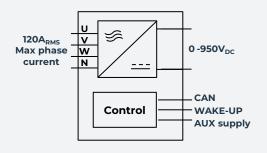
# **ACHV MP**

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



## **KEY FEATURES**

- > Built-in capacitors & inductors
- > Non-isolated topology, to be used with LF transformers or BrightLoop's DCHVI MP for grid connection
- > DC range 0-950 $V_{DC}$ , AC range 0-400 $V_{AC}$
- > Non-overlapping topology:  $V_{DC} > \widehat{V}_{ph-ph}$
- > 120A<sub>RMS</sub> max apparent current
- > Output power of 80kW at 400V<sub>AC</sub>
- > Buck-boost configuration possible for wide DC voltage range
- > Seamless transition between grid-following and grid-forming inverter and PFC rectifier
- Active harmonic filter capable
- > PLL synchronization on external grid
- > Flexible controls allow inverter operation as independent single-phase, balanced threephase, or unbalanced with neutral connection
- > AC compliant load sharing algorithm for easy parallelization
- > Cutting-edge power density
- > Weight: < 25kg</p>



## TECHNICAL SPECIFICATION

Power			
AC ports	3 phases + neutral, 400V <sub>AC</sub> / 950V <sub>DC</sub> max		
DC port	OV <sub>DC</sub> to 950V <sub>DC</sub>		
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 <sub>RMS</sub> per phase		
Current accuracy	<3% of full scale		
Efficiency	>96% at full load		
Control			
Auxiliary supply	9V <sub>DC</sub> – 75V <sub>DC</sub>		
	<100µA disable mode current		
	consumption		
Enable function	ON/OFF signal. Tie to ground for start-up		
	Internal pull up		
Parallelization	Active current sharing		
	Internal, between paralleled converters		
Switching synchronization	External, with a synchronization signal		
	CAN-settable phase shift		
Safety discharge	<5 sec to reach 60V		
Environment			
Environmental protection	IP67		
Altitude	Up to 4000m		
Max cooling temperature	65°C outlet		
Operating temperature	From -40°C to 70°C ambient		
range			
Storage temperature range	From -40°C to 100°C		

#### **BrightLoop Converters**

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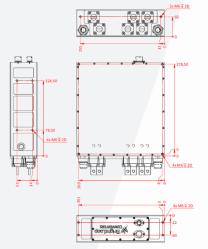




Dielectric withstand				
HV - case	Basic insulation, tested at 2500V <sub>DC</sub>			
HVAC - HVDC	Basic insulation, tested at 2500V <sub>DC</sub>			
HV - LV	Reinforced insulation, tested at 5000V <sub>DC</sub>			
LV - case	Functionnal insulation, tested at 500V <sub>DC</sub>			
CAN Interface				
Bus speed	125Kbps to 1Mbps (set by CAN)			
	Current limit			
	Voltage setpoint			
Cantrala	Frequency setpoint			
Controls	Mode of operation			
	Power ON/OFF			
	Discharge request			
	Status			
	Voltages, currents, frequency			
Monitoring	Internal auxiliary power supplies voltage			
	Internal temperatures			
	Internal protections			
Identification	Software & Hardware revision			
Software Update	CAN Bootloader			
Liquid cooling				
Pressure loss	<200mBar			
Maximum operating pressure*	3 barg			
Maximum testing pressure	6 barg			
Hydraulic connector	NORMAQUICK PS3 VDA (Mounted on			
	NORMAQUICK PS3 NW 16-xx)			
Mechanical				
Dimensions	< 280 x 266 x 80mm + connectors			
Weight	< 11kg			
Interface	M8 fixations on each sides			
Havein a	Aluminum with conductive anti-corrosion			
Housing	treatment			
Power connectors options	Amphenol PL500 & PL300 with HVIL			
	Amphenol PL082 & PL084 with HVIL			
	Bus bar connection			
	22 pins for control			
6: 1	13 pins for paralleling and switching			
Signal connector	synchronization			
	8STA family (SOURIAU)			
* for higher pressure application, please				

<sup>\*:</sup> for higher pressure application, please contact us

## **OUTLINE DRAWING**



Dimensions in mm

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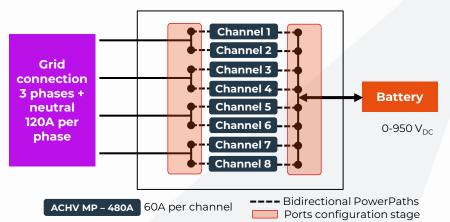
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## **Ordering code logic**

Port examples Individually CAN Settable

Port examples Individually CAN Settable



## Part number example:

4	C HV Ø M	F	s Ø LC
	2 3 4		6 7 8
1 – Pr	oduct family	2 - V	oltage
AC	HV-HV isolated ACDC conv. inv.	HV	400V <sub>AC</sub> / 950V <sub>DC</sub> max
3 – G	alvanic isolation		
Ø	Isolated	_	
4 – P	ackage size	5 – F	Product line
М	Medium	Р	Performance
6 – N	umber of ports on side A	7 - N	lumber of ports on side B
S	Single	S	Single
D	Dual	D	Dual
Т	Triple	Т	Triple
Q	Quadruple	Q	Quadruple
Р	Penta	Р	Penta
Sx	Six	Sx	Six
Н	Hepta (seven)	Н	Hepta (seven)
0	Octo (eight)	0	Octo (eight)
8 - C	ooling		
LC	Liquid cooling		

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V22.06