SPECIFICATION		Specification No.	S-221000C11～14				
		Drawing No.	S-221000C11	Revision	b	Page	1/4
Product Name	MZEV□-200	Enactment Date	July 03, 2023	Revision Date	November 2, 2023		
		Drawing Section	Sales Engineering Department				

1. General

This product is SPD for power supply with a built-in disconnector and deterioration indicator that conforms to IEC 61643-11:2011.

2. Service Condition

2.1 Install Location : Indoor
2.2 Ambient Temperature : -40°C ~ +85°C
2.3 Relative Humidity : ≤90% (non-condensing)
2.4 Storage Temperature : -40°C ~ +85°C
2.5 Storage Humidity : ≤90% (non-condensing)
2.6 Altitude : ≤2000m

3.Appearance, Dimensions and Marking

3.1 Appearance and dimensions.

Table.1

Model Number	Wiring method	Appearance
MZEV2-200	Single phase 2 wire	S-221000A02
MZEV3-200	Single phase 3 wire 3 phase 3 wire	S-221000A12

3.2 Marking

Following particulars are marked on the body of this product;

(1) Manufacture's name or trademark
(2) Maximum continuous operation voltage U_c
(3) Test classification and Surge protection performance (In, Imax, Uoc, VPR, MCOV, SCCR)
(4) Voltage protection level U_p
(5) Degree of protection (IP code)
(6) Terminal identification
(7) CE Mark
(8) Two-dimensional code (Installation Instruction)

4. Applicable Standards

The applicable standards of this product are shown in Table 2.

Table 2

Item	Standard
Surge protection performance	IEC 61643-11:2011

5. Characteristics

The Electrical Characteristics of this product is Table.3

Table.3 Electrical Characteristics

Item	Condition	Performance	
1. Model number		MZEV2-200	MZEV3-200
2. Test standard	IEC 61643-11:2011	Exam class classification Class Ⅱ, Ⅲ	
3. Rated operational voltage		240 / 120V (50 / 60Hz)	
4. Applicable line		Single phase 2 wire	Single phase 3 wire/ 3 phase 3 wire
5. Maximum continuous operation voltage U_c / MCOV	L-L, L-PE	AC275V (50 / 60Hz)	
6. Open Circuit Voltage Uoc (Note.2)	IEC 61643-11:2011	1.2 / 50μs 5kV	
7. Voltage protection level U_p(Note.2)	IEC 61643-11:2011	L-PE	≦1.35kV
8. Overcurrent protection	IEC 61643-11:2011	MCCB : 50AF / 50AT	
9. Short-circuit current rating I_{SCCR} (Note.2)	IEC 61643-11:2011	L-PE	5kA (50/60Hz)
10. Temporary overvoltage Open Circuit Voltage U_T (Note.2)	IEC 61643-11:2011	L-PE	335V 5s (50/60Hz)
11. Residual current I_{PE} (Note.2)	IEC 61643-11:2011	L-PE	AC255V (50/60Hz) : ≦1mA
12. Nominal discharge current I_n		2.5kA	
13. Maximum discharge current I_{max}	8 / 20μs	5kA	
14. Voltage protection rating VPR (Note.3)		≦1.2kV	
15. Number of ports		1port	
16. Mounting method		screw fixing	
17. Terminal identification		L1: Red, L2: Black, L3: Blue,PE: Yellow / Green Wire size: 14AWG	
18 Degree of protection		IP20	
19 Fault indicator	Normal / Fault	LED lighting / LED off	

Note 1) Test Conditions

Temperature 20±15°C, Humidity 65±20% (IEC 160-1963 (normal condition of test place)).

Note 2) Perform tests based on the provisions of IEC 61643-11:2011.

6. Inspection Condition

The inspection of electrical characteristics, mechanical characteristics and appearance shall be held as following Table.4.

Table.4

Item	Inspection type		How to check for Characteristics
	In-process inspection	Product inspection	
1. DC Spark-over voltage	Total	Sampling	100V/sec 480～800V (According to in-house standards)
2. Table 3 6～11	—	Type	According to IEC 61643-11:2011
3. Nominal discharge current	—	Type	According to Table.3
4. Measured limiting voltage	—	Type	According to Table.3
5. Maximum discharge current	—	Type	According to Table.3
6. Maximum continuous operation voltage	—	Type	According to Table.3
7. Degree of protection	—	Type	According to Table.3
8. LED lighting confirmation	Total	Sampling	LED lighting
9. Low temperature test	—	Type	After the test in Table 5, the DC discharge starting voltage and leakage current Satisfy the performance and check the LED lighting.
10. High temperature test	—	Type	
11. High temperature-humidity test	—	Type	
12. Temperature cycle test	—	Type	
13. Vibration test	—	Type	
14. Appearance/Structure	Total	Sampling	According to Table.1
15. Dimensions	Sampling	Sampling	
16. Display	Total	Sampling	

Note 1) Sampling inspections are, in principle, ISO 2859 (counting sampling inspection procedures and sampling), one-time sampling and normal inspections.
AQL=1.0 according to the special inspection level S-3. For dimensions, n=5, Ac=0 and Re=1 regardless of lot size.

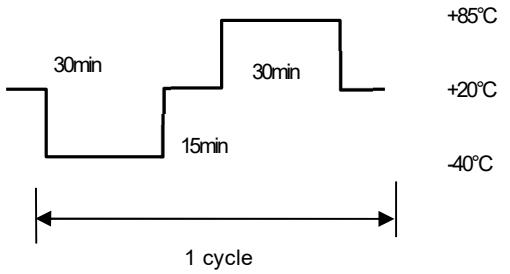
Note 2) "Type inspection; This inspection is executed when the main material is changed.

Note 3) Test conditions
Temperature 20±15°C, Humidity 65±20% (IEC Publication 160(normal condition of test place))

7. Environmental Test

Table.5 shows the environmental test condition of this product.

Table.5

Item	Test Condition	Test Time
1. Low temperature test	Ta= -40±3°C (IEC 60068-2-2:2007)	96h
2. High temperature test	Ta= +85±2°C (IEC 60068-2-1:2007)	96h
3. High temperature-humidity test	Ta= +40±2°C 90～95% (IEC 60068-2-78:2012)	96h
4. Temperature cycle test	 (IEC 60068-2-14:2009)	30 cycles
5. Vibration test	Frequency:40 (Hz) Sweep rate:13.7m/s^2(1.4G)	2.5h / 3axis

8. Packing and Marking of Wrapping Box

Each product is packed in an individual packaging bag.

9. Quality Guarantee Period

The warranty period of this product has been one year since the product was delivered.

If defective product claims are found to be justifiable, replacement products meeting the applicable specification will be provided.

10. Environmental correspondence

This product is applicable to EU RoHS Directive (*) for regulated substances (10 substances: lead, mercury, cadmium, hexavalent chromium, PBB, PBDE, DEHP, BBP, DBP, DIBP), and does not include controlled substances that exceed regulatory limits.

* European Parliament and Council Directive 2011/65/EU , (EU)2015 / 863

11. Caution

To prevent short-circuit due to application of AC overvoltage, use at the rear of the fuse or breaker.