

Twin 4-phase MLI

Multilevel inverter with a total of 8 reconfigurable phases, P=20 kW

> Customer:

Texas A&M

> Product description:

Twin 4-phase MLI is a 600V multi-level inverter with neutral point clamp (NPC) topology. In addition to the multi-level operating mode, MLI can be configured to run in 2-level mode if required.

The unit has a total of 8 phases (inverter arms) that can be configured as

- 4 independent H-bridges
- 2 independent 4-phase inverters
- 2 3-phase inverters and one H-bridge
- ... and many other

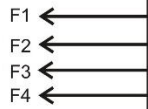
In addition, the unit also has a 3-phase rectifier with soft-start circuit that interfaces with the ac grid up to 3 x 540V.

The unit comes in a package with advanced DSP control platform, with 2-level and 3-level modulation algorithms, with Park & Clarke transforms, decoupling digital current controller for 3-phase, 4-phase, 5-phase and 6-phase loads, field oriented control algorithms for induction and BLDC motors, with active and reactive power control to be used in configurations where the unit regenerates the energy to the 3-phase ac-grid, and with the software package for supplying and controlling doubly fed induction generators (DFIG), according to the diagram attached.

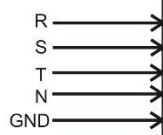
The unit also has real-time USB-link which turns the laboratory PC computer into the scope capable of inspecting, triggering and storing real-time waveforms.

AC POWER CONNECTIONS:

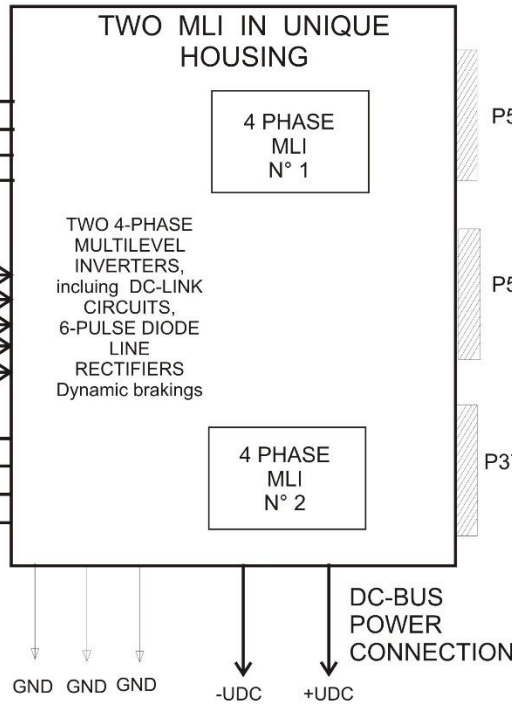
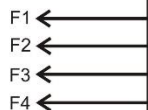
MOTOR 1
(OR-LINE)
(OR-ROTOR)



3x400V
50HZ
FOR INTERNAL
DIODE
RECTIFIERS



MOTOR 2
(OR-LINE)
(OR-ROTOR)



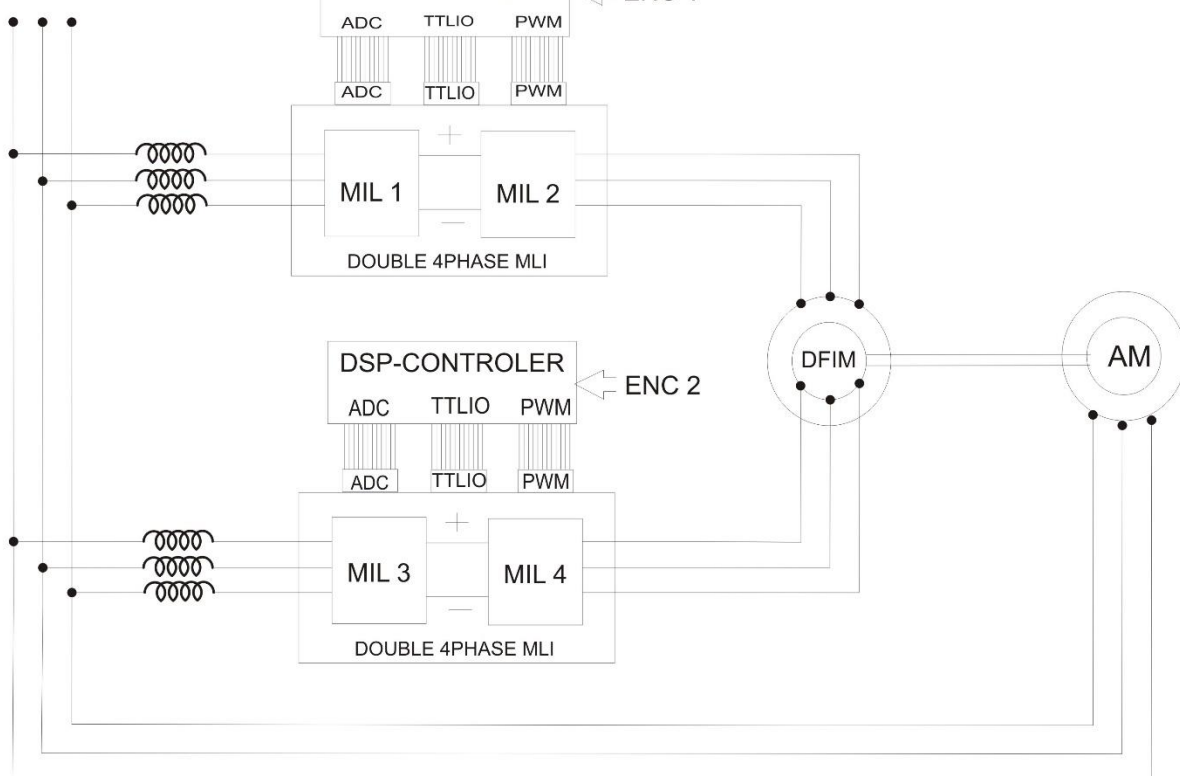
SIGNALS

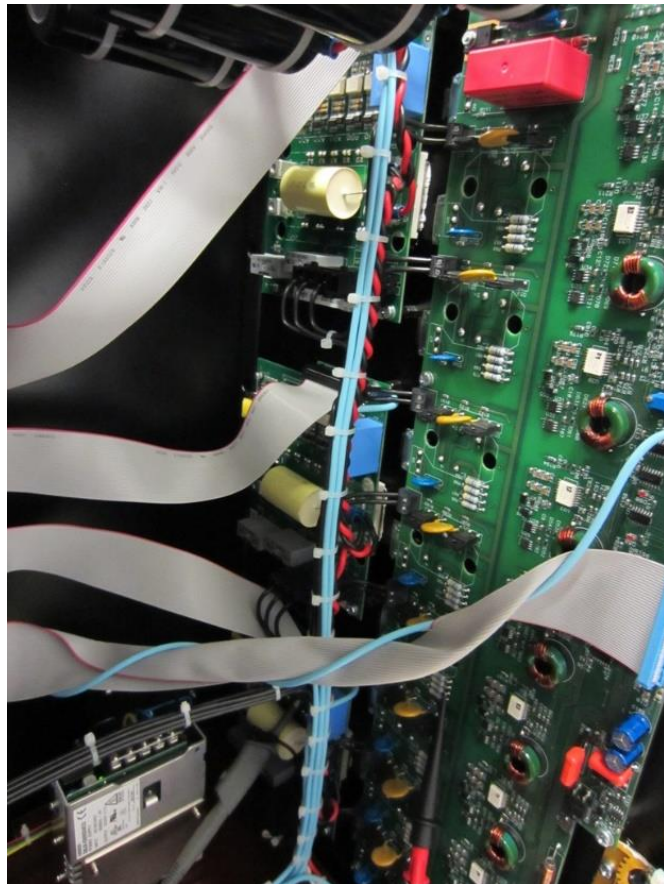
50-PIN SHELL
CONNECTOR COMPATIBLE
WITH dSPACE WITH
16 x ADC INPUTS

50-PIN SHELL
CONNECTOR COMPATIBLE
WITH dSPACE WITH
32 x TTL GPIO - I/O

37-PIN SHELL
CONNECTOR COMPATIBLE
WITH dSPACE WITH
16 x PWM LINES

50 Hz
3 x 400V







> **DDC involvement:**

Concept, hardware design, safety and EMC norms, DSPcontrol software design and communication software design, preseries production and customer support.