Three phase voltage source converter

PCO-10T800

Applications and usage

- *AC-DC active front-end (PV inverter, active filtering, V2G applications, microgrids…)*
- *DC-DC converters: half bridge, H-brige, interleaved converter*
- *AC motor drive*

Main features

- Three phase voltage source converter
- 10 kVA, 400 V_{rms}, 15 A_{rms}
- 800 V_{DC} maximum voltage
- 20 kHz switching frequency
- Isolated drivers (UVLO, desaturation protection)
- Isolated current and voltage measurement
- Isolated digital I/O for external control functions
- Power module with solderless spring contact technology for fast and easy repair

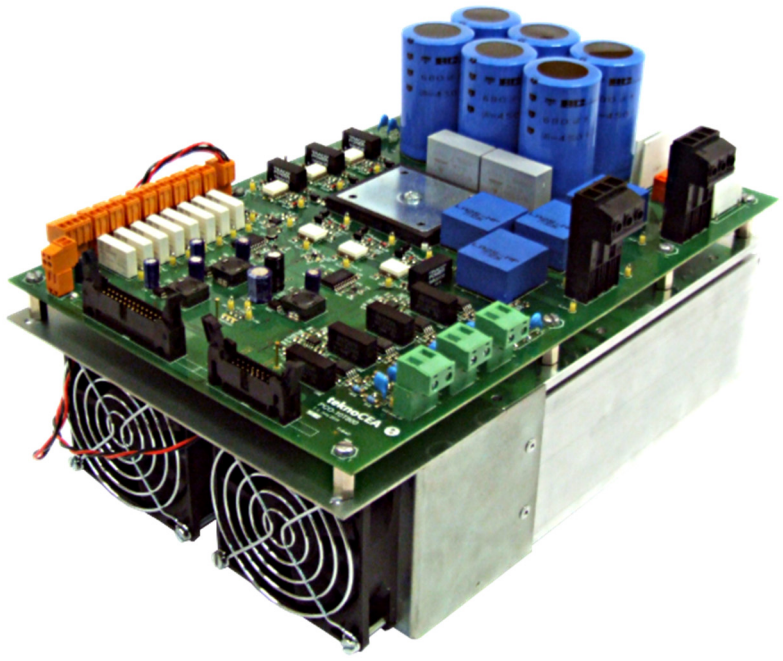
OVERVIEW

The teknoCEA PCO-10T800 is a versatile three phase power electronics platform allowing designers to implement the most common power converter topologies in a digital control environment. Implementable configurations: AC-DC reversible active front-end or DC-DC converter.

It is the perfect device to be used in research and development platforms since it includes all the necessary hardware to implement a 10 kVA, 400 V_{rms}, 15 A_{rms} inverter.

The converters are ready-to-use devices intended to speed-up your projects by their unique extra features such as isolated voltage sensors and relay outputs, resulting in the best choice in power converter applications research. simplifying the design and construction of research and development systems.

The control interface can be connected to any control platform.



PCO-10T800 power converter general view

FUNCTIONAL DESCRIPTION

FEATURES

This three phase converter has been designed for general purpose applications. Includes isolated drivers, isolated voltage and current measurements and digital I/O for application control purposes.

It is based on the SkiiP 23AC12T4v1 IGBT4 Trench module from Semikron. The power module has solder-free spring contact technology for fast and easy repair. Module temperature is available as a measurement.

Drivers are isolated and include UVLO and desaturation protection functionalities for proper protection.

The DC bus capacitors include standardly connected discharge resistors for safety. The DC bus is split in two, and the mid-point is accessible for higher flexibility.

DC bus voltage and current is measured on the board. Three phase currents are also measured. All the current measurements are range configurable for better accuracy (5 A, 6 A, 8 A, 12 A and 25 A). The converter also includes three isolated and independent voltage measurements for UPS, grid connected or DC/DC applications, where output voltage or grid voltage should be measured.

Eight free contact relays are available on the converter for further functionalities such as AC or DC precharge control circuit, main circuit breaker control or signaling.

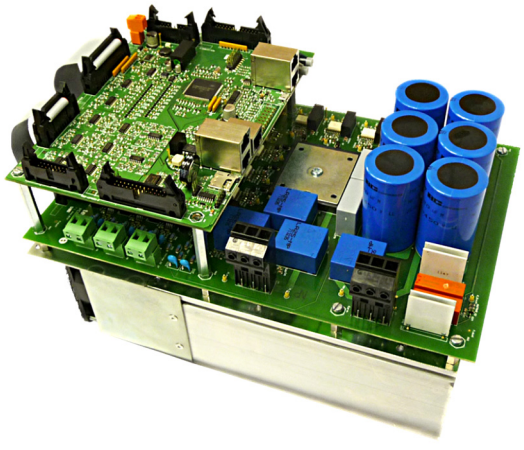
All the signals are available in two flat cable connectors. One for analog measurements, and the other for the digital signals, including drivers errors.

The converter has a forced air cooling system controlled by the user. All the system is powered by a unique 24 V power supply (not included).

TYPICAL CONFIGURATION

The PCO-10T800 is designed to directly match the CDA01-CU3 control board. This control board is based on the F28M35 Texas Instruments microcontroller, and it is able to control up to three PCO-10T800 converters, allowing the implementation of many topologies, including AC-AC back-to-back and four wire AC interface. For further information on the control board, please, refer to teknoCEA website.

Inductors, protection and other components, including mounting and cabinets can be provided by teknoCEA.



PCO-10T800 and CDA01-CU3 F28M35 control board

teknoCEA

Contact Us

Give us a call for more information about our products and services

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