

Test Report No.: 48.400.23.1087.01-00/09

Rev.: 00

Dated: 2023-11-10



Applicant: Jiangsu Acrel Electrical Manufacturing. Co., Ltd.  
Address: No. 5, Dongmeng Road, Nanzha Street, Jiangyin, Jiangsu, P. R. China  
Attn: Han Zhonghua  
Sample Description: Residual current operated relay  
Model No.: ASJ  
Sample Received Date: 2023-10-12  
Test Period: 2023-10-12~2023-10-27  
Test Location: TÜV SÜD Certification and Testing (China) Co., Ltd.  
Shanghai Branch, SHA Chemical Lab.  
Purpose of examination: Verification of RoHS (Restriction of Hazardous Substances) directive 2011/65/EU and its amendment (EU) 2015/863 on submitted samples  
Test Results: Refer to following page(s)  
Remark:  
- The result relates only to the items tested.  
- The reference model(s) was declared by client.  
- The test sample(s) and item(s) was specified by client.

TÜV SÜD Certification and Testing (China) Co., Ltd.  
TÜV SÜD Group  
Prepared by:

Reviewed by:



Mr. Yiwei CHEN



Mr. Feng ZHANG

Disclaimer Measurement Uncertainty: Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail. Any use for advertising purposes must be granted in writing. This test report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

TÜV SÜD Certification and Testing (China) Co., Ltd.  
Floor 1-4, Building B, No.37, Tuanjie Road(Middle), Xishan  
Economic and Technological Development Zone, Wuxi  
Jiangsu. China

Tel.: +86-510-88203737 Fax: +86-510-88203636

www.tuv-sud.cn info@tuv-sud.cn

Shanghai Chemical Lab No. 1999 Du Hui Road  
Tel.: +86-21-6037-6501

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### SUMMARY OF TEST RESULTS

No.	Test Requested	Conclusion	Remarks
1.	Heavy Metal (Pb, Cd, Hg and Cr VI) Content	<b>PASS</b>	
2.	Polybrominated Biphenyls (PBBs) and Polybrominated Diphenyl Ethers (PBDEs) Content	<b>PASS</b>	
3.	Phthalates (DEHP, BBP, DBP and DIBP) Content	<b>PASS</b>	

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1. TESTED SUBJECT DESCRIPTION

Sample No.	Description (Material, colour)	Photograph/Location
01	Blue soft plastic panel	
02	Black soft plastic panel	
03	Transparent hard plastic cover	
04	White hard plastic bracket	
05	Light gray hard plastic shell	

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Sample No.	Description (Material, colour)	Photograph/Location
06	White hard plastic buckle	
07	Gray hard plastic bracket	
08	Blue hard plastic bracket	
09	Silver metal pin	
10	Blue hard plastic shell	



Sample No.	Description (Material, colour)	Photograph/Location
11	Silver metal pin	
12	Blue potting compound	
13	White hard plastic bracket	
14	Silver metal silicon steel sheet	
15	Blue soft plastic adhesive tape	

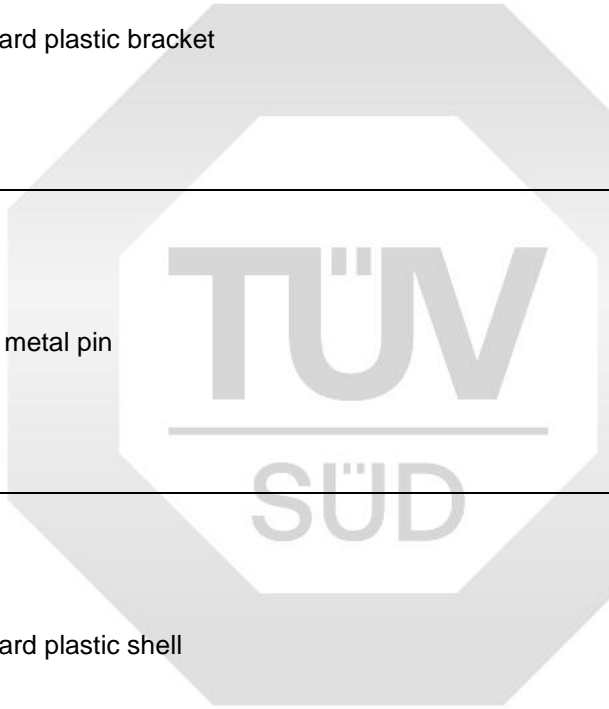
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Sample No.	Description (Material, colour)	Photograph/Location
16	Golden metal wire	
17	Black hard plastic bracket	
18	Golden metal pin	
19	Black hard plastic shell	
20	Silver metal pin	

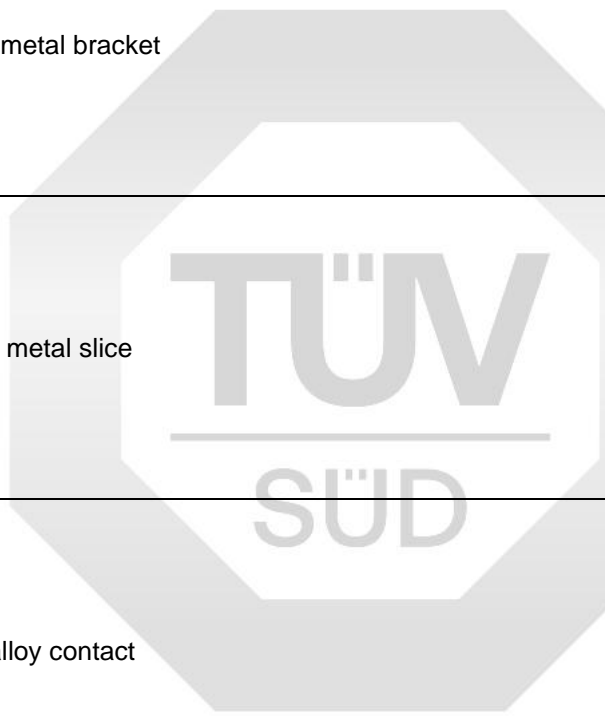
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Sample No.	Description (Material, colour)	Photograph/Location
21	White hard plastic bracket	
22	Silvery metal bracket	
23	Golden metal slice	
24	Silver alloy contact	
25	White hard plastic bracket	

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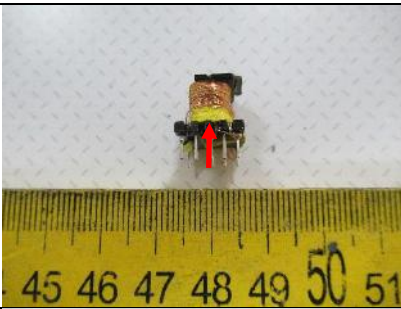

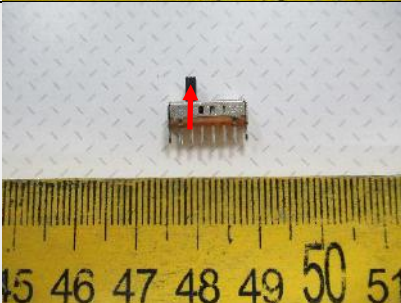
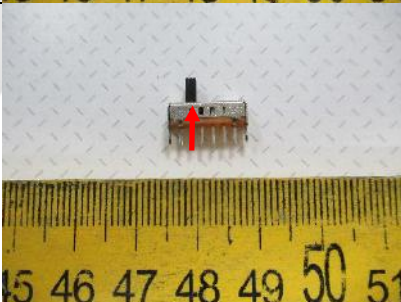
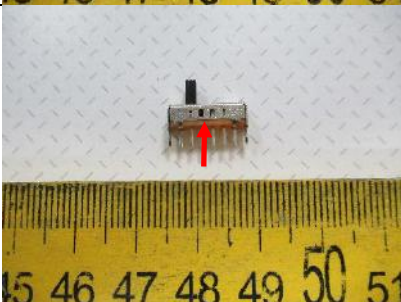


Sample No.	Description (Material, colour)	Photograph/Location
26	Golden metal wire	
27	Golden metal slice	
28	Yellow soft plastic adhesive tape	
29	Silver metal pin	
30	Black metal magnet	

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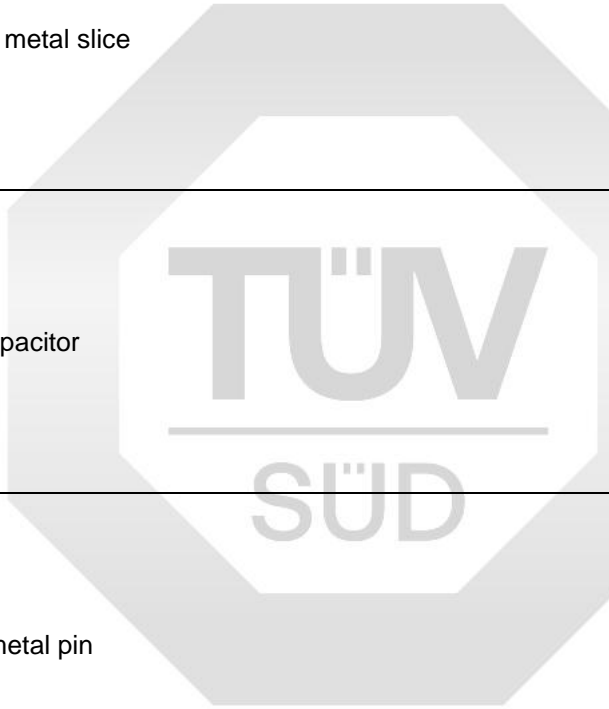
Sample No.	Description (Material, colour)	Photograph/Location
31	Black hard plastic bracket	
32	Golden metal wire	
33	Black hard plastic rod	
34	Black metal frame	
35	Yellow hard plastic slice	

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Sample No.	Description (Material, colour)	Photograph/Location
36	Silver metal pin	
37	Golden metal slice	
38	Blue capacitor	
39	Silver metal pin	
40	Green hard	

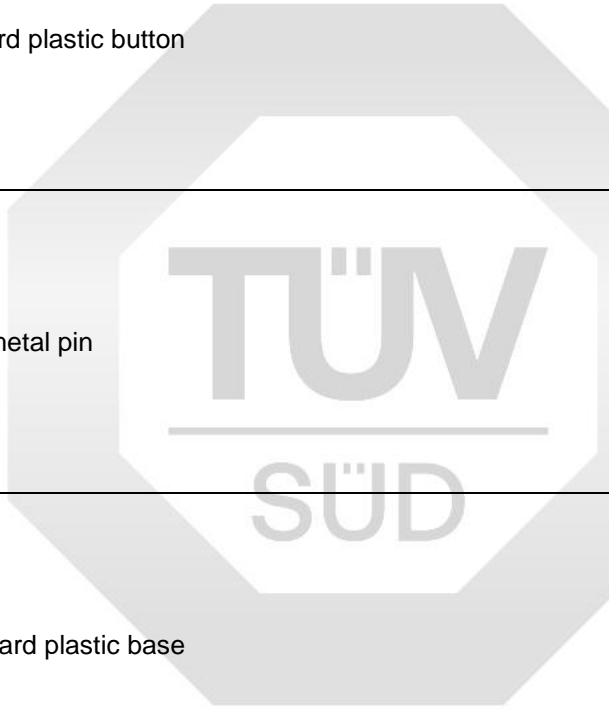
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Sample No.	Description (Material, colour)	Photograph/Location
41	Silver metal pin	
42	Red hard plastic button	
43	Silver metal pin	
44	Black hard plastic base	
45	Silvery metal slice	

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Sample No.	Description (Material, colour)	Photograph/Location
46	Silvery metal frame	
47	Red hard LED	
48	Silver metal pin	
49	White hard plastic knob	
50	Black hard plastic frame	

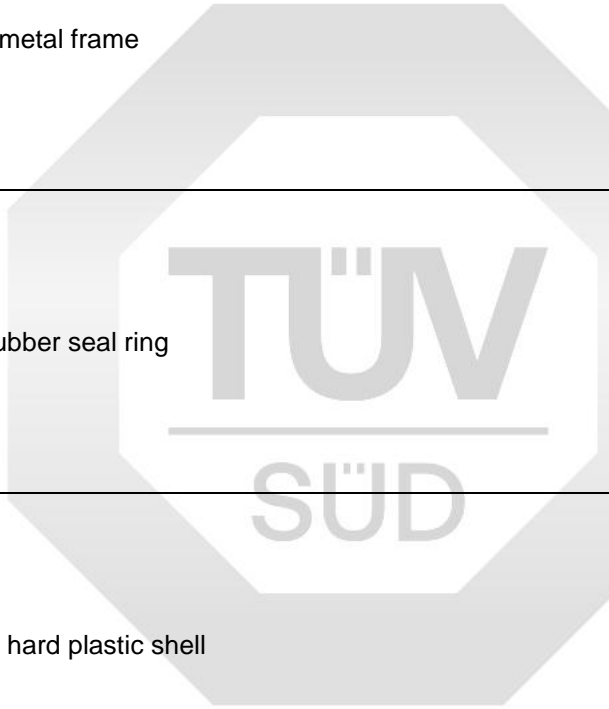
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Sample No.	Description (Material, colour)	Photograph/Location
51	Silver metal pin	
52	Silvery metal frame	
53	Black rubber seal ring	
54	Orange hard plastic shell	
55	White hard plastic base	

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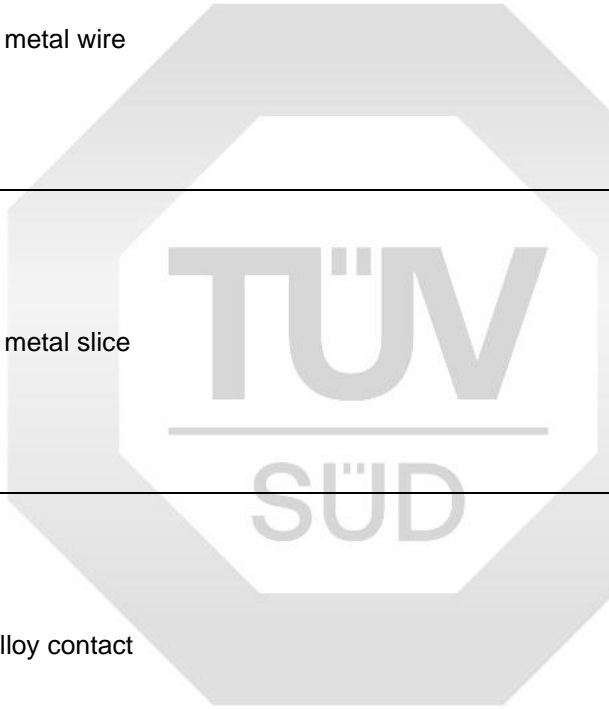






Sample No.	Description (Material, colour)	Photograph/Location
56	Silver metal pin	
57	Golden metal wire	
58	Golden metal slice	
59	Silver alloy contact	
60	Silvery metal frame	

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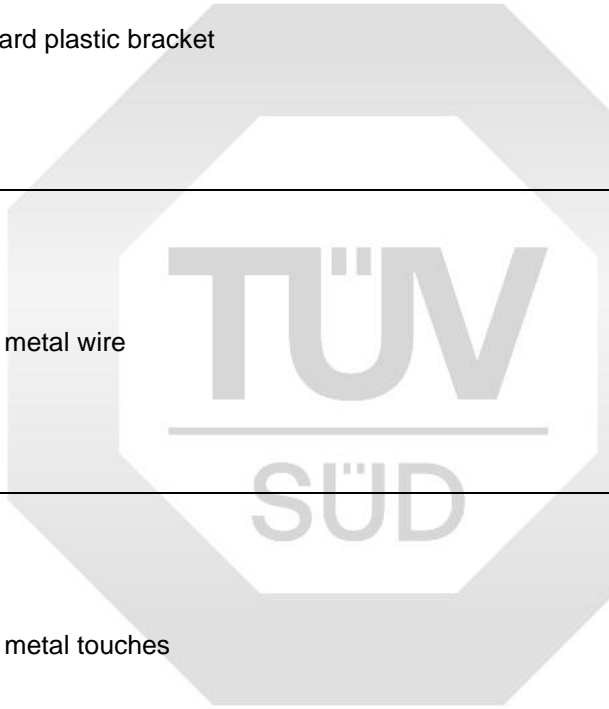
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Sample No.	Description (Material, colour)	Photograph/Location
61	Black hard plastic slice	
62	Orange hard plastic shell	
63	White hard plastic base	
64	Silver metal pin	
65	Silvery metal bracket	



Sample No.	Description (Material, colour)	Photograph/Location
66	White hard plastic bracket	
67	Black hard plastic bracket	
68	Golden metal wire	
69	Golden metal touches	
70	Golden metal slice	

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Sample No.	Description (Material, colour)	Photograph/Location
71	Silvery metal bracket	
72	Silver alloy contact	
73	Blue hard plastic shell	
74	White hard plastic bracket	
75	Black hard plastic base	





Sample No.	Description (Material, colour)	Photograph/Location
76	Silver metal pin	
77	Silver metal slice	
78	Black soft plastic sheath	
79	Silver metal pin	
80	Black metal magnet	

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Sample No.	Description (Material, colour)	Photograph/Location
81	Golden metal wire	
82	Black chip resistor	
83	Black chip resistor	
84	Black chip resistor	
85	Brown chip capacitor	


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Sample No.	Description (Material, colour)	Photograph/Location
86	Black chip resistor	 A photograph showing a small, black, rectangular chip resistor. The resistor is positioned on a yellow ruler with black markings. The number '70' is visible on the ruler below the resistor.

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2. TEST RESULT(S)

2.1 SCREENING TEST

Test method: With reference to EN 62321-1:2013, EN IEC 62321-2:2021, EN 62321-3-1:2014 and EN 62321-8:2017.

For Heavy Metals and Flame Retardants, analyzed by Energy Dispersive X-ray Fluorescence Spectrometer (XRF); for phthalates, analyzed by Gas Chromatography and Mass Spectrometer (GC-MS).

Sample No.	Heavy Metals and Flame Retardants					Phthalates			
	Cd	Pb	Hg	Cr	Br	DEHP	BBP	DBP	DIBP
01	BL	BL	BL	BL	BL	BL	BL	BL	BL
02	BL	BL	BL	BL	Inc. <sup>(a)</sup>	BL	BL	BL	BL
03	BL	BL	BL	BL	BL	BL	BL	BL	BL
04	BL	BL	BL	BL	BL	BL	BL	BL	BL
05	BL	BL	BL	BL	Inc. <sup>(a)</sup>	BL	BL	BL	BL
06	BL	BL	BL	BL	BL	BL	BL	BL	BL
07	BL	BL	BL	BL	Inc. <sup>(a)</sup>	BL	BL	BL	BL
08	BL	BL	BL	BL	Inc. <sup>(a)</sup>	BL	BL	BL	BL
09	BL	BL	BL	BL	NA	NA	NA	NA	NA
10	BL	BL	BL	BL	Inc. <sup>(a)</sup>	BL	BL	BL	BL
11	BL	BL	BL	BL	NA	NA	NA	NA	NA
12	BL	BL	BL	BL	BL	BL	BL	BL	BL
13	BL	BL	BL	BL	Inc. <sup>(a)</sup>	BL	BL	BL	BL
14	BL	BL	BL	Inc. <sup>(a)</sup>	NA	NA	NA	NA	NA
15	BL	BL	BL	BL	BL	BL	BL	BL	BL
16	BL	BL	BL	BL	NA	NA	NA	NA	NA
17	BL	BL	BL	BL	Inc. <sup>(a)</sup>	BL	BL	BL	BL
18	BL	BL	BL	BL	NA	NA	NA	NA	NA
19	BL	BL	BL	BL	Inc. <sup>(a)</sup>	BL	BL	BL	BL
20	BL	BL	BL	BL	NA	NA	NA	NA	NA

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Sample No.	Heavy Metals and Flame Retardants					Phthalates			
	Cd	Pb	Hg	Cr	Br	DEHP	BBP	DBP	DIBP
21	BL	BL	BL	BL	Inc. <sup>(a)</sup>	BL	BL	BL	BL
22	BL	BL	BL	BL	NA	NA	NA	NA	NA
23	BL	BL	BL	BL	NA	NA	NA	NA	NA
24	BL	BL	BL	BL	NA	NA	NA	NA	NA
25	BL	BL	BL	BL	Inc. <sup>(a)</sup>	BL	BL	BL	BL
26	BL	BL	BL	BL	NA	NA	NA	NA	NA
27	BL	BL	BL	BL	NA	NA	NA	NA	NA
28	BL	BL	BL	BL	BL	BL	BL	BL	BL
29	BL	BL	BL	BL	NA	NA	NA	NA	NA
30	BL	BL	BL	BL	NA	NA	NA	NA	NA
31	BL	BL	BL	BL	BL	BL	BL	BL	BL
32	BL	BL	BL	BL	NA	NA	NA	NA	NA
33	BL	BL	BL	BL	Inc. <sup>(a)</sup>	BL	BL	BL	BL
34	BL	BL	BL	BL	NA	NA	NA	NA	NA
35	BL	BL	BL	BL	BL	BL	BL	BL	BL
36	BL	BL	BL	BL	NA	NA	NA	NA	NA
37	BL	BL	BL	BL	NA	NA	NA	NA	NA
38	BL	BL	BL	BL	BL	BL	BL	BL	BL
39	BL	BL	BL	BL	NA	NA	NA	NA	NA
40	BL	BL	BL	BL	Inc. <sup>(a)</sup>	BL	BL	BL	BL
41	BL	BL	BL	BL	NA	NA	NA	NA	NA
42	BL	BL	BL	BL	BL	BL	BL	BL	BL
43	BL	BL	BL	BL	NA	NA	NA	NA	NA
44	BL	BL	BL	BL	BL	BL	BL	BL	BL



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Sample No.	Heavy Metals and Flame Retardants					Phthalates			
	Cd	Pb	Hg	Cr	Br	DEHP	BBP	DBP	DIBP
45	BL	BL	BL	BL	NA	NA	NA	NA	NA
46	BL	BL	BL	BL	NA	NA	NA	NA	NA
47	BL	BL	BL	BL	Inc. <sup>(a)</sup>	BL	BL	BL	BL
48	BL	BL	BL	BL	NA	NA	NA	NA	NA
49	BL	BL	BL	BL	BL	BL	BL	BL	BL
50	BL	BL	BL	BL	Inc. <sup>(a)</sup>	BL	BL	BL	BL
51	BL	BL	BL	BL	NA	NA	NA	NA	NA
52	BL	BL	BL	BL	NA	NA	NA	NA	NA
53	BL	BL	BL	BL	BL	BL	BL	BL	BL
54	BL	BL	BL	BL	Inc. <sup>(a)</sup>	BL	BL	BL	BL
55	BL	BL	BL	BL	Inc. <sup>(a)</sup>	BL	BL	BL	BL
56	BL	BL	BL	BL	NA	NA	NA	NA	NA
57	BL	BL	BL	BL	NA	NA	NA	NA	NA
58	BL	BL	BL	Inc. <sup>(a)</sup>	NA	NA	NA	NA	NA
59	BL	BL	BL	BL	NA	NA	NA	NA	NA
60	BL	BL	BL	BL	NA	NA	NA	NA	NA
61	BL	BL	BL	BL	Inc. <sup>(a)</sup>	BL	BL	BL	BL
62	BL	BL	BL	BL	Inc. <sup>(a)</sup>	BL	BL	BL	BL
63	BL	BL	BL	BL	Inc. <sup>(a)</sup>	BL	BL	BL	BL
64	BL	BL	Inc.(a)	BL	NA	NA	NA	NA	NA
65	BL	BL	BL	BL	NA	NA	NA	NA	NA
66	BL	BL	BL	BL	Inc. <sup>(a)</sup>	BL	BL	BL	BL
67	BL	BL	BL	BL	BL	BL	BL	BL	BL
68	BL	BL	BL	BL	NA	NA	NA	NA	NA





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Sample No.	Heavy Metals and Flame Retardants					Phthalates			
	Cd	Pb	Hg	Cr	Br	DEHP	BBP	DBP	DIBP
69	BL	BL	BL	BL	NA	NA	NA	NA	NA
70	BL	BL	BL	BL	NA	NA	NA	NA	NA
71	BL	BL	BL	BL	NA	NA	NA	NA	NA
72	BL	BL	BL	BL	NA	NA	NA	NA	NA
73	BL	BL	BL	BL	Inc. <sup>(a)</sup>	BL	BL	BL	BL
74	BL	BL	BL	BL	BL	BL	BL	BL	BL
75	BL	BL	BL	BL	Inc. <sup>(a)</sup>	BL	BL	BL	BL
76	BL	BL	BL	BL	NA	NA	NA	NA	NA
77	BL	BL	BL	BL	NA	NA	NA	NA	NA
78	BL	BL	BL	BL	BL	BL	BL	BL	BL
79	BL	BL	BL	BL	NA	NA	NA	NA	NA
80	BL	BL	BL	BL	NA	NA	NA	NA	NA
81	BL	BL	BL	BL	NA	NA	NA	NA	NA
82	BL	BL	BL	BL	BL	BL	BL	BL	BL
83	BL	Inc. <sup>(a)</sup>	BL	BL	BL	BL	BL	BL	BL
84	BL	BL	BL	BL	BL	BL	BL	BL	BL
85	BL	BL	BL	BL	BL	BL	BL	BL	BL
86	BL	BL	BL	BL	BL	BL	BL	BL	BL



Remark:

- "BL" denotes below limit
- "OL" denotes over limit
- "Inc." denotes inconclusive
- "NA" denotes not applicable
- "(a)" denotes further confirmation test was conducted, results are listed in 2.2 and 2.3.
- XRF screening limits in mg/kg for regulated elements in various matrices

ELEMENT	POLYMER		
	BL	INCONCLUSIVE	OL
Cd	$X \leq (70-3\sigma)$	$(70-3\sigma) < X < (130+3\sigma)$	$X \geq (130+3\sigma)$
Pb	$X \leq (700-3\sigma)$	$(700-3\sigma) < X < (1300+3\sigma)$	$X \geq (1300+3\sigma)$
Hg	$X \leq (700-3\sigma)$	$(700-3\sigma) < X < (1300+3\sigma)$	$X \geq (1300+3\sigma)$
Br	$X \leq (300-3\sigma)$	$X > (300-3\sigma)$	NA
Cr	$X \leq (700-3\sigma)$	$X > (700-3\sigma)$	NA

ELEMENT	METAL		
	BL	INCONCLUSIVE	OL
Cd	$X \leq (70-3\sigma)$	$(70-3\sigma) < X < (130+3\sigma)$	$X \geq (130+3\sigma)$
Pb	$X \leq (700-3\sigma)$	$(700-3\sigma) < X < (1300+3\sigma)$	$X \geq (1300+3\sigma)$
Hg	$X \leq (700-3\sigma)$	$(700-3\sigma) < X < (1300+3\sigma)$	$X \geq (1300+3\sigma)$
Cr	$X \leq (700-3\sigma)$	$X > (700-3\sigma)$	NA

ELEMENT	COMPLEX MATERIAL		
	BL	INCONCLUSIVE	OL
Cd	$X \leq (50-3\sigma)$	$(50-3\sigma) < X < (150+3\sigma)$	$X \geq (150+3\sigma)$
Pb	$X \leq (500-3\sigma)$	$(500-3\sigma) < X < (1500+3\sigma)$	$X \geq (1500+3\sigma)$
Hg	$X \leq (500-3\sigma)$	$(500-3\sigma) < X < (1500+3\sigma)$	$X \geq (1500+3\sigma)$
Br	$X \leq (250-3\sigma)$	$X > (250-3\sigma)$	NA
Cr	$X \leq (500-3\sigma)$	$X > (500-3\sigma)$	NA

- Screening limits in mg/kg for regulated phthalates in various matrices

PHTHALATES	BL	INCONCLUSIVE
DEHP	$X < 600$	$X \geq 600$
BBP	$X < 600$	$X \geq 600$
DBP	$X < 600$	$X \geq 600$
DIBP	$X < 600$	$X \geq 600$

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## 2.2 HEAVY METAL CONTENT

Test method: With reference to EN 62321-4:2014 /A1:2017, EN 62321-5:2014, EN 62321-7-1:2015 and EN 62321-7-2:2017, analyzed by Inductively Coupled Plasma Optical Emission Spectrometer (ICP-OES) and Ultraviolet-visible spectrophotometer (UV-Vis).

[Reporting Limit: 2.0 mg/kg for Cadmium; 5.0 mg/kg or 0.10 µg/cm<sup>2</sup> for Hexavalent Chromium, 10.0 mg/kg for Lead and Mercury.]

Sample No.	Result(s)				
	Total Cadmium	Hexavalent Chromium	Hexavalent Chromium	Total Mercury	Total Lead
14	--	/	Negative	--	--
58	--	/	Negative	--	--
83	--	--	--	--	2362.0 <sup>(d)</sup>
Unit	mg/kg	mg/kg	µg/cm <sup>2</sup>	mg/kg	mg/kg
RoHS Requirement	100	1000	Negative <sup>#</sup>	1000	1000

### Remark:

- "mg/kg" denotes milligram per kilogram
- "µg/cm<sup>2</sup>" denotes micrograms per square centimeter
- "<" denotes less than
- "Positive" denotes the absorbance value of sample is > 0.13 µg/cm<sup>2</sup>, the sample is considered to be positive for Hexavalent Chromium.
- "Inconclusive" denotes the absorbance value of sample is ≥ 0.10 µg/cm<sup>2</sup> and ≤ 0.13 µg/cm<sup>2</sup>, the sample is considered to be Inconclusive for Hexavalent Chromium.
- "Negative" denotes the absorbance value of sample is < 0.10 µg/cm<sup>2</sup>, the sample is considered to be negative for Hexavalent Chromium.
- "<sup>#</sup>" According to DIRECTIVE 2011/65/EU Article 4(1) and Annex II. While, positive means the presence of CrVI on tested areas and the result(s) was (were) regarded as in conflict with European Parliament and Council Directive 2011/65/EU, Article 4(1) and Annex II.
- "--" denotes tested by XRF, result is listed in 2.1
- "<sup>(d)</sup>" denotes the exempt item according to DIRECTIVE 2011/65/EU Annex III item 7(c)-I "Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectronic devices, or in a glass or ceramic matrix compound".



**2.3 POLYBROMINATED BIPHENYLS (PBBs) AND POLYBROMINATED DIPHENYL ETHERS (PBDEs) CONTENT**

Test Method: With reference to EN 62321-6:2015, extracted by toluene and analyzed by Gas Chromatography and Mass Spectrometer (GC-MS). [Reporting Limit : 5 mg/kg]

Test Item		Result(s) [mg/kg]					RoHS Requirement [mg/kg]
		02	05	07	08	10	
PBBs	Monobromobiphenyl	<5	<5	<5	<5	<5	-
	Dibromobiphenyl	<5	<5	<5	<5	<5	-
	Tribromobiphenyl	<5	<5	<5	<5	<5	-
	Tetrabromobiphenyl	<5	<5	<5	<5	<5	-
	Pentabromobiphenyl	<5	<5	<5	<5	<5	-
	Hexabromobiphenyl	<5	<5	<5	<5	<5	-
	Heptabromobiphenyl	<5	<5	<5	<5	<5	-
	Octabromobiphenyl	<5	<5	<5	<5	<5	-
	Nonabromobiphenyl	<5	<5	<5	<5	<5	-
	Decabromobiphenyl	<5	<5	<5	<5	<5	-
<b>Sum of detected PBBs</b>		<50	<50	<50	<50	<50	1000
PBDEs	Monobromodiphenyl ether	<5	<5	<5	<5	<5	-
	Dibromodiphenyl ether	<5	<5	<5	<5	<5	-
	Tribromodiphenyl ether	<5	<5	<5	<5	<5	-
	Tetrabromodiphenyl ether	<5	<5	<5	<5	<5	-
	Pentabromodiphenyl ether	<5	<5	<5	<5	<5	-
	Hexabromodiphenyl ether	<5	<5	<5	<5	<5	-
	Heptabromodiphenyl ether	<5	<5	<5	<5	<5	-
	Octabromodiphenyl ether	<5	<5	<5	<5	<5	-
	Nonabromodiphenyl ether	<5	<5	<5	<5	<5	-
	Decabromodiphenyl ether	<5	<5	<5	<5	<5	-
<b>Sum of detected PBDEs</b>		<50	<50	<50	<50	<50	1000

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**2.3 POLYBROMINATED BIPHENYLS (PBBs) AND POLYBROMINATED DIPHENYL ETHERS (PBDEs) CONTENT**

Test Method: With reference to EN 62321-6:2015, extracted by toluene and analyzed by Gas Chromatography and Mass Spectrometer (GC-MS). [Reporting Limit : 5 mg/kg]

Test Item		Result(s) [mg/kg]					RoHS Requirement [mg/kg]
		13	17	19	21	25	
PBBs	Monobromobiphenyl	<5	<5	<5	<5	<5	-
	Dibromobiphenyl	<5	<5	<5	<5	<5	-
	Tribromobiphenyl	<5	<5	<5	<5	<5	-
	Tetrabromobiphenyl	<5	<5	<5	<5	<5	-
	Pentabromobiphenyl	<5	<5	<5	<5	<5	-
	Hexabromobiphenyl	<5	<5	<5	<5	<5	-
	Heptabromobiphenyl	<5	<5	<5	<5	<5	-
	Octabromobiphenyl	<5	<5	<5	<5	<5	-
	Nonabromobiphenyl	<5	<5	<5	<5	<5	-
	Decabromobiphenyl	<5	<5	<5	<5	<5	-
	<b>Sum of detected PBBs</b>		<50	<50	<50	<50	<50
PBDEs	Monobromodiphenyl ether	<5	<5	<5	<5	<5	-
	Dibromodiphenyl ether	<5	<5	<5	<5	<5	-
	Tribromodiphenyl ether	<5	<5	<5	<5	<5	-
	Tetrabromodiphenyl ether	<5	<5	<5	<5	<5	-
	Pentabromodiphenyl ether	<5	<5	<5	<5	<5	-
	Hexabromodiphenyl ether	<5	<5	<5	<5	<5	-
	Heptabromodiphenyl ether	<5	<5	<5	<5	<5	-
	Octabromodiphenyl ether	<5	<5	<5	<5	<5	-
	Nonabromodiphenyl ether	<5	<5	<5	<5	<5	-
	Decabromodiphenyl ether	<5	<5	<5	<5	<5	-
	<b>Sum of detected PBDEs</b>		<50	<50	<50	<50	<50

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**2.3 POLYBROMINATED BIPHENYLS (PBBs) AND POLYBROMINATED DIPHENYL ETHERS (PBDEs) CONTENT**

Test Method: With reference to EN 62321-6:2015, extracted by toluene and analyzed by Gas Chromatography and Mass Spectrometer (GC-MS). [Reporting Limit : 5 mg/kg]

Test Item		Result(s) [mg/kg]					RoHS Requirement [mg/kg]
		33	40	47	50	54	
PBBs	Monobromobiphenyl	<5	<5	<5	<5	<5	-
	Dibromobiphenyl	<5	<5	<5	<5	<5	-
	Tribromobiphenyl	<5	<5	<5	<5	<5	-
	Tetrabromobiphenyl	<5	<5	<5	<5	<5	-
	Pentabromobiphenyl	<5	<5	<5	<5	<5	-
	Hexabromobiphenyl	<5	<5	<5	<5	<5	-
	Heptabromobiphenyl	<5	<5	<5	<5	<5	-
	Octabromobiphenyl	<5	<5	<5	<5	<5	-
	Nonabromobiphenyl	<5	<5	<5	<5	<5	-
	Decabromobiphenyl	<5	<5	<5	<5	<5	-
	<b>Sum of detected PBBs</b>	<50	<50	<50	<50	<50	1000
PBDEs	Monobromodiphenyl ether	<5	<5	<5	<5	<5	-
	Dibromodiphenyl ether	<5	<5	<5	<5	<5	-
	Tribromodiphenyl ether	<5	<5	<5	<5	<5	-
	Tetrabromodiphenyl ether	<5	<5	<5	<5	<5	-
	Pentabromodiphenyl ether	<5	<5	<5	<5	<5	-
	Hexabromodiphenyl ether	<5	<5	<5	<5	<5	-
	Heptabromodiphenyl ether	<5	<5	<5	<5	<5	-
	Octabromodiphenyl ether	<5	<5	<5	<5	<5	-
	Nonabromodiphenyl ether	<5	<5	<5	<5	<5	-
	Decabromodiphenyl ether	<5	<5	<5	<5	<5	-
	<b>Sum of detected PBDEs</b>	<50	<50	<50	<50	<50	1000

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**2.3 POLYBROMINATED BIPHENYLS (PBBs) AND POLYBROMINATED DIPHENYL ETHERS (PBDEs) CONTENT**

Test Method: With reference to EN 62321-6:2015, extracted by toluene and analyzed by Gas Chromatography and Mass Spectrometer (GC-MS). [Reporting Limit : 5 mg/kg]

Test Item		Result(s) [mg/kg]					RoHS Requirement [mg/kg]
		55	61	62	63	66	
PBBs	Monobromobiphenyl	<5	<5	<5	<5	<5	-
	Dibromobiphenyl	<5	<5	<5	<5	<5	-
	Tribromobiphenyl	<5	<5	<5	<5	<5	-
	Tetrabromobiphenyl	<5	<5	<5	<5	<5	-
	Pentabromobiphenyl	<5	<5	<5	<5	<5	-
	Hexabromobiphenyl	<5	<5	<5	<5	<5	-
	Heptabromobiphenyl	<5	<5	<5	<5	<5	-
	Octabromobiphenyl	<5	<5	<5	<5	<5	-
	Nonabromobiphenyl	<5	<5	<5	<5	<5	-
	Decabromobiphenyl	<5	<5	<5	<5	<5	-
	<b>Sum of detected PBBs</b>	<50	<50	<50	<50	<50	1000
PBDEs	Monobromodiphenyl ether	<5	<5	<5	<5	<5	-
	Dibromodiphenyl ether	<5	<5	<5	<5	<5	-
	Tribromodiphenyl ether	<5	<5	<5	<5	<5	-
	Tetrabromodiphenyl ether	<5	<5	<5	<5	<5	-
	Pentabromodiphenyl ether	<5	<5	<5	<5	<5	-
	Hexabromodiphenyl ether	<5	<5	<5	<5	<5	-
	Heptabromodiphenyl ether	<5	<5	<5	<5	<5	-
	Octabromodiphenyl ether	<5	<5	<5	<5	<5	-
	Nonabromodiphenyl ether	<5	<5	<5	<5	<5	-
	Decabromodiphenyl ether	<5	<5	<5	<5	<5	-
	<b>Sum of detected PBDEs</b>	<50	<50	<50	<50	<50	1000

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**2.3 POLYBROMINATED BIPHENYLS (PBBs) AND POLYBROMINATED DIPHENYL ETHERS (PBDEs) CONTENT**

Test Method: With reference to EN 62321-6:2015, extracted by toluene and analyzed by Gas Chromatography and Mass Spectrometer (GC-MS). [Reporting Limit : 5 mg/kg]

Test Item		Result(s) [mg/kg]		RoHS Requirement [mg/kg]
		73	75	
PBBs	Monobromobiphenyl	<5	<5	-
	Dibromobiphenyl	<5	<5	-
	Tribromobiphenyl	<5	<5	-
	Tetrabromobiphenyl	<5	<5	-
	Pentabromobiphenyl	<5	<5	-
	Hexabromobiphenyl	<5	<5	-
	Heptabromobiphenyl	<5	<5	-
	Octabromobiphenyl	<5	<5	-
	Nonabromobiphenyl	<5	<5	-
	Decabromobiphenyl	<5	<5	-
	<b>Sum of detected PBBs</b>		<50	<50
PBDEs	Monobromodiphenyl ether	<5	<5	-
	Dibromodiphenyl ether	<5	<5	-
	Tribromodiphenyl ether	<5	<5	-
	Tetrabromodiphenyl ether	<5	<5	-
	Pentabromodiphenyl ether	<5	<5	-
	Hexabromodiphenyl ether	<5	<5	-
	Heptabromodiphenyl ether	<5	<5	-
	Octabromodiphenyl ether	<5	<5	-
	Nonabromodiphenyl ether	<5	<5	-
	Decabromodiphenyl ether	<5	<5	-
	<b>Sum of detected PBDEs</b>		<50	<50


Remark:

- "mg/kg" denotes milligram per kilogram
- "<" denotes less than

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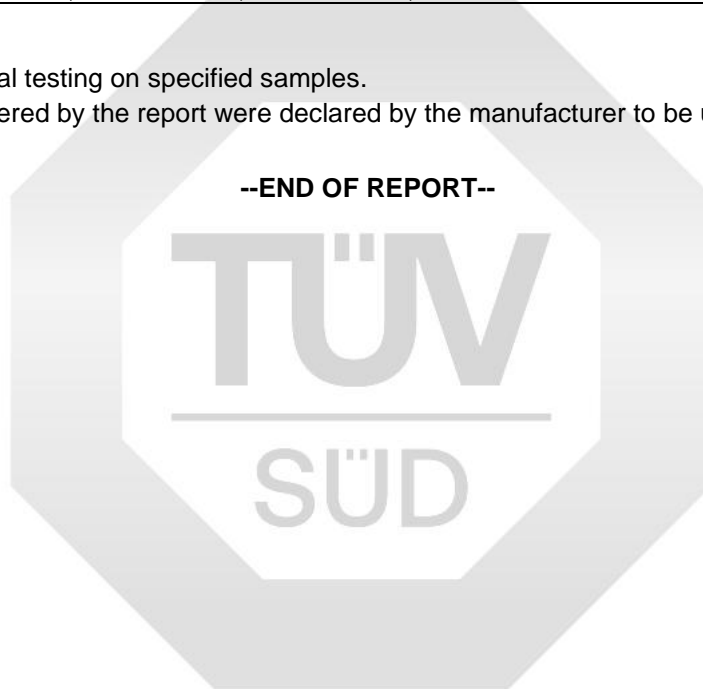
**APPENDIX I: Product Model**

Product:Residual current operated relay	Test model: ASJ
	
Additional models: ASJ10-LD1A, ASJ10-LD1C, ASJ20-LD1A, ASJ20-LD1C	

**Remark:**

1. The report covers material testing on specified samples.
2. The tested materials covered by the report were declared by the manufacturer to be used on the additional model.

**--END OF REPORT--**



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