ATEX

Eaton's MTL product range and the ATEX directive

CROUSE-HINDS SERIES

SAFETY OF EQUIPMENT

DIRECTIVE 94/9/EC *23 March '94 Implementation date 1 July '03*

SCOPE - *THE ARTICLES*

- Placing on the market and putting into service
- Equipment and protective systems for use in potentially explosive atmospheres
- Conformity assessment procedures

EQUIPMENT GROUPS & CATEGORIES - *ANNEX I*

ESSENTIAL HEALTH & SAFETY REQUIREMENTS - *(EHSR's) - ANNEX II*

- Principle of integrated safety
- Consideration of environment
- Marking
- Choice of materials
- All potential ignition sources
- Risk caused by software
- Risk from gas, vapours, mist and dust

UK IMPLEMENTATION

Statutory Instrument SI 1996, No. 192 and amendments.
Office of Public Service Information (www.opsi.gov.uk)
Equipment and Protective Systems Regulation (EPS Regulation)

Your country implementation.....

EQUIPMENT MARKING

ATEX (European Union)

CE 0999 Ex II 1 G

- CE mark (European Compliance)
- Identification number of Notified Body responsible for surveillance
- EU Explosive Atmosphere Symbol
- Equipment Group
  I : Mining
  II : Non-Mining
- Equipment Category (Group II)
  1, 2, 3
- Type of explosive atmosphere (Group II)
  G : Gas, vapour, mist
  D : Dust
  (Group I)
  M1 : energised
  M2 : de-energised

IEC/CENELEC (Global/Europe)

GAS Ex d IIB T6 Gb (-40°C ≤ T_{amb} ≤ +50°C)

- Explosion protection symbol
- Type of protection
- Apparatus Group
- Temperature Classification (Group II)
- Equipment Protection Level (EPL)
- Ambient temperature range of -20°C to +40°C unless stated on label

DUST Ex t IIIC T80°C Db

- Explosion protection symbol
- Type of protection
- Apparatus Group
- Maximum external surface temperature
- Equipment Protection Level

Alternate marking format possible :-
Ex db IIB T6 (-40°C ≤ T_{amb} ≤ +50°C) Ex tb IIIC T80°C

For further explanation of gas, temperature, area classification and the various types of electrical protection please refer to Eaton's MTL flammable facts poster

SAFETY OF THE INSTALLATION

DIRECTIVE 1999/92/EC *16 December '99 Implementation date 1 July '03*

SCOPE - *THE ARTICLES*

- Prevention, avoidance, mitigation
- Assessment of explosion risks
- Classify into hazardous zones
- Explosion protection document

CLASSIFICATION OF PLACES WHERE POTENTIALLY EXPLOSIVE ATMOSPHERES MAY OCCUR - *ANNEX I*

- Hazardous zones - gas, vapours or mist and combustible dusts

MINIMUM REQUIREMENTS FOR IMPROVING SAFETY & HEALTH - *ANNEX II*

- Training, working procedures
- Criteria for selection of equipment and protective systems

WARNING SIGN WHERE EXPLOSIVE ATMOSPHERES MAY OCCUR - *ANNEX III*

UK IMPLEMENTATION

Dangerous Substances & Explosive Atmosphere Regulation 2002.
Health & Safety Executive.
(www.hse.gov.uk/fireandexplosion/dsear.htm)

Your country implementation.....

CE MARK CONFIRMS COMPLIANCE WITH ALL RELEVANT DIRECTIVES SUCH AS:

Low Voltage Directive 2006/95/EC

Electro Magnetic Compatibility 2004/108/EC

Machinery Directive 2006/42/EC

ATEX or parallel Flammable Atmospheres Directive 94/9/EC

EXAMPLES OF BODIES NOTIFIED UNDER *DIRECTIVE 94/9/EC*

Organisation	Identification No
SGS Baseefa	1180
TÜV Nord Group	0158
DNV	0344
LCIE	0081
PTB	0102
TÜV Product Service GmbH	0123

Full list can be found on:
http://ec.europa.eu/enterprise/atex/nb/nblist.htm

SURFACE INDUSTRY — ATEX EQUIPMENT CATEGORY & INTENDED USE

Equipment category	Level of protection	Area classification
II 1G 1D	Two independent faults (ia) or Two types of protection	Zone 0 (gas) Zone 20 (dust)
II 2G 2D	One fault (ib) or One type of protection	Zone 1 (gas) Zone 21 (dust)
II 3G 3D	Safe in normal operation (n)	Zone 2 (gas) Zone 22 (dust)

Mining industries (I) has categories M1 and M2

'SIMPLE APPARATUS' & THE ATEX DIRECTIVES

Simple apparatus has been in use as a valuable part of intrinsically safe systems for many years. It was necessary to reassess the use of this apparatus with the introduction of the two ATEX directives. The following has been agreed at EU level; *"Simple apparatus is considered not to require certification by a notified body. The responsibility for compliance with the relevant parts of the standard rests with the persons claiming compliance. Certification to the ATEX Directive is not required because of the low levels of energy, which are added to the intrinsically safe circuit by this apparatus. Simple apparatus is required to be clearly identified when it is installed."*

ATEX GUIDELINES *FOURTH EDITION*

Guidelines on the application of European Parliament and Council Directive 94/9/EC of 23 March 1994 on the approximation of the laws of the Member States concerning equipment and protective systems intended for use in potentially explosive atmospheres.

Visit: http://ec.europa.eu/enterprise/sectors/mechanical/files/atex/guide/atex-guidelines_en.pdf

COMPLIANCE

Compliance with the ATEX Directive 94/9/EC can be demonstrated by using the Harmonised European Standards. Reference to these standards relating to the various methods of electrical protection can be found on Eaton's MTL flammable facts poster or the EU ATEX website listed below.

NEW ATEX DIRECTIVE

A new ATEX equipment directive 2014/34/EU, dated 26th February 2014 has been published, as part of the New Legislative Framework (NLF).

Compliance will be mandatory for all manufacturers from 20th April 2016.

CERTIFICATION REQUIREMENTS

Equipment category	1	2 Electrical	2 Non-electrical	3	Annex of 100a Directive
CERTIFICATION PHASE					
Certification by notified body	✓	✓			III
Certification by manufacturer			✓	✓	VIII
Unit verification by notified body	UNIVERSAL OPTION				IX
SURVEILLANCE					
QA of production by notified body	✓				IV
QA of product by notified body		✓			VII
QA by manufacturer			✓	✓	VIII

NOTE. *Internal combustion engines are electrical equipment*
Unit verification is normally used for special small quantity apparatus

European (ATEX) Directive http://ec.europa.eu/enterprise/atex/index_en.htm
European (CENELEC) standards www.cenelec.eu
International (IEC) standards www.iec.ch

GUIDE OF GOOD PRACTICE RELATING TO DIRECTIVE *1999/92/EC*

A non - binding code of practice was published in 2003 identifying how this directive could be implemented, a link can be found on the web site -

http://bookshop.europa.eu/is-bin/INTERSHOP.enfinity/WFS/EU-Bookshop-Site/en_GB/-/EUR/ViewPublication-Start?PublicationKey=KE6404175

Eaton's MTL product range is manufactured under a quality management system in accordance with BS EN ISO 9001:2008

THE NEW APPROACH

To gain a better understanding of directives based on the new approach to technical harmonisation and global approach to conformity assessment e.g. ATEX, Pressure Equipment, Machinery directives, refer to the European Commissions guide available to order or download from:

http://ec.europa.eu/DocsRoom/documents/4942/attachments/1/translations/en/renditions/pdf

FUNCTIONAL SAFETY *IEC 61508*

Safety Instrumented systems are widely used in industrial process plants where there is threat to life or environment should something go wrong. The IEC 61508 set of standards 'Functional safety of electrical / electronic / programmable electronic safety-related systems' are now considered industry 'good practice' for both manufacturers and users designing products and systems for safety related applications.

Our application note AN9025 provides an introduction to the subject.

MTL Instruments are members of 'The 61508 Association'

The 61508 Association
http://www.61508.org/

QUALITY ASSURANCE NOTIFICATION

SGS Baseefa (2001) Ltd
Measurement Technology Ltd SGS Baseefa ATEX 0703

Eaton's MTL products are manufactured under a quality control system satisfying the ATEX Directive

Powering Business Worldwide

Eaton Electric Limited,
Great Marlings, Butterfield, Luton, Beds, LU2 8DL, UK.
Tel: +44 (0)1582 723633
Fax: +44 (0)1582 422283

AUSTRALIA Tel: +61 1300 308 374 Fax: +61 1300 308 463
BeNeLux Tel: +31 (0)418 570290 Fax: +31 (0)418 541044
CHINA Tel: + 86 21 2899 3817 Fax: + 86 21 2899 3992
FRANCE Tel: +33 (0)4 37 46 16 53 Fax: +33 (0)4 37 46 17 20
GERMANY Tel: +49 (0)22 73 98 12 - 0 Fax: +49 (0)22 73 98 12 - 2 00
INDIA Tel: +91 (0)44 24501660/24501857 Fax: +91 (0)44 24501463
ITALY Tel: +39 02 959501 Fax: +39 02 95950759
JAPAN Tel: +81 (0)3 6430 3128 Fax: +81 (0)3 6430 3129
NORWAY Tel: +47 66 77 43 80 Fax: +47 66 84 55 33
RUSSIA Tel: +7 (495) 981 3770 Fax: +7 (495) 981 3771
SINGAPORE Tel: +65 6 645 9888 Fax: +65 6 487 7997
SOUTH KOREA Tel: +82 6380 4805 Fax: +82 6380 4839
UNITED ARAB EMIRATES Tel: +971 2 44 66 840 Fax: +971 2 44 66 841
UNITED KINGDOM Tel: +44 (0)1582 723633 Fax: +44 (0)1582 422283
AMERICAS Tel: +1 281-571-8065 Fax: +1 281-571-8069

www.mtl-inst.com **mtlenquiry@eaton.com**
For technical advice or further information call:
+44 (0)1582 723633