NON ISOLATED REVERSIBLE DC DC CONVERTER Liquid cooling

TAME-POWER DC DC converters allow to transfer up to 1 megawatt on 35V to 800V voltage ranges perfectly adapted to applications of the on-road, off-road, aeronautics and stationary markets and easily embed architectures integrating: fuel cells, batteries, supercaps and auxiliary power supplies.

As a specialist in high-reliability power conversion solutions, TAME-POWER brings over 50 years of expertise in electronic systems to the table. Our commitment lies in providing tailored products that blend efficiency, performance, and power density to address diverse mobile and fixed application needs. At TAME-POWER, we understand that every customer comes with unique requirements. Therefore, our philosophy revolves around partnering with clients throughout the product development process to ensure we deliver solutions that precisely match their specifications.

NEW GENERATION OF DC DC HVHV CONVERTER

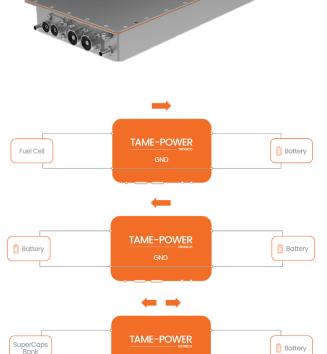
- Fully compatible with past version CONV-DCDC-XXKW-BIKS (added infos on the CAN frame)
- New functionality: Power map implementation
- Increase power density and ensures power optimization up to 120kW
- High efficiency (up to 99 %) using Silicon Carbide (SiC) technology
- Smart DC DC converter, programmable as current or voltage source
- Optimized max power according to the Power Map
- Control according to voltage, current or power, input or output
- Operations controlled through isolated CAN 2.0B
- Parallelization of DC DC modules for higher power delivery
- Liquid cooling

USE CASES

Boost - Fuel Cell to Battery: The converter can be used with Fuel cell application in Boost mode to battery and other component as a driver for electrical engine. This typical application is for a truck or bus. The converter must transfer the power from the Fuel Cell (Low side) to the Battery and driver (High side).

Buck - Battery to Battery: The converter can be used with Battery application in buck mode to battery. This typical application is for a car charger. The converter must transfer the power from the Battery (High side) to the Battery and load (Low side).

Buck and Boost - Super Capacitors to Battery: The converter can be used with Super Caps application in reversible mode to battery. This typical application is for a car. The converter must transfer the power from the Battery (High side) to the Super Caps (Low side).



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DOUBLE unit

NON ISOLATED REVERSIBLE DC DC CONVERTER Liquid cooling

| SPECIFICATIONS | CONVY-DCDC- 800V-07-RA-00 | CONVY-DCDC- 800V-11-RA-00 | CONVY-DCDC- 800V-15-RA-00 | CONVY-DCDC- 800V-07-RB-00 | CONVY-DCDC- 800V-11-RB-00 | CONVY-DCDC- 800V-15-RB-00 | | | |
|----------------------|---|------------------------------|------------------------------|------------------------------|------------------------------|--------------------------------|--|--|--|
| ELECTRICAL | | | | | | | | | |
| High voltage range | 50 V – 800 V | | | | | | | | |
| Low voltage range | 35 V – 500 V | | | | | | | | |
| Rated output current | 150A | | | 300 A | | | | | |
| Maximum power | 50 kW | 55 kW | 65 kW | 100 kW | 110 kW | 120 kW | | | |
| Efficiency | >96% | | | | | | | | |
| Supply voltage | 10.5 V – 32 V | | | | | | | | |
| Supply consumption | 6 W (Max) | | | 12W (Max) | | | | | |
| Regulation modes | Current/ Voltage/ Power (at both sides) | | | | | | | | |
| Safety features | HVIL, OTP, OCP, OVP, UVP | | | | | | | | |
| Galvanic insulation | 3.0 kV (100 M Ω between power circuit and chassis and control intertace) | | | | | | | | |
| COMMUNICATION | | | | | | | | | |
| Protocole | CAN 2.0B / 500 kbits/s | | | | | | | | |
| Frames period | 20 ms | | | | | | | | |
| COOLING | | | | | | | | | |
| Liquid cooling | WEG (Water 50% / Glycol 50%) | | | | | | | | |
| Liquid temperature | -40 °C to +65 °C | | | | | | | | |
| Flow rate | 3 to 6 L/mn | | | | | | | | |
| Maximum Pressure | 5 Bar | | | | | | | | |
| Pressure drops | 500 mBar (at 6 L/min flow) 900 mBar (a | | | | 0 mBar (at 6 L/min f | [·] (at 6 L/min flow) | | | |
| Tank capacity | 80.6 cm ³ | | | 151.7 cm ³ | | | | | |
| ENVIRONMENTAL | | | | | | | | | |
| Operating temp. | -40 °C to +85 °C | | | | | | | | |
| Storage temperature | -40 °C to +105 °C | | | | | | | | |
| Relative humidity | 10% to 85% | | | | | | | | |
| Ingress Protection | IP 65 | | | | | | | | |
| MECHANICAL | | | | | | | | | |
| Housing material | Aluminum | | | | | | | | |
| Weight | 14 kg 22 kg | | | | | | | | |
| Dimensions (LxWxH) | 420 mm x 310 mm x 84 mm 772 mm x 310 mm x 84 mm | | | | mm | | | | |
| PRODUCT MATURITY | | | | | | | | | |
| <u>C sample</u> | In production | | | | | | | | |

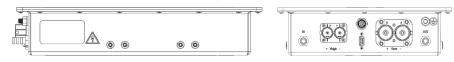
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Datasheet CONVY series V2.4

TAME-POWER

| SPECIFICATIONS | CONVY-DCDC- 800V-07-RA-00 | CONVY-DCDC- 800V-11-RA-00 | CONVY-DCDC- 800V-15-RA-00 | CONVY-DCDC- 800V-07-RB-00 | CONVY-DCDC- 800V-11-RB-00 | CONVY-DCDC- 800V-15-RB-00 | | | |
|------------------|--|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|--|--|--|
| STANDARDS | | | | | | | | | |
| Electrical | ISO 16750-2 Road vehicles - Environmental conditions and testing - Electrical loads | | | | | | | | |
| Environnemental | ISO 16750-4 Road vehicles - Environmental conditions and testing - Climatic loads | | | | | | | | |
| | ISO 16750-3 Road vehicles - Environmental conditions and testing - Mechanical loads | | | | | | | | |
| | IEC 60529 Ingress Protection (IP) ratings | | | | | | | | |
| Safety | EN 61010-1 Safety requirements for electrical equipment for measurement, control, and laboratory use | | | | | | | | |
| | UN ECE R100 European requirement for the approval of road electric vehicles | | | | | | | | |
| EMC | EN 55016-2-3 Specification for radio disturbance and immunity measuring apparatus and methods | | | | | | | | |
| | EN 61000-4-2/4-3/4-8 Electromagnetic compatibility - Testing and measurement techniques - Immunity | | | | | | | | |
| | EN 62311: Assessment of electronic and electrical equipment related to human exposure restrictions | | | | | | | | |
| | ECE R10 Automotive EMC Testing | | | | | | | | |
| CONNECTORS | | | | | | | | | |
| Low voltage | An | nphenol PL082X-3 | 00 | Ampheno | ol PLOOX-500 & PLOOY-500 | | | | |
| High voltage | An | nphenol PL082X-12 | 20 | Amphe | enol PL082X-300 -10M8 | | | | |
| Service | Phoenix Contact 1441655 - A Coded - 5 (Match with our TAME-POWER starter kit) | | | | | | | | |
| Cooling | Legris 0931 10 13 | | | | | | | | |
| Casing grounding | MS x 17 mm Threaded rod | | | | | | | | |
| HVIL | DB9 female (Match with our TAME-POWER starter kit) | | | | | | | | |

CONVY-DCDC-800V-XX-RA-00 (Single unit)



CONVY-DCDC-800V-XX-RB-00 (Double unit)

COMMERCIAL VEHICLE



POWER MAP

TAME-POWER DC DC converters embed a powerful software that permanently calculates the maximum power the device can transfer. The calculation is done in real-time, according to the values of low side voltage and high side voltage.

Each product has its own Power Map available for download on the Product page

- **APPLICATIONS**
- Fuel cell systems
- Battery systems
- Supercap systems
- DC Charging
- Smart Grids

Challenge us with your application through our contact form !

AIRCRAFT

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OFF-ROAD VEHICLE

OTHER PRODUCTS AND ACCESSORIES

Below you can find the other product families created by TAME-POWER. Each product can be fully customized to meet specific requirements.

STARTER KIT

- This kit for liquid or air cooled DC DC converters allows controlling a DC DC converter unit by direct connection to a power supply and a PC or a laptop.
- Include CAN communication probe and service power cables.
- The provided HMI software propose a user-friendly access to the main functions of the converter.

POWER CABLES

- High side and low side power connection cables to transfer energy between the converter and your systems.
- The choice of cables will depend on the type of converter single or double.
- Cables have open end on one side to allow custom connectors application.

CISO: New HVLV isolated converter

- Isolated Buck DC DC converter in a liquid cooled version.
- Allow regulation according to input voltage.
- Applicable to battery systems and electric vehicles.

COMET AIR: HVHV air cooled converter

- Non-isolated Buck DC DC converter in air cooled version.
- Allows regulation according to voltage, current or power, input or output.
- Applicable to fuel cell power, battery systems, super capacitors, chargers, loads and motors.









TAME-POWER