

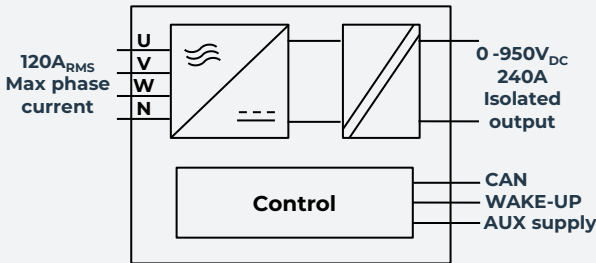
ACHVI MP

Ultra-versatile bidirectional 3Ph+N inverter
Built-in input-output galvanic isolation
120A_{RMS} / phase, max power 80kW @400V_{AC}
Perfect for grid and island configurations,
or High Power On-board Charger



KEY FEATURES

- > Built-in capacitors, inductors and transformer
- > DC range 0-950V_{DC}, AC range 0-400V_{AC}
- > Non-overlapping topology: $V_{DC} > \hat{V}_{ph-ph}$
- > 120A_{RMS} max phase current
- > Output power of 80kW at 400V_{AC}
- > Buck-boost configuration possible for wide DC voltage range
- > Seamless transition between grid-tied (CSI) and grid-forming (VSI) inverter and PFC rectifier
- > On-the-fly adjustment of harmonics corrections
- > PLL synchronization on external grid
- > Flexible controls allow inverter operation as independent single-phase, balanced three-phase, or unbalanced with neutral connection
- > AC compliant load sharing algorithm for easy parallelization
- > Cutting-edge power density
- > Weight: <25kg



TECHNICAL SPECIFICATION

Power	
AC ports	3 phases + neutral, 400V _{AC} / 950V _{DC} max
DC port	0V _{DC} to 950V _{DC}
AC Frequency range	0-1000Hz
Power factor	> 0.95 @ 50Hz
Harmonic distortion	<1% @ 50Hz
Phase unbalance	0-100% with neutral connection
Control modes	Grid forming inverter
	Grid tied inverter
	PFC rectifier
	Active harmonics correction
Current capability	120A _{RMS} per phase
Current accuracy	<3% of full scale
Efficiency	>96% at full load
Control	
Auxiliary supply	9V _{DC} – 75V _{DC}
	<100µA disable mode current consumption
Enable function	ON/OFF signal. Tie to ground for start-up. Internal pull up
Parallelization	Active current sharing
Switching synchronization	Internal, between paralleled converters
	External, with a synchronization signal
Safety discharge	CAN-settable phase shift
	<5 sec to reach 60V
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

BrightLoop Converters

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www.brightloop.fr

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TECHNICAL SPECIFICATION

Dielectric withstand

HV - case	Basic insulation, tested at 2500V _{DC}
HVAC - HVDC	Basic insulation, tested at 2500V _{DC}
HV - LV	Reinforced insulation, tested at 5000V _{DC}
LV - case	Functional insulation, tested at 500V _{DC}

CAN Interface

Bus speed	125Kbps to 1Mbps (set by CAN)
Controls	Current limit
	Voltage setpoint
	Frequency setpoint
	Mode of operation
	Power ON/OFF
Monitoring	Discharge request
	Status
	Voltages, currents, frequency
	Internal auxiliary power supplies voltage
	Internal temperatures

Identification	Software & Hardware revision
	CAN Bootloader

Liquid cooling

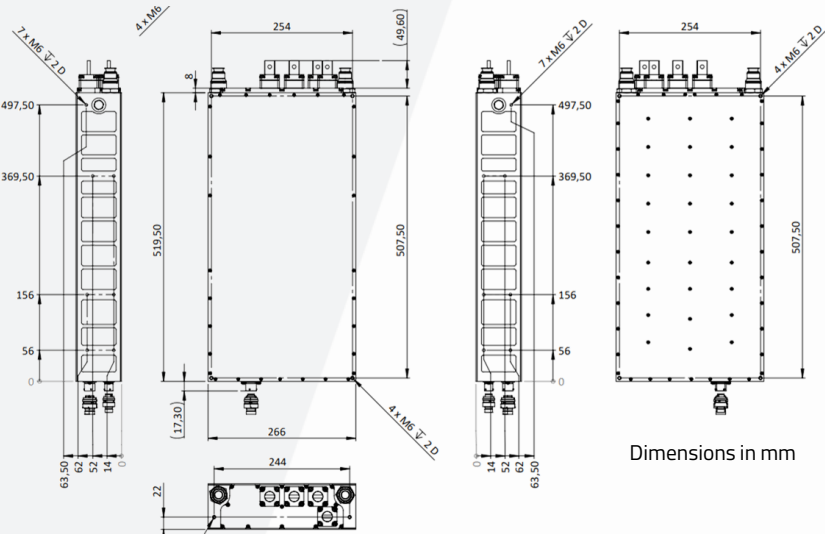
Pressure loss	<300mBar
Maximum operating pressure*	3 barg
Maximum testing pressure	6 barg
Hydraulic connector	NORMAQUICK PS3 VDA (Mounted on NORMAQUICK PS3 NW 16-xx)

Mechanical

Dimensions	< 520 x 266 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
Signal connector	22 pins for control
	13 pins for paralleling and switching synchronization 8STA family (SOURIAU)

*: for higher pressure application, please contact us

OUTLINE DRAWING



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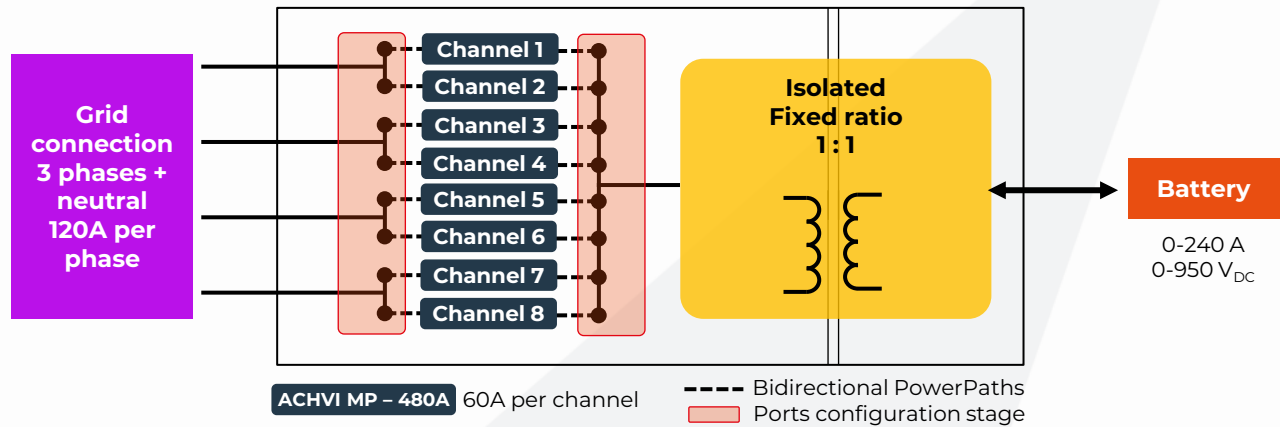
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Ordering code logic

Port examples
Individually CAN Settable

Port examples
Individually CAN Settable



Part number example :

AC	HV	I	M	P	S	Ø	S	LC
1	2	3	4	5	6	7	8	9
1 – Product family				2 – Voltage				
AC	HV-HV isolated ACDC conv. inv.			HV	400V _{AC} / 950V _{DC} max			
3 – Galvanic isolation								
I	Isolated							
4 – Package size				5 – Product line				
M	Medium			P	Performance			
6 – Number of ports on side A				7 – Number of ports on side B				
S	Single			Ø	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)			
8 – Number of ports on side C				9 – Cooling option				
S	Single			LC	Liquid cooling			

V22.06

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