

<b>SPECIFICATION</b>		Specification No.	T-210140C01~04			
		Drawing No.	T-210140C91	Revision		Page
Product Name	MZSR-400JK「J」ARI	Enactment Date	7.Jun.2021	Revision Date		
		Drawing Section	Sales Engineering Department			

### 1. General

This product is a power-source surge protection device (SPD) with two sets of functions:protecting a power source from abnormal voltages up to 500V AC that are induced in powercircuits.

### 2.. Service Condition

- 2.1 Install Location :Indoor
- 2.2 Ambient Temperature :-40°C~+80°C
- 2.3 Relative Humidity : ≤96% (non-condensing)
- 2.4 Storage Temperature :-40°C~+80°C
- 2.5 Storage Humidity : ≤96% (non-condensing)
- 2.6 Altitude : ≤2000m

### 3.Construction

#### 3.1 Appearance and dimensions

Table.1

Model Number	Product Configuration	Appearance
MZSR-400	Plug-in module	T-210140A01
MZSR-ARI	Plug-in module	T-210140A02
MZSR-JK1ARI(400)	Base	T-210140A03
MZSR-JK2ARI(400)	Base	T-210140A04
MZSR-JK3ARI(400)	Base	T-210140A05
MZSR-400JK1ARI	SPD(Plug-in module + Base)	T-210140A06
MZSR-400JK2ARI	SPD(Plug-in module + Base)	T-210140A07
MZSR-400JK3ARI	SPD(Plug-in module + Base)	T-210140A08

#### 3.2 Marking

- (1) Manufacturer's name or trademark
- (2) Maximum continuous operating voltage  $U_c$
- (3) Type current
- (4) Test classification and discharge parameter( $I_{max}$ )
- (5) Nominal discharge current  $I_n$
- (6) Voltage protection level  $U_p$
- (7) Degree of protection (IP code)
- (8)Maximum recommended rating for overcurrent protection

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#### 4. Characteristics

##### 4.1 SPD characteristics shown in Table.2

Table.2

Item		Characteristics		
1.Model number		MZSR-		
		400JK1ARI	400JK2ARI	400JK3ARI
2. Test standard		IEC 61643-11:2011		
3. Test classification		Class II		
4. Nominal $U_N$		Single phase	Split phase, Three phase	Three phase
		400,480V	230/400V 277/480V	230/400V 277/480V
5. Maximum continuous operation voltage $U_C$	L-N/N-PE	500V / 275V (50/60Hz)		
6. Nominal discharge current $I_n$	8/20 $\mu$ s	20kA		
7. Maximum discharge current $I_{max}$	8/20 $\mu$ s	40kA		
8. Voltage protection level $U_P$	L-N/N-PE	$\leq 2.5kV$ / $\leq 1.5kV$		
9. Voltage protection level (5kA) $U_P$	L-N/N-PE	$\leq 1.8kV$ / -		
10. Overcurrent protection		$\leq 125A$ gG(Fuse) / MCCB:50AT( $\geq 50AF$ )		
11. Short-circuit current rating $I_{SCCR}$		25kA(50/60Hz) <sup>N4</sup>		
12. Follow-up cutoff rating $I_f$	L-N/N-PE	- / 100A(50/60Hz)		
13. Temporary overvoltage $U_T$	L-N/N-PE	580V 5s / 1200V 200ms (50/60Hz)		
14. Leakage current $I_{PE}$	AC500/255V (L-N/N-PE)	$\leq 1mA$		
15. Response speed $T_A$		$\leq 3ns$		
16. Dielectric withstanding voltage(only base)	L/N-PE	1.2/50 $\mu$ s 10kV		
17. Number of ports		1port		
18. Location		Indoor		
19. Mounting method		35mm DIN rail		
20. Degree of protection		IP20		
21. Identification of terminals		L, N, PE		
22. Fault indicator	Operating state / Fault indication	Green/Red		
23. Remote contact <sup>N2</sup>	Normal	11-12	Short	
		11-14	Open	
	Fault	11-12	Open	
		11-14	Short	
	Maximum operation voltage/current		AC250V/1.5A	

Note 1) Test Conditions

Temperature 20 $\pm$ 15 $^{\circ}$ C, Humidity 65 $\pm$ 20% (IEC 160-1963 (normal condition of test place)).

Note 2) Characteristics are defined in state where a base and a plug are connected.

Note 3) Do not use "L-N,L-PE" voltage more than  $U_C$ .

Note 4) Including external disconnecter.

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### 5.Connection Cable

5.1 Connection ports : screw clamping terminal connection or crimp-type terminal connection

Cable size : cross-section 1.6~22mm<sup>2</sup> (AWG15~4)N1

Cable stripping length : about 15mm (Figure.1)

Recommended tightening torque :1.47~1.96N·m (15~20kgf·cm)

Crimp-type terminal : M5 Y-type (Width<12mm, Thickness≤1mm)N2

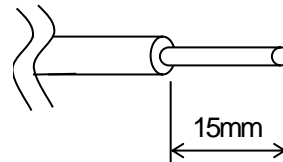


Figure.1

### 5.2 Remote contact

Cable size : cross-section 0.05~2mm<sup>2</sup> (AWG30~14)

Cable stripping length : 7~8mm

Note1)One cable: ≤22mm<sup>2</sup>, Two cables total: <22mm<sup>2</sup>

Note2)One cable only

### 6. Inspection Condition

The inspection of electrical characteristics, mechanical characteristics and appearance shall be held as following Table.3.

Table.3

Item	Inspection type	How to check for Characteristics
1.Varistor voltage (V1mA)	Sampling	L-N: 819~1001V
2. DC discharge start voltageVs	Sampling	N-PE: ≥800V
3.Table.2:5~14	Type	According to IEC 61643-11:2011
4. Identification of terminals	Type	According to Table.2
5.Low temperature test	Type	After Table.4 test V1mA: According to Table.3 DC discharge start voltage:Table.3 IPE : According to Table.2
6.High temperature test	Type	
7.High temperature-humidity test	Type	
8.Temperature cycle test	Type	
9.Vibration test	Type	
10.Appearance, display	Sampling	According to Table.1
11.Dimension	Sampling	

Note 1) Sampling Inspection; Single sampling plan, Normal inspection, Special inspection levels S-3 based ISO-2859 and AQL=2.5.

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

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### 7. Environmental Test

Table.4 shows the environmental test condition of this product.

Table.4

Item	Test Condition	Test Time
1. Low temperature test	Ta=-40±3°C	1000h
2. High temperature test	Ta=+80±2°C	1000h
3. High temperature-humidity test	Ta=+40±2°C 90~96%	4day
4. Temperature cycle test		30 cycle
5. Vibration test	Frequency:40(Hz) Sweep rate:19.6m/s2(2G)	15min/3axis

### 8. Packing and Marking of Wrapping Box

#### 8.1 Packing

Packaging unit 1 pieces packed in a box.

#### 8.2 Marking of wrapping box

Following particulars are marking on wrapping box.

- (1) Product Name (2) Model (3) Lot No (4) RoHS (5) Date of manufacture (6) Quantity (7) Manufacturer's name
- (8) Test classification

### 9. Quality Guarantee Period

The warranty period of this product is one year from the delivery date..

The product will be replaced with a product in good condition if a problem occurs during this period is determined to be the responsibility of Sankosha. Replacement is limited to the actual product only. Batteries and other consumable supplies are not covered.

### 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, 2016/863 / EU

### 11. Caution

Please use in combination with fuse or breaker to avoid short fault by hitting AC overload voltage.