

Product Environmental Profile

BUS central unit for temperature control



LEGRAND'S ENVIRONMENTAL COMMITMENTS

• **Incorporate environmental management into our industrial sites**

Of all Legrand sites worldwide, over 80% are ISO 14001-certified (sites belonging to the Group for more than five years).

• **Involve the environment in product design**

Provide our customers with all relevant informations (composition, consumption, end of life, etc.).
Reduce the environmental impact of products over their whole life cycle.

• **Offer our customers environmentally friendly solutions**

Develop innovative solutions to help our customers to design more energy efficient, better managed and more environmentally friendly installations.



REFERENCE PRODUCT

<p>Function</p>	<p>The system is constituted by 1 central unit, 1 thermal sensor and 1 actuator and does not take into account the wiring device. The central unit allows to display, program and control the room temperature detected by the sensor and commands the actuator following a daily or weekly programming. PCR category: active product in continuous operation (100% of the time) for 10 years.</p>		
<p>Reference Products</p>			
	<p>Cat. LG-573918 BUS central unit for temperature control</p>	<p>Cat. LG-067458 Thermal sensor</p>	<p>Cat. LG-003579 BUS DIN Rail actuator</p>

The company reserves the right to change specifications and designs without notice. All illustrations, descriptions, dimensions and weights in the document are for guidance and cannot be held binding on the Company.



CONCERNED PRODUCTS

The environmental data for the Reference Product represent the following Catalogue Numbers:

<ul style="list-style-type: none"> • LG-573918 	<ul style="list-style-type: none"> • LG-067458 	<ul style="list-style-type: none"> • LG-003579
<ul style="list-style-type: none"> • LG-573919 • LG-067456 	<ul style="list-style-type: none"> • LG-067455 • LG-067457 • LG-573920 • LG-573921 • LG-573922 • LG-573923 • LG-573924 • LG-573925 	<ul style="list-style-type: none"> • LG-003580

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■ CONSTITUENT MATERIALS

This product contains no substances prohibited by the regulations applicable at the time of its introduction to the market. At the date of publication of this document, this product contains no substances to which the RoHS directives apply (2002/95/EC and review 2011/65/EC) and no substances appearing on the list of candidates for authorisation of the European REACH regulation.

Total weight of Reference Products:		933 g (unit packaging included)			
Plastics as % of weight		Metals as % of weight		Other as % of weight	
Polycarbonates (PC)	18,8 %	Steel	7,3 %	Glass Fiber	2,6 %
Polyvinyl Chloride (PVC)	9,5 %	Copper	2,0 %	Glass	1,8 %
ABS	3,6 %	Nickel	1,1 %	Epoxy Resin	1,7 %
Polyamide (PA66)	1,4 %	Tin	0,9 %	Other	2,9 %
Polystyrene (PS)	1,3 %	Other metals	1,6 %	Packaging as % of weight	
Other plastics	1,5 %			Cardboard	24,8 %
				Paper	11,2 %
				Polycarbonates (PC)	6,0 %
Total plastics	36,1 %	Total metals	12,9 %	Total other and packaging	51,0 %

Estimated recycled material content: 38 % by weight



■ MANUFACTURE

These products come from sites that have received ISO14001 certification.



■ DISTRIBUTION

The Group's products are distributed from logistics centres located to optimize transport efficiency.

The Reference Product is therefore transported over an average distance of 780 km, essentially by road, representing a marketing in Europe.

Packaging is compliant with Directive 2004/12/EC concerning packaging and packaging waste. At the end of product life, the theoretical recycling potential is 100 % and their energy recovery potential is 100 % (as % of packaging weight).



■ INSTALLATION

Installation components not delivered with the product are not taken into account.



■ USE

■ Servicing and maintenance:

Under normal conditions of use, this type of product requires one battery change in 10 years.

■ Consumable

During 10 years, a replacement with one NiMH battery is necessary.



END OF LIFE

• **Non-hazardous waste contained in the product: 537 g**

In application of Directive 2002/96/EC, the following elements must be extracted and directed to special waste treatment services:

- Batteries NiMH : 25 g
- Electronic cards more than 10 cm² : 140 g

• **Hazardous waste contained in the product:**

This product contains no hazardous waste

• **Theoretical recycling potential:**

The theoretical recycling potential of a product is the percentage of material that can be recycled using existing techniques. It takes no account of the existence or lack of recycling services, which are highly dependent on the local situation.

This product contains 87 % by weight of potentially recyclable materials (excluding packaging):

- Plastic materials : 61 %
- Metal materials : 22 %
- Other materials : 4 %

• **Energy recovery potential:**

Energy recovery consists in using the calories contained in waste by burning it and recovering the energy produced, for example, to heat buildings or to produce electricity. The process uses the convertible energy contained in the waste. 66 % of the product mass can be recycled with energy recovery.



ENVIRONMENTAL IMPACTS

The evaluation of environmental impacts examines the stages of the Reference Product life cycle: manufacturing, distribution, installation, use and end of life of the product marketed and used in Europe. The following modelling elements were taken into account:

Manufacture	Unit packaging taken into account.
Distribution	Transport between the last Group distribution centre and an average delivery to the sales area.
Installation	Installation components not delivered with the product are not taken into account.
Use	<ul style="list-style-type: none"> • Maintenance: under normal conditions of use, this type of product requires one battery change in 10 years. During 10 years, is necessary a replacement with one NiMH battery. • Product category: active product. • Use scenario: 10-years working life, 365 days/year, in active continuous operating mode; daily power consumption of 2 Watt for 2 hours (all the elements of the Reference Products in active mode) and 1,3 Watt for 22 hours (central unit and thermal sensor in active mode and actuator in stand-by). This modelling duration does not constitute a minimum durability requirement. • Energy model: Electricity Europe 2005.
End of life	In view of the data available on the date of creation of the document, and in accordance with the requirements of the PCR of the « PEP ecopassport » programme, was counted transport of the Reference Product by road only once, over a distance of 1000 km, to a processing site at end of life.
Software used	EIME V4.1 and its database, version 11.3 developed from version 11.0.

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ENVIRONMENTAL IMPACTS

		Total for Life cycle		Raw material and manufacture		Distribution		Installation		Use		End of life	
Mandatory indicators	Contribution to greenhouse effect	1,01E+05	g~CO ₂	3,23E+04	32%	1,47E+02	< 1%	0,00E+00	0%	6,83E+04	68%	1,10E+02	< 1%
	Damage to the ozone layer	5,84E-03	g~CFC-11	1,95E-03	33%	1,04E-04	2%	0,00E+00	0%	3,70E-03	64%	7,81E-05	1%
	Eutrophisation of water	2,72E+00	g~PO ₄ ³⁻	1,68E+00	62%	2,44E-03	< 1%	0,00E+00	0%	1,04E+00	38%	1,84E-03	< 1%
	Photochemical ozone formation	2,94E+01	g~C ₂ H ₄	6,05E+00	21%	1,25E-01	< 1%	0,00E+00	0%	2,31E+01	79%	9,44E-02	< 1%
	Acidification of the air	1,64E+01	g~H ⁺	6,91E+00	42%	1,87E-02	< 1%	0,00E+00	0%	9,50E+00	58%	1,41E-02	< 1%
	Total energy consumed	1,79E+03	MJ	4,38E+02	24%	1,85E+00	< 1%	0,00E+00	0%	1,35E+03	75%	1,39E+00	< 1%
	Consumption of water	5,42E+02	dm ³	3,28E+02	61%	1,76E-01	< 1%	0,00E+00	0%	2,13E+02	39%	1,32E-01	< 1%

Optional indicators	Depletion of natural resources	7,44E-14	years ⁻¹	7,14E-14	96%	2,53E-18	< 1%	0,00E+00	0%	2,92E-15	4%	1,90E-18	< 1%
	Toxicity of the air	2,01E+07	m ³	8,35E+06	42%	2,76E+04	< 1%	0,00E+00	0%	1,17E+07	58%	2,08E+04	< 1%
	Toxicity of the water	2,28E+04	dm ³	3,36E+03	15%	1,83E+01	< 1%	0,00E+00	0%	1,94E+04	85%	1,38E+01	< 1%
	Production of hazardous waste	1,98E+00	kg	8,55E-01	43%	5,45E-05	< 1%	0,00E+00	0%	1,13E+00	57%	4,11E-05	< 1%

The environmental impacts of the Reference Product are representative of the products covered by the PEP, which therefore constitute a homogeneous environmental family. Extrapolation rule: the environmental impacts of the functional-equivalent systems created by combining the different products of the homogeneous family are exactly the same for the Manufacturing, Distribution, Installation, Use and End of Life phases.

The values of these impacts are valid for the context specified in this document. They must not be used directly to draw up the environmental balance sheet for the installation.

Registration number: LGRP-2012-107-v1-en	Drafting rule: PEP-PCR-ed 2-FR-2011 12 09
Authorisation number of checker: VH02	Programme information: www.pep-ecopassport.org
Date of issue: November 2012	Validity period: 4 years
Independent verification of the declaration and data, in accordance with ISO 14025:2006 Interne <input checked="" type="checkbox"/> Externe <input type="checkbox"/>	
In accordance with ISO 14025 :2006 Type III environmental declaration	
The critical review of the PCR was conducted by a panel of experts chaired by J.Chevalier (CSTB)	
The elements of the present PEP cannot be compared with elements from another programme	

