

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

**Issued to:**

Siemens AG  
Wernerwerkdam 5  
13629 Berlin  
Germany

**For the server product:**

SIPROTEC 5  
7SJ82 Overcurrent protection  
Firmware version: V08.82  
Hardware version: 7SJ82-DAAA-AA0-0AAAA0-A90411-  
13113A-EBA000-000AB0-HB1BD4-JA0

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

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

Communication networks and systems for power utility automation

The conformance test has been performed according to IEC 61850-10 and the UCA International Users Group Edition 2 with Amendment 1 Server Test Procedures version 1.1 with product's protocol implementation conformance statement and extra information for testing: "SIPROTEC 5 PIXIT, PICS, TICS IEC 61850 Manual, V8.82 and higher, C53000-G5040-C013-C" and model implementation conformance statement: "SIPROTEC Model Implementation Conformance Statement (MICS) According to IEC 61850, Device: x7SJ82, Mapping version V08.82.01".

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):

1a Basic Exchange (26/29)	9a GOOSE publish (10/13)
2 Data Sets (4/7)	9b GOOSE subscribe (27/27)
2+ Data Set Definition (24/24)	12a Direct Control (7/18)
3 Substitution (3/3)	12b SBO Control (15/27)
4 Setting Group Selection (4/4)	12c Enhanced Direct Control (10/20)
4+ Setting Group Definition (13/13)	12d Enhanced SBO Control (16/28)
5 Unbuffered Reporting (25/26)	13a Time Synchronization with SNTP (7/8)
6 Buffered Reporting (35/36)	14 File Transfer (5/8)
	15 Service Tracking (2/17)

This certificate includes a summary of the test results as carried out at DNV in The Netherlands with UniGrid SA Simulator 1.8.1 with test suite 20210921.1 and UniCA 61850 Analyzer 6.41.00. This document has been issued for information purposes only, and the archived DNV verification report No. 10300967-INC 21-3340 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 Siemens AG. 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, December 14, 2021



**N.A. Heijker**  
Business Leader  
Interoperability of Smart Power Systems

Issued by:




**R. Schimmel**  
Verification Manager

<sup>1</sup> Level A - Independent test lab with certified ISO 9001 Quality System

## IEC 61850 Certificate Level A

Applicable Server Test Procedures from the UCA International Users Group Edition 2 with Amendment 1 Server Test Procedures version 1.1

Conformance Block	Mandatory	Conditional
1a: Basic Exchange	sAss1, sAss2, sAss3, sAss4, sAssN2, sAssN3, sAssN4, sAssN5, sSrv1, sSrv2, sSrv3, sSrv4, sSrv5, sSrv8, sSrvN1abcd, sSrvN4	sAssN6, sSrv6, sSrv9, sSrv10, sSrv11, sSrv12, sSrv13, sSrv15, sSrvN1e, sSrvN3
2: Data Sets	sDs1, sDs10a, sDsN1ae	sDs15
2+: Data Set Definition	sDs2, sDs3, sDs4, sDs5, sDs6, sDs7, sDs8, sDs9, sDs13, sDs14, sDsN1cd, sDsN2, sDsN3, sDsN4, sDsN5, sDsN6, sDsN7, sDsN8, sDsN9, sDsN10	sDs11, sDs12, sDsN11, sDsN12
3: Substitution	sSub1, sSub2, sSub3	
4: Setting Group Selection	sSg1, sSg3, sSgN1	sSg11
4+: Setting Group Definition	sSg2, sSg4, sSg6, sSg7, sSg8, sSg10, sSg12, sSgN2, sSgN3, sSgN4, sSgN5	sSg5, sSg9
5: Unbuffered Reporting	sRp1, sRp2, sRp3, sRp4, sRp5, sRp9, sRp14, sRp16, sRp23, sRpN1, sRpN2, sRpN3, sRpN4, sRpN5, sRpN7, sRpN8, sRpN9	sRp6, sRp7, sRp8, sRp10, sRp11, sRp12, sRp15, sRp17
6: Buffered Reporting	sBr1, sBr2, sBr3, sBr4, sBr5, sBr9, sBr14, sBr16, sBr20, sBr21, sBr22, sBr23, sBr24, sBr25, sBr26, sBr27, sBr28, sBr29, sBrN1, sBrN2, sBrN3, sBrN4, sBrN5, sBrN7, sBrN8, sBrN9, sBrN10	sBr6, sBr7, sBr8, sBr10, sBr11, sBr12, sBr15, sBr17
9a: GOOSE publish	sGop2a, sGop3, sGop4, sGop9, sGop10, sGop11, sGop12	sGop1, sGop6, sGopN1
9b: GOOSE subscribe	sGos1, sGos2, sGos3, sGos5, sGos6a, sGos7, sGos8, sGos9, sGos10, sGos11, sGos12, sGos14, sGos15, sGos20, sGos21, sGos22, sGos23, sGosN1, sGosN2, sGosN3, sGosN4, sGosN5, sGosN6, sGosN7	sGos4, sGos6b, sGos13
12a: Direct control	sCtl5, sCtl10, sDOs1, sDOs2	sCtl7, sCtl16, sCtl17
12b: SBO control	sCtl5, sCtl8, sCtl9, sCtl10, sCtl11, sCtl25, sSBOs1, sSBOs2, sSBOs6	sCtl4, sCtl6, sCtl7, sCtl16, sCtl17, sCtl27
12c: Enhanced Direct Control	sCtl5, sCtl10, sDOes1, sDOes2	sCtl7, sCtl13, sCtl14, sCtl16, sCtl17, sCtl26
12d: Enhanced SBO Control	sCtl5, sCtl8, sCtl9, sCtl10, sCtl11, sCtl25, sSBOes1, sSBOes2, sSBOes6, sSBOes8	sCtl4, sCtl6, sCtl7, sCtl16, sCtl17, sCtl26
13a: Time sync SNTP	sTm1, sTm2, sTm7, sTmN1	sTm3, sTm4, sTm5
14: File transfer	sFt1, sFt2ab, sFt4, sFt5, sFtN1ab	
15: Service tracking		sTrk7, sTrk17

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

- 7SA82 Distance protection 3-pole
- 7SD82 Differential protection 3-pole
- 7SL82 Differential & Distance protection 1-/3-pole
- 7SJ81 Overcurrent protection
- 7UT82 Transformer differential protection 2 sides
- 7SK82 Motor protection

Test case	Limitations
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