



IEC 61850 Certificate Level A¹

No. 74100372-MOC/INC 11-1966

Issued to:
Schweitzer Engineering Laboratories, Inc
2350 NE Hopkins Court
Pullman, WA 99163-5603
USA

For the product:
SEL-451-5 Protection, Automation, and
Bay Control System
Version R307



The product has not shown to be non-conforming to:
IEC 61850-6, 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 with product's protocol, model and technical issue implementation conformance statements: "IEC61850 PICS SEL-451, version 20110718", "IEC61850 MICS SEL-451, version 20110718", "IEC61850 TICS SEL-451, version 20110718" and product's extra information for testing: "IEC61850 PIXIT SEL-451, version 20110718".

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 as defined in the UCA International Users Group Device Test procedures v2.2b):

1 Basic Exchange (15/24)	9b GOOSE Subscribe (10/10)
2 Data Sets (3/6)	12a Direct Control (7/11)
5 Unbuffered Reporting (13/18)	12c Enhanced Direct Control (7/13)
6 Buffered Reporting (16/20)	12d Enhanced SBO Control (12/19)
9a GOOSE Publish (5/12)	

This Certificate includes a summary of the test results as carried out at KEMA in the Netherlands with UniCAsim 61850 version 3.21.02 with test suite 3.21.02 and UniCA 61850 analyzer 4.22.03. The test is based on the UCA International Users Group Device Test Procedures version 2.2b. This document has been issued for information purposes only, and the original paper copy of the KEMA report: No. 74100372-MOC/INC 11-1965 will prevail.

The test has been carried out on one single specimen of the product as referred above and submitted to KEMA by SEL. The manufacturer's production process has not been assessed. This Certificate does not imply that KEMA has certified or approved any product other than the specimen tested.

Arnhem, 8 August 2011

M. Adriaansen
Regional Director Management & Operations Consulting

R. Schimmel
Certification manager

1 Level A - Independent Test lab with certified ISO 9000 or ISO 17025 Quality System

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Applicable Test Procedures from the UCA International Users Group Device Test Procedures version 2.2b

Conformance Block	Mandatory	Conditional
1: Basic Exchange	Ass1, Ass2, Ass3, AssN2, AssN3, AssN4, AssN5 Srv1, Srv2, Srv3, Srv4, Srv5, SrvN1abcd, SrvN4	Srv8
2: Data Sets	Dset1, Dset10a, DsetN1ae	
5: Unbuffered Reporting	Rp1, Rp2, Rp3, Rp4, Rp7, Rp10 RpN1, RpN2, RpN3, RpN4	Rp5, Rp8, Rp9
6: Buffered Reporting	Br1, Br2, Br3, Br4, Br7, Br8, Br9, Br12 BrN1, BrN2, BrN3, BrN4, BrN5	Br5, Br10, Br11
9a: GOOSE publish	Gop2, Gop3, Gop4, Gop7	Gop1
9b: GOOSE subscribe	Gos1a, Gos2, Gos3, GosN1, GosN2, GosN3, GosN4, GosN5, GosN6	Gos1b
12a: Direct control	CtlN3, CtlN8 DOns1, DOns3	Ctl2, CtlN10, CtlN11
12c: Enhanced Direct Control	CtlN3, CtlN8 DOes2, DOes5	Ctl2, CtlN10, CtlN11
12d: Enhanced SBO control	Ctl3, CtlN1, CtlN2, CtlN3, CtlN4, CtlN9 SBOes1, SBOes2, SBOes3	Ctl2, CtlN10, CtlN11