



# S&C ELECTRIC COMPANY

Excellence Through Innovation

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Reference Number: CERT-1126

Original Issue Date: 07/16/2019

## CERTIFIED TEST ABSTRACT

### TYPE OF TEST

Dielectric  
Lightning Impulse  
Power Frequency

### TYPE OF EQUIPMENT

S&C Type XS Fuse Cutouts – Overhead Pole-Top Style, with the following base catalog numbers and ratings:

Catalog Number	Max Voltage, kV	Cont. Current, A	Rated Interrupting Current, kA, Asym.	Rated Interrupting Current, kA, Sym.	Minimum Leakage Distance, Inches (mm)	BIL, kV
89021R10-P	15	100	10	7.1	14.764 (375)	110
89031R10-P	15	100	16	10.6		
89071R11-P	15	200	12	8		
89811R10-P	15	/	/	/		

Catalog Number	Max Voltage, kV	Cont. Current, A	Mom. Current, kA, Asym.	Minimum Leakage Distance, Inches (mm)	BIL, kV
89221R10-P	15	300	16	14.764 (375)	110

All the base catalog numbers listed above utilize 15 kV Class Type XS Fuse Cutout mountings with polymer insulators comprising of 4 sheds with an outside diameter of 92 mm and 4 sheds with an outside diameter of 108 mm.

### APPLICABLE TEST SPECIFICATIONS

IEEE C37.41-2016, *IEEE Standard Design Tests for High-Voltage (>1000 V) Fuses and Accessories*

IEEE C37.42-2016, *IEEE Standard Specifications for High-Voltage (>1000 V) Fuses and Accessories*

IEC 60282-2: 2008, *High-Voltage Fuses. Part 2 – Expulsion Fuses*

**TEST PROCEDURE AND RESULTS**

S&C Test Number: 18371

Successful dielectric test results are presented in “Table 1. Summary of Dielectric Test Results and IEEE Requirements” and “Table 2. Summary of Dielectric Test Results and IEC Requirements”.

These tests were performed on devices with base catalog number 89021R10-P (with 30A Fuse Link), which utilize a 15 kV Class S&C Type XS Fuse Cutout mounting with polymer insulators comprising of 4 sheds with an outside diameter of 92 mm and 4 sheds with an outside diameter of 108 mm. The test samples were arranged and conducted in accordance with procedures specified in IEEE C37.41-2016 and IEC 60282-2: 2008.

Table 1. Summary of Dielectric Test Results and IEEE Requirements							
Test Configuration	Corrected Withstand Test Voltage (kV)				Required Withstand Voltage (kV) in IEEE		
	Power Frequency		Impulse 1.2x50 $\mu$ s		Power Frequency		Impulse
	1 min. Dry	1 min. Wet	Positive	Negative	1 min. Dry	1 min. Wet	
Cutout closed Upper terminal energized Rear insert grounded	65	45	110	110	35	30	110
Cutout open Upper terminal energized Lower terminal grounded Rear insert floating	70	60	121	121	35	30	110
Cutout open Upper terminal grounded Lower terminal energized Rear insert floating	70	60	121	121	35	30	110

**Table 2. Summary of Dielectric Test Results and IEC Requirements**

Test Configuration	Corrected Withstand Test Voltage (kV)				Required Withstand Voltage (kV) in IEC		
	Power Frequency		Impulse 1.2x50 $\mu$ s		Power Frequency		Impulse
	1 min. Dry	1 min. Wet	Positive	Negative	1 min. Dry	1 min. Wet	
Cutout closed Upper terminal energized Rear insert grounded	65	45	110	110	38	38	95
Cutout open Upper terminal energized Lower terminal grounded Rear insert floating	70	60	121	121	45	45	110
Cutout open Upper terminal grounded Lower terminal energized Rear insert floating	70	60	121	121	45	45	110

**DISCUSSION**

All the cutouts listed in this Certified Test Abstract utilize the same polymer insulator and mounting live parts. Hence, it can be stated that the results certifying 89021R10-P can be used to certify other cutouts listed at the beginning of this Certified Test Abstract, as the Fuse Tubes and Blades are interchangeable.

**CONCLUSIONS**

Type XS Fuse Cutouts with Polymer insulators listed in the beginning of this Certified Test Abstract meet the dielectric requirements defined in the IEEE C37.41-2016, IEEE C37.42-2016 and IEC 60282-2: 2008.

**STATEMENT**

The above-stipulated conclusion is based upon test results presented and, upon engineering experience and judgment.

STATE OF ILLINOIS )

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COUNTY OF COOK )

Chen Zhongyun, being sworn, states that: Chen Zhongyun is Manager — Fuse Products — Engineering Department of S&C Electric (China) Company Ltd. and is authorized to execute this certificate on behalf of S&C Electric Company; and said tests were conducted in the manner above set forth, and the results are accurately reported above.

Subscribed and sworn to before me  
this 18<sup>th</sup> day of July 2019.

S&C ELECTRIC COMPANY

Tammi Silverstein

Affixed hereon is my Cook County,  
Illinois Notary Public Seal

by Chen Zhongyun

Chen Zhongyun  
Manager—Fuse Products —  
Engineering Department  
S&C Electric Company (China) Ltd.

