

# DCHVI MP

HV-HV bidirectional Buck or Boost Converter  
 Input-output galvanic isolation  
 Voltage up to  $950V_{DC}$ , current 480A  
 Isolated port 240A / 200kW  
 Multi inputs / outputs capability  
 Cutting-edge power density

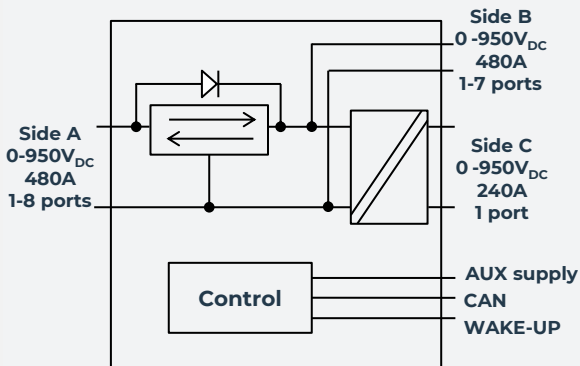


## KEY FEATURES

- > **Built-in capacitors, inductors and transformer included**
- > **Input and output range: 0 to  $950V_{DC}$**
- > **Non-overlapping topology:  $V_{sideA} < V_{sideB}$**
- > **Bidirectional current capability**
- > **Non-isolated stage: 480A max**
- > **Isolated stage: 240A / 200kW max**
- > **Ultra-high end-to-end efficiency**
- > **CAN remote communication and monitoring**
- > **Liquid cooling**
- > **Weight: <25kg**
- > **Can be paralleled for increased power**
- > **Up to 8 ports possible on each side for multiple inputs-outputs configurations**
- > **Connectors and Busbars options for electrical interface**

## TECHNICAL SPECIFICATION

<b>Power</b>	
Max number of ports	8 side A, 7 side B, 1 side C
Side A, B, and C voltage range	$0V_{DC}$ to $950V_{DC}$ $V_A < V_B \rightarrow V_B = V_C$
Voltage settings possibilities	Max boost ratio : $V_B = 20 \times V_A$ max Bypass mode : $V_A = V_B$ possible Short-circuit mode : $V_A = 0V_{DC}, V_C = 0V_{DC}$
Voltage accuracy	+/-1% of full scale
Current capability	A <-> B : +/-60A per channel, +/-480A total A <-> C : +/-240A
Current accuracy	<3% of full scale
Short circuit protection	Side A: Current regulation at setpoint value Side C: Short-circuit protected
X Capacitance	Side A: 100 $\mu$ F Side B: 140 $\mu$ F Side C: 40 $\mu$ F No inrush current limitation
Y Capacitance	<10 $\mu$ F
Safety discharge time	<5 sec to reach 60V
Efficiency	97.5% at full load, 1:2 voltage ratio
<b>Control</b>	
Auxiliary supply	$9V_{DC} - 60V_{DC}$ <100 $\mu$ A disable mode current consumption <40W in Power_ON mode
Enable function	ON/OFF signal. Tie to ground for start-up. Internal pull up
Inrush current limitation	Not included
<b>Environment</b>	
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



## BrightLoop Converters

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

[www.brightloop.fr](http://www.brightloop.fr)



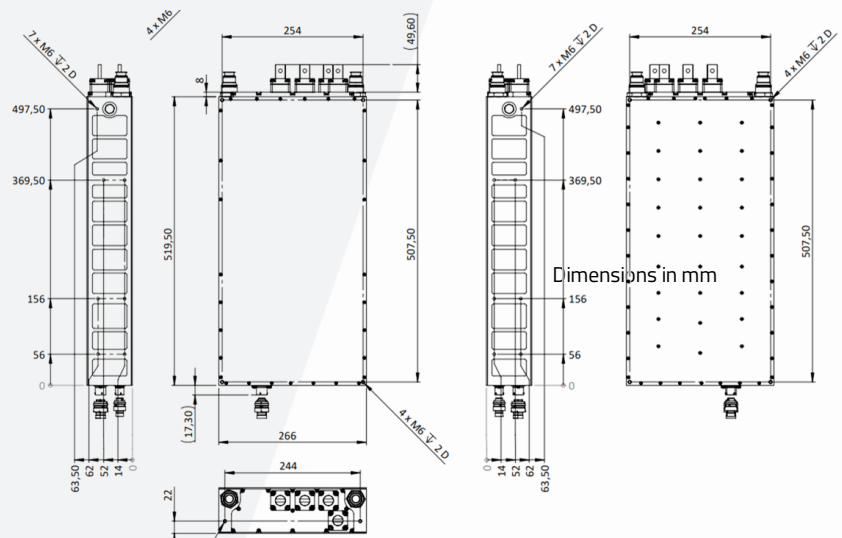
# DCHVI MP

TECHNICAL SPECIFICATION

<b>Dielectric withstand</b>	
HV - case isolation	1950V <sub>DC</sub> Basic isolation
HV - LV isolation	2500V <sub>DC</sub> Reinforced isolation
<b>CAN Interface</b>	
Bus speed	125Kbps to 1Mbps (set by CAN)
Controls	Side A Current limit +/-480A, 2A resolution
	Side A Voltage set point 0V to 950V, 1V resolution
	Side B Current limit +/-480A, 2A resolution
	Side B Voltage set point 0V to 950V, 1V resolution
	Side C Current limit +/-240A, 2A resolution
Monitoring	Side C Voltage set point 0V to 950V, 1V resolution
	Power ON/OFF
	Discharge request
	DC/DC Status
	Voltages and currents
Identification	Internal auxiliary power supplies voltage
	Internal temperatures
Software Update	Internal protections
Software Update	Software & Hardware revision
Software Update	CAN Bootloader
<b>Liquid cooling</b>	
Pressure loss	<200mBar TBC
Maximum operating pressure*	3 barg
Maximum testing pressure	6 barg
Hydraulic connector	NORMAQUICK PS3 VDA (Mounted on NORMAQUICK PS3 NW 16-xx)
<b>Mechanical</b>	
Dimensions	< 600 x 280 x 80mm + connectors
Weight	<25kg
Interface	M8 fixations on each sides
Housing	Aluminum with conductive anti-corrosion treatment
Power connectors options	Amphenol PL500 & PL300 with HVIL
	Amphenol PL082 & PL084 with HVIL
	Bus bar connection
Signals connector	8STA family (SOURIAU)

\*: for higher pressure application, please contact us

## OUTLINE DRAWING



### BrightLoop Converters

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

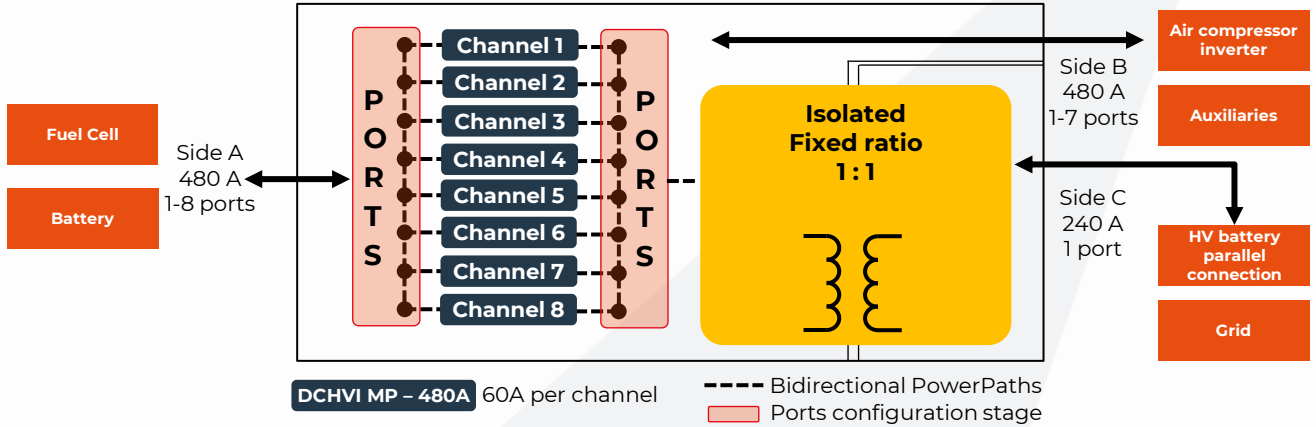
[www.brightloop.fr](http://www.brightloop.fr)



# Ordering code logic

Port examples  
Individually CAN Settable

Port examples  
Individually CAN Settable



## Part number example :

DC	HV	I	M	P	S	∅	S	LC
1	2	3	4	5	6	7	8	9
<b>1 - Product family</b>				<b>2 - Voltage</b>				
DC	HV-HV isolated DCDC converter			HV	950V <sub>DC</sub> max			
<b>3 - Galvanic isolation</b>								
I	Isolated							
<b>4 - Package size</b>				<b>5 - Product line</b>				
M	Medium			P	Performance			
<b>6 - Number of ports on side A</b>					<b>7 - Number of ports on side B</b>			
S	Single			∅	None			
D	Dual			S	Single			
T	Triple			D	Dual			
Q	Quadruple			T	Triple			
P	Penta			Q	Quadruple			
Sx	Six			P	Penta			
H	Hepta (seven)			Sx	Six			
O	Octo (eight)			H	Hepta (seven)			
<b>8 - Number of ports on side C</b>					<b>9 - Cooling option</b>			
S	Single			LC	Liquid cooling			

## BrightLoop Converters

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

[www.brightloop.fr](http://www.brightloop.fr)

