

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

**Issued to:**

Mitsubishi Electric Corporation  
1-1-2 Wadasaki-Cho, Hyogo-ku  
652-8555 Kobe  
Japan

**For the server product:**

MRD-HB (101PYA) Biased differential relay  
IEC 61850 version: 2.0.0.0  
S/N: 219611-52901

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 2.0.6 with product's protocol, model and technical issue implementation conformance statements: "Protocol Implementation Conformance Statement (PICS) for the IEC 61850 Edition 2 server interface in MRD-HB (101PYA). JEPF-EL1854\_V1.00", "Model Implementation Conformance Statement (MICS) for the IEC 61850 Edition 2 server interface in MRD-HB (101PYA), JEPF-EL1853 rev.1.00" and "TISSUES Implementation Conformance Statement (TICS) for the IEC 61850 Edition 2 server interface in MRD-HB (101PYA), JEPF-EL 1855 rev.1.00" and the extra information for testing: "Protocol Implementation eXtra information for Testing (PIXIT) for the IEC 61850 Edition 2 server interface in MRD-HB (101PYA), JEPF-EL 1856 rev.1.01".

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 (20/26)	9a GOOSE Publish (11/13)
2 Data Sets (4/7)	9b GOOSE Subscribe (21/21)
2+ Data Set Definition (24/24)	12a Direct Control (6/18)
4 Setting Group Selection (4/4)	12d Enhanced SBO Control (16/28)
4+ Setting Group Definition (13/13)	13 Time Synchronization (7/7)
5 Unbuffered Reporting (22/23)	14 File Transfer (5/8)
6 Buffered Reporting (32/33)	15 Service Tracking (8/17)

This certificate includes a summary of the test results as carried out at Mitsubishi Electric Corporation in Japan with UniGrid SA Simulator 2.2.0 with test suite 20230509 and UniCA 61850 Analyzer 6.44.01. This document has been issued for information purposes only, and the archived DNV verification report No. 10425595-DSO 23-2875 rev 2 will prevail.

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

Arnhem, June 5, 2023



**G. Akse**  
Business Development Manager  
Interoperability of Smart Power Systems

**Issued by:**




**R. Schimmel**  
Verification Manager

<sup>1</sup> Level A - Independent test lab with certified ISO 9001 Quality System

UCA International Users Group P.O. Box 315, Shell Knob, MO 65747 USA

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Applicable Test Procedures from the UCA International Users Group Edition 2 Server Test Procedures version 2.0.6

Conformance Block	Mandatory	Conditional
1: Basic Exchange	sAss1, sAss2, sAss3, sAss4, sAssN2, sAssN3, sAssN4, sAssN5, sSrv1, sSrv2, sSrv3, sSrv4, sSrv5, sSrv8, sSrvN1abcd, sSrvN4	sAssN6, sSrv9, sSrv10, sSrv12
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
4: Setting Group Selection	sSg1, sSg3, sSgN1	sSg11
4+: Setting Group Definition	sSg2, sSg4, sSg6, sSg7, sSg8, sSg10, sSg12, sSgN2, sSgN3, sSgN4, sSgN5	sSg5, sSg9
5: Unbuffered Reporting	sRp1, sRp2, sRp3, sRp4, sRp5, sRp9, sRp14, sRp16, sRpN1, sRpN2, sRpN3, sRpN4, sRpN8	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, sBrN8	sBr6, sBr7, sBr8, sBr10, sBr11, sBr12, sBr13, sBr15, sBr23, sBr24
9a: GOOSE publish	sGop2a, sGop3, sGop4, sGop9, sGop10, sGop11, sGop12	sGop1, sGop6, sGopN1, sGopN2
9b: GOOSE subscribe	sGos1, sGos2, sGos3, sGos5, sGos6a, sGos7, sGos8, sGos9, sGos10, sGos11, sGos12, sGos23, sGosN1, sGosN2, sGosN3, sGosN4, sGosN5, sGosN6	sGos4, sGos6b, sGos13
12a: Direct control	sCtl5, sCtl10, sDOns1, sDOns2	sCtl15, sCtl16
12d: Enhanced SBO Control	sCtl5, sCtl8, sCtl9, sCtl10, sCtl11, sCtl25, sSBOes1, sSBOes2, sSBOes6, sSBOes8	sCtl4, sCtl6, sCtl7, sCtl15, sCtl16, sCtl26
13: Time sync	sTm1, sTm2, sTmN1	sTm3, sTm4, sTm5, sTmN2
14: File transfer	sFt1, sFt2ab, sFt4, sFt5, sFtN1ab	
15: Service tracking		sTrk1, sTrk2, sTrk4, sTrk7, sTrk8, sTrk9, sTrk10, sTrk11