



IEC 61850 Certificate Level A¹

No. 74100457-MOC/INC 13-3131

Issued to:
ALSTOM GRID UK Ltd.
St. Leonards Avenue
Stafford ST17 4LX
United Kingdom

For the server product:
MiCOM P40 Agile
P643 Transformer Protection Relay
Software Version 4H
Hardware Version K



The server product has not shown to be non-conforming to:
IEC 61850 First Edition Parts 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, the UCA International Users Group Device Test Procedures version 2.3 with TPCL² version 1.5, the product's protocol, model and technical issue implementation conformance statements: "MiCOM Px4x PICS, Protocol Implementation Conformance Statement, Px4x/EN PC/A", "MiCOM P643 MICS, Model Implementation Conformance Statement, P643-MC-EN-C52" and "MiCOM P642, P643, P645 TICS, Transformer Protection Relays, P64x/EN TC/B52" and the extra information for testing: "MiCOM P642, P643, P645 PIXIT, Protocol Implementation eXtra Information for Testing for the IEC 61850 Interface in P64x with Software Version 04, P64x/EN/PX/C52".

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 (19/24)	12a	Direct Control (4/12)
2	Data Sets (3/6)	12b	SBO Control (6/14)
4	Setting Group Selection (2/3)	12c	Enhanced Direct Control (4/13)
5	Unbuffered Reporting (16/19)	12d	Enhanced SBO Control (9/19)
6	Buffered Reporting (18/21)	13	Time Synchronization (3/5)
9a	GOOSE Publish (11/13)	14	File Transfer (6/7)
9b	GOOSE Subscribe (11/11)		

This certificate includes a summary of the test results as carried out at KEMA in Arnhem with UniCA 61850 Client simulator 4.27.04 with test suite 3.27.00 and UniCA 61850 Analyzer 5.27.04. This document has been issued for information purposes only, and the original paper copy of the KEMA report No. 74100457-MOC/INC 13-3130 will prevail.

The test has been carried out on one single specimen of the product as referred above and submitted to KEMA by ALSTOM GRID UK Ltd. The manufacturer's production process has not been assessed. This attestation does not imply that KEMA has approved any product other than the specimen tested.

Arnhem, September 16, 2013

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Director Intelligent Networks & Communication

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Certification 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 Device Test Procedures version 2.3 with TPCL version 1.5

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, SrvN1f
2: Data Sets	Dset1, Dset10a, DsetN1ae	
4: Setting Group Selection	Sg1, SgN1a	
5: Unbuffered Reporting	Rp1, Rp2, Rp3, Rp4, Rp7, Rp10, Rp12 RpN1, RpN2, RpN3, RpN4	Rp5, Rp8, Rp9, RpN5, RpN6
6: Buffered Reporting	Br1, Br2, Br3, Br4, Br7, Br8, Br9, Br12, Br14 BrN1, BrN2, BrN3, BrN4, BrN5	Br5, Br10, Br11, BrN6
9a: GOOSE publish	Gop2, Gop3, Gop4, Gop7, Gop10a	Gop1, Gop5, Gop6, Gop9, Gop10b, GopN1
9b: GOOSE subscribe	Gos1a, Gos2, Gos3, GosN1, GosN2, GosN3, GosN4, GosN5, GosN6	Gos1b, Gos4
12a: Direct control	CtiN3, CtiN8 DOns1, DOns3	
12b: SBO control	Cti3, CtiN1, CtiN2, CtiN3, CtiN4, SBOns2	
12c: Enhanced Direct Control	CtiN3, CtiN8 DOes2, DOes5	
12d: Enhanced SBO control	Cti3, CtiN1, CtiN2, CtiN3, CtiN4, CtiN9 SBOes1, SBOes2, SBOes3	
13: Time sync	Tm1, Tm2, TmN1	
14: File transfer	Ft1, Ft2ab, Ft4, FtN1ab	Ft2c, FtN1c