IECEx Certified Equipment Scheme

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IECEx Certified Equipment Scheme

- Overview of the Certification Process
- Tips on how to make application
- Benefits to stakeholders
- Feedback from local manufacturers
IECEx Certification Schemes

IECEx System

IECEx 02 Vision:
- Worldwide acceptance
- One standard
- One test
- One certificate
- One Mark

IECEx Equipment Scheme
Certification of Ex Equipment

IECEx Conformity Mark License

IECEx Services Scheme
Certification of Ex Service Providers

IECEx Personnel Competence Scheme
Supporting Documentation Structure

- IECEx 01 Basic Rules
- IECEx 02 Rules of Procedure – Equipment Scheme
- IECEx 04 Rules of Procedure – Mark Licensing System
  - Series Operational Documents (OD 001- OD XXX)
  - Technical Capability Document (TCD)
  - ExTR/QAR forms
  - IECEx Bulletin (std differences)
  - ISO/IEC stds and ExTAG decision
  - Application Guidance
  - Application form

All are available at: www.iecex.com
Key Features of IECEx Equipment Scheme

- Based on ISO type 5 cert. mode
- All equipment and systems used in hazardous areas, covered:
  - Electrical
  - Non-electrical
- Certificates issued to Int’l Stds, e.g.:
  - IEC
  - ISO
- “On-Line” Certificates with instant checking of certificates on IECEx website
- Operated by 55 ExCBs and 61 ExTLs
Possible Choice of Certificates

IECEx体系 IECEx System
www.iecex.com

IECEx Certified Equipment Scheme
IECEx 02

IECEx Conformity Mark License Scheme
IECEx 04

Choice btw:
- IECEx “Certificate of Conformity”
- IECEx “Component Certificate”
- IECEx “Unit Verification” Cert.

IECEx 04: 16 ExCBs for licensing IECEx Conformity Mark to IECEx certified products
Operation of IECEx Equipment Scheme

• Based on common ODs and procedures for all ExCBs & ExTLs

• All ExCBs and ExTLs undergo peer assessment process
  — initial assessment, surveillance/mid-term surveillance, 5-year reassessment
  — mandatory proficiency test (OD 202)

• Single report and certificate format used by all ExCBs and ExTLs, e.g. ExTR, QAR, CoC

• Dispute Resolution Mechanism
  — friendly communication btw issuing and accepting bodies
  — complain and/or appeal to body/IECEx secretariat/IEC/CAB
  — Technical interpretation via ExTAG decision (DS – OD 035)

• Int’l confidence as a best practice mode on conformity assessment to int’l standards
IECEEx Equipment Certification – Basic STEPS

• Manufacturer/applicant needs to:
  — Prepare application documents (OD 017), including technical drawings, instruction manual, supporting documents and test sample
  — Select an IECEEx Certification Body (ExCB)
  — Complete and submit application form to selected ExCB

• ExCB and its associated ExTL needs to:
  — confirm acceptance of application
  — carry the certification processes
    ※ Test and assessment (ExTR)
    ※ Factory initial audit to ISO/IEC 80079-34, previous OD 005 (QAR)
    ※ ExCB issues IECEEx certificate (Ex CoC)

• On-going Surveillance by ExCB
Core Elements of IECEx Equipment Certification

- ISO Type 5 – high credibility for all manufactured products
  
  Testing of Samples (Type Test)  
  Initial Assessment of Manufacturer’s Quality System (factory audit)  
  On-going Surveillance (factory audits)

Remarks:
1) IECEx does NOT require manufacturer separately holds ISO 9001 certificate.
2) Assessment of QMS to ISO/IEC 80079-34 is not required for IECEx unit Verification (IECEx OD 033).
Certification Process of Ex Equipment

According to type 5 of ISO Certification mode

Application Preparation
By Manufacturer

IECEx Certification Body (ExCB)

Completed by ExTL

Sample test

Factory Audit

Factory Surveillance

Completed by ExCB

Manufacturer

- Based on ISO/IEC 17065/17025+IECEx Rules + Procedures + ODs.
- No need to conduct factory audit and surveillance for IECEx “Unit Verification” Certificate.
Conditions for issuing IECEx CoC

IECEx Assessment and Test Report ExTR + IECEx Quality Assessment Report QAR = IECEx Certificate of Conformity (Ex CoC)

Remarks:
1) ExCB needs to confirm that ExTR and QAR match.
2) IECEx CoC issued to latest two versions of standards.
3) IECEx Unit Verification, refer to IECEx OD 033.
4) ExTR, QAR and CoC can be individually apply for, and issued by different bodies.
Procedure for Issuing ExTR

- Steps acc. to IECEx OD 009:
  - Receive application for ExTR
  - Contract review
  - Development of test plan
    (acceptance of previous test data)
  - Conduct test and assessment
  - Compile ExTR by ExTL and reviewed by ExCB
  - Issue ExTR to applicant
  - Register ExTR at IECEx website
**Procedure for Issuing QAR**

- **Steps acc. to IECEx OD 009:**
  - Receive application for QAR
  - Contract review
  - Review applicant’s QMS (acceptance of previous audit results)
  - Quality document assessment and site audit acc. to ISO/IEC 80079-34
    ※ Modelled on ISO 9001, plus additional
    ※ Annex A - Critical areas on Ex types
  - Compile QAR and independent review
  - Issue and Register QAR

**In order to:**
1) Ensure product is produced to certification.
2) Prevent any deviations and compromises.
Procedure for Issuing IECEx CoC

- Steps acc. to IECEx OD 009:
  - Receive application
  - Contract review
  - Confirmation of ExTR & QAR, and their matching
  - Certification decision
  - Prepare and Issue CoC via online system
  - Commence surveillance program

Figure 1- Process for issuing an IECEx Certificate of Conformity
Procedure for Issuing IECEx Unit Verification Certificate

• Steps acc. to IECEx OD 033:
  — Receive application
  — Contract review
  — Conduct test and assessment (ExCB works with associated ExTL)
  — Compile and approve ExTR
  — Draft and issue certificate to specific items, via online system

• Manufacturer’s preparations:
  — Equipment design requirement
  — Design and manufacture to Standards
  — Product documents acc. to OD 017
Procedure for licensing IECEx Mark

- Steps acc. to IECEx OD 422:
  - Receive application
  - Contract review
  - Review currency of IECEx CoCs
  - Assessment & audit of applicant’s procedure and design (OD 023)
  - Issue and register license via online system
  - Surveillance arrangement by ExCB
Tips on How to Make Application

- IECEx 02A Guidance for applicants seeking IECEx CoC
Selection of ExCBs

- Full listing maintained at IECEx website
  - 55 ExCBs + 5 Applicants
  - 61 ExTLs + 8 Applicants
  (as of 28 March 2017)
Abstracted from IECEx 02A
Foundation of IECEx Equipment Scheme

Equity  Transparency  Confidence

FOUNDATION

Int’l evidence that meets Int’l standards, a global marketing solution!
Recognition and Support by Countries and Industries

- 33 participated members from USA, UK, France, Germany, Australia, Norway, Malaysia, Canada, UAE, China, ......
- Active involvement in IECEx meetings + WGs
- Supported/promoted by industries
- Endorsed by UNECE
Benefits to Stakeholders in China

Customers
- Reduction of app. risk
- Compliance to int’l practice
- Safer production
- Global management

Regulators
- Used for improvement of national system
- Adoption as a good practice for supporting
  - The Belt and Road
  - National quality and safety strategy

Manufacturers
- Confidence to int’l std.
- Global market access
- Win reputation
- Reduce quality cost
- Add value to bidding
Evidence of the Benefits

- Statistics on issued equip. CoCs and Reports
  - 24,544 IECEx CoC, 22,434 ExTR and 9,155 QAR issued

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- IECEx Certificate holders from China
  - About 1000 IECEx CoCs, 1000 ExTRs and 860 QARs, e.g, the Sponsors –
    - Warom: 169 CoC; CZ: 61 CoC; CHENZHU: 13 products certified under 2 CoC
Feedback from dedicated Ex manufacturers in China

30 yrs history, as a leading Ex company in China, to provide equipment solutions for whole series Ex system.

A full supporter of IECEx, as an earliest IECEx CoC holder in China since 2007 & a member IECEx MarkCo.
Enterprise ideas and qualifications

- “Quality first, users supreme” oriented with continuous innovation
  - ISO 9001, 14001, 10012 and OHSAS 18001 certified
  - Qualified as “Enterprise Technology Center”
- Authorized as “Intellectual Property Rights Exemplary Enterprises”
  - holds more than 700 product patents
Series Products available at Warom

- Ex LED series lightings and various professional lightings
- Ex components, terminal boxes, plugs and sockets
- Ex control panels and distribution stations, Ex instruments, ...... for Group I, II and III purposes

防爆LED系列灯具
Explosion-proof LED series lightings

防爆面光灯、高/低顶灯、泛光/投光灯、局部照明灯、警示灯、移动照明灯具
Explosion-proof fluorescent light fitting, Highbay, Floodlight / spot light, Local / caution illumination, Portable lighting

防爆接线箱、插接装置
Explosion-proof terminal box, plug and socket

防爆操作柱、控制箱、配电箱
Explosion-proof control box, distribution box
Value of IECEx equipment certification

• Being as largest export Ex equipment supplier to about 30 countries and regions, e.g., Russia, the United Arab Emirates, Saudi Arabia, Kuwait, Iran, Thailand, Turkey, South Africa, Brazil and so on.

• Confidence by various certifications, e.g., IECEx, ATEX, CU-TR, UL&FM, INMETRO and etc.

• As an int’l player, IECEx is an important tool with Value:
  — Continuous improvement by IECEx audit
  — High confidence that meets int’l standards
  — Quick access to local certification within IECEx member countries
  — Direct acceptance by some marketplace

IECEx Certification is a global marketing solutions for Ex equipment!
Feedback from Dedicated Ex manufacturers in China

27 years history, continuously committed to providing respected customers high-quality products and services

A leading Chinese Mfr., especially in Ex equipment with non metal enclosure
One of earliest IECEx CoC holders in China
Active supporter of IECEx system
Series Products available at CZ

- Explosion-proof Components and Modules
- Explosion-proof Plugs and Sockets
- Explosion-proof Lightings
- Explosion-proof Electrical Apparatus, Control Box, Junction Box, Including Full plastic, stainless steel and aluminum-alloy enclosure
IECEx helped CZ products to the int’l market with low cost and less time! IECEEx Certification is the best choice for globalization of an Ex Enterprise!
Feedback from Dedicated Ex manufacturers in China

CHENZHU 辰竹

15 years history, one of largest professional suppliers for safety interface and protection units
Series Products available at CHENZHU

For Safety Protection of ICS used in petrochemical, coal industry

- Explosion-proof
- Lightning-proof
- Anti-interference

Intrinsic Safety Ex i

Isolated Safety Barriers

<table>
<thead>
<tr>
<th>EMC</th>
<th>Lightning Protection</th>
<th>Mech. safety</th>
<th>Transmitters &amp; Power Supply</th>
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</thead>
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<tr>
<td>Signal isolator</td>
<td>SPD</td>
<td>Safety relay</td>
<td>Smart controller</td>
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</table>

Cumulative sales - 2 million units, annual sales - 300 thousand units
The domestic market share – 1st!
Value of IECEx equipment certification

- Advanced Cert. Model based on ISO type 5
- Accelerated ATEX & TIIS certification

- Ensure the design meets latest int’l standards
- Ensure the process controlled by QMS

- Widely recognition by end users
- Add value to overseas projects

- Reduce time to market
- Win competitive opportunity
Thank you

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