



# IEC 61850 Certificate

## Level A<sup>1</sup>

### No. D 061589 0136 Rev. 00

Issued to:

NR Electric CO., Ltd.  
69 Suyuan Avenue, Jiangning, 211102  
Nanjing, PEOPLE'S REPUBLIC OF CHINA

For the server product:

PCS-902 LINE DISTANCE RELAY  
Software Version: Ed2 1.00  
CPU Board Version:  
NR1102 (S/N: G833185000701)

Issued by:

TÜV SÜD CERTIFICATION AND TESTING (CHINA) CO., LTD  
SHANGHAI BRANCH  
*Communication Protocols*  
No.16 Lane 1951 Duhui Road  
Shanghai, 201 108,  
People's Republic of China

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 TPCL<sup>2</sup> version 1.2.6 with product's protocol, model and technical issue implementation conformance statements: "PICS for the IEC61850 Ed2 interface in PCS-900 Product Family V1.0", "MICS for the IEC61850 Ed2 interface in PCS-900 Product Family V1.0", "TICS for the IEC61850 Ed2 interface in PCS-900 Product Family V1.0" and product's extra information for testing: "PIXIT for the IEC61850 Ed2 interface in PCS-900 Product Family V1.0".

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

1	Basic Exchange (25/26)	9a	GOOSE Publish (12/13)
2	Data Sets (4/7)	9b	GOOSE Subscribe (14/14)
3	Substitution (3/3)	12a	Direct Control (12/18)
4	Setting Group Selection (4/4)	12b	SBO Control (18/27)
4+	Setting Group Definition (13/13)	12c	Enhanced Direct Control (14/20)
5	Unbuffered Reporting (18/21)	12d	Enhanced SBO Control (19/28)
6	Buffered Reporting (25/30)	13	Time Synchronization (4/7)
		14	File Transfer (7/8)

This Certificate includes a summary of the test results as carried out at TÜV SÜD Certification and Testing (China) Co., Ltd Shanghai Branch in P.R. China with SimFlex CS Ed.2 version 2.0 with test suite 1.0-1.2-v0.5 and Wireshark version 1.10.8. This document has been issued for information purposes only, and the original paper copy of the TÜV SÜD report: 705001803709-00, version 1-0 will prevail.

The test has been carried out on one single specimen of the product as referred above and submitted to TÜV SÜD by NR Electric CO., Ltd.. The manufacturer's production process has not been assessed. This certificate does not imply that TÜV SÜD has certified or approved any product other than the specimen tested.

Shanghai, Jan 23, 2019

Cong WANG

Cong, WANG  
Technical Certifier

Yifan WANG

Yifan, WANG  
Test Engineer

<sup>1</sup> Level A - Independent Test lab with certified ISO/IEC 17025 Quality System

<sup>2</sup> Test Procedure Change List

TÜV SÜD CERTIFICATION AND TESTING (CHINA) CO., LTD  
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ZERTIFIKAT ◆ CERTIFICATE ◆ 認證證書 ◆ CERTIFICADO ◆ CERTIFICAT

## No. D 061589 0136 Rev. 00

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

Conformance Block	Mandatory	Conditional
1: Basic Exchange	sAss1, sAss2, sAss3, sAssN2, sAssN3, sAssN4, sAssN5, sSrv1, sSrv2, sSrv3, sSrv4, sSrv5, sSrvN1abcd, sSrvN4	sAssN6, sSrv6, sSrv8, sSrv9, sSrv10, sSrv11, sSrv12, sSrvN1e, sSrvN1f, sSrvN2, sSrvN3
2: Data Sets	sDs1, sDs10a, sDsN1ae	sDs15
3: Substitution	sSub1, sSub2, sSub3	
4: Setting Group Selection	sSg1, sSg3, sSgN1	sSg11
4+: Setting Group Definition	sSg2, sSg4, sSg7, sSg8, sSg10, sSg12, sSgN2, sSgN3, sSgN4, sSgN5	sSg5, sSg6, sSg9
5: Unbuffered Reporting	sRp1, sRp2, sRp3, sRp4, sRp5, sRp9, sRp14, sRp15, sRpN1, sRpN2, sRpN3, sRpN4, sRpN8	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	sBr8, sBr10, sBr11, sBr12
9a: GOOSE publish	sGop2a, sGop3, sGop4, sGop9, sGop10, sGop11	sGop1, sGop5, sGop6, sGop7, sGopN1, sGopN2
9b: GOOSE subscribe	sGos1, sGos2, sGos3, sGos5, sGos6a, sGos7, sGosN1, sGosN2, sGosN3, sGosN4, sGosN5, sGosN6	sGos4, sGos6b
12a Direct control	sCtl5, sCtl10, sDOns1, sDOns2	sCtl2, sCtl7, sCtl13, sCtl15, sCtl16, sCtl17, sCtl18, sCtl19
12b SBO control	sCtl5, sCtl8, sCtl9, sCtl10, sCtl11, sCtl25, sSBOns1, sSBOns2, sSBOns6	sCtl2, sCtl6, sCtl7, sCtl15, sCtl16, sCtl17, sCtl18, sCtl19, sCtl27
12c Enhanced Direct Control	sCtl5, sCtl10, sDOes1, sDOes2	sCtl2, sCtl7, sCtl13, sCtl14, sCtl15, sCtl16, sCtl17, sCtl18, sCtl19, sCtl26
12d Enhanced SBO control	sCtl5, sCtl8, sCtl9, sCtl10, sCtl11, sCtl25, sSBOes1, sSBOes2, sSBOes6, sSBOes8	sCtl2, sCtl6, sCtl7, sCtl15, sCtl16, sCtl17, sCtl18, sCtl19, sCtl26
13 Time sync	sTm1, sTm2, sTmN1	sTm3
14 File transfer	sFt1, sFt2ab, sFt4, sFt5, sFtN1ab	sFt2c, sFtN1c

All configuration file and data model tests have been successfully performed for the product variants using the same communication hardware and software version: PCS-915, PCS-921, PCS-924, PCS-931, PCS-978, PCS-985, PCS-992, PCS-993, and PCS-994.

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 ZERTIFIKAT ◆ CERTIFICATE ◆ 認證證書 ◆ CERTIFICADO ◆ CERTIFICAT

## Zertifizierungsvertrag

Grundlage für die Zertifikatserteilung ist die Prüf- und Zertifizierungsordnung von TÜV SÜD Product Service.

Mit Erhalt des Zertifikates erkennt der Zertifikatsinhaber die jeweils gültige Fassung der Prüf- und Zertifizierungsordnung an ([www.tuev-sued.de/ps\\_regulations](http://www.tuev-sued.de/ps_regulations)) und wird somit Partner im Zertifiziersystem von TÜV SÜD Product Service.

## Prinzipielle Voraussetzung für die Gültigkeit des Zertifikates:

- Gültigkeit der zitierten normativen Prüfgrundlage(n) ist gegeben und zusätzlich bei Zertifikaten mit Berechtigung zur Verwendung eines Prüfzeichens bzw. bei Zertifikaten für QM-Systeme:
- Voraussetzungen für vorschriftsmäßige Fertigung werden eingehalten.
- Die Fertigungs- bzw. Betriebsstätten werden regelmäßig überwacht.

## Certification contract

Certification is based on the TÜV SÜD Product Service Testing and Certification Regulations. On receipt of the certificate the certificate holder agrees to the current version of the Testing and Certification Regulations ([www.tuv-sud.com/ps\\_regulations](http://www.tuv-sud.com/ps_regulations)) and thus becomes partner in the TÜV SÜD Product Service Certification System.

## Requirements for the validity of the certificate in principle:

- Validity of the quoted test standard(s) In addition, for certificates with the right to use a certification mark and for QM certificates:
- Conditions for an adequate manufacturing are maintained
- Regular surveillance of the facility is performed

## 认证合约

认证基于 TÜV SÜD 产品服务《测试及认证准则》。获得证书即表明证书持有者接受当前版本的《测试及认证准则》(见 [www.tuv-sud.com/ps\\_regulations](http://www.tuv-sud.com/ps_regulations)) 并成为 TÜV SÜD 产品服务认证系统内的合作伙伴。

## 维持证书有效性的原则要求：

- 认证所依据标准的有效性
- 此外，对于授权可使用认证标志的证书和质量管理体系证书：
- 保持充分的生产条件
  - 生产场地通过定期的监督

## 認證契約

認證は TÜV SÜD Product Service の試験認証規約に基づく。認証書保持者は認証書を受領することにより最新の試験認証規約([www.tuv-sud.com/ps\\_regulations](http://www.tuv-sud.com/ps_regulations))に同意したものとします。その結果、TÜV SÜD Product Service 認証システムのパートナーとなる。

## 認證書の有効性に関する原則的な要求事項

- 引用している試験規格が有効である
- さらに認証マークの使用を許諾された認証書や品質マネジメント認証書は：
- 適切な製造の条件を維持している
  - 定期的な工場監査を実施している

## Contrato de certificação

A certificação se baseia nos Regulamentos de Testes e Certificação do Grupo TÜV SÜD. Ao receber o certificado, o Fornecedor, titular do certificado concorda com a versão atual dos Regulamentos de Testes e Certificação do Grupo TÜV SÜD ([www.tuv-sud.com/ps\\_regulations](http://www.tuv-sud.com/ps_regulations)) e assim, torna-se parceiro no Sistema de Certificação de Produtos e Serviços TÜV SÜD.

## Requisitos para a validade do certificado (em princípio):

- Validade da(s) norma(s) de ensaio(s) referenciada(s).
- Adicionalmente, para os certificados com o direito ao uso da marca de certificação e para certificados de SG:
- Condições de fabricação adequada estão mantidas.
  - Auditoria de monitoração realizada regularmente.