

## KEMA TYPE TEST CERTIFICATE OF COMPLETE TYPE TESTS

<b>Object</b>	SDN switch	<b>1069-17</b>
<b>Type</b>	SEL-2740S	
Rated input voltage	125/250 Vdc 120/220/240 Vac 50/60 Hz	Ethernet ports 20
Mechanical class	1	Number of slots 6
<b>Manufacturer</b>	Schweitzer Engineering Laboratories, Inc., Pullman, Washington, United States *)	
<b>Client</b>	Schweitzer Engineering Laboratories, Inc., Pullman, Washington, United States	
<b>Tested by</b>	DNV GL Netherlands B.V., Arnhem, the Netherlands	
<b>Date of tests</b>	14 February 2017 to 18 January 2018	

The object, constructed in accordance with the description, drawings and photographs incorporated in this Certificate, has been subjected to the series of proving tests in accordance with the complete type test requirements of

### IEC 61850-3:2013

The results are shown in the record of proving tests and the oscillograms attached hereto. The values obtained and the general performance are considered to comply with the above standard(s) and to justify the ratings assigned by the manufacturer as listed on page 7.

This Certificate applies only to the object tested. The responsibility for conformity of any object having the same type references as that tested rests with the Manufacturer.

\*) as declared by the manufacturer

This Certificate consists of 148 pages in total.

DNV GL Netherlands B.V.



J.P. Fonteijne  
Executive Vice President  
KEMA Laboratories



Laboratories Arnhem, 20 March 2018

## INFORMATION SHEET

### **1 KEMA Type Test Certificate**

A KEMA Type Test Certificate contains a record of a series of (type) tests carried out in accordance with a recognized standard. The object tested has fulfilled the requirements of this standard and the relevant ratings assigned by the manufacturer are endorsed by DNV GL. In addition, the object's technical drawings have been verified and the condition of the object after the tests is assessed and recorded. The Certificate contains the essential drawings and a description of the object tested. A KEMA Type Test Certificate signifies that the object meets all the requirements of the named subclauses of the standard. It can be identified by gold-embossed lettering on the cover and a gold seal on its front sheet.

The Certificate is applicable to the object tested only. DNV GL is responsible for the validity and the contents of the Certificate. The responsibility for conformity of any object having the same type references as the one tested rests with the manufacturer.

Detailed rules on types of certification are given in DNV GL's Certification procedure applicable to KEMA Laboratories.

### **2 KEMA Report of Performance**

A KEMA Report of Performance is issued when an object has successfully completed and passed a subset (but not all) of test programmes in accordance with a recognized standard. In addition, the object's technical drawings have been verified and the condition of the object after the tests is assessed and recorded. The report is applicable to the object tested only. A KEMA Report of Performance signifies that the object meets the requirements of the named subclauses of the standard. It can be identified by silver-embossed lettering on the cover and a silver seal on its front sheet.

The sentence on the front sheet of a KEMA Report of Performance will state that the tests have been carried out in accordance with ..... The object has complied with the relevant requirements.

### **3 KEMA Test Report**

A KEMA Test Report is issued in all other cases. Reasons for issuing a KEMA Test Report could be:

- Tests were performed according to the client's instructions.
- Tests were performed only partially according to the standard.
- No technical drawings were submitted for verification and/or no assessment of the condition of the object after the tests was performed.
- The object failed one or more of the performed tests.

The KEMA Test Report can be identified by the grey-embossed lettering on the cover and grey seal on its front sheet.

In case the number of tests, the test procedure and the test parameters are based on a recognized standard and related to the ratings assigned by the manufacturer, the following sentence will appear on the front sheet. The tests have been carried out in accordance with the client's instructions. Test procedure and test parameters were based on ..... If the object does not pass the tests such behaviour will be mentioned on the front sheet. Verification of the drawings (if submitted) and assessment of the condition after the tests is only done on client's request.

When the tests, test procedure and/or test parameters are not in accordance with a recognized standard, the front sheet will state the tests have been carried out in accordance with client's instructions.

### **4 Official and uncontrolled test documents**

The official test documents of DNV GL are issued in bound form. Uncontrolled copies may be provided as a digital file for convenience of reproduction by the client. The copyright has to be respected at all times.

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## 1 SUMMARY

By order of the client type tests according to IEC 61850-3 have been performed on the test object.

<b>Test / Measurement</b>	<b>Test result</b>
Dimensions of structure and visual inspection	Passed
Functional requirements <sup>1</sup>	Passed
Product safety	Passed
Electromagnetic compatibility (EMC)	Passed
Burden tests	Passed
Climatic environmental conditions	Passed
Mechanical environmental conditions	Passed
Enclosure protection	Passed

During the testing period the following changes were made to the test object:

The mounting brackets have been reinforced and extended. This change is required to pass the mechanical tests.

The changes to the test object have been documented in chapter 8 "Photographs of changes to the test object".