

IEC 61850 Certificate Level B¹

Issued to:

Hitachi Energy Germany AG
Havellandstr. 10-14
68309 Mannheim, Germany

For the product:

RTU500 series (RTU560, RTU530)
Firmware Version: 13.7.4.8
HW: 1KGT036200R002 – 560CMR01

Issued by: Hitachi Energy Ltd, SVC Baden

The product has not been shown to be non-conforming to:

IEC 61850-5 Edition 2 Performance class P1(3ms)

The performance test has been performed according to the UCA International Users Group GOOSE performance Test Procedures version 2.5 with product's protocol implementation conformance statement and product's extra information for testing included in: "1KGT 150 702 V017 1, RTU500 series - Remote Terminal Units IEC 61850 Server Protocol description".

The test has been carried out on one single specimen of the product as referred above and submitted to SVC Baden by Hitachi Energy Germany AG. The manufacturer's production process has not been assessed. This certificate does not imply that SVC Baden has certified or approved any product other than the specimen tested.

This Certificate summarizes the test results as carried out at SVC in Switzerland with *Omicron Test Universe V3.01* and *Allegro-1000-rev1+2x10G 4.1.2*. This document has been issued for information purposes only, and the original paper copy of the test report: *1KHL050139_IEC61850ConformanceTestProtocol_GoPerEd2_Rev2.5_RTU560_13.7.4.8* will prevail.

The GOOSE performance has been measured with Boolean and Double Point data.

Baden 2025-01-29

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Responsible System Verification Center Lead

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¹ ISO 9000 certified test lab, allowed to issue UCA® level B

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1/2

 **Hitachi Energy Ltd**

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 **Hitachi Energy**

GOOSE Performance Measured Results:

Performance class = P1 (3ms)

Goose Performance Benchmark summary results (compensated for scan cycle delays if any)

Test ID	Large dataset	Correlated subscribed	Back-ground	Minimum Transfer time [ms]	Maximum Transfer time [ms]	Average Transfer time [ms]
Gpf1	-	-	-	0.85	0.95	0.38
Gpf2	X	-	-	1.38	1.41	1.43
Gpf3	-	X	-	0.88	1.04	0.68
Gpf4	X	X		1.38	1.56	1.87
Gpf5	-	-	X	0.87	1.02	1.42
Gpf6	X	-	X	1.37	1.70	1.55
Gpf7	-	X	X	0.89	1.03	0.82
Gpf8	X	X	X	1.32	1.58	1.53