



IEC 61850 Certificate Level A¹

No. 74100348-NMEA/INC 11-1103

Issued to:
Hyosung
183-2 Hogyedong, Dongan-gu
ANYANG GYEONGGI-DO 431-080
KOREA

For the product:
Hyosung NeoProPAC-GBC
Firmware version 1.0
H/W version 1.2



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: "Protocol Implementation Conformance Statement for the IEC 61850 interface in <NeoProPAC - GBC>", "Model Implementation Conformance Statement for the IEC 61850 interface in <NeoProPAC - GBC>", "IEC 61850 TISSUES CONFORMANCE STATEMENT (TICS) FOR <NeoProPAC - GBC>" and product's extra information for testing: "Protocol Implementation eXtra Information for Testing (PIXIT) for the IEC 61850 interface in <NeoProPAC - GBC>".

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 v2.2b):

| | |
|---------------------------------|----------------------------------|
| 1 Basic Exchange (20/24) | 9a GOOSE Publish (7/12) |
| 2 Data Sets (3/6) | 9b GOOSE Subscribe (10/10) |
| 2+ Data Set Definition (23/23) | 12a Direct Control (6/11) |
| 4 Setting Group Selection (2/3) | 12d Enhanced SBO Control (12/19) |
| 5 Unbuffered Reporting (15/18) | 13 Time Synchronization (4/5) |
| 6 Buffered Reporting (17/20) | 14 File Transfer (4/7) |

This Certificate includes a summary of the test results as carried out at KEPRI in Republic of Korea with UniCASim 61850 version 3.23.00 with test suite 3.23.00 and UniCA 61850 analyzer 4.21.03. The test is based on the UCA International Users Group Device Test Procedures version 2.2b. This document has been issued for information purposes only, and the original paper copy of the KEMA report: No. 74100348-NMEA/INC 11-1102 will prevail.

The test has been carried out on one single specimen of the product as referred above and submitted to KEMA by Hyosung. 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, May 15, 2011

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Regional Director Management & Operations Consulting

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Applicable Test Procedures from the UCA International Users Group Device Test Procedures version 2.2b

| 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 | |
| 2+: Data Set Definition | Dset2, Dset3, Dset4, Dset5, Dset6, Dset7, Dset8, Dset9 DsetN1cd, DsetN2, DsetN3, DsetN4, DsetN5, DsetN6, DsetN7, DsetN8, DsetN9, DsetN10, DsetN11, DsetN12, DsetN13, DsetN14, DsetN15 | |
| 4: Setting Group Selection | Sg1, SgN1a | |
| 5: Unbuffered Reporting | Rp1, Rp2, Rp3, Rp4, Rp7, Rp10 RpN1, RpN2, RpN3, RpN4 | Rp5, Rp6, Rp8, Rp9, RpN5 |
| 6: Buffered Reporting | Br1, Br2, Br3, Br4, Br7, Br8, Br9, Br12 BrN1, BrN2, BrN3, BrN4, BrN5 | Br5, Br6, Br10, Br11 |
| 9a: GOOSE publish | Gop2, Gop3, Gop4, Gop7 | Gop1, Gop5, Gop10 |
| 9b: GOOSE subscribe | Gos1a, Gos2, Gos3, GosN1, GosN2, GosN3, GosN4, GosN5, GosN6 | Gos1b |
| 12a: Direct control | CtlN3, CtlN8, DOns1, DOns3 | Ctl2, CtlN11 |
| 12d: Enhanced SBO control | Ctl3, CtlN1, CtlN2, CtlN3, CtlN4, CtlN9 SBOes1, SBOes2, SBOes3 | Ctl2, Ctl7, CtlN11 |
| 13: Time sync | Tm1, Tm2, TmN1 | TmN2 |
| 14: File transfer | Ft1, Ft2ab, Ft4, FtN1ab | |