

Electrical network protection

Sepam series 80

Product Environmental Profile (PEP)



This declaration provides information on the environmental behaviour of the product during the different phases of its life cycle.

1. General information on the product and manufacturer

1.1 Product information

Trademark of the product range

The products concerned by the Product Environmental Profile are part of the Sepam series 80 range.

The range consists of electronic units with the following functions:

- protection of electrical distribution systems,
- measurement,
- control of switchgear,
- communication.

Each unit comprises a base unit with a user-machine interface (UMI), input/output modules and a connection interface to the communication network.

Model representative of the range

Sepam series 80, parts number SEP383, 59704, MES120 number 59715, MMS020 number 59707

Product function

Sepam units are designed to protect electrical distribution systems.

Functional unit profiled

The Sepam series 80 is made up of the SEP383 base unit with an integrated UMI, the MM020 memory cartridge and the MES120 input/output module.

Technical characteristics

Reference standard: IEC 60255-6

Performances

- | | |
|-----------------------------|------------------|
| • Analogue inputs | 4 U and 8 I max. |
| • Logic input/outputs | 42 I, 23 S max. |
| • Temperature-sensor inputs | 16 I max. |
| • Communication ports | 2 |

1.2 Manufacturer identification

Manufacturer

Schneider Electric Industries SAS
89 boulevard Franklin-Roosevelt
F-92500 Rueil-Malmaison

Development entity

PMC department, Power & Monitoring Control within Power and Protection Control domain.

Production sites

The production site is in France
Usine M4
22 chemin du Vieux-Chêne, F-38240 Meylan.

Schneider Electric is setting up Environmental Management Systems on its production sites. They are subject to third-party ISO 14001 certification.

2. Materials and substances making up the product

2.1 Material balance

The total weight of the product is 929 grams, distributed as indicated in the table below.

Materials	Weight in grams	% weight
Ferrous	472	16.0 %
Non-ferrous alloys	20	0.7 %
Thermoplastic	842	28.6 %
Connector	141	4.8 %
Electronics	1469	49.9 %
Others	46	1.6 %
Total	2944	100.0 %

2.2 Information on dangerous substances

Dangerous substances banned by regulations

All relevant measures have been taken with our departments, suppliers and subcontractors to ensure that the materials included in Sepam series 80 do not contain any substances banned by European regulations (see Annex 1).

3. Energy consumption

The electrical energy dissipated by the reference Sepam series 80 depends on the implementation and operating conditions. The following assumptions were used to calculate energy consumption:

Implementation conditions	: continuous supply
Operating conditions	: 24/24
Assumed duration of the installation (d)	: 15 years, i.e. 131 400 hours

Energy consumption of Sepam series 80 (E) 1314 kWh

Calculation method

Where P is the power drawn,
energy consumption is calculated using the formula: $E = P \times d$

4. Information on batteries

The Sepam series 80 contains a removable lithium battery.

At the end of its service life, or when the product is at the end of its service life, this battery must be removed from the Sepam series 80 and must undergo selective processing in specialised plant, as set by Directive 91/157 CEE published in official journal L78 on 36.03.1991 concerning batteries and accumulators containing certain dangerous substances and modified by directive 98/101/CEE published in official journal on 05.01.1999.

5. Packaging

Description of packaging

The following materials are used.

Materials	Weight in grams	% weight
Cardboard	954	59.0 %
Paper	565	35.0 %
Elastomer	80	4.9 %
Polyethylene	18	1.1 %
Total	1617	100.0 %

All the relevant measures have been taken with our departments, suppliers and subcontractors to ensure that packaging does not contain any materials banned by European regulations.

(The sum of the concentrations of lead, cadmium, mercury and hexavalent chromium contained in the original packaging used to document and deliver the products concerned by this declaration does not exceed 100 ppm, the limit set by Directive 94/62/EEC, published in Official Journal L365 on 31 December 1994, on packaging and packaging waste).

6. Information on product end-of-life management

The Sepam series 80 units contain electronic boards and a lithium battery.

At the end of their service life, products must be dismantled.

Following dismantling, the electronic boards must undergo selective processing for the materials and components in specialised processing plants in view of recovering the various constituent materials.

The lithium battery must undergo a selective processing in specialised plants in view of eliminating it.

The proportion of recyclable material in the reference product is 71%.

This percentage includes the ferrous and non-ferrous materials, as well as the printed circuits boards.

The 29% of the product made up of thermoplastics not containing any brominated flame retardant can be recovered.

7. Environmental impact analysis

An analysis has been made of the environmental impacts on the reference product life cycle. It takes into account all stages of the product life cycle: production, distribution and use. We used the EIME (**E**nvironmental **I**mpact and **M**anagement **E**xplorer) software tool to obtain the Life Cycle Analysis (LCA) data.

With EIME, a complete, quantitative assessment of environmental impacts was made according to the following indicators:

RMD (Raw Material Depletion)

ED (Energy Depletion)

WD (Water Depletion)

GW (Global Warming Potential)

ODP (Ozone Depletion Potential)

AT (Air Toxicity)

POC (Photochemical Ozone Creation)

AA (Air Acidification)

WT (Water Toxicity)

WE (Water Eutrophication)

HWP (Hazardous Waste Production)

The analysis conditions and results are available on request.

ANNEX 1: Declaration relating to the use of dangerous substances

All the relevant measures have been taken with our departments, suppliers and subcontractors so that the materials included in our products do not contain any of the banned substances defined below.

Asbestos:

The materials used in the products concerned by this declaration do not contain any asbestos, the marketing and use of which are governed by Directive 76/769/EEC published in Official Journal L262 on 27.09.1976 concerning the harmonisation of legislative, regulatory and administrative measures of the member States in view of restricting the marketing and use of certain dangerous substances and preparations, amended by directives 83/478/EEC, Official Journal L263 of 24.09.1983, 85/610/EEC, Official Journal L375 of 31.12.1985 and 91/659/EEC, Official Journal L363 of 31.12.1991.

PCBs (Polychlorinated biphenyls) and PCTs (Polychlorinated terphenyls):

The transformers and capacitors used in some of the products concerned by this declaration do not contain more than 0.005% by weight of PCBs or PCTs, the marketing and use of which are governed by Directive 76/769/EEC published in Official Journal L262 on 27.09.1976 concerning the harmonisation of legislative, regulatory and administrative measures of the member States in view of restricting the marketing and use of certain dangerous substances and preparations, amended by directives 82/828/EEC, Official Journal L350 of 10.12.82, 85/467/EEC, Official Journal L269 of 11.10.85 and 89/677/EEC, Official Journal L398 of 30.12.89.

Cadmium:

The plastic materials incorporated in the products concerned by this declaration do not contain more than 0.01% by weight of cadmium as a pigment or stabiliser, the marketing and use of which are governed by Directive 76/769/EEC published in Official Journal L262 on 27.09.1976 concerning the harmonisation of legislative, regulatory and administrative measures of the member States in view of restricting the marketing and use of certain dangerous substances and preparations, amended by Directive 91/338/EEC, Official Journal L186 of 12.07.91.

Cadmium and lead:

The paints that may be used in the treatment of the materials incorporated in the products concerned by this declaration do not contain more than 0.1% weight of cadmium and do not contain any lead, the marketing and use of which are governed by Directive 76/769/EEC published in Official Journal L262 on 27.09.1976 concerning the harmonisation of legislative, regulatory and administrative measures of the member States in view of restricting the marketing and use of certain dangerous substances and preparations, amended by Directive 89/677/EEC, Official Journal L398 of 30.12.89.

Mercury:

The batteries and accumulators that may be incorporated in the products concerned by this declaration do not contain more than 5 ppm weight of mercury, the marketing and use of which are governed by Directive 91/157/EEC published in Official Journal L78 of 26.03.91 relating to batteries and accumulators containing certain dangerous substances, amended by Directive 98/101/EEC, Official Journal L1 of 05.01.1999.

Concentrations of lead, cadmium, mercury and hexavalent chromium in packaging:

The sum of the concentrations of lead, cadmium, mercury and hexavalent chromium in the original packaging used to give information on and deliver the products concerned by this declaration does not exceed 100 ppm, the limit set by Directive 94/62/EEC, Official Journal L365 of 31/12/1994, relating to packaging and packaging waste.

PentaBDE (pentabromodiphenylether), OctaBDE (octabromodiphenylether)

The materials incorporated in the products concerned by this declaration do not contain more than 0.1% weight of pentabromodiphenylether or octabromodiphenylether, the marketing and use of which are governed by Directive 76/769/EEC published in Official Journal L262 on 27.09.1976 concerning the harmonisation of legislative, regulatory and administrative measures of the member States in view of restricting the marketing and use of certain dangerous substances and preparations, amended by Directive 2003/11/EEC, Official Journal L42 on 15.02.2003

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As standards, specifications and designs change from time to time, please ask for confirmation of the information given in this publication.

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