



## Technical Construction File

Report No.: NIMU-CE2292Y5051EL

Revision Date:2019/03/01

**Applicant/Holder:** Suzhou Industrial Park Surong Electric Co.,Ltd.

**Address:** No.298, Tangzhuang Road, Suzhou Industrial Park, Suzhou, China

**Manufacturer:** Suzhou Industrial Park Surong Electric Co.,Ltd.

**Product Type:** Self-healing Low Voltage Shunt Capacitor

**Models:**FBSMJ0.45-30-3; BSMJ0.4-5-3; BSMJ0.4-80-3; BSMJ0.415-5-3;

BSMJ0.415-80-3; BSMJ0.45-5-3; BSMJ0.45-80-3;BSMJ0.48-5-3;

BSMJ0.48-80-3; BSMJ0.525-5-3;BSMJ0.525-80-3; BSMJ0.69-5-3;

BSMJ0.69-80-3; BSMJ0.12-5-1; BSMJ0.12-30-1; BSMJ0.69-5-1;

BSMJ0.69-30-1; BSMJ0.12-1.67\*3-1Y; BSMJ0.12-20\*3-1Y;

BSMJ0.3-1.67\*3-1Y; BSMJ0.3-20\*3-1Y

**According to :** Low Voltage Directive 2014/35/EU EMC Directive 2014/30/EU

<b>Test result:</b>	<b>PASS</b>
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Date: 01, 03, 2019

Tested by: Mike.Yu

Approved By: Allen.Dong

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<b>ASSEMENT REPORT</b> <b>Per</b> <b>EN 60252-1:2011+A1:2013</b> <b>Risk assessment and risk reduction</b>	
Report Report reference No. .... : No:NIMU-CE2292Y5051EL	
Tested by(+ signature)..... <i>nikeyu</i>	
Reviewed by(+ signature)..... <i>Shue</i>	
Date of issue ..... : 2019-03-01 Number of pages (Report) ..... : N.A.	
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Client Name .....: Suzhou Industrial Park Surong Electric Co.,Ltd. Address .....: No.298, Tangzhuang Road, Suzhou Industrial Park, Suzhou, China	
Test specification Standard ..... : EN 60252-1:2011+A1:2013  Test procedure ..... : CE-LVD+EMC  Non-standard test method ..... : N.A.	
General product information:  The product is Self-healing Low Voltage Shunt Capacitor	
Test Result:PASS.  The product meets the all test requirements. The details are listed in the following documents.	





## General remarks

This report shall not be reproduced except in full without the written approval of the testing laboratory.

The test results presented in this report relate only to the item(s) tested.

"(see appended table)" refers to a table appended to the report.

"(see remark #)" refers to a remark appended to the report.

"(see Annex #)" refers to an annex appended to the report.

Throughout this report a comma (point) is used as the decimal separator.

### **Remark:**

#### **Photo-document:**

(See appendix 1)

#### **Copy of marking plate:**

(See appendix 2)



## EN 60252-1

Clause	Requirement	Test	Result - Remark	Verdict
<b>5</b>	<b>Quality requirements and tests</b>			P
5.1	Test requirements			P
5.1.2	Test conditions		Temperature :20°C	P
5.2	Nature of tests			--
5.2.1	Type tests			P
5.2.2	Routine tests			N
5.3	Type tests			P
5.3.1	Test procedure			P
5.3.2	Extent of qualification			P
5.3.2.1	A type test on a single model qualifies only the model tested. When the type test is performed on two models of the same type, and of different rated capacitance value, selected under the rules of 5.3.1, the qualification is valid for all models of the same type having rated capacitance between the two tested values.			P
5.3.2.2	The qualification tests carried out successfully on a capacitor model having a certain capacitance tolerance are valid also for capacitors of the same model but having a different capacitance tolerance of up to twice the limits of the declared tolerance. For example, $\pm 5\%$ would cover up to $\pm 10\%$ , and $\pm 10\%$ would cover up to $\pm 20\%$ . A smaller tolerance than the declared tolerance is not permitted. For example, a type approval for $\pm 10\%$ would not cover $\pm 5\%$ .			P
5.3.2.3	capacitors are required with a capacitance tolerance that is not symmetrical with respect to the rated capacitance value.			P



5.4	Routine tests		N
5.5	Tangent of loss angle	defined by the manufacturer.	P
5.6	Visual examination	The marking is legible during	
	the life of the capacitor.		P
5.7	Voltage test between terminals		P
5.8	Voltage test between terminals and case		P
5.9	Capacitance measurement		P
5.10	Check of dimensions		P
5.11	Mechanical tests		P
5.11.1	Robustness of terminations		P
5.11.2	Soldering		P
5.11.3	Vibration		P
5.11.4	Fixing bolt or stud (if fitted)		P



## EN 60252-1

Clause	Requirement	Test	Result - Remark	Verdict
5.12	Sealing test			P
5.13	Endurance test			P
5.13.1	Testing in air with forced circulation		Class B, 1000hours	P
5.13.2	Endurance test procedure			P
5.13.3	Conditions of compliance			P
5.14	Damp-heat test		after the test. Capacitance	
	change < 0,5 %	P		
5.15	Self-healing test		after the test., Capacitance change < 0,5 %, RC value is 100 s.	P
5.16	Destruction test			N
5.16.1	General			N
5.16.2	Test specimens			N
5.16.3	Test apparatus for sequential DC and AC test(capacitor type S1 and S2)			N 5.16.4
	Test apparatus for sequential DC and AC test(capacitor type S3)			N 5.16.5
	Test procedure for sequential DC and AC test(capacitor type S1 and S2)			N 5.16.6
	Test procedure for sequential DC and AC test(capacitor type S3)			N
5.16.7	Evaluation of the failure			N
5.17	Resistance to heat, fire and tracking			N
5.17.1	Ball-pressure test		No insulating material	N
5.17.2	Glow-wire test		No insulating material	N
5.17.3	Tracking test			N



<b>6</b>	<b>Permissible overloads</b>		P
6.1	Maximum permissible voltage	400V~	P
6.2	Maximum permissible current		P
6.3	Maximum permissible reactive output		P
<b>7</b>	<b>Safety requirements</b>		P
7.1	Creepage distances and clearances	Different polarity: cl>3mm,cr>3mm	P
7.2	Terminals and connecting cables		P
7.3	Earth connections		N
7.4	Discharge devices		P
<b>8</b>	<b>Marking</b>		P



## EN 60252-1

Clause	Requirement	Test	Result - Remark	Verdict
	The following information shall be marked on the capacitor:			--
	a) manufacturer's name, abbreviated name or trade mark;			P
	b) manufacturer's type designation;			P
	c) rated capacitance (CN) in microfarads and tolerance as a percentage		0.1uf	P
	d) rated voltage (UN) in volts		400V~	P
	e) spare;			P
	f) rated frequency fN, in hertz, if other than 50 Hz;			P
	g) climatic category, for example 25/85/21 (see 4.1);			N
	h) date of manufacture (a code may be used);			P
	i) or SH for self-healing capacitors;		SH	P
	j) discharge device, if any, shall be written out in full or indicated by the symbol			P
	k) class of safety protection, for example, S0, S1, S2,S3			P
	l) approval marks;			P
	m) filling material. Reference to liquid used (not needed for dry capacitors);			P
	n) class of operation or life duration. To be positioned adjacent to the voltage;			P
	o) specification (standard) number.		EN 60252-1	P



<b>9</b>	<b>Guidance for installation and operation</b>	<b>P</b>
9.1	General	P
9.2	Choice of rated voltage	P
9.2.1	Measurements of working voltage	P
9.2.2	Influence of capacitance	P
9.3	Checking capacitor temperature	P
9.3.1	Choice of maximum permissible capacitor operating temperature	P 9.3.2
	Choice of minimum permissible capacitor operating temperature	P
9.4	Checking transients	P
9.5	Leakage current	P



# Appendix 1

## Photos of EUT





## **Appendix 2**

### **Product marking of EUT**

#### **Self-healing Low Voltage Shunt Capacitor**

**Model:BSMJ0.45-30-3**

**EN 60252-1 SH B**

**Suzhou Industrial Park Surong Electric Co.,Ltd.**

**MADE IN CHINA**