



IEC 61850 Certificate Level A¹

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No. 30920420-Consulting 09-1712

Issued to:
ABB Oy
Distribution Automation
Muotitie 2 A
FI-65101 Vaasa
Finland

For the product:
REF615
Software version: 2.0.3
Hardware revision: C



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: "RE_615_IEC61850_PICS_756465_ENC", "RE_615_IEC61850_MICS_756467_ENd", "RE_615_IEC61850_TICS_756466_ENC" and product's extra information for testing: "RE_615_IEC61850_PIXIT_756464_ENe".

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 v2.2):

| | |
|-------------------------------------|----------------------------------|
| 1 Basic Exchange (20/24) | 9a GOOSE Publish (7/12) |
| 2 Data Sets (3/6) | 9b GOOSE Subscribe (9/10) |
| 4+ Setting Group Definition (10/11) | 12a Direct Control (6/11) |
| 5 Unbuffered Reporting (14/18) | 12d Enhanced SBO Control (11/19) |
| 6 Buffered Reporting (16/20) | 13 Time Synchronization (3/4) |
| | 14 File Transfer (4/7) |

This Certificate includes a summary of the test results as carried out at ABB Oy in Finland with UniCASim 61850 version 3.19.02 with test suite 3.19.01 and UniCA 61850 analyzer 4.18.02. The test is based on the UCA International Users Group Device Test Procedures version 2.2. This document has been issued for information purposes only, and the original paper copy of the KEMA report: No. 30920420-Consulting 09-1711 will prevail.

The test has been carried out on one single specimen of the products as referred above and submitted to KEMA by ABB Oy. 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, July 27, 2009

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Manager Intelligent Networks and Communication

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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 2.2

| Conformance Block | Mandatory | Conditional |
|------------------------------|--|--|
| 1: Basic Exchange | Ass1, Ass2, Ass3, AssN2, AssN3, AssN4, AssN5 Srv1, Srv2, Srv3, Srv4, Srv5, SrvN1abcd, SrvN4 | Srv6, Srv7, Srv8, SrvN1e, SrvN2, SrvN3 |
| 2: Data Sets | Dset1, Dset10a, DsetN1ae | |
| 4+: Setting Group Definition | Sg1, Sg2, Sg3a, Sg3b, Sg4 SgN1a, SgN1b, SgN2, SgN3, SgN4 | |
| 5: Unbuffered Reporting | Rp1, Rp2, Rp3, Rp4, Rp7, Rp10 RpN1, RpN2, RpN3, RpN4 | Rp5, Rp8, RpN5, RpN6 |
| 6: Buffered Reporting | Br1, Br2, Br3, Br4, Br7, Br8, Br9, Br12 BrN1, BrN2, BrN3, BrN4, BrN5 | Br5, Br10, BrN6 |
| 9a: GOOSE publish | Gop2, Gop3, Gop4, Gop7 | Gop1, Gop6, GopN1 |
| 9b: GOOSE subscribe | Gos1a, Gos2, Gos3, GosN1, GosN2, GosN3, GosN4, GosN5, GosN6 | |
| 12a: Direct control | CtlN3, CtlN8, DOns1, DOns3 | Ctl2, CtlN11 |
| 12d: Enhanced SBO control | Ctl3, CtlN1, CtlN2, CtlN3, CtlN4, CtlN9 SBOes1, SBOes2, SBOes3 | Ctl2, CtlN11 |
| 13: Time sync | Tm1, Tm2, TmN1 | |
| 14: File transfer | Ft1, Ft2ab, FtN1ab, Ft4 | Ft2c, FtN1c |

All configuration file and data model tests have been successfully performed for the product variants using the same hardware and software version: RED615, RET615, REM615