

# Datasheet

## Non-isolated liquid-cooled DC DC converters

### SMART NON-ISOLATED REVERSIBLE DC/DC CONVERTER

#### Liquid cooling

#### FEATURES

- Programmable smart DC/DC converter allowing regulation according to voltage, current or power, input or output
- Buck/boost transition controlled by CAN command
- Operations controlled through insulated CAN 2.0B
- Parallelization of DC/DC modules for higher power delivery (in current source mode only)
- Liquid cooling

#### APPLICATIONS

- Fuel cell power
- Battery systems
- Super capacitors
- Chargers
- Loads
- Motors



SINGLE unit

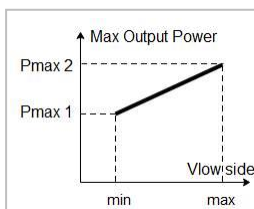


DOUBLE unit

#### PERMANENT MAXIMUM OUTPUT POWER

		Vhigh side range					Eff. @Pmax	Size	Reference
		200 ... 400V	300 ... 500V	500 ... 700V	600 ... 700V	550 ... 950V			
Vlow side range	35 ... 120V	4 - 7kW (*)					98%	SINGLE	CONV-DCDC-07KW-ACDH-01-G
		8 - 14kW (*)						DOUBLE	CONV-DCDC-14KW-ACDH-01-J
	50 ... 220V		4 - 26kW (1)				98%	SINGLE	CONV-DCDC-26KW-AEFJ-01-H
			8 - 52kW					DOUBLE	CONV-DCDC-52KW-AEFJ-01-K
	50 ... 220V			5 - 14kW			98%	SINGLE	CONV-DCDC-14KW-AEJN-01-H
				10 - 28kW				DOUBLE	CONV-DCDC-28KW-AEJN-01-K
	150 ... 400V			16 - 32 kW			98%	SINGLE	CONV-DCDC-32KW-CHJN-01-H
				32 - 64 kW				DOUBLE	CONV-DCDC-64KW-CHJN-01-K
	300 ... 400V				35 - 40 kW		97%	SINGLE	CONV-DCDC-40KW-FHLN-01-H
					70 - 80 kW			DOUBLE	CONV-DCDC-80KW-FHLN-01-K
	100 ... 450V					7 - 22 kW	98%	SINGLE	CONV-DCDC-22KW-BIKS-01-H
						14 - 44 kW		DOUBLE	CONV-DCDC-44KW-BIKS-01-K

\* Boost only



The maximum power the DCDC converter can provide is related to Vlow side range according to the chart beside.

See example (1) : Pmax1 = 4 kW @ Vlow side min = 50V  
Pmax2 = 26 kW @ Vlow side max = 220V  
For any value of Vhigh side range

#### COMMUNICATION AND MONITORING

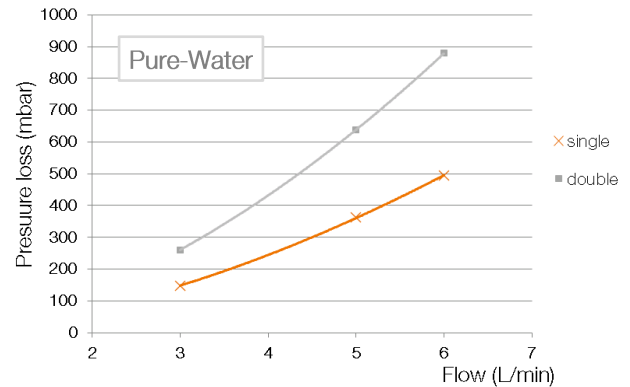
	MIN	TYP.	MAX	UNITS
CAN 2.0B bus speed	125		500	Kb/s
CAN periodicity		100		ms
Measured voltages accuracy		±0.7	±2	% of full scale
Measured Low Side current accuracy		±1.9	±3	% of full scale
Measured High Side current accuracy		±1.7	±2.5	% of full scale
Measured internal temperature accuracy		±1	±3	°C
Service Power Supply - Voltage	10.5		32	V
Service Power Supply - Power consumption (SINGLE / DOUBLE)	2		6 / 12	W

## CONNECTORS

	SUPPLIER	SINGLE unit	DOUBLE unit
V Low side	AMPHENOL	PL082X-301	PL00X-501 & PL00Y-501
V High side	AMPHENOL	PL082X-121	PL082X-301
CAN + Service voltage	PHOENIX CONTACT	1441655 - A Coded - 5 positions	
Cooling connectors	LEGRIS	0931 10 13	
Casing grounding	-	M8 x 17 mm Threaded rod	
HVIL	-	DB9 female	

## COOLING PARAMETERS

	MIN	TYP.	MAX	UNITS
Flow rate	3	5	6	L/mn
Pressure			5	Bar
Inlet liquid temperature	0		+65	°C



## REGULATION MODES

	CURRENT	VOLTAGE	POWER
According to Low side	✓	✓	✓
According to High side	✓	✓	✓

## ENVIRONMENT DATA

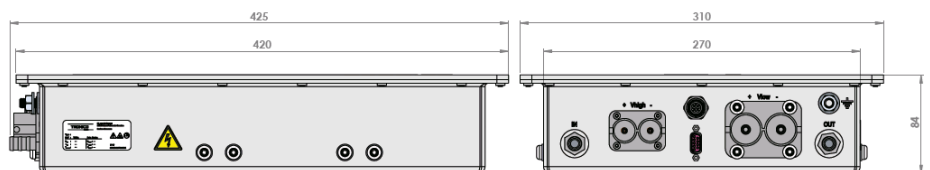
	MIN	TYP.	MAX	UNITS
Galvanic insulation between power circuit and chassis-control interface (1min test)			2.5	kV
Insulation resistance	10			MΩ
Ambient temperature (operating)	-40		85	°C
Ingress Protection		IP65		-

## STANDARDS USED FOR DESIGN

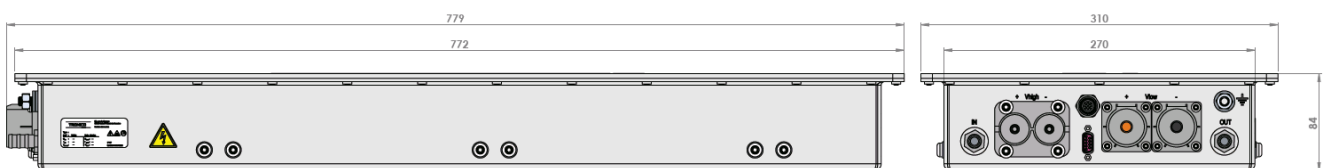
EMC	R10
Control circuit supply voltage	ISO 16750-2 mode D
Mechanical loads	ISO 16750-3
Climatic loads	ISO 16750-4 code G
Chemical loads	ISO 16750-5 mounting location A
Electrical vehicle safety	R100

## MECHANICAL DATA

- Single unit - weight: 11 kg



- Double unit - weight: 22 kg





# POWER CHARTS FOR CONVERTERS REFERENCES

