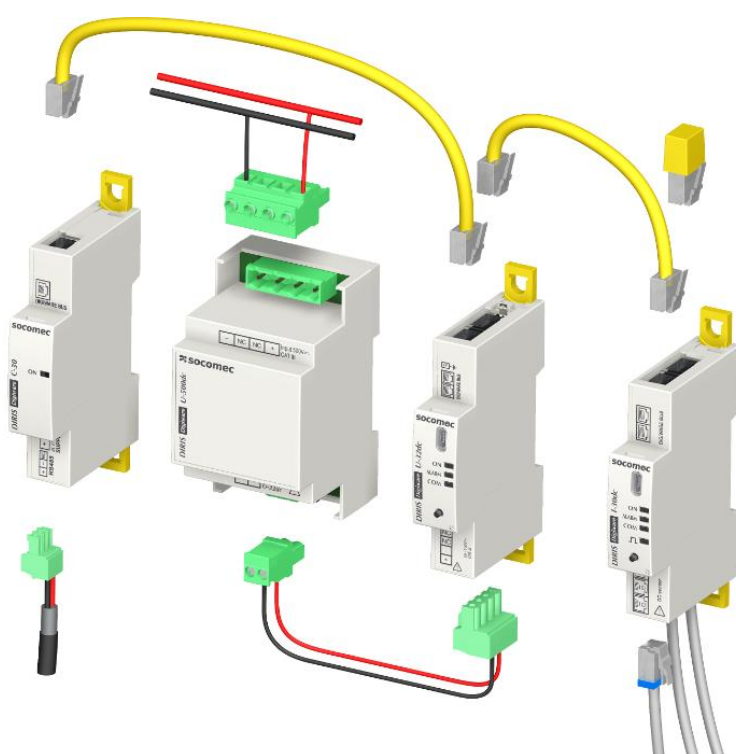




## Measurement system **DIRIS Digiware DC**



### The commitments of Socomec to respect the environment

As part of its environmental policy, Socomec is committed to:

- Develop innovating solutions primarily focused on energy efficiency to help its customer in the design of less energy-consuming, better managed and ecofriendly installations.
- Diversify its product offer in the renewable energy and energy efficiency sectors,
- Minimize the environmental impact of its industrial activities through the progressive ISO 14001 certification of its production sites,
- Minimize at the preliminary design stage the environmental impacts of its products taking into account their whole life cycle,
- Provide his customers with reliable data on the environmental performance of the products.

Socomec is member of :

**créer** CLUSTER RESEARCH :  
EXCELLENCE IN ECODSIGN  
& RECYCLING



**Gimélec**

Environment and sustainable  
development commissions



## ■ Representative product

### Reference product

A lot of system can be mounted. This PEP is made from the below configuration:

Quantity	Name	Commercial reference
1	DIRIS Digiware C-31	48290101
1	DIRIS Digiware U-31dc	48290150
1	DIRIS Digiware U1500dc	48290155
6	DIRIS Digiware I-35dc	48290157
8	Cable – 0.5m	48290182

### Product description

The DIRIS Digiware DC is a measuring system with modular format. It is designed for monitoring and reporting continuous electrical energy (DC). The DIRIS Digiware DC offers a range of functions for measuring voltage, current, power, energy and quality. It can be used to jointly analyse DC loads.

The DIRIS Digiware DC is a system based on centralizing the voltage measurement and distributing the current measurement close to the loads.

- The voltage is measured by a dedicated DIRIS Digiware U module,
  - Directly via DIRIS Digiware U-3xdc,
  - Via an adapter DIRIS Digiware Uxxxdc,
- The current by dedicated DIRIS Digiware I-3xdc modules.

The voltage and current measurements are interconnected by the Digiware Bus.

The measurements can be accessed via:

- A display DIRIS Digiware D.
- An interface DIRIS Digiware C.

### Functional unit

Measure parameters for DC electrical network during 10 years.

## ■ Material and substances

### Declaration of the constitutive materials according to IEC 62474

Total mass of the system (including packaging): 1066 g (packaging: 250,7 g and electronic components: 493,6 g)

#### For the DIRIS Digiware DC system

Metals, % weight		Plastics, % weight		Others, % weight	
Copper and its alloys	8,5%	Others thermoplastics	36,7%	Others Organics	30,5%
Aluminium and its alloys	2,2%	Other plastics	5,7%	Ceramics and Glass	6,7%
Other ferrous alloys – non stainless	1,9%	PVC	<0,1%	Others Inorganics	4,2%
Other non-ferrous metals and alloys	1,9%				
Nickel and its alloys	1,3%				
Stainless steels	<0,1%				
Zinc and its alloys	<0,1%				
Magnesium and its alloys	<0,1%				

The estimated content of recycled materials is 31,9%, based on a Life Cycle Analysis model with EIME software which is a software distributed by CODDE, a subsidiary of Bureau Veritas.

## Substances management

Socomec is leading a program to limit the use of hazardous substances in the design of new products and to monitor the presence of substances of concern in its supplies to anticipate future use restrictions.



ROHS directive 2011/65/EU compliance: although the majority of Socomec products are outside the scope of the ROHS directives, a ROHS compliance process has been in progress on a voluntary basis since 2006. Product references covered by this PEP meet the requirements of the RoHS Directive on the restriction of substances such as lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyl (PBB) and polybrominated diphenyl ethers (PBDEs).



REACH 1907/2006 regulation: to the best of our knowledge at the publication date of this document, none of the substance of the candidate list to authorization (SVHC) has been found in the references covered by this PEP.

## ■ Manufacturing

The products covered by this PEP are manufactured on a site where impacts on the environment are reduced by optimizing its energy consumption and by practicing a rigorous waste management.

Moreover, Socomec is committed to the progressive ISO 14001 certification of its manufacturing sites.

## ■ Distribution

As part of its distribution policy aiming to respect the environment, Socomec is in favor of groupage transports and ISO14001 certified logistic partners.



The packaging complies with Directive 94/62/EC.  
The sizing of the packaging has been optimized to ensure the best possible protection of the product at the lowest possible volume in order to reduce the impact of the transport stage on the environment.

Packaging design solutions favors mono-material recyclable cardboard without coloring or bleaching. The wedging of the packaged product is made of recycled cardboard, no polystyrene is used.

## ■ Installation

The installation stage consists in connecting the product to the existing electrical installation. The installation does not generate any significant impacts on the environment, except impacts from packaging waste.

## ■ Use phase

### Consumption scenario

Use phase scenario: European energy mix

Mode	Power consumption of the reference product (W)	Load rate (%)	Time distribution (%)
Active	DIRIS Digiware DC system : 20 W	100	100

Product power consumption during its total lifespan (10 years): 1752 kWh

### Care and maintenance

The product does not require any maintenance under normal conditions of use.

### Consumables

The product requires consumables.

## ■ End of life

### End of life treatment

See below the location of components that need to be oriented towards appropriate end of life facilities according to the applicable local legislation.

- 1) With a screwdriver in the notches\*, dissociate the 2 parts of the plastic housing.

Then repeat the operations on the opposite face of the product.

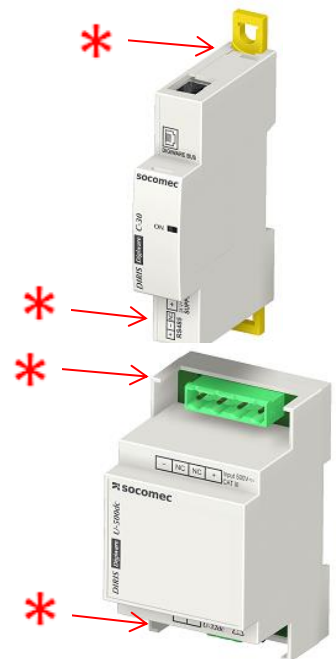
- 2) Remove the superior part of the plastic housing in order to access the electronic cards.

Take the electronic card out of the plastic housing.

Head all of the parts towards the appropriate recycling industry according to the legislation.

Remark:

This system does not contain any battery.



### Recovery potential of the product according to IEC TR 62635

The total potential value of this product is 46,1%.

This potential value takes into account the material recycling and energy recovery.

## Environmental impacts

### Calculation methodology: life cycle assessment (LCA)



The calculation of the impacts on the environment was made using a life cycle assessment methodology in accordance with the ISO 14040 requirements and with PEP eco passport product category rules. For more details follow the link: [www.pep-ecopassport.org](http://www.pep-ecopassport.org)  
 This study was carried out with the version 5.7.0.2 of the software EIME with version database CODDE\_2016\_11. The software is distributed by CODDE which is a subsidiary of Bureau Veritas.

The whole life cycle has been taken into account:

Step	Geographical representativeness	Scenario
<b>Manufacturing (M)</b>	Production of electronic components : Asia Production of other components and packaging : Europe Assembly : France	From the raw material extraction to the last Socomec logistic platform, including packaging
<b>Distribution (D)</b>	Distribution scenario : Europe	From the last Socomec logistic platform to the final customer
<b>Installation (I)</b>	Transport and treatment of packaging wastes : Local	Local road transport of generated wastes to the treatment site, and landfilling
<b>Use phase (U)</b>	Energy mix : Europe	Power consumption required during 15 years and maintenance according to consumption scenario described on page 3.
<b>End Of Life (EOL)</b>	Transport and treatment : Local	Road transport from the final customer to the treatment sites. End of life treatment.


### Environmental impacts of the DIRIS Digiware DC system

The following impacts have been calculated to best represent geographically and technologically each step of the life cycle.

Indicators	Unit	Total impact	M	D	I	U	EOL
Contribution to global warming	kg CO <sub>2</sub> eq.	1,09E+03	3,74E+01	5,57E-01	1,00E+01	1,04E+03	1,80E-01
Contribution to ozone layer depletion	kg CFC11 eq.	7,28E-05	4,77E-06	0*	4,23E-07	6,76E-05	0*
Contribution to the soil and water acidification	kg SO <sub>2</sub> eq.	4,42E+00	5,81E-02	2,50E-03	3,34E-02	4,33E+00	7,42E-04
Contribution to water eutrophication	kg (PO <sub>4</sub> ) <sup>3-</sup> eq.	3,43E-01	1,33E-02	5,75E-04	6,69E-02	2,61E-01	5,12E-04
Contribution to photochemical ozone formation	kg C <sub>2</sub> H <sub>4</sub> eq.	2,47E-01	6,07E-03	1,78E-04	2,83E-03	2,38E-01	5,54E-05
Contribution to the depletion of abiotic resources - elements	kg Sb eq.	2,11E-02	2,10E-02	0*	0*	9,01E-05	0*
Contribution to the depletion of abiotic resources - fossil fuels	MJ	1,24E+04	4,24E+02	7,83E+00	1,45E+02	1,18E+04	2,55E+00
Contribution to water pollution	m <sup>3</sup>	4,68E+04	3,10E+03	9,16E+01	7,71E+02	4,28E+04	2,46E+01
Contribution to air pollution	m <sup>3</sup>	4,97E+04	3,31E+03	2,28E+01	1,74E+03	4,46E+04	1,50E+01
Use of renewable primary energy (excl. raw materials)	MJ	2,65E+03	1,27E+01	0*	4,56E+00	2,63E+03	0*
Use of renewable primary energy used as raw materials	MJ	4,73E+00	4,73E+00	0*	0*	0*	0*
Total use of renewable primary energy resources	MJ	2,66E+03	1,75E+01	0*	4,56E+00	2,63E+03	0*
Use of non-renewable primary energy (excl. raw materials)	MJ	1,86E+04	4,35E+02	7,87E+00	8,21E+01	1,81E+04	2,20E+00
Use of non-renewable primary energy used as raw materials	MJ	4,82E+00	4,82E+00	0*	0*	0*	0*
Total use of non-renewable primary energy resources	MJ	1,86E+04	4,40E+02	7,87E+00	8,21E+01	1,81E+04	2,20E+00
Use of secondary materials	kg	3,25E-01	3,25E-01	0*	0*	0*	0*
Use of renewable secondary fuels	MJ	0,00E+00	0*	0*	0*	0*	0*
Use of non-renewable secondary fuels	MJ	0,00E+00	0*	0*	0*	0*	0*
Net use of fresh water	m <sup>3</sup>	3,76E+03	0*	0*	0*	3,76E+03	0*

<b>Hazardous waste disposed of</b>	kg	3,35E+01	3,29E+01	0*	0*	5,41E-01	0*
<b>Non-hazardous waste disposed of</b>	kg	4,05E+03	1,76E+01	0*	1,59E+02	3,87E+03	9,20E-01
<b>Radioactive waste disposed of</b>	kg	2,60E+00	8,26E-03	0*	5,28E-03	2,58E+00	0*
<b>Components for reuse</b>	kg	0,00E+00	0*	0*	0*	0*	0*
<b>Materials for recycling</b>	kg	0,00E+00	0*	0*	0*	0*	0*
<b>Materials for energy recovery</b>	kg	0,00E+00	0*	0*	0*	0*	0*
<b>Exported energy</b>	MJ by energy vector	0,00E+00	0*	0*	0*	0*	0*
<b>Total use of primary energy during the life cycle</b>	MJ	2,13E+04	4,57E+02	7,88E+00	8,67E+01	2,07E+04	2,23E+00

NB : 0\* means that this impact either represents less than 0.01% of the total life cycle of the reference flow, or has no impact (in the case where the total impact is zero).

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PEP are compliant with XP C08-100-1 :2014			
The elements of the present PEP cannot be compared with elements from another program			
Document in compliance with ISO 14025: 2010 « Environmental labels and declarations. Type III environmental declarations »			

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