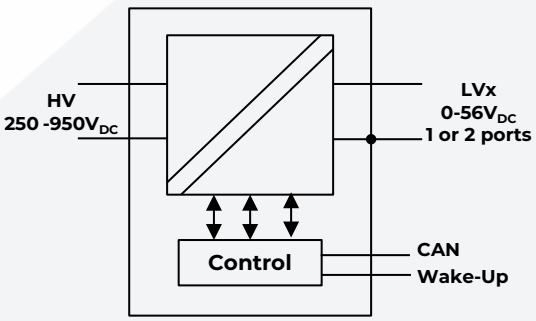
PERFORMANCE PRODUCT LINE

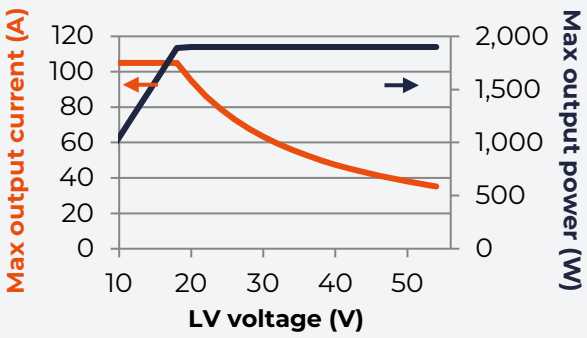
DCDC SP

Bidirectional isolated DCDC converter
Motorsport & extreme vehicle applications
800V battery compliant
Battery charger / LV network supply
Total continuous power 1.9kW/105A

KEY FEATURES

- **Isolated HV voltage: 250 to 950V_{DC}**
- **LV side voltage range: 0 to 56V_{DC} (CAN settable)**
- **Single or Dual LV ports configuration**
- **CAN Bootloader & Remote Communication**
- **Liquid-Cooling (LC) or Forced-Air (FA)**
- **Harsh environment**
- **High efficiency: >94%**
- **Weight: 590g (LC) / 625g (FA)**





TECHNICAL SPECIFICATION

HV side	
Voltage	250V_{DC} to 950V_{DC}
ON/OFF	Internal pull-up. Tie to ground for start-up
HV X capacitance	100nF (no built-in precharge)
HV parallel resistance	4MΩ
IDLE mode consumption	280mW
LV side	
Voltage	0V_{DC} to 56V_{DC} (set by CAN)
Overvoltage protection	58V_{DC}
Absolute maximum rating	60V_{DC}
Static precision	1%
Continuous current	0 to 105A (set by CAN) 35A per channel
Current limit accuracy	<3% at full scale
Short-circuit protection	Current regulation at setpoint value down to 0V
Continuous power	1900W max 650W per channel
Line + load regulation	15% for 0-100% step load without battery
Efficiency	
Global efficiency	> 94%
Environment	
Environmental protection	IP67
Altitude	Up to 3000m
Cooling	Liquid temperature 65°C max
Operating temperature range	From -40°C to 80°C ambient
Storage temperature range	From -40°C to 100°C
Weight	590g (LC) | 625g (FA)

BrightLoop Converters

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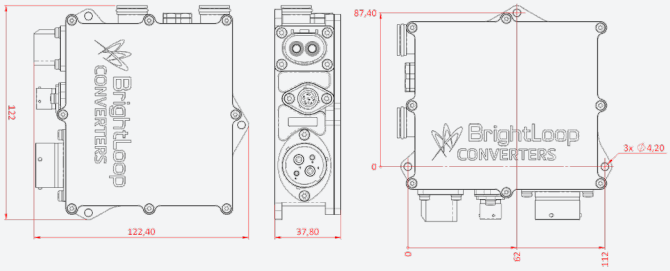
DCDC SP

TECHNICAL SPECIFICATION

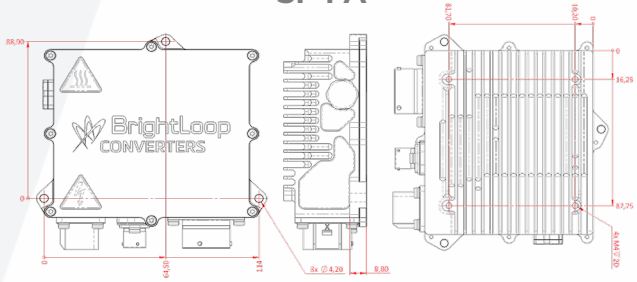
CAN Interface	
Bus speed	125Kbps to 1Mbps (set by CAN)
Control modes	HV -> LV
	LV -> HV
	LV <-> LV
LV management	LV current limit 0A to 105A, 1A resolution
	Voltage LV setpoint 10V to 56V, 0.1V resolution
	Power ON/OFF for each LV port
Power limitation / Remaining	Minimum between 105A and 1.9kW depending on selected LV voltage
LV side power configuration	Single: 105A Dual: 70A + 35A
Monitoring	DC/DC status and errors
	Voltages, currents, temperatures measurements
Identification	Software & Hardware revision
	Bootloader for CAN software update
Safety	
HV/LV insulation	3000V_{DC} Reinforced insulation (tested 60 sec.)
	EN 62368-1 compliant
Liquid-Cooling (LC)	
Pressure loss	70mbar @10L/min
Maximum operating pressure	1.7barg
Maximum testing pressure	3.3barg
Liquid cooling volume	30cm³
Cooling connectors	Wiggins (W994-08D) size ½ ”
Mechanical	
Dimensions	122.4x122x37.8 mm (LC) 122x121.9x43.8mm (FA)
Housing	Aluminum with conductive anti-corrosion treatment
HV connector	IP67 with security loop (Amphenol PL082X-61-2.5)
Output connector	IP67 (Amphenol 8STA 016 22 PN 251)
Signals connector	IP67 (Souriau 8TA 008 35 SN)
Fan interface (FA)	Fixation holes for ø 80mm fan
	Supplied with electrical mating connectors

OUTLINE DRAWING

SP LC



SP FA



Dimensions in mm

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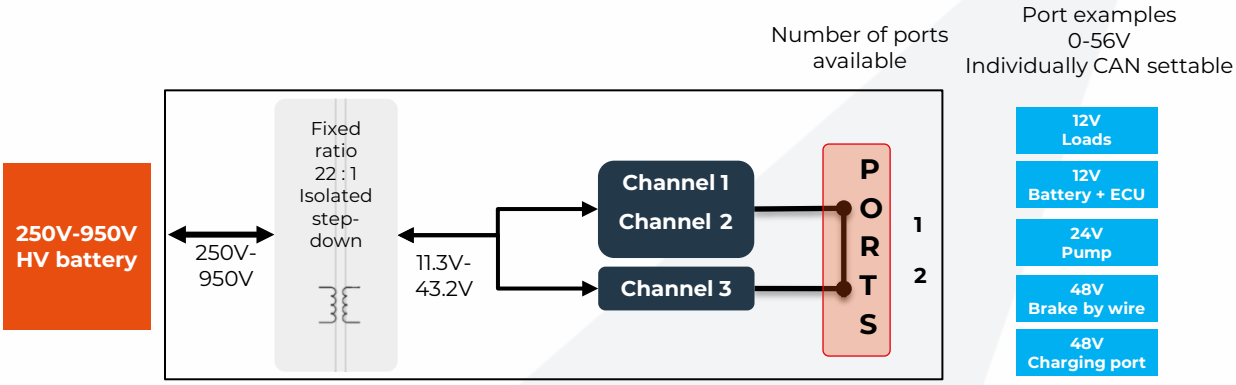
Ordering code logic



DCDC SP – 1.9kW 35A/650W per channel

Ports configuration stage

DCDC	S	P	D	2-1	LC
1	2	3	4	5	6

1 – Product family		**2 – Package size**	
DCDC	Isolated DCDC converter	S	Small
3 – Product line		**4 – Number of ports on LV side**	
P	Performance	S	Single
		D	Dual
5 – Number of channels per PowerPath		**6 – Cooling option**	
Separated by –		LC	Liquid-Cooling
		FA	Forced-Air

V22.03

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