

## IEC 61850 Certificate Level A<sup>1</sup>

**Issued to:**

Schweitzer Engineering Laboratories, Inc.  
2350 NE Hopkins Court  
99163 Pullman WA  
United States of America

**For the server product:**

SEL-2411 Programmable Automation Controller  
Firmware version: SEL-2411-R501  
IEC 61850 library ID: 0E57F003  
S/N: 3240195504  
Hardware version: MB3

The server product has not been shown to be non-conforming to:

### IEC 61850 Edition 2 Parts 6, 7-1, 7-2, 7-3, 7-4 and 8-1

Communication networks and systems for power utility automation

The conformance test has been performed according to IEC 61850-10 Edition 2, the UCA International Users Group Edition 2 Server Test Procedures version 2.0.6 with product's protocol, model and technical issue implementation conformance statements: "Protocol Implementation Conformance Statement for the IEC 61850 interface in SEL-2411 and SEL-2414, Version 1", "Model Implementation Conformance Statement (MICS) for the IEC 61850 Edition 2 server interface in SEL-2411 and SEL-2414, Version 1" and "TISSUES Implementation Conformance Statement for the IEC 61850 Edition 2 server interface in SEL-2411 and SEL-2414, Version 1" and the extra information for testing: "Protocol Implementation eXtra Information for Testing (PIXIT) for the IEC 61850 Edition 2 server interface in SEL-2411 and SEL-2414, Version 1".


The following IEC 61850 conformance blocks have been tested with a positive result (number of relevant and executed test cases / total number of test cases):

1 Basic Exchange (20/26)	12a Direct Control (8/18)
2 Data Sets (4/7)	12b SBO Control (15/27)
5 Unbuffered Reporting (18/23)	12c Enhanced Direct Control (9/20)
6 Buffered Reporting (27/33)	12d Enhanced SBO Control (17/28)
9a GOOSE Publish (9/13)	13 Time Synchronization (6/7)
9b GOOSE Subscribe (21/21)	14 File Transfer (6/8)
	15 Service Tracking (7/17)


This certificate includes a summary of the test results as carried out at DNV in The Netherlands with UniGrid SA Simulator 2.2.1 with test suite 20240119 and UniCA 61850 Analyzer 6.41.00. This document has been issued for information purposes only, and the archived DNV verification report No. 10488276-DSO 24-4170 rev 2 will prevail.

The test has been carried out on one single specimen of the product as referred above and submitted to DNV by Schweitzer Engineering Laboratories, Inc. The manufacturer's production process has not been assessed. This certificate does not imply that DNV has approved any product other than the specimen tested.

Arnhem, May 16, 2024

  
**R. Botezatu**  
Test Engineer

Issued by:



  
**R. Schimmel**  
Verification Manager

<sup>1</sup> Level A - Independent test lab with certified ISO 9001 Quality System  
UCA International Users Group P.O. Box 315, Shell Knob, MO 65747 USA

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Applicable Test Procedures from the UCA International Users Group Edition 2 Server Test Procedures version 2.0.6

Conformance Block	Mandatory	Conditional
1: Basic Exchange	sAss1, sAss2, sAss3, sAss4, sAssN2, sAssN3, sAssN4, sAssN5, sSrv1, sSrv2, sSrv3, sSrv4, sSrv5, sSrv8, sSrvN1abcd, sSrvN4	sAssN6, sSrv9, sSrv10, sSrv12
2: Data Sets	sDs1, sDs10a, sDsN1ae	sDs15
5: Unbuffered Reporting	sRp1, sRp2, sRp3, sRp4, sRp5, sRp9, sRp14, sRp16, sRpN1, sRpN2, sRpN3, sRpN4, sRpN8	sRp8, sRp10, sRp11, sRp12, sRp15
6: Buffered Reporting	sBr1, sBr2, sBr3, sBr4, sBr5, sBr9, sBr14, sBr16, sBr20, sBr21, sBr22, sBr25, sBr26, sBr27, sBr28, sBr29, sBrN1, sBrN2, sBrN3, sBrN4, sBrN5, sBrN8	sBr8, sBr10, sBr11, sBr12, sBr15
9a: GOOSE publish	sGop2a, sGop3, sGop4, sGop9, sGop10, sGop11, sGop12	sGop1, sGopN2
9b: GOOSE subscribe	sGos1, sGos2, sGos3, sGos5, sGos6a, sGos7, sGos8, sGos9, sGos10, sGos11, sGos12, sGos23, sGosN1, sGosN2, sGosN3, sGosN4, sGosN5, sGosN6	sGos4, sGos6b, sGos13
12a: Direct control	sCtl5, sCtl10, sDOns1, sDOns2	sCtl15, sCtl16, sCtl17, sCtl21
12b: SBO control	sCtl5, sCtl8, sCtl9, sCtl10, sCtl11, sCtl25, sSBOns1, sSBOns2, sSBOns6	sCtl4, sCtl6, sCtl15, sCtl16, sCtl17, sCtl21
12c: Enhanced Direct Control	sCtl5, sCtl10, sDOes1, sDOes2	sCtl14, sCtl15, sCtl16, sCtl17, sCtl21
12d: Enhanced SBO Control	sCtl5, sCtl8, sCtl9, sCtl10, sCtl11, sCtl25, sSBOes1, sSBOes2, sSBOes6, sSBOes8	sCtl4, sCtl6, sCtl15, sCtl16, sCtl17, sCtl21, sCtl26
13: Time sync	sTm1, sTm2, sTmN1	sTm3, sTm4, sTm5
14: File transfer	sFt1, sFt2ab, sFt4, sFt5, sFtN1ab	sFt3
15: Service tracking		sTrk1, sTrk2, sTrk8, sTrk9, sTrk11, sTrk13, sTrk14

All configuration file and data model tests have been successfully performed for the product variants using the same communication hardware and software version:

- SEL-2414 Transformer Monitor  
Firmware version: SEL-2414-R500 with IEC 61850 library ID: 0E57F003