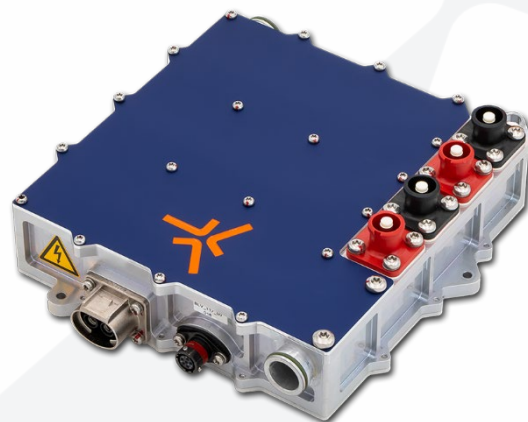


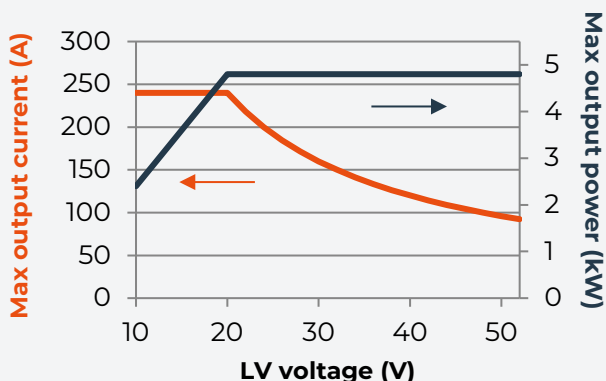
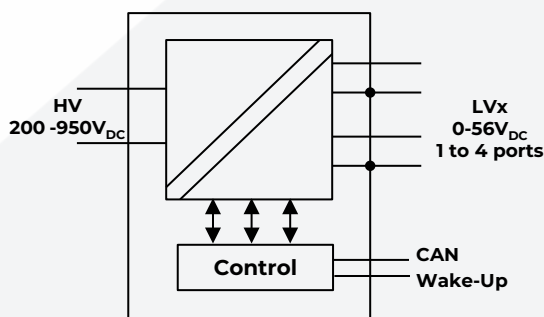
# DCDC MP

Bidirectional isolated DCDC converter  
Motorsport & extreme vehicle applications  
800V battery compliant  
Battery charger / LV network supply  
Total continuous power 4.8kW/240A



## KEY FEATURES

- > **Isolated HV voltage: 200 to 950V<sub>DC</sub>**
- > **LV side voltage range: 0 to 56V<sub>DC</sub> (CAN settable)**
- > **Single or Multiple LV ports configuration**
- > **CAN Bootloader & Remote Communication**
- > **Liquid-Cooling (LC) or Forced-Air (FA)**
- > **Harsh environment**
- > **High efficiency: >94%**
- > **Weight: 1770g (LC) / 2065g (FA)**



## TECHNICAL SPECIFICATION

### HV side

|                        |                                              |
|------------------------|----------------------------------------------|
| Voltage                | 200V <sub>DC</sub> to 950V <sub>DC</sub>     |
| ON/OFF                 | Internal pull-up. Tie to ground for start-up |
| HV X capacitance       | ~100nF (no built-in precharge)               |
| HV parallel resistance | 1.2MΩ                                        |
| IDLE mode consumption  | 2.2W                                         |

### LV side

|                          |                                                    |
|--------------------------|----------------------------------------------------|
| Voltage                  | 0V <sub>DC</sub> to 56V <sub>DC</sub> (set by CAN) |
| Overvoltage protection   | 58V <sub>DC</sub>                                  |
| Absolute maximum rating  | 60V <sub>DC</sub>                                  |
| Static precision         | 1%                                                 |
| Current limit            | 0 to 240A (set by CAN)<br>60A per channel          |
| Current limit accuracy   | <3% at full scale                                  |
| Short-circuit protection | Current regulation at setpoint value down to 0V    |
| Continuous power         | 4800W<br>1200W per channel                         |
| Line + load regulation   | 15% for 0-100% step load without battery           |

### Efficiency

|                   |       |
|-------------------|-------|
| Global efficiency | > 94% |
|-------------------|-------|

### Environment

|                             |                             |
|-----------------------------|-----------------------------|
| Environmental protection    | IP67                        |
| Altitude                    | Up to 4000m                 |
| 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                      | 1770g (LC)   2065g (FA)     |

## BrightLoop Converters

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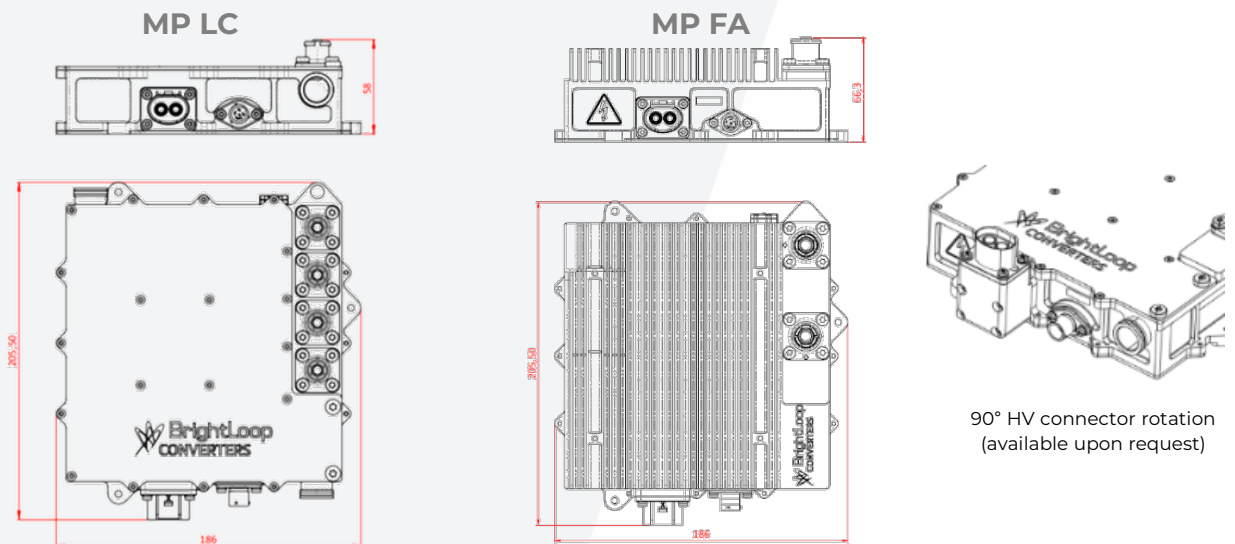
[www.brightloop.fr](http://www.brightloop.fr)

# DCDC MP

## TECHNICAL SPECIFICATION

| CAN Interface                              |                                                                                                    |
|--------------------------------------------|----------------------------------------------------------------------------------------------------|
| Bus speed                                  | 125Kbps to 1Mbps (set by CAN)                                                                      |
| Control modes                              | HV -> LV                                                                                           |
|                                            | LV -> HV                                                                                           |
|                                            | LV <-> LV                                                                                          |
| LV management                              | HV -> LV @10sec (Discharge mode)                                                                   |
|                                            | LV current limit 0A to 240A, 1A resolution                                                         |
|                                            | Voltage LV setpoint 10V to 56V, 0.1V resolution                                                    |
| Power limitation / Remaining               | Power ON/OFF for each LV port                                                                      |
|                                            | Minimum between 240A and 4.8kW depending on selected LV voltage                                    |
| LV side power configuration                | LV ports defined by 4 internal channels of 60A/1200W each<br>Configurable from 1 to 4 LV ports     |
| Monitoring                                 | DC/DC status and errors                                                                            |
|                                            | Voltages, currents, temperatures measurements                                                      |
| Identification                             | Software & Hardware revision                                                                       |
|                                            | Bootloader for CAN software update                                                                 |
| Safety                                     |                                                                                                    |
| HV/LV insulation                           | 3000V <sub>DC</sub> Reinforced insulation (tested 60 sec.)<br>EN 62368-1 compliant                 |
| Liquid-Cooling (LC)                        |                                                                                                    |
| Power loss                                 | 300W max at full power                                                                             |
| Pressure loss                              | 55 mbar @10L/min                                                                                   |
|                                            | 120 mbar @15L/min                                                                                  |
|                                            | 200 mbar @20L/min                                                                                  |
| Maximum operating pressure                 | 1.3barg                                                                                            |
| Maximum testing pressure                   | 2.6barg                                                                                            |
| Cooling liquid volume                      | 140cm <sup>3</sup>                                                                                 |
| Cooling connector (LC)                     | Wiggins (W994-10D) size 5/8"                                                                       |
| Mechanical                                 |                                                                                                    |
| Dimensions                                 | 205,5x186x58mm (LC) / 205,5x186x66,3mm (FA)                                                        |
| Housing                                    | Aluminum with conductive anti-corrosion treatment                                                  |
| HV connector                               | IP67 with security loop (Amphenol PL082X-61-2.5)<br>Option available to rotate HV connector at 90° |
| LV connectors                              | IP67 (Amphenol SurLok Plus 5.7 or 8mm)                                                             |
| Signals connector                          | IP67 (Souriau 8TA 008 35 SN)                                                                       |
| Supplied with electrical mating connectors |                                                                                                    |

## OUTLINE DRAWING



Dimensions in mm  
(May vary depending on number of outputs)

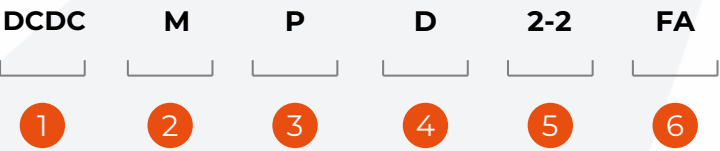
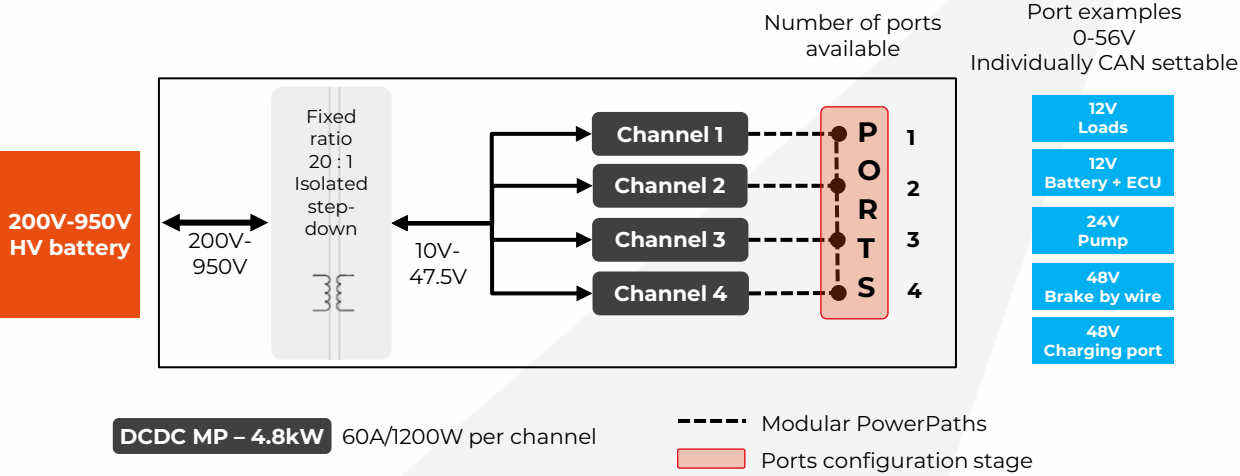
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 **BrightLoop**  
A member of the ABB Group

# Ordering code logic



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

\*Refer to scheme for number of channels available to build PowerPath

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