# Product Environmental Profile

## Modicon TM3 Expert Counter Module - TM3XF/H


PEP ecoPASSPORT®

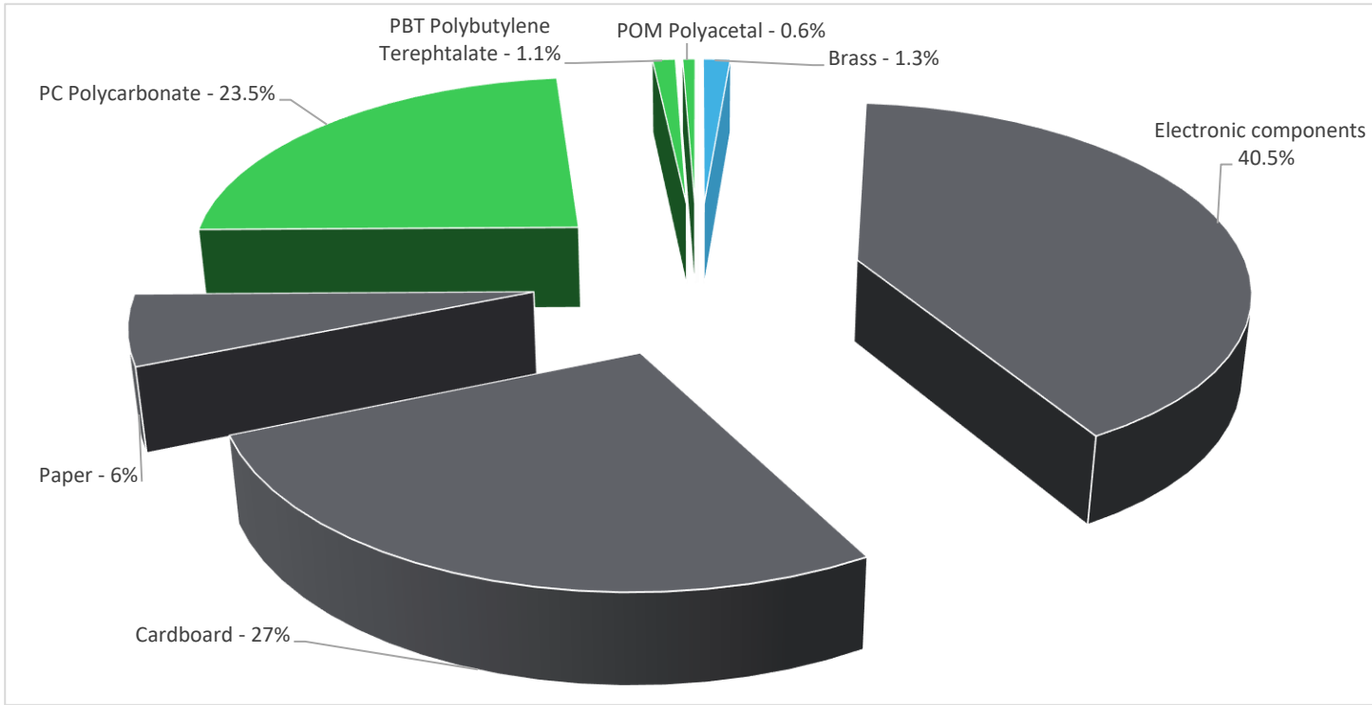
Schneider Electric

# General information

| | |
|---|---|
| **Representative product** | Modicon TM3 Expert Counter Module - TM3XF/H |
| **Description of the range** | Expert counter modules are used to count the pulses generated by a sensor or to process signals from an incremental encoder.<br>The counter functions allow reflex outputs to be managed on all modules.<br>The function parameters are set by configuration using EcoStruxure Machine Expert software.<br><br>The environmental impacts of this referenced product are representative of the impacts of the other products of the range which are developed with a similar technology. |
| **Functional unit** | to count the pulses generated by a sensor or to process signals from an incremental encoder 100% of the time for 10 years |

# Constituent materials

| | | |
|---|---|---|
| **Reference product mass** | 223.7 g | including the product, its packaging and additional elements and accessories |




| | | |
|---|---|---|
| | Plastics | 25.2% |
| | Metals | 1.3% |
| | Others | 73.5% |

# Substance assessment

Products of this range are designed in conformity with the requirements of the RoHS directive (European Directive 2011/65/EU of 8 June 2011) and do not contain, or only contain in the authorised proportions, lead, mercury, cadmium, hexavalent chromium or flame retardants (polybrominated biphenyls - PBB, polybrominated diphenyl ethers - PBDE) as mentioned in the Directive

As the products of the range are designed in accordance with the RoHS Directive (European Directive 2002/95/EC of 27 January 2003), they can be incorporated without any restriction in an assembly or an installation subject to this Directive.

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

http://www2.schneider-electric.com/sites/corporate/en/products-services/green-premium/green-premium.page

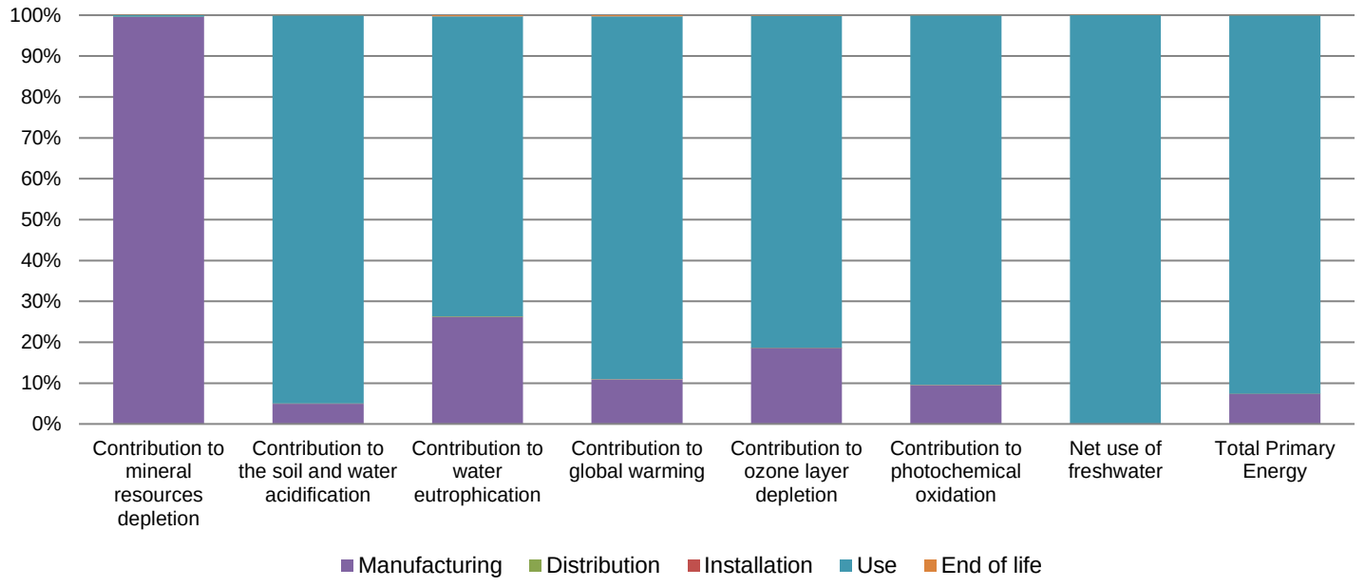
# Additional environmental information

| The Modicon TM3 Expert Counter Module - TM3XF/H presents the following relevent environmental aspects | |
|---|---|
| **Manufacturing** | Manufactured at a Schneider Electric production site ISO14001 certified |
| **Distribution** | Weight and volume of the packaging optimized, based on the European Union's packaging directive<br>Packaging weight is 60.6 g, consisting of cardboad (81.8%) and paper (18.2%)<br>Product distribution optimised by setting up local distribution centres |
| **Use** | The product does not require special maintenance operations. |
| **End of life** | End of life optimized to decrease the amount of waste and allow recovery of the product components and materials<br>This product contains 2 electronic cards (65g) that should be separated from the stream of waste so as to optimize end-of-life treatment.<br>The location of these components and other recommendations are given in the End of Life Instruction document which is available on the Schneider-Electric Green Premium website<br>http://www2.schneider-electric.com/sites/corporate/en/products-services/green-premium/green-premium.page<br>Recyclability potential: **19%** Based on “ECO’DEEE recyclability and recoverability calculation method” (version V1, 20 Sep. 2008 presented to the French Agency for Environment and Energy Management: ADEME). |

# Environmental impacts

| | | | | |
|---|---|---|---|---|
| **Reference life time** | 10 years | | | |
| **Installation elements** | No special components needed | | | |
| **Use scenario** | The product is in active mode 100% of the time with a power use of 1.2W for 10 years | | | |
| **Geographical representativeness** | Europe | | | |
| **Energy model used** | **Manufacturing** | **Installation** | **Use** | **End of life** |
| | Energy model used: Indonesia | Electricity grid mix; AC; consumption mix, at consumer; < 1kV; EU-27 | Electricity grid mix; AC; consumption mix, at consumer; < 1kV; EU-27 | Electricity grid mix; AC; consumption mix, at consumer; < 1kV; EU-27 |

| Compulsory indicators | | Modicon TM3 Expert Counter Module - TM3XF/H - TM3XFHSC202 | | | | | |
|---|---|---|---|---|---|---|---|
| **Impact indicators** | **Unit** | Total | Manufacturing | Distribution | Installation | Use | End of Life |
| Contribution to mineral resources depletion | kg Sb eq | 1.21E-03 | 1.20E-03 | 0* | 0* | 4.48E-06 | 0* |
| Contribution to the soil and water acidification | kg $SO_2$ eq | 2.26E-01 | 1.12E-02 | 1.32E-04 | 0* | 2.15E-01 | 9.04E-05 |
| Contribution to water eutrophication | kg $PO_4^{3-}$ eq | 1.77E-02 | 4.61E-03 | 3.04E-05 | 3.32E-06 | 1.30E-02 | 4.79E-05 |
| Contribution to global warming | kg $CO_2$ eq | 5.80E+01 | 6.34E+00 | 2.89E-02 | 0* | 5.15E+01 | 1.55E-01 |
| Contribution to ozone layer depletion | kg CFC11 eq | 4.13E-06 | 7.70E-07 | 0* | 0* | 3.36E-06 | 5.30E-09 |
| Contribution to photochemical oxidation | kg $C_2H_4$ eq | 1.31E-02 | 1.24E-03 | 9.40E-06 | 0* | 1.18E-02 | 7.19E-06 |
| **Resources use** | **Unit** | Total | Manufacturing | Distribution | Installation | Use | End of Life |
| Net use of freshwater | m3 | 1.87E+02 | 3.80E-02 | 0* | 0* | 1.87E+02 | 0* |
| Total Primary Energy | MJ | 1.11E+03 | 8.19E+01 | 4.08E-01 | 0* | 1.03E+03 | 3.77E-01 |




| Optional indicators | | Modicon TM3 Expert Counter Module - TM3XF/H - TM3XFHSC202 | | | | | |
|---|---|---|---|---|---|---|---|
| **Impact indicators** | **Unit** | Total | Manufacturing | Distribution | Installation | Use | End of Life |
| Contribution to fossil resources depletion | MJ | 6.46E+02 | 6.10E+01 | 4.05E-01 | 0* | 5.85E+02 | 3.10E-01 |
| Contribution to air pollution | $m^3$ | 2.83E+03 | 6.06E+02 | 1.23E+00 | 0* | 2.22E+03 | 2.74E+00 |
| Contribution to water pollution | $m^3$ | 2.77E+03 | 6.35E+02 | 4.75E+00 | 4.97E-01 | 2.13E+03 | 6.39E+00 |
| **Resources use** | **Unit** | Total | Manufacturing | Distribution | Installation | Use | End of Life |
| Use of secondary material | kg | 1.61E-02 | 1.61E-02 | 0* | 0* | 0* | 0* |
| Total use of renewable primary energy resources | MJ | 1.34E+02 | 3.58E+00 | 0* | 0* | 1.31E+02 | 0* |
| Total use of non-renewable primary energy resources | MJ | 9.77E+02 | 7.83E+01 | 4.08E-01 | 0* | 8.98E+02 | 3.77E-01 |
| Use of renewable primary energy excluding renewable primary energy used as raw material | MJ | 1.33E+02 | 2.39E+00 | 0* | 0* | 1.31E+02 | 0* |
| Use of renewable primary energy resources used as raw material | MJ | 1.20E+00 | 1.20E+00 | 0* | 0* | 0* | 0* |
| Use of non renewable primary energy excluding non renewable primary energy used as raw material | MJ | 9.74E+02 | 7.52E+01 | 4.08E-01 | 0* | 8.98E+02 | 3.77E-01 |
| Use of non renewable primary energy resources used as raw material | MJ | 3.12E+00 | 3.12E+00 | 0* | 0* | 0* | 0* |
| Use of non renewable secondary fuels | MJ | 0.00E+00 | 0* | 0* | 0* | 0* | 0* |
| Use of renewable secondary fuels | MJ | 0.00E+00 | 0* | 0* | 0* | 0* | 0* |

| Waste categories | Unit | Total | Manufacturing | Distribution | Installation | Use | End of Life |
|---|---|---|---|---|---|---|---|
| Hazardous waste disposed | kg | 2.56E+00 | 2.15E+00 | 0* | 0* | 2.69E-02 | 3.89E-01 |
| Non hazardous waste disposed | kg | 1.94E+02 | 1.51E+00 | 0* | 0* | 1.92E+02 | 0* |
| Radioactive waste disposed | kg | 1.29E-01 | 8.72E-04 | 0* | 0* | 1.28E-01 | 0* |
| **Other environmental information** | **Unit** | Total | Manufacturing | Distribution | Installation | Use | End of Life |
| Materials for recycling | kg | 1.04E-01 | 1.31E-02 | 0* | 6.03E-02 | 0* | 3.04E-02 |
| Components for reuse | kg | 0.00E+00 | 0* | 0* | 0* | 0* | 0* |
| Materials for energy recovery | kg | 4.31E-02 | 0* | 0* | 0* | 0* | 4.31E-02 |
| Exported Energy | MJ | 1.95E-04 | 2.18E-05 | 0* | 1.74E-04 | 0* | 0* |

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

*Life cycle assessment performed with EIME version EIME v5.8.1, database version 2016-11 in compliance with ISO14044.*

The use phase is the life cycle phase which has the greatest impact on the majority of environmental indicators (based on compulsory indicators).

According to this environmental analysis, proportionality rules may be used to evaluate the impacts of other products of this range.

Depending on the impact analysis, the environmental indicators of other products in this family may be proportionally extrapolated by the energy consumption values. For Abiotic Depletion, impacts may be proportionally extrapolated by the mass of the product. Air Pollution, Eutrophication, Ozone Layer Depletion and Water Pollution may be 20% proportionally extrapolated by the mass of the product, and 80% by the energy consumption values.

*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-00456-V01.01-EN | *Drafting rules* | PCR-ed3-EN-2015 04 02 |
| *Verifier accreditation N°* | VH33 | | |
| *Date of issue* | 05/2019 | *Information and reference documents* | www.pep-ecopassport.org |
| | | *Validity period* | 5 years |

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

Internal External X

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

*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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