convert

CCU - DIRECT CURRENT CONVERTER UNIT

Tracel

CONVERT
CCU – DIRECT CURRENT CONVERTER UNIT

The UCC (Direct Current Converter Unit) belongs to TRACEL's CONVERT line and aims to convert the direct current voltage (DC Link) at the input to provide stabilized voltage at the output with the quality necessary for different types of consumers, from normal ones (batteries) even the most sensitive.

1. Aplications

- Product developed to be used in TMNS – TRACEL MICRO NETWORK SYSTEM to feed specific consumers;
- Supply of various consumers that require continuous and stabilized voltage, such as battery banks, substations, emergency lighting, etc...

2. Differentials

- National design, manufacturing and maintenance;
- Prompt technical assistance;
- Designed with high technology;
- Advanced control algorithms to optimize system power and efficiency;
- High power and current density.

3. Main features

- Equipment with high energy efficiency, robustness and high MTBF (Mean Time Between Failures);
- technology: Switched (PWM) at high frequency with IGBT transistors;
- Supply voltage: 550 to 700Vdc;
- Output voltage: 22 to 28Vdc;
- Output current: 150A in the UCC150 model and 400A in the UCC400 model;
- Static regulation: ≤ +/- 1%;
- Output ripple: ≤ 2% without battery;
- Batteries: lithium, alkaline, lead-acid stationary, sealed, vented or valve regulated,
- Galvanic isolation: through ferrite core isolating transformer (low losses with low noise coupling between primary and secondary);
- LC Filter F F Battery EMI/EMC Filter DC Input DC Output ;
- Possibility of redundant operation;
- Microcontrolled system;
- HMI Control: Human machine interface (optional);
- Communication and remote diagnostics with event log
- Adjustment of parameters, temperature, current voltage, via RS-232 through software;
- Serial remote interface (RS-232) and CAN;
- Dimensions: 150A/400A: Width= 206/445 mm, Height= 232/265 mm and Depth= 492/400 mm
- Equipment weight: 150A: 25Kg | 400A: 50kg

4. Features

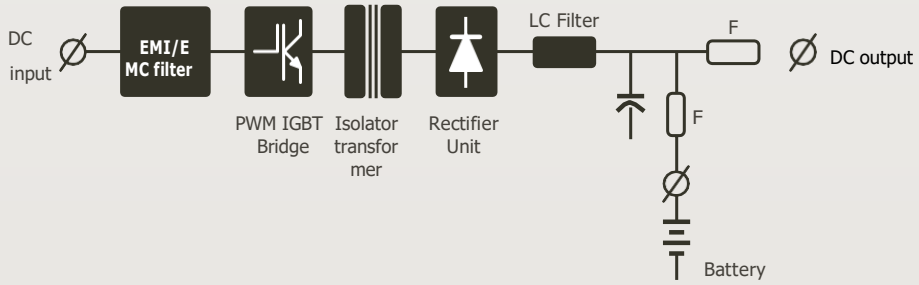
This equipment is an electronic DC voltage converter (DC Link) at the input with a stabilized DC voltage at the output to supply several consumers. For this purpose, a high frequency inverter is used in a transformer built with a ferrite core with low losses. magnetic devices, resulting in a large reduction in the volume of the equipment. This transformer performs the functions of adapting the input DC voltage to the required output levels and the galvanic isolation function between the input and output, ensuring high immunity to the noise levels present in the input installation, providing better safety for system operators. The transformer output voltage is rectified by fast diodes and filters designed for the desired ripple (AC ripple). The equipment has EMI (Electromagnetic Interference) filters at the input that ensure EMC (Electromagnetic Compatibility) with the system. The optimal output regulation of this equipment is achieved by adjusting the work cycle of the PWM Bridge, meaning that the voltage and current at the output can be controlled and maintained stable, through a feedback system, even if load changes and variations occur. on the input power. The control of this equipment is carried out with a state-of-the-art digital signal processor (DSP), allowing the acquisition of electrical signals and the control algorithm to be executed reliably and at high speed.

5. Protections

- Overload;
- Short circuit;
- Overvoltage at the output;
- Overtemperature;
- Lack of communication;
-

6. Refrigeration – Forced air

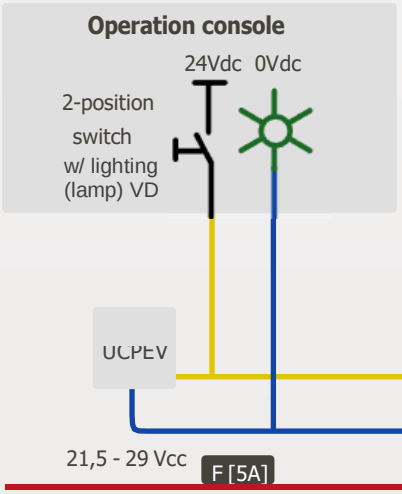
7. Equipment Single Line Diagram



8. Installation and Connection

8.1 Power and Control Connection

8.1.1 UCC150A



12 poles connector		Description	Specification
1	-UD	DC Power Input	Negative Pole: 0 Vdc
2	No Function		
3	+UD	DC Power Input	Positive Pole: 700 VDC
	No Function		
5	-	DC Power Output	0 Vdc
6			
7	+	DC Power Output	22-28 Vdc
8			
9	IN	Digital Input	Enables Inverter: (High Level 24Vdc) / Disables (Low Level 0Vdc)
10	OUT	Digital Output	RUN/Stop/Failure
11	+	Control Power	21,5-29 Vdc
12	-	Control Power	0 Vdc

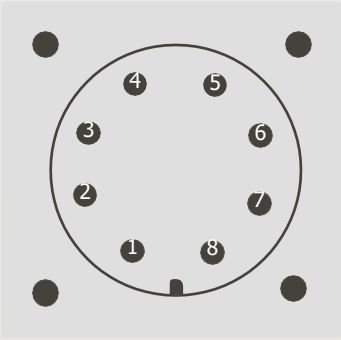
OUT*:

Operation console lighting

Off: equipamento desligado (Stop);
ON: equipment turned on (RUN);
Flashing: failed equipment.

8.1.2 UCC400A

8.1.3 UCC400A



Pins	Specification
1	CONTROL POWER +21.5 to 29VDC
2	CONTROL POWER 0 VDC
3	DIGITAL INPUT
4	DIGITAL OUTPUT
5	
6	CAN LOW
7	GND
8	CAN HIGH

8.2 EMI – Radiated electromagnetic interference

When the EMI generated by the converter is a problem for other equipment, use shielded cable or cable protected by metallic conduit/conduit to connect the output cable between the converter and the load. Connect the shield at one end to the system grounding point.

Rua Capitão Guynemer Quadra 18 lote 1B
Polo Industrial CODIN · Xerém · Duque de Caxias · RJ

+55 21 2679-1586
www.tracel.com.br