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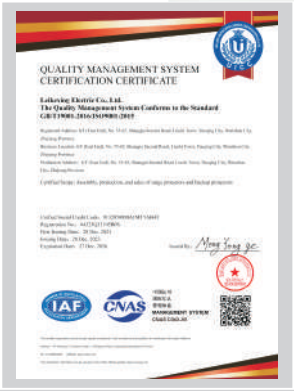
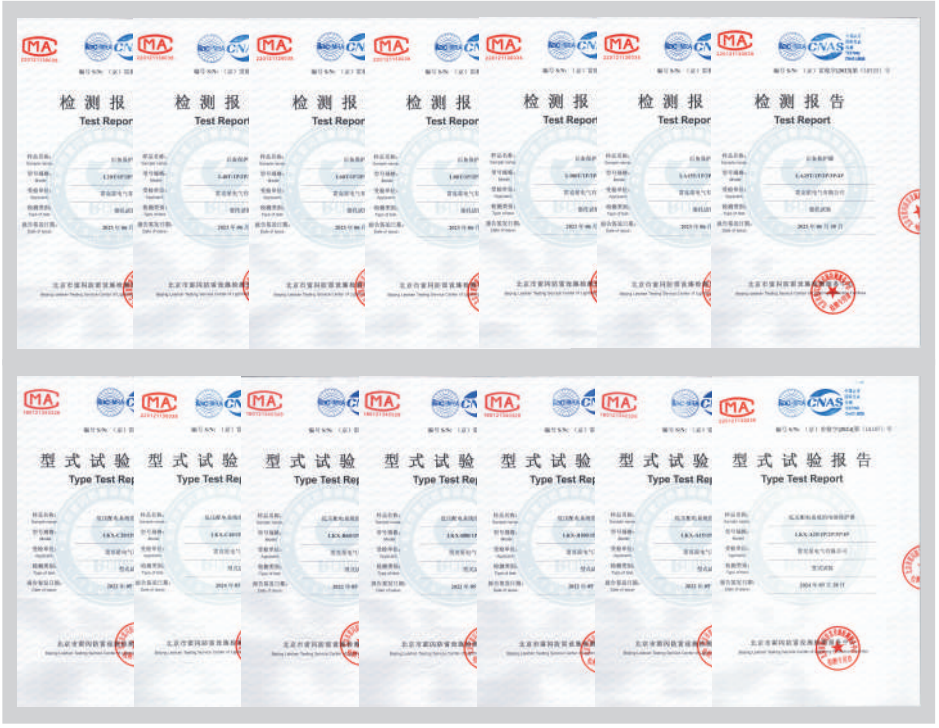
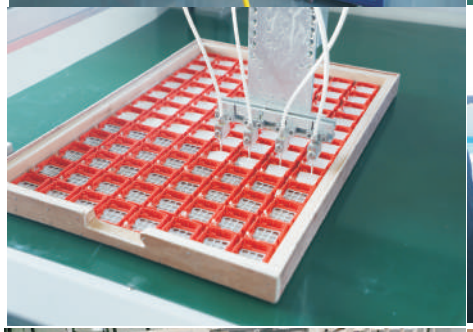
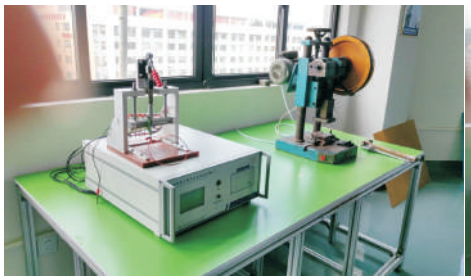
CERTIFICATES









FACTORY MAP

◆ GS-T1T2-AC/H PRODUCT-DETAILS

1. Meets both Class I (10/350μs waveform) and Class II (8/20μs waveform) SPD tests
2. Based on zinc oxide technology
3. Using 34S–H high–performance MOV,the maximum will be up to 10/350μs 8ka
4. No power frequency continuous flow
5. The operating environment temperature is –40℃~+80℃
6. Remote signaling function is optional.
7. When product fails,the green window turns to red and remote signaling provides remote alarm function

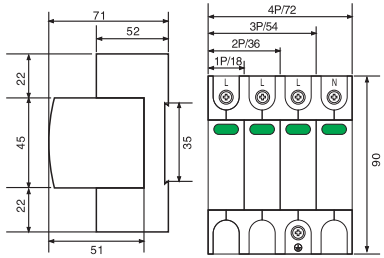
Technical Data

SPD Typ		Type 1+2/Class I+II				
Technology		Mov(Metal oxide varistors)				GDT
Protecton mode(s)		L–PE/N–PE				NPE
Nominal voltage (a.c.)	[Un]	220V	300V	380V	400V	255V
Max.continuous operating voltage(a.c.)	[Uc]	275V	320V	385V	420V	255V
Nominal discharge curpent(8/20μs)	[In]	30kA		30kA		30kA
Max.discharge current (8/20μs)	[Imax]	60kA		60kA		60kA
Lightning impulse current(10/350μs)	[Iimp]	12.5kA		9kA		12.5kA
Protection level	[Up]	⩽1.8kV	⩽2.0kV	⩽2.2kV	⩽2.4kV	⩽1.5kV
Response time	[tA]	⩽25ns				
Temporary overvoltage(TOV) withstand - 5 sec	[Ut]	335V	440V	440V	620V	335V
Admissible short-circuit current	[Isccr]	25kA				
Max.backup fuse		200A gL/Gg				

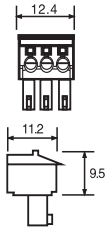
Mechanical Data

Current	AC System
SPD configuration	Single/Three phase
Plugable	Availabie
Mounting	35mm DIN rail
Material	Thermoplastic,UL 94 V-O
Operating temperature	–40℃... +80℃
Protection rating	IP20
Operating state /fauit indication	Green/Red
Remote Signaling	Optional
Wiring for remote signaling	Max 1.5mm solid/flexible
Max. Voltage/Current for remote signaling	250V/0.1A;125V/0.2A;75V/0.5A
Standards compliance	IEC 61643-11/EN 61643-11
Certificate	CE,TUV,RoHS,CB

Size



Remote Signaling



WR..+FS	05–1.5mm² AWG 28–16Cu	0.2Nm 1.7lbs–in
Working Vokage	30V DC	
Working Current	50mA	
Contacr Resistance	⩽100mΩ	
Innlation Resistance	⩾100mΩ	
Press Force	30 ± 15gf	
Life	⩾1000000	

◆ GS-T1T2-AC/N PRODUCT-DETAILS

1. Meets both Class I (10/350 μ s waveform) and Class II (8/20 μ s waveform) SPD tests
2. Based on zinc oxide technology
3. Using 34S–H high–performance MOV,the maximum will be up to 10/350 μ s 8ka
4. No power frequency continuous flow
5. The operating environment temperature is –40℃~+80℃
6. Remote signaling function is optional.
7. When product fails,the green window turns to red and remote signaling provides remote alarm function

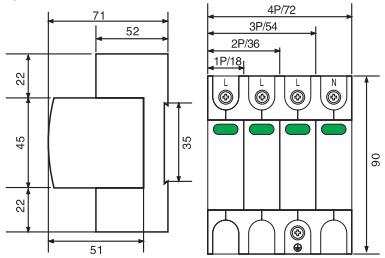
Technical Data

SPD Typ		Type 1+2/Class I+II				
Technology		Mov(Metal oxide varistors)				GDT
Protecton mode(s)		L–PE/N–PE				NPE
Nominal voltage (a.c.)	[Un]	220V	300V	380V	400V	255V
Max.continuous operating voltage(a.c.)	[Uc]	275V	320V	385V	420V	255V
Nominal discharge curpent(8/20μs)	[In]	20kA		20kA		20kA
Max.discharge current (8/20μs)	[Imax]	50kA		50kA		50kA
Lightning impulse current(10/350μs)	[Iimp]	7kA		6.25kA		7kA
Protection level	[Up]	⩽1.5kV	⩽1.6kV	⩽1.8kV	⩽2.0kV	⩽1.5kV
Response time	[tA]	⩽25ns				
Temporary overvoltage(TOV) withstand - 5 sec	[Ut]	335V	440V	440V	620V	335V
Admissible short-circuit current	[Isccr]	25kA				
Max.backup fuse		125A gL/Gg				

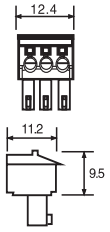
Mechanical Data

Current	AC System
SPD configuration	Single/Three phase
Plugable	Availabie
Mounting	35mm DIN rail
Material	Thermoplastic,UL 94 V-O
Operating temperature	–40℃... +80℃
Protection rating	IP20
Operating state /fauit indication	Green/Red
Remote Signaling	Optional
Wiring for remote signaling	Max 1.5mm solid/flexible
Max. Voltage/Current for remote signaling	250V/0.1A;125V/0.2A;75V/0.5A
Standards compliance	IEC 61643-11/EN 61643-11
Certificate	CE,TUV,RoHS,CB

Size



Remote Signaling



WR..+FS	05–1.5mm² AWG 28–16Cu	0.2Nm 1.7lbs–in
Working Vokage	30V DC	
Working Current	50mA	
Contacr Resistance	⩽100mΩ	
Innlation Resistance	⩾100mΩ	
Press Force	30 ± 15gf	
Life	⩾1000000	

◆ GS-T2-AC PRODUCT-DETAILS

1. Meets Class II (8/20 μ s waveform) SPD tests
2. Based on zinc oxide technology
3. Using 34S MOV,the maximum will be up to 8/20 μ s 40ka
4. No power frequency continuous flow
5. Compact,yet high surge rated pluggable design,using minimum DIN rail width
6. The operating environment temperature is –40℃~+80℃
7. Red/Green status indication and change–over contacts standard for remote monitoring.(RS485 is Option)

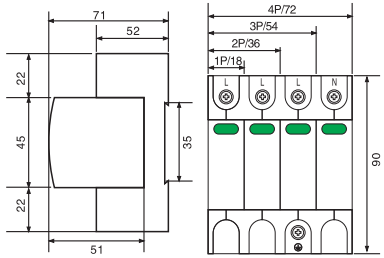
Technical Data

Pole		2P/2+0				
Technology		Mov(Metal oxide varistors)				GDT
Protecton mode(s)		L–PE/N–PE				NPE
Nominal voltage (a.c.)	[Un]	220V	300V	380V	400V	255V
Max.continuous operating voltage(a.c.)	[Uc]	275V	320V	385V	420V	255V
Nominal discharge curpent(8/20μs)	[In]	15kA				20kA
Max.discharge current (8/20μs)	[Imax]	40kA				40kA
Protection level	[Up]	⩽1.5kV	⩽1.6kV	⩽1.8kV	⩽2.0kV	⩽1.5kV
Response time	[tA]	⩽25ns				
Temporary overvoltage(TOV) withstand - 5 sec	[Ut]	335V	440V	440V	620V	335V
Admissible short-circuit current	[Isccr]	25kA				
Max.backup fuse		63A gL/Gg				

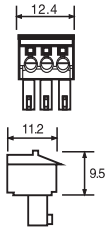
Mechanical Data

Current	AC System
SPD configuration	Single/Three phase
Plugable	Availabie
Mounting	35mm DIN rail
Material	Thermoplastic,UL 94 V-O
Operating temperature	–40℃... +80℃
Protection rating	IP20
Operating state /fauit indication	Green/Red
Remote Signaling	Optional
Wiring for remote signaling	Max 1.5mm solid/flexible
Max. Voltage/Current for remote signaling	250V/0.1A;125V/0.2A;75V/0.5A
Standards compliance	IEC 61643-11/EN 61643-11
Certificate	CE,TUV,RoHS,CB

Size



Remote Signaling



WR..+FS	05–1.5mm² AWG 28–16Cu	0.2Nm 1.7lbs–in
Working Vokage		30V DC
Working Current		50mA
Contacr Resistance		⩽100mΩ
Innlation Resistance		⩾100mΩ
Press Force		30 ± 15gf
Life		⩾1000000

◆ GS-T1T2-DC PRODUCT-DETAILS

1. Meets both Class I (10/350 μ s waveform) and Class II(8/20 μ s waveform) SPD tests
2. Based on zinc oxide technology
3. Using 34S–H high–performance MOV, the maximum will be up to 10/350us 9kA
4. No power frequency continuous flow
5. The operating environment temperature is –40℃~+80℃
6. Remote signaling function is optional.
7. When product falls, the green window turns to red and remote signaling provides remote alarm function

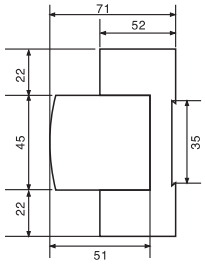
Technical Data

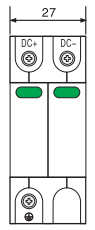
SPD Type		Type 1+2/Classl+II			
Technology		Mov(Metal oxide varistors)			
Protecton mode(s)		DC+PE.DC–/PE			
Nominal voltage (D.c.)	[Ucpv]	600V	800V	1000V	1200V
Nominal discharge curpent(8/20μs)	[In]	20kA			
Max.discharge current (8/20μs)	[Imax]	50kA			
Lightning impulse current (10/350μs)	[Iimp]	6.25kA			
Total discharae current for muitipole SPD	[Itotal]	12.5kA			
Protection level	[Up]	⩽3.2kV	⩽3.6kV	⩽4.0kV	⩽4.5kV
Response time	[tA]	⩽25ns			
Short-circuit current rating	[Iscpv]	10kA			
Max, backup fuse		125A gL/Gg			

Mechanical Data

Technology	MOV(Metal Oxide Varistors)+GDT
SPD configuration	DC system
Plugable	Availabie
Mounting	35mm DIN rail
Housing material	Thermoplastic,UL 94 V-O
Operating temperature	–40℃... +80℃
Protection rating	IP20
Operating state /fauit indication	Green/Red
Remote Signaling	Optional
Wiring for remote signaling	Max 1.5mm solid/flexible
Max. Voltage/Current for remote signaling	250V/0.1A;125V/0.2A;75V/0.5A
Test Standards	IEC 61643-31/EN 61643-31
Certification	CE,CB,RoHS,TUV

Size





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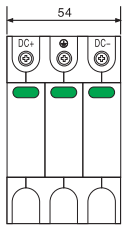


3P

◆ GS-T2-DC PRODUCT-DETAILS

1. Meets Class II (8/20s waveform) SPD tests
2. Based on zinc oxide technology
3. Using 34s MOV, the maximum will be up to 8/20 μ s 40kA
4. No power frequency continuous flow
5. The operating environment temperature is –40° C~+70° C
6. Remote signaling function is optional.
7. When product falls, the green window turns to red and remote signaling provides remote alarm function

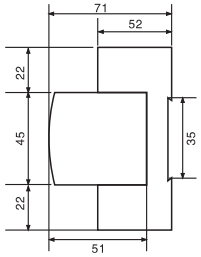
Technical Data

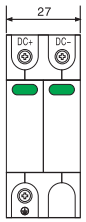
POLE		2P			
SPD Type		Type 2/ClassII			
Technology		MOV/MOV+GDT			
Protecton mode(s)		DC+PE.DC~			
Max.continuous operating voltage (D.c.)	[Ucpv]	600V	800V	1000V	1200V
Nominal discharge curpent(8/20μs)	[In]	15kA			
Max.discharge current (8/20μs)	[Imax]	40kA			
Protection level	[Up]	≤3.2kV	≤3.6kV	≤4.0kV	≤4.5kV
Response time	[tA]	≤25ns			
Short-circuit current rating	[Iscpv]	10kA			
Max, backup fuse		125A gL/Gg			

Mechanical Data

SPD configuration	DC system
Plugable	Availabie
Mounting	35mm DIN rail
Housing material	Thermoplastic,UL 94 V-O
Operating temperature	–40℃... +80℃
Protection rating	IP20
Operating state /fauit indication	Green/Red
Remote Signaling	Optional
Wiring for remote signaling	Max 1.5mm solid/flexible
Max. Voltage/Current for remote signaling	250V/0.1A;125V/0.2A;75V/0.5A
Standards compliance	IEC 61643-31/EN 61643-31
Certification	CE,CB,RoHS,TUV

Size





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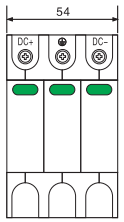


3P

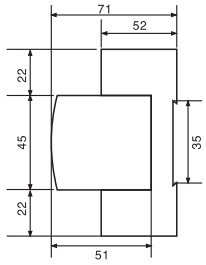
Technical Data

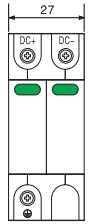
POLE		3P			
SPD Type		Type 2/ClassII			
Technology		MOV(Metal Oxide Varistors)+GDT			
Protecton mode(s)		MOV/MOV+GDT			
Max.continuous operating voltage (D.c.)	[Ucpv]	800V	1000V	1200V	1500V
Nominal discharge curpent(8/20μs)	[In]	20kA			
Max.discharge current (8/20μs)	[Imax]	40kA			
Protection level	[Up]	≤3.6kV	≤4.0kV	≤4.5kV	≤5.2kV
Response time	[tA]	≤25ns			
Short-circuit current rating	[Iscpv]	10kA			
Max, backup fuse		125A gL/Gg			

Mechanical Data

SPD configuration	DC system
Plugable	Availabie
Mounting	35mm DIN rail
Housing material	Thermoplastic,UL 94 V-O
Operating temperature	–40℃... +80℃
Protection rating	IP20
Operating state /fauit indication	Green/Red
Remote Signaling	Optional
Wiring for remote signaling	Max 1.5mm solid/flexible
Max. Voltage/Current for remote signaling	250V/0.1A;125V/0.2A;75V/0.5A
Standards compliance	IEC 61643-31/EN 61643-31
Certification	CE,CB,RoHS,TUV

Size





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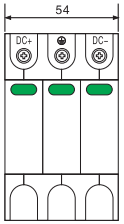


3P

DC surge protector features:

1、Improve system stability: photovoltaic surge protector can quickly consume surge voltage or current to avoid system collapse, thus enhancing system stability.

2、Extend the life of the system: by reducing the impact of environmental factors on the system, the photovoltaic surge protector helps to improve the durability of the system and extend the service life.

3、Improve System Security: protect the system from surge voltage and current damage, reduce maintenance costs and risks, improve overall security.

4、Self–protection and fault indication function: when the protection device is old or damaged, it can disconnect from the circuit in time, and notify the user to replace it by visual or remote signal, so as to improve the reliability and security of the system.

SPD wind/energy storage high voltage surge protector

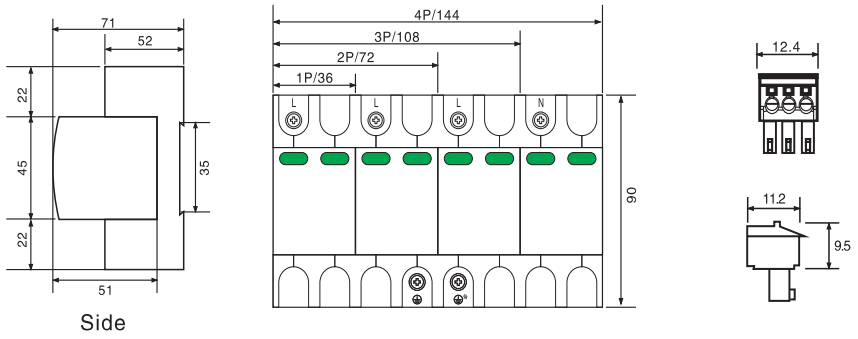
High quality materials | Extreme response | Quick power outage | Safe and reliable

SPD

PROFESSIONAL SURGE MANUFACTURERS

IEC, GB/T standards	690V	750V	850V	1140V	1200V	1500V
Uo/Un(50/60Hz)	690V	750V	850V	1140V	1200V	1500V
Uc(AC)	720V	850V	1050V	1220V	1350V	1600V
In(8/20μS)	20kA	20kA	40kA	60kA	60kA	80kA
Imax(8/20μS)	40kA	40kA	80kA	100kA	100kA	120kA
Iimp(10/350μS)	6.25kA	6.25kA	7.5kA	12.5kA	15kA	15kA
Up	2500V	3500V	4500V	5000V	5500V	6500V
Response time	<25s					
Maximum backup fuse(max)	125A/ gL/gG					
ISCCR(AC)	25kA/50kA					
Mechanical and environmental characteristics						
Operating temperature range	–40° F to+158° F(–40℃ to+70℃)					
Allowed working humidity	5%...95%					
Atmospheric pressure and altitude	80k Pa... 106k Pa/–500m...2000m					
Terminal screw torque	39.9 lbf.in [4.5Nm]					
Maximum Traverse section area(max)	2AWG (Multi–ply thread) /4AWG (Flexible Cord) 35mm² (Multi–ply thread) /25mm² (Flexible Cord)					
Installation	35mmDIN guideway, according to En60715					
Protection level	IP20					
Shell material	Fire Thermoplastic UL94V–0					
Thermal protection	Yes					
Working status/failure indication	Green/red					
Remote contact(RC)	Optional					
AC and DC switching capability	AC:250V/0.5A;DC:250V/0.1A;125V/0.2A;75V/0.5A					
Color of appearance	Module White/base royal blue					

◆ Shape and dimension drawing



Product scope of application

SPD special external disconnector is connected in series on the SPD circuit, using the internal current sorting channel device to realize the power frequency small current quick cut off;. To achieve low current SPD fire protection, lightning SPD continuous protection role; SCB products are limited to use in SPD circuit over-current protection, or backup current protection do not use other occasions.

According to the standards of GB18802.1, GB50057 and Q/thqb001 -2003, the front end of SPD circuit must be connected in series with the over-current protector required by the factory. Because the current fuses and miniature circuit breakers can not coordinate with SPD, when the power supply is abnormal or SPD deteriorates and fails, the fire and equipment are damaged by lightning. Has seriously affected the normal operation of production!

At present, a large number of miniature circuit breakers used with SPD can not be matched with the following four points:

1、Lightning current impact is very easy to damage —— lightning arrester failure;

2、The residual voltage of lightning impulse current is high —— the reliability of equipment lightning protection is reduced;

3、Power frequency continuous current not tripping--power abnormal SPD fire;

4、Accidental tripping of lightning impulse —— failure of lightning protection.

Product selection

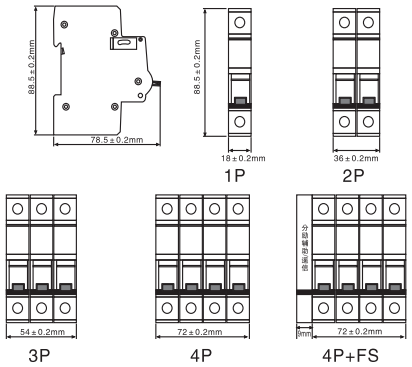
T1Class10/350 μ S

L	A	15	/	FS	/	4P
Models	Test type 1 with SPD	limp 12.5:12.5kA 15:15kA 25:25kA 50:50kA		Remote tripping alarm null: none (default) has: FS		1P 2P 3P 4P

T2Class8/20 μ S

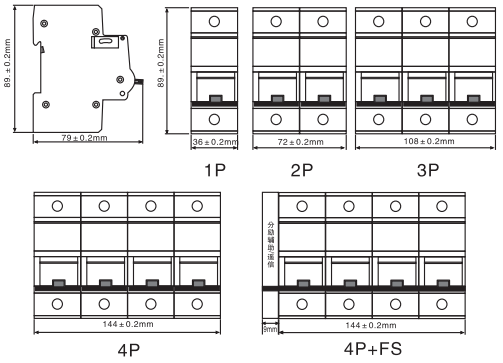
L	100	/	FS	/	4P
Models Test grade type II with SPD	Surge tolerance 20:In10kA;Imax20kA 40:In20kA;Imax40kA 60:In30kA;Imax60kA 80:In40kA;Imax80kA 100:In60kA;Imax100kA 120:In80kA;Imax120kA		Remote tripping alarm null: none (default) has: FS		1P 2P 3P 4P

T2 series main technical parameters



Model	T2(1P/2P/3P/4P)	With SPD test type is accurate	Class II
Meet the criteria	NB/T 42150-2021	Fit SPD model	LKX-C40(1P\2P\3P\4P)
Rated working voltage	230V/400V/690V AC	Remote indication function	IOF attachments can be installed
Operating frequency	50/60Hz	Rated torque	3.5N · m
Limp(10/350 μ S)	/	Wiring capacity	2.5~25mm2
Imax(8/20 μ S)	40kA		2.5~35mm2
In(8/20 μ S)	20kA	Entry mode	In and out or in and out
Rated short circuit capacity	25kA	Operating temperature	-25℃~+60℃
Minimum delay action current	3A	Mechanical life	15,000 times
Protection level	IP20	Electrical life	10000times

T1 series main technical parameters



Model	T1(1P/2P/3P/4P)	With SPD test type is accurate	Class II
Meet the criteria	NB/T 42150-2021	Fit SPD model	LKX-A15(1P\2P\3P\4P)
Rated working voltage	230V/400V/690V AC	Remote indication function	IOF attachments can be installed
Operating frequency	50/60Hz	Rated torque	3.5N · m
Limp(10/350 μ S)	15kA	Wiring capacity	2.5~25mm2
Imax(8/20 μ S)	50kA		2.5~35mm2
In(8/20 μ S)	15kA	Entry mode	In and out or in and out
Rated short circuit capacity	100kA	Operating temperature	-25℃~+60℃
Minimum delay action current	3A	Mechanical life	15000 times
Protection level	IP20	Electrical life	10000times

Product selection

LSFB – □ □ □ □ □

- Additional features FS Remote
- Combination methods (1P, 2P, 3P, 4P, 1P+N, 3P+N)
- Breaking capacity: D, Z, G
- Iimp;Imax
- I: Represents T1 class; II represents Class T2
- Backup integrated SPD

Performance characteristics

1、Large flow capacity, low residual voltage, and fast response time;
2、Low leakage current and rate of change;
3、Adopting the latest thermal separation technology to completely avoid fires;
4、Adopting special impact melting plates, with high reliability;
5、Equipped with work fault indication and remote signaling alarm function;
6、Adopting temperature control protection circuit, built–in thermal protection, and automatic disconnection device for short circuit faults;
7、Adopting standard modular design, easy installation and easy maintenance;
8、The core components adopt internationally renowned brands, with excellent performance and stable and reliable operation;
9、Rigorous structure, easy installation, and simple maintenance;
10、Crafted with exquisite craftsmanship, it can work for a long time in harsh environments such as acid, alkali, dust, salt spray, and humidity.

Technical parameters

Model		LSFB-II-20	LSFB-II-40	LSFB-II-60	LSFB-II-80	LSFB-I-12.5	LSFB-I-15
category		T2 class				T1 class	
Uc(V)		275V/385V//420V					
In(8/20μS)(kA)		10	20	30	40	30	40
Imax(8/20μS)(kA)		20	40	60	80	60	80
Iimp(10/350μS)(kA)		/	/	/	/	12.5	15
Up(kV)		1.2	1.6	1.8	2.0	1.8	2.0
Isc	D(kA)	15	15	25	25	25	25
	Z(kA)	25	25	35	35	35	35
	G(kA)	35	35	50	50	50	50
Ue(V)		230V/400V					
It(A)		≤ 3A					
response time(ns)		≤ 25ns					
Maximum terminal connection(mm^2)		25					
Maximum remote signal connection(mm^2)		1.5					
degrees of protection provided by enclosure		IP20					
Ambient Temperature(℃)		45~85					
Working environment humidity(%)		95					
altitude(m)		4000					
Installation method		35mm safety installation					

Dimensional drawing (unit: mm)

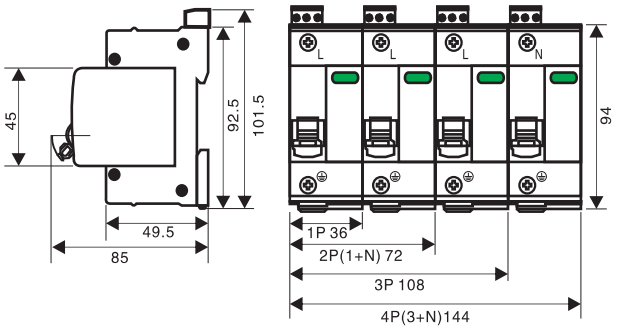


Figure 1

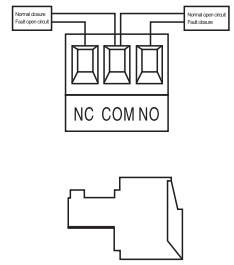


Figure 2

Installation and wiring

1、The lightning arrester is installed with 35mm guide rails and installed inside the distribution box and cabinet, paying attention to waterproofing and moisture–proof measures;
2、It is recommended to use the V–shaped wiring method as shown in Figure 5 for the installation of lightning arresters. When wiring according to Figure 5, the power supply line does not require additional fuses or backup protectors;
3、When it is not possible to use Figure 5 wiring on site, the parallel wiring method shown in the figure can also be used. When connecting in parallel, the total length of the wiring should be controlled within 0.5 meters, and it should be short and straight to minimize the lightning current path as much as possible;
4、When connecting in parallel, there is no need to use fuse F2 on the lead wire of the power lightning arrester. This product comes with an SPD dedicated pre protection switch to prevent power supply system failures caused by lightning arrester failures.
5、When remote alarm is required, depending on the different alarm systems, open circuit alarm ports or short circuit alarm ports can be selected;
6、After the product wiring is completed, check that the wiring is correct and firm. Once everything is normal, it can be powered on and put into operation.

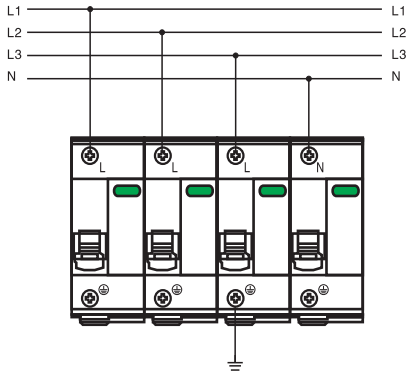


Figure 3: Parallel Connection Method

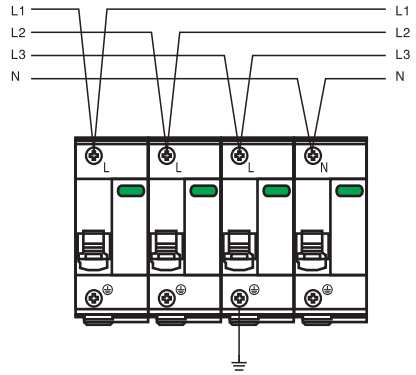


Figure 4: V–shaped wiring method