SPD Surge Disconnector

1. Functions and Characteristics

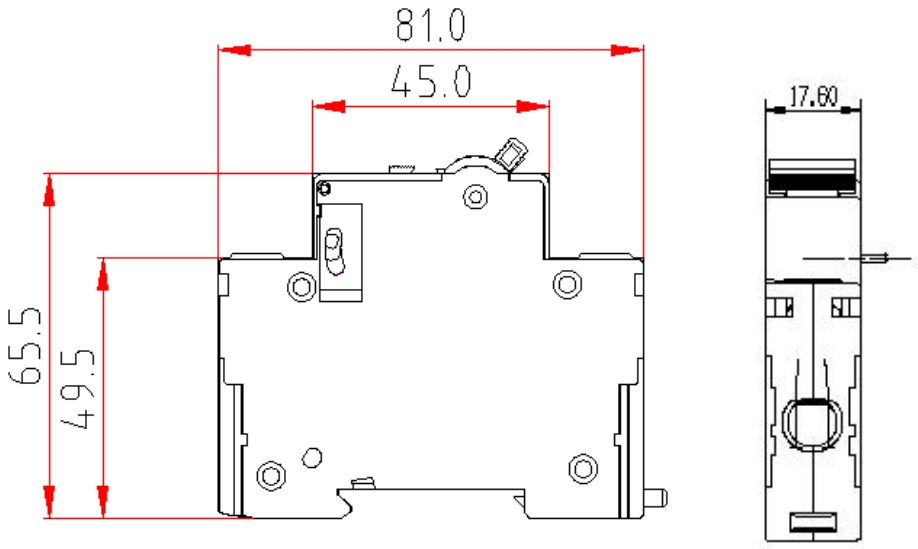
According to the standard of IEC61643 and GB50057-2010，overcurrent protection devices required by the manufacturers of surge protection devices must be linked in series in front of SPD. Due to the fact that fuses and miniature circuit breakers can not coordinate with SPD well, the accidents such as fire and broken equipment damaged by lightning may occur because of abnormal current or deteriorating SPD, which seriously affect the normal production activity. At present, the miniature circuit breakers can not work with SPD under 4 aspects: 1.the miniature circuit breakers (the breaking capacity less than 10kA) can not withstand lightning stroke, which leads to the failure of lightning protection. 2. The residual voltage increases after lightning stroke, which lowers the protection level of lightning protection devices. 3. Miniature circuit breakers can not trip under low power frequency current, which leads SPD to cause fire. 4. Miniature circuit breakers trip by mistake under lightning stroke, which leads to the failure of lightning protection.

Aiming to solve the problem that there is not specialized overcurrent protection devices matched with SPD in the lightning protection industry, TAIHANG confirms the character of SCB(SPD external disconnector) through many years of research and development and experiment on simulating various environments: 1. The tripping current of power frequency is less than 4A. 2. The impulse current without tripping is more than 80kA (8/20). 3. The residual voltage is low after lightning stroke. SCB solves the problem that situation that there is not specialized overcurrent protection devices matched with SPD. The direct effect of combining SCB and SPD is that: it ensures SPD does not cause fire under abnormal current and does not trip under lightning stroke.

2. Main Parameters

Parameters		
Model	T08/80E1	T08/80E2
Electric symbol		
Rated operating voltage（Ue）	230V_{AC}	
Rated insulation voltage（Ui）	400V_{AC}	
Impulse current without tripping（Ie）	80kA（8/20）	
The endurance capacity of impulse current without tripping	60kA(8/20) 16 times	
Tripping threshold for Power frequency current（Ii）	3±1A	
Rated service short-circuit breaking capacity（Ics）	20kA	35kA
The breaking time of short-circuit power frequency current（Tcs）	≤40ms	
Mechanical life	1000 times	
Electrical life	1000 times	
Degree of protection of enclosure	IP20	
screw	M6	
The minimum area of linking cables	2.5mm^2/flexible	
The maximum area of linking cables	25mm^2/flexible	
Shell material	PA66 UL94V-0	
Shape dimension	1P:81×65.5×17.6mm 4P: 81×65.5×70.4mm	
Environment temperature	The product works normally under -25℃～+60℃	
Storage environment	Humidity：-40℃～+75℃ relative humidity：＜95%	
Working environment	Humidity：-25℃～+60℃ relative humidity：＜95%	
shell color	shell：green handlebar：orange	
Mounting rail	EN60715(35mm)	
Remarks	Also applicable in 110VAC application	

3. Dimension of Shape Installation



4. Product Picture

5. Inspection

5.1 inspection standard

IEC61643-11:2011	Low-voltage surge protective devices (SPD) Part 1: Surge protective devices connected to low-voltage power distribution system- requirements and tests
IEC60898-1:2002	Electrical accessories-Circuit-breaker for overcurrent protection for household and similar installation Part 1: Circuit-breakers for a.c operation
GB50057-2010	Code for design protection of structure against lightning
ISO2859-1	Sampling procedures for inspection by attributes Part one: Sampling schemes indexed by acceptance quality limit (AQL)for lot-by-lot inspection

5.2 Incoming Quality Control

Material should be conducted sampling tests according to Inspection Standard of Metal Pieces、Inspection Standard of Plastic Pieces、Inspection Standard of Electric Pieces、Inspection Standard of Supplementary Materials and ISO2859-1

5.3 Products inspection

5.3.1Routine tests

Routine tests take place in the final stage of the production. It examines all the products in the production line. After this test, except being packed and labeled, products are not further processed.

53.2 Sampling tests

Conduct sampling tests according to ISO2859-1.

5.3.3 Acceptance tests

Acceptance tests are the sampling tests which aim to confirm products continuously meet the relative standards. Acceptance tests must be conducted according to regulated procedure and frequency.

Test table

No.	Testing items	Routine tests	Final tests	Acceptance tests	
1	appearance quality	√	√	√	Once a year
2	Electrical connection			√	Once a year
3	The tripping characteristic of power frequency load			√	Once a year
4	Rated service short-circuit breaking capacity（Ics）			√	Once a year
5	The tripping current of power frequency load	√	√	√	Once a year
6	The action of status indicator	√	√	√	Once a year
7	The endurance capacity of impulse current without tripping			√	Once a year
8	Mechanical life and electrical life			√	Once a year
9	Mechanical performance			√	Once a year
10	Mechanical strength			√	Once a year
11	High temperature test			√	Once a year
12	Low temperature test			√	Once a year
13	Test on anti-direct contact			√	Once a year
14	Insulation parts			√	Once a year
15	Metal part		√	√	Once a year
16	Heat resistance			√	Once a year
17	Insulation resistance			√	Once a year
18	Flame retardant			√	Once a year
19	Air clearances and creepage distance			√	Once a year
20	Dielectric strength		√	√	Once a year
21	Temperature rise			√	Once a year

Caution: Process control must regulate key processes and special processes according to relative requirements (more information can be gained in the process flow diagram).