

SPECIFICATION		Specification No.	S-162800C21~24				
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Product Name	SPD for LAN with Deterioration Diagnosis Model : LAN-CAT5e-P+ II (R)	Enactment Date	10.Sep.2018	Revision Date	15.Apr.2024		
		Drawing Section	Product Development Department				

## 1. General

This product protects against abnormal voltages resulting from a lightning surge to a personal computer or other equipment that is connected to a LAN and PoE circuit. The product supports 2.5GBase-T, 1000Base-T, 100Base-TX, 10Base-T, PoE, PoE+, and PoE++ circuits. The product supports both UTP (unshielded) and STP (shielded) cables including protection against abnormal voltages to the shielded part of STP cables.

This product can perform deterioration diagnosis by connecting a Specialized tester to the connector on the top of the main unit.

## 2. Environmental characteristic

- 2.1 Location : Indoor
- 2.2 Rated and storage temperature : -40 °C ~ +85 °C
- 2.3 Rated and storage humidity : 90 % or less (no condensation)

## 3. Structure

### 3.1 Appearance, Structure and Dimension

Appearance, Structure and Dimensions are figured by S-162800A21.

### 3.2 Marking

The following display is marked on the product.

- (1) Product name
- (2) Manufacturer name
- (3) Production name
- (4) Correspondence line
- (5) Maximum continuous operating voltage

## 4. Applicable Standards

Applicable Standards of this product is Table.1

Table. 1 Applicable Standards

Item	Standard name
Certified safety standards	UL497B (File No. E140906)
Surge protection performance	IEC61643-21:2009 / JIS C 5381-21:2014
	IEC61000-4-5:2005 / JIS C 61000-4-5:2009

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## 5. Electrical Characteristics

The Electrical Characteristics of this product is Table.2

Table. 2 Electrical Characteristics

No.	Item	Condition	Performance	Remarks
1	Ethernet	—	10Base-T 100Base-TX 1000Base-T 2.5GBase-T PoE PoE+ PoE++	IEEE802.3 IEEE802.3u IEEE802.3ab IEEE802.3bz IEEE802.3af IEEE802.3at IEEE802.3bt
2	Transmission band	—	DC~100 MHz	
3	Attenuation	—	$\leq 1.0$ dB	
4	Near End Crosstalk (NEXT)	—	$\geq 32.3$ dB	
5	Bit error rate	—	$\leq 0.01$ %	
6	Maximum Continuous Operating Voltage (Uc)	—	60 VDC	Each Line - Earth Line
7	Current Rating (In)	—	2,400 mA	IEEE802.3af, IEEE802.3at
8	Breakdown Voltage	100 V/sec., X-C	160 V~300 V	Each Line - Earth Line
9	Voltage Protection Level (Up)	1.2/50 $\mu$ s10 kV, X-C	$\leq 500$ V	Each Line - Earth Line
10	Impulse Durability	8/20 $\mu$ s, X-C	5 kA 10 times	Category C2
		10/350 $\mu$ s, X-C	2.5 kA 2 times	Category D1
11	AC Durability	50 Hz 0.5 A 1 sec.	5 times	
12	Impulse Reset	60 VDC 600 mA, X <sub>1</sub> -X <sub>2</sub>	$\leq 30$ ms	Between PoE Power supply terminals
13	Insulation Resistance	60 VDC, X-C	$\geq 1,000$ M $\Omega$	Each Line - Earth Line
14	Deterioration Diagnosis	Specialized tester	LED on : Normal LED off : Replace	

Note 1) Test conditions

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

Note 2) Item 5,6,8,9,10,11,12 shall have the test based on IEC61643-21:2009 stipulation.

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## 6. Inspection

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

Table.3

Item	Inspection Type	Judgment Standard
Attenuation	Total Inspection	It depends on clause 5.
Near End Crosstalk (NEXT)	Model Inspection	
Bit Error Rate	Model Inspection	
Maximum Continuous Operating Voltage (Uc)	Model Inspection	
Current Rating (In)	Model Inspection	
Breakdown Voltage	Total Inspection	
Voltage Protection Level (Up)	Model Inspection	
Impulse Durability	Model Inspection	
AC Durability	Model Inspection	
Impulse Reset	Model Inspection	
Insulation Resistance	Model Inspection	
Deterioration Diagnosis	Total Inspection	
Appearance	Total Inspection	It depends on Structure's figured by S-162800A21
Dimension	Sampling Inspection	

Note1) The sampling Inspection of dimensions, I assume it  $n=5, A_c=0, R_e=1$

Note2) Model Inspection; This inspection is executed more than one about the first lot that was able to expand in a production process. However, the item from which the performance is confirmed by the same type of product might be omitted.

## 7. Packaging and marking of wrapping box

### 7.1 Packaging

The product is packed in wrapping box.

### 7.2 Marking of wrapping box

Following particulars are marking on wrapping box.

(1) Product Name      (2) Manufacturer's name or its abbreviation      (3) Production lot number

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#### 8. Quality assurance and warranty period

The warranty period is for one year from the delivery date. Your product will be replaced with a product in good condition if a problem that occurs during this period is determined to be the responsibility of Sankosha. Replacement is limited to the actual product only. Any expenses incurred by the replacement will be charged to the customer.

This product was shipped after a strict inspection. If a problem arises due to a manufacturing deficiency or if you believe the product was damaged during shipment, please inquire with your distributor or local Sankosha branch office.

#### 9. Environmental correspondence (RoHS compliant)

This product does not contain more than specified provisions for substances subject to regulation (10 substances) in the EU RoHS Directive (\*), except for exemptions.

10 substances: Lead, Mercury, Cadmium, Hexavalent Chromium, PBB, PBDE, DEHP, BBP, DBP, DIBP.

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

#### 10. Deterioration diagnosis of this product

Deterioration diagnosis of this product can be performed by connecting a dedicated tester to the top surface connector of this product. As a result of deterioration diagnosis, if the LED does not light up please replace this product with a new one.

When diagnosing deterioration, disconnect the LAN cable on the LINE side and the EQUIP side. If there is a lightning strike nearby, please do not perform deterioration diagnosis because it is dangerous.