

No. 74108094-OPE/INC 15-2140

Issued to:

GE Multilin
650 Markland St.
Markham, ON L6C 0M1
Canada

For the server product:

845 Transformer protection unit
Software version: 1.50
S/N: MJ1A15000179

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 1.0.2 with product's protocol, model and technical issue implementation conformance statements: Protocol Implementation Conformance Statement for the IEC 61850 interface in: 850 Feeder Protection, 869 Motor Protection Relay, 845 Transformer Protection Relay, v1.0, Model Implementation Conformance Statement for the IEC 61850 interface in 845 Transformer Protection System, v1.30 and TISSUES Implementation Conformance Statement for the IEC 61850 Ed2 interface in: 850 Feeder Protection System, 869 Motor Protection System, 845 Transformer Protection System, v1.0 and the extra information for testing: Protocol Implementation eXtra Information for Testing (PIXIT) for the IEC 61850 interface in: 850 Feeder Protection Relay, 869 Motor Protection Relay, 845 Transformer Protection Relay, v1.0.

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)	12a Direct Control (7/18)
2 Data Sets (4/7)	12b SBO Control (13/27)
5 Unbuffered Reporting (16/20)	12c Enhanced Direct Control (8/20)
6 Buffered Reporting (24/29)	12d Enhanced SBO Control (13/28)
9a GOOSE Publish (10/13)	13 Time Synchronization (4/7)
9b GOOSE Subscribe (12/14)	14 File Transfer (5/8)

This certificate includes a summary of the test results as carried out at DNV GL in The Netherlands with UniCA 61850 Client simulator 4.29.03 with test suite Ed2 3.29.03 and UniCA 61850 Analyzer 5.29.02. This document has been issued for information purposes only, and the original paper copy of the DNV GL report No. 74108094-OPE/INC 15-2139 will prevail.

The test has been carried out on one single specimen of the product as referred above and submitted to DNV GL by GE. 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, July 23, 2015




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

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Applicable Test Procedures from the UCA International Users Group Edition 2 Server Test Procedures version 1.0 with TPCL 1.0.2

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
5: Unbuffered Reporting	sRp1, sRp2, sRp3, sRp4, sRp9, sRp14, sRpN1, sRpN2, sRpN3, sRpN4, sRpN8	sRp5, sRp8, sRp10, sRp11, sRp12
6: Buffered Reporting	sBr1, sBr2, sBr3, sBr4, sBr9, sBr14, sBr20, sBr21, sBr22, sBr25, sBr26, sBr27, sBr28, sBrN1, sBrN2, sBrN3, sBrN4, sBrN5, sBrN8	sBr5, sBr8, sBr10, sBr11, sBr12
9a: GOOSE publish	sGop2a, sGop3, sGop4, sGop7, sGop9, sGop10, sGop11	sGop1, sGop6, sGopN1
9b: GOOSE subscribe	sGos1, sGos2, sGos3, sGos5, sGos6a, sGos7, sGosN1, sGosN2, sGosN3, sGosN4, sGosN5, sGosN6	
12a: Direct control	sCtl5, sCtl10, sDOns1, sDOns2	sCtl2, sCtl13, sCtl16
12b: SBO control	sCtl5, sCtl8, sCtl9, sCtl10, sCtl11, sCtl25, sSBOns1, sSBOns2, sSBOns6	sCtl2, sCtl6, sCtl16, sCtl27
12c: Enhanced Direct Control	sCtl5, sCtl10, sCtl14, sDOes1, sDOes2	sCtl2, sCtl13, sCtl16
12d: Enhanced SBO Control	sCtl5, sCtl8, sCtl9, sCtl10, sCtl11, sCtl25, sSBOes1, sSBOes2, sSBOes6, sSBOes8	sCtl2, sCtl6, sCtl16
13: Time sync	sTm1, sTm2, sTmN1	sTm3
14: File transfer	sFt1, sFt2ab, sFt4, sFt5, sFtN1ab	