

Busch-Watchdog PRO 280 Twisted Pair free@home & KNX

PEP ecopassport®

Product Environmental Profile




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Date of issue:	November 2025	Validity period:	5 years
Independent verification of the declaration and data in compliance with ISO 14025: 2006			
Internal:	<input type="checkbox"/>	External:	<input checked="" type="checkbox"/>
The PCR review was conducted by a panel of experts chaired by Julie Orgelet (Ddemail)			
PEPs are compliant with XP C08-100-1:2016 and EN 50693:2019 or NF E38-500 :2022 The components of the present PEP may not be compared with components from any other program.			
Document complies with ISO 14025:2006 "Environmental labels and declarations. Type III environmental declarations"			
			



ABB Purpose & Embedding Sustainability

ABB is committed to continually promoting and embedding sustainability across its operations and value chain, aspiring to become a role model for others to follow. With its ABB Purpose, ABB is focusing on reducing harmful emissions, preserving natural resources and championing ethical and humane behavior.

The content of this PEP cannot be compared with the content based on another program/database.

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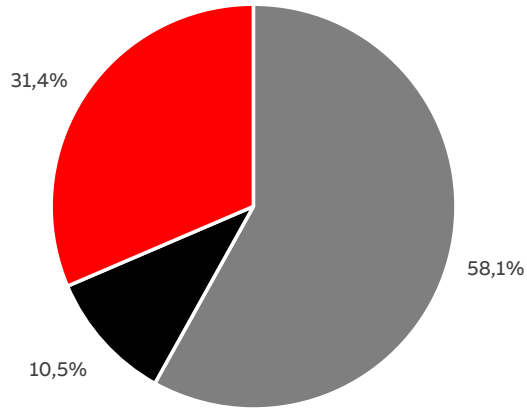


General information

Reference product	Busch-Watchdog PRO 280 Twisted Pair free@home & KNX
Description of the product	The homogeneous family of Busch-Watchdog PRO 280 Twisted Pair free@home & KNX consists of passive infrared motion sensors with a Bluetooth interface, an additional temperature sensor, and a twisted-pair connection for free@home/KNX systems, without an integrated switch actuator.
Functional unit	Automatically switches lighting on and off, ensuring reliable functionality over a reference service lifetime of 10 years.
Other products covered	List of other products covered or references are on page 8
Manufacturing address	ABB AG BUSCH-JAEGER Freisenbergstr. 2 58513 Lüdenscheid GERMANY



Constituent Materials



■ Plastics 250,29 g ■ Metals 45,06 g ■ Others 135,44 g

Total weight of reference product and packaging

430,8

g

Plastics as % of weight		Metals as % of weight		Others as % of weight	
Name and CAS number	Weight%	Name and CAS number	Weight%	Name and CAS number	Weight%
ASA	51,6	Electronic component	10,5	Cardboard packaging	16,7
HDPE	2,9			Paper packaging	12,5
Other plastics	2,1			Plastic packaging	2,0
PC	1,5			Glass fibres	0,3

The reference product and other products in this range are in conformity with the provisions of Low Voltage Directive 2014/35/EU, RoHS directive 2011/65/EU, covering 2015/863(EU), REACH regulation No 1907/2006, and national legislation. Plastics used for the reference product are halogen-free materials (IEC/61249-2-21) and they are also recyclable.



Additional Information

Manufacturing	<p>Includes the environmental impacts associated with the extraction and processing of the raw materials making up the product and its packaging, as well as their transport to the manufacturing site.</p> <p>Additionally, it includes the electricity consumption required for the product assembly and the wastes generated during the manufacturing process.</p>
Distribution	<p>Includes the transportation in its packaging from the manufacturer's last logistics platform to the customer.</p>
Installation	<p>Installation stage includes the manual installation of the products by the customer (no energy consumption is required during installation) and the disposal of the packaging.</p>
Use	<p>Includes the energy consumption due to electrical losses during the RLT in the customer's locations. Due to the nature of the product, no energy is consumed during the RLT.</p>
End of life	<p>Includes the transportation of the product from the installation site to the final end of life treatment site, as well as the end of life treatment processes. A value of 1,000 km transport by lorry is used for the transportation.</p>
Benefits and loads beyond the system boundaries	<p>Potential for reuse, recovery and/or recycling, expressed as net benefits and impacts</p>



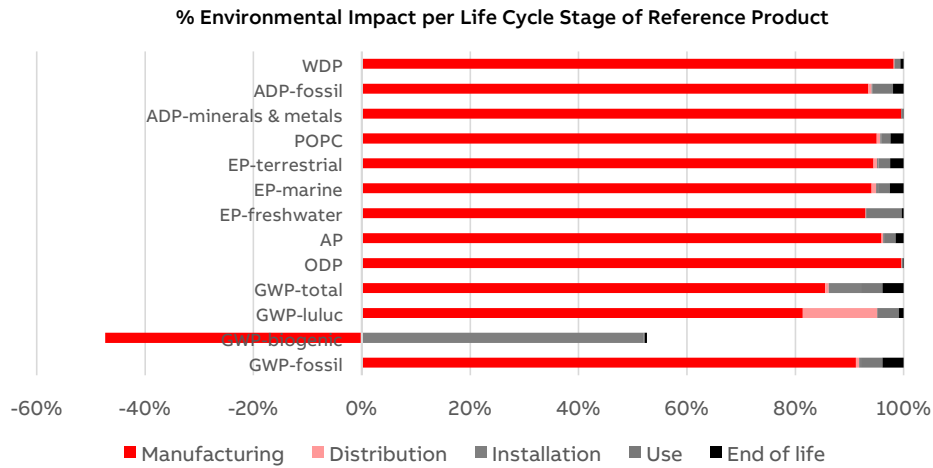
Environmental Impacts

Reference lifetime	10 years
Product category	Active products
Installation elements	Manual installation by the customer.
Use scenario	The energy consumption was estimated according to PEP requirements for this type of products.
Geographical representativeness	Europe
Technological representativeness	Materials and processes are specific for the production of the reference product and the rest of the products of the homogeneous environmental family covered in this PEP.
Software and database used	SimaPro 10.2.0.0 & Ecoinvent 3.11

Energy model used

Manufacturing	German electricity mix.
Installation	No energy required.
Use	Customers' national electricity mixes.
End of life	Recycling of product

Common base of mandatory indicators



Environmental impact indicators

Indicator	Unit	Total	Manufacturing	Distribution	Installation	Use	End of life	Benefits	
GWP	Total	kg CO2 eq.	5,35E+00	4,58E+00	3,25E-02	3,20E-01	2,11E-01	2,11E-01	-3,34E+00
	Fossil	kg CO2 eq.	5,32E+00	4,85E+00	3,13E-02	1,85E-02	2,10E-01	2,08E-01	-3,32E+00
	Biogenic	kg CO2 eq.	3,05E-02	-2,74E-01	1,54E-05	3,01E-01	9,11E-04	2,60E-03	-8,12E-03
	Luluc	kg CO2 eq.	8,87E-03	7,22E-03	1,22E-03	4,07E-06	3,47E-04	8,31E-05	-5,05E-03
ODP	kg CFC-11 eq.	1,53E-06	1,52E-06	1,22E-09	1,65E-10	3,24E-09	2,04E-09	-6,71E-08	
AP	H+ eq.	3,09E-02	2,96E-02	1,01E-04	5,02E-05	6,46E-04	4,70E-04	-4,29E-02	
EP	Freshwater	kg P eq.	4,65E-04	4,32E-04	3,49E-07	1,30E-07	3,06E-05	1,72E-06	-4,19E-04
	Marine	kg N eq.	5,33E-03	5,01E-03	4,45E-05	3,00E-05	1,05E-04	1,37E-04	-4,58E-03
	Terrestrial	mol N eq.	5,88E-02	5,55E-02	3,79E-04	1,99E-04	1,24E-03	1,47E-03	-5,34E-02
POCP	kg NMVOC eq.	2,34E-02	2,22E-02	1,46E-04	7,82E-05	3,63E-04	5,75E-04	-2,08E-02	
ADP	Minerals & metals	kg SB eq.	7,32E-04	7,29E-04	1,18E-07	4,41E-08	2,54E-06	4,44E-07	-1,14E-03
	Fossil	MJ	8,22E+01	7,69E+01	4,52E-01	1,31E-01	3,14E+00	1,62E+00	-5,20E+01
WDP	m³ eq. depr.	1,83E+00	1,80E+00	2,55E-03	6,54E-04	1,88E-02	1,18E-02	-1,20E+00	

Resource use indicators

Indicator	Unit	Total	Manufacturing	Distribution	Installation	Use	End of life	Benefits
PERE	MJ	1,08E+01	7,28E+00	9,16E-03	2,37E+00	1,10E+00	5,83E-02	-4,30E+00
PERM	MJ	0,00E+00	2,37E+00	0,00E+00	-2,37E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	1,08E+01	9,65E+00	9,16E-03	4,58E-03	1,10E+00	5,83E-02	-4,30E+00
PENRE	MJ	8,23E+01	6,78E+01	4,59E-01	3,66E-01	3,14E+00	1,05E+01	-5,20E+01
PENRM	MJ	0,00E+00	9,09E+00	0,00E+00	-2,35E-01	0,00E+00	-8,85E+00	0,00E+00
PENRT	MJ	8,23E+01	7,69E+01	4,59E-01	1,31E-01	3,14E+00	1,62E+00	-5,20E+01

Common base of mandatory indicators

Use of secondary materials, water, and energy resources

Indicator	Unit	Total	Manufacturing	Distribution	Installation	Use	End of life	Benefits
SM	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m ³	5,33E-02	5,13E-02	1,19E-04	-1,49E-05	1,62E-03	3,10E-04	-3,43E-02

Waste category indicators

Indicator	Unit	Total	Manufacturing	Distribution	Installation	Use	End of life	Benefits
HWD	kg	5,31E-04	4,98E-04	3,41E-06	9,68E-07	1,63E-05	1,22E-05	-2,63E-04
N-HWD	kg	4,59E-01	2,98E-01	3,15E-02	1,80E-02	1,81E-02	9,35E-02	-1,69E-01
RWD	kg	1,05E-04	9,14E-05	9,56E-08	9,49E-08	1,29E-05	7,30E-07	-6,17E-05

Output flow indicators

Indicator	Unit	Total	Manufacturing	Distribution	Installation	Use	End of life	Benefits
CfRu	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MfR	kg	1,31E+00	8,82E-06	0,00E+00	1,07E+00	0,00E+00	2,39E-01	0,00E+00
MfER	kg	1,72E-01	0,00E+00	0,00E+00	1,45E-01	0,00E+00	2,66E-02	0,00E+00
EE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Other indicators

Indicator	Unit	Total
Biogenic Carbon	kg of C	0,00E+00
Product Packaging	kg of C	7,76E-02

Glossary

Environmental impact Indicators

GWP-total	Global Warming Potential total (Climate change)
GWP-fossil	Global Warming Potential fossil
GWP-biogenic	Global Warming Potential biogenic
GWP-luluc	Global Warming Potential land use and land use change
ODP	Depletion potential of the stratospheric ozone layer
AP	Acidification potential
EP-freshwater	Eutrophication potential - freshwater compartment
EP-marine	Eutrophication potential - fraction of nutrients reaching marine end compartment
EP-terrestrial	Eutrophication potential - Accumulated Exceedance
POCP	Tropospheric ozone creation potential
ADP-m&m	Abiotic Depletion for non-fossil resources potential
ADP-fossil	Abiotic Depletion for fossil resources potential
WDP	Water deprivation potential

Resource indicators

PENRE	Use of non-renewable primary energy excluding renewable primary energy resources used as raw material
PENRM	Use of non-renewable primary energy resources used as raw material
PENRT	Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)
PERE	Use of renewable primary energy excluding non-renewable primary energy resources used as raw material.
PERM	Use of renewable primary energy resources used as raw material
PERT	Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)

Secondary materials, water and energy resources		Waste category indicators	
SM	Use of secondary materials	HWD	Hazardous waste disposed
RSF	Use of renewable secondary fuels	N-HWD	Non-hazardous waste disposed
NRSF	Use of non-renewable secondary fuels	RWD	Radioactive waste disposed
FW	Net use of fresh water		

Output flow indicators

CfRu	Components for re-use
MfR	Materials for recycling
MfER	Materials for energy recovery
EE	Exported Energy

References

- [1] PCR “PEP-PCR-ed4-EN-2022_09_06” - Product Category Rules for Electrical, Electronic and HVAC-R Products (published: 6th September 2022)
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- [5] ISO 14044:2006 - Environmental management - Life cycle assessment - Requirements and guidelines
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- [9] IEC/TR 62635 - Guidelines for end-of-life information provided by manufacturers and recyclers and for recyclability rate calculation of electrical and electronic equipment - Edition 1.0
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- [11] LB-DT 17-21D - RoHS II (MCCBs and ACBs)
- [12] LB-DT 18-21D - REACH (MCCBs and ACBs)
- [13] 1SDL000571R0 Ver 01 - RoHS Exemptions (MCCBs and ACBs)
- [14] 1SDL000572R0 Ver 01 - SVHC present in excess of 0.1% (MCCBs and ACBs)