



# IEC 61850 Certificate Level A<sup>1</sup>

No. 30820245-Consulting 08-2694

Issued to:  
HYOSUNG Corporation  
454-2 Nae-Dong  
Changwon  
Korea (641-712)

For the product:  
GCU-2000 Bay Controller for Medium  
Voltage Gas Insulated Switchgear  
Firmware version: RS 1922  
Hardware version: GCU-2000-00



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: "GCU-2000 Protocol Implementation Conformance Statement (PICS), version 1.1", "GCU-2000 Model Implementation Conformance Statement (MICS), version 1.0", "GCU-2000 Tissues Conformance Statement (TICS), version 1.0" and product's extra information for testing: "GCU-2000 Protocol Implementation Extra Information for Testing (PIXIT), version 1.1".

The following IEC 61850 conformance blocks have been tested with a positive result (number of relevant and executed test cases / total number of test cases as defined in the test procedures revision 2.2):

1	Basic Exchange (20/24)	9a	GOOSE Publish (7/11)
2+	Data Set Definition (25/28)	9b	GOOSE Subscribe (9/9)
5	Unbuffered Reporting (16/17)	12a	Direct Control (6/13)
6	Buffered Reporting (18/20)	13	Time Synchronization (3/4)

This Certificate includes a summary of the test results as carried out at KEMA in the Netherlands with UniCAsim 61850 version 3.18.00 with test suite 3.18.00 and UniCA 61850 analyzer 4.18.01. The test is based on the "Conformance Test Procedures for Server Devices with IEC 61850-8-1 interface, revision 2.2". This document has been issued for information purposes only, and the original paper copy of the KEMA report: No. 30820245-Consulting 08-2693 will prevail.

The test has been carried out on one single specimen of the products 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, 8 December

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1 Level A - Independent Test lab with certified ISO 9000 or ISO 17025 Quality System

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Relevant and executed test cases from the "Conformance Test Procedures for Server Devices with IEC 61850-8-1 interface, revision 2.2"

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 Set Definition (SCL-DynDataSet)	Dset1, Dset2, Dset3, Dset4, Dset5, Dset6, Dset7, Dset8, Dset9, Dset10a, DsetN1acde, DsetN2, DsetN3, DsetN4, DsetN5, DsetN6, DsetN7, DsetN8, DsetN9, DsetN10, DsetN11, DsetN12, DsetN13, DsetN14, DsetN15	
5: Unbuffered Reporting	Rp1, Rp2, Rp3, Rp4, Rp7, Rp8 RpN1, RpN2, RpN3, RpN4	Rp5, Rp6, Rp9, Rp10, RpN5, RpN6
6: Buffered Reporting	Br1, Br2, Br3, Br4, Br7, Br8, Br9, Br10, Br12 BrN1, BrN2, BrN3, BrN4, BrN5	Br5, Br6, Br11, BrN6
9a: GOOSE publish	Gop2, Gop3, Gop4, Gop7,	Gop1, Gop6, GopN1
9b: GOOSE subscribe	Gos1, Gos2, Gos3, GosN1, GosN2, GosN3, GosN4, GosN5, GosN6	
12a: Direct control	CtlN3, CtlN8 DOns1, DOns3	Ctl2, CtlN11
13: Time sync	Tm1, Tm2, TmN1	