



IEC 61850 Certificate Level A¹

International
Usersgroup

No. 74101092-MOC/INC 12-00406

Issued to:
DAEWOONG ELECTRIC CO., LTD.
2967 Hakwoon-Ri, Yangchon-Myeon
Gimpo-Si, Kyunggi-Do
Korea 415-843

For the client system:
DW-SPIN IEC 61850 Client V.1.0
Hardware: SONY VPCSA with Windows 7
Professional



The client system 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 client system's protocol, model and technical issue implementation conformance statements: Protocol Implementation Conformance Statement for the IEC 61850 interface in DW-SPIN v1.0, Model Implementation Conformance Statement for the IEC 61850 interface in DW-SPIN v1.0, TISSUE Implementation Conformance Statement for the IEC 61850 interface in DW-SPIN v1.0 and product's extra information for testing: Protocol Implementation extra Information for Testing for the IEC 61850 interface in DW-SPIN 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 as defined in the UCA IUG Conformance Test Procedures for Client System with IEC 61850-8-1 interface, revision 1.1 with TPCL version 1.1):

| | | | |
|----|--------------------------------|-----|-------------------------------|
| 1 | Basic Exchange (19/22) | 12a | Direct Control (7/7) |
| 2 | Data Sets (4/8) | 12b | SBO Control (9/9) |
| 2+ | Data Set Definition (4/4) | 12c | Enhanced Direct Control (7/7) |
| 4 | Setting Group Selection (3/4) | 12d | Enhanced SBO Control (9/9) |
| 4+ | Setting Group Definition (2/2) | 13 | Time Synchronization (4/4) |
| 5 | Unbuffered Reporting (16/18) | 14 | File Transfer (6/8) |
| 6 | Buffered Reporting (20/22) | | |

This Certificate includes a summary of the test results as carried out at KEMA in the Netherlands with UniCA Multi IED Simulator v2.0.0.3 and UniCA 61850 analyzer v4.24.02. The test is based on the UCA IUG Conformance Test Procedures for Client System with IEC 61850-8-1 interface revision 1.1 with TPCL version 1.1. This document has been issued for information purposes only, and the original paper copy of the KEMA report: No. 74101092-MOC/INC 12-00405 will prevail.

The test has been carried out on one single specimen of the client system as referred above and submitted to KEMA by DAEWOONG ELECTRIC CO., LTD. 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, February 29, 2012

M. Adriaansen
Regional Director Management & Operations Consulting

S.J.T. Mulder
Senior Test Engineer

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 IUG Conformance Test Procedures for Client System with IEC 61850-8-1 interface, revision 1.1 with TPCL version 1.1

| Conformance Block | Mandatory | Conditional |
|------------------------------|--|--|
| 1: Basic Exchange | cAss1, cAss2, cAss3, cAss4, cAssN1, cAssN4, cAssN5, cAssN6 cSrv5, cSrvN3 | cSrv1, cSrv2, cSrv3, cSrv4, Srv6, cSrvN1, cSrvN4, cSrvN5, cSrvN6 |
| 2: Data Sets | cDs1, cDs2, cDs5, cDsN1 | |
| 2+: Data Set Definition | cDs6, cDsN4 | cDs7, cDsN5 |
| 4: Setting Group Selection | cSg2, cSgN1 | cSg1 |
| 4+: Setting Group Definition | cSg3, cSg4 | |
| 5: Unbuffered Reporting | cRp2, cRp3, cRp4, cRp5, cRp8, cRp9, cRp10, cRpN2, cRpN3, cRpN7, cRpN8 | cRp1, cRp6, cRp7, cRpN1, cRpN4 |
| 6: Buffered Reporting | cBr2, cBr3, cBr4, cBr5, cBr8, cBr9, cBr10, cBr11, cBr12, cBrN2, cBrN3, cBrN7, cBrN8, cBrN9 | cBr1, cBrN1 cBr6, cBr7, cBr13, cBrN4 |
| 12a: Direct control | cCtl4, cCtlN1 cDOns1, cDOns2 | cCtl1, cCtl2, cCtl3 |
| 12b: SBO control | cCtl4, cCtlN1 cSBOns1, cSBOns2, cSBOns3 | cCtl1, cCtl2, cCtl3, cSBOns4 |
| 12c: Enhanced Direct Control | cCtl4, cCtlN1 cDOes1, cDOes2 | cCtl1, cCtl2, cCtl3 |
| 12d: Enhanced SBO control | cCtl4, cCtlN1, cSBOes1, cSBOes2, cSBOes3 | cCtl1, cCtl2, cCtl3 cSBOes4 |
| 13: Time sync | cTm1 | cTm2, cTmN1, cTmN2 |
| 14: File transfer | cFt1, cFt2, cFt3, cFtN1, cFtN2 | cFt5 |