

SPECIFICATION		Specification No.	T-130370C31~35			
		Drawing No.	T-130370C31	Revision	b	Page
Product Name	Smart SPD SMBP-MZSR200JK□AR	Enactment Date	Aug. 29th, 2016	Revision Date	Sep.20.2019	
		Drawing Section	Sales Engineering Department			

1. General

This SPD(Surge Protective Device) is suitable for a.c. power line, this SPD is intended use of protect from abnormal voltage such as indirect lightning surge.

The composition of this SPD consists of a plug, a base and a sensor.

Designed for replacing only a plug part if SPD become failure and lightning surge detection feature which indicates the SPD operation count and recommended replacement.

Between neutral conductor N of TT or TN system, and protective conductor PE consist of GDT (Gas Discharge Tube) only.

2. Service Condition

- 2.1 Install Location : Indoor
- 2.2 Ambient Temperature : -25°C~+60°C
- 2.3 Relative Humidity : ≤95%(non-condensing)
- 2.4 Storage Temperature : -40°C~+70°C
- 2.5 Storage Humidity : ≤95%(non-condensing)
- 2.6 Altitude : ≤2000m

3. Appearance, Dimensions and Marking

3.1 Appearance and Dimensions.

Table.1

Model Number	Product Configuration	Appearance
SMBP-MZSRAR	Smart SPD sensor	T-130370A04
SMBP-MZSR200JK1AR	Smart SPD(SMBP)	T-130370A24
SMBP-MZSR200JK2AR	Smart SPD(SMBP)	T-130370A25
SMBP-MZSR200JK3AR	Smart SPD(SMBP)	T-130370A26

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)Type of current(~)
- (4)Test classification and discharge parameter (I_n, I_{max})
- (5)Voltage protection level U_p
- (6)Degree of protection(IP code)
- (7)Identification of terminals (Base)
- (8)Max. mains-side overcurrent protection

SPECIFICATION		Specification No.	T-130370C31~35			
		Drawing No.	T-130370C32	Revision	b	Page
Product Name	Smart SPD SMBP-MZSR200JK□AR	Enactment Date	Aug. 29th, 2016	Revision Date	Sep.20.2019	
		Drawing Section	Sales Engineering Department			

4. Characteristics

4.1 SPD characteristics shown in Table.2

Table.2

Item	Measurement condition	Characteristics		
		SMBP-MZSR		
1.Model Number		200JK1AR	200JK2AR	200JK3AR
2.Complies with standard		IEC 61643-11:2011		
3.Test classification		Class II		
4.Nominal Voltage U_N		Single phase two-wire	Single phase two-wire, Single phase three-wire, Three phase three-wire	Three phase three-wire, Three phase four-wire
		200,230V	100/200V 230/400V	200V 230/400V
5.Maximum continuous operation voltage U_c	L-N/N-PE	275V (50/60Hz)		
6.Nominal discharge current I_n	8/20 μ s	20kA		
7.Maximum discharge current I_{max}	8/20 μ s	40kA		
8.Voltage protection level U_p	L-N/N-PE	$\leq 1.4kV / \leq 1.5kV$		
9.Voltage protection level (5kA) U_p	L-N/N-PE	$\leq 1kV / -$		
10.Overcurrent protection		$\leq 125A gG$ (Fuse)		
11.Short-circuit current rating I_{scor}		25kA (50/60Hz) ^{N3}		
12. Current interruption rating	L-N/N-PE	- / 100A 50/60Hz		
13.Temporary overvoltage U_T	L-N/N-PE	335V 5s / 1200V 200ms (50/60Hz)		
14.Leakage current I_{FE}	AC255V (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 μ s 10kV		
17.Number of ports		1port		
18.Location		In door		
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 ^{N4}	Normal	11-12	Short	
		11-14	Open	
	Fault	11-12	Open	
		11-14	Short	
Maximum operation voltage / current		UL:AC125V / 1.5A (Max:AC250V / 1.5A)		

Note 1) Test Conditions

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

Note 2) Do not use "L-PE" voltage more than U_c .

Note 3) Including external disconnecter.

Note 4) Characteristics are defined in state where a base and a plug are connected.

SPECIFICATION		Specification No.	T-130370C31~35			
		Drawing No.	T-130370C33	Revision	b	Page
Product Name	Smart SPD SMBP-MZSR200JK□AR	Enactment Date	Aug. 29th, 2016		Revision Date	Sep.20.2019
		Drawing Section	Sales Engineering Department			

4.2 Sensor characteristics shown in Table.3

Table.3

Item	Characteristics		Information
1.Minimum detection surge current	•±200A		8/20μs
2.Maximum surge current	•±40kA		8/20μs
3.Switch operation	Press once	•SPD operation count : 00~99	7 segment display
		•Battery level alarm : bt	
3.Switch operation	Press and hold (≥5sec)	•Recommended replacement display	
		Data erasing	•SPD operation count :CL
4.Battery	•Battery life:7years(CR1632,3V)		Replaceable

Note 1) Test Conditions

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

5. Connection cable

- 5.1 Cable size : cross-section 1.6~22mm² (AWG15~4)^{N1}
 Cable stripping length : about 15mm(Figure.1)
 Recommended tightening torque :1.47~1.96N·m(15~20kgf·cm)
 Crimp-type terminal connection port : M5 Y-type crimp-type terminal (Width<12mm, Thickness≤1mm)^{N2}

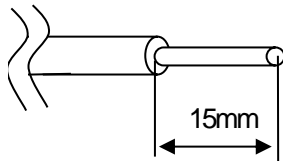


Figure.1

5.2 Remote contact

- Cable size : cross-section 0.05~2mm² (AWG30~14)
 Cable stripping length : 7~8mm

Note1)One cable: ≤22mm², Two cables total: <22mm²

Note2)One cable only

SPECIFICATION		Specification No.	T-130370C31~35		
		Drawing No.	T-130370C34	Revision	b
Product Name	Smart SPD SMBP-MZSR200JK□AR	Enactment Date	Aug. 29th, 2016	Revision Date	Sep.20.2019
		Drawing Section	Sales Engineering Department		

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
1.Varistor voltage (V_{1mA})	Sampling	L-N: 387~473V
2. DC spark-over voltage	Sampling	N-PE: $\geq 480V$
3.Table 2:5~14	Type	According to IEC 61643-11:2011
4.Remote contact	Sampling	According to Table.2
5.SPД operation count	Type	Confirm count indication operates after Impulse is applied.
6.Recommended replacement display	Sampling	LED check switch: Press once Install a plug: Defect LED OFF Except a plug: Defect LED ON
7.Data erasing	Sampling	LED check switch: Press and hold(≥ 5 sec) 7 segment display: CL (operation count 00)
8.Battery level alarm	Type	Check the display when voltage is reduced less than 2.5V from 3V. LED check switch: Press once. 7 segment display: bt
9.Low temperature test	Type	After Table.5 test
10.High temperature test	Type	V_{1mA} : According Table.4
11.High temperature-humidity test	Type	I_{PE} : According Table.1
12.Temperature cycle test	Type	Defect LED: According Table.4
13.Vibration test	Type	7 segment display: 00
14.Appearance, display	Sampling	According to Table.1
15.Dimension		

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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		Drawing No.	T-130370C35	Revision	b	Page
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		Drawing Section	Sales Engineering Department			

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	1000h
2.High temperature test	Ta=+70±2°C	1000h
3.High temperature-humidity test	Ta=+40±2°C 90~96%	4days
4.Temperature cycle test		30 cycles
5.Vibration test	Frequency:40(Hz) Sweep rate:19.6m/s ² (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) Manufacturer's name (3) Quantity (4) Date of manufacture (5) Lot No (6) RoHS (6) Test classification

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, 2016/863 / EU

11. Caution

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