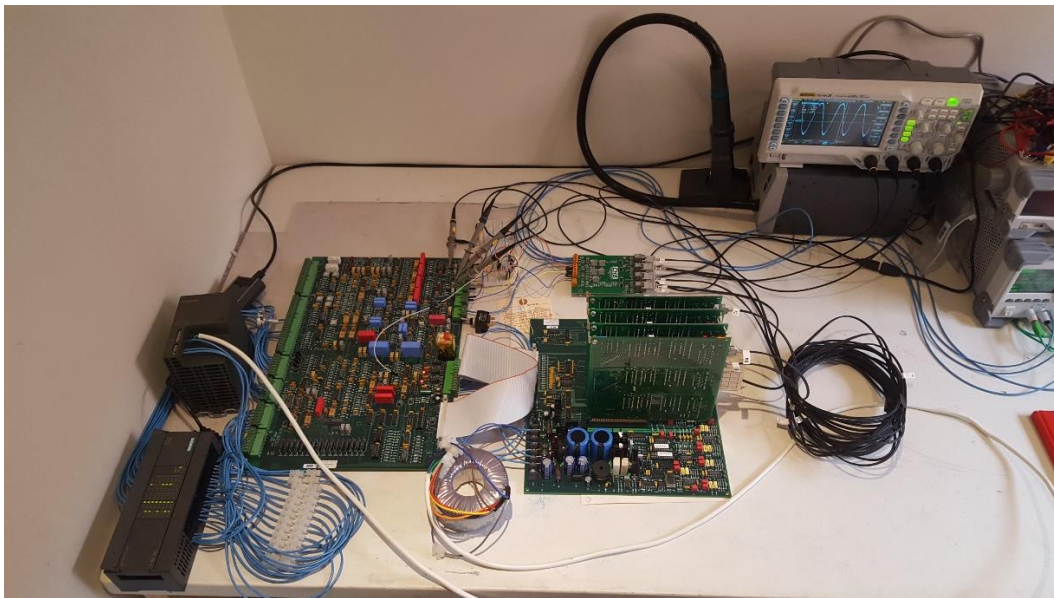


Case Study – Legacy Robicon Support

CHB Drives were engaged to provide support for a Legacy Siemens Robicon unit dating back to 1999.

The Robicon unit is configured as a large (1 MW 10,750 amp output) single phase fixed frequency, variable voltage power supply for an induction heater.

The customer had experienced out of saturation faults with the power cells and had changed the master control board which rectified the out of saturation issues. CHB Drives were asked to verify the condition of the master control board and preform any necessary repairs.



To test the master control board comprehensively a simulator system was put together to allow for all the control boards and PLC to be run together. The simulator system allowed for simulation of the power cells and fibre optic serial communications. A CHB Drives designed circuit board generated the voltage and current signals dependent on the IGBT firing commands send over the fibre optic links to the power cells. The key component on the simulator circuit board is the in house programmed Xilinx FPGA, which handles all the serial data communications and PWM outputs for current and voltage feedback simulation.

With the simulation system running all the boards were tested successfully together. No faults were found which lead to further investigation on site and the root cause of the out of saturation faults being identified.

In addition to building the simulation system CHB Drives verified that the current generation Harmony power cells can be run off the customers legacy control system. For this to happen the simulator board was reprogrammed to become a serial data gateway. The serial data was read in from the legacy control system. The enable and parity bits were inverted which allowed the Harmony power cell to function correctly. This gives the customer risk mitigation as now they can run readily available Harmony power cells on the legacy control system if required. The customers legacy power cells are now obsolete and are no longer supported by Siemens.