

VFD AND TWO AXES PLOTTER TRAINING KIT



Hytech Didactic VFD and Plotter training kit is designed to provide hands on training on PLC-HMI integrated operations of Servo Motor based two axes plotter as well as Variable Frequency Drive.

Two axes plotter is a designed with two single axes linear slides equipped with Servo Motor and ball screws. These two slides are single axis robots which can be interpolated with Servo motors and PLC.

Variable frequency drive which is most commonly used to control

and operate AC Induction motors is also integrated with PLC and HMI. Weight loading arrangement provides necessary experimental arrangement to test performance of Variable Frequency Drive.



Structure:

VFD and Plotter training kit is made in a mild steel structure with total dimensions of 1600mm width and 900mm depth. Horizontal work surface which is dedicated for two axes plotter is made in aluminium extrusions. Two axes plotter with a drawing mechanism which is pneumatically actuated is mounted on this horizontal worksurface.

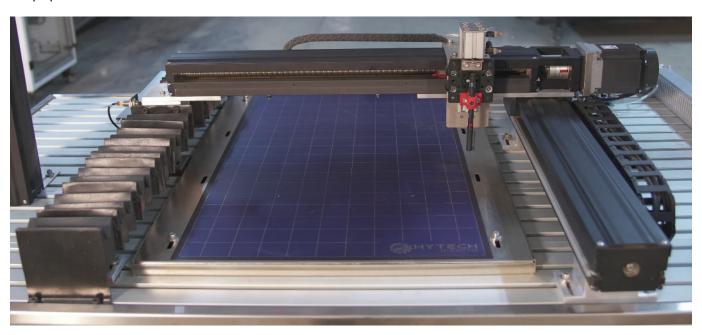
Variable frequency drive along with weight loading arrangement

is mounted on the vertical worksurface. PLC with HMI and switchgear-based operations panel is also mounted on the vertical worksurface. Computer workstation with monitors is also provided on the training kit for PLC and HMI operations.



Two Axes Plotter

Linear slides which are also called as single axis robots are provided for plotter. Each single axis robot is directly coupled with AC Servo Motor. One slide is mounted on the other slide with a linear motion guideway to achieve the positional accuracy of less than 20 microns. User is expected to program these servo motors through PLC and HMI interface to achieve the necessary movement of servo motors. With pneumatically actuated mechanism, user can demonstrate the interpolated movement on paper.





Variable Frequency Drive:

Variable Frequency drive is integrated with PLC and HMI. User is expected to drive the AC Induction motor which is coupled with a timer belt to linear slide. Magnetic scale with a digital readout is coupled with a linear slide to give the feedback regarding the actual movement of slide against the commanded movement. User can operate the AC Motor and VFD through PLC with HMI interface.

PLC - HMI - VFD:

PLC in VFD and Plotter training kit is Mitsubishi IQR 04 and HMI is Mitsubishi GOT 10 inches. VFD is also from Mitsubishi. Push buttons as well as indicators and buzzers are provided on the operation panel which can be utilised by user for various experimental operations.



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