



INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

An Introduction to the IECEx System and IECEx Scheme Certification Processes

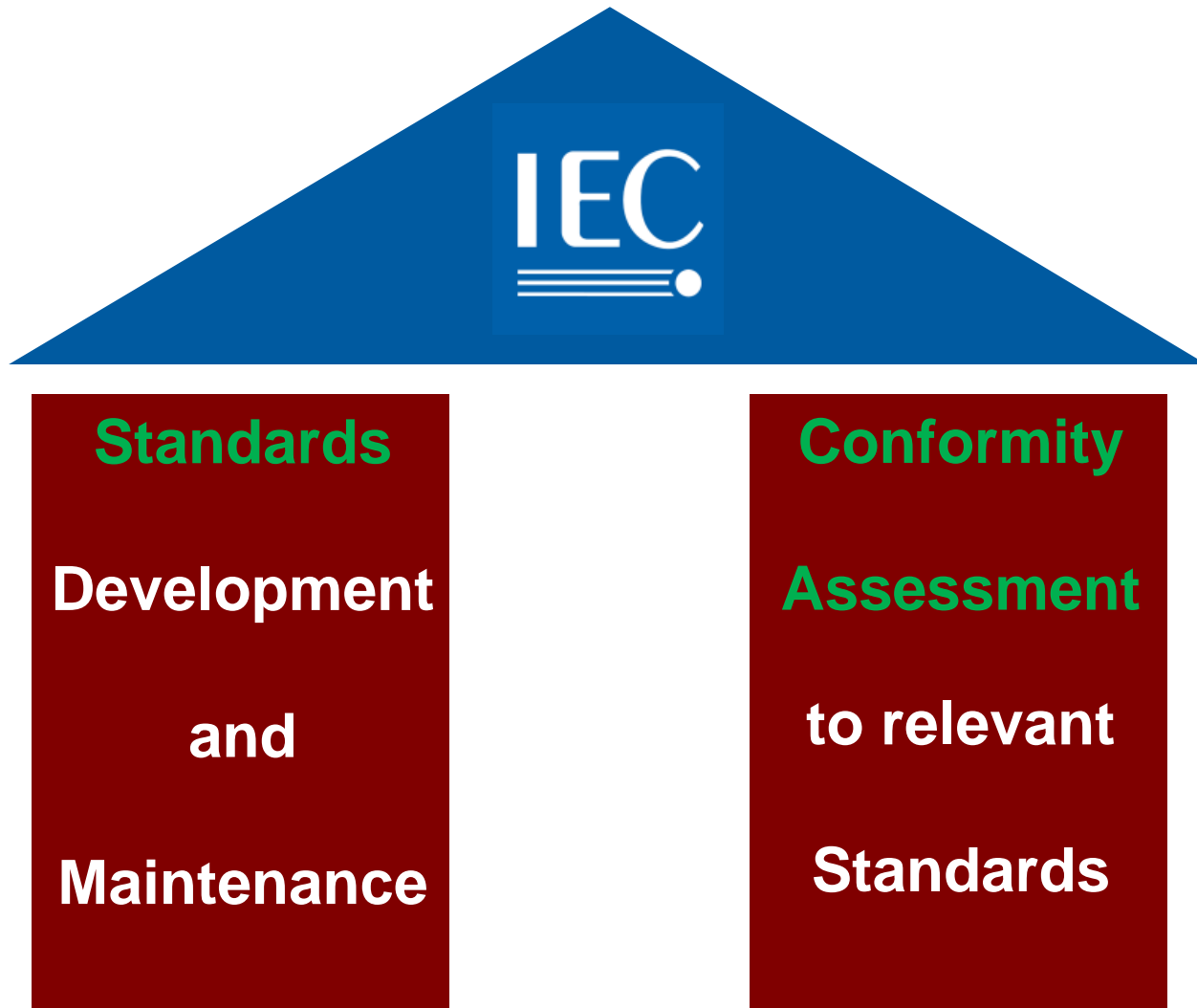


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**IECEx Secretariat
January 2018**



Pillars of the IEC building





Pillars of the IEC building



**Conformity
Assessment
to relevant
Standards**



Standards put into practice...

Conformity Assessment systems provide **independent verification** of claims of **compliance** with Standards related to:

- safety
- performance
- reliability
- inter-operatability
- competence

on the basis of testing and assessment of production processes, people and management systems



IEC's Conformity Assessment Systems

24 Member IEC Board on Conformity Assessment (CAB)

IECEE

System of Conformity Assessment Schemes for Electrotechnical Equipment and Components

CB Scheme

CB-FCS Scheme

PV Programme

E3 Energy Efficiency

Hazardous Substances

IECEX

System for Certification to Standards Relating to Equipment for use in Explosive Atmospheres

Ex Equipment

Ex Services

Ex Personnel

IECQ

Quality Assessment System for Electronic Components, assemblies, materials and related processes

Components + assemblies

Processes

HSPM

Avionics

LED Lighting

IECRE

System for certification to Standards relating to equipment for use in renewable energy applications

Wind Energy

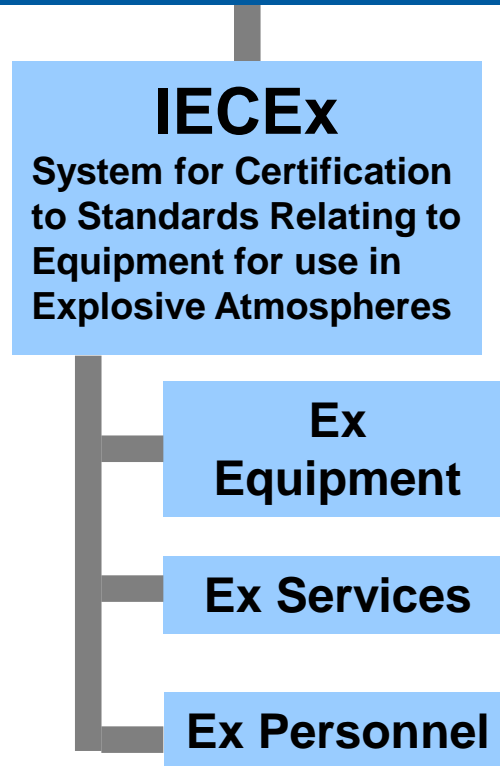
Marine Energy

PV Solar



IEC's Conformity Assessment Systems

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IECEX System & Schemes

IEC System for Certification to Standards Relating to Equipment for use in Explosive ('Ex') Atmospheres.





IECEX System & Schemes

IEC System for Certification to Standards Relating to Equipment for use in Explosive (“Ex”) Atmospheres.



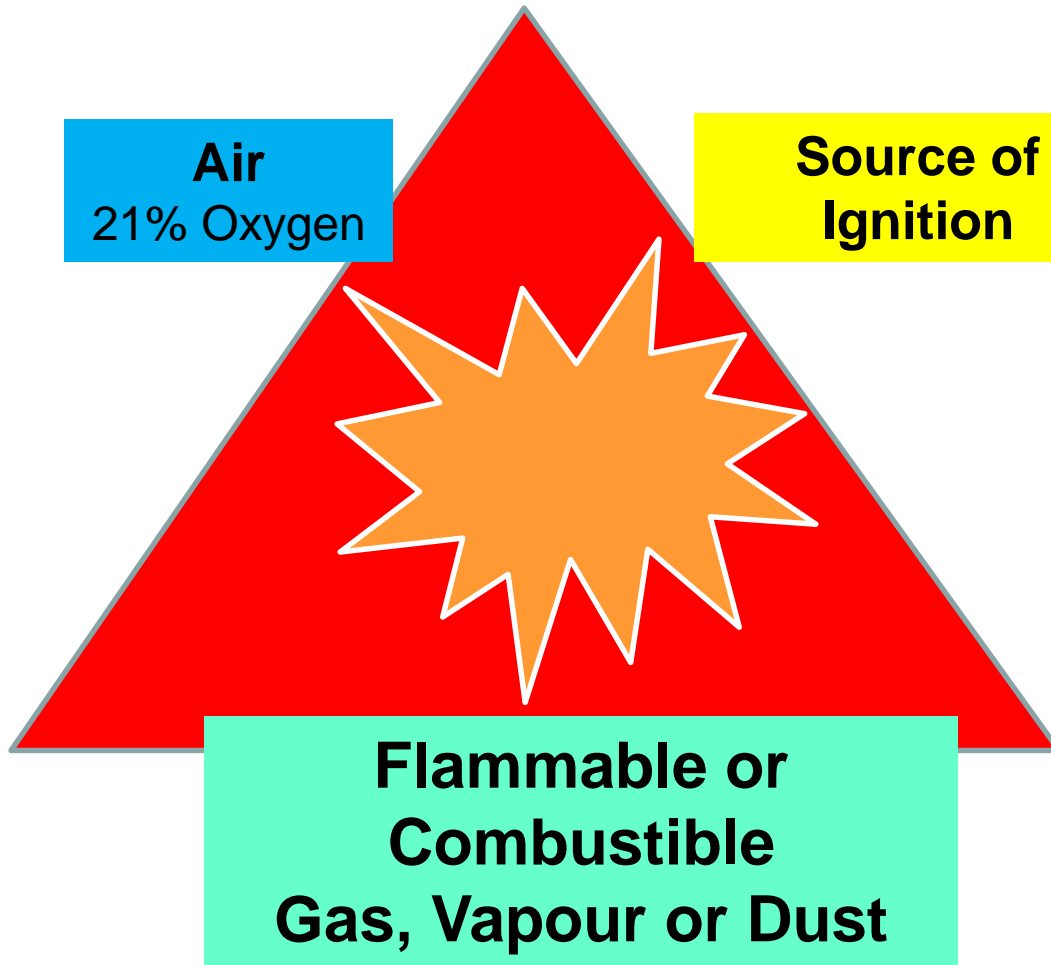


“Ex” is not an Industry of its own!

“Ex” is part of almost every Industry known to Man ... examples include:

- Automotive refuelling stations or petrol stations
- Oil + gas extraction
- Oil refineries, rigs and processing plants
- Gas pipelines and distribution centres
- Chemical processing plants
- Printing industries, paper and textiles
- Hospital operating theatres
- Aircraft refuelling and hangars
- Surface coating industries
- Coal mining
- Sewerage treatment plants
- Grain handling and storage
- Woodworking areas
- Sugar refineries, storage , packaging + distribution
- Metal surface grinding, eg aluminium dusts and particles.
- Transportation
- Pharmaceuticals
- Food processing
- Furniture manufacturer
- many others

Cause of explosions ...



IGNITION SOURCES

- Electrical Arcing and Sparking
- Mechanical Sparks
- Welding
- Naked Flames
- Hot Gases
- Incandescent Materials
- Hot Surfaces
- Electromagnetic Radiation
- Ionising Radiation
- HF Radiation
- Lasers
- Exothermic Chemical Reactions
- Ultrasonics
- Lightning
- Static Electricity
- Adiabatic Compressions
- Cathodic Protection Currents



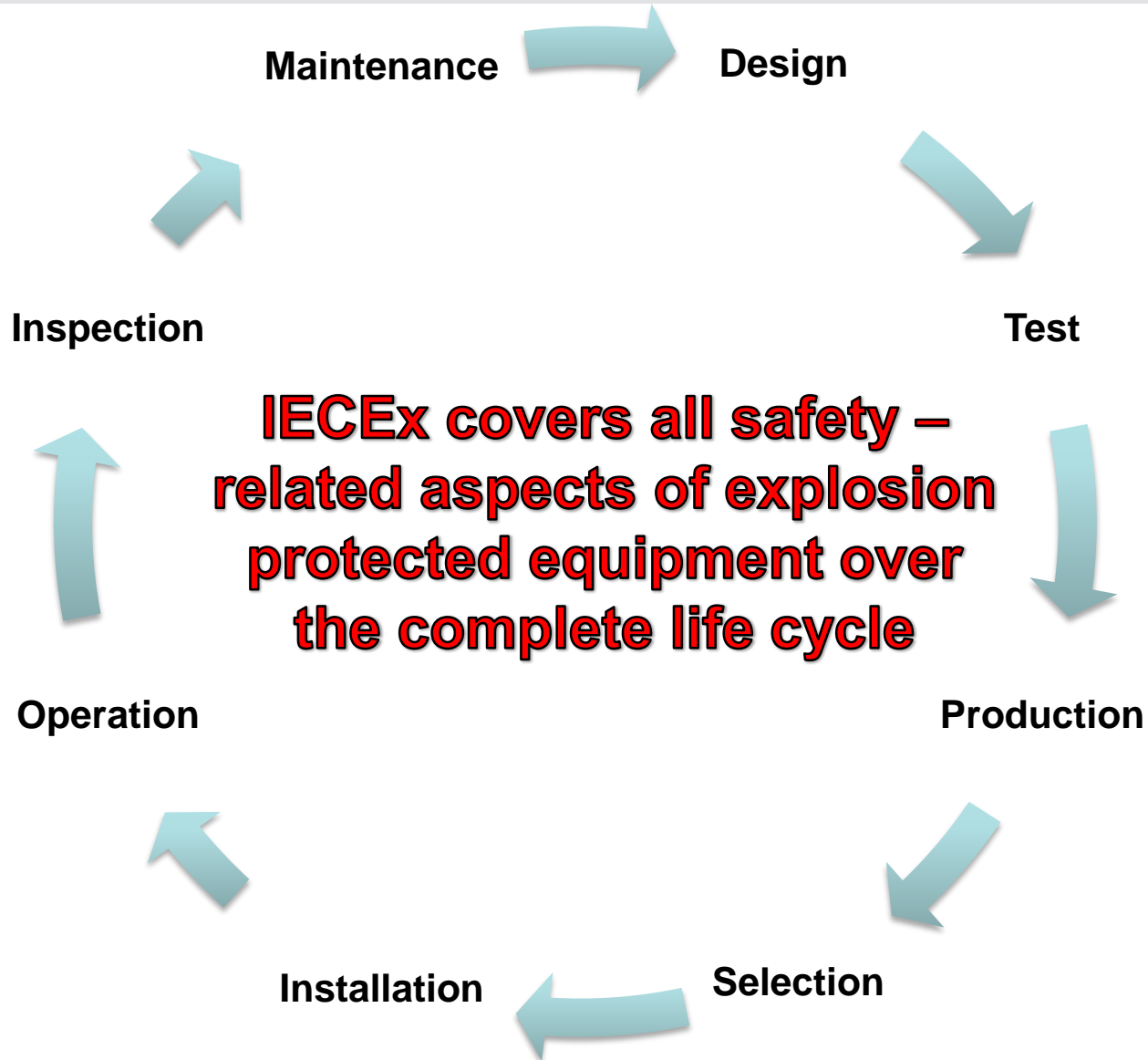
IECEX System & Schemes

IEC System for Certification to Standards Relating to Equipment for use in Explosive ('Ex') Atmospheres.





Product Lifecycle Coverage





Schemes within the IECEx System

IECEx System

IECEx Equipment Scheme

Certification of Ex Equipment



IECEx Conformity Mark License Scheme



IECEx Services Scheme

Certification of Ex Service Providers



IECEx Certified Persons Scheme (CoPC)

Competency to work in Ex field





Schemes within the IECEx System

IECEx System

IECEx Equipment Scheme
Certification of Ex Equipment



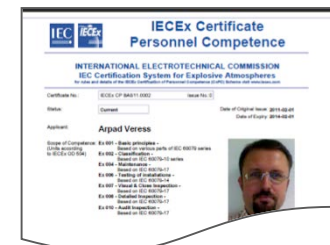
IECEx Conformity Mark License Scheme



IECEx Services Scheme
Certification of Ex Service Providers



IECEx Certified Persons Scheme (CoPC)
Competency to work in Ex field





IECEX Equipment Scheme

This system provides an:

- **IECEX Technical Report (ExTR)**
- **IECEX Quality Assessment Report (QAR)**
- **IECEX Certificate of Conformity (CoC)**



To obtain this certificate, the manufacturer prepares his application and submits it to the relevant IECEx Certification Body (ExCB). Samples of the equipment will be tested by the laboratory of the ExCB and a factory inspection will be organized. On-going periodic audits (factory inspections) ensure that the stringent standards are being maintained by the manufacturer, over time.

■ IECEx Technical Report (ExTR)



The **ExTR** demonstrates that a **sample** of ex-production product has been tested to all relevant requirements of all relevant IEC or ISO Standards and that the sample has satisfied all relevant requirements.



Scope and Standards for IECEx include ...

- **Electrical Equipment**
Conformance to **IEC 60079 Series** and **IEC 61241 Series** requirements
- **Non-electrical Equipment to**
ISO/IEC 80079 Series



IECEX Equipment Scheme

■ IECEx Quality Assessment Report (QAR)

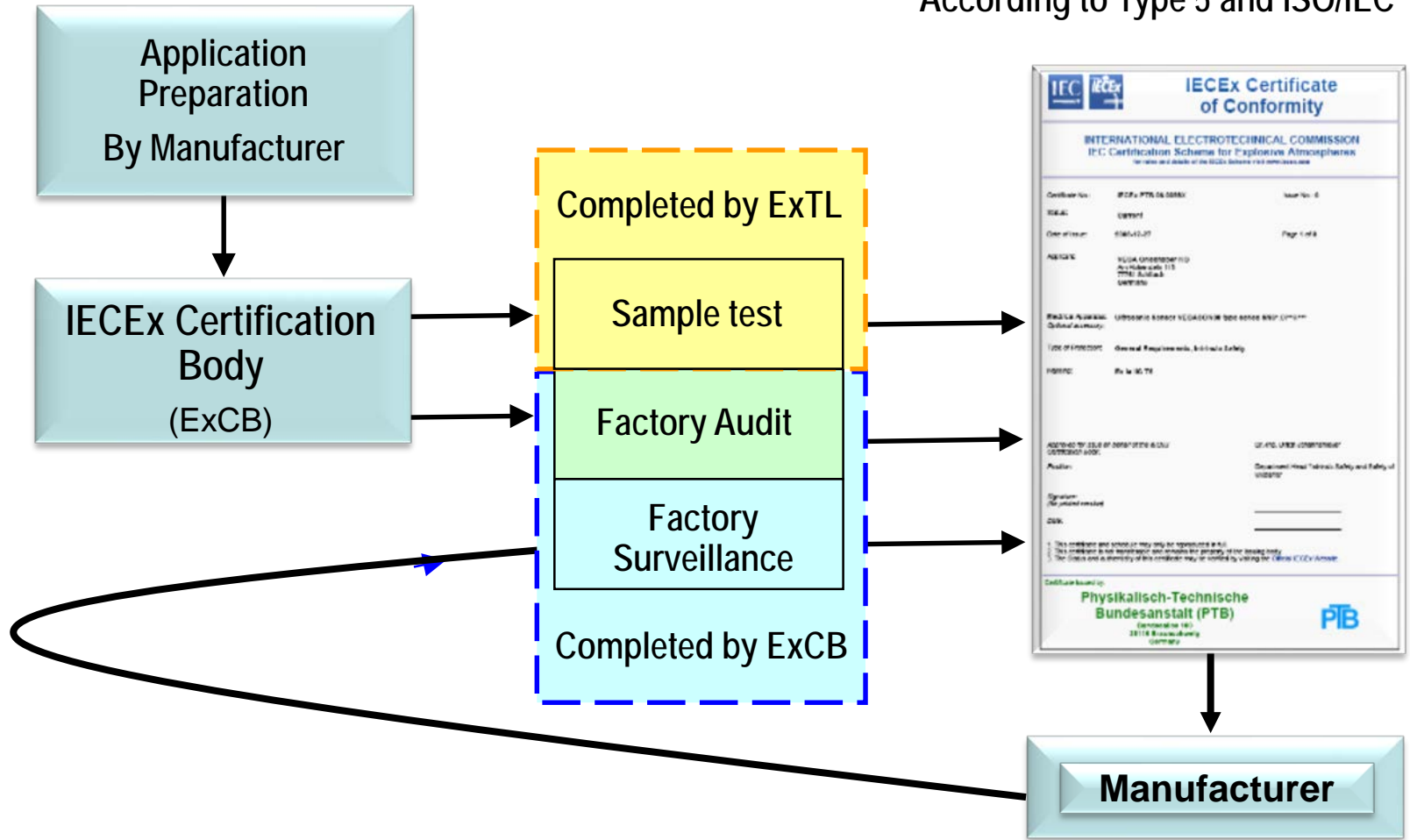


The QAR demonstrates that all manufacturing locations where the certified product is manufactured have been audited and have been confirmed as capable of manufacturing product identical in design and performance to the tested sample. The QAR has a three year life and at the end of the three years a full audit is required. Surveillance audits are also conducted during the three year period. The frequency of surveillance audits is determined by ISO 9001 and ISO 80079-34 certification status.



Certification Process for Ex Equipment


According to Type 5 and ISO/IEC 17065



- Based on ISO/IEC 17065/17025+IECEX Rules + Procedures + ODs.
- No need to conduct factory audit and surveillance for IECEx "Unit Verification" Certificate.



IECEX Equipment Certificate Example



IECEX Certificate of Conformity


INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres
for rules and details of the IECEX Scheme visit www.ieceex.com

Certificate No.:	IECEX BAS 17.0063X	Issue No.:	0	Certificate history:
Status:	Current			
Date of Issue:	2017-06-22	Page 1 of 4		
Applicant:	Eaton Electric Limited Great Marlings Butterfield Luton Bedfordshire LU2 8DL United Kingdom			
Equipment:	FC5-5512-222 to -241 MTL Foundation Fieldbus Junction Box			
Optional accessory:				
Type of Protection:	Increased Safety, Type of Protection 'n' & intrinsic Safety			
Marking:	Ex ec nA [Ic] IIC T4 Gc (-40°C ≤ Ta ≤ +60°C)			
Approved for Issue on behalf of the IECEX Certification Body:	R. S. Sinclair			
Position:	Technical Manager			

1. This certificate and schedule may only be reproduced in full.
 2. This certificate is not transferable and remains the property of the issuing body.
 3. The Status and authenticity of this certificate may be verified by visiting the Official IECEX Website.

Certificate issued by:

SGS Baseefa Limited
 Rockhead Business Park
 Staden Lane
 Buxton, Derbyshire, SK17 9RZ
 United Kingdom



Certificate No.:	IECEX BAS 17.0063X	
Date of Issue:	2017-06-22	Issue No.: 0
		Page 2 of 4
Manufacturer:	Eaton Electric Limited Great Marlings Butterfield Luton Bedfordshire LU2 8DL United Kingdom	
Additional Manufacturing location(s):	MTL Instruments Pvt Limited No 3 Old Mahaballpuram Road Sholinganallur Chennai 600119 India	

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEX Quality system requirements. This certificate is granted subject to the conditions as set out in IECEX Scheme Rules, IECEX D2 and Operational Documents as amended.

STANDARDS:
 The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

IEC 60079-0 : 2011 Edition: 6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-11 : 2011 Edition: 6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "I"
IEC 60079-15 : 2010 Edition: 4	Explosive atmospheres - Part 15: Equipment protection by type of protection "n"
IEC 60079-7 : 2006-07 Edition: 4	Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
IEC 60079-7 : 2015 Edition: 5.0	Explosive atmospheres - Part 7: Equipment protection by increased safety "e"

This Certificate does not indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:
 A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report:
 GB/BAS/EXTR17.0152/00

Quality Assessment Report:
 GB/BAS/QAR06.0022/06 GB/BAS/QAR07.0017/06



Standard IECEx Certificate Number

IECEX UL 13.0049

IECEX Certification

Certificate Issuing Body

Year of Issue

Certificate Issued in that year

IECEX UL 13.0049

Normal Certificate Number

IECEX UL 13.0049X

**Conditions of Product Use
Apply**

IECEX UL 13.0049U

Component Certificate

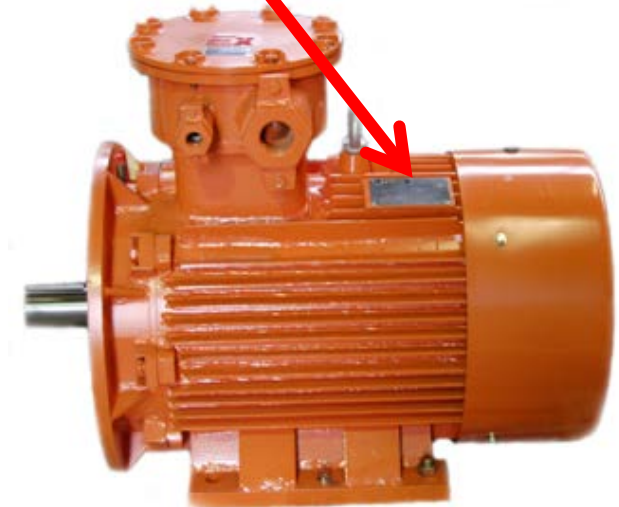
Certificate Number appears on Product Marking



Certificate Number on the Product

○ ROTOTECH					3-AC Induction Motor ○				
EX IEC 60034-1 AS 1359									
Ex mark ExdI/IIB T4/T5					Ex Cer. No.: IEC Ex ITA 10.0025X				
TYPE					N°				
					kg ±%				
kW	Hz	V	AMP	RPM	EFF.	COSφ	T.AMB	T.RISE	CONN.
Ins.CL.	S	IP	BRG DE		NDE				
○ MEPS COMPLIANT					www.rototech.com.au ○				

Under the IECEx Certified Equipment Scheme, the IECEx Certificate number displayed on the product must match the Master version on the website – this provides instant verification of claims of IECEx Certification





IECEX On-Line Certificate System



INTERNATIONAL ELECTROTECHNICAL COMMISSION SYSTEM
FOR CERTIFICATION TO STANDARDS RELATING TO EQUIPMENT
FOR USE IN EXPLOSIVE ATMOSPHERES (IECEX SYSTEM)

Information ▾ Publications ▾ Members' Area ▾ **Certificates & Licences ▾** Meetings & Events ▾ Contact Home

News Releases

Explosions avoided

IECEX, UNECE and IEC Brazilian NC conference on safety in the Ex field

Preventing dust explosions

IECEX certification provides high level of protection

Mining: A high-risk activity

IECEX ensures protection and safety for Ex equipment and workforce

Competitive advantages

IECEX present at Australasian Oil and Gas Exhibition and Conference

IECEX launches first mobile app

to show international certificates for equipment used in explosive atmospheres

IECEX-AFSEC seminar in Africa



IECEX Malaysia 2014

Kuala Lumpur 19-20 February 2014

Organized by the IEC and IECEX, together with Department of Standards Malaysia, and in conjunction with UNECE (United Nations Economic Commission for Europe), the 2014 IECEX International Conference will take place on 19 and 20 February 2014.

[More information from the meeting website](#)

Quick Links

[IECEX Certificates and Licences](#)

[Certification Bodies \(ExCBs\) - Equipment](#)

[Certification Bodies \(ExCBs\) - Service Facilities](#)

[Certification Bodies \(ExCBs\) - Certified Persons](#)

[Certification Bodies \(ExCBs\) - Conformity Mark](#)

[ExTAG Decision Sheets List](#)

[IEC TC31 & IECEX Meeting Schedule](#)

Featured



IECEX systems endorsed by UNECE



IECEX mobile apps



IECEX On-Line Certificate System

IECEX CoC System

iececex.ch/iececex/exs.nsf/ex_eq.xsp?v=e

IEC **IECEX** INTERNATIONAL ELECTROTECHNICAL COMMISSION SYSTEM FOR CERTIFICATION TO STANDARDS RELATING TO EQUIPMENT FOR USE IN EXPLOSIVE ATMOSPHERES

For ExCBs only [Log in](#)

CERTIFIED EQUIPMENT CONFORMITY MARK LICENSES CERTIFIED SERVICE FACILITIES CERTIFIED PERSONS TOOLS

Information
 IECEX Certificates are issued by IECEX Approved Certification Bodies using the IECEX On-Line Certificate System.
 The IECEX Certificate that appears on this public view IECEX website is an image of the official on-line version and a signature is not required to validate it.
 A printed or downloaded PDF copy of an On-line IECEX Certificate(s) must be regarded as an "Uncontrolled Copy" of the on-line official version.

[Click here for a link to the INSTRUCTIONS FOR USE.](#)
 For any questions, please contact Mr. Chris Agius, IECEX Secretary.

Available on the **App Store**

ANDROID APP ON **Google play**

Enter your criteria

IECEX documents: Certificates Issued year: - All - Status: - All - Free text:

ExCBs: - All - Certificate/ExTR/QAR number: Standard:

Applicant/ Manufacturer: Indonesia Name:

For Ex Certificates only: Equipment: Type of protection:

[Reset](#) [Search](#)

Total Certificates found : 3

Previous 1 Next

Certificate no.	Date	ExCB	Location	Equipment	Applicant	Standards	Files
IECEX ITA 15.0012X issue 0	2015-06-18	ITA	Indonesia	Hydraulic Power Unit Panel Assembly	Pt Proserv	IEC 60079-0 (Ed.5), IEC 60079-0 (Ed.6.0), IEC 60079-1 (Ed.6), IEC 60079-1 (Ed.7.0), IEC 60079-11 (Ed.5), IEC 60079-18 (Ed.3), IEC 60079-7 (Ed.3), IEC 60079-7 (Ed.4)	
IECEX BKI 11.0001X issue 1	2012-02-14	BKI	Indonesia	Handheld corrosion logger / up-downloader model KSFHU; Corrosion data logger and transmitter model DCI	Pt. Korosi Specindo	IEC 60079-0 (Ed.5), IEC 60079-11 (Ed.5)	



Schemes within the IECEx System

IECEx System

IECEx Equipment Scheme
Certification of Ex Equipment



IECEx Conformity Mark License Scheme



IECEx Services Scheme
Certification of Ex Service Providers



IECEx Certified Persons Scheme (CoPC)
Competency to work in Ex field





IECEX Certified Service Facility Scheme

Certifying providers of

- *Design*
- *Selection*
- *Installation*
- *Inspection*
- *Maintenance*
- *Repair*
- *Overhaul*
- *Reclamation*

services on Ex Equipment

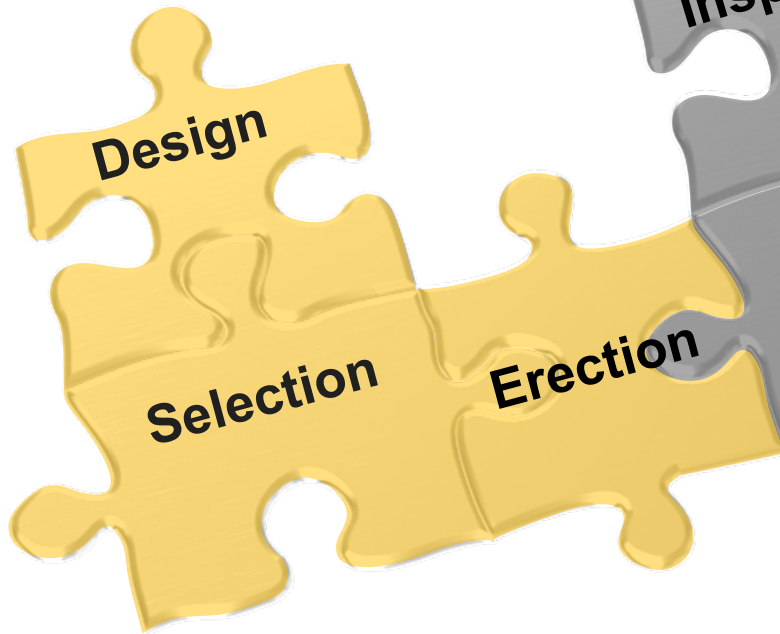




Relevant IEC "Service" Standards

IEC 60079-19

IEC 60079-14



IEC 60079-17



IECEX Certified Service Facility Scheme

IEC IECEx CoC System

ieccex.iec.ch/ieccex/exs.nsf/ex_sf.xsp?v=s

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INTERNATIONAL ELECTROTECHNICAL COMMISSION SYSTEM FOR CERTIFICATION TO STANDARDS RELATING TO EQUIPMENT FOR USE IN EXPLOSIVE ATMOSPHERES

CERTIFIED EQUIPMENT CONFORMITY MARK LICENSES **CERTIFIED SERVICE FACILITIES** CERTIFIED PERSONS TOOLS

Information

IEC System for Certification to Standards relating to Equipment for use in Explosive Atmospheres (IECEX System)
 IECEX Certificates of Certified Service Facility Scheme enables:
 IECEX Certification Bodies to issue new IECEX Certificates of Conformity On-line.
 Full Public access to consult, view and print issued IECEX Certificates.

[Click here for a link to the INSTRUCTIONS FOR USE.](#)
 For any questions, please contact Mr. Chris Agius, IECEX Secretary.

Available on the App Store

ANDROID APP ON Google play

Certificates Facility Assessment Reports

Certificate no.	Year	ExCB	Location	Applicant	Free text	Reset	Search
<input type="text"/>	- All -	- All -	- All -	<input type="text"/>	<input type="text"/>		

Previous 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 Next

Certificate no.	Date	ExCB	Location	Applicant	Protection type
IECEX DEK S0029 issue 0	2017-06-28	DEK	The Netherlands	Facta Spijkenisse B.V.	03-5 Program - Repair Overhaul and Reclamation Flameproof Enclosure 'd' Increased Safety 'e' Oil Filled 'o' Other Pressurisation 'p' Type of Protection 'n'
IECEX KEM S0011 issue 2	2017-06-26	KEM	The Netherlands	Jrs Rotating Service B.V.	Other
IECEX BAS S0025 issue 1	2017-06-21	BAS	United Kingdom	Eriks Distribution And Engineering	Flameproof Enclosure 'd' Increased Safety 'e'

IECEx System

IECEx Equipment Scheme

Certification of Ex Equipment



IECEx Conformity Mark License Scheme



IECEx Services Scheme

Certification of Ex Service Providers



IECEx Certified Persons Scheme (CoPC)

Competency to work in Ex field



What is Competency?

- **Competence = Application** of knowledge and skills to the standards of performance required in the workplace.
- Competency includes all aspects of work performance and not just specific skills...
 - Persons must be aware of the hazards in their work area and work safely in their presence
 - Persons must know what they are doing under various scenarios
 - Equipment must be used correctly

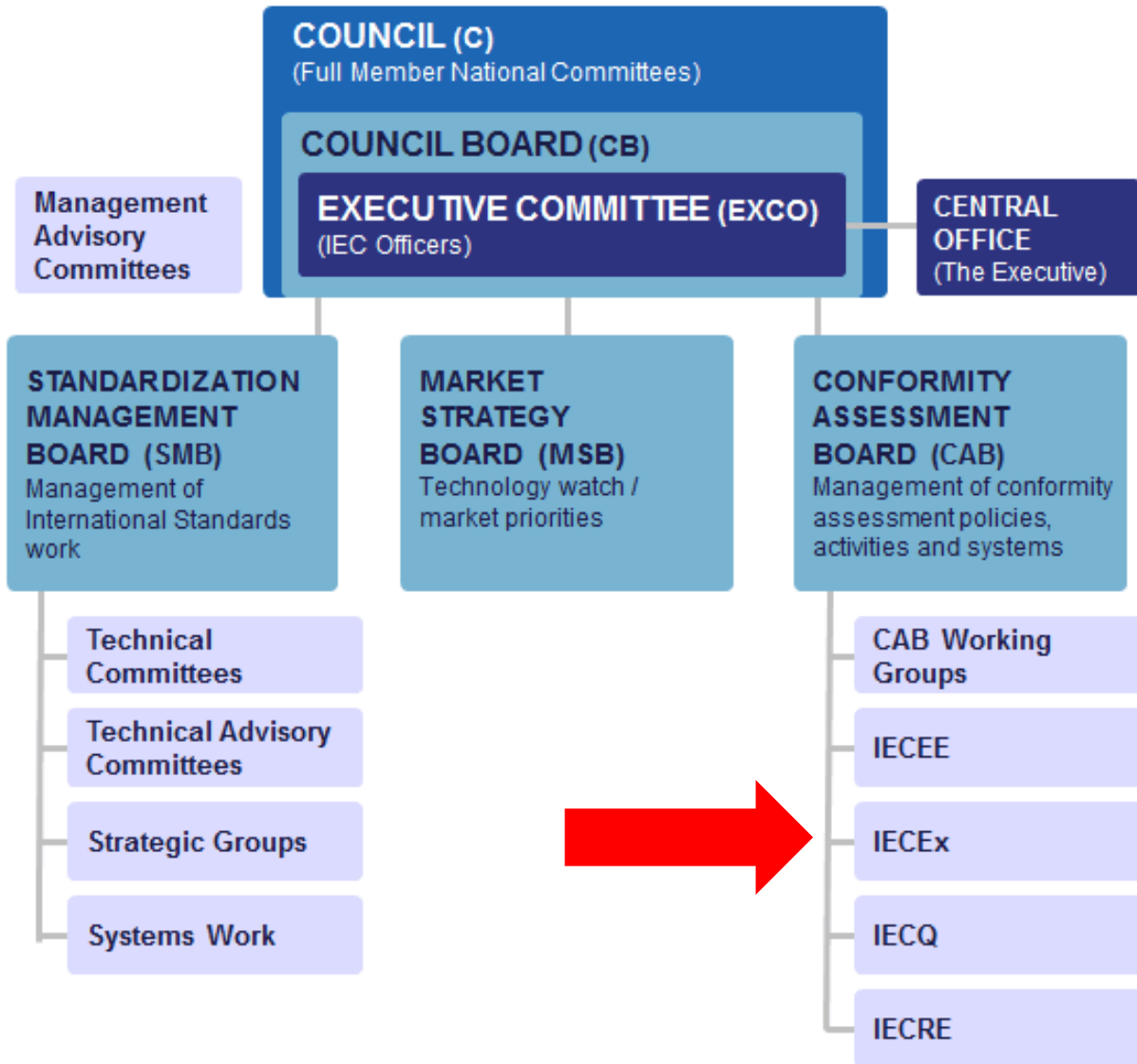


IECEX CoPC Units of Competency

Reference	Title
Unit Ex 000	Basic knowledge & awareness to enter hazardous area site
Unit Ex 001	Apply basic principles in explosive atmospheres
Unit Ex 002	Perform classification of hazardous areas
Unit Ex 003	Install explosion protected equipment & wiring systems
Unit Ex 004	Maintain equipment in hazardous areas
Unit Ex 005	Overhaul & repair of explosion protected equipment
Unit Ex 006	Test electrical installations
Unit Ex 007	Perform visual & close inspection of electrical installations
Unit Ex 008	Perform detailed inspection of electrical installations
Unit Ex 009	Design electrical installations
Unit Ex 0010	Perform audit inspection of electrical installations



Getting involved IEC 'levels'





INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

Thank you for your attention



www.iecex.com

mark.amos@iecex.com