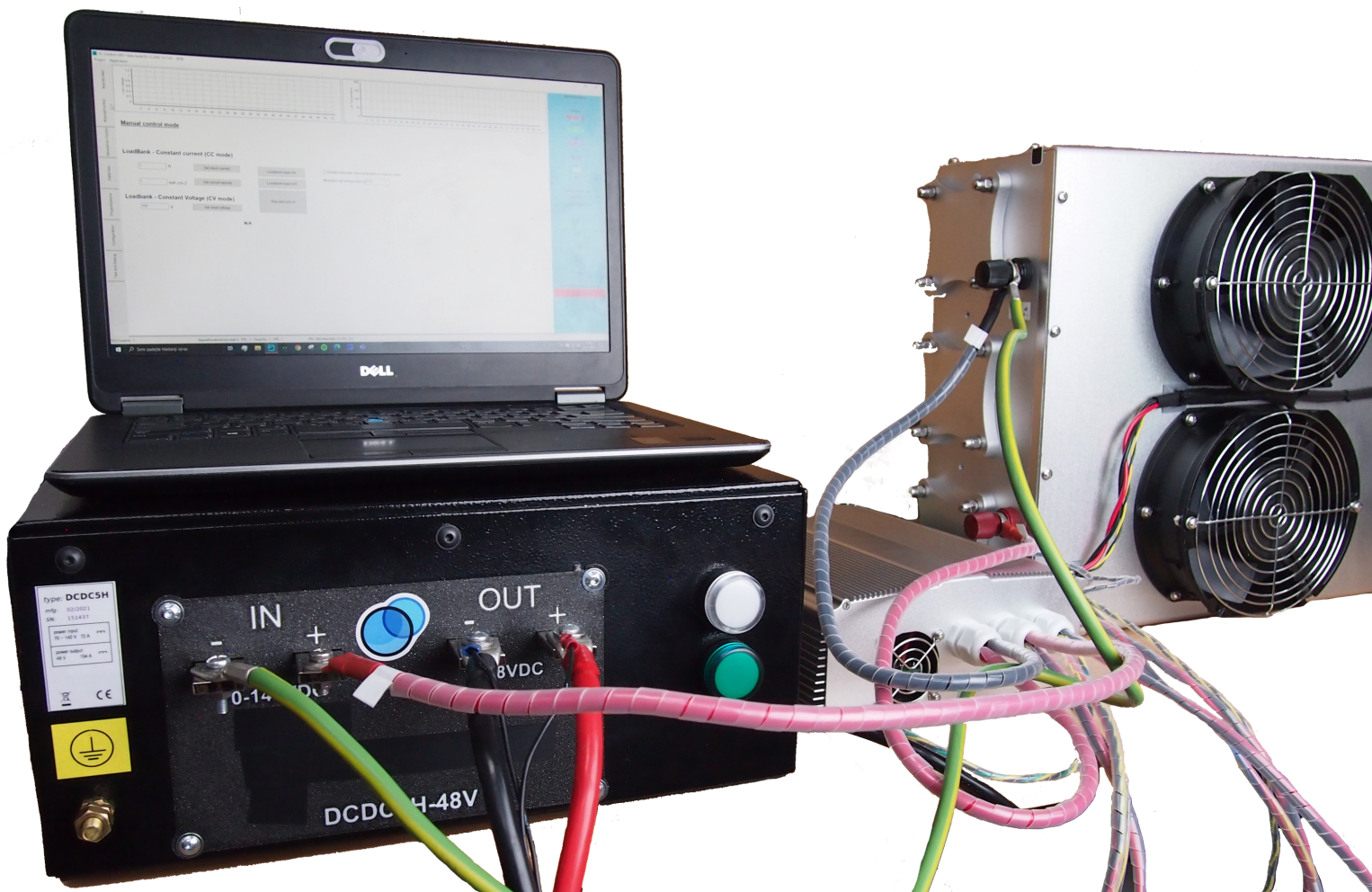


# DATASHEET

## CONVERTER 48VDC TO H-5000 (H-5000-DCDCC-48V)



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## GLOSSARY OF TERMS AND ABBREVIATIONS

Tab. 1: Table of Terms and abbreviations:

DC	Direct current
EMC	Electromagnetic Compatibility
H2FC	Hydrogen fuel cell
IPC	Association Connecting Electronics Industries
PE	Protective earth
RoHS	Restriction of the use of certain Hazardous Substances in electrical and electronic equipment

## 1. INTRODUCTION



Fig. 1: H-5000-DCDCC-48V



## 1.1 PRODUCT OVERVIEW

H-5000-DCDCC-48V is an output DC/DC converter designed mainly for hydrogen fuel cell stacks. It provides constant output voltage in full range H2FC stack operational voltage. Maximum output power is 5 kW.

## 1.2 STANDARDS

Tab. 2: Table of standards

Type.	Document No.	Name
EMC.	EN 61326-1: 2013	Electrical equipment for measurement, control, and laboratory use - EMC requirements
RoHS. six	EN 62321: 2009	Electrotechnical products - Determination of level of regulated substances (Cd, Hg, Pb, Cr+6, PBB, PBDE)

## 1.3 MODEL VARIANTS

Tab. 3: Table of product variants

Model	Description
H-5000-DCDCC-48V	H2FC stack 5 kW DCDC converter 48 V output

## 2. INSTALLATION AND MAINTENANCE

### 2.1 MECHANICAL MOUNTING

H-5000-DCDCC-48V shall be operated free standing in horizontal position.  
There shall be always enough free space around the device to ensure free ventilation airflow.

### 2.2 ELECTRIC CONNECTION



#### **Dangerous voltage hazard!**

Electric installation shall be always performed by a person with appropriate qualification.

Case of the H-5000-DCDCC-48V shall be always grounded during operation. Connect the ground or a PE conductor using the grounding screw.

For connecting the input and output, always use appropriate conductor dimensions according to the input and output current.



**Warning.** Always keep the correct polarity when connecting the input and output. Reverse polarity can damage the device.

### 2.3 MAINTENANCE INSTRUCTIONS

Before each operation check if the connection wires are not damaged and the connection screws are tightened. Avoid moisture penetration inside the device.

Remove dust from the surface of the device and from ventilation grilles regularly.

## 3. TECHNICAL DESCRIPTION

### 3.1 TECHNICAL PARAMETERS

Tab. 4: Technical parameters

INPUT	Voltage Range	70 ~ 144 V DC
	DC Current	69.6 A / 96 V DC typ.
	Inrush Current	600 A / 96 V DC
OUTPUT	DC Voltage	48 V
	Rated Current	104 A
	Current Range	0 ~ 104 A
	Rated Power	5000 W
	Ripple & Noise	150 mV p-p
	Setup, Rise Time	500 ms, 50 ms at full load
PROTECTION	Output Overload	126 ~ 150% rated output power
		Protection type: Constant current limiting, unit will shut down output voltage after about 5 s. Re-power on to recover.
	Output fuse	180 A
		fuse cannot be replaced by customer, sent to
	Output Over Voltage	manufacturer to repair
		62 ~ 68 V
the	Over	Protection type: Shut down output voltage, re-power on to recover
		Shut down output voltage, recovers
	automatically	
	Temperature	after temperature goes down
	Efficiency	92% typ.
	Isolation Resistance	Input - Output, Input - Frame Ground, Output -
		Frame Ground: 100 MΩ / 500 V DC / 25°C / 70%
RH		
IP Rating		IP20

## 3.2 INTERFACES



Fig. 3: H-5000-DCDCC-48V device

terminals


Tab. 5: DC Input terminal

IN +	DC input from H2FC stack
IN -	

Tab. 6: DC Output terminal



OUT +	DC Output
OUT -	

Tab. 7: DC Grounding terminal

	Protective ground
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## 3.3 INDICATORS AND CONTROLS

Tab. 8: Indicators on device

IN	white LED 	Input voltage present
OUT	green LED. 	Output voltage OK

### 3.4 MECHANICAL DIMENSIONS

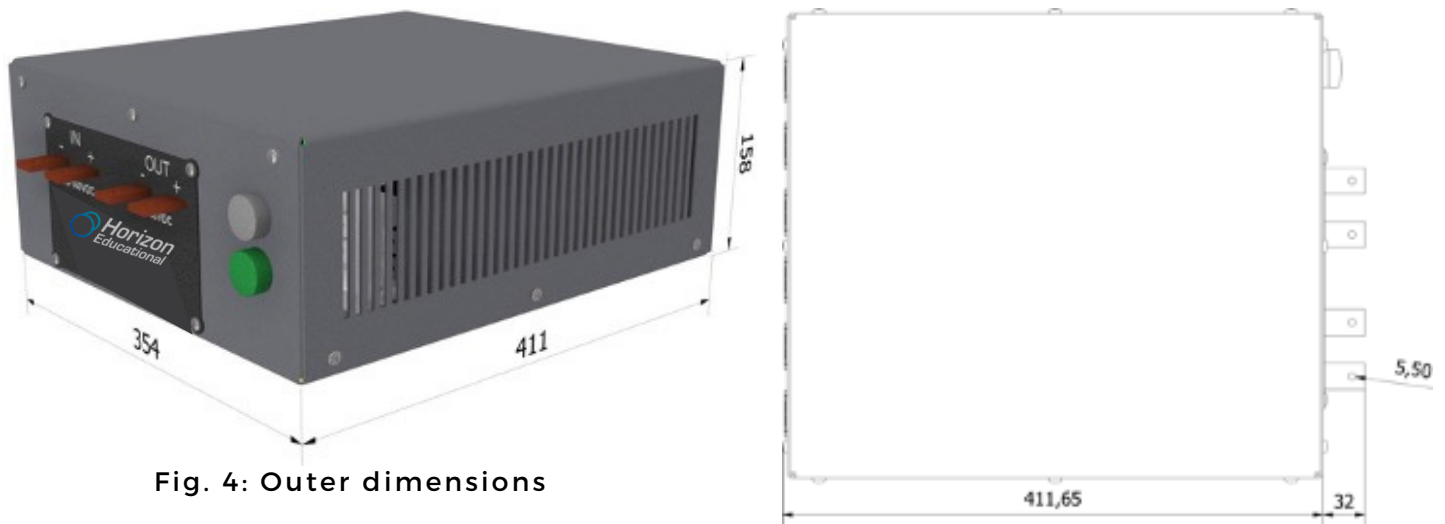


Fig. 4: Outer dimensions

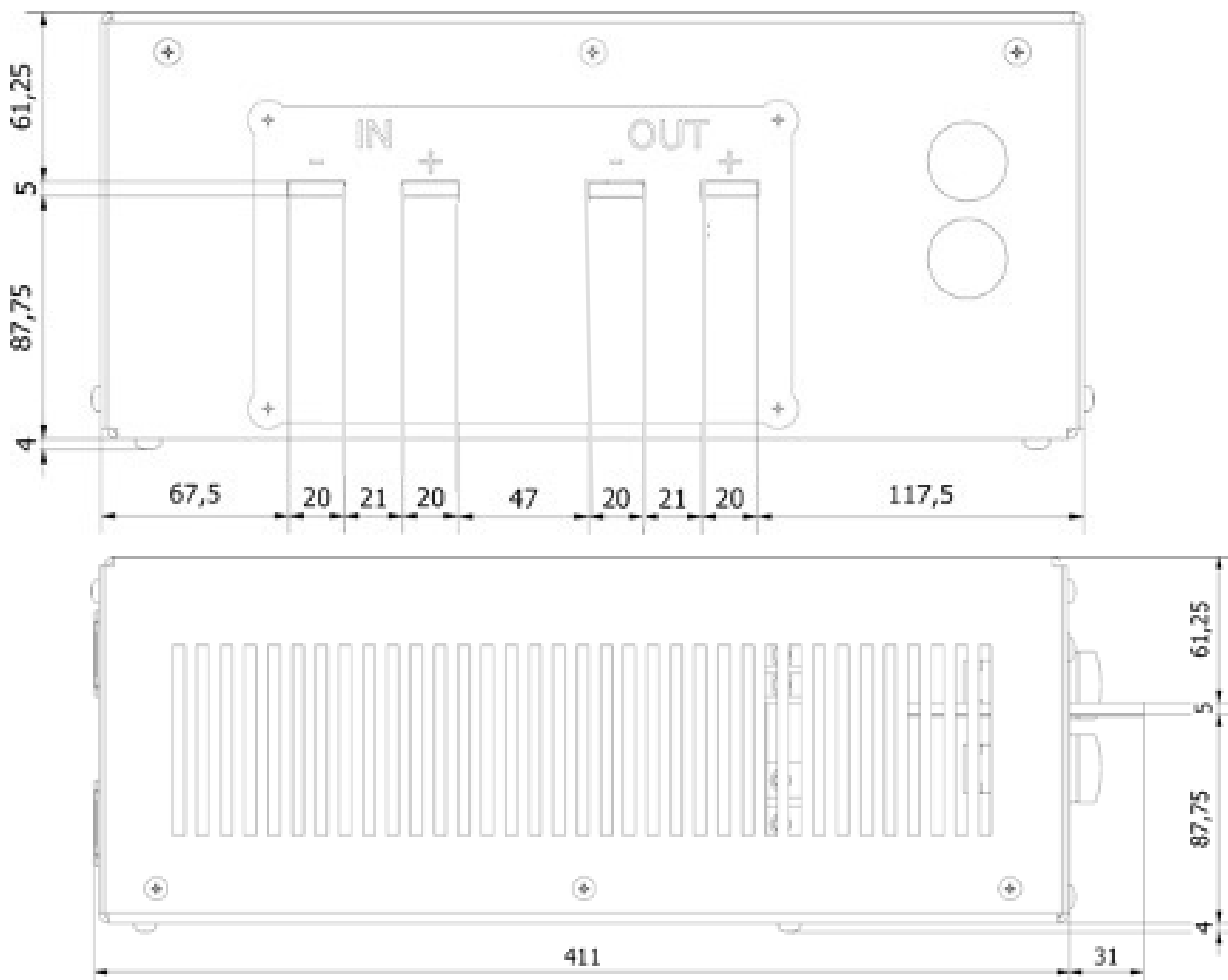


Fig. 5: Mechanical drawings



## 4.1 INSTRUCTIONS FOR SAFE DISPOSAL OF THE PRODUCT

Packaging and waste equipment must be disposed of in accordance with Directive 2002/96/EC and relevant national laws.

Tab. 9: Waste categories

Packiging waste	Non-hazardous
Electrical and electronic equipment	Hazardous waste



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