HEAVY DUTY APPLICATIONS

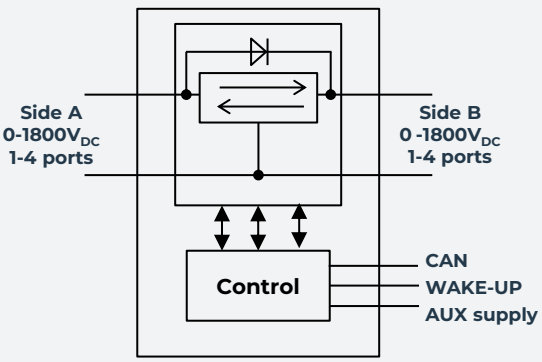
DCVHV LP

HV-HV bidirectional Buck or Boost Converter
Voltage up to $1800V_{DC}$, current 400A
Power 500kW at $1250V_{DC}$ Side A
Multi inputs / outputs capability
Cutting-edge power density

In development

KEY FEATURES

- **Built-in capacitors & inductors**
- **Input and output range: 0 to $1800V_{DC}$**
- **Non-overlapping topology: $V_{SideB} > V_{sideA}$**
- **Bidirectional current capability**
- **Max current: 400A**
- **Current and voltage control**
- **CAN remote communication and monitoring**
- **Weight: TBC**
- **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	$0V_{DC}$ to $1800V_{DC}$
Voltage settings possibilities	Max boost ratio: $V_B = 20 \times V_A$ max Short-circuit operation: $V_A = 0V_{DC}$
Voltage accuracy	+/-1% of full scale
Current capability	+/-50A per channel, +/-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 $0V_{DC}$ (in case the side A is regulated in voltage mode)
X Capacitance	11µF per side A & B No inrush current limitation
Y Capacitance	<0.2µF
Safety discharge time	<5 sec to reach 60V
Control	
Auxiliary supply	$9V_{DC} – 60V_{DC}$ <100µA disable mode current consumption <100W in Power_ON
$\overline{\text{Enable}}$ 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	$4300V_{DC}$ Basic isolation
HV - LV isolation	$5300V_{DC}$ Reinforced isolation

BrightLoop Converters

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

www.brightloop.fr

BrightLoop
A member of the ABB Group

DCVHV LP

TECHNICAL SPECIFICATION

CAN Interface	
Bus speed	125Kbps to 1Mbps (set by CAN)
Controls	Side A Current limit +/-400A , 2A resolution
	Side A Voltage set point 0V to 1800V, 1V resolution
	Side B Current limit +/-400A, 2A resolution
	Side B Voltage set point 0V to 1800V, 1V resolution
	Power ON/OFF
	Discharge request
Monitoring	DC/DC Status
	Voltages and currents
	Internal auxiliary power supplies voltage
	Internal temperatures
	Internal protections
Identification	Software & Hardware revision
Software Update	CAN Bootloader
Liquid cooling	
Pressure loss	<300mBar (TBC)
Maximum operating pressure*	3 barg
Maximum testing pressure	6 barg
Hydraulic connector	STAUBLI RME/CBI or CEJN UltraFlow
Mechanical	
Dimensions	666 x 423 x 86mm + connectors (TBC)
Weight	TBC
Interface	M8 fixations on each sides
Housing	Aluminum with conductive anti-corrosion treatment
Power connectors options	Busbar connections or High Voltage connectors
Signals connector	8STA family (SOURIAU)

**: for higher pressure application, please contact us*

OUTLINE DRAWING

In development

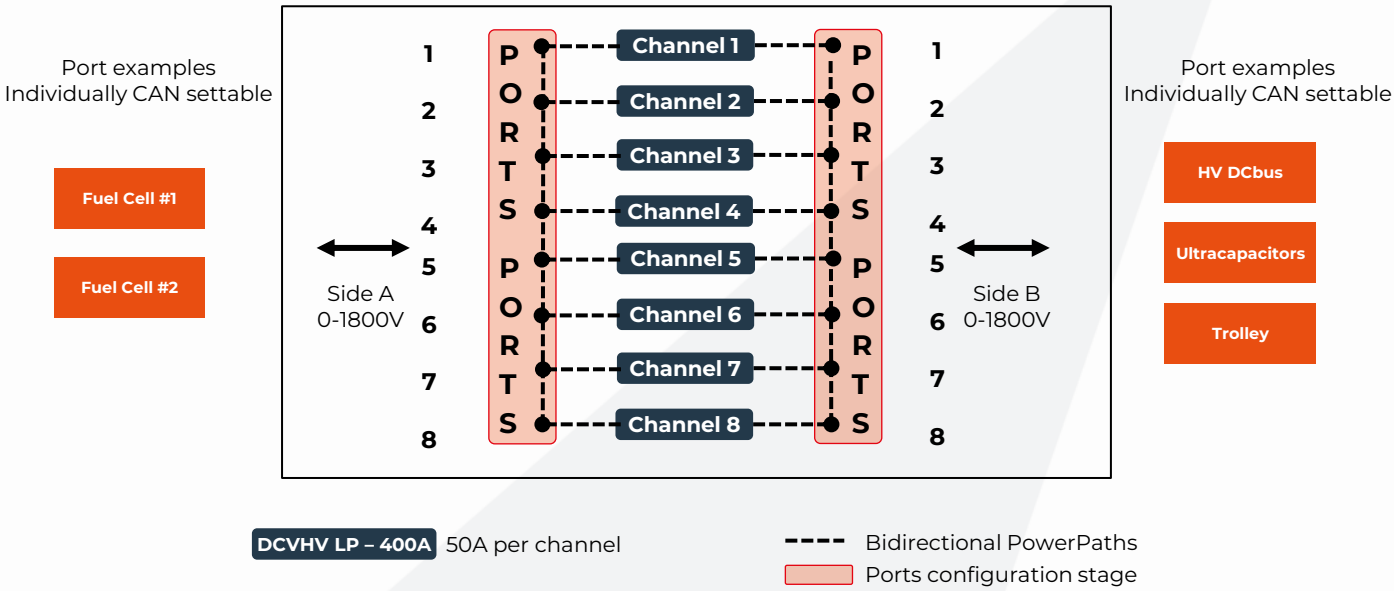
BrightLoop Converters

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

www.brightloop.fr

BrightLoop
A member of the ABB Group

Ordering code logic



DCVHV LP – 400A 50A per channel

Bidirectional PowerPaths

Ports configuration stage

Part number example :

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

1 – Product family		**2 – Voltage**	
DC	HV-HV non-isolated DCDC converter	VHV	1800V_{DC} 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		

V22.07

BrightLoop Converters

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

www.brightloop.fr

BrightLoop
A member of the ABB Group