Industrial DC-DC Converter IGBT Full Bridge Topology Industrial

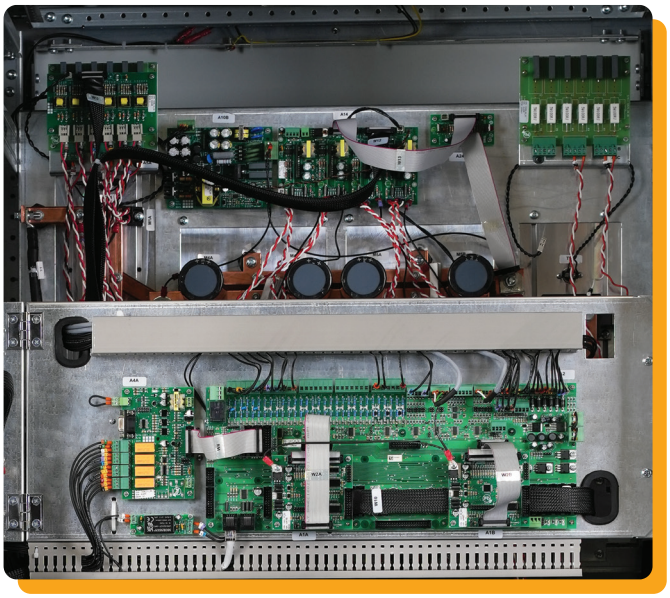
Industrial DC-DC converters are vital in modern electronic systems, efficiently converting one DC voltage level to another.

They are used in telecommunications, automotive, industrial equipment, and renewable energy. Their main role is to deliver appropriate voltage and current, ensuring optimal performance and energy efficiency. Available in topologies like buck (step-down) and boost (step-up), these converters feature advanced control, thermal management, and protection systems for reliability in demanding environments. As technology evolves, DC-DC converters play an increasingly crucial role in maintaining seamless, efficient operations.

DC- DC Converter

DC Voltage Regulation with Dropper Diode System

For precise DC voltage regulation, a dropper diode system is often utilized in conjunction with DC-DC converters. This system helps in maintaining a stable output voltage by dropping excess voltage, ensuring that the connected devices receive a consistent and regulated power supply.



General specefications

- Fast control with DSP controller.
- IGBT technology.
- <1% Voltage Ripple (<4% on 1 phase).
- Alarm adjustable.
- Dry contacts.
- ModBus Protocol - RS232, RS485.
- Operation available while mains fail Current limiting (adjustable).
- Automatic start & fault recovery.

Applications

- Power generation plants.
- Transmission and Distribution substations.
- Continuous process industries.
- Oil & Gas and Petrochemical industries.
- Rail transport.
- Telecommunication Projects.

Features

- Full Bridge High-Frequency IGBT Module
- Customized input range based on specification.
- +/- 1% Output Voltage Stability.
- Buck (decrease) and Boost (increase) DC/DC Converter (Optional as only Buck or Only Boost).
- DC/DC Converter can be used in DC Charger as a voltage regulator instead of Dropper Diode.
- High reliability& efficiency.
- High Compact Design.
- Electronic short circuit protection.
- Price competitive solution.

Industrial DC – DC converter

Technical Data

Input	
DC voltage	110VDC (between 90VDC-160VDC)/ 220VDC (between 180VDC-300VDC)
Input Protection	• Overcurrent protection via MCB and • Overvoltage / Undervoltage protection
Topology	Full Bridge High Frequency IGBT Module
Control	Microprocessor Controlled System

Output	
DC voltage	110VDC \ 220VDC • For other voltage level ask for more information
Output Tolerance	1%
Dynamic Response	+/- 5% at 50msec
Output Protection	Short Circuit, Overvoltage, Overload protection

General data	
Operating temperature	0 to 40 °C(1)
Storage temperature	-20 to +70 °C
Relative humidity	< 95 % non condensing
Operating altitude	1000 m max without derating(1)
Cooling	Forced ventilation
Efficiency	Up to 94 % according to rating
External protection	IP 20 according to IEC 60529
Noise (at 1m in front of the unit)	60-72 dB according to rating
Cabinet color	RAL 7035(1)
Dimensions	Varying according to ratings and options
MTBF	100,000
Cable Entry	Bottom (Standard) / Top (OPTIONAL
Isolation Voltage	2000VAC input/chassis and output/chassis
Enclosure Material	Mild Steel, Zinc-phosphate coated; 100 µm electrostatic paint; 1.5 mm thickness

DISPLAY PANEL & MEASUREMENT	
Measurements	Input Voltage • Output Voltage • Output Current
Indicators	• DC Input High/Low • DC Output High/Low • Input MCB/FUSE OFF • Output MCB/FUSE OFF • Overload • IGBT SCR Fuse Failure • Overtemperature • Fan Failure • Converter Failure
Adjustable Parameters	Output Voltage and Current
Sound Alarm	Warning Messages 2 Short 'beep' per 2 seconds
free alarm contacts	• Input MCB OFF • Output MCB OFF • Over output voltage • Convertor failure • Over temperature

(1) Other option available on request

Standards

Standards	
EN 50091-1	Security
EN 50091-2	EMC

Hannibal Power and Technology