

Product Environmental Profile

PM5100/PM5300 Series Power and Energy Meter





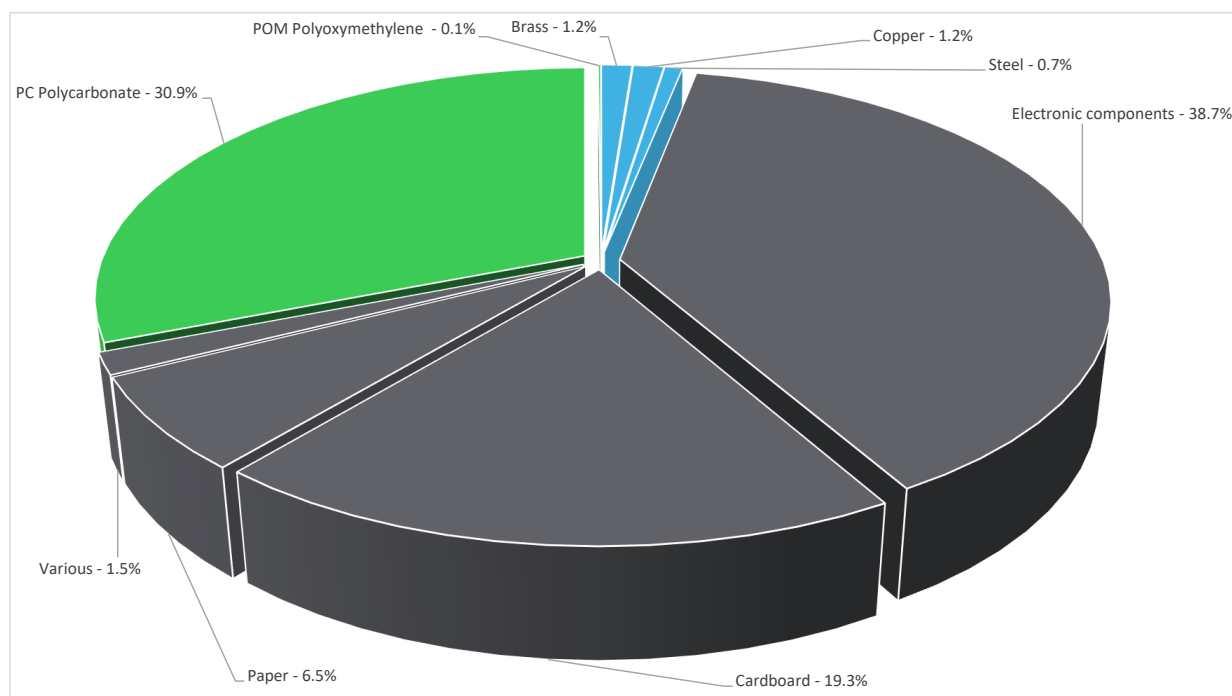
General information

Reference product	PM5100/PM5300 Series Power and Energy Meter - METSEPM5330
Description of the product	The device is a flush-mount energy meter with Class 0.5S accuracy, 64 samples per cycle, and a 96mm by 96mm backlit LCD display. It measures Energy, Active/Reactive Power, Voltage, Current, Frequency, Power Factor, and up to the 31st Harmonic. It has 256kB memory for fixed parameters, operates in 50Hz or 60Hz networks, and accepts 100-415VAC and 125-250VDC. It supports 1A or 5A input, Single Phase, Three Phase, or Three Phase and Neutral configurations. The communication protocol is Modbus RTU and ASCII 2 wires with RS485 port support, and it includes two digital inputs/outputs and dual relay outputs.
Description of the range	Single product
Functional unit	To measure and monitor electrical parameters over a 10-year period, the device consumes 3.25 watts in active mode (39.50% time) and 2.6 watts in standby mode (60% time), resulting in a total energy consumption of 249.11 kWh. It operates within a supply voltage range of 90-450V AC and 100-300V DC, with a network frequency of 50Hz or 60Hz. The device can measure current (5-8500mA), voltage (35-760V AC, 20-400V DC), and frequency (45-65Hz), ensuring accurate and reliable monitoring in accordance with relevant standards.
Specifications are:	Measurement Types: Current, Voltage, Frequency, Power Factor, Energy, Active and Reactive Power Supply Voltage: 90-450V AC, 45-65Hz; 100-300V DC Network Frequency: 50Hz, 60Hz Line Rated Current: 1A, 5A Type of Network: 3P + N, 3P, 1P + N Maximum Power Consumption: 11VA at 415V Ride-Through Time: Varies based on voltage Display Type: Monochrome graphic LCD



Constituent materials

Reference product mass 580 g including the product, its packaging, additional elements and accessories



Plastics	31.0%
Metals	3.0%
Others	66.0%



Substance assessment

Details of ROHS and REACH substances information are available on the Schneider-Electric website

<https://www.se.com>

**Additional environmental information**

End Of Life	Recyclability potential:	4%	The recyclability rate was calculated from the recycling rates of each material making up the product based on REEECYLAB tool developed by Ecosystem, for components/materials not covered by the tool, data from the EIME database and the related PSR was taken. If no data was found a conservative assumption was used (0% recyclability).
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**Environmental impacts**

Reference service life time	10 years		
Product category	Other equipments - Active product		
Life cycle of the product	The manufacturing, the distribution, the installation, the use and the end of life were taken into consideration in this study		
Electricity consumption	The electricity consumed during manufacturing processes is considered for each part of the product individually. The final assembly generates a negligible consumption and is not considered in the analysis.		
Installation elements	NA		
Use scenario	In active mode, consuming 3.25 watts with a time repartition of 39.50%, and in standby mode, it consumes 2.6 watts with 60.50% time repartition. Over a 10-year period, the total energy consumption of the active parts amounts to 250.2513 kWh.		
Time representativeness	The collected data are representative of the year 2024		
Technological representativeness	The Modules of Technologies such as material production, manufacturing processes and transport technology used in the PEP analysis (LCA EIME in the case) are similar and representative of the actual type of technologies used to make the product.		
Geographical representativeness	Final assembly site	Use phase	
	India	Europe, EU-27 United States, US Asia Pacific, APAC Australia, AU Morocco, MA	
Energy model used	[A1 - A3]	[A5]	[B6]
	Global, European and French datasets are used.	No energy used	Electricity Mix; Low voltage; 2020; Europe, EU-27 Electricity Mix; Low voltage; 2020; United States, US Electricity Mix; Low voltage; 2020; Asia Pacific, APAC Electricity Mix; Low voltage; 2020; Australia, AU
		[C1 - C4]	
		Global, European and French datasets are used.	

Detailed results of the optional indicators mentioned in PCRed4 are available in the LCA report and on demand in a digital format - Country Customer Care Center - <http://www.se.com/contact>

Mandatory Indicators		PM5100/PM5300 Series Power and Energy Meter - METSEPM5330						
Impact indicators	Unit	Total (without Module D)	[A1 - A3] - Manufacturing	[A4] - Distribution	[A5] - Installation	[B1 - B7] - Use	[C1 - C4] - End of life	[D] - Benefits and loads
Contribution to climate change	kg CO2 eq	1.85E+02	1.66E+01	7.93E-02	3.32E-02	1.67E+02	1.24E+00	-2.26E-02
Contribution to climate change-fossil	kg CO2 eq	1.84E+02	1.67E+01	7.93E-02	3.32E-02	1.66E+02	1.24E+00	-2.13E-02
Contribution to climate change-biogenic	kg CO2 eq	7.99E-01	0*	0*	0*	8.23E-01	1.37E-03	-1.33E-03
Contribution to climate change-land use and land use change	kg CO2 eq	2.63E-04	2.63E-04	0*	0*	0*	0*	0.00E+00
Contribution to ozone depletion	kg CFC-11 eq	2.90E-06	2.05E-06	0*	0*	8.47E-07	1.69E-09	-5.44E-09
Contribution to acidification	mol H+ eq	1.21E+00	1.17E-01	5.03E-04	0*	1.10E+00	1.08E-03	-1.13E-03
Contribution to eutrophication, freshwater	kg P eq	1.94E-04	4.64E-05	2.98E-08	2.90E-08	9.99E-05	4.80E-05	-3.10E-08
Contribution to eutrophication marine	kg N eq	1.36E-01	1.38E-02	2.36E-04	3.81E-05	1.21E-01	4.28E-04	-2.05E-05
Contribution to eutrophication, terrestrial	mol N eq	1.61E+00	1.47E-01	2.59E-03	3.97E-04	1.45E+00	4.55E-03	-2.41E-04
Contribution to photochemical ozone formation - human health	kg COVNM eq	4.54E-01	4.93E-02	6.52E-04	9.36E-05	4.03E-01	1.12E-03	-1.40E-04
Contribution to resource use, minerals and metals	kg Sb eq	3.74E-03	3.72E-03	0*	0*	2.15E-05	1.40E-06	-1.14E-05
Contribution to resource use, fossils	MJ	3.18E+03	2.28E+02	1.11E+00	0*	2.95E+03	3.96E+00	-4.23E-01
Contribution to water use	m3 eq	1.50E+01	5.35E+00	0*	1.62E-02	9.51E+00	9.83E-02	-5.65E-02

Inventory flows Indicators		PM5100/PM5300 Series Power and Energy Meter - METSEPM5330						
Inventory flows	Unit	Total (without Module D)	[A1 - A3] - Manufacturing	[A4] - Distribution	[A5] - Installation	[B1 - B7] - Use	[C1 - C4] - End of life	[D] - Benefits and loads
Contribution to use of renewable primary energy excluding renewable primary energy used as raw material	MJ	3.44E+02	5.80E+00	0*	0*	3.38E+02	3.80E-02	-2.95E-02
Contribution to use of renewable primary energy resources used as raw material	MJ	3.47E+00	3.47E+00	0*	0*	0*	0*	0.00E+00
Contribution to total use of renewable primary energy resources	MJ	3.48E+02	9.27E+00	0*	0*	3.38E+02	3.80E-02	-2.95E-02
Contribution to use of non renewable primary energy excluding non renewable primary energy used as raw material	MJ	3.17E+03	2.20E+02	1.11E+00	0*	2.95E+03	3.96E+00	-4.23E-01
Contribution to use of non renewable primary energy resources used as raw material	MJ	8.30E+00	8.30E+00	0*	0*	0*	0*	0.00E+00
Contribution to total use of non-renewable primary energy resources	MJ	3.18E+03	2.28E+02	1.11E+00	0*	2.95E+03	3.96E+00	-4.23E-01
Contribution to use of secondary material	kg	0.00E+00	0.00E+00	0*	0*	0*	0*	0.00E+00
Contribution to use of renewable secondary fuels	MJ	0.00E+00	0*	0*	0*	0*	0*	0.00E+00
Contribution to use of non renewable secondary fuels	MJ	0.00E+00	0*	0*	0*	0*	0*	0.00E+00
Contribution to net use of freshwater	m³	3.49E-01	1.25E-01	0*	3.78E-04	2.22E-01	2.29E-03	-1.32E-03
Contribution to hazardous waste disposed	kg	6.32E+01	5.83E+01	0*	0*	4.63E+00	2.26E-01	-1.01E+00
Contribution to non hazardous waste disposed	kg	3.62E+01	7.18E+00	0*	1.60E-01	2.87E+01	1.98E-01	-7.31E-03
Contribution to radioactive waste disposed	kg	4.95E-03	2.07E-03	1.99E-06	0*	2.87E-03	8.79E-06	-3.98E-06
Contribution to components for reuse	kg	0.00E+00	0*	0*	0*	0*	0*	0.00E+00
Contribution to materials for recycling	kg	1.88E-02	1.15E-03	0*	0*	0*	1.76E-02	0.00E+00
Contribution to materials for energy recovery	kg	9.20E-09	9.20E-09	0*	0*	0*	0*	0.00E+00
Contribution to exported energy	MJ	1.96E-04	2.17E-05	0*	0*	0*	1.74E-04	0.00E+00

* represents less than 0.01% of the total life cycle of the reference flow

Contribution to biogenic carbon content of the product kg of C 0.00E+00

Contribution to biogenic carbon content of the associated packaging kg of C 4.59E-02

* The calculation of the biogenic carbon is based on the Ademe for the Cardboard (28%), EN16485 for Wood (39,52%), and APESA/RECORD for Paper (37,8%)

Mandatory Indicators		PM5100/PM5300 Series Power and Energy Meter - METSEPM5330							
Impact indicators	Unit	[B1 - B7] - Use	[B1]	[B2]	[B3]	[B4]	[B5]	[B6]	[B7]
Contribution to climate change	kg CO2 eq	1.67E+02	0*	0*	0*	0*	0*	1.67E+02	0*
Contribution to climate change-fossil	kg CO2 eq	1.66E+02	0*	0*	0*	0*	0*	1.66E+02	0*
Contribution to climate change-biogenic	kg CO2 eq	8.23E-01	0*	0*	0*	0*	0*	8.23E-01	0*
Contribution to climate change-land use and land use change	kg CO2 eq	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to ozone depletion	kg CFC-11 eq	8.47E-07	0*	0*	0*	0*	0*	8.47E-07	0*
Contribution to acidification	mol H+ eq	1.10E+00	0*	0*	0*	0*	0*	1.10E+00	0*
Contribution to eutrophication, freshwater	kg P eq	9.99E-05	0*	0*	0*	0*	0*	9.99E-05	0*
Contribution to eutrophication marine	kg N eq	1.21E-01	0*	0*	0*	0*	0*	1.21E-01	0*
Contribution to eutrophication, terrestrial	mol N eq	1.45E+00	0*	0*	0*	0*	0*	1.45E+00	0*
Contribution to photochemical ozone formation - human health	kg COVNM eq	4.03E-01	0*	0*	0*	0*	0*	4.03E-01	0*
Contribution to resource use, minerals and metals	kg Sb eq	2.15E-05	0*	0*	0*	0*	0*	2.15E-05	0*
Contribution to resource use, fossils	MJ	2.95E+03	0*	0*	0*	0*	0*	2.95E+03	0*
Contribution to water use	m3 eq	9.51E+00	0*	0*	0*	0*	0*	9.51E+00	0*

Inventory flows Indicators		PM5100/PM5300 Series Power and Energy Meter - METSEPM5330							
Inventory flows	Unit	[B1 - B7] - Use	[B1]	[B2]	[B3]	[B4]	[B5]	[B6]	[B7]
Contribution to use of renewable primary energy excluding renewable primary energy used as raw material	MJ	3.38E+02	0*	0*	0*	0*	0*	3.38E+02	0*
Contribution to use of renewable primary energy resources used as raw material	MJ	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to total use of renewable primary energy resources	MJ	3.38E+02	0*	0*	0*	0*	0*	3.38E+02	0*
Contribution to use of non renewable primary energy excluding non renewable primary energy used as raw material	MJ	2.95E+03	0*	0*	0*	0*	0*	2.95E+03	0*
Contribution to use of non renewable primary energy resources used as raw material	MJ	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to total use of non-renewable primary energy resources	MJ	2.95E+03	0*	0*	0*	0*	0*	2.95E+03	0*
Contribution to use of secondary material	kg	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to use of renewable secondary fuels	MJ	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to use of non renewable secondary fuels	MJ	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to net use of freshwater	m³	2.22E-01	0*	0*	0*	0*	0*	2.22E-01	0*
Contribution to hazardous waste disposed	kg	4.63E+00	0*	0*	0*	0*	0*	4.63E+00	0*
Contribution to non hazardous waste disposed	kg	2.87E+01	0*	0*	0*	0*	0*	2.87E+01	0*
Contribution to radioactive waste disposed	kg	2.87E-03	0*	0*	0*	0*	0*	2.87E-03	0*
Contribution to components for reuse	kg	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to materials for recycling	kg	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to materials for energy recovery	kg	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to exported energy	MJ	0*	0*	0*	0*	0*	0*	0*	0*

* represents less than 0.01% of the total life cycle of the reference flow

Life cycle assessment performed with EIME version v6.2.4, database version 2024-01 in compliance with ISO14044, EF3.1 method is applied, for biogenic carbon storage, assessment methodology -1/1 is used

Please note that the values given above are only valid within the context specified and cannot be used directly to draw up the environmental assessment of an installation.

Registration number :	SCHN-02016-V01.01-EN	Drafting rules	PEP-PCR-ed4-2021 09 06
		Supplemented by	PSR-0005-ed3.1-EN-2023 12 08
Verifier accreditation N°	VH42	Information and reference documents	www.pep-ecopassport.org
Date of issue	05-2025	Validity period	5 years
Independent verification of the declaration and data, in compliance with ISO 14025 : 2006			
Internal External X			
The PCR review was conducted by a panel of experts chaired by Julie Orgelet (DDemain)			
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"			



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