

No. 10119305-INC 18-2968

Issued to:

ASHIDA Electronics Pvt. Ltd.
Plot No. A-308, Road No.21
Wagle Industrial Estate
Thane (W) – 400604, Maharashtra
India

For the server product:

ADR245B Modular Version
Directional Feeder Protection Relay
Software version: V2.2.0
S/N: 18F245B0059

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

IEC 61850 Edition 2 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 Edition 2, the UCA International Users Group Edition 2 Server Test Procedures version 1.0 with TPCL2 1.2.6 with product's protocol, model and technical issue implementation conformance statements: "Numerical Protection Relay (ADR245B/ADR233B/ADR244B) IEC61850 Server Edition 2 Conformance Statement. Version 2.2.0" and product's extra information for testing: "Numerical Protection Relay (ADR245B/ADR233B/ADR244B) IEC61850 Server Edition 2 Conformance Statement. Version 2.2.0".

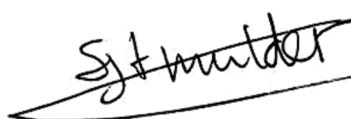
The following IEC 61850 conformance blocks have been tested with a positive result (number of relevant and executed test cases / total number of test cases):

1 Basic Exchange (16/26)	9a GOOSE Publish (11/13)
2 Data Sets (4/7)	9b GOOSE Subscribe (13/14)
2+ Data Set Definition (24/24)	12a Direct Control (6/18)
5 Unbuffered Reporting (20/21)	12b SBO Control (11/27)
6 Buffered Reporting (27/30)	12c Enhanced Direct Control (8/20)
	12d Enhanced SBO Control (12/28)
	13 Time Synchronization (3/7)
	14 File Transfer (5/8)

This certificate includes a summary of the test results as carried out at ASHIDA in India with UniGrid SA Simulator 1.4.438 with test suite 1.0.13 and UniCA 61850 Analyzer 5.34.01. This document has been issued for information purposes only, and the archived DNV GL verification report No. 10119305-INC 18-2967 will prevail.

The test has been carried out on one single specimen of the product as referred above and submitted to DNV GL by ASHIDA. 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, October 10, 2018



S.J.T. Mulder
Business Leader
Interoperability of Smart Power Systems

Issued by:



DNV KEMA is now DNV GL



R. Schimmel
Verification Manager

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

² TPCL - Test procedures change list

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Applicable Test Procedures from the UCA International Users Group Edition 2 Server Test Procedures version 1.0 with TPCL 1.2.6

Conformance Block	Mandatory	Conditional
1: Basic Exchange	sAss1, sAss2, sAss3, sAssN2, sAssN3, sAssN4, sAssN5, sSrv1, sSrv2, sSrv3, sSrv4, sSrv5, sSrvN1abcd, sSrvN4	sSrv8, sSrvN1f
2: Data Sets	sDs1, sDs10a, sDsN1ae	sDs15
2+: Data Set Definition	sDs2, sDs3, sDs4, sDs5, sDs6, sDs7, sDs8, sDs9, sDs11, sDs13, sDs14, sDsN1cd, sDsN2, sDsN3, sDsN4, sDsN5, sDsN6, sDsN7, sDsN8, sDsN9, sDsN10	sDs12, sDsN11, sDsN12
5: Unbuffered Reporting	sRp1, sRp2, sRp3, sRp4, sRp5, sRp9, sRp14, sRp15, sRpN1, sRpN2, sRpN3, sRpN4, sRpN8	sRp6, sRp7, sRp8, sRp10, sRp11, sRp12, sRpN5
6: Buffered Reporting	sBr1, sBr2, sBr3, sBr4, sBr5, sBr9, sBr14, sBr15, sBr20, sBr21, sBr22, sBr25, sBr26, sBr27, sBr28, sBrN1, sBrN2, sBrN3, sBrN4, sBrN5, sBrN8	sBr6, sBr7, sBr8, sBr10, sBr11, sBr12
9a: GOOSE publish	sGop2a, sGop3, sGop4, sGop9, sGop10, sGop11	sGop1, sGop6, sGop7, sGopN1, sGopN2
9b: GOOSE subscribe	sGos1, sGos2, sGos3, sGos5, sGos6a, sGos7, sGosN1, sGosN2, sGosN3, sGosN4, sGosN5, sGosN6	sGos4
12a: Direct control	sCtl5, sCtl10, sDOns1, sDOns2	sCtl13, sCtl16
12b: SBO control	sCtl5, sCtl8, sCtl9, sCtl10, sCtl11, sCtl25, sSBOns1, sSBOns2, sSBOns6	sCtl16, sCtl27
12c: Enhanced Direct Control	sCtl5, sCtl10, sDOes1, sDOes2	sCtl13, sCtl14, sCtl16, sCtl26
12d: Enhanced SBO Control	sCtl5, sCtl8, sCtl9, sCtl10, sCtl11, sCtl25, sSBOes1, sSBOes2, sSBOes6, sSBOes8	sCtl16, sCtl26
13: Time sync	sTm1, sTm2, sTmN1	
14: File transfer	sFt1, sFt2ab, sFt4, sFt5, sFtN1ab	

All configuration file and data model tests have been successfully performed for the product variants using the same communication hardware and software version:

- ADR245B Enhanced Version – Directional Feeder Protection Relay
- ADR245B Basic Version – Directional Feeder Protection Relay
- ADR233B Modular Version – Transformer Protection Relay
- ADR233B Enhanced Version – Transformer Protection Relay
- ADR233B Basic Version – Transformer Protection Relay
- ADR244B Modular Version – Motor Protection Relay
- ADR244B Enhanced Version – Motor Protection Relay