

EXPLOSION-PROOF ENCODERS BY ELCIS

ELCIS presents the new explosion-proof incremental and absolute encoders mod. **80EXS**, **0B80EXS**, **0Q80EXS**, with **CE** certification (EC type examination certificate) provided by **ISSeP** N° **ISSeP02ATEX001X** and Product Notification by **CESI** N° **CESI02ATEX138Q**, in conformity with **annex II** and **annex VII** to the **ATEX Directive 94/9/EC** (mandatory from 1st July 2003).

These encoders are suitable for use in working environments with potentially explosive atmosphere with the presence of gas (except for mines with grisù) according to CENELEC EN 50014 and EN50018 Standards with **EEx d II C T5** and **EEx d II C T6** housings (T5 = max temperature of the case surface +100°C and for an ambient temperature of +60°C, T6 = max temperature of the case surface +85°C and for an ambient temperature of +40°C).

These transducers are extremely sturdy; they are made in turned rod metal (aluminium for standard version or stainless steel as custom option) with precision bearings and stainless steel shaft.

Just like all the other **ELCIS** products, the new explosion-proof encoders show a very high manufacturing quality degree as they are produced in accordance with the **UNI EN ISO 9001:2000**.



In order to understand better the application field of these products we give you a short synthesis about the European ATEX Directives and their practicability:

Potentially explosive atmosphere

A "potentially explosive atmosphere" is an atmosphere which could become explosive as a result of the local conditions of the working. It's a mixture with air, under atmospheric conditions, of flammable substances in the form of gases, vapours, mists or dusts in which, after the ignition has occurred, combustion spreads to the entire unburned mixture.

The equipments, including our encoders, for use in working environments with "potentially explosive atmosphere" will have to comply with the essential requirements of European ATEX Directive 94/9/EC.

ATEX Directive

ATEX comes from the French **ATmospheres EXplosibles** and it's the name of two European Directives that regulates the "potentially explosive atmosphere". The first one, 94/9/EC, covers electrical equipments for potentially explosive atmosphere and aims to move near the different requirements for the safety of equipment for use in explosive atmospheres in every Country within the European Union. The second one, 99/92/EC, sets out the minimal requirements concerning with workers safety and requirements on employers working in an explosive atmosphere. In particular, our encoders are complying to the Annex II and Annex VII of Directive 94/9/EC and to the Standards CENELEC EN50014 ed. 1997 + A1 and A2 1999 "Electrical apparatus for potentially explosive atmospheres. General requirements." and EN50018 ed. 2000 "Electrical apparatus for potentially explosive atmospheres. Flameproof enclosure 'd'".

Furthermore, the Directive includes the safety, control and regulation equipments which don't work directly in explosive atmosphere, but which are necessary to the safe functioning of the apparatus to which they are connected.

The greatest difference between this Directive and the previous ones is that it considers all the risks of explosion that can cause an ignition source (e.g. mechanical shocks, electromagnetic waves, overheating, optical radiations) and it applies to all the equipments, also non electrical ones, which will or may be used in an explosive atmosphere.

The products have to be certified with **EC type examination certificate** by particular authorized European Bodies and their production have to be put under Quality Control by means of **Production Quality Assurance Notification** by particular authorized European notified Bodies.

ELCIS has EC type examination certificate issued by **ISSeP** (Belgium) and Product Quality Assurance Notification issued by **CESI** (Italy). The identification plate of the product have to bear some specific symbols, as shown later on.

From **1st July 2003** each new product put on the market must comply with the essential requirements of the **ATEX Directive 94/9/EC**.

The application of **ATEX** Standards expects that the formerly installed equipments will have to be analyzed and should be substituted with new apparatus complying with **ATEX Directive 94/9/EC**, in case of problems or non conformity.

The Directive 99/92/EC face up workers' duties concerning with explosion's prevention and related protections; the user has to adopt proper technical and organizational methods, to take explosion's risks into account, to split up in specific zones the ambients in which could be generated explosive atmospheres and to show the defined zones.

The zones characterized by the presence of gas (look at Fig.1) are divided in:

- Zone 0: PERMANENT HAZARD.

A place in which an explosive atmosphere consisting of a mixture with air of flammable substances in the form of gas, vapour or mist is present continuously or for long periods or frequently.

- Zone 1: POTENTIAL HAZARD.

A place in which an explosive atmosphere consisting of a mixture with air of flammable substances in the form of gas, vapour or mist is likely to occur in normal operation occasionally.

- Zone 2: MINIMUM HAZARD.

A place in which an explosive atmosphere consisting of a mixture with air of flammable substances in the form of gas, vapour or mist is not likely to occur in normal operation but, if it does occur, will persist for a short period only.

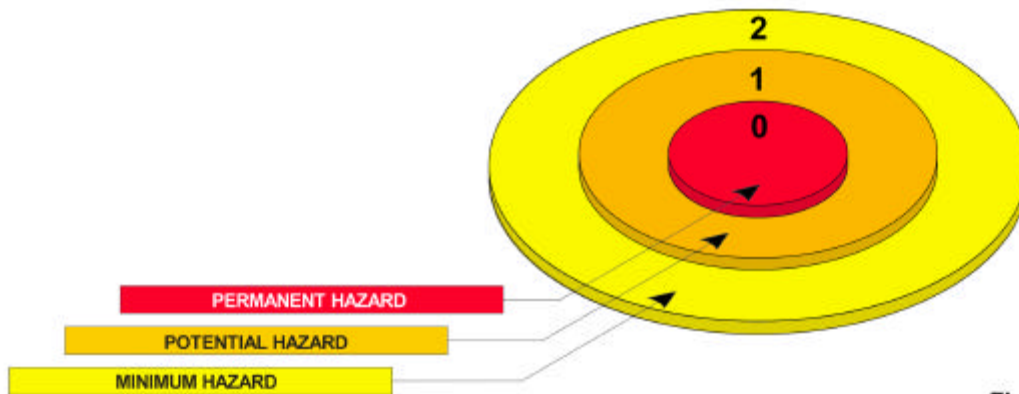


Fig.1

ELCIS explosion-proof encoders are fit to be used in **zone 1 and 2** and they have the identification plate according to CENELEC EN50014 Standard as follows.

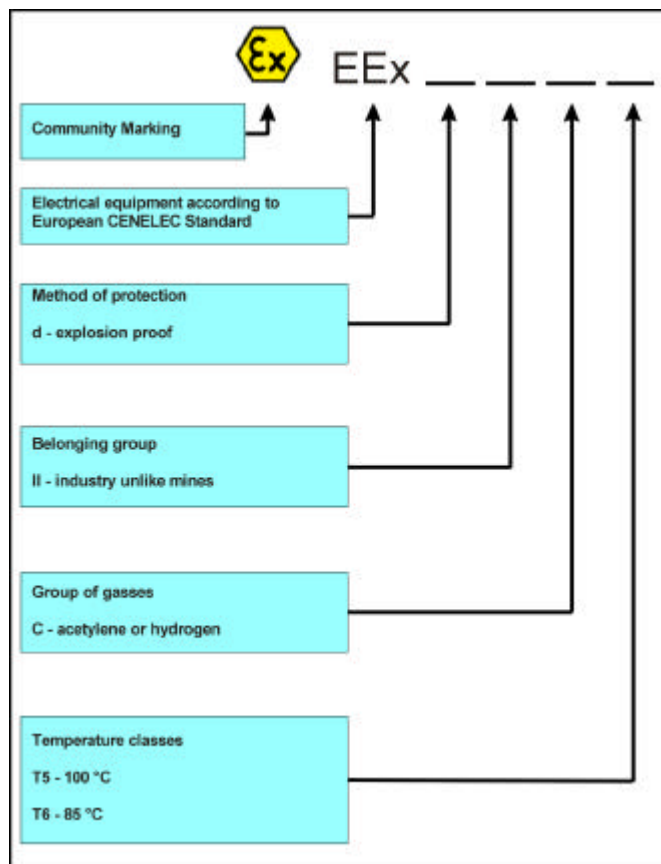


Fig. 2

The responsibilities provided for are shared out in this way:

- Manufacturer

The manufacturer has to conform to Directive 94/9/EC; the 1st July 2003 date won't be delayed and his products shall have the EC type examination certificate and the Product Quality Assurance Notification.

- User

The user has to evaluate the place where he will use the products according to Fig.1, to adopt equipment conformable to ATEX and to use it properly. He must warrant the safety during possible repairs in order to grant the continuity of industrial processes. From 1st July 2003 his plants must be consistent with European Directives and he can't buy or install products not conforming to ATEX Directive 94/9/EC.

Non ATEX products, installed before al 1st July 2003, has to be substituted with new ATEX products if they are out of order.

- Restorer

The restorer is not affected by Directive 94/9/EC, but he has to be properly teached in order to avoid problems.