

## DDL5048-48

### 48V bidirectional DC/DC Converter

#### Description

The DDL5048-48 is a non-isolated high-power DC/DC Converter handling energy transfer between two ports (Port A and Port B) in either direction. During power transfer from Port A to Port B, the converter operates in buck mode and provides a reduced voltage level at Port B. In the reverse direction, the converter works in boost mode and increases the voltage level on port A.

The dedicated input Port C in parallel to Port A is equipped with a circuitry limiting the inrush current. Therefore a connected power supply is prevented from high current load during startup.

An additional +24V constant voltage output features a power supply for a lot of applications. With the CAN interface, a variety of parameters can be set individually. Several safety functions e.g., overvoltage, overcurrent and overtemperature protection are integrated.

#### Specification

The following parameters are valid for operation at 25°C and under nominal conditions, unless specifically stated otherwise. Nominal condition includes in particular  $U_C > U_B$ ,  $U_A > U_B$  and  $U_A > 30V$ .



- Energy recovery (Recuperation)
- Programmable input/output
- High efficiency
- Remote control (CAN)
- Overload protection
- Low standby power consumption
- Port A input current up to 100A
- Port B input current up to 85A
- Inrush current limitation (Port C)
- Auxiliary 24V output

#### Port A

Input Current Limit	100 A
Output Voltage Setpoint	38 ... 55 VDC
Output Current Limit	33 A
Output Power Limit	300 ... 3000 W
Output Efficiency	typ. 95 %

#### Port B

Input Current Setpoint	15 ... 85 A
Output Voltage Setpoint	6 ... 55 VDC
Output Current Setpoint	15 ... 100 A
Output Power Limit	500 ... 5000 W
Output Efficiency	typ. 97 %
Dropout Voltage	< 2 V

#### Port C

Input Voltage	40 ... 55 VDC
Current Limit	nom. 100 A

#### +24V Output

Output Voltage	24 V
Voltage Tolerance	+/-0.72 V
Output Current	up to 8 A
Output Power	nom. 150 W
Output Efficiency	>94 %

#### Monitoring

Sense Resolution	12 Bit
Sense Bandwidth	50 Hz

#### Communication

CAN2.0A und B	Compatible
Bandwidth	max. 1 Mbit/s

#### Environment

Ambient Temp.	0 ... 80 °C
Baseplate Temp.	0 ... 55 °C
Humidity	20 ... 95 %

#### Certifications

Safety	EN 62368
EMC Conducted	EN 61000-6-3
EMC Radiated	EN 55032 Class A
ESD	EN 61000-4-2