

TS1 Series Surge Protective Device



TS1-D/2-320-5

TS1-C/2-320-20

TS1-B/4-385-30

TS2 Series Surge Protective Device



TS2-30/2.5

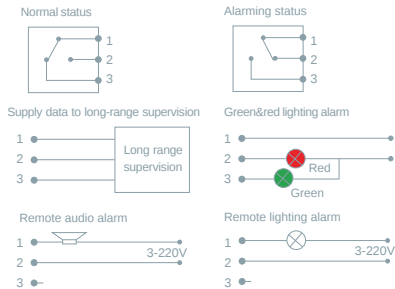
TS2-60/2.5

Introduction

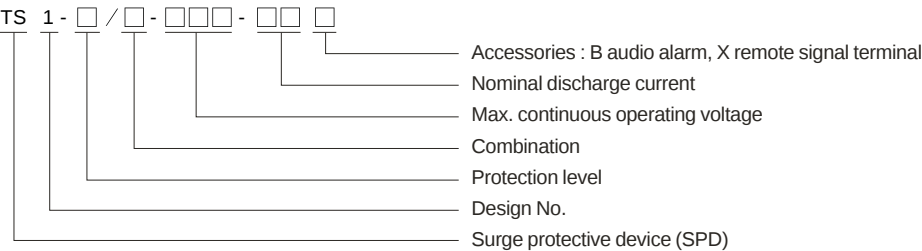
TS1 series products have a good discharge capacity. This series is suitable for protection level - C (Class 2) and level-D (Class 3) of low voltage power system. You can select different combination wiring methods according to different power supply system.

- Energy - rich voltage dependent resistor, nanosecond level speed of response;
 - Capacity of overheated and surge protection;
 - Visual display instruction¹⁾ and remote signal terminal²⁾;
- 1)A visual display on the protector about its operation;
- 2)A terminal effecting the long-distance monitor the operation of the protector, outside connecting lines needed;
- Convenient to be pulled or inserted, possible to remove failed module;
 - DIN rail 35mm installation

Wiring diagram of remote signal terminal



Denominated indication



Performance parameters			
Type	TS1-C	TS1-D	TS1-N-PE
	Limiting type	Limiting type	Switching type
Max. continuous operating voltage ² Uc (V)	385	320	255
Nominal discharge current In 8/20μs(kA)	20	10	40
Max. load current Imax 8/20μs(kA)	40	20	60
Voltage protection level Up (kV)	1.8	1.5	1.0
Fuse	32	20	-
Functional indication	Green window: functional; red window: failed		
Remote signal contacts	A couple of NO, NC contacts		
Audio alarm	Optional		
Wiring capacity	1.5~35mm ²		
Dimension	See drawing		
House material	Complied with UL94V-0		
House protection level	IP20		
Installation method	35mm DIN rail		

Note1): Max. Continuous operating voltage optional:275V, 320V, 385V, 420V, 485V and 550V .

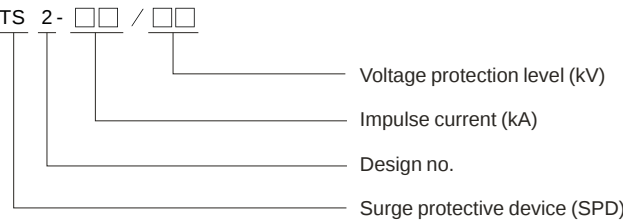
Dimension

Circuit Diagram

Introduction

- TS2 series products are comply with testing condition Class1 in GB18802.1-2002 standard. This series is suitable for protection level B (Class 1)of low voltage power system.
- Great energy and resistance;
 - Safe and reliable;
 - No leakage current;
 - DIN rail 35mm installation

Denominated indication



Performance parameters				
Type	TS2-30/2.5	TS2-30/4.0	TS2-60/2.5	TS2-60/4.0
	Switching type	Switching type	Switching type	Switching type
Max. continuous operating voltage ² Uc (V)	255	255	255	255
Load capacity Q	15As	15As	30As	30As
Max. load current Iimp 8/20μs(kA)	30	30	60	60
Nominal discharge current In 8/20μs(kA)	100	100	200	200
Voltage protection level Up (kV)	2.5	4.0	2.5	4.0
Fuse	125A	125A	250A	250A
Follow current interrupting-rating	4.5kA/255V			
Wiring capacity	4~35mm ²			
Dimension	90×36×62			
House material	Complied with UL94V-0			
House protection level	IP20			
Installation method	35mm DIN rail			

Note1): Max. Continuous operating voltage optional:385V and 420V.

Dimension

Circuit Diagram

TS3 Series Surge Protective Device



TS3-275



TS3-320

TS4 Series Surge Protective Device



TS4-60/4-385



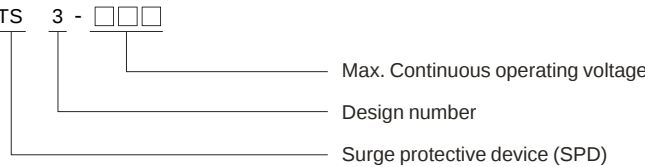
TS4-100/4-385

Introduction

TS3 series products can protect two lines within width specification of SPD module. This series is suitable for protection level B (Class 1) of low voltage power system.

- Energy - rich voltage dependent resistor, nanosecond level speed of response;
- Capacity of overheated and surge protection;
- Visual display instruction;
- DIN rail 35mm installation.

Denominated indication

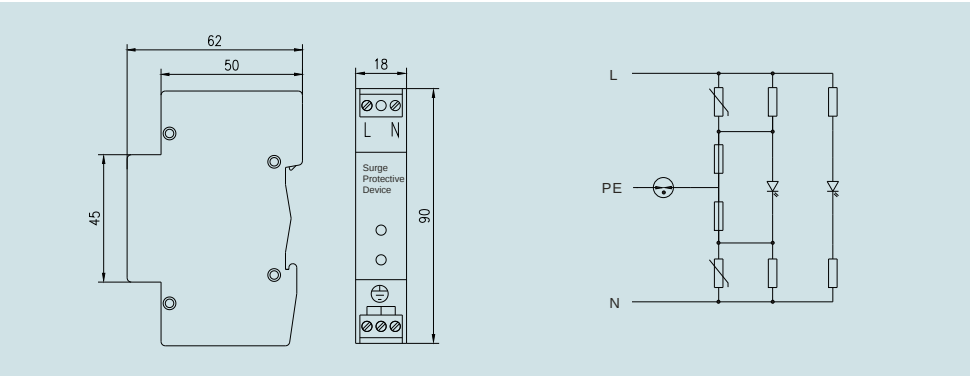


Performance parameters

Type	TS3-320	TS3-275
	Compound type	Compound type
Max. Continuous operating voltage ¹⁾ Uc (V)	320	275
Nominal discharge current In 8/20μs(kA)	5	5
Max. load current Imax 8/20μs(kA)	10	10
Voltage protection level Up (kV)	1.0	0.8
Functional indication	Green window: functional; red window: failed	
Wiring capacity	1~2.5mm ²	
Dimension	90 × 18 × 62	
House material	Complied with UL94V-0	
House protection level	IP20	
Installation method	35mm DIN rail	

Note1): Max. Continuous operatingvoltage optional: 275V, 320V, 385V, 420V485V and 550V .

Dimension

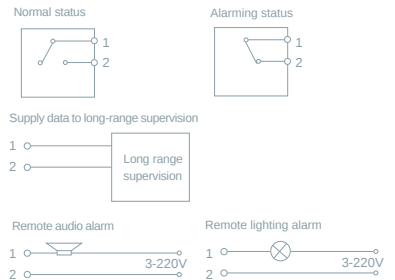


Introduction

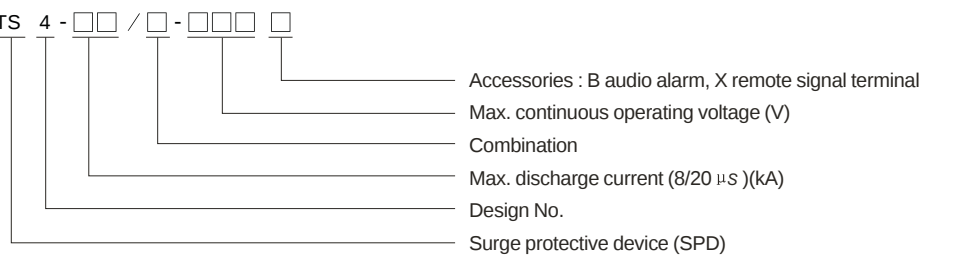
TS4 series products have a good discharge capacity, its max. discharge current can be 60~100kA of single module. This series is suitable for protection level B (Class 1) of low voltage power system. You can select different combination wiring methods according to different power supply system.

- Energy - rich voltage dependent resistor, nanosecond level speed of response;
 - Capacity of overheated and surge protection;
 - Visual display instruction and remote signal terminal²⁾;
- 1)A visual display on the protector about its operation;
2) A terminal effecting the long-distance monitor the operation of the protector, outside connecting lines needed;
- Convenient to be pulled or inserted, possible to remove failed module;
 - DIN rail 35mm installation

Wiring diagram of remote signal terminal



Denominated indication

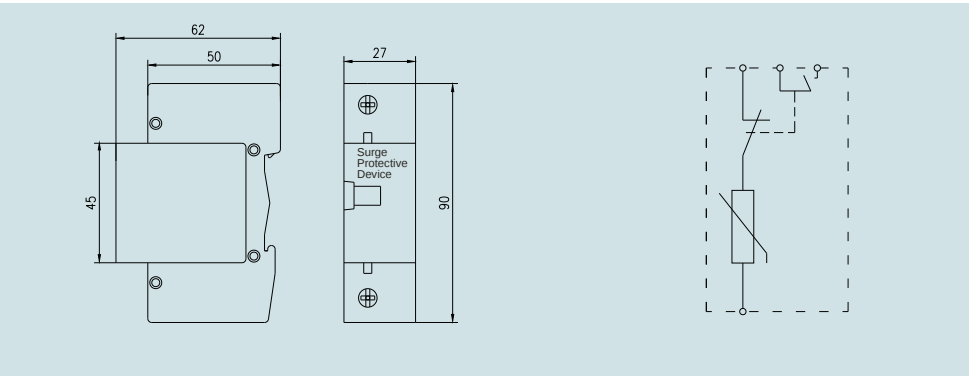


Performance parameters

Type	TS4-60	TS4-80	TS4-100
	Limiting type	Limiting type	Limiting type
Max. continuous operating voltage ¹⁾ Uc (V)	385	385	385
Nominal discharge current In 8/20μs(kA)	30	40	50
Max. load current Imax 8/20μs(kA)	60	80	100
Voltage protection level Up (kV)	2.0	2.5	3.0
Fuse	63	100	125
Functional indication	Green window: functional; red window: failed		
Remote signal contacts	A NO contact		
Wiring capacity	1.5~35mm ²		
Dimension	90 × 27 × 62		
House material	Complied with UL94V-0		
House protection level	IP20		
Installation method	35mm DIN rail		

Note1): Max. Continuous operatingvoltage optional:275V, 320V, 385V, 420V485V and 550V .

Dimension



TS5 Series Surge Protective Device



TS5-150-385



TS5-120-385

TS6 Series Surge Protective Device



TS6-40/2-385



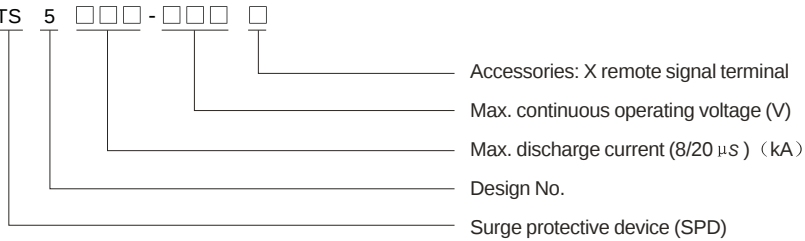
TS6-40/4-385

Introduction

TS5 series products have a good discharge capacity, its max. discharge current can be 150kA of single module. This series is suitable for protection level B (Class 1) of low voltage power system. You can select different combination wiring methods according to different power supply system.

- Energy - rich voltage dependent resistor, nanosecond level speed of response;
 - Capacity of overheated and surge protection;
 - Visual display instruction¹ and remote signal terminal²;
- 1) A visual display on the protector about its operation;
- 2) A terminal effecting the long-distance monitor the operation of the protector, outside connecting lines needed;
- DIN rail 35mm installation

Denominated indication



Performance parameters

Type	TS5-150	TS5-120
	Limiting type	Limiting type
Max. continuous operating voltage ¹ Uc (V)	385	385
Nominal discharge current In 8/20μs(kA)	80	60
Max. load current Imax 8/20μs(kA)	150	120
Voltage protection level Up (kV)	3.0	2.5
Fuse	200	125
Functional indication	Green window: functional; red window: failed	
Wiring capacity	1.5~35mm ²	
Dimension	96 × 36 × 67	
House material	Complied with UL94V-0	
House protection level	IP20	
Installation method	35mm DIN rail	

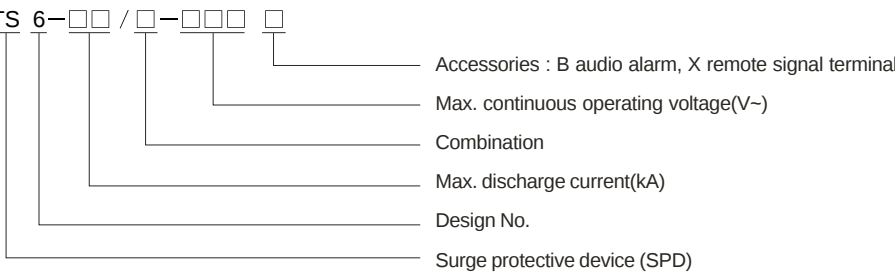
Note1): Max. Continuous operating voltage optional: 275V, 320V, 385V, 420V, 485V and 550V .

Introduction

TS6 series products have a good discharge capacity, its max. discharge current can be 40~60kA of single module. This series is suitable for protection level-C (Class 2) of low voltage power system. You can select different combination wiring methods according to different power supply system.

- Energy - rich voltage dependent resistor, nanosecond level speed of response;
 - Capacity of overheated and surge protection;
 - Visual display instruction¹ and remote signal terminal²;
- 1) A visual display on the protector about its operation;
- 2) A terminal effecting the long-distance monitor the operation of the protector, outside connecting lines needed;
- Convenient to be pulled or inserted, possible to remove failed module;
 - External dimensions conform to the modulus electric appliance standard, which is convenient for combination of terminal electric appliances;
 - Independent single module instruction;
 - DIN rail 35mm installation

Denominated indication

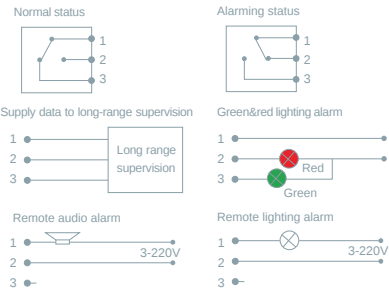


Performance parameters

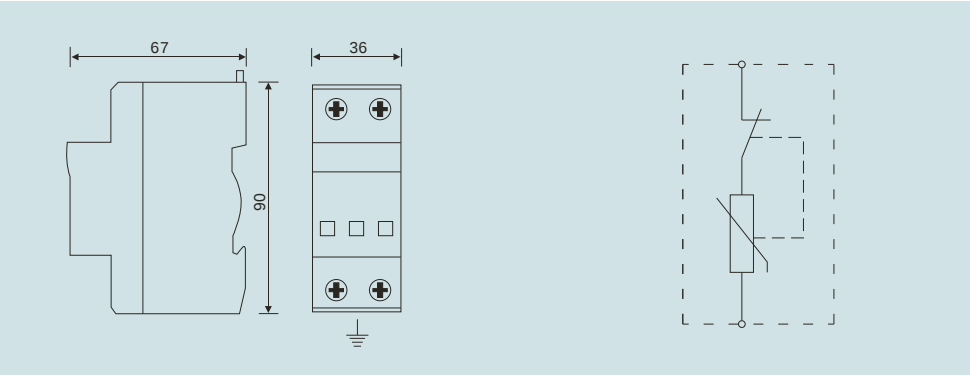
Type	TS6-60	TS6-40	TS6-N-PE
	Limiting type	Limiting type	Switching type
Max. continuous operating voltage ¹ Uc (V)	385	385	255
Nominal discharge current In 8/20μs(kA)	30	20	40
Max. load current Imax 8/20μs(kA)	60	40	60
Voltage protection level Up (kV)	1.8	1.8	1.0
Fuse	63	32	-
Functional indication	Green window: functional; red window: failed		
Remote signal contacts	A couple of NO, NC contacts		
Wiring capacity	1.5~25mm ²		
Dimension	See drawing		
House material	Complied with UL94V-0		
House protection level	IP20		
Installation method	35mm DIN rail		

Note1): Max. Continuous operating voltage optional: 275V, 320V, 385V, 420V, 485V and 550V .

Wiring diagram of remote signal terminal

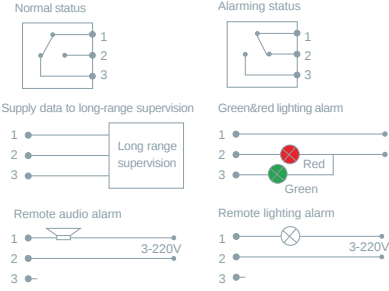


Dimension

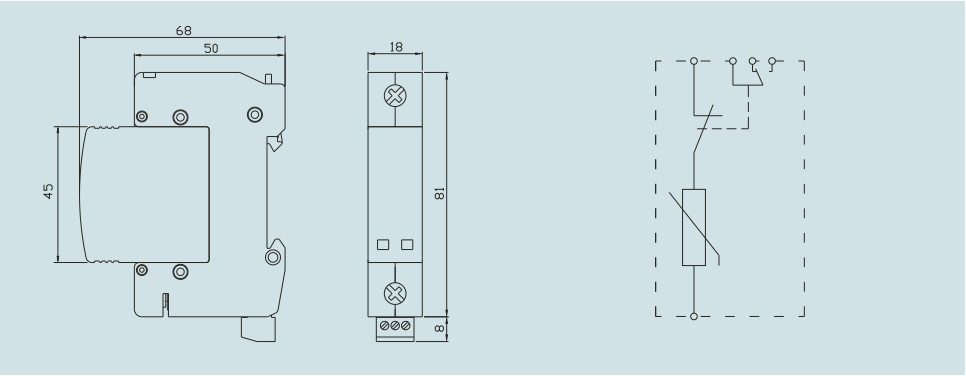


Circuit Diagram

Wiring diagram of remote signal terminal



Dimension



Circuit Diagram

TS7 Series Surge Protective Device



TS7-10/2-275



TS7-40/4-385



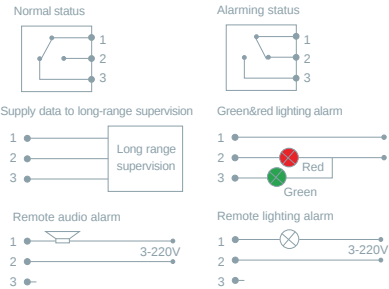
TS7-60/4-385

Introduction

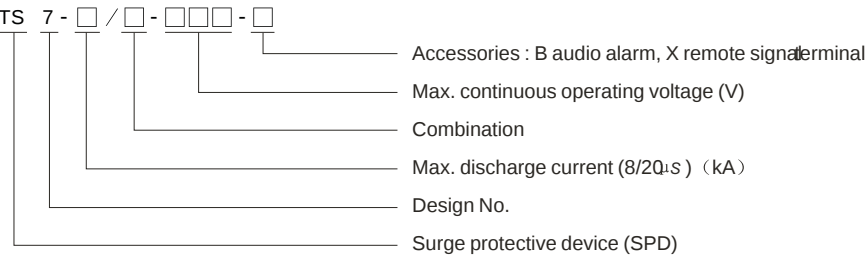
TS7 series products have a good discharge capacity. This series is suitable for protection level - C (Class 2) and level-D (Class 3) of low voltage power system. You can select different combination wiring methods according to different power supply system.

- Energy - rich voltage dependent resistor, nanosecond level speed of response;
- Capacity of overheated and surge protection;
- Visual display instruction and remote signal terminal²⁾;
- 1)A visual display on the protector about its operation;
- 2)A terminal effecting the long-distance monitor the operation of the protector, outside connecting lines needed;
- Convenient to be pulled or inserted, possible to remove failed module;
- DIN rail 35mm installation

Wiring diagram of remote signal terminal



Denominated indication



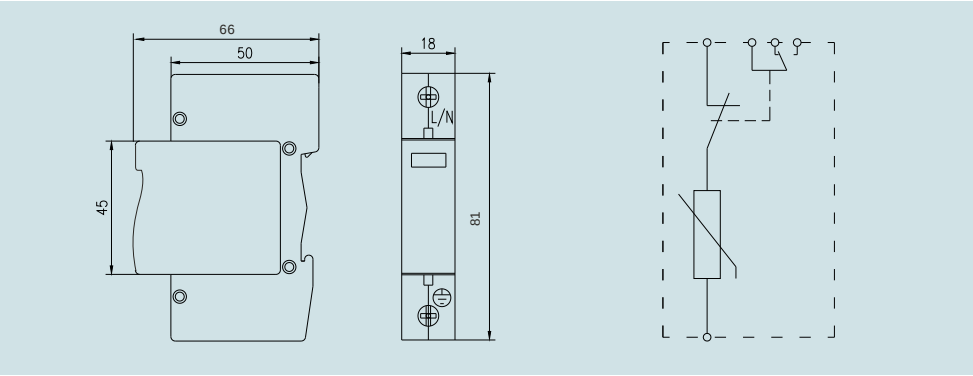
Performance parameters

Type	TS7-60	TS7-40	TS7-20
	Limiting type	Limiting type	Limiting type
Max. continuous operating voltage ¹⁾ Uc (V)	385	320	320
Nominal discharge current In 8/20μs(kA)	30	20	10
Max. load current Imax 8/20μs(kA)	60	40	20
Voltage protection level Up (kV)	2.0	1.8	1.5
Fuse	32	20	20
Functional indication	Green window: functional; red window: failed		
Remote signal contacts	A couple of NO, NC contacts		
Audio alarm	Optional		
Wiring capacity	1.5~35mm ²		
Dimension	See drawing		
House material	Complied with UL94V-0		
House protection level	IP20		
Installation method	35mm DIN rail		

Note1): Max. Continuous operating voltage optional:275V, 320V, 385V, 420V/485V and 550V .

Dimension

Circuit Diagram



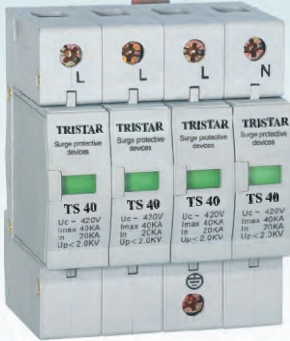
TS10,10T, 20,40 Series Surge Protective Device



TS10-40/2-320



TS20-40/4-275



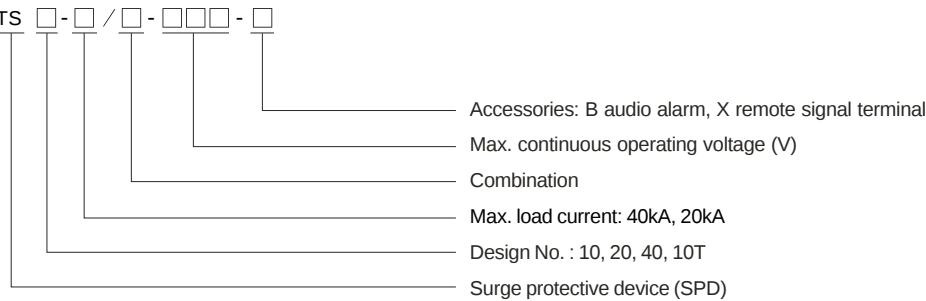
TS40-40/4-420

Introduction

TS10, TS10T, TS20, and TS40 series products have a good discharge capacity, its max. discharge current can be 20~40kA of single module. This series is suitable for protection level-C (Class 2) and level-D (Class 3) of low voltage power system. You can select different combination wiring methods according to different power supply system.

- Energy - rich voltage dependent resistor, nanosecond level speed of response;
- Capacity of overheated and surge protection;
- Visual display instruction and remote signal terminal²⁾;
- 1)A visual display on the protector about its operation;
- 2)A terminal effecting the long-distance monitor the operation of the protector, outside connecting lines needed;
- Convenient to be pulled or inserted, possible to remove failed module;
- DIN rail 35mm installation

Denominated indication



Performance parameters

Type	TS40	TS20	TS10
	Limiting type	Limiting type	Limiting type
Max. continuous operating voltage ¹⁾ Uc (V)	385	320	420
Nominal discharge current In 8/20μs(kA)	20	20	20
Max. load current Imax 8/20μs(kA)	40	40	40
Voltage protection level Up (kV)	1.8	1.5	1.8
Fuse	32A	32A	32A
Functional indication	Green window: functional; red window: failed		
Remote signal contacts	A couple of NO, NC contacts		
Wiring capacity	1.5~35mm ²		
House material	Complied with UL94V-0		
House protection level	IP20		
Installation method	35mm DIN rail		

Note1): Max. Continuous operating voltage optional:275V, 320V, 385V, 420V, 485V and 550V .



TS10T-40/3+1-385



TS20-40/2-440



TS40-40/2-420

TSR1 Box Surge Protective Device

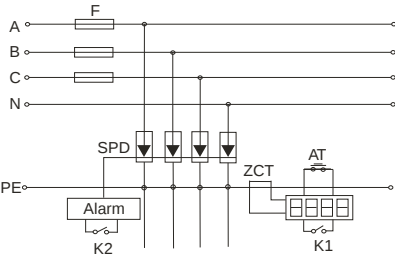


Introduction

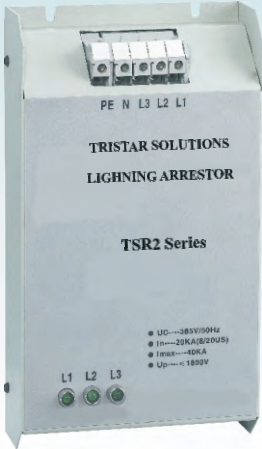
TSR1 series products are surge protective boxes for power supply, it is suitable for protection level-C (Class 2) and level-D (Class 3) of low voltage power system. You can select different combination wiring methods according to different power supply system.

- Energy-rich voltage dependent resistor, nanosecond level speed of response;
 - Capacity of overheated and surge protection;
 - Visual display instruction and remote signal terminal;
- 1) A visual display on the protector about its operation;
- 2) A terminal effecting the long-distance monitor the operation of the protector, outside connecting lines needed;
- Multi-functions: alarms if any poles or neutral failed;
 - Alarm if operation failed. Function of lightning strike counter;
 - Module design convenient to use.

Electric principle



TSR2 Box Surge Protective Device



Introduction

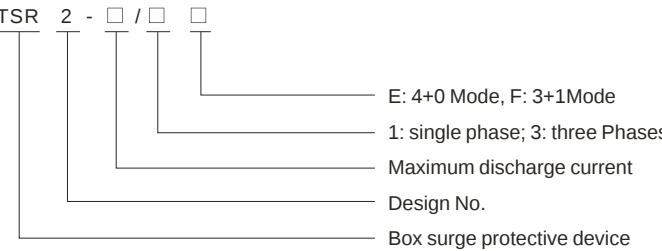
TSR2 series products are a kind of integrative surge protective box, it is suitable to the low pressure power distribution series C level protection.

- Energy-rich voltage dependent characteristics;
- Capacity of overheated and surge protection;
- Visual display instruction;
- Solid and compact construction easy to install

Installment

- Before installment, please make sure following points:
1. Check if the system is connected with single-phase installment or three-phase one, make sure that rating voltage is same with rating protective voltage marked on nameplate.
 2. Refer to circuit diagram (see attached)
 3. Firstly switches off power source before installing surge protectors.
 4. Surge protectors have no directional components so that it can be installed in reversal or slant ways. The box can be circumgyrated 180° for easily reading instruction on the box body. If no professional operation or electrical purpose, It is not allowed to open the box to prevent manmade destroy to the indicating lighting and board.
 5. Check screws outside of body to make sure that it's already tightened, because during transportation it'll be possibly less crowded.
 6. Fix : the wiring used for installation of SPD should be as short as possible, meanwhile it should be binded together to reduce inductance.
 7. Terminal L of surge protective device is connected with the opposite phase wiring separately; terminal N of surge protective device is connected with the neutral phase wiring; terminal PE of surge protective device is connected with the earthing wiring. A wrong connection will result in damage and danger for the surge protective device.

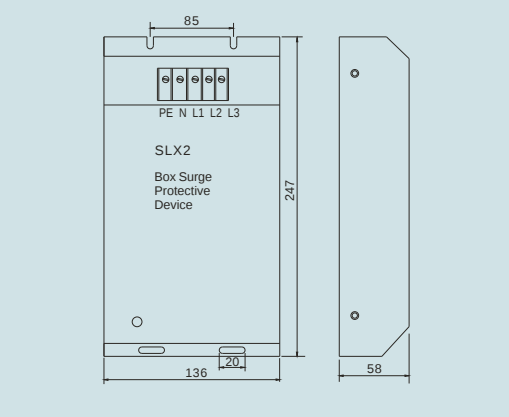
Denominated indication



Performance parameters

Type	Maximum discharge current 8/20 μs (kA)	Protection Mode	Voltage protection level Up (kV)	Maximum continuous operating voltage (V)
TSR2-60/3E	60	L-PE;N-PE	2.5	385
TSR2-60/3F		L-N-PE	2.0	
TSR2-40/3E	40	L-PE;N-PE	2.5	
TSR2-40/3F		L-N-PE	2.0	
TSR2-60/1	60	L-PE;N-PE	2.0	
TSR2-40/1	40	L-PE;N-PE	2.0	

Dimension



Attention

1. Surge protector should have a good and independent earthing system. The earth resistance should be smaller than 10 Ω and cannot be water pipes, gas pipes or down comers.
2. earthing wire should not be less than 4mm², which should not be more than 0.5m of distance to meet the equipotential set.
3. It does possibly harm the equipments and even destroy electronic system or relevant equipments, like dangerous fixed voltage, wrong installment or operation of the equipments.

TSX-RJ11 Series Surge Protective Device



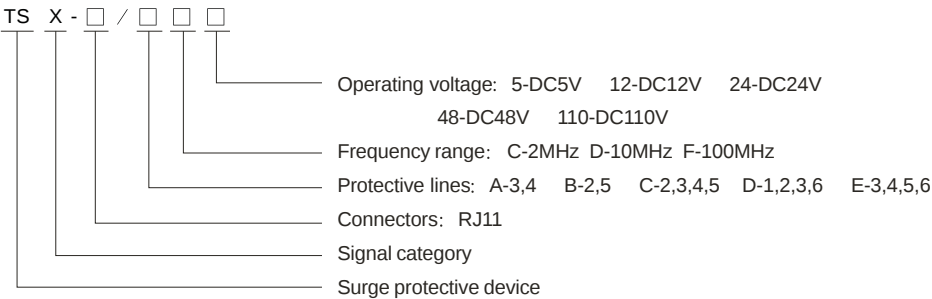
TSX-RJ11/CD110

TSX-RJ11/CC48

Introduction

TSX-RJ11 series surge protective devices are used in Modern, DDN, fax machine, telephone etc. to protect equipments from damage when circuit is induced by over voltage and arising equipotential.

Denominated indication



Installation and Application

- Installed at the interface of the digital line between LPZ1 and LPZ3.
- Suitable for the terminal equipments such as MODEM (ISDN, ADSL), DDN, fax machine, telephone line ect.
- RJ11 connector can be made up with multi-poles or multi-circuits signal lightning protection base according to the request of customers.

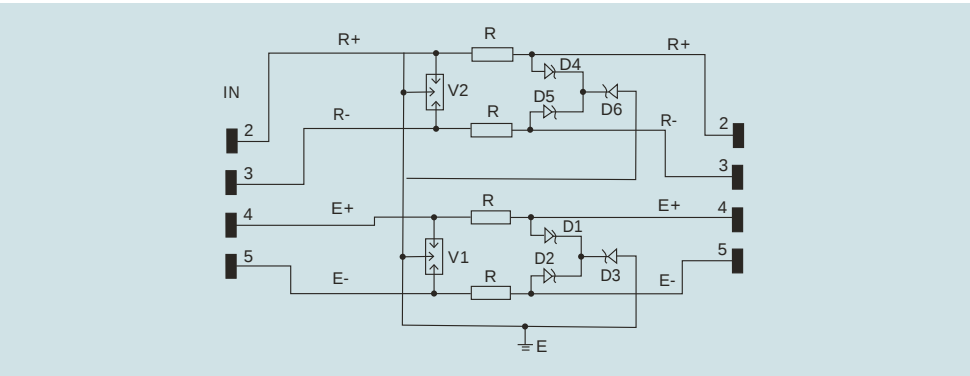
Performance parameters

Type	TSX-RJ11 /								
	AC110	BC110	CC110	AC48	BC48	CC48	AC24	BC24	CC24
Operating voltage Un	DC110V			DC48V			DC24V		
Max. Continuous operating voltage Uc	DC150V			DC60V			DC30V		
Limited voltage Up(10/70Qμ s)	≤500V			≤200V			≤120V		
Nominal discharge current In 8/20μs(kA)				3kA					
Impulse protective voltage Ur(1kVμ s)				< 600V					
Frequency range				2MHz					
Insertion loss				<0.5db					
Connectors				RJ11					
Protective lines	3,4	2,5	2,3,4,5	3,4	2,5	2,3,4,5	3,4	2,5	2,3,4,5
Protection mode	Full=scale protection								
Responde time	<1ns								
House material	shielded metal aluminium								

Features

- Small return circuit cross-section, excellent protection performance
- Low residual voltage, quickly response time
- With over voltage and over current protective functions.

Electric principle



TSX-RJ45 Signal Surge Protective Device



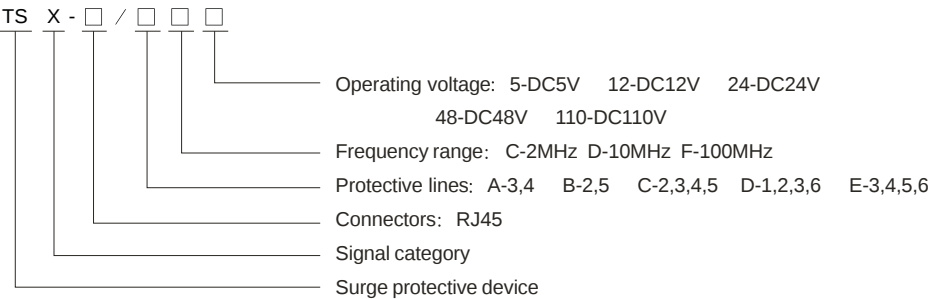
TSX-RJ45/DD48

TSX-RJ45/DF5

Introduction

TSX-RJ45 series signal surge protective devices are customized for ethernet network, token-ring, They meet various different lightning protection zones requirements. Product output and input terminal adopt RJ45(F/M) connectors, installation conveniently. Product design is complied with IEC 61643-2DRAFT standard, suitable for server, working station, hub, broad band and RJ45 connectors protection to protect equipments from damage when wires circuit is induced by over voltage or arising equipotential.

Denominated indication



Installation and Application

- Installed at the interface of the data line between LPZ1 and LPZ3.
- Be suitable for various computer network (ethernet network, token - ring,) Server, Router, hub, Broad band etc.

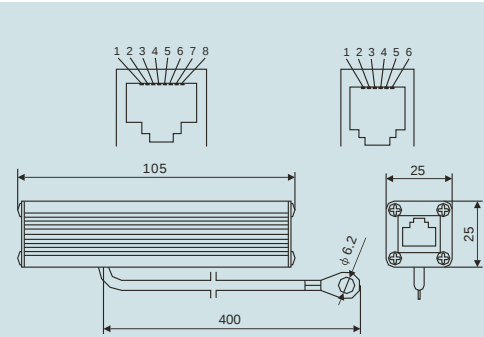
Performance parameters

Type	TSX-RJ45 /							
	DD5	ED5	DD12	ED12	DD24	ED24	ED48	ED48
Operating voltage Un	DC5V		DC12V		DC24V		DC48V	
Max. Continuous operating voltage Uc	DC6V		DC15V		DC30V		DC60V	
Limited voltage Up(10/70Qμ s)	≤40V		≤60V		≤120V		≤200V	
Nominal discharge current In 8/20μs(kA)					3kA			
Impulse protective voltage Ur(1kVμ s)					≤600V			
Frequency range					10MHz			
Insertion loss					<0.5dB			
Connectors					RJ45			
Protective lines	1,2,3,6	3,4,5,6	1,2,3,6	3,4,5,6	1,2,3,6	3,4,5,6	1,2,3,6	3,4,5,6
Protection mode	Full=scale protection							
Responde time	<1ns							
House material	shielded metal aluminium							

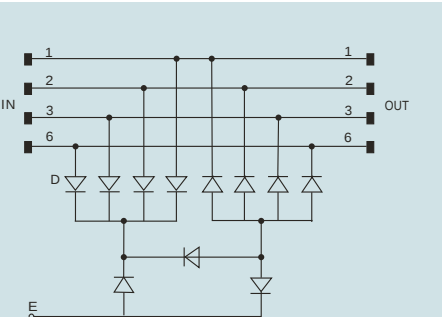
Features

- Small return circuit cross-section, excellent protection performance
- Low residual voltage, quickly response time
- With over voltage and over current protective functions.

Dimension diagram



Electric principle



TSX-JZ Series Surge Protective Device



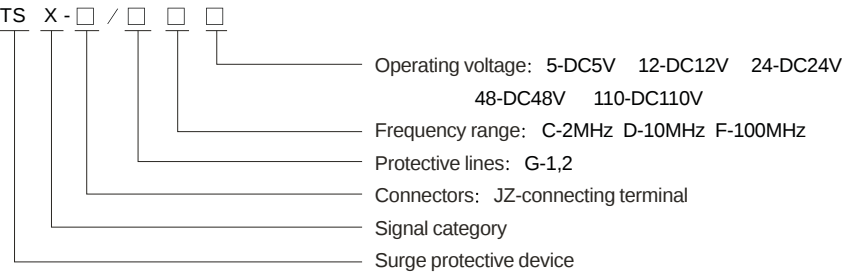
TSX-JZ/GD24

TSX-JZ/GD48

Introduction

This series surge protective devices adopts terminal connection waysand is suitable for connecting terminal connection, twisted - pair transmission communication, computerauto control fire alarm system. This protects used for protecting equipment fromlightning surge, network over voltage.

Denominated indication



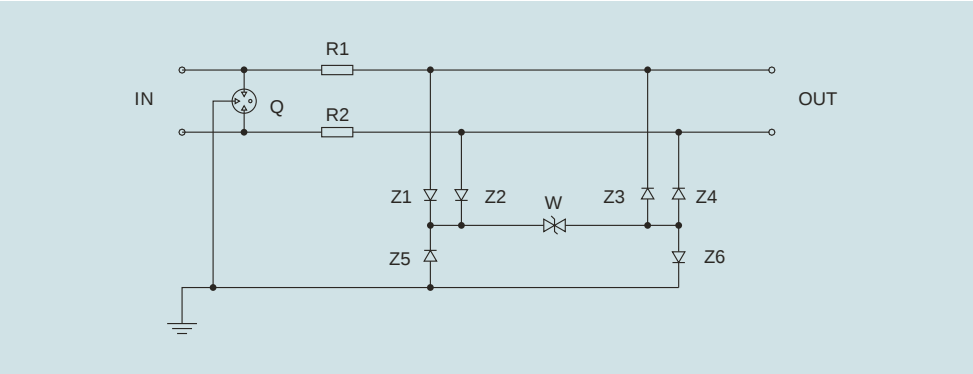
Installation and application

- Be suitable for telephone line, fax-machine, DDN, ISDN, computer connector, twisted-pair, remote signal and auto control equipment lightning protection.
- Perfect product design , convenient installation
- This series are Installed return circuit of equipments by 35mm DIN. Multi-circuit equipments can choose combinative installation.
- Adopt in series truncked installation, multi-circuit truncked installation can be combined according to customer's requirements.
- Grounding system: to firmly connect earthing down-lead terminals with the busbar of grounding accessory.

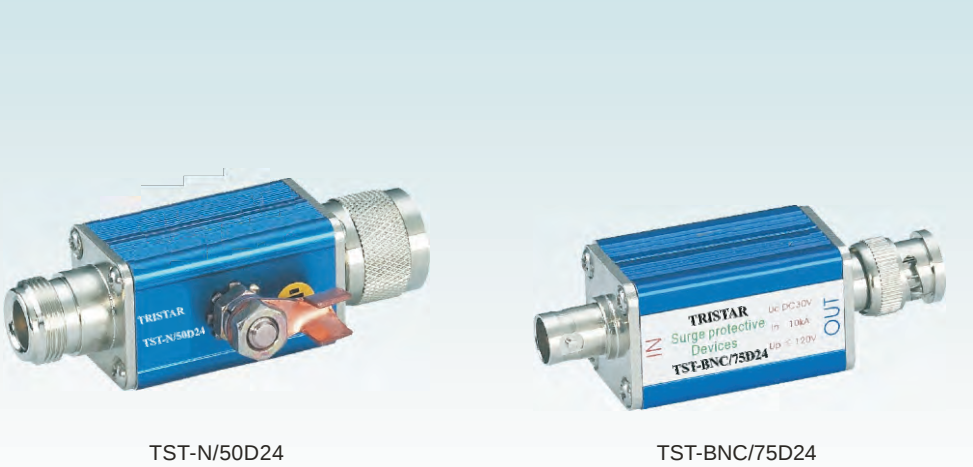
Performance parameters

Type	TSX-JZ /								
	GC110	GD110	GC48	GD48	GC24	GD24	GF110	GF48	GF24
Operating voltage Un	DC110V		DC48V		DC24V		DC110V	DC48V	DC24V
Max. continuous operating voltage Uc	DC150V		DC60V		DC30V		DC150V	DC60V	DC30V
Voltage limiting Up(10/70Q _i s)	≤500V		≤200V		≤120V		≤500V	≤200V	≤120V
Nominal discharge current In(8/20 _i s)	10kA								
Impulse protective voltage Ur(1Kv _i s)	≤600V								
Frequency range	2MHz	10MHz	2MHz	10MHz	2MHz	10MHz	100MHz		
Insertion loss	<0.5dB				<3db				
Connectors	Wiring terminals								
Protective lines	1,2								
Protection mode	Full-scale protection								
Respond time	<10ns								

Electric principle



TST Series Surge Protective Device



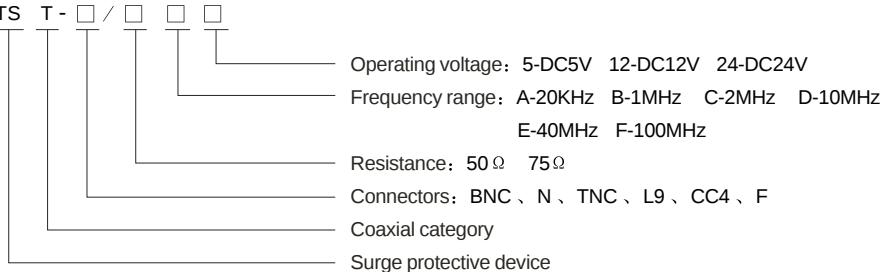
TST-N/50D24

TST-BNC/75D24

Introduction

TST series coaxial signal surge protective devices are suitable for close circuit TV monitoring system, protection system, satellite communication system and coaxial signal transmission computer network system. According to different signal range, transmission frequency, anti-interference and network surge impulse features, product connectors have BNC, N, TNC, L9, CC4, FL10 etc.

Denominated indication



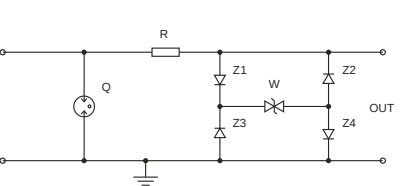
Installation and application

- Installed at the interface of the digital line between LPZ1 and LPZ3.
- Be suitable for close circuit TV system, monitoring and safety system. coaxial signal transmission computer network system, VSAT satellite communication system.

Features

- High surge current capability 10k A 8/20 μ s
- Little insert loss and low residual voltage,
- Quick response time and convenient installation

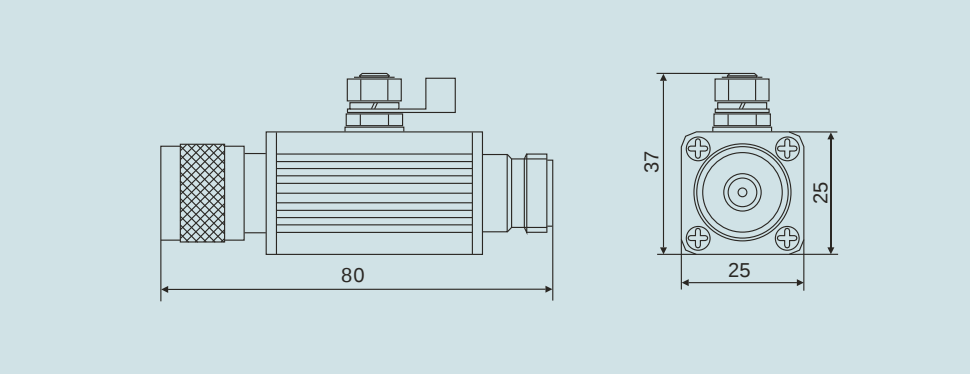
Electric principle



Performance parameters

Type	TST-BNC/				TST-N/		TST-TNC/		TST-L9/		TST-CC4/		TST-FL10/			
	75D 24	75E 24	50D 24	50E 24	50D 24	50E 24	50D 24	50E 24	50D 24	50E 24	50D 24	50E 24	75D 24	75E 24		
Operating voltage Un							DC24V									
Max. continuous working voltage Uc							DC30V									
Nominal discharge current In(8/20s)							10kA(8/20s)									
Connectors	BNC		BNC		N		TNC		L9		CC4		FL10			
Frequency range (MHz)	10	40	10	40	10	40	10	40	10	40	10	40	10	40		
Protection level (8/20s)							<120V									
Response time							≤10ns									
Insertion loss							≤0.5dB									
Resistance	75Ω								50Ω				75Ω			
Remark							Shell grounding									

Dimension diagram



TSW Series Surge Protective Device



TSW-F/75C

TSW-N/50C

TSW-SL16/50A

Introduction

TSW series is suitable for satellite TV high frequency, satellite signal receiver, microwave station, mobile communication station system. To protect equipments from damage when meet inductive lightning impulse voltage.

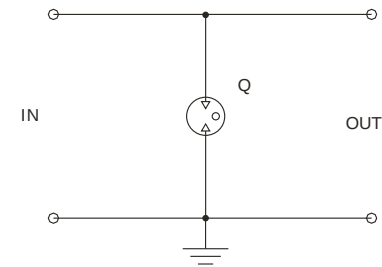
Installation and application

- Installed at boundaries LP0B and LPZ1
- Used in the system such as the air port's navigating station, (NDB) long wave communication station, small power short wave communication station, BP paging transmitter, closed-circuit TV net, VSA satellite TV, security satellite accepting station, microwave communication receiving and dispatch station, MMDS communication and GPS global position system.

Features

- Large let-through current and can be repeated using after lightning.
- Small VSWR and little insertion loss.
- Convenient installation, standard connectors

Electric principle



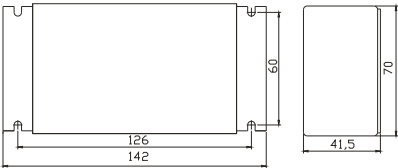
TSZH1 Series Combined Surge Protective Device



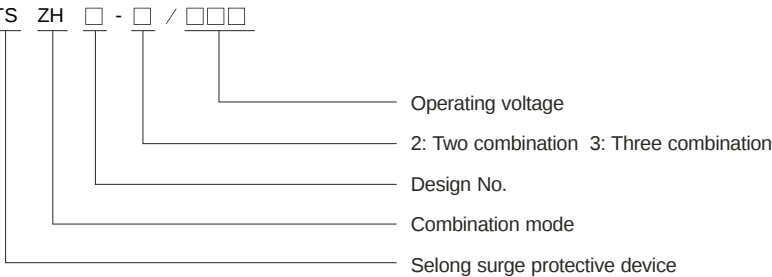
Introduction

TSZH1 combination surge protective devices specially is suitable for CCTV monitoring cameras, fully comply with IEC standard. Integrated design made it easily installation and connection as well as reducing cost and promote protective effects.

Dimension diagram



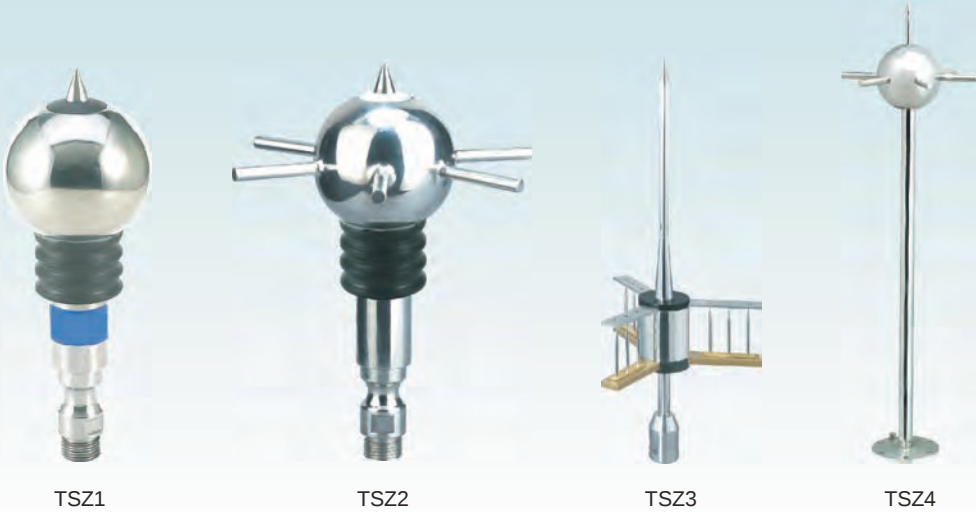
Denominated indication



Performance parameters

Type	TSZH1-3/220 /TSLZH1-2/220	TSZH1-3/024 / TSZH1-2/024
Functions	video/ power/ control	video/ power/ control
Failure indicator	Indicator off , lightning protection failure	
Power protection parameters		
Max. continuous operating voltage Uc(V)	320	40
Voltage limiting (V)	700	75
Max. discharge currentImax(k A)	20	10
Video/ audio protection parameters		
Max. continuous working voltage Uc(V)	8	
Voltage limiting (V)	15	
Max. discharge current Imax(k A)	10	
Max. Transmission rates	10MHz(Insertion loss<0.2dB)	
Cloud Terrace control signal system parameters(for SLZH-3)		
Max. continuous operating voltage Uc(V)	8	
Voltage limiting (V)	15	
Max. discharge current Imax(k A)	10	
Max. Transmission rates	10MHz(Insertion loss<0.2dB)	

TSZ Series
Pre-discharge
Lightning Rod



Operating principle

TSZ ionization pre-discharge lightning rod, added 'accelerate ionization' function., so it can discharge earlier than other common lightning rods as well enlarge protective radius and safety coefficient.

SLZ pre-discharge lightning rod

- High protection class
- Repeatedly to make the electronic ion and pre-discharge, after lightning electrical continuous and functions normally.
- Pre-discharge function
- Long life
- Protective quality no changes after lightning strike
- Active attract lighting system
- Perfect shape and reliable quality.

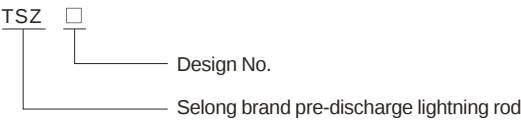
Formula of protection radius

ΔT - is the ahead of time
L is pre-discharge distance equal $V \cdot \Delta T$.
Protective radius R_p counting as following:
 $R_p = \sqrt{h(2D-h) + \Delta L(2D + \Delta L)}$
1) D-is the distance of electric shock which based on the protected object class, for I, II, III comply with D value 20m, 45m, 60m.
2) H- is the height from top of lightning rod to protected surface.
3) $\Delta L = V \cdot \Delta T$, generally condition $V = 1m/\mu s$

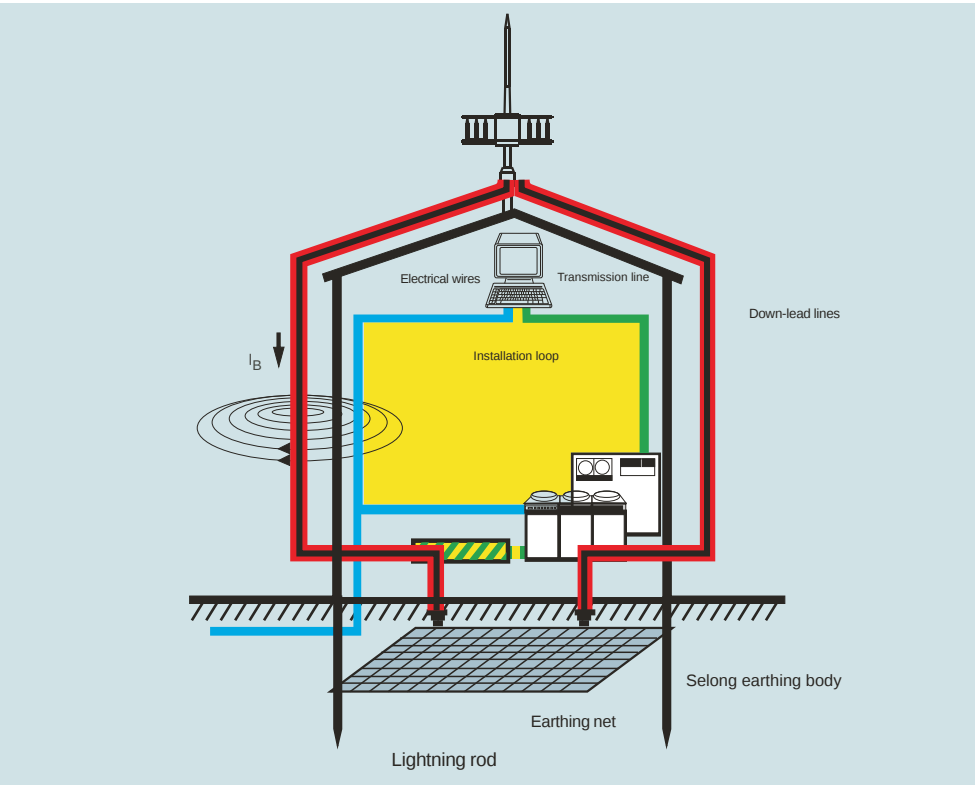
Standard lightning rod application

Be suitable for buildings, warehouses, satellite stations and airport(VOR) etc.

Denominated indication



High distance from top of the protected H(m)	Protection radius Rp(m)		
	Level 1	Level 2	Level 3
2	43	51	58
3	62	75	84
4	83	99	110
5	104	124	135
6	104	125	135
8	104	125	136
10	104	126	137
20	104	130	142
40	104	130	144



TSL402B Series
Multi-functional
Power Strip With
Surge Protection



Features

TSL 402B multi-functional lightning protection power strip ,protective modes have single phase three lines, single phase two lines and three lines power surge protective device, make surge protection and power strip function together. It is used in power system terminal equipment, IT system and household appliance lightning protection. Internal discharge current I_{max}. 10k A(8/20) and surge suppressor I_{max}. 10k A(8/20) are assembled inside of TSL 402B power strip. Indicator with red color is normal working, otherwise failure.
CDL 402B residual current operated protective devices is to avoid electrocuted and improve security performance. CDL 402B with over load protection function have a black replace switch in the side of power strip . To protect precise equipments, please connect lines(L,N), please note to the marks strictly. Grounding connection should adopt 4mm² threads copper lines.

Performance parameters

Type	TSL402B	
Nominal voltage	230V/50Hz	
Continuous operating voltage	275、320	
Rated voltage	10A	
Rated power	2500W	
Max. Discharge current	10kA(L-N、L-PE、N-PE)	
Protection level	<1.2kV(L-N、L-PE), <500V(N-PE)	
Built-in hot fuse implement	120℃	10A

Introduction of power supply surge protection for automobile gas station

Automobile gas station belongs to the first lightning protection building. Generally automobile gas stations are located in stubborn, their building square are regularly small and have no need to effect mutual protective level lightning protection programs. Low voltage 380V can be installed with switch type power supply SPD nominal flowing current of 25kA, 10/350 μs as the first power supply lightning protection of all the electric equipment in the station. The distribution boxes of fuel dispensers and hall are installed with power supply lightning protective box with fireproofing function flowing current 20kA, 8/20 μs . Regarding computer administrative equipment in the hall, UPS power source, receipts printers, fuel dispenser data equipment and the power supply inlets of other exact equipment, you can select switch type power supply lightning protector with flowing capacity more than 10kA(8/20 μs).
Complied with standard:
GB50057-94 (2000 version) <Design code for protection of structures against lightning>;
GB 15599-95 <Safety rules of Lightning with relation to petroleum and its facilities>;
GB 50074-2002 <Code for design of oil depot>;
GB/T 19271.1-2003/IEC 61312-1: 1998 <Protection against lightning electromagnetic impulse (LEMP)>.

