

## DDL4848-48 (short version)

### 48V bidirectional DC/DC Converter

#### Description

The DDL4848-48 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  $U_A > 20V$ .



- 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	<b>100 A</b>
Output Voltage Setpoint	<b>20 ... 55 VDC</b>
Output Current Limit	<b>33 A</b>
Output Power Limit	<b>300 ... 3000 W</b>
Output Efficiency	<b>typ. 95 %</b>

#### Port B

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

#### Port C

Input Voltage	<b>20 ... 55 VDC</b>
Current Limit	<b>nom. 100 A</b>

#### +24V Output

Output Voltage	<b>24 V</b>
Voltage Tolerance	<b>+/-0.72 V</b>
Output Current	<b>up to 8 A</b>
Output Power	<b>nom. 150 W</b>
Output Efficiency	<b>&gt;95 %</b>

#### Monitoring

Sense Resolution	<b>12 Bit</b>
Sense Bandwidth	<b>50 Hz</b>

#### Communication

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

#### Environment

Ambient Temp.	<b>0 ... 80 °C</b>
Baseplate Temp.	<b>0 ... 55 °C</b>
Humidity	<b>20 ... 95 %</b>

#### Certifications

Safety	<b>EN62368-1</b>
Emission	<b>EN61000-6-4</b>
Immunity*	<b>EN61000-6-2</b>
*Basic standards:	<b>EN61000-4-2; -4-3; -4-4; -4-5; -4-6; -4-8; -4-11</b>