



Querom

Power Electronics



DDL4848-48

48V bidirectional DC/DC converter
(short version data sheet)

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 $U_A > 20V$.

Port A

| | |
|-------------------------|-----------------------|
| Input Current Limit | 100 A |
| Output Voltage Setpoint | 20 ... 55 VDC* |
| Output Current Limit | 85 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 | 20 ... 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 | >95 % |

Monitoring

| | |
|------------------|---------------|
| Sense Resolution | 12 Bit |
| Sense Bandwidth | 50 Hz |

- 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

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 | EN62368-1 |
| Emission | EN61000-6-4 |

