LEM ENVIRONMENTAL POLICY

In relation with the customers' expectations in term of environment, the company LEM SA takes position in the following terms:

- **LEM SA is certified ISO 14001 (Dec 2003).**
- **LEM SA acts in accordance with the Swiss law regarding subjects concerning natural environment protection and the protection of the human being in the professional environment.**
- **RoHS (Restriction of Hazardous Substances) and the EC directive 2002/95/EC are integrated in our environment care strategy. Except for lead, our products do not contain any of banned materials: mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB) or polybrominated diphenyl ethers (PBDE).**
- **A specific task force has been working on the subject of eliminating lead and its compounds from any parts or processes. It follows the above-indicated European directives on the matter. LEM SA will be in conformity at the given deadline (July 1, 2006).**
- **Of its own accord, LEM SA applies its own rules for sorting and recycling rejections from its activities. It conducts a permanent survey of water and electricity consumption.**

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A. Consideration about environmental aspects.

1. ***Existing products***
   a. The existing products are developed on the basis of a design specification that takes into consideration the standards and normalization of the moment (customer specification and standards). The products therefore correspond to these specifications. They are not redeveloped in relation with newly published or appearing specifications, entering into force after the product has been developed and launched into the market. Only the modification of the law may lead to reconsider the design of the products. As a recent example, the complete LEM portfolio has been assessed in light of RoHS and WEEE directives.
   b. As far as possible, the LEM SA will adapt its products in relation with the customer's specification, considering that this customer participates to this approach, particularly in financial terms.
   c. LEM SA does not enter into consideration for taking into account retroactively new expectations with existing products.
   d. An important modification is subject to a new study, based on a new or revised specification. Thus leading to a new product development (new product reference or designation). Such a case induces respecting the new directives, such as environment protection directives and recommendations.

2. ***New products – New developments***
   a. Any new development is subject to the establishment of a design specification. This specification is constituted of all elements necessary for the design and the development (Objectives in term of Quality, Cost, Lead time).
   b. The new products are developed in conformity with the Swiss and European applicable laws and directives, including those about the protection of the environment and the particular and explicit expectations expressed by the customer.

B. Identification and utilization of prohibited and restricted substances

1. ***Prohibited materials and chemical compounds***
   The following compounds are **not or not anymore** used at LEM SA:
   a. Asbestos and its compounds
   b. CFC, HCFC, Halon
   c. Benzene
   d. Arsenic and its compounds
   e. Cadmium and its compounds
   f. Hexavalent Chromium, chromium and its compound
   g. Mercury and its compounds
   h. Polybrominated biphenyls and polybrominated diphenyl ethers
   i. Diphenylether-Pentabromo derivative $C_{12}H_5Br_5O$ (compliant with Directive 2003/11/EC)
   j. Diphenylether-Octabromo derivative $C_{12}H_2Br_8O$ (compliant with Directive 2003/11/EC)

2. ***Utilization of prohibited or restricted materials and substances***

   Some particular materials are necessary for the function of the products and currently there is no technical solution to replace or eliminate them.
   a. *Nickel*
   In relation with the best knowledge in the domain, nickel as an inherent part of the design is an element of the function and the performance of the products. This material is protected from access and human contact by the means of the housing.
   b. *Antimony Trioxide'*
   The Hall device (HW 302) is constituted of Antimony Trioxide (Sb_2O_3). This element of our products is protected by the means of a housing. It may additionally be potted, namely surrounded by an electrically and mechanically isolating material. Therefore people cannot touch this material.
   c. *PVC*
   Tube packaging used for some of our finished products contains PVC.

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d. *Isocyanates*
Some of the synthetic compound used for the manufacturing of housing, as well as some potting materials contains diphenylmethan diisocyanate (MDI).

e. *Other substances*
For some substances, we are not in position today to take position and indicate if and how much quantity of prohibited or restricted substances our processes and finished products may contain. The suppliers of these materials and substances are presently not in a position to make a clear statement describing the precise chemical content and weights, then providing an environmental certificate. These substances are:

i. Aliphatic CHC
ii. Azo Colorants with carcinogenic compounds
iii. Brominated and other halogenated flame retardants (exception see 1.h, I, j)
iv. Phthalates

f. ***Lead***

Lead is solely used in the soldering material of electric and electronic components. This element of our products is protected by the means of a housing. It may additionally be potted, namely surrounded by an electrically and mechanically isolating sealing material.
In relation with the European lead-free Soldering Technology Roadmap (February 2003) LEM has initiated the wish for a complete elimination of lead, in conformity with the European Directive 2002/95/EC.

Lead-free roadmap (status March 2005)

Q4/2003-Q1/2004	Clarify situation with suppliers, customers, and electronic industries. Check solutions, alternatives and costs.
Q2-Q4/2004	Evaluation and selection of lead-free electronic components for LEM strategic components like Amplifier and Hall cell. Assessment of LEM portfolio and product conversion plan.
Q3/2004-Q1/2005	New process approval tests (solderability, wave soldering, tin whiskers test).
Q1-Q2/2005	Suppression of lead used in external terminals. Conversion of PCB mounted transducers to **lead-free process capable**.
Q3/2005	First **Lead-Free products** available, in line with customers' demands and **RoHS compliant**.
From Q3/2005	Progressive implementation within LEM design and production centers worldwide.
July 2006	General use of lead-free elements in all LEM products.

Definitions:

➢ Lead-Free process capable (Phase 1)
This phase includes the elimination of lead used in terminal finishes. Lead-free process compatible transducers suffer no loss of form, fit or function after exposure to the thermal excursions required for lead-free soldering.
Transducers remain compatible to both lead content and lead-free processes.
For more information, see the document "Conversion schedule by product family".

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- Lead-Free product (Phase 2)
  This phase concerns the elimination of lead inside of the product and the soldering capability for input and output pins. Products will be considered lead-free when lead is not intentionally added to the product or raw materials and lead content due to impurities is less than or equal to 1000 parts per million (ppm) by weight in homogenous materials (material that cannot be mechanically disjointed in single materials).

- "RoHS Compliant" with the Directive 2002/95/EC
  New electrical and electronic equipment put on the market does not contain lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB) or polybrominated diphenyl ethers (PBDE).

C. Information provided

a. Technical datasheet of the finished products
b. A list indicating the main elements of the finished products, with their commercial designation of the material used, including weights.
c. A related list of materials constituting these main elements, with their mechanical and electrical data (including standards and certifications like I/F, UL94, etc.). It may include chemical compounds and recycling information.
d. If relevant, customer questionnaires are filled in relation with our best knowledge of the moment.

D. Future development

LEM SA has successfully completed its certification ISO 14001 in December 2003. Concerning the use of chemical compounds, we have completed information banks that are available on request (product related). Any newly designed finished product will include chemical and environmental related and detailed information, as far as we get information from our suppliers. When such information is insufficient or inexistent, we will force ourselves to change for new materials where it is technically and commercially possible. Lack of information on materials and compounds used in existing finished products could lead us to abandon them.

Geneva – 14 March, 2005

Regis Mentzer
Quality System & Environment system manager

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