

TRSX Series Lightning box

I:Application

This product is applicable to low-voltage power supply and distribution system with power grid voltage below 1000V and frequency of 50/60Hz. It is connected to the power line of three-phase power supply and distribution system in parallel to prevent damage to power supply system and electrical equipment caused by impulse surge and transient overvoltage caused by lightning stroke.

This product has the advantages of large reserve current capacity, up to a level of 15kA (10/350us), safety and reliability, reasonable structure, and convenient installation. At the same time, it is designed with Kevin wiring method to ensure the best protection effect on the power supply system.

This power supply lightning protection box is widely used for lightning protection and overvoltage protection of the main power supply in communication equipment rooms, computer rooms, communication, power, factories, mines, finance, civil aviation, railways, and other systems.

II:Working principle

Under normal working voltage, the lightning protection module is in a high resistance state, which does not affect the normal operation of the circuit. The failure indicator light of the lightning protection box does not light up (the lightning protector is working normally). When an instantaneous pulse overvoltage occurs on the line due to lightning strikes or switch operations, the lightning arrester module quickly conducts within nanosecond time, and the lightning counter displays a cumulative count of times to short-circuit the overvoltage to the ground and release it. When the pulse overvoltage disappears, the lightning protection module automatically restores the high resistance state, without affecting the user's power supply. When the surge current is too large and the current capacity exceeds the maximum value, the lightning protection module deteriorates. The overcurrent and overheat release devices in this module will automatically disconnect the lightning protection module circuit, protecting the power circuit from being affected and preventing fires; At this point, the failure indicator light turns red, indicating that the lightning arrester is faulty and reminding the user to replace it in a timely manner.

III:Installation

(1) The lightning protection box of this power supply can only be installed by professional personnel, and the installation position is in a place that cannot be directly touched by human hands. Before installation confirm that it is a non-live installation and check if the power lightning protection box is intact. After power on, the work indicator light (green light) should light up normally, and the failure indicator light (not lit) should go out. If there is damage or the red indicator light is lit, it cannot be used.

(2) An independent air switch or fuse with a capacity of 32A–63A should be installed at the front end of the lightning protection box.

(3) Connect according to the L, N, and PE marked on the lightning protection box. The cross-sectional area of the connecting line of the phase line should not be less than 6mm^2 . The cross-sectional area of the wire connection should not be less than 10mm^2 and should be as short, flat, and straight as possible.



Lightning Box

Parameter/Type		TRSX-20	TRSX-40	TRSX-60	TRSX-80	TRSX-100
Protected mode		L-PE;N-PE				
Nominal voltage	U_n	380V AC				
Maximum operating voltage	U_c	385V AC				
Nominal discharge current (8/20 μ s)	I_n	10kA	20kA	30kA	40kA	50kA
Maximum discharge current (8/20 μ s)	I_{max}	20KA	40KA	60KA	80KA	100KA
Voltage protection level	U_p	$\leq 1,5kV$	$\leq 2,0kV$	$\leq 2,0kV$	$\leq 2,4kV$	$\leq 2,5kV$
Response time	t_a	<25ns				
The nominal cross-sectional area of the copper conductor for operation connection		Single or multiple stranded copper wire: 6mm ² - 25mm ²				
Fault indication		red indication field				
Degree of protection		IP20				
Range of operating temperatures (min/max)		-40°C~ +70°C				
Humidity range		5%~95%				
Mounting		Wall mounted installation				
According to standard		EN 61643-11:2012, IEC 61643-11:2011 / T2				
Remarks		Other U_c can be customized.(420VAC, 385VAC, 320VAC, etc.)				