COMBINATION THERMOSTAT

Product Environmental Profile

Environmental Product Declaration

Document in compliance with ISO 14025: 2010 "Environmental labels and declarations. Type III environmental declarations"

ORGANIZATION		CONTACT INFORMATION			
ABB Oy, Wiring Accessories		ella.helynranta@fi.abb.com			
ADDRESS		WEBSITE			
Porvoon Sisäkehä 2, 06100 Porvoo, Finland		www.installationmaterials.com			
STATUS	SECURITY LEVEL	REGISTRATION NUMBER	REV.	LANG.	PAGE
Approved	Public	ABBG-00027-V01.01-EN	1	en	1/11

ABB Purpose & Embedding Sustainability

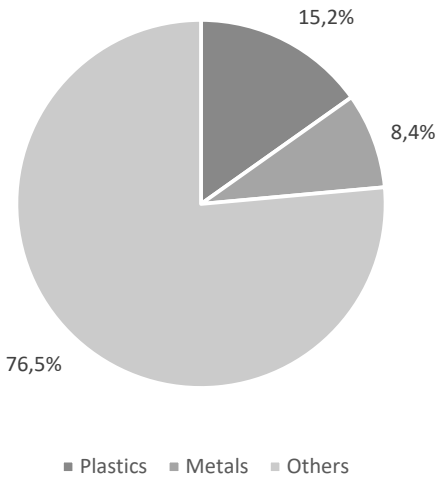
ABB is committed to continually promoting and embedding sustainability across its operations and value chain, aspiring to become a role model for others to follow.
With its ABB Purpose, ABB is focusing on reducing harmful emissions, preserving natural resources and championing ethical and humane behavior.

Scan QR code for more information

General Information

Reference product	2TKA00004035 (TC16-20-84)
Description of the product	Thermostat with low insert (20 mm mounting depth) meeting the Ecodesign requirements. The thermostat is pre-programmed and quick and easy to install. Also compatible with sensors from other manufacturers. Enclosure class is IP21. The thermostat can be controlled with an external input (home/away switch).
Functional unit	Control during 10 years the ambient temperature set by the user in N zones, in a range of 0-35, with a temperature step of 0,5C, according to 4 temperature set points and characterized by a rated current of 16A.
Other products covered	2TKA00004034 (TC16-20-214), 2TKA00004033 (TC16-20U), 2CKA001032A0519 (1098 U-102), 2CKA001032A0520 (1098 UF-102), 2CKA001032A0521 (1098 UJ-214), 2CKA001032A0522 (1098 UJ-914) and 2CKA001032A0523 (1098 UJ-84). Center plates: 2CKA006430A0401 (6435-214-500), 2CKA006430A0306 (6435-84), 2CKA006430A0305 (6435-83), 2CKA006430A0388 (6435-884), 2CKA006430A0389 (6435-885) and 2CKA006430A0344 (6435-866)

Constituent materials



Total weight of Reference product	207,8 g including the product and its packaging

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-%**
Polycabonate	14,8	Stainless steel	7,9	Electronic components	54,9
Polyamide 6	0,4	Copper alloy	0,5	Cartonboard	13,4
–	–	–	–	Paper	8,2

Products in this range are in conformity with the provisions of EMC Directive 2014/30/EU, Low Voltage Directive 2014/35/EU, RoHS Directive 2011/65/EU, covering 2015/863(EU), and national legislation.

Additional Environmental Information

Manufacturing	Manufactured at production site ISO 14001 certified
Distribution	Product distribution optimised by setting up local distribution centres. Packaging weight 44,8 g, consisting of cardboard (62%) and paper (38%).
Installation	The product does not require special installation procedure and requires little to no energy to install. The disposal of the packaging materials is accounted during the installation phase.
Use	The product does not require special maintanence operations
End of life	This product falls within the scope of the WEEE directive (2012/19/EU). Therefore it must be processed through local WEEE recycling / recovery channels
Software and database used	OpenLCA version 10, with databses ecoinvent 3.6 and ELCD
Standards	Products in this PEP are in conformity with the provisions of Low Voltage Directive 2014/35/EU and EMC Directive (2014/30/EU)

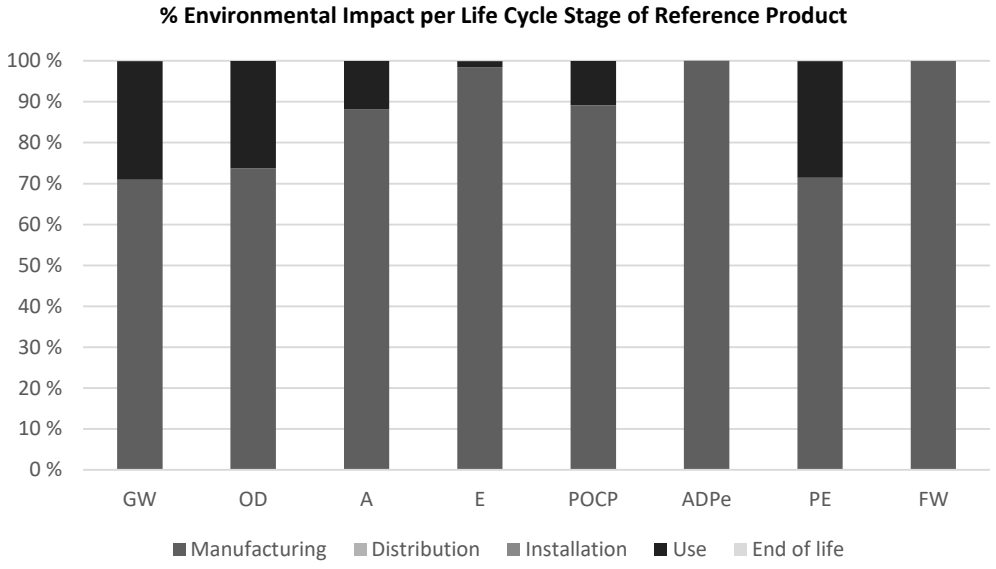
Environmental impacts

Reference lifetime	10 years
Product category	Programmable thermostats
Installation elements	No additional elemements needed
Use scenario	0,05 W for 100% of the time
Geographical representativeness	Nordic countries and Europe
Technological representativeness	The manufactruing processes considered are representative of the products production
Energy model used	
Manufacturing	Manufacturing plant: Germany
Installation	-
Use	Electricity grid mix, consumption mix, at consumer, AC, <1kV; EU-27
End of life	-

Compulsory Indicators

Impact indicators	Unit	Total	Manu-facturing	Distri-bution	Instal-lation	Use	End of life
Global warming (GW)	kg CO_2 eq.	7,430E+00	5,270E+00	3,053E-03	3,599E-06	2,156E+00	9,859E-04
Ozone depletion (OD)	kg CFC-11 eq.	5,315E-07	3,917E-07	6,094E-12	1,116E-14	1,398E-07	5,340E-12
Acidification of soil and water (A)	kg SO_2 eq.	7,546E-02	6,648E-02	1,951E-05	2,269E-09	8,951E-03	4,632E-06
Eutrophication (E)	kg $(PO_4)^3$ eq.	3,260E-02	3,210E-02	3,554E-06	2,580E-09	4,979E-04	3,508E-06
Photochemical ozone creation (POCP)	kg C_2H_4 eq.	4,543E-03	4,050E-03	1,238E-06	7,638E-10	4,919E-04	3,284E-07
Depletion of abiotic resources – elements (ADPe)	kg Sb eq.	2,320E-03	2,320E-03	1,204E-10	2,785E-14	1,527E-07	4,147E-11

Resource use indicators	Unit	Total	Manu-facturing	Distri-bution	Instal-lation	Use	End of life
Total use of primary energy (PE)	MJ	1,042E+02	7,446E+01	4,252E-02	6,618E-06	2,973E+01	1,384E-02
Net freshwater use (FW)	m^3	3,823E+01	3,820E+01	3,755E-07	1,502E-09	2,680E-02	3,280E-07



Optional Indicators

Impact indicators	Unit	Total	Manu-facturing	Distri-bution	Instal-lation	Use	End of life
Depletion of abiotic resources – fossil fuels (ADPf)	MJ	8,284E+01	5,858E+01	4,246E-02	6,498E-06	2,421E+01	1,374E-02
Water pollution (WP)	m^3	9,140E+01	9,097E+01	1,960E-05	1,345E-07	4,282E-01	8,451E-05
Air pollution (AP)	m^3	5,869E+02	5,420E+02	4,635E-02	4,761E-05	4,487E+01	1,709E-02
Resource use indicators	**Unit**	**Total**	**Manu-facturing**	**Distri-bution**	**Instal-lation**	**Use**	**End of life**
Total use of renewable primary energy resources	MJ	1,299E+01	7,544E+00	5,676E-05	1,198E-07	5,450E+00	1,038E-04
Total use of non-renewable primary energy resources	MJ	9,125E+01	6,691E+01	4,246E-02	6,499E-06	2,428E+01	1,374E-02

Optional Indicators

Waste category indicators	Unit	Total	Manu-facturing	Distri-bution	Instal-lation	Use	End of life
Non-hazardous waste disposed	kg	9,829E+00	1,829E+00	1,071E-04	4,266E-07	8,000E+00	2,919E-04
Radioactive waste disposed	kg	5,707E-03	5,658E-04	7,612E-08	1,394E-10	5,141E-03	6,662E-08

Output flow indicators	Unit	Total	Manu-facturing	Distri-bution	Instal-lation	Use	End of life
Components for reuse	kg	5,337E-03	0,000E+00	0,000E+00	0,000E+00	0,000E+00	5,337E-03
Materials for recycling	kg	1,665E-01	1,000E-02	0,000E+00	3,773E-05	0,000E+00	1,565E-01
Materials for energy recovery	kg	1,963E-02	0,000E+00	0,000E+00	3,441E-06	0,000E+00	1,963E-02

Country specific indicators	Unit	Total	Manu-facturing	Distri-bution	Instal-lation	Use	End of life
No Country specific indicators used							

For other products than the Reference product covered by this PEP, the environmental impacts for each phase of the lifecycle are obtained by multiplying the values of the Reference product by the following coefficients:

* if the coefficient is "1", the impacts of the phase of the life cycle are assimilated to the Reference product, meaning that the impacts are unchanged in comparison to the Reference product

Product name	Manufacturing	Distribution	Installation	Use	End of life
TC16-20-214	1,01	1,05	1,00	1,00	1,08
1098 UJ-214	0,85	0,76	1,00	1,00	0,71
1098 UJ-914	0,85	0,79	1,00	1,00	0,76
1098 UJ-84	0,85	0,79	1,00	1,00	0,76
TC16-20U & 6435-214-500	1,00	1,00	1,22	1,00	0,96
TC16-20U & 6435-84	1,00	1,03	1,26	1,00	1,00
TC16-20U & 6435-83	1,00	1,03	1,26	1,00	1,00
TC16-20U & 6435-884	1,00	1,03	1,26	1,00	1,00
TC16-20U & 6435-885	1,00	1,03	1,26	1,00	1,00
TC16-20U & 6435-866	1,00	1,03	1,26	1,00	1,00
1098 U-102 & 6435-214-500	0,84	0,71	1,22	1,00	0,60
1098 U-102 & 6435-84	0,84	0,74	1,26	1,00	0,64
1098 U-102 & 6435-83	0,84	0,74	1,26	1,00	0,64
1098 U-102 & 6435-884	0,84	0,74	1,26	1,00	0,64
1098 U-102 & 6435-885	0,84	0,74	1,26	1,00	0,64
1098 U-102 & 6435-886	0,84	0,74	1,26	1,00	0,64
1098 UF-102 & 6435-214-500	1,00	1,00	1,22	1,00	0,96
1098 UF-102 & 6435-84	1,00	1,03	1,26	1,00	1,00
1098 UF-102 & 6435-83	1,00	1,03	1,26	1,00	1,00
1098 UF-102 & 6435-884	1,00	1,03	1,26	1,00	1,00

For other products than the Reference product covered by this PEP, the environmental impacts for each phase of the lifecycle are obtained by multiplying the values of the Reference product by the following coefficients:

* if the coefficient is "1", the impacts of the phase of the life cycle are assimilated to the Reference product, meaning that the impacts are unchanged in comparison to the Reference product

Product name	Manufacturing	Distribution	Installation	Use	End of life
1098 UF-102 & 6435-885	1,00	1,03	1,26	1,00	1,00
1098 UF-102 & 6435-866	1,00	1,03	1,26	1,00	1,00
–	–	–	–	–	–
–	–	–	–	–	–
–	–	–	–	–	–
–	–	–	–	–	–
–	–	–	–	–	–
–	–	–	–	–	–
–	–	–	–	–	–
–	–	–	–	–	–
–	–	–	–	–	–
–	–	–	–	–	–
–	–	–	–	–	–
–	–	–	–	–	–
–	–	–	–	–	–
–	–	–	–	–	–
–	–	–	–	–	–
–	–	–	–	–	–
–	–	–	–	–	–
–	–	–	–	–	–
–	–	–	–	–	–

Registration number:		Drafting Rules:	PCR-ed3-EN-2015 04 02
ABBG-00027-V01.01-EN		Supplemented by:	PSR-0005-ed2-EN-2016 03 29
Verifier accreditation number:		Information and reference documents:	
VH08		www.pep-ecopassport.org	
Date of issue:	September 2022	Validity period:	5 years

Independent verification of the declaration and data, in compliance with ISO 14025: 2010

Internal ○	External ◉

The PCR review was conducted by a panel of experts chaired by Philippe Osset (SOLINNEN)

PEP are compliant with XP C08-100-1: 2016
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"

Environmental Impact Indicator Glossary

Impact indicators	Description	Unit
Global warming (GW)	Indicator of potential global warming caused by emissions to air contributing to the greenhouse effect. Includes fossil and biogenic	kg CO_2 eq.
Ozone depletion (OD)	Indicator of emissions to air that contribute to the destruction of the ozone layer	kg CFC-11 eq.
Acidification of soil and water (A)	Indicator of the potential acidification of soils and water caused by the release of certain gases to the atmosphere	kg SO_2 eq.
Eutrophication (E)	Indicator of the contribution to eutrophication of water by the enrichment of the aquatic ecosystem with nutritional elements, e.g. industrial or domestic effluents, agriculture, etc.	kg $(PO_4)^3$ eq.
Photochemical ozone creation (POCP)	Indicator of emissions of gases that affect the creation of photochemical ozone in the lower atmosphere (smog) because of the rays of the sun.	kg C_2H_4 eq.
Depletion of abiotic resources – elements (ADPe)	Indicator of the depletion of natural non-fossil resources	kg Sb eq.
Depletion of abiotic resources – fossil fuels (ADPf)	Indicator of the depletion of natural fossil resources	MJ (lower heating value)
Water pollution (WP)	Indicator of the quantity of water necessary to dilute the toxic elements poured into water in all the stages of the product life cycle.	m^3
Air pollution (AP)	Indicator of the quantity of air necessary to dilute the toxic elements emitted into the air in all the stages of the product life cycle.	m^3
Resource use indicators	**Description**	**Unit**
Total use of primary energy (PE)	Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials) + Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ (lower heating value)