CE-LVD
TEST REPORT

For

Adjustable Voltage Protector

Model No.:	**KE-V008, KE-V009, V008, V009, PROTECTOR DE VOLTAGE, VT-PRT-04, GSM-N6793, VT-PRT-03, POWER PLUG PROTECTOR, PROTCETOR DE VOLTAJE, QPN-12-3, WASHERS & SMALL APPLIANCES, GSM-MP120E, VOLTAGE &ELECTRONIC SURGE PROTECTOR, BX-V008, BX-V009, N004, N01R-PTNU-1, R-PTNU-2, PCHM-MR220, PCHM-MP120, EW-V009-120, KL-1191-1, KL-1191-2, VOTECTOR DE VOLTAJE EQUIPOS ELECTRONICOS**
Applicant :	**Wenzhou Zhongzhe Electric Co., LTD** **The Nanlvao village, Liushi town, Yueqing, Wenzhou City, Zhejiang**
Manufacturer :	**Wenzhou Zhongzhe Electric Co., LTD** **The Nanlvao village, Liushi town, Yueqing, Wenzhou City, Zhejiang**
Issued By :	**Shenzhen KES Testing & Certfication Co., Ltd.** **Room 405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao' An District, Shenzhen, Guangdong, China**
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Report Number :	**00440KES0040S**
Issued Date :	**January 16, 2024**
Date of Report :	**January 16, 2024**

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TEST REPORT
EN 60947-5-1
Low-voltage switchgear and controlgear – Part 5-1: Control circuit devices and switching elements – Electromechanical control circuit devices

Report reference No. ……..…..:	00440KES0040S
Testing laboratory ……..…..:	Shenzhen KES Testing & Certfication Co., Ltd.
Location……..…..:	Room 405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao 'An District, Shenzhen, Guangdong, China
Applicant……..…..:	Wenzhou Zhongzhe Electric Co., LTD
Address:……..…..:	The Nanlvao village, Liushi town, Yueqing, Wenzhou City, Zhejiang
Manufacturer……..…..:	Wenzhou Zhongzhe Electric Co., LTD
Address:……..…..:	The Nanlvao village, Liushi town, Yueqing, Wenzhou City, Zhejiang
Standards……..…..:	EN 60947-5-1: 2017 EN IEC 60947-1: 2021
Procedure deviation……..…..:	N/A
Non-standard test method……..…..:	N/A
Type of test equipment ……..…..:	Adjustable Voltage Protector
Trade mark……..…..:	N/A
Model/Type designation……..…..:	KE-V008, KE-V009, V008, V009, PROTECTOR DE VOLTAGE, VT-PRT-04, GSM-N6793, VT-PRT-03, POWER PLUG PROTECTOR, PROTCETOR DE VOLTAJE, QPN-12-3, WASHERS & SMALL APPLIANCES, GSM-MP120E, VOLTAGE &ELECTRONIC SURGE PROTECTOR, BX-V008, BX-V009, N004, N01R-PTNU-1, R-PTNU-2, PCHM-MR220, PCHM-MP120, EW-V009-120, KL-1191-1, KL-1191-2, VOTECTOR DE VOLTAJE EQUIPOS ELECTRONICOS
Rating……..…..:	AC 120-220V, 50/60Hz, 12A
TRF originator……..…..:	Shenzhen KES Testing & Certfication Co., Ltd.
Copyright blank test report:	Shenzhen KES Testing & Certfication Co., Ltd.
Test item particulars:	--
Operating Condition	Continuous
Class of equipment	--

Possible test case verdicts :	
test case does not apply to the test object	N(/A.)
test object does meet the requirement	P(ass)
test object does not meet the requirement	F(ail)

Name and address of the testing laboratory :

Shenzhen KES Testing & Certfication Co., Ltd.
Room 405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao 'An District, Shenzhen, Guangzhou, China

Tested by : Henry Tian — Signature — January 14, 2024 — Date

Henry Tian / Engineer
Name/title

Witnessed by: Jet chen — Signature — January 16, 2024 — Date

Jet Chen / project Engineer
Name/title

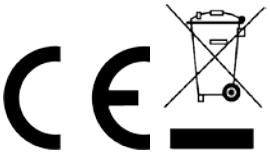
Approved by : Shenzhen KES Testing&Certification Co., LTD — Signature — January 16, 2024 — Date

Kevin Liu / Manager
Name/title

General remarks:	
"(see remark #)" refers to a remark appended to the report. "(see appended table)" refers to a table appended to the report. Throughout this report a comma is used as the decimal separator. The test results presented in this report relate only to the object tested. This report shall not be reproduced except in full without the written approval of the testing laboratory. Unless otherwise specified, test are made under normal conditions at an ambient temperature within the range of 15℃ to 35℃, RH45% to 75% and an air pressure of 860mbar of 1060mbar	Attachment with: 1) Photo documentation

Note: Due to similarity of the rating labels, only above label is listed.

Adjustable Voltage Protector
Model: KE-V008
Rating: AC 120-220V, 50/60Hz, 12A



Wenzhou Zhongzhe Electric Co., LTD

EN 60947-5-1			
Clause	Requirement – Test	Result	Verdict
3	Classification□ □		--
3.1	Contact elements		P
	Contact elements may be classified as follows:		P
	a) Utilization categories (see 4.4).		P
	b) Electrical ratings based on utilization categories (see Annex A).		P
	c) One of the following form letters (see Figure 4):		P
	1) Form A - Single gap make-contact element;		P
	2) Form B - Single gap break-contact element;		P
	3) Form C - Single gap make-break three terminal change-over contact element;		P
	4) Form X - Double gap make-contact element;		P
	5) Form Y - Double gap break-contact element;		P
	6) Form Z - Double gap make-break four terminal change-over contact element.		P
	d) Other types not included in c).		P
3.2	Control switches		P
	Control switches may be classified according to the contact element and the nature of the actuating system, e.g. push-buttons, form X.		P
3.3	Control circuit devices		
	Control circuit devices may be classified according to the control switch and the associated control circuit equipment, e.g. push-buttons plus indicator lights.		P
3.4	Time delay switching elements		P
	Distinction is made according to how the time delay of a switching element is achieved, e.g.electrical delay, magnetic delay, mechanical delay, or pneumatic delay.		P
3.5	Control switch mounting		P
	The control switch mounting may be classified by the mounting hole size, e.g. D12, D16, D22,D30 (see 6.3.1).		P
4	Characteristics		--

EN 60947-5-1			
Clause	Requirement – Test	Result	Verdict
4.1	Summary of characteristics		P
4.1.1	General		P
	The characteristics of control circuit devices and switching elements should be stated in the following terms, where such terms are applicable:		P
	type of equipment (see 4.2);		P
	rated and limiting values for switching elements (see 4.3);		P
	utilization categories of switching elements (see 4.4);		P
	normal and abnormal load characteristics (see 4.3.6).		P
4.1.2	Operation of a control switch		--
	The principal application of a control switch is the switching of loads as indicated for the various utilization categories in Table 1.		P
	Other applications, e.g. the switching of tungsten filament lamps, small motors, etc., are not dealt with in detail in this standard, but are mentioned in 4.3.6.2.		P
4.1.2.1	Normal conditions of use		P
	The normal use of a control switch is to close, maintain and open circuits in accordance with the utilization category shown in Table 1. Also refer to Table 4.		P
4.1.2.2	Abnormal conditions of use		P
	Abnormal conditions may arise, for example, when an electromagnet, although energized, has failed to close. Refer to Table 5.		P
	A control switch shall be able to break the current corresponding to such conditions of use.		P
4.2	Type of control circuit device or switching element		P
4.2.1	Kind of control circuit device		P

EN 60947-5-1			
Clause	Requirement – Test	Result	Verdict
	manual control switches, e.g. push-buttons, rotary switches, foot switches, etc,;		P
	electromagnetically operated control switches, either time delayed or instantaneous, e.g. contactor relays;		P
	pilot switches, e.g. pressure switches, temperature sensitive switches (thermostats), programmers, etc.;		P
	position switches;		P
	associated control equipment, e.g. indicator lights, etc.		P
4.2.2	Kind of switching elements		P
	The kind of switching elements shall be stated:		P
	auxiliary contacts of a switching device (e.g. contactor, circuit breaker, etc.) which are not dedicated exclusively for use with the coil of that device;		P
	interlocking contacts of enclosure doors;		P
	control circuit contacts of rotary switches;		P
	control circuit contacts of overload relays.		P
4.2.3	Number of poles		P
	The number of poles shall be stated.		P
4.2.4	Kind of current		P
	The kind of current shall be stated:		P
	Alternating current or direct current.		--
4.2.5	Interrupting medium		P
	The interrupting medium shall be stated:		P
	Air, oil, gas, vacuum, etc.		P
4.2.6	Operating conditions		P
4.2.6.1	Method of operation		P
	The method of operation shall be stated:		P

EN 60947-5-1			
Clause	Requirement – Test	Result	Verdict
	Manual, electromagnetic, pneumatic, electro-pneumatic.		P
4.2.6.2	Method of control		P
	The method of control shall be stated:		P
	automatic;		P
	non- automatic;		P
	semi-automatic.		P
4.3	Rated and limiting values for switching elements		P
4.3.1	General		P
	The rated values established for the switching elements of a control circuit device shall be stated in accordance with 4.3.2 to 4.3.6 inclusive but it is not necessary to specify all the values listed.		P
4.3.2	Rated voltages (of a switching element)		P
4.3.2.1	General		P
	A switching element is defined by the rated voltages described in 4.3.2.2 to 4.3.2.4.		P
4.3.2.2	Rated operational voltage (Ue)		P
	Subclause 4.3.1.1 of IEC 60947-1:2007 applies with the following additions:		P
	For three-phase circuits, Ug is stated as r.m.s. voltage between phases.		P
4.3.2.3	Rated insulation voltage (U)		P
	Subclause 4.3.1.2 of IEC 60947-1:2007 applies.		P
4.3.2.4	Rated impulse withstand voltage (Uimp)		P
	Subclause 4.3.1.3 of IEC 60947-1:2007 applies.		P
4.3.3	Currents		P
	A switching element is characterized by the currents described in 4.3.3.1 to 4.3.3.3.		P
4.3.3.1	Data shall be included on the nameplate, or on the equipment, or in the manufacturer's published literature:		--
	Conventional free air thermal current (/tn)		P
	Subclause 4.3.2.1 of IEC 60947-1:2007 applies.		P
4.3.3.2	Conventional enclosed thermal current (/the)		P

EN 60947-5-1			
Clause	Requirement – Test	Result	Verdict
	Subclause 4.3.2.2 of IEC 60947-1:2007 applies.		P
4.3.3.3	Rated operational current (/g)		P
	The first paragraph of 4.3.2.3 of IEC 60947-1:2007 applies.		P
4.3.4	Rated frequency		P
	Subclause 4.3.3 of IEC 60947-1:2007 applies.		P
4.3.5	Vacant		P
4.3.6	Normal and abnormal load characteristics		P
4.3.6.1	Rated making and breaking capacities and behaviour of switching elements under normal conditions		P
	A switching element shall comply with both requirements given in Table 4 corresponding to the assigned utilization category and the requirements according to the rated operational voltage.		P
4.3.6.2	Making and breaking capacities under abnormal conditions		P
	A switching element shall comply with the requirements given in Table 5 corresponding to the assigned utilization category.		P
4.3.7	Short-circuit characteristics		P
4.3.7.1	Rated conditional s hort-circuit current		P
	Subclause 4.3.6.4 of IEC 60947-1:2007 applies.		P
4.4	Utilization categories for switching elements		P
	The utilization categories as given in Table 1 are considered standard. Any other types of application shall be based on agreement between manufacturer and user, but information given in the manufacturer's catalogue or tender may constitute such an agreement.		P

EN 60947-5-1			
Clause	Requirement – Test	Result	Verdict
4.10	Electrically separated contact elements		P
	The manufacturer shall state whether the contact elements of a control circuit device are electrically separated or not (see 2.3.3.7). Separated contact elements shall be assumed to be opposite polarity unless otherwise stated by the manufacturer.		P
4.11	Actuating quantities for pilot switches		P
	The operating value and return value of the actuating quantity are to be determined on uniform rising values and normal falling values of the actuating quantity. Unless otherwise stated, the rate of change shall be regular and such that the operating (or return) value is reached in not less than 10 s.		P
	The operating value and the return value may both be fixed values, or one of them or both may be adjustable (or the differential value may be adjustable).		P
	Where appropriate, the manufacturer shall indicate a withstand value, either a maximum value higher than the highest setting of the operating value or a minimum value lower than the lowest setting of the return value. A withstand value implies no damage to the pilot switch or no change in its characteristics.		P
4.12	Pilot switches having two or more contact elements		P
	Pilot switches having two or more contact elements which are not individually adjustable may have different operating and return values for each contact element.		P
	A pilot switch having two or more contact elements which are individually adjusted is considered as a combination of pilot switches.		P

EN 60947-5-1			
Clause	Requirement – Test	Result	Verdict
5	Product information		--
5.1	Nature of information		P
	The following information shall be given by the manufacturer:		P
5.2	MARKING		--
5.2.1	Data shall be preferably marked on the equipment:		P
	a - manufacturer's name or trademark	See pages 1	P
	b - type designation or serial number	See pages 1	P
	Data shall be included on the nameplate, or on the equipment, or in the manufacturer's published literature:		--
	c - number of this standard	IEC 60947-1	P
	d - rated operational voltages		P
	e - utilization category and rated operational currents, at the rated operational voltages of the control circuit device		P
	f - rated insulation voltage:		P
	g - rated impulse withstand voltage		P
	h - switching overvoltages, if applicable		P
	i - IP code, in case of enclosed control circuit device	waterproofing grade 4, Dust level 6	P
	j - pollution degree	III	P
	k - type and maximum ratings of short-circuit protective device		P
	l - conditional short-circuit current		P
	m - suitability for isolation, where applicable, with the symbol 07-13-06 of IEC 60617-7		P
	n - indication of contact elements of same polarity		P
5.2.2	Terminal identification and marking	(see 7.1.8.4 of IEC 60947-1)	P
	Clearly and permanently identified according IEC 60445 and Annex L, unless superseded by relevant standard.		P
	Neutral terminal identified by letter	N	P
	Protective earth terminal identified by letter		P
5.2.3	Functional markings		P
	Actuators may be identified by symbols in the form of engravings, but if a stop button carries any symbol engraved or marked this symbol shall be a circle or oval		P
	Letters or words may used where space is available		P

EN 60947-5-1			
Clause	Requirement – Test	Result	Verdict
	Symbols shall be in accordance with IEC 60417		P
5.2.4	Emergency stop		P
	Actuator shape and colour, background colour and direction of unlatching for emergency stop devices with mechanical latching function shall be in accordance with 4.2 of IEC 60947-5-5		N
5.2.5	Operating diagram		P
	As rotary switches may have multiplicity of contacts elements and a multiplicity of actuator positions, it necessary that the manufacturer indicates the relationship between the actuator positions and the associated contact elements position		P
5.2.5.1	The position indication shall be clear, and the associated text or symbols shall be indelible and easily legible		P
5.2.5.2	Terminal markings for operating diagrams		P
	Terminal markings shall be clearly identifiable with respect to the operating diagram (see also Annex M)		P
5.2.6	Time delay markings		P
	The manufacturer shall indicate, for each time-delay contact element, the characteristic of the delay, according to 2.4.1.1 or 2.4.1.2		P
5.3	Instructions for installation, operation and maintenance		P
	The manufacture shall specify, in his documents or catalogues:		P
	- the conditions for installation, operation and maintenance, if any, of the equipment during operation and after a fault		P
	- the specify the measures to be taken with regard to EMC, if any,		P

EN 60947-5-1			
Clause	Requirement – Test	Result	Verdict
	- equipment only suitable in environment A shall provided with the following notice	NOTICE This product has been designed for environment B may cause unwanted electromagnetic disturbances in which case the user may be required to taken adequate mitigation measures.	P
	- if necessary, the instructions for transport, installation and operation of the equipment shall indicate the measures that are particular importance for the proper and correct installation, commissioning and operation of the equipment.		P
6	Normal service, mounting and transport conditions		--
6.1.1	Ambient temperature		P
	Ambient air temperature does not exceed +40 °C and its average over 24 hours does not exceed +35°C and the lower limit is –5°C	-25°C to70°C	P
6.1.2	Altitude of side of installation does not exceed 2000m		P
6.1.3.1	Relative humidity does not exceed 50 % at max temp +40 °C, higher rel. hum may at lower temperatures e.g. 90% at +20 °C		P
6.1.3.2	Pollution degree		P
	Unless otherwise stated, equipment for: - industrial use shall have a degree 3, depending upon micro-environment - household and similar shall have degree 2	2	P
6.1.4	Shock and vibration		N/A
	Under consideration		N/A
6.2	Conditions during transport and storage		N/A
	Under consideration		N/A
6.3	Mounting		P

EN 60947-5-1			
Clause	Requirement – Test	Result	Verdict
	According manufacturer's instruction		P
6.3.1	Mounting of single hole mounted devices		N/A
	Dimensions according Table 2		N/A
6.3.1.1	Location of key recess(if any)		N/A
	Dimensions according Table 3		N/A
6.3.1.2	Range of panel thickness		N/A
	The device shall be capable of being mounted on any thickness between 1 and 6 mm		N/A
6.3.1.3	Grouping of devices		N/A
	The distances a between the mounting centres in the same row and b between the centre lines of the rows shall be not less than those given in table 3. Distances a and b may be interchanged		N/A
7.1	CONSTRUCTION		--
7.1.1	Materials		P
7.1.2	Current-carrying parts and their connection		P
	No contact pressure through insulating materials		P
7.1.3	Clearances		--
	Clause 7.1.3 of IEC 60947 applies		P
	Minimum values are given in Table 13 and Table 15 of IEC 60947-1		P
	Rated impulse withstand voltage	(see test sequence I)2.5KV	P
	Case B (mm)	Required :…0.6 mm	P
	Case A (mm)	Required :…1.5mm	P
		Measured: …3.2mm	P
	Creepage distances		P
	Pollution degree .....:	2	P
	Comparative tracking index (V) .....:	500V	P
	Material group .....:	I	P
	Rated insulation voltage Ui (V) .....:	300V	P
	Minimum creepage distances (mm) .....:	1.6mm	P
	Measured creepage distances (mm) .....:	3.2mm	P
7.1.4	Actuator		N/A

EN 60947-5-1			
Clause	Requirement – Test	Result	Verdict
7.1.4.1	Insulation		N/A
7.1.4.2	Direction		N/A
7.1.4.3	Actuating force (or moment) :		N/A
7.1.4.4	Limitation of rotation (of rotary switch)		N/A
7.1.4.5	Emergency stop		N/A
7.1.5	Indication of the contact position		N/A
7.1.5.1	Indication means		N/A
7.1.5.2	Indication by the actuator		N/A
7.1.6	Conditions for control switches suitable for isolation		N/A
7.1.7	Class II control circuit devices		N/A
	Not provided with means for protective earthing and insulated by encapsulation,	See annex F	N/A
7.1.8	Requirements for control devices with integrally connected cables	See annex G	N/A
7.1.11	Degree of protection of enclosed equipment		N/A
	Degree of protection .....:	waterproofing grade 4, Dust level 6	N/A
	Test for first characteristic		N/A
	Test for first numeral .....:		N/A
	Test for second characteristic		N/A
	Test for second numeral .....:		N/A
7.2	Performance requirements		P
	Subclauses 7.2.1.1 and 7.2.2 of IEC 60947-1 apply with the following additions:		P
7.2.1.2	Limits of operation of contactor relays		P
	The limits of operation for contactor relays shall be in accordance with IEC 60947-4-1	See clause 8.3.3.2	P
7.2.3	Dielectric properties		P
	Subclause 7.2.3 of IEC 60947-1 applies with the following addition	See clause 8.3.3.4	P
	For class II control circuit devices insulated by encapsulation	See Annex F	N/A
7.2.4	Ability to make and break under normal and abnormal load conditions		P
7.2.4.1	Making and breaking capacities		P
	Making and breaking capacities under normal conditions as state in table 4	See clause 8.3.3.5.2	P
	Making and breaking capacities under abnormal conditions as state in table 5	See clause 8.3.3.5.3	N/A

EN 60947-5-1			
Clause	Requirement – Test	Result	Verdict
7.2.4.2	Vacant		N/A
7.2.4.3	Durability		N/A
	Sub-clause 7.2.4.3 of IEC 60947-1 applies with the following additions:		N/A
	Mechanical durability	See Annex C	N/A
	Electrical durability	See Annex C	N/A
7.2.5	Conditional short-circuit current		P
	The switching element shall withstand the stresses resulting from short-circuit current under the conditions specified in 8.3.4		P
7.2.6	Switching overvoltage		N/A
	Subclause 7.2.6 of IEC 60947-1 applies		N/A
7.2.7	Additional requirements for control switches suitable for isolation		N/A
	Control switches suitable for isolation shall be tested according to 8.3.3.4 of IEC 60947-1 with a value of test voltage as specified in Table 14 or IEC 60947-1 corresponding to the rated impulse withstand voltage Uimp declared by the manufacturer.		N/A
	Other additional requirements applicable to such control switches are under consideration		N/A
7.3	Electromagnetic compatibility (EMC)		N/A
	Subclause 7.3 of IEC 60947-1 applies unless otherwise specified in this standard		N/A

8.3.1.a	TEST SEQUENCE I (sample No. 1)	--
Test No. 1	- operating limits of contactor relays (8.3.3.2)	--
Test No. 2	- temperature rise (Clause 8.3.3.3.)	--
Test No. 3	- dielectric properties (Clause 8.3.3.4)	--
Test No. 4	- mechanical properties of terminals (8.2.4 of IEC 60947-1	--

8.3.3.2	Operating limits of contactor relays		--
9.3.3.2.1	Power-operated equipment:		--
8.2.1.2.1	Electromagnetic contactors and starters		--
	rated control supply voltage Us (V) .....:		P

EN 60947-5-1			
Clause	Requirement – Test	Result	Verdict
	frequency (Hz) .....:		P
	declared ambient temperature(>40 °C) for 100% Us	40	P
	limits of close satisfactorily at any value between 85% and 110% of rated control supply voltage Us .....:		P
	limits of drop out and open fully are: 75% to 20% for a.c. and 75% to 10% for d.c. .....:	See operation under -5°C	N/A
	ambient temperature(-5 °C) for 100% Us		P
	limits of close satisfactorily at any value between 85% and 110% of rated control supply voltage Us .....:	See operation under 40°C	P
	Limits of drop out and open fully are: 75% to 20% for a.c. and 75% to 10% for d.c. .....:		P
8.2.1.2.2	Contactors and starters with electronically controlled electromagnet		--
	Rated control supply voltage Us (V) .....:		
	Frequency (Hz) .....:		N/A
	Declared ambient temperature(>40 °C) for 100% Us		N/A
	Limits of close satisfactorily at any value between 85% and 110% of rated control supply voltage Us .....:		N/A
	Limits of drop out and open fully are: 75% to 20% for a.c. and 75% to 10% for d.c. .....:		N/A
	Ambient temperature(-5 °C) for 100% Us		N/A
	Limits of close satisfactorily at any value between 85% and 110% of rated control supply voltage Us .....:		N/A
	Limits of drop out and open fully are: 75% to 20% for a.c. and 75% to 10% for d.c. .....:		N/A
8.2.1.2.3	Electro-pneumatic contactors and starters		--

EN 60947-5-1			
Clause	Requirement – Test	Result	Verdict
	Rated air supply pressure(Bar) .....:		N/A
	Declared ambient temperature(>40 °C) for 100% of the rated air supply pressure(Bar)		N/A
	Limits of close satisfactorily at any value between 85% and 110% of rated air supply pressure(Bar) .....:		N/A
	Limits of drop out and open fully are: 75% to 10% of rated air supply pressure(Bar) .....:		N/A
	Ambient temperature(-5 °C) for 100% of the rated air supply pressure(Bar)		N/A
	Limits of close satisfactorily at any value between 85% and 110% of rated air supply pressure(Bar) .....:		N/A
	Limits of drop out and open fully are: 75% to 10% for the rated air supply pressure(Bar) :		N/A
8.3.3.3	Temperature rise		--
	ambient temperature 10-40 C .....:		---
	test enclosure W x H x D (mm x mm x mm) .....:		--
	material of enclosure .....:		--
	NO-contacts, test conditions:		--
	- rated operational current Ie (A) .....:	5-15mA	P
	- cable cross-section (mm²) .....:	1mm2	P
	- temperature rise of NO terminals (K) .....:	≤7.0,	P
	NC-contacts, test conditions:		N/A
	- rated operational current Ie (A) .....:	____ A	N/A
	- cable cross-section (mm²) .....:	____mm2 /_____AWG	N/A
	- temperature rise of NC terminals (K) .....:	See table ___	N/A
	Coils and electromagnets, test conditions:		--
	- rated control supply voltage Us (V) .....:	____ V / ____ Hz	N/A
	- Class of insulating material .....:	E	N/A
	- temperature rise of coil and electromagnets (K) :	See table ___	N/A

EN 60947-5-1			
Clause	Requirement – Test	Result	Verdict
8.3.3.4	Test of dielectric properties, impulse withstand voltage (Uimp indicated):		
	- verification by measurement of clearances instead of testing		N/A
	- rated impulse withstand voltage (V) .....:	2.5KV	P
	- test Uimp auxiliary circuits (kV) .....:	3KV	P
	Test of dielectric properties, dielectric withstand voltage (Uimp not indicated):		P
	- rated insulation voltage (V) .....:	300V	P
	- control and auxiliary circuits, test voltage (V) for 5 sec .....:	1500V	P
8.2.4	Mechanical properties of terminals		--
8.2.4.2	Mechanical strength of terminals		--
	maximum cross-sectional area of conductor (mm^2) .....:		P
	diameter of thread (mm) .....:		P
	torque (Nm) .....:		P
	5 times on 2 separate clamping units		P
8.2.4.3	Testing for damage to and accidental loosening of conductor (flexion test)		--
	conductor of the smallest cross-sectional area (mm^2) .....:		P
	number of conductor of the smallest cross section .....:		P
	diameter of bushing hole (mm) .....:		P
	height between the equipment and the platen (mm) .....:		P
	mass at the conductor(s) (kg) .....:		P
	135 continuous revolutions: the conductor shall neither slip out of the terminal nor break near the clamping unit		P

EN 60947-5-1			
Clause	Requirement – Test	Result	Verdict
8.2.4.4	Pull-out test		--
	force (N) .....:		P
	1 min, the conductor shall neither slip out of the terminal nor break near the clamping unit		P
	Flexion test		P
	conductor of the largest cross-sectional area (mm^2) .....:		P
	number of conductor of the largest cross-section :		P
	diameter of bushing hole (mm) .....:		P
	height between the equipment and the platen (mm) .....:		P
	mass at the conductor(s) (kg) .....:		P
	135 continuous revolutions: the conductor shall neither slip out of the terminal nor break near the clamping unit		P
	Pull-out test		P
	force (N) .....:		P
	1 min, the conductor shall neither slip out of the terminal nor break near the clamping unit		P
	Flexion test		N/A
	conductor of the largest and smallest cross-sectional area (mm^2) .....:		N/A
	number of conductor of the smallest cross sectional, number of conductor of the largest cross sectional .....:		N/A
	diameter of bushing hole (mm) .....:		N/A
	height between the equipment and the platen (mm) .....:		N/A
	mass at the conductor(s) (kg) .....:		N/A

EN 60947-5-1			
Clause	Requirement – Test	Result	Verdict
	135 continuous revolutions: the conductor shall neither slip out of the terminal nor break near the clamping unit		N/A
	Pull-out test		N/A
	force (N) .....:		N/A
	1 min, the conductor shall neither slip out of the terminal nor break near the clamping unit		N/A
8.3.1.a	TEST SEQUENCE II (sample No. 2)		--
Test No. 1	- Making and breaking capacities of switching elements under normal conditions (8.3.3.5.2)		--
Test No. 2	- Dielectric verification (8.3.3.5.5.b)		--
8.3.1.a	TEST SEQUENCE III (sample No. 3)		N/A
Test No. 1	- Making and breaking capacities of switching elements under abnormal conditions (8.3.3.5.3)		N/A
Test No. 2	- Dielectric verification (8.3.3.5.5.b)		N/A
8.3.1.	TEST SEQUENCE IV (sample No. 4)		N/A
Test No. 1	- Performance under conditional short-circuit current (8.3.4)		N/A
Test No. 2	- Dielectric verification (8.3.3.5.5.b)		N/A
8.3.1.	TEST SEQUENCE V (sample No. 5)		N/A
Test No. 1	- Degree of protection of enclosed control circuit-devices (Annex C of IEC 60947-1)		N/A
Test No. 2	- Verification of actuation force or moment (8.2.5)		N/A

EN 60947-5-1			
Clause	Requirement – Test	Result	Verdict
8.3.1.	TEST SEQUENCE VI (sample No. 6)		N/A
Test No. 1	- Measurement of clearances and creepage distances (7.1.3)		N/A
Test No. 2	- Verification of limitation of rotation of a rotary switch (8.2.6)		N/A
8.3.4	TEST SEQUENCE VI		P
	Measurement of clearances and creepage distances (7.1.3)		P
	Clearances and creepage distances	See clause 7.1.3	P
	Verification of limitation of rotation of a rotary switch (8.2.6)		
8.2.6	When this test is required in 7.1.4.4, it shall be tested during sequence VI of 8.3.1 The test sample shall be mounted according to the manufacturers instructions		N/A
7.1.4.4	Limitation of rotation (of a rotary switch)		
	When actuators with limited or unidirectional movement are used, they shall be fitted with robust means of limitation, capable of withstanding five times the actual maximum actuating moment		N/A
8.2.6	The operating moment shall be measured five times and the maximum value recorded.		N/A
	The maximum moment value, multiplied by five, shall be applied to the actuator by forcing it against the means of limitation. The moment shall be applied for 10 s.		N/A
	Means of limitation has not moved, become loose or prevented the actuator's normal operation		N/A
	Annex C of IEC 60947-1		N/A
Annex C	Degree of protection of enclosed control circuit-devices		N/A
Annex E	Items subject to agree between manufacturer and user		N/A
	Annex J of IEC 60947-1 applies, as far as covered by clauses and of this standard, with the following additions		N/A
Annex F	Class II control circuit devices insulated by encapsulation Requirements and tests		N/A

EN 60947-5-1			
Clause	Requirement – Test	Result	Verdict
Annex G	Additional requirements for control circuit devices with integrally connected cables		N/A
Annex H	Additional requirements for semiconductor switching elements for control circuit devices		N/A
Annex J	Special requirements for indicator lights and indicating towers		N/A
Annex K	Special requirements for control switches with direct opening action		N/A
Annex L	Special requirements for mechanically linked contact elements		N/A
Annex M	Terminal marking, distinctive number and distinctive letter for control circuit devices		N/A

	TABLE: Heating Test		P
	Test voltage (V) ..... :	220	—
	Ambient (℃).....:	25	—

Thermocouple Locations	dT(K)	required dT(K)
Ambient	25 ℃	--
Terminal No. 1	23.8	65
Enclosure ,plastic ,outside	23.5	40
Enclosure ,metal ,outside	26.4	75
supplementary information:		

	TABLE: Dielectric Strength	P

Test voltage applied between:	Test potential applied (V)	Breakdown / flashover (Yes/No)
All poles together to enclosure	1500	No breakdown or flashover
supplementary information:		

	TABLE: insulation resistance measurements	P

Insulation resistance R between:	R (MΩ)	Required R (MΩ)
All poles together to enclosure	>200	1
supplementary information:		

	TABLE: Clearance and Creepage Distance Measurements	P

clearance cl and creepage distance dcr at/of:	Up (V)	U r.m.s. (V)	required cl (mm)	cl (mm)	required dcr (mm)	dcr (mm)
--	2500	---	1.5	>1.5	1.6	>1.6
supplementary information:						

	TABLE: Ball Pressure Test of Thermoplastics	P

Allowed impression diameter (mm) .....:		—
Part	Test temperature (°C)	Impression diameter (mm)
Enclosure	125	1.62
Terminal (white)	125	1.18
supplementary information:		

	TABLE: Threaded Part Torque Test			P
Threaded part identification		Diameter of thread (mm)	Column number (I, II, or III)	Applied torque (Nm)
Terminal		3.0	II	0.8
supplementary information:				

	TABLE: Critical components information				
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity1)
Enclosure(top)	Sabic Innovative Plastics China Co Ltd	940(f1)	94V-0 105°C	UL94	UL E161723
Metal (bottom)	--	--	7.5mm	--	--
supplementary information: 1) Provided evidence ensures the agreed level of compliance.					

Photographs
Appendix 1
Photo documentation

Photo 1 View: [√] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [ ] Internal	

Photo 2 View: [ ] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [√] Bottom [ ] Internal	

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Photo 3 View: [√] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [ ] Internal	

Photo 4 View: [ ] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [√] Bottom [ ] Internal	

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