

SPECIFICATION		Specification No.	S-221001C11~15		
		Drawing No.	S-221001C11	Revision	Page
Product Name	MZEV□□-200	Enactment Date	Jul 24 2025	Revision Date	
		Drawing Section	Sales Engineering Department		

1. General

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

This product can be mounted inside the equipment or used on a distribution board, etc.

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
MZEV12-200	Single-phase 2-wire	S-221001A02
MZEV13-200	Single-phase 3-wire	S-221001A12
MZEV33-200	3-phase 3-wire	S-221001A22

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 (I_n , I_{max} , U_{oc} , VPR, MCOV, SCCR)
- (4) Voltage protection level U_p
- (5) Degree of protection (IP code)
- (6) Ambient Temperature
- (7) Terminal identification
- (8) Model
- (9) Date of manufacture (Year and Month)
- (10) CE Mark
- (11) UL Mark and UL characteristics
- (12) Two-dimensional code (Installation Instruction)

4. Applicable Standards

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

Table.2

Item	Standard
Applicable Standards	UL1449 5th Edition
Surge protection performance	IEC 61643-11:2011

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5. Characteristics

The Electrical Characteristics of this product is Table.3.

Table.3

Item	Condition	Performance		
1. Model number		MZEV12-200	MZEV13-200	MZEV33-200
2. Test standard	IEC 61643-11:2011	Exam class classification Class II, III		
	UL1449 5th Edition	Type 2 SPD		
3. Rated operational voltage		240V,120V (50/60Hz)	240/120V (50/60Hz)	240V (50/60Hz)
4. Applicable line		Single-phase 2-wire	Single-phase 3-wire	3-phase 3-wire
	IEC 61643-11:2011	200V,100V	200/100V	200V
	UL1449 5th Edition	240V,120V	240/120V	240V
5. Maximum continuous operation voltage U _c / MCOV		L-L, L-PE L-N,N-PE	AC275V (50/60Hz)	
6. Open Circuit Voltage U _{oc}	IEC 61643-11:2011	1.2/50μVs 6kV		
7. Voltage protection level U _p	IEC 61643-11:2011	L-PE,N-PE ≤ 1.35kV		
8. Overcurrent protection	IEC 61643-11:2011	MCCB:50AF/50AT		
	UL1449 5th Edition	Fuse: EDISON FUSE INC LESRK2.5(Note.2)		
Rated short-circuit breaking capacities		AC600V 200kA (EDISON FUSE INC LESRK2.5 E162363)		
9. Short-circuit current rating I _{SCCR}	IEC 61643-11:2011 UL1449 5th Edition	L-PE	5kA (50/60Hz)	
10. Temporary overvoltage Open Circuit Voltage U _T	IEC 61643-11:2011	L-PE,N-PE	335V 5s (50/60Hz)	
11. Residual current I _{PE}	IEC 61643-11:2011	L-PE,N-PE	AC255V (50/60Hz):≤1mA	
12. Nominal discharge current I _n	IEC 61643-11:2011 UL1449 5th Edition	8/20μs 3kA		
13. Maximum discharge current I _{max}	IEC 61643-11:2011	8/20μs 5kA		
14. Voltage protection rating VPR	UL1449 5th Edition	L-L,L-N	2.0kV	
		L-PE,N-PE	1.5kV	
15. Number of ports		1port		
16. Mounting method		screw fixing		
17. Terminal identification		L : Black	L1 : Black	L1 : Black
		N : White	N : White	L2 : Red
		PE : Yellow / Green	L2 : Red PE : Yellow / Green	L3 : Blue PE: Yellow / Green
		Wire size :14AWG	Wire size :14AWG	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) If using as a UL certified product, be sure to use a fuse: EDISON FUSE INC LESRK2.5 for overcurrent protection.

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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. Maximum continuous operation voltage	—	Type	According to Table.3
3. Open Circuit Voltage	—	Type	
4. Voltage protection level	—	Type	
5. Overcurrent protection	—	Type	
6. Short-circuit current rating	—	Type	
7. Temporary overvoltage Open Circuit Voltage	—	Type	
8. Residual current	—	Type	
9. Nominal discharge current	—	Type	
10. Maximum discharge current	—	Type	
11. Measured limiting voltage	—	Type	
12. Degree of protection	—	Type	
13. LED lighting confirmation	Total	Sampling	LED lighting
14. Low temperature test	—	Type	After testing under the test conditions in Table.5, The DC Spark-over voltage, Residual current, and Fault indicator must be within the standards.
15. High temperature test	—	Type	
16. High temperature-humidity test	—	Type	
17. Temperature cycle test	—	Type	
18. Vibration test	—	Type	
19. Appearance/Structure	Total	Sampling	According to Table.1
20. Dimensions	Sampling	Sampling	
21. 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

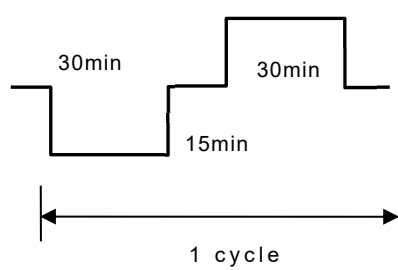
Temperature 20±15°C, Humidity 65±20% (IEC Publication 160(normal condition of test place))

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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	 <p>(IEC 60068-2-14:2009)</p>	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.

The following information shall be displayed on the surface of the individual packaging bag:

- (1) Series name
- (2) Manufacturer's name or trademark
- (3) Two-dimensional code (Installation Instruction)
- (4) Recycling symbol for packaging
- (5) Cautions and Disclaimers

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9. Quality Assurance Period and Content of Assurance

The warranty period for this product is generally one year (*) from the date of delivery. Failures that occur during this time will be repaired free of charge or replaced only with non-defective ones if the cause is clearly judged to be our responsibility. The warranty does not cover any damage or damage to the device caused by lightning. The cost of replacement is not covered by the warranty.

This product is shipped after strict in-house inspection. However, please contact the dealer or each branch office of purchase for any trouble caused by a malfunction or accident during transportation.

Purchased items are not covered by our warranty but are covered by the manufacturer's warranty.

*If you wish to extend the warranty, we will discuss the warranty separately.

However, the warranty does not apply in the following cases:

- (1) If the product arises from use that is contrary to the conditions or precautions stated in the specifications or instruction manual, etc.
- (2) The effect of lightning strikes beyond product specifications, fire, earthquake, typhoon, eruption, flood, tsunami, salt damage, snow damage, freeze, abnormal temperature, abnormal vibration, Cases caused by other natural disasters.
- (3) When caused by changes in geology or topography, such as ground fluctuations or landslides.
- (4) Cases resulting from external factors such as fire, explosion, collision, corrosive gas, or contact with flying objects.
- (5) Cases arising from acts of a third party.
- (6) If the product is modified irrespective of our company, or improper handling such as moving, transporting or dropping the installation site, cases arising from secondary construction.
- (7) Cases caused by damage or improper construction of foundation or mounting pole. (outside our construction scope)
- (8) The failure or failure of the equipment connected to this product.
- (9) If it occurs without performing inspection and action for maintenance items recommended by us.

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