

## 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

SINGLE unit



DOUBLE unit



## 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).



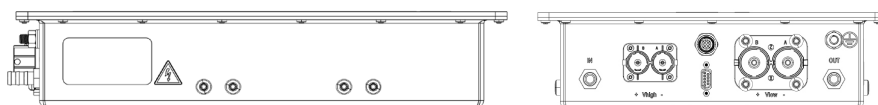
## NON ISOLATED REVERSIBLE DC DC CONVERTER

### Liquid cooling

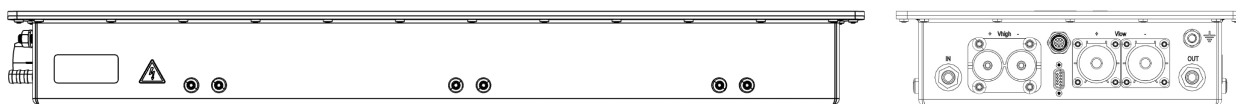
SPECIFICATIONS	CONVY-DCDC-800V-07-RA-00	CONVY-DCDC-800V-11-RA-00	CONVY-DCDC-800V-15-RA-00	CONVY-DCDC-800V-07-RB-00	CONVY-DCDC-800V-11-RB-00	CONVY-DCDC-800V-15-RB-00
<b>ELECTRICAL</b>						
High voltage range	50 V – 800 V					
Low voltage range	35 V – 500 V					
Rated output current	150A			300 A		
Maximum 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 MΩ between power circuit and chassis and control interface)					
<b>COMMUNICATION</b>						
Protocole	CAN 2.0B / 500 kbits/s					
Frames period	20 ms					
<b>COOLING</b>						
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 (at 6 L/min flow)		
Tank capacity	80.6 cm <sup>3</sup>			151.7 cm <sup>3</sup>		
<b>ENVIRONMENTAL</b>						
Operating temp.	-40 °C to +85 °C					
Storage temperature	-40 °C to +105 °C					
Relative humidity	10% to 85%					
Ingress Protection	IP 65					
<b>MECHANICAL</b>						
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		
<b>PRODUCT MATURITY</b>						
<a href="#">C sample</a>	In production					

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
<b>STANDARDS</b>						
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					
<b>CONNECTORS</b>						
Low voltage	Amphenol PL082X-300			Amphenol PLOOX-500 & PLOOY-500		
High voltage	Amphenol PL082X-120			Amphenol 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)



## 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](#) !

## 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.



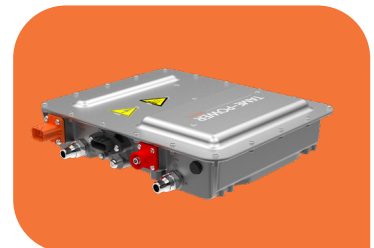
### POWER CABLES

- 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.

