

KOLSAT

Surge Protective Device

Power supply surge protective device



LY1-D20 LY1-C40



LY1-B60

Product overview

This series surge protective device suits for 50/60Hz, 380V and below TT, IT, TN-S, TN-C-S etc. Power supply system, could be used as equipotential bonding connection between LPZ1, LPZ2 and LPZ3. Applied to IEC61643-1, GB18802.1 standard, installed in 35mm DIN rail. There has failure disengagement device built in. When surge protective device over heat, over current, or breakdown failure, failure disengagement will separate from power grid automatically, at the same time window viewer color will turn from Green(normal) to Red(fault).

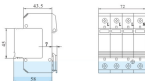
Product features

1. Protector unit can be replaced directly without replacing the base.
2. Maximum tolerance to lightning current impulse is up to 100kA(8/20 μ s).
3. Action response time is less than 25ns.
4. Visible window uses colors to show operating status, green (normal), red (fault).

Main technical parameters

Model	LY1-D20	LY1-C40	LY1-B60
Rated operating voltage Un(V)		220	
Max continuous operating voltage Uc(V)	275	420	385
Nominal discharge current In(kA)	10	20	30
Max discharge current Imax(kA)	20	40	60
Voltage protection level Up(kV)	≤ 1.2	≤ 2.0	≤ 2.1
Response time (ns)		< 25	
Min. sectional area of incoming wire L/N(mm ²)	2.5	4	4
Min. sectional area of incoming ground wire PE(mm ²)	4	6	6
Fuse or circuit breaker selection		32	
Installation	35mm standard DIN Rail		
Shell material	UL94-V0 flame retardant plastic		

Outline dimensional drawing



LY1-B80



LY1-B100

Power supply surge protective device

Product overview

This series surge protective device suits for 50/60Hz, 380V and below TT, IT, TN-S, TN-C-S etc. Power supply system, could be used as equipotential bonding connection between LPZ1, LPZ2 and LPZ3. Applied to IEC61643-1, GB18802.1 standard, installed in 35mm DIN rail. There has failure disengagement device built in. When surge protective device over heat, over current, or breakdown failure, failure disengagement will separate from power grid automatically, at the same time window viewer color will turn from Green(normal) to Red(fault).

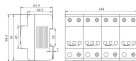
Product features

1. Maximum tolerance to lightning current impulse is up to 150kA(8/20 μ s).
2. Action response time is less than 25ns.
3. Visible window uses colors to show operating status, white (normal), red (fault).

Main technical parameters

Model	LY1-B60	LY1-B100	LY1-B120
Rated operating voltage Un(V)		200/285	
Max continuous operating voltage Uc(V)		420	
Nominal discharge current In(kA)	40	60	80
Max discharge current Imax(kA)	80	100	120
Voltage protection level Up(kV)	≤ 2.5	≤ 2.5	≤ 2.5
Response time (ns)		< 25	
Min. sectional area of incoming wire L/N(mm ²)		4	
Min. sectional area of incoming ground wire PE(mm ²)		6	
Fuse or circuit breaker selection (A)		63	
Installation	35mm standard DIN Rail		
Shell material	UL94-V0 flame retardant plastic		

Outline dimensional drawing



Power supply surge protective device



LY1-B(15KA)

Product overview

LY1-10/350 μs series switching type high energy SPD is applied to under 380V power supply system for the first level lightning protection.

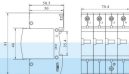
Product features

1. Integrated type SPD unit.
2. Maximum tolerance to lightning current impulse is up to 15kA(10/350μs).
3. Action response time is less than 100ns.

Main technical parameters

Model	LY1-B(15KA)
Rated operating voltage U _n (V)	220
Max continuous operating voltage U _c (V)	255
Nominal discharge current I _n (kA)	15
Impulse current I _{imp} (kA)	15
Voltage protection level U _p (kV)	≤2.0
Response time (ns)	<100
Min. sectional area of incoming wire L/N (mm ²)	6
Min. sectional area of incoming ground wire PE(mm ²)	10
Fuse or circuit breaker selection (A)	100
Installation	35mm standard DIN Rail
Shell material	UL94-V0 flame retardant plastic

Outline dimensional drawing



Power supply surge protective device



LY1-B(25KA)

Product overview

LY1-10/350 μs series switching type high energy SPD is applied to under 380V power supply system for the first level lightning protection.

Product features

1. Integrated type SPD unit.
2. Maximum tolerance to lightning current impulse is up to 25kA(10/350μs).
3. Action response time is less than 100ns.

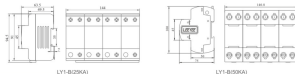


LY1-B(50KA)

Main technical parameters

Model	LY1-B(25KA)	LY1-B(50KA)
Rated operating voltage U _n (V)	220	220
Max continuous operating voltage U _c (V)	255/385	255
Impulse current I _{imp} (kA)	25	50
Voltage protection level U _p (kV)	≤2.0	≤2.0
Response time (ns)	<100	<100
Min. sectional area of incoming wire L/N (mm ²)	6	6
Min. sectional area of incoming ground wire PE(mm ²)	10	10
Fuse or circuit breaker selection (A)	100	100
Installation	35mm standard DIN Rail	35mm standard DIN Rail
Shell material	UL94-V0 flame retardant plastic	UL94-V0 flame retardant plastic

Outline dimensional drawing





LY1-C40 DC

PV surge protective device

Product overview

This series surge protective device suits for new energy solar power generation system, max. continuous working voltage has DC 500V, DC 600V, DC 1000V, DC 1200V. Installed in DC circuit main switch system, protect against indirect lightning current, direct lightning current or other instantaneous over-voltage protection.

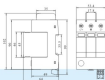
Product features

1. Plug-in type surge protective device;
2. Visible window uses colors to show operating status, green (normal), red (fault).
3. Double protection of fusing and overcurrent;
4. Remote signaling interface that realizes remote control.

Main technical parameters

Model	LY1-C40 DC			
Max continuous operating voltage U_c (V)	500	600	1000	1200
Nominal discharge current I_n (kA)	20			
Max discharge current I_{max} (kA)	40			
Voltage protection level U_p (kV)	<2.2	<2.9	<3.6	<3.8
Response time (ns)	<25			
Min. sectional area of incoming wire L/N (mm ²)	4			
Min. sectional area of incoming ground wire PE(PEV)	6			
Fuse or circuit breaker selection (A)	32			
Installation	35mm standard DIN Rail			
Shell material	UL94-V0 flame retardant plastic			

Outline dimensional drawing



PV surge protective device

Product overview

This series surge protective device suits for new energy wind power generation system, max. continuous working voltage is 690V DC. Installed in DC circuit main switch system, protect against indoor lightning current, direct lightning current or other instantaneous over-voltage protection.

Product features

1. Plug-in type surge protective device;
2. Visible window uses colors to show operating status, green (normal), red (fault).
3. Double protection of fusing and overcurrent;
4. Remote signaling interface that realizes remote control.

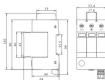


LY1-C40 DC

Main technical parameters

Model	LY1-C40 DC	
Max continuous operating voltage U_c (V)	690	
Nominal discharge current I_n (kA)	20	
Max discharge current I_{max} (kA)	40	
Voltage protection level U_p (kV)	<2.4	
Response time (ns)	<25	
Min. sectional area of incoming wire L/N (mm ²)	4	
Min. sectional area of incoming ground wire PE(PEV)	6	
Fuse or circuit breaker selection (A)	32	
Installation	35mm standard DIN Rail	
Shell material	UL94-V0 flame retardant plastic	

Outline dimensional drawing



PV miniature DC circuit breakers

Product overview

ZL7-63 small dc circuit breaker, the use of special arcing, current limiting system, can rapidly points off the fault current of dc power distribution systems, make differential cooperate gets greatly improved. Especially for electric power engineering in dc system measurement confirmed screen and electric screen above the trip between such as accident, this series has excellent performance, can avoid the above problems. Differential with characteristics of this series of products for the domestic and foreign similar products of the best. The product can protect the important components of solar photovoltaic power generation systems, photovoltaic modules from high DC current and AC feedback current caused by inverter fault, to ensure the reliable operation of solar photovoltaic power generation systems. ZL7-63 series dc circuit breaker accord with IEC60898-2 (GB10963.2-2008) "household and similar places with part 2: over current protection circuit breaker used in ac and dc circuit breaker", IEC60947-2 "low-voltage switchgear and control equipment circuit breaker in the second part", applicable to the unipolar rated dc voltage does not exceed 250 VDC, 2 is more than 500 VDC, three is more than 800 VDC, four is more than 1000 VDC and 1000 VDC, 1-63 - a rated current, rated insulation voltage 500 v line, line facilities used for buildings, and similar places over current protection, can also be used to frequent on-off operation. The circuit breaker has small volume, high breaking capacity, spring distance short, quick make and installation is convenient wait for a characteristic. This product is suitable for non-professional personnel use and don't need to be maintained. ZL7-63 series dc circuit breaker DC600V above product USES the inner edge, thus the connection mode of users and 2 p products are the same, more convenient for users to install.

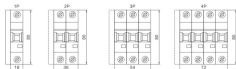


Main technical parameters

参数	1P	3P	3P	4P
Rated working voltage Un (V)	DC 250V	DC 500V	DC 600V	DC 1000V, DC 1500V
Rated working current In(A)	B curve: 1, 2, 3, 4, 5, 6, 10, 16, 20, 25, 32, 40, 50, 63 C curve: 1, 2, 3, 4, 5, 6, 10, 16, 20, 25, 32, 40, 50, 63			
Rated breaking capacity Icn(KA)(T=4ms)	6			
Curve type	B, C			
Rated impulse withstand voltage Uimp(KV)	4			
Rated insulation voltage Ui	1200			
Lifetime	With overload equipment 10000 times, Without overload equipment 20000 times			
Use environment	Ambient temperature: -25°C ~ +40°C			
With accessories	Auxiliary alarm switch shunt			
Max. wire connection size	25mm ²			
Certificate	SAA, 3C, CE			
Standard	IEC60947-2, IEC60898-2, GB10963.2, GB14048.2			

PV miniature DC circuit breakers

Outline dimensional drawing



Mode of connection

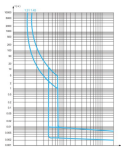


Polarity DC circuit breaker

Non-polarity DC circuit breaker

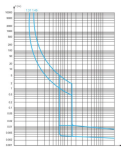
Trip and current limiting characteristics

B release curve(4~7In)



6A-63A

C release curve(7~15In)



1A-63A

PV miniature DC circuit breakers

Trip and current limiting characteristics

	Plateau capacity				
	Above sea level/m	2000	3000	4000	5000
Rated working voltage/V	500	450	400	350	
	750	675	600	525	
	1000	900	800	700	
	1250	1125	1000	875	
	1500	1350	1200	1050	
Rated working current	In	0.96In	0.93In	0.9In	

Note: Charts above is apply to GB/T 20645 special environment condition low voltage technical requirements.

Item used in IP65 combiner box rated dispersion coefficients	
Main circuit	Rated dispersion coefficient
2, 3	0.9"
4, 5	0.85"
6-9	0.8"
> 10	0.6"

Note: Different combiner box dimension and size different, this data for reference only.

Product is used either altitude 2000 m and the following, above 2000 meters down, let use, other special requirements please contact the manufacturer; ambient air temperature - 25 degrees to + 40 degrees, the average temperature is not more than 24 hours + 35 degrees; When the ambient air temperature is higher than + 40 degrees or below - 25 degrees, please contact the manufacturer; Ability affected by damp air, salt fog and mold (3).

Products by the factory setting, various features and accessories in use do not adjust at will. In users comply with the storage and use conditions from the manufacturer, from the date of delivery, no more than 18 months breaker seal in good condition, such as damage due to manufacturing quality problem or can't normal use, manufacturer is responsible for free replacement and repair. The number of product 1 p, 2 p, 3 p, 4 p tripping curve B, C

Breaking capacity of 6 ka, 10 ka rated current of 10-63 - a protection grade IP40 (positive) IP20 (terminal) using the environment temperature - 30°C to 70°C



PV fuse and holder

Product overview

LYPV series PV dedicated DC fuses mainly used for solar PV combiner box shaped solar panels and photovoltaic string inverters, which can generate current feedback generated by the circuit overload and short circuit current breaking, thus helping protect the PV modules plates, can also be used as an optional component of the electrical circuit overload and short circuit protection in any other DC circuit

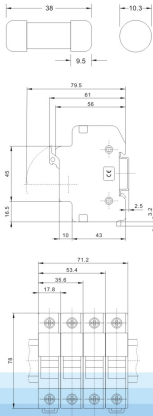
Main technical parameters

Item	Rated Current	Rated Voltage	Energy Integrals (I ² A ² s)		Watts Loss(W)	
			Pre-Arcing	Total 1000V	0.8In	In
10*38g PV	1A	1000VDC	0.15	0.4	0.8	1.5
	2A	1000VDC	1.2	3.4	0.6	1.0
	3A	1000VDC	4	11	0.8	1.3
	4A	1000VDC	9.5	26	1.0	1.5
	5A	1000VDC	19	50	1.0	1.6
	6A	1000VDC	30	80	1.1	1.8
	8A	1000VDC	3	32	1.2	2.1
	10A	1000VDC	7	70	1.2	2.3
	12A	1000VDC	12	120	1.5	2.7
	15A	1000VDC	22	220	1.7	2.9
	20A	1000VDC	34	350	2.1	3.6
25A	1000VDC	325	1000	1.65	2.91	

10*38 gPV Fuse holder	
Pole	1P, 2P, 3P, 4P
Rated voltage(VDC)	1000
Rated current(A)	1A, 2A, 3A, 4A, 5A, 6A, 8A, 10A, 12A, 15A, 20A, 25A
Rated breaking capacity(kA)	20
The most high power consumption(W)	3.5
Connection(mm ²)	2.5-10
Working temperature(°C)	-30~+70
Resistance	Class 2
Altitude(m)	<2000
Relative humidity	<95%
Protection class/degree	IP20
Pollution	3
Installation environment	No obvious shock and vibration
Installation class	Class II
Installation type	DIN rail

PV Fuse and holder

Outline dimension



MC4 solar connector



Rated current	30A
Rated voltage	1500VDC(IEC)800VDC(UL)
Ambient temperature range	-40°C~+90°C(IEC)
Degree of protection	IP67 sealed IP2X unsealed
Contact resistance of plug connectors	0.5mΩ
Contact material	Copper, tin plated
Locking system plug connectors	Snap-in(not/only MC4)
Flame class	UL94-HB/UL94-V5
Cable Size	2.5mm²/Arm7 6mm²



Rated current	30A
Rated voltage	1500VDC(IEC)800VDC(UL)
Ambient temperature range	-40°C~+90°C(IEC)
Degree of protection	IP67 sealed IP2X unsealed
Contact resistance of plug connectors	0.5mΩ
Contact material	Copper, tin plated
Locking system plug connectors	Snap-in(not/only MC4)
Flame class	UL94-HB/UL94-V5
Cable Size	2.5mm²/Arm7 6mm²



Rated current	50A
Rated voltage	1500VDC(IEC)800VDC(UL)
Ambient temperature range	-40°C~+90°C(IEC)
Degree of protection	IP67 sealed IP2X unsealed
Contact resistance of plug connectors	0.5mΩ
Contact material	Copper, tin plated
Locking system plug connectors	Snap-in(not/only MC4)
Flame class	UL94-HB/UL94-V5
Cable Size	2.5mm²/Arm7 6mm²

Power Supply SPD Backup Protector



Product features

- Parameters control the trip mechanism, and it achieves selective analysis on the through-current;
- Low residual voltage of the surge current, can compare with fuse;
- High-energy contacts with long service life;
- Compact appearance and small size are easy to cut off power supply to support SPD;
- Full specifications meet the SPD on T1, T2 and T3 levels;
- 35mm standard din rail installation/meets different countries installation requirements.



Applications

- Breaking off through power frequency current and lightning current, effectively protects SPD from fusing short-circuit due to abnormal transient overvoltage, prevents from serious fire accidents.
- Achieved selective breaking off for throughed frequency current and lightning current, effectively protects SPD from deterioration resulting in start voltage falling to less than the power supply voltage and increasing of leakage current, prevents from serious fire accidents.
- When SPD has a lightning current, the external disconnecter will not be tripped by mistake, so that lightning protection of electrical equipment is always in valid state.

Scope of application

SCB-SPD special backup protector provides professional backup protection for SPD (Surge Protection Device) which provides protection for the first level, second level and third-level equipment, it is suitable for places where SPD lightning protection equipment has been installed, such as power equipment in industrial and residential buildings, electrical, communications, road and transportation, petrochemical and other industries.

Main technical parameters

Spec. & Model	QCSCB-20	QCSCB-40	QCSCB-60	QCSCB-80	QCSCB-100	QCSCB-150						
Non-trip impulse current Ie withstand capacity	20kA(5/20)	40kA(5/20)	60kA(5/20)	80kA(5/20)	100kA(5/20)	150kA(5/20)						
Non-trip impulse current withstand capacity	10kA(5/20)16times 20kA(5/20)2times	20kA(5/20)16times 40kA(5/20)2times	40kA(5/20)16times 80kA(5/20)2times	60kA(5/20)16times 80kA(5/20)2times	80kA(5/20)16times 100kA(5/20)2times	Use the standard GB18811.1(2017) test level T1						
Electrical symbol												
Rated operating voltage Ue							230VAC					
Rated insulation voltage Ui							400VAC					
Current tripping value I _n							3 ± 1A					
Turning short-circuit capacity I _{sc} (kV·s)							≤40kA					
Power frequency short-circuit current breaking time t _{br}							≤50ms					
Mechanical life							≤4000times					
Electrical life							≤4000times					
Shell IP code							IP20					
Screw							M5					
Min. area of connecting cable							2.5mm ² /flexible					
Max. area of connecting cable							25mm ² /flexible					
Max. allowable operating current of remote signaling circuit							2A(250V)AC NO or NC (default NC)					
Shell material							PBT UL94V0					
Outline dim							91 × 73 × 17.8mm					
Protection action and ambient temperature	-25°C ~ -60°C inside switch											
Storage condition	Temperature -40°C ~ 75°C, relative humidity <95% (at 25°C)											
Service condition	Temperature -25°C ~ 60°C, relative humidity <95% (at 25°C)											
Shell color	Shell blue		Hards: orange									
Mounting rail	EN60715(35mm)											

Order guide

Model	Protection level	Imp In	Width (W)	Electrical symbol
QCSCB-15.0	T1	≤25kA(10/350µs)	35mm	
		≤15kA(10/350µs)	18mm	
QCSCB-100	T2	≤60kA(5/20µs)	18mm	
QCSCB-80			18mm	
QCSCB-60			18mm	
QCSCB-40	T2/T3	≤20kA(5/20µs)	18mm	
QCSCB-20			18mm	



Control Signal/DC Surge Protective Device

Product overview

LY10 series surge protective device is in series in front of protected equipment, mainly used in communication lines, telemetry signals, remote control signals etc. signal equipment protection. It can suppress induced over-voltage on the signal lines and protect equipment from hazards lightning induction.



LY1-10

Product overview

1. Large flow tolerance, multilevel protection.
2. Fast response, low limit voltage.
3. Protect a pair of signal lines.
4. Low insertion loss.
5. A variety of protection rated voltage for selection.

Main technical parameters

Model	LY10		
Spec	Single part		
Rated operating voltage	12V	24V	48V
Max continuous operating voltage	15V	30V	60V
Rated load current	500mA		
Flow withstand capacity	10kV/5KA		
Clamping voltage U_c (1.2/50)	80V	80V	180V
Transmission rate	10Mbps		
Insertion loss	<0.2dB		
Interface type	Connection terminal		
Protection grade	IP20		

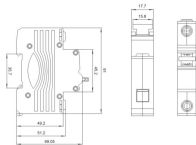
Outline dimensional drawing



Technical parameters of SCB PV power industry

Technical parameters	Level T1	Level T2	Level T2/T3
Model	QCSCB-100PV	QCSCB-60PV	QCSCB-60PV
Rated operating voltage (Ue)	600V/690V/750V	1000V/10kV	1000V/10kV
Rated insulation voltage (Ui)	900V/10kV	1200V/10kV	1200V/10kV
Application	SPD fire prevention	SPD fire prevention	SPD fire prevention
Matching SPD parameters (Imp Ln)	≤15kA(10/350μs)	≤60kA(10/20μs)	≤20kA(10/20μs)
Power frequency current tripping value	4A	4A	4A
Power frequency current breaking times	1000	1000	1000
Power frequency short-circuit current breaking capacity (I _{cs})	0.5kA	0.5kA	0.5kA
Max. wiring of terminal	25mm ²	25mm ²	25mm ²
Protection class of shell	IP20	IP20	IP20
Ambient temperature for operation	-25°C-60°C	-25°C-60°C	-25°C-60°C
Ambient temperature for storage	-40°C-75°C	-40°C-75°C	-40°C-75°C
Ambient temperature for operation	20%-90%	20%-90%	20%-90%
Mounting rail	En60715(35mm)	En60715(35mm)	En60715(35mm)
Remark	Switching type SDP should be matched with multi-gap		

Outline dimensional drawing



New structure new color of power supply SPD

