

IEC 61850 Certificate Level A¹

Issued to:
DONGWOO ELECTRIC CORP
34, Oseongseo-ro, Anjung-eup,
Pyeongtaek-si, Gyeonggi-do,
Republic of Korea, 17928

For the server product:
SA-IMD (Substation Automation Information
Monitoring & Diagnosis Device)
DWSA-WATCHER
Software Version 1.0
HW : DWSA-WATCHER
OS : Windows Server 2019
S/N : DWSA-WATCHER-2024-001

Issued by: **Korea Testing Laboratory**

The server product has not been shown to be non-conforming to:
IEC 61850 Edition 2 with Amendment 1 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, the UCA International Users Group Edition 2 with Amendment 1 Server Test Procedures version 1.2 with product's protocol, model and tissues implementation conformance statements: "DongWoo-DWSAWatcher_PICS_Ed2.1", "DongWoo-DWSAWatcher_MICS_Ed2.1", "Dongwoo-DWSAWatcher_TICS_Ed2.1" and the extra information for testing: "DongWoo-DWSAWatcher_PIXIT_Ed2.1".

The following IEC 61850 conformance blocks have been tested with a positive result (number of relevant and executed test cases / total number of test):

1a	Basic Exchange (23/29)	6	Buffered Reporting (35/36)
2	Data Sets (4/7)	12a	Direct Control (5/18)
2+	Data Set Definition (24/24)	13a	Time Synchronization with SNTP (4/8)
5	Unbuffered Reporting (25/26)	14	File Transfer (5/8)

This Certificate includes a summary of the test results as carried out at Seoul in Republic of Korea with IEC 61850 Ed2.1 KTL Testing Tool 1.0 with test suite IEC 61850 Ed2.1 Server Conformance Test V.1.0 and IEC 61850 Ed2.1 KTL Trace Manager V.1.0. This document has been issued for information purposes only, and the original paper copy of the KTL report: No. TR-24-045125-01-2 will prevail.

The test has been carried out on the specimen of the product as referred above and submitted to KTL by DONGWOO ELECTRIC CORP. The manufacturer's production process has not been assessed. This certificate does not imply that KTL has certified or approved any product other than the specimen tested.

Seoul, Aug. 1, 2024

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1 Level A - Independent Test lab with accredited ISO/IEC 17025 Quality System

Applicable Server Test Procedures from the UCA International Users Group Edition 2 Amendment 1
Server Test Procedures version 1.2.

Conformance Block	Mandatory	Conditional
1a: Basic Exchange	sAss1, sAss2, sAss3, sAss4, sAssN2, sAssN3, sAssN4, sAssN5, sSrv1, sSrv2, sSrv3, sSrv4, sSrv5, sSrv8, sSrvN1abcd, sSrvN4	sAssN6, sSrv6, sSrv10, sSrv12, sSrvN1e, sSrvN2, sSrvN3
2: Data Sets	sDs1, sDs10a, sDsN1ae	sDs15
2+: Data Set Definition	sDs2, sDs3, sDs4, sDs5, sDs6, sDs7, sDs8, sDs9, sDs13, sDs14, sDsN1cd, sDsN2, sDsN3, sDsN4, sDsN5, sDsN6, sDsN7, sDsN8, sDsN9, sDsN10	sDs11, sDs12, sDsN11, sDsN12
5: Unbuffered Reporting	sRp1, sRp2, sRp3, sRp4, sRp5, sRp9, sRp14, sRp16, sRp23, sRpN1, sRpN2, sRpN3, sRpN4, sRpN7, sRpN8, sRpN9	sRp6, sRp7, sRp8, sRp10, sRp11, sRp12, sRp13, sRp15, sRpN5
6: Buffered Reporting	sBr1, sBr2, sBr3, sBr4, sBr5, sBr9, sBr14, sBr16, sBr20, sBr21, sBr22, sBr25, sBr26, sBr27, sBr28, sBr29, sBrN1, sBrN2, sBrN3, sBrN4, sBrN5, sBrN7, sBrN8, sBrN9, sBrN10	sBr6, sBr7, sBr8, sBr10, sBr11, sBr12, sBr13, sBr15, sBr23, sBr24
12a: Direct Control	sCtl5a, sCtl10a, sDOns1, sDOns2	sCtl15a
13a: Time Synchronization with SNTP	sTm1, sTm2, sTm7, sTmN1	
14: File Transfer	sFt1, sFt2ab, sFt4, sFt5, sFtN1ab	