

No. 10004215-OPE/INC 15-2927

Issued to:

Schweitzer Engineering Laboratories, Inc.
2350 NE Hopkins Court
Pullman, WA 99163
USA

For the server product:

SEL-651RA Recloser Control
Version: R100
S/N: 1151980123

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

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

Communication networks and systems in substations

The conformance test has been performed according to IEC 61850-10, the UCA International Users Group Server Device Test Procedures version 3.02, the product's protocol, model and technical issue implementation conformance statements: "Protocol Implementation Conformance Statement for the IEC 61850 interface in SEL-651RA, version 1.0", "Model Implementation Conformance Statement for the IEC 61850 interface in SEL-651RA, version 1.0" and "TISSUES Implementation Conformance Statement for the IEC 61850 interface in SEL-651RA, version 1.0" and the extra information for testing: "Protocol Implementation eXtra Information for Testing (PIXIT) for the IEC 61850 interface in SEL-651RA, version 1.0".

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 (18/24)	9a GOOSE Publish (8/12)
2 Data Sets (3/6)	9b GOOSE Subscribe (11/11)
5 Unbuffered Reporting (17/19)	12a Direct Control (7/12)
6 Buffered Reporting (24/28)	12c Enhanced Direct Control (7/13)
	12d Enhanced SBO Control (12/19)
	13 Time Synchronization (4/5)
	14 File Transfer (4/7)

This certificate includes a summary of the test results as carried out at DNV GL in The Netherlands with UniCA 61850 Client Simulator 4.29.03 with test suite 3.29.00 and UniCA 61850 Analyzer 5.29.02. This document has been issued for information purposes only, and the original paper copy of the DNV GL verification report No. 10004215-OPE/INC 15-2928 will prevail.

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

Arnhem, November 30, 2015



M. Adriaensen
Head of Department
Operational Excellence

Issued by:



DNV KEMA is now DNV GL



R. Schimmel
Verification Manager

¹ Level A - Independent test lab with certified ISO 9001 Quality System



Applicable Test Procedures from the UCA International Users Group Server Device Test Procedures version 3.02

Conformance Block	Mandatory	Conditional
1: Basic Exchange	Ass1, Ass2, Ass3, AssN2, AssN4, AssN5 Srv1, Srv2, Srv3, Srv4, Srv5, SrvN1abcd, SrvN4	AssN3, Srv8, Srv9, Srv10, SrvN1f
2: Data Sets	Dset1, Dset10a, DsetN1ae	
5: Unbuffered Reporting	Rp1, Rp2, Rp3, Rp4, Rp9, Rp15, RpN1, RpN2, RpN3, RpN4, RpN8	Rp7, Rp8, Rp10, Rp11, Rp12, RpN5
6: Buffered Reporting	Br1, Br2, Br3, Br4, Br9, Br15, Br20, Br21, Br22, Br25, Br26, Br27, Br28, BrN1, BrN2, BrN3, BrN4, BrN5, BrN8	Br7, Br8, Br10, Br11, Br12
9a: GOOSE Publish	Gop2, Gop3, Gop4, Gop9, Gop10a	Gop1, Gop7, Gop10b
9b: GOOSE Subscribe	Gos1a, Gos2, Gos3, GosN1, GosN2, GosN3, GosN4, GosN5, GosN6	Gos1b, Gos4
12a: Direct Control	CtIN3, CtIN8, DOns1	CtI2, CtIN10, CtIN11, DOns3
12c: Enhanced Direct Control	CtIN3, CtIN8, DOes2, DOes5	CtI2, CtIN10, CtIN11
12d: Enhanced SBO Control	CtI3, CtIN1, CtIN2, CtIN3, CtIN4, CtIN9, SBOes1, SBOes2, SBOes3	CtI2, CtIN10, CtIN11
13: Time Sync	Tm1, Tm2	Tm3, TmN1
14: File Transfer	Ft1, Ft2ab, Ft4, FtN1ab	