

IEC 61850 Conformance Certificate Level B¹

Issued to:
Hitachi ABB Power Grids
GA Products
S-721 59 Västerås
Sweden

For the server product:
REC670 Bay Control
Product version: 2.2.5
Firmware version: 2.2.14.2
S/N: T1749268

Issued by: Hitachi ABB Power Grids, SVC Baden

The server product has not 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 3.3a, the product's protocol, model and technical issue implementation conformance statements: "Protocol Implementation Conformance Statement for the IEC 61850 Edition 1 interface in Relion™ 670 and 650 series and SAM600-IO Version 2.2.5, 1MRG039999, revision B", "Model Implementation Conformance Statement (MICS) for the IEC 61850 Edition 1 server interface in Relion™ 670 and 650 series and SAM600-IO Version 2.2.5, 1MRG040002, revision B", "TISSUES Implementation Conformance Statement for the IEC 61850 Ed1 interface in Relion™ 670 and 650 series and SAM600-IO, 1MRG040001, revision B" and the extra information for testing: "Protocol Implementation eXtra Information for Testing (PIXIT) for the IEC 61850 Edition 1 server interface in Relion™ 670 and 650 series and SAM600-IO Version 2.2.5, 1MRG040000, revision B"

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 (21/25)	9a	GOOSE Publish (9/12)
2	Data Sets (3/6)	9b	GOOSE Subscribe (11/11)
3	Substitution (4/4)	12a	Direct Control (7/11)
4	Setting Group Selection (3/3)	12d	Enhanced SBO Control (14/19)
5	Unbuffered Reporting (15/18)	13	Time Synchronization (5/5)
6	Buffered Reporting (23/27)	14	File Transfer (6/7)

This Certificate includes a summary of the test results as carried out at the SVC Baden in Switzerland with UniCAsim 61850 version 4.31.02 and test suite SVC2020v1 and UniCA Analyzer 5.34.01. This document has been issued for information purposes only, and the original paper copy of the SVC Baden report: No. 1KHL050133 will prevail. The test has been carried out on one single specimen of the product as referred above and submitted to SVC Baden by Hitachi ABB Power Grids. The manufacturer's production process has not been assessed. This certificate does not imply that SVC Baden has approved any product other than the specimen tested.

Baden, 2021-06-07


S. Kizil
Certification Manager


C. Zehnder
Test engineer

¹ Level B - Tester with ISO 9001 Quality System

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Applicable Test Procedures from the UCA International Users Group Server Device Test Procedures version 3.3a

Conformance Block	Mandatory	Conditional
1 Basic Exchange	Ass1, Ass2, Ass3, AssN2, AssN4, AssN5 Srv1, Srv2, Srv3, Srv4, Srv5, SrvN1abcd, SrvN4	AssN3, Srv6, Srv7, Srv8, Srv12 SrvN1e, SrvN1f, SrvN3
2 Data Sets	Dset1, Dset10a, DsetN1ae	
3 Substitution	Sub1, Sub2, Sub3, SubN1	
4 Setting Group Selection	Sg1, SgN1a, Sg3	
5 Unbuffered Reports	Rp1, Rp2, Rp3, Rp4, Rp9, RpN1, RpN2, RpN3, RpN4, RpN8	Rp5, Rp8, Rp10, Rp11, Rp12
6 Buffered Reports	Br1, Br2, Br3, Br4, Br9, Br20, Br21, Br22, Br25, Br26, Br27, Br28 BrN1, BrN2, BrN3, BrN4, BrN5, BrN8	Br5, Br8, Br10, Br11, Br12
9a GOOSE publish	Gop2, Gop3, Gop4, Gop9, Gop10a	Gop1, Gop7, Gop10b, GopN2
9b GOOSE subscribe	Gos1a, Gos2, Gos3, GosN1, GosN2, GosN3, GosN4, GosN5, GosN6	Gos1b, Gos4
12a Direct Control	CtlN3, DOns1	Ctl2, Ctl7, CtlN10, CtlN11 DOns3
12d Enhanced SBO control	CtlN1, CtlN2, CtlN3, CtlN4, CtlN9 SBOes1, SBOes2, SBOes3	Ctl2, Ctl3, Ctl7, CtlN6, CtlN10, CtlN11
13 Time Synchronization	Tm1, Tm2,	Tm3, TmN1, TmN2
14 File Transfer	Ft1, Ft2ab, Ft4, FtN1ab	Ft2c, FtN1c

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

- REB650 Busbar Protection
- REC650 Bay Control
- RED650 Line Differential Protection
- REL650 Line Distance Protection
- REQ650 Breaker Protection
- RET650 Transformer Protection
- REB670 Busbar Protection
- RED670 Line Differential Protection
- REG670 Generator Protection
- REL670 Line Distance Protection
- RES670 Phasor Measurement
- RET670 Transformer Protection
- SAM600-IO Switchgear Control Unit

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