

No. 10016857-OPE/INC 16-2048

Issued to:

ABB AB
Grid Automation Products
S-721 59 Västerås
Sweden

For the server product:

REB500 Distributed Busbar Protection
Firmware version: 8.2.0.1
Hardware: 1MRK010003

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

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

Communication networks and systems for power utility automation

The conformance test has been performed according to IEC 61850-10 Edition 2, the UCA International Users Group Edition 2 Server Test Procedures version 1.0 with TPCL² 1.2 with product's protocol, model and technical issue implementation conformance statements: "IEC61850 Conformance Statement for REB500 Version V8.2 PICS and MICS, 1KHL501731-AEN" and "TISSUES Implementation Conformance Statement for the IEC 61850 Ed2 interface in ABB REB500 V8.2, 1KHL501741" and the extra information for testing: "Protocol Implementation eXtra Information for Testing (PIXIT) for the IEC 61850 interface in ABB REB500 V8.2, 1KHL501740".

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 (19/26)	9b GOOSE Subscribe (12/14)
2 Data Sets (4/7)	12a Direct Control (4/18)
4 Setting Group Selection (4/4)	13 Time Synchronization (5/7)
5 Unbuffered Reporting (18/21)	14 File Transfer (7/8)
6 Buffered Reporting (26/30)	

This certificate includes a summary of the test results as carried out at ABB in Switzerland with UniCA 61850 Client Simulator 4.29.03 with test suite Ed2 4.31.04 and UniCA 61850 Analyzer 5.31.02. This document has been issued for information purposes only, and the original paper copy of the DNV GL verification report No. 10016857-OPE/INC 16-2049 will prevail.

The test has been carried out on one single specimen of the product as referred above and submitted to DNV GL by ABB. 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, June 17, 2016



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

² TPCL - Test procedures change list

Applicable Test Procedures from the UCA International Users Group Edition 2 Server Test Procedures version 1.0 with TPCL 1.2

Conformance Block	Mandatory	Conditional
1: Basic Exchange	sAss1, sAss2, sAss3, sAssN2, sAssN3, sAssN4, sAssN5, sSrv1, sSrv2, sSrv3, sSrv4, sSrv5, sSrvN1abcd, sSrvN4	sSrv6, sSrv8, sSrvN1e, sSrvN1f, sSrvN3
2: Data Sets	sDs1, sDs10a, sDsN1ae	sDs15
4: Setting Group Selection	sSg1, sSg3, sSgN1	sSg11
5: Unbuffered Reporting	sRp1, sRp2, sRp3, sRp4, sRp5, sRp9, sRp14, sRp15, sRpN1, sRpN2, sRpN3, sRpN4, sRpN8	sRp8, sRp10, sRp11, sRp12, sRp13
6: Buffered Reporting	sBr1, sBr2, sBr3, sBr4, sBr5, sBr9, sBr14, sBr15, sBr20, sBr21, sBr22, sBr25, sBr26, sBr27, sBr28, sBrN1, sBrN2, sBrN3, sBrN4, sBrN5, sBrN8	sBr8, sBr10, sBr11, sBr12, sBr13
9b: GOOSE subscribe	sGos1, sGos2, sGos3, sGos5, sGos6a, sGos7, sGosN1, sGosN2, sGosN3, sGosN4, sGosN5, sGosN6	
12a: Direct control	sCtl5, sCtl10, sDOns1, sDOns2	
13: Time sync	sTm1, sTm2, sTmN1	sTm3, sTmN2
14: File transfer	sFt1, sFt2ab, sFt4, sFt5, sFtN1ab	sFt2c, sFtN1c