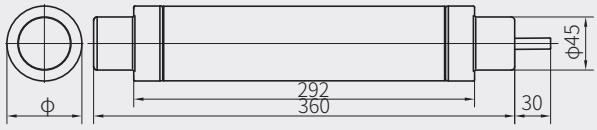


Figure 3 Fuse Outline Dimensions

Table 2 **Diameter ϕ**

Rated Current (A)	Diameter ϕ (mm)
6.3~50	ϕ51
63~125	ϕ76
150~200	ϕ88

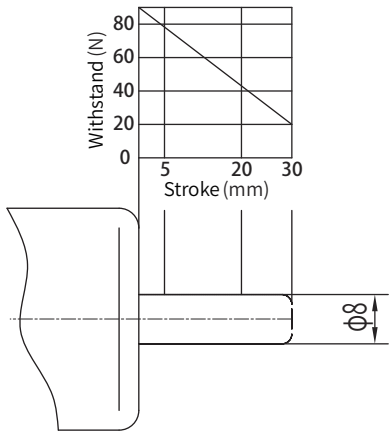


Figure 4 Striker Operation Schematic

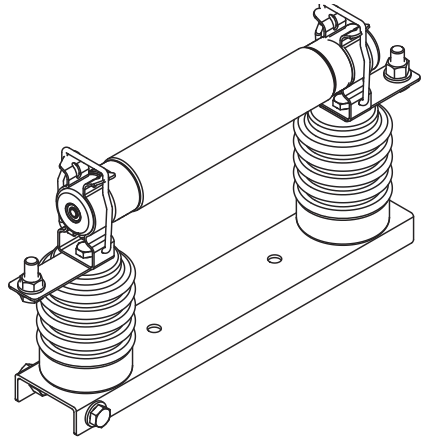


Figure 5 Fuse Installation Schematic

Operation and Maintenance

1.Fuses should be stored in protective boxes before use. Any fuse that has been dropped or subjected to severe mechanical impact must be inspected for damage to the fuse base, fuse body, metal components, and ceramic tube, cleaned, and have its resistance measured before installation.
2.Fuses are generally installed horizontally but may be mounted in any orientation (horizontal or tilted). Tighten all adjustable connections to prevent overheating at contact points during operation.
3.Due to the exceptionally fine fuse element's sensitivity to corona effects, corona discharge may corrode the element over months or years, eventually triggering fuse operation. This risk can be significantly reduced by ensuring the fuse base is kept away from grounded metal frameworks, particularly avoiding the use of flanged conduits near the fuse base.
4.Always replace blown fuses with new units of identical model, specifications, and parameters. Never substitute with other devices.
5.Fuse replacement must be performed under de-energized conditions. Fuses shall not be used for switching unloaded circuits.
6.For three-phase installations, replace all three fuses if one operates, unless it is confirmed that only the activated fuse carried fault current.
7.Store products in well-ventilated areas with relative humidity ⩽85%, protected from rainwater ingress.
8.Stacking limits:Fuse bases: Maximum 4 layers，Fuses: Maximum 5 layers，Elevate containers ⩾50mm above ground.

XRNT1-12/(6.3～200)-50
High Voltage Current-Limiting Fuse

Ordering Instructions

1. Customers must provide the following details when ordering: product name, model, specifications, quantity, fuse tube color (default: white), and whether fuse accessories are required.
2. Fuse ordering codes and models are listed in Table 3
3. The default white color applies to the domestic market.

Table 3 Fuse Ordering Codes and Models

Rated Voltage (kV)	Ordering Code	Model	Equivalent Models	Rated Current (A)	Diameter Φ (mm)	Length (mm)
6/12		XRNT1-12/6.3	SDLDJ-12/6.3	6.3	Φ51	292
		XRNT1-12/10	SDLDJ-12/10	10		
		XRNT1-12/16	SDLDJ-12/16	16		
		XRNT1-12/20	SDLDJ-12/20	20		
		XRNT1-12/25	SDLDJ-12/25	25		
		XRNT1-12/31.5	SDLDJ-12/31.5	31.5		
		XRNT1-12/40	SDLDJ-12/40	40		
		XRNT1-12/50	SDLDJ-12/50	50		
		XRNT1-12/63	SFLDJ-12/63	63	Φ76	
		XRNT1-12/80	SFLDJ-12/80	80		
		XRNT1-12/100	SFLDJ-12/100	100		
		XRNT1-12/125	SKLDJ-12/125	125		
		XRNT1-12/150	SXLDJ-12/150	150	Φ88	
		XRNT1-12/160	SXLDJ-12/160	160		
		XRNT1-12/200	SXLDJ-12/200	200		

General Selection (Recommended) for Primary Protection Fuses in Transformers See Table 4

Table 4 General Selection (Recommended) for Transformer Primary Protection Fuses

Transformer Capacity (kVA)	Transformer Primary Rated Voltage: 12kV	Fuse Model & Specifications	Fuse Outline Dimensions ϕ×L (mm)
	Fuse Rated Current (A)		
50	10	XRNT1-12/10-50	ϕ51×292
100	16	XRNT1-12/16-50	
125	16	XRNT1-12/16-50	
160	16	XRNT1-12/16-50	
200	20	XRNT1-12/20-50	
250	25	XRNT1-12/25-50	
315	31.5	XRNT1-12/31.5-50	
400	40	XRNT1-12/40-50	
500	50	XRNT1-12/50-50	
630	63	XRNT1-12/63-50	ϕ76×292
800	80	XRNT1-12/80-50	
1000	100	XRNT1-12/100-50	
1250	125	XRNT1-12/125-50	
1600	160	XRNT1-12/160-50	ϕ88×292
2000	200	XRNT1-12/200-50	

XRNT1-24/(6.3～200)-40
High Voltage Current-Limiting Fuse

Scope of Application

XRNT1—24/(6.3～200)-40 High-Voltage Current-Limiting Backup Fuse for Transformer Protection (hereinafter referred to as "the fuse") is suitable for indoor high-voltage power systems with AC 50Hz, rated voltage 24kV, and rated current up to 200A. Under specified operational conditions, it reliably interrupts fault currents ranging from the minimum breaking current (approximately 3.5–6 times rated current, In) to the rated breaking current of 40kA, serving as a protection component against overload and short-circuit faults in power transformers and other electrical equipment within power systems.

Product Features:Reliable interruption of fault currents from minimum breaking current to rated breaking current (40kA)，High breaking capacity, stable characteristics, and low power consumption，Compatible with other switchgear (e.g., load switches, vacuum contactors)，Essential protection component for power transformers, electrical equipment, high-voltage switchgear, ring main units, and high/low-voltage prefabricated substations

Compliant Standards:GB/T 15166.2、IEC 60282-1

Model Designation

Fuse Model Designations and Their Meanings:

X R N T 1 - 24 / □ - 40

- 40 — Max Breaking Capacity (kA)
- □ — Rated current (A)
- 24 — Rated Voltage (kV)
- 1 — Design Code
- T — For Transformer Protection
- N — Indoor Type
- R — High Voltage Fuse
- X — Current-Limiting Type

Equivalent Fuse Model Interpretations:

S □ □ □ J - 24 / □ - 40

- 40 — Max Breaking Capacity (kA)
- □ — Rated current (A)
- 24 — Rated Voltage (kV)
- J — Insertion Type Compliant with German DIN Standard
- □ — Striker Type: N=None; D=Spring Type;
- □ — Fuse Length (mm): O=192; L=292; M=442; Q=537
- □ — Fuse Diameter (mm): D=51; F, K (High-Strength Ceramic)=76; X=88
- S — For Transformer Protection

XRNT1-24/(6.3～200)-40
High Voltage Current-Limiting Fuse

Operating Conditions

1. Ambient temperature: -25°C to +40°C
2. Altitude ⩽1000m
3. No corrosive/flammable gases or excessive humidity
4. Minimal vibration

Structure

The fuse features a cylindrical design compliant with German DIN standard insertion-type structure. It consists of ceramic housing, contact caps, fusible element, support core, quartz sand filler, and striker mechanism.

The fuse structure is simple, cost-effective, easy to install and replace, with stable characteristics, high breaking capacity, and excellent current-limiting effect.

The fuse tube contains a precision-engineered variable cross-section fusible element, systematically wound on the support core. The tube is fully filled with high-purity quartz sand as arc-quenching medium. When overload or short-circuit current flows through the fusible element for a specified duration, the narrow-neck sections of the ribbon element melt and vaporize first, generating arcs. The quartz sand rapidly quenches the arcs to interrupt the circuit.

Technical Parameters

Rated Voltage (kV)	Model	Equivalent Models	Rated Current (A)	Diameterφ (mm)	Length (mm)	Breaking Capacity (kA)	Frequency (Hz)
10/24	XRNT1-24	SDMDJ-24	6.3、10、16、20、25、31.5、40	Φ51	442	40	50
		SFMDJ-24	50、63、80	Φ76			
		SXMDJ-24	100、125、160、200	Φ88			

Rated Voltage: The application range is defined by two distinct voltage values. The lower value (here 6kV) represents the minimum voltage, while the higher value indicates the maximum operating voltage.

Current Characteristics of Fuses

The fuse's pre-arcing time-current characteristics conform to the curve shown in Figure 1 when the ambient air temperature is between 15°C and 30°C, while its cut-off current characteristics are illustrated in Figure 2.

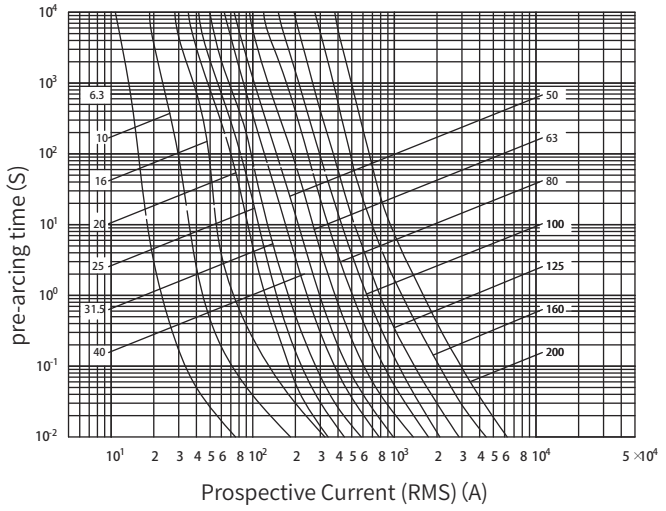


Figure 1 XRNT1-24 Pre-arcing Time-Current Characteristic Curve

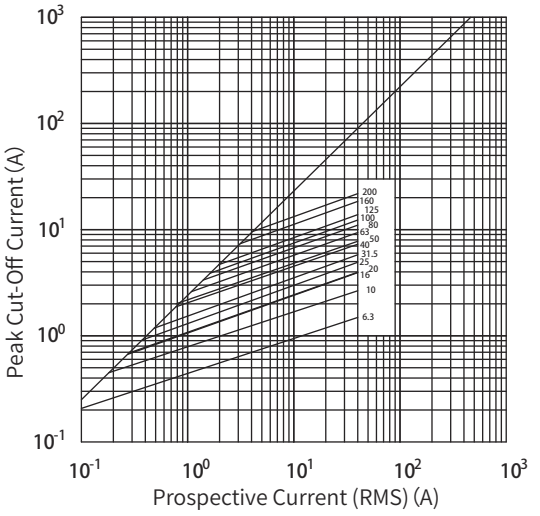


Figure 2 XRNT1-24 Cut-off Current Characteristics

XRNT1-24/(6.3～200)-40
High Voltage Current-Limiting Fuse

Outline and Installation Dimensions

Fuse Outline Dimensions: See Figure 3 and Table 2
Striker Operation Schematic: See Figure 4
Fuse Installation Schematic: See Figure 5

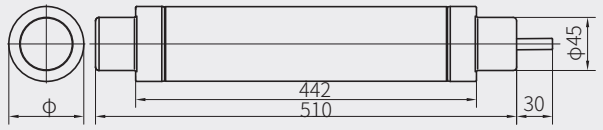


Figure 3 Fuse Outline Dimensions

Table 2 **Diameter Φ**

Rated Current (A)	Diameter Φ (mm)
6.3~40	Φ51
50~80	Φ76
100~200	Φ88

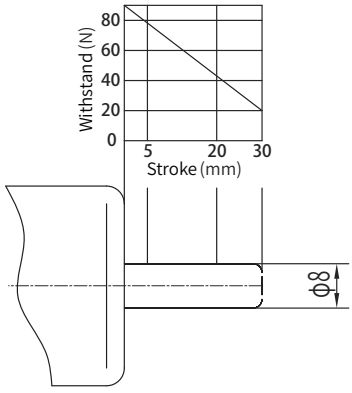


Figure 4 Striker Operation Schematic

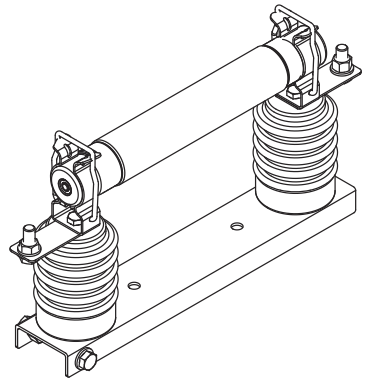


Figure 5 Fuse Installation Schematic

Operation and Maintenance

1.Fuses should be stored in protective boxes before use. Any fuse that has been dropped or subjected to severe mechanical impact must be inspected for damage to the fuse base, fuse body, metal components, and ceramic tube, cleaned, and have its resistance measured before installation.
2.Fuses are generally installed horizontally but may be mounted in any orientation (horizontal or tilted). Tighten all adjustable connections to prevent overheating at contact points during operation.
3.Due to the exceptionally fine fuse element's sensitivity to corona effects, corona discharge may corrode the element over months or years, eventually triggering fuse operation. This risk can be significantly reduced by ensuring the fuse base is kept away from grounded metal frameworks, particularly avoiding the use of flanged conduits near the fuse base.
4.Always replace blown fuses with new units of identical model, specifications, and parameters. Never substitute with other devices.
5.Fuse replacement must be performed under de-energized conditions. Fuses shall not be used for switching unloaded circuits.
6.For three-phase installations, replace all three fuses if one operates, unless it is confirmed that only the activated fuse carried fault current.
7.Store products in well-ventilated areas with relative humidity ⩽85%, protected from rainwater ingress.
8.Stacking limits:Fuse bases: Maximum 4 layers，Fuses: Maximum 5 layers，Elevate containers ⩾50mm above ground.

Ordering Instructions

1.Customers must provide the following details when ordering: product name, model, specifications, quantity, fuse tube color (default: white), and whether fuse accessories are required.
2.Fuse ordering codes and models are listed in Table 3

Table 3 Fuse Ordering Codes and Models

Rated Voltage (kV)	Ordering Code	Model	Equivalent Models	Rated Current (A)	Diameter Φ (mm)	Length (mm)
10/24		XRNT1-24/6.3	SDMDJ-24/6.3	6.3	Φ51	442
		XRNT1-24/10	SDMDJ-24/10	10		
		XRNT1-24/16	SDMDJ-24/16	16		
		XRNT1-24/20	SDMDJ-24/20	20		
		XRNT1-24/25	SDMDJ-24/25	25		
		XRNT1-24/31.5	SDMDJ-24/31.5	31.5		
		XRNT1-24/40	SDMDJ-24/40	40		
		XRNT1-24/50	SFMDJ-24/50	50	Φ76	
		XRNT1-24/63	SFMDJ-24/63	63		
		XRNT1-24/80	SFMDJ-24/80	80		
		XRNT1-24/100	SXMDJ-24/100	100	Φ88	
		XRNT1-24/125	SXMDJ-24/125	125		
		XRNT1-24/160	SXMDJ-24/160	160		
		XRNT1-24/200	SXMDJ-24/200	200		

XRNT1-36/(6.3～80)-40
High Voltage Current-Limiting Fuse

Scope of Application

XRNT1-36/(6.3-80)-40 High-Voltage Current-Limiting Backup Fuse for Transformer Protection (hereinafter referred to as "the fuse") is suitable for indoor high-voltage power systems with AC 50Hz, rated voltage 36kV, and rated current up to 80A. Under specified operational conditions, it reliably interrupts fault currents ranging from the minimum breaking current (approximately 3.5–6 times rated current, In) to the rated breaking current of 40kA, serving as a protection component against overload and short-circuit faults in power transformers and other electrical equipment within power systems.

Product Features:Reliable interruption of fault currents from minimum breaking current to rated breaking current (40kA), High breaking capacity, stable characteristics, and low power consumption, Compatible with other switchgear (e.g., load switches, vacuum contactors), Essential protection component for power transformers, electrical equipment, high-voltage switchgear, ring main units, and high/low-voltage prefabricated substations

Compliant Standards:GB/T 15166.2、IEC 60282-1

Model Designation

Fuse Model Designations and Their Meanings:

X R N T 1 - 36 / □ - 40

- 40 — Max Breaking Capacity (kA)
- □ — Same family series rated current (A)
- 36 — Rated Voltage (kV)
- 1 — Design Code
- T — For Transformer Protection
- N — Indoor Type
- R — High Voltage Fuse
- X — Current-Limiting Type

S □ □ □ J - 36 / □ - 40

- 40 — Max Breaking Capacity (kA)
- □ — Same family series rated current (A)
- 36 — Rated Voltage (kV)
- J — Insertion Type Compliant with German DIN Standard
- □ — Striker Type: N=None; D=Spring Type;
- □ — Fuse Length (mm): O=192; L=292; M=442; Q=537
- □ — Fuse Diameter (mm): D=51; F, K (High-Strength Ceramic)=76; X=88
- S — For Transformer Protection

XRNT1-36/(6.3～80)-40
High Voltage Current-Limiting Fuse

Operating Conditions

1. Ambient temperature: -25°C to +40°C
2. Altitude ⩽1000m
3. No corrosive/flammable gases or excessive humidity
4. Minimal vibration

Structure

The fuse features a cylindrical design compliant with German DIN standard insertion-type structure. It consists of ceramic housing, contact caps, fusible element, support core, quartz sand filler, and striker mechanism.

The fuse structure is simple, cost-effective, easy to install and replace, with stable characteristics, high breaking capacity, and excellent current-limiting effect.

The fuse tube contains a precision-engineered variable cross-section fusible element, systematically wound on the support core. The tube is fully filled with high-purity quartz sand as arc-quenching medium. When overload or short-circuit current flows through the fusible element for a specified duration, the narrow-neck sections of the ribbon element melt and vaporize first, generating arcs. The quartz sand rapidly quenches the arcs to interrupt the circuit.

Technical Parameters

Rated Voltage (kV)	Model	Equivalent Models	Rated Current (A)	Diameterφ (mm)	Length (mm)	Breaking Capacity (kA)	Frequency (Hz)
20/36	XRNT1-36	SDQDJ-36	6.3、10、16、20、25	Φ51	537	40	50
		SFQDJ-36	31.5、40、50	Φ76			
		SXQDJ-36	63、80	Φ88			

Rated Voltage: The application range is defined by two distinct voltage values. The lower value (here 6kV) represents the minimum voltage, while the higher value indicates the maximum operating voltage.

Current Characteristics of Fuses

The fuse's pre-arcing time-current characteristics conform to the curve shown in Figure 1 when the ambient air temperature is between 15°C and 30°C, while its cut-off current characteristics are illustrated in Figure 2.

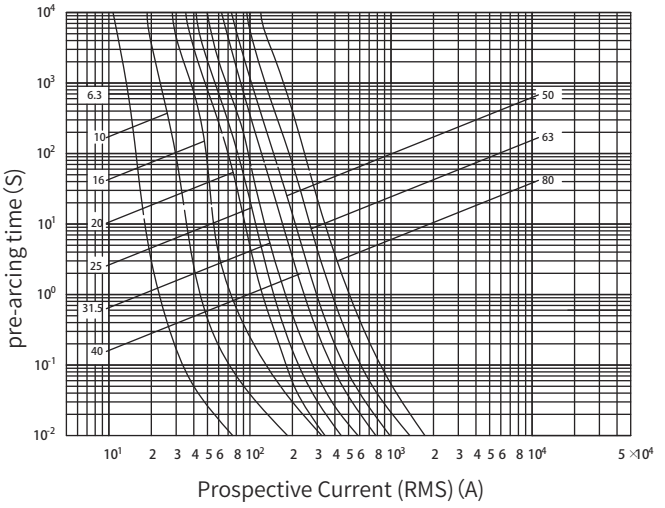


Figure 1 XRNT1-36 Pre-arcing Time-Current Characteristic Curve

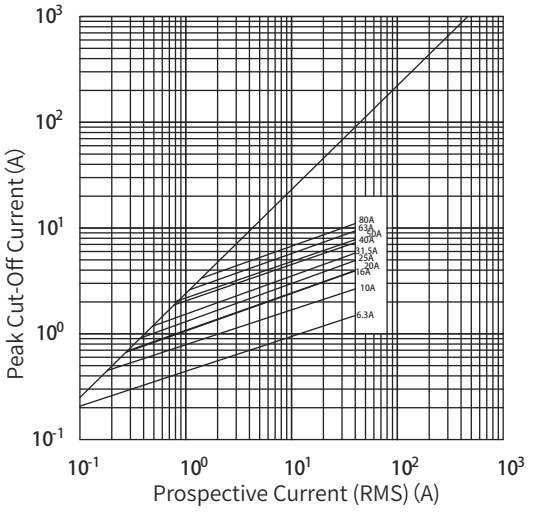


Figure 2 XRNT1-36 Cut-off Current Characteristics

XRNT1-36/(6.3～80)-40
High Voltage Current-Limiting Fuse

外形及安装尺寸

Fuse Outline Dimensions: See Figure 3 and Table 2
Striker Operation Schematic: See Figure 4
Fuse Installation Schematic: See Figure 5

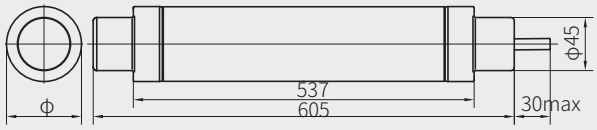


Figure 3 Fuse Outline Dimensions

Table 2 **Diameter ϕ**

Rated Current (A)	Diameter ϕ (mm)
6.3~25	ϕ51
31.5~50	ϕ76
63~80	ϕ88

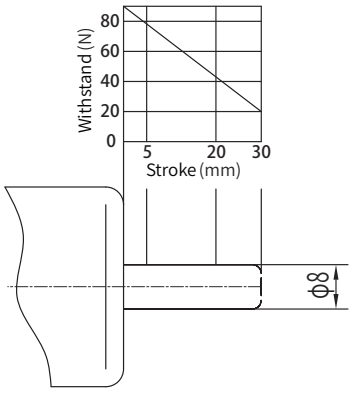


Figure 4 Striker Operation Schematic

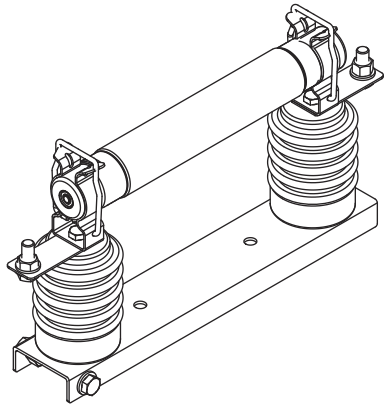


Figure 5 Fuse Installation Schematic

Operation and Maintenance

1.Fuses should be stored in protective boxes before use. Any fuse that has been dropped or subjected to severe mechanical impact must be inspected for damage to the fuse base, fuse body, metal components, and ceramic tube, cleaned, and have its resistance measured before installation.
2.Fuses are generally installed horizontally but may be mounted in any orientation (horizontal or tilted). Tighten all adjustable connections to prevent overheating at contact points during operation.
3.Due to the exceptionally fine fuse element's sensitivity to corona effects, corona discharge may corrode the element over months or years, eventually triggering fuse operation. This risk can be significantly reduced by ensuring the fuse base is kept away from grounded metal frameworks, particularly avoiding the use of flanged conduits near the fuse base.
4.Always replace blown fuses with new units of identical model, specifications, and parameters. Never substitute with other devices.
5.Fuse replacement must be performed under de-energized conditions. Fuses shall not be used for switching unloaded circuits.
6.For three-phase installations, replace all three fuses if one operates, unless it is confirmed that only the activated fuse carried fault current.
7.Store products in well-ventilated areas with relative humidity ⩽85%, protected from rainwater ingress.
8.Stacking limits:Fuse bases: Maximum 4 layers，Fuses: Maximum 5 layers，Elevate containers ⩾50mm above ground.

Ordering Instructions

1.Customers must provide the following details when ordering: product name, model, specifications, quantity, fuse tube color (default: white), and whether fuse accessories are required.
2.Fuse ordering codes and models are listed in Table 3

Table 3 Fuse Ordering Codes and Models

Rated Voltage (kV)	Ordering Code	Model	Equivalent Models	Rated Current (A)	Diameter ϕ (mm)	Length (mm)
20/36		XRNT1-36/6.3	SDQDJ-36/6.3	6.3	Φ51	537
		XRNT1-36/10	SDQDJ-36/10	10		
		XRNT1-36/16	SDQDJ-36/16	16		
		XRNT1-36/20	SDQDJ-36/20	20		
		XRNT1-36/25	SDQDJ-36/25	25		
		XRNT1-36/31.5	SFQDJ-36/31.5	31.5	Φ76	
		XRNT1-36/40	SFQDJ-36/40	40		
		XRNT1-36/50	SFQDJ-36/50	50		
		XRNT1-36/63	SXQDJ-36/63	63	Φ88	
		XRNT1-36/80	SXQDJ-36/80	80		

XRNT1-40.5/(6.3～63)-40
High Voltage Current-Limiting Fuse

Scope of Application

XRNT1-40.5/(6.3～63)-40 High-Voltage Current-Limiting Backup Fuse for Transformer Protection (hereinafter referred to as "the fuse") is suitable for indoor high-voltage power systems with AC 50Hz, rated voltage 40.5kV, and rated current up to 63A. Under specified operational conditions, it reliably interrupts fault currents ranging from the minimum breaking current (approximately 3.5–6 times rated current, In) to the rated breaking current of 40kA, serving as a protection component against overload and short-circuit faults in power transformers and other electrical equipment within power systems.

Product Features:Reliable interruption of fault currents from minimum breaking current to rated breaking current (40kA)，High breaking capacity, stable characteristics, and low power consumption，Compatible with other switchgear (e.g., load switches, vacuum contactors)，Essential protection component for power transformers, electrical equipment, high-voltage switchgear, ring main units, and high/low-voltage prefabricated substations

Compliant Standards:GB/T 15166.2、IEC 60282-1

Model Designation

Fuse Model Designations and Their Meanings:

X R N T 1 - 40.5 / □ - 40

- 40 — Max Breaking Capacity (kA)
- □ — Rated current (A)
- 40.5 — Rated Voltage (kV)
- 1 — Design Code
- T — For Transformer Protection
- N — Indoor Type
- R — High Voltage Fuse
- X — Current-Limiting Type

Equivalent Fuse Model Interpretations:

S □ □ □ J - 40.5 / □ - 40

- 40 — Max Breaking Capacity (kA)
- □ — Rated current (A)
- 40.5 — Rated Voltage (kV)
- J — Insertion Type Compliant with German DIN Standard
- □ — Striker Type: N=None; D=Spring Type;
- □ — Fuse Length (mm): O=192; L=292; M=442; Q=537
- □ — Fuse Diameter (mm): D=51; F, K (High-Strength Ceramic)=76; X=88
- S — For Transformer Protection

XRNT1-40.5/(6.3～63)-40
High Voltage Current-Limiting Fuse

Structure

The fuse features a cylindrical design compliant with German DIN standard insertion-type structure. It consists of ceramic housing, contact caps, fusible element, support core, quartz sand filler, and striker mechanism.

The fuse structure is simple, cost-effective, easy to install and replace, with stable characteristics, high breaking capacity, and excellent current-limiting effect.

The fuse tube contains a precision-engineered variable cross-section fusible element, systematically wound on the support core. The tube is fully filled with high-purity quartz sand as arc-quenching medium. When overload or short-circuit current flows through the fusible element for a specified duration, the narrow-neck sections of the ribbon element melt and vaporize first, generating arcs. The quartz sand rapidly quenches the arcs to interrupt the circuit.

Operating Conditions

1. Ambient temperature: -25°C to +40°C
2. Altitude ⩽1000m
3.No corrosive/flammable gases or excessive humidity
4. Minimal vibration

Technical Parameters

Rated Voltage (kV)	Model	Equivalent Models	Rated Current (A)	Diameterφ (mm)	Length (mm)	Breaking Capacity (kA)	Frequency (Hz)
20/40.5	XRNT1-40.5	SDQDJ-40.5	6.3、10、16	Φ51	537	40	50
		SFQDJ-40.5	20、25、31.5、40	Φ76			
		SXQDJ-40.5	50、63	Φ88			

Rated Voltage: The application range is defined by two distinct voltage values. The lower value (here 6kV) represents the minimum voltage, while the higher value indicates the maximum operating voltage.

Current Characteristics of Fuses

The fuse's pre-arcing time-current characteristics conform to the curve shown in Figure 1 when the ambient air temperature is between 15°C and 30°C, while its cut-off current characteristics are illustrated in Figure 2.

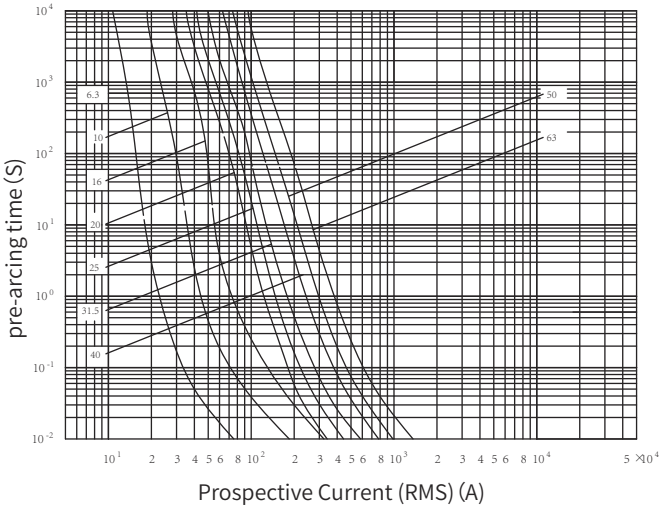


Figure 1 XRNT1-36 Pre-arcing Time-Current Characteristic Curve

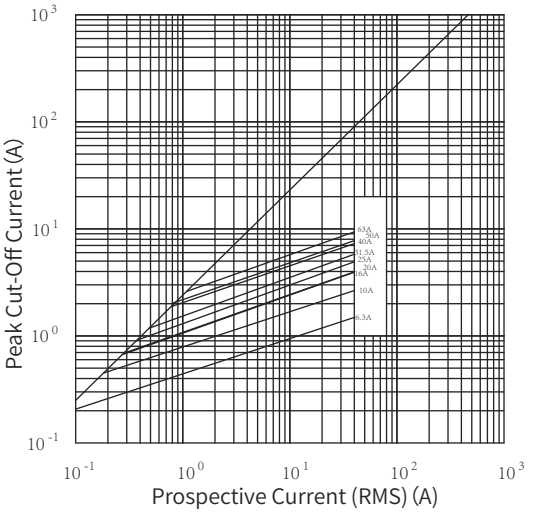


Figure 2 XRNT1-36 Cut-off Current Characteristics

Outline and Installation Dimensions

Fuse Outline Dimensions: See Figure 3 and Table 2
Striker Operation Schematic: See Figure 4
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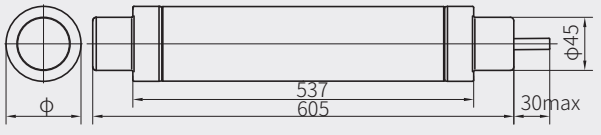

Figure 3 Fuse Outline Dimensions

XRNT1-40.5/(6.3～63)-40
High Voltage Current-Limiting Fuse

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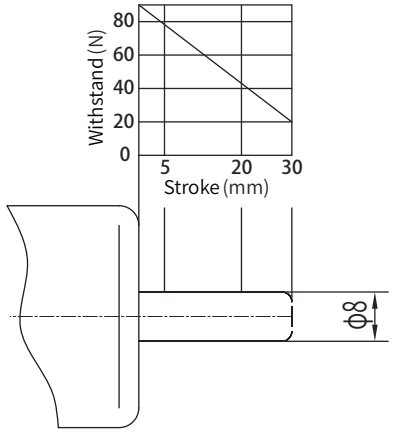
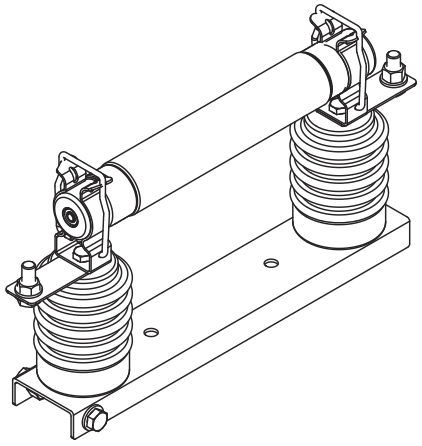


Figure 4 Striker Operation Schematic



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		XRNT1-40.5/10	SDQDJ-40.5/10	10		
		XRNT1-40.5/16	SDQDJ-40.5/16	16		
		XRNT1-40.5/20	SFQDJ-40.5/20	20	Φ76	
		XRNT1-40.5/25	SFQDJ-40.5/25	25		
		XRNT1-40.5/31.5	SFQDJ-40.5/31.5	31.5		
		XRNT1-40.5/40	SFQDJ-40.5/40	40		
		XRNT1-40.5/50	SXQDJ-40.5/50	50	Φ88	
		XRNT1-40.5/63	SXQDJ-40.5/63	63		

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