

No. 10074265-INC 18-2051 Rev1

Issued to:

ABB SACE
A division of ABB S.p.A.
Via Pescaria 5
24123 Bergamo
Italy

For the server product:

Ekip Touch with Ekip Com IEC61850
Protection and control relay
Ekip Com IEC61850 Software version: 03.02
Ekip Com IEC61850 Hardware version: 00.00
Ekip Com IEC61850 S/N: 748005040520W001

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

IEC 61850-5 First Edition Performance Class: P1 (10ms)

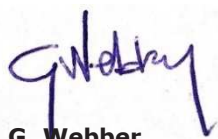
The performance test has been performed according to the UCA International Users Group GOOSE performance Test Procedures version 1.5 with product's protocol, implementation conformance statements: "Protocol Implementation Conformance Statement (PICS) for Ekip Com IEC 61850 Based on IEC 61850-7-2, version 1.8", and product's extra information for testing: "Protocol Implementation eXtra Information for Testing (PIXIT) for Ekip Com IEC 61850 Based on IEC 61850-10, version 1.13".

This certificate includes a summary of the test results as carried out at ABB SACE in Italy with the Omicron CMC850 version 3.1, UniCA GOOSE simulator version 2.27.01 and UniCA 61850 Analyzer version 5.34.01. This document has been issued for information purposes only, and the original paper copy of the DNV GL report: No. 10074265-INC 18-2050 will prevail.

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

The test has been carried out on one single specimen of the product as referred above and submitted to DNV GL by ABB SACE. The manufacturer's production process has not been assessed. This certificate does not imply that DNV GL has approved any product other than the specimen tested.

Arnhem, January 18, 2018



G. Webber
Business Leader
Interoperability of Smart Grids

Issued by:



DNV KEMA is now DNV GL



R. Schimmel
Verification Manager

¹ Level A - Independent test lab with certified ISO 9001 Quality System

GOOSE Performance Measured Results

Results of the GOOSE performance benchmark tests as specified in the UCA International Users Group GOOSE performance Test Procedures version 1.5.

Performance class = P1 (10ms)

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	-	-	-	1.32	1.70	1.46
Gpf2	X	-	-	1.69	2.01	1.82
Gpf3	-	X	-	1.89	2.64	1.75
Gpf4	X	X	-	2.46	4.25	3.06
Gpf5	-	-	X	1.32	1.73	1.46
Gpf6	X	-	X	1.68	2.05	1.82
Gpf7	-	X	X	1.87	2.66	1.76
Gpf8	X	X	X	2.48	4.02	3.16