



IEC 61850 Certificate

Level A¹

No. D 061589 0146 Rev. 00

Issued to:

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

For the server product:

PCS-221S MERGING UNIT
Software Version: Ed2 2.00
Hardware Version: NR6106-3
(S/N: YJJG0007145)

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 product has not been shown to be non-conforming to:
IEC 61850-5 Edition 2 Performance Class P1 (3ms)
Communication networks and systems for power utility automation

The performance test has been performed according to the UCA International Users Group GOOSE performance Test Procedures version 2.5 with product's protocol implementation conformance statements: "PICS for the IEC61850 Ed2 interface in PCS-221S V1.0", and product's extra information for testing: "PIXIT for GOOSE Performance Ed2 in PCS-221S V1.0".

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.

This Certificate summaries test results as carried out at TÜV SÜD Certification and Testing (China) Co., Ltd Shanghai Branch in P.R. China with OMICRON Test Universe version 4.00, OMICRON IEDScout version 4.20 and ZH-5N Record Analysis Unit. This document has been issued for information purposes only, and the original paper copy of the TÜV SÜD test report: No. 705001902609-00, version V1.0 will prevail.

The GOOSE performance has been measured with Boolean and Double Point information's.

Shanghai, Oct 30, 2019

Cong WANG
Technical Certifier

Yifan WANG
Test Engineer

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

TÜV SÜD
ZERTIFIKAT ◆ CERTIFICATE ◆ 認證證書 ◆ CERTIFICADO ◆ CERTIFICAT



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GOOSE Performance Measured Results

(Applicable test procedures from the UCA International Users Group Edition 2 GOOSE Performance Test Procedures version 2.5.)

Performance class = P1 (3 ms)

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	-	-	-	0.12	0.37	0.22
Gpf2	X	-	-	0.38	0.67	0.49
Gpf3	-	X	-	0.12	0.38	0.24
Gpf4	X	X	-	0.39	0.68	0.50
Gpf5	-	-	X	0.12	0.36	0.23
Gpf6	X	-	X	0.34	0.64	0.49
Gpf7	-	X	X	0.12	0.39	0.24
Gpf8	X	X	X	0.39	0.70	0.50

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) und wird somit Partner im Zertifizierungssystem 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) 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）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

認証契約

認証は 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)に同意したものとする。その結果、TÜV SÜD Product Service 認証システムのパートナーとなる。

認証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) 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.