



# IECEX Quality Assessment Report

INTERNATIONAL ELECTROTECHNICAL COMMISSION

IEC SCHEME FOR CERTIFICATION TO STANDARDS FOR SAFETY OF ELECTRICAL EQUIPMENT FOR EXPLOSIVE ATMOSPHERES (IECEX-System)

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**Report No** : DE/TUR/QAR/19.0002/01  
01 220 0458 (ATEX)

**Date of Issue** : 2021-10-25

**Valid until** : 2024-08-08


**Product Category** : Type of protection “e” and “nA”

**Applicant** : Woodward (Tianjin) Controls Co.,Ltd.

**Manufacturing Locations** : Building A,Ditiantai Industrial Park,Huaihedao, Beichen High-Tech Park,Tianjin 300410,China.

**Approved for issue on behalf of the IECEx Certification Body** : Andreas Maschke

**Position** : Head of Certification Body

**Signature** : 

**Date** : 2021-10-25

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Quality Report issued by:

**TÜV Rheinland Industrie Service GmbH**  
**Am Grauen Stein**  
**51105 Köln**

 **TÜVRheinland®**  
Precisely Right.

**IECEX Quality Assessment Report (QAR)**  
**CONFIDENTIAL**  
**Audit Report No: DE/TUR/QAR/19.0002/01**  
**01 220 0458 (ATEX)**  
TÜV Rheinland Industrie Service GmbH



**Manufacturer (auditee)** : Woodward (Tianjin) Controls Co.,Ltd.

**Address** : Building A, Ditantai Industrial Park,Huaihedao, Beichen High-Tech Park,Tianjin 300410,China.

**No. of employees** : 300

*include the total number of employees on site  
and those involved in production of Ex products*

**Scope of audit** : initial assessment  reassessment  surveillance   
*List all applicable IECEX Test Reports (or attach copies) to which this audit applies and indicate product type.*

Electrical equipment with type(s) of protection i  d  e  m  n  other (specify)

Protective system

Safety, controlling or regulating device

**Audit Team Leader** : Yang Wang

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2	Introduction
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5	Nonconformity report
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## **1 SUMMARY REPORT**

### **Summary of observations:**

The company is certified according to ISO 9001:2015, TÜV Nord Cert GmbH.  
In addition the company is certified according to ISO/IEC 80079-34:2018 (ATEX-Directive and IECEX-System), Type of protection are; e & nA (TÜV Rheinland Industrie Service GmbH)  
The organization has established, documented, and implemented a QM system pursuant to DIN EN ISO 9001:2015 and ISO/IEC 80079-34:2018.


### **Nonconformities**

1

### **Audit Team Leader recommendations**

- QAR issued, indicating compliance with IECEX, recommending that IECEX Certificate of Conformity be issued/maintained\***
  
- QAR issued, indicating general compliance with IECEX, even if minor Non-conformances are raised, recommending that IECEX Certificate of Conformity be issued/maintained\*** following receipt of satisfactory documentary evidence supporting effective corrective action. Corrective action to be verified at next surveillance visit
  
- QAR issued, indicating Non-compliance with IECEX due to Major Non-conformances being raised, recommending that IECEX Certificate of Conformity be issued only after a satisfactory follow-up visit. For issued IECEX Certificates of Conformity, recommendation that they be maintained providing a follow up visit is conducted within 2 calendar months\***. Follow up visits are required to verify that corrective actions have been effectively documented and implemented.
  
- QAR issued, indicating NON-compliance with IECEX, due to major Non Conformances being raised such that non-complying product may be released to the market, recommending that IECEX Certificate of Conformity be refused/suspended** A further complete assessment, including site assessment to be conducted
  
- QAR issued, indicating NON-compliance with IECEX, recommending that IECEX Certification be refused/suspended** New applications are to be closed complete assessment is to be conducted. Where IECEX Certification has previously been granted, suspend or withdraw any IECEX Certificates associated with this assessment and inform the IECEX Secretary and other ACBs

**Audit Team Leader:**



Yang Wang

**IECEX Certification Body:**



Andreas Maschke

## **2 INTRODUCTION**

**Manufacturer (auditee)** : Woodward (Tianjin) Controls Co.,Ltd.  
Building A,Ditiantai Industrial Park,Huaihedao, Beichen High-Tech  
Park,Tianjin 300410,China.

**Scope of audit**

<b>Type A</b> initial assessment/reassessment of manufacturer <u>with</u> a certified QS	■
<b>Type B</b> initial assessment/reassessment of manufacturer <u>without</u> a certified QS	□
<b>Type C</b> surveillance of manufacturer <u>with</u> a certified QS*	□
<b>Type D</b> surveillance of manufacturer <u>without</u> a certified QS	□
<b>Type E</b> integrated assessment, reassessment or surveillance of manufacturer to include ISO 9001	□

**Company Description** :

Woodward delivers lasting contributions to energy control, always innovating for a better future. Woodward integrates leading-edge technologies into fuel, combustion, fluid, actuation, and electronic control systems for the aerospace and energy markets. Our growth is driven by the increasing demand for fuel-efficient, low-emission, and high-performance energy management. Woodward have a clear vision and follow carefully planned long-term strategies. With multiple locations in ten countries. Woodward can respond quickly with solutions tailored to the local demands of our customers. Woodward leadership in energy control and optimization solutions is built on a strong foundation, dating back to 1870. Woodward are driven by the needs of our customers and guided by our tradition of integrity, values, and principles. Total 300 employees.

**Audit criteria** :

IEC 80079-34, Potentially explosive atmospheres – Application of quality systems  
Certificate No. IECEx TUR 15.0024X from TÜV Rheinland Industrie Service GmbH (IECEX-Scheme)  
Certificate No. TUV 15 ATEX 7717 X from TÜV Rheinland Industrie Service GmbH (2014/34/EU)  
Certificate No. 04 100 010847 from TÜV Nord Cert GmbH (ISO 9001:2015)  
Certificate No. IECEx CSA 18.0033X from CSA Group (IECEX-Scheme)

**Product(s):** EG3P(in Hydraulic Amp)/EG10P Actuator and LECM ignition coil

**Date(s) and duration of audit** :

Recertification Audit, ATEX / IECEx , 14.10.2021 and 15.10.2021, TÜV Rheinland, Yang Wang, 1.5 day(s)

Latest audits:

Surveillance audit ISO 9001:2015, 21.12.2020~22.12.2020, TÜV Nord, Ms.He Jin and Mr. zhang Delong, two day(s)

## **3 AUDIT DATA**

**Composition of audit team:**

Mr.Yang Wang  
TUV Rheinland (China) Ltd.  
Unit 707, AVIC Building, No.10B Central Road,  
East 3rd Ring Road, Chaoyang District, Beijing 100022,P.R.China

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**Interviewed representatives of manufacturer (auditee):**

Mr.Lei Wang, QA manager and Ex representative  
 Ms.Lily Hou, Customer Quality Engineer  
 Ms.May Ma, Compliance Engineer  
 Mr.John Zhang, Sourcing Manager  
 Mr.Michael Jiang, Material Manager  
 Mr.David Du, Director COE/systems  
 Mr.Tian Gang, CMM Programmer

**Changes in the management system / Contract review**

No major changes have been made to the management system and the management system documentation since the last audit. The order details which form the basis of the audit (including number of employees, scope and sites) reflect the actual situation in the organization.  
 The description of the scope in the certificate appropriately reflects the scope of the management system.  
 A corresponding printing request is attached.(only ATEX)

**Reference documents used:**

Directive 2014/34/EU Annex VII  
 ISO/IEC 80079-34 :2018  
 IEC 60079-0  
 IEC 60079-7 Type of protection, Ex e  
 IEC 60079-15 Type of protection, Ex nA  
 Quality manual of Company (QM manual), amended as of 2020-09-02 /revision 23

**Positive findings and opportunities for improvement**

No.	Unit/Department Site	Positive findings
1	All	The evaluation of annual quality objectives are clear, and the required corrective actions are performed in accordance with the processes completely.
2	All	The process of internal audit and management review are performed excellently.
3	All	All Ex external documents are archived clearly and completely.

The following recommendations and opportunities for improvement provided by the auditor are intended to contribute to the continuous improvement of the management system. They also serve to eliminate any weaknesses still existing in the organization, ensure management system effectiveness and prevent nonconformities.

No.	Unit/Department Site	Recommendations and opportunities for improvement
1	All	Annual supplier evaluations should be performed in accordance with the approved processes completely and required assessment records must be archived also.
2	All	Regular trainings for Ex knowledge should be performed when it is necessary.

**4 DOCUMENT REVIEW and INDIVIDUAL ASSESSOR'S REPORT – Assessment of Implementation**

**Requirements 2014/34/EU / IECEx-System**

Item	Audit result
<b>4.4 Quality management system and its processes</b>	The quality management system ensures that the Ex products comply with the types described in the certificate and the technical documentation. The relevant parts of the ISO/IEC 80079-34:2018 standard are fully applied.
<b>5.3 Organizational roles, responsibilities and authorities</b>	An Ex-Representative is named, who meets the following requirements: <ul style="list-style-type: none"> <li>• the effective co-ordination of activities with respect to Ex Products</li> <li>• liaison with the Notified Body responsible for issuing the ex-certificate with regard to any intended changes</li> <li>• liaison with the Notified Body responsible for quality management system with regard to intended updates of the system</li> <li>• the authorization of initial approval and changes to related drawings, where appropriate</li> <li>• the authorization of concessions</li> <li>• the accuracy of the ex-product information provided to the customer in sales information and installation instructions (which must include the specific conditions of use and scheduled restrictions)</li> <li>• the effective coordination of manufacturing processes of Ex products, including externally supplied products</li> </ul> (Process QM manual and environmental manual, Document No.:2100C008, Revision:23,issued on 2020-09-02)  The Ex-Representative is Mr.Lei Wang,which is QA manager and was appointed by general manager.He report to GM directly according to released company organizational chart.
<b>7.1.5 Monitoring and measuring resources</b>	The measuring equipment, used for Ex products, is calibrated and has a valid calibration sticker and certificate, examples WY031 / YD2560A:DLdz2016-0065(Insulation voltage tester).Calibrated by Tianjin Electronic instrument Institute. CNAS L0921,valid till 2022.11.20 (Process Monitoring and measurement equipment control procedure, Document No.: 3677C024, Revision:P,issued on 2018-11-26)
<b>7.2 Competence</b>	All persons who are involved in the conformity process of the ex-products are trained and competent. (Process Human resource training management procedure, Document No.:3261C001, Revision:J,issued on 2021-08-16)  The ATEX/IECEX trainings are performed by compliance engineer of Woodward USA regularly, and the training records are archived completely. Required trainings will be done by Woodward USA timely when any design changes or new requirements arising up on the certified Ex equipment.
<b>7.4 Communication</b>	Internal and external communication relating to Ex Products are controlled.
<b>7.5 Documented information</b>	All requirements and regulations for ensuring the conformity of the Ex products with their certificates and the associated technical documentation are regulated and managed in a systematic manner. Processes / procedures specify how changes are internally and externally managed (responsible for the Ex-Product and/or QM system). Ex-relevant technical documents are marked as follows:

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Item	Audit result
	<p>All technical documents are marked with the approved stamp and Ex information. These documents are stored into Woodward BDDS system.</p> <p>A review of the validity of all Ex-related certificates, standards, directives, etc. is taking place annually. (Process Internal audit control procedure, Document No.:3152C004, Revision: P, issued on 2019-03-19)</p> <p>A minimum of 10 years retention time is required; beginning after the specific Ex Product (batch) has been placed on the market. (Process Document and Data Control Procedure, Document No.:3641C001, Revision: S, issued on 2020-08-10)</p>
<b>8.2 Requirements for products and services</b>	<p>It is evaluated whether specified customer requirements are compatible with the certificate.</p> <p>The Ex-Representative will be involved in any changes that affect the conformity of Ex-products.</p>
<b>8.3.6 Design and development changes</b>	<p>The Ex-Representative will be involved in any changes that affect the conformity of Ex-products.</p> <p>(Process Engineering Change request process, Document No.: 4-36-2666,Revision: 19,issued on 2018-11-13)</p>
<b>8.4 Control of externally provided processes, products and services</b>	<p>Suppliers of crucial parts (BoM) related to products with an EU Type Examination or Technical Report are selected after initial assessment and after that a periodic monitoring.</p> <p>For procured products that can influence the type of protection are specified verification measures for compliance in place. (Process: Purchasing control procedure, Document No.: 3574C020, Revision: H, issued on 2018-11-26)</p> <p>The following suppliers have influence the type of protection and are under periodic monitoring: N/A.</p> <p>All critical parts are purchased from Woodward USA directly, and Woodward USA has a QAN system also .The test and inspection are controlled by Woodward USA themselves.</p> <p>For material-related suppliers, corresponding declarations of conformity or inspection certificates are available.</p> <p>(Process Purchasing control procedure, Document No.: 3574C020, Revision: H, issued on 2018-11-26, Supplier management procedure Document No.:4774C001,Revision: E,2018-11-13)</p>
<b>8.5 Production and service provision</b>	<p>Traceability and identification of the Ex-Product and their parts is during all stages of production and delivery are guaranteed.</p> <p>Traceability for the final product and its important parts are guaranteed.</p> <p>The Ex-Representative will be involved in any changes that could affect the conformity of Ex-Products.</p> <p>Routine tests are required for the following products: A routine insulation strength test shall be performed for EG3P(in Hydraulic Amp)/EG10P Actuator. The routine test are carried out by Woodward Tianjin according to the approved test procedure.</p> <p>Production/assembly and final tests are carried out according to the specification. Example: Amplifier(EG3P Actuator) TSP 753-PAGE J114-Hi-POT(500V/1Minute)</p> <p>An operating manual that has been prepared in accordance with the applicable standards and/or the statutory and regulatory requirements is enclosed with the Ex-product or is otherwise accessible for the customer (e.g. website)</p>

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Item	Audit result
	(Process The control procedure of review related to product, Document No.: 3472C002, Revision: O, issued on 2020-08-11) Following Ex products were assessed during the audit: Work order: D545708-1,2021.08.06 SN:22626882 Amplifier(EG3P Actuator)
<b>8.7 Control of nonconforming outputs</b>	If nonconforming products with potential hazards have already been shipped, customers and competent certification bodies will be informed in writing. Records of nonconforming products will be kept for at least 10 years. (Process Control of nonconforming product, Document No.: 3683C004, Revision: R, issued on 2020-01-01, Corrective and preventive action procedure, Document No.: 3685C006, Revision: G, issued on 2017-10-31)
<b>9 Performance evaluation</b>	All aspects of Directive 2014/34/EU or IECEx-System are reviewed in internal audits annually. (Process Internal audit procedure Document No.:3152C004,Revision: P,2019-03-19) The management review of 2020 year was carried out according to requirements and effectively and includes the effectiveness of quality management with regard to the Ex-Products. The Ex-Representative participated in the evaluation. (Process Management Review procedure Document No.:3152C004,Revision: K,2019-03-19)

Chapter of standard	4.1	4.2	4.3	4.4	5.1	5.2	5.3	6.1	6.2	6.3		
Rating *	1	1	1	1	1	1	1	1	1	1		
No. of nonconformity												
Chapter of standard	7.1	7.2	7.3	7.4	7.5	8.1	8.2	8.3	8.4	8.5	8.6	8.7
Rating *	1	1	1	1	1	1	1	1	3	1	1	1
No. of nonconformity									1			
Chapter of standard	9.1	9.2	9.3	10.1	10.2	10.3						
Rating *	1	1	1	1	1	1						
No. of nonconformity												

**\*Rating:**  
1 = conforming  
2 = not audited in this audit  
3 = failed/nonconformity (see nonconformity report)

**5 NONCONFORMITY REPORT**  
look at separate non-conformity report

**NCR No: 1**

**6 APPENDICES (optional)**  
additional assessor notes  
summary of audit trail (e.g. who? what? when? etc.)

Date for next Audit: Before due date