

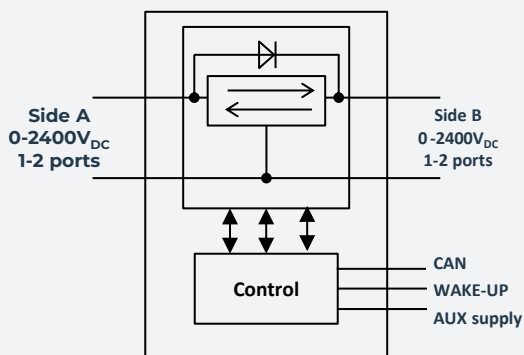
# DCUHV LP

HV-HV reversible Buck or Boost Converter  
 Voltage up to  $2400V_{DC}$ , current 400A  
 Power 500kW at 1250V Side A  
 Multi inputs / outputs capability  
 Cutting-edge power density



## KEY FEATURES

- > Built-in magnetics, inductors and transformers included
- > Input and output range : 0 to  $2400V_{DC}$
- > Non-overlapping topology :  $V_{SideB} > V_{SideA}$
- > Bi-directional current capability
- > Max current : 400A
- > Current and voltage control
- > CAN remote communication and monitoring
- > Weight: < 45kg
- > Can be paralleled for increased power
- > Up to 4 ports possible for multiple inputs-outputs configurations
- > Connectors and Busbars options for electrical interface



## TECHNICAL SPECIFICATION

Power	
Max number of ports	4 side A, 4 side B
Side A and side B voltage range	0V to $2400V_{DC}$
Voltage settings possibilities	Max boost ratio : $V_B = 20 \times V_A$ max Short-circuit operation : $V_A = 0V$
Voltage accuracy	$\pm 1\%$ of full scale
Current capability	$\pm 50A$ per channel, $\pm 400A$ total
Current accuracy	<3% of full scale
Efficiency	98.9% at nominal current with 2:1 voltage conversion ratio
Short circuit protection	Current regulation at setpoint value down to 0V (in case the side A is regulated in voltage mode)
X Capacitance	11 $\mu F$ per side A & B No inrush current limitation
Y Capacitance	<0.2 $\mu F$
Safety discharge time	<5sec to reach 60V
Control	
Auxiliary supply	$9V_{DC} - 60V_{DC}$ <100 $\mu A$ disable mode current consumption <100W in Power_ON
Enable function	ON/OFF signal. Tie to ground for start-up. Internal pull up
Inrush current limitation	Not included
Environment	
Environmental protection	IP67
Altitude	Up to 4000m
Max cooling temperature	65°C outlet
Operating temperature range	From -40°C to 70°C ambient
Storage temperature range	From -40°C to 100°C
Dielectric withstand	
HV - case isolation	4300 $V_{DC}$ Basic isolation
HV - LV isolation	5300 $V_{DC}$ Reinforced isolation

### BrightLoop Converters

221 Boulevard Davout  
 75020 Paris – France  
 Tel +33 1 83 62 63 59

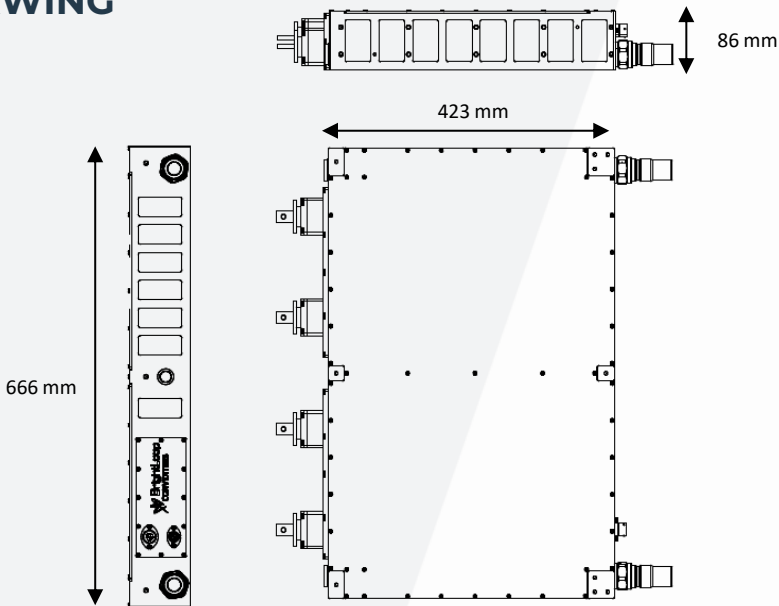
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# DCUHV LP

TECHNICAL SPECIFICATION

CAN Interface	
Bus speed	125Kbps to1Mbps (set by CAN)
Controls	Side A Current limit +/-400A , 2A resolution
	Side A Voltage set point 0V to 2400V 1V resolution
	Side B Current limit +/-400A, 2A resolution
	Side B Voltage set point 0V to 2400V, 1V resolution
	Power ON/OFF
Monitoring	Discharge request
	DC/DC Status
	Voltages and currents
	Internal auxiliary power supplies voltage
	Internal temperatures
Identification	Internal protections
	Software & Hardware revision
Software Update	CAN Bootloader
Liquid cooling	
Pressure loss	<300mBar TBC
Maximum recommended operating pressure	1.3bar TBC
Maximum testing pressure	2.6 bar TBC
Hydraulic connector	STAUBLI RME/CBI or CE3N UltraFlow
Mechanical	
Dimensions	666 x 423x 86mm + connectors
Weight	<45 Kg
Interface	M8 fixations on each sides
Housing	Aluminum with conductive anti-corrosion treatment
Power connectors options	Bus bar connections or High Voltage connectors
Signals connector	8STA family (SOURIAU)

## OUTLINE DRAWING



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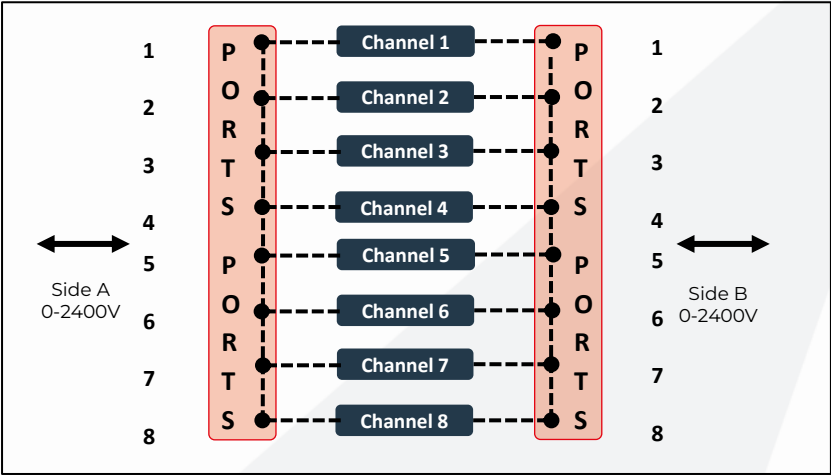
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# Ordering code logic

Port examples  
Individually CAN settable

Fuel Cell #1

Fuel Cell #2



Port examples  
Individually CAN settable

HV DCbus

Ultracapacitors

Trolley

DCUHV LP - 400A

50A per channel

----- Reversible PowerPaths

Ports configuration stage

## Part number example :

DC	UHV	L	P	D	S	LC
1	2	3	4	5	6	7

1 – Product family		2 – Voltage	
DC	HV-HV non-isolated DCDC converter	UHV	2400V <sub>DC</sub> max
3 – Package size		4 – Product line	
L	Large	P	Performance
5 – Number of ports on side A		6 – Number of ports on side B	
S	Single	S	Single
D	Dual	D	Dual
7 – Cooling option			
LC	Liquid cooling		

V22.08

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