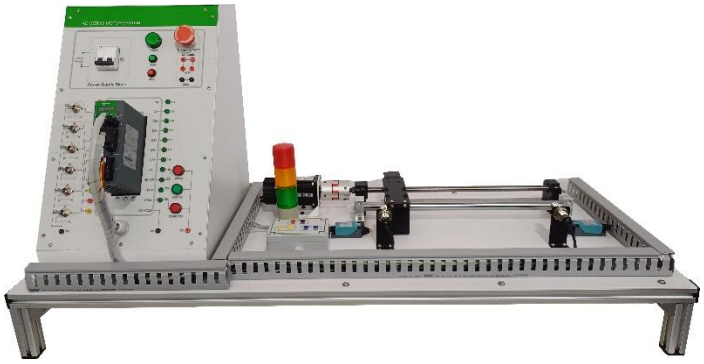
KCL-19 | **AC SERVO LINEAR POSITION TRAINER** | **MAKE: KITEK**

The KCL-19 AC Servo Linear Position Trainer is use full in control laboratory experiment. 3-phase ac servomotors having Speed, position, Torque with feedback have been traditionally used for position/ speed control applications especially in light/heavy weight, precision instrumentation area in airborne systems.



TECHNICAL SPECIFICATION

- **Power Supply**
  - 2 Pole MCB, 6A with 9A Contactor & O/L thermal relay

- **Servo Amplifier**
  - Power supply 220V system
    - ~ Input Voltage 1Phase, AC 220V, 3.6A 50Hz
    - ~ Output 3Phase, AC 0~220V,0~400Hz,2.8A,400W
    - ~ Output: DC 24V/2A
  - Rated revolutions per minute (RPM): 3000rpm
  - Encoder type : 17-bit single-turn absolute
  - Control signal 10 inputs, 4 outputs
  - Analog Input Two 12-bit analog inputs
  - Pulse signal
    - ~ Input 1 group (of open collector input or differential input)
    - ~ Output 1 group of differential outputs (A+/A-; B+/B-; Z+/Z-)
  - Encoder 2 Input Incremental encoder (or grating ruler) interface
  - Communication USB for computer interface
  - Control mode

1. Position control
- Control input : Clearing residual pulses, Inhibiting command pulses, Switching electronic gear ratios, Switching vibration control.
- Control output : Such as positioning completion output
- Input frequency : Photoelectric coupling: differential input of 4Mpps or open collector input of 200kpps
- Pulse : + direction, Clockwise + counterclockwise (CW + CCW)

2. Speed control
- Control input : Internal command speed 1, speed 2, speed 3, Zero-point clamping
  Control output Such as speed reaching
  Analog input Speed command input analog voltage DC±10V.
  Torque limit input CW or CCW torque limit.
  Internal speed command eight-step speeds can be switched based on external control inputs.

3. Torque control
- Control input Such as zero-drift clamping input.
- Control output Such as speed reaching
- Analog input Torque command input allows gain and polarity settings based on analog voltage.
- Analog Speed limit input.

- Protection against overvoltage, under voltage, overcurrent, over speed, overload, overheating, encoder fault, and power outage detection.

- **AC Servo Motor**
  - 220V AC, 1.8A, 400W, 1.3Nm, 3000rpm

- **General Specs:**
  - Working temperature 0–45°C
  - All input & output are terminated in 4mm shrouded connector, Should provide 4mm banana cable for experiments.
  - Housed in metal enclosure with MIMIC panel on the front side.
  - Linear Position Structure
  - AC Servo motor coupled with Ball screw Linear structure
    - ~ Length: 400mm.
    - ~ Diameter: 12mm.
    - ~ Precision: C7.
    - ~ Material: Steel
    - ~ Sensor: Limit detection, home positioning

- **PLC:** 8 Digital input / 6 Digital Output **(Optional)**

- **Experiments**
  - Determination of the position
  - Setup of the position unit and parameter
  - Characteristics of Servo Motor and setup of the Servo Driver
  - Speed, Torque and Position control operation