

Mitsubishi PLC Trainer Kit consisting of 32 MT PLC, HMI, VFD, SCADA, PLC Software

KS/PLC/SCADA/ADV

It includes 16 Inputs +16 Transistor Outputs+2AI+1AO, No of I/Os: 35 Points (16 Inputs +16 Transistor Outputs+2AI+1AO), Onboard Digital outputs:16 Nos., Onboard Digital Inputs: 16 No.s, Inbuilt Analog Input: 2AI, Analog I/O range 0 to 10 V, Inbuilt Analog Output: 1Ao, Analog I/O range 0 to 10 V (Voltage), Communication Port :Inbuilt RS485 & Eth. Programming Device : Standard PC. IOT capability should be available in PLC, software included GX Works3 and TIA Portal Basic V16 or higher. (Qty 1 each)

The Mitsubishi HMI includes 7" Wide TFT color LCD (65536 colors), Resolution: WVGA: 800 x 480 dots, Backlight: LED, Display size:154 (W) x 85.9 (H) mm, Flash memory (Internal): 15 MB, SDRAM: maximum 32 GB, software included, ethernet port, USB ports, RS-485.

All the program shall be demonstrate through HMI and PLC, software GT Works3 and SIMATIC HMI(Qty1 each).

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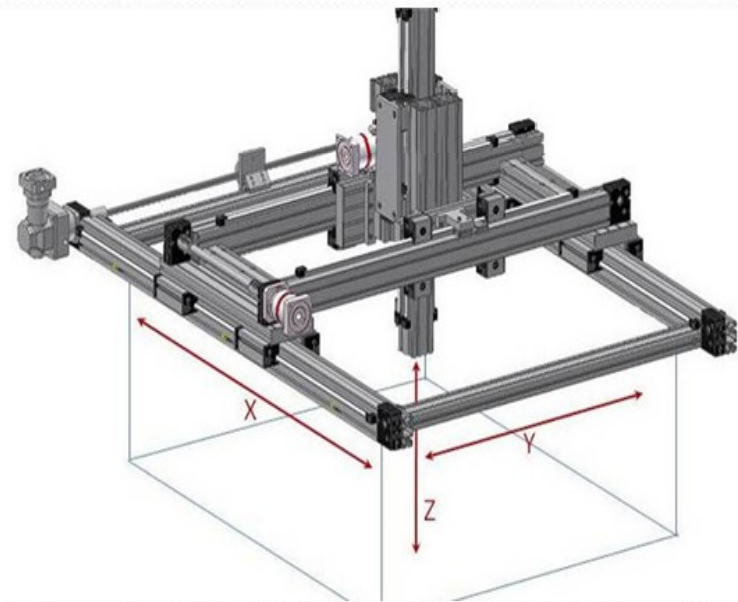


PLC based X Y Cartesian System

KS/PLC/X-Y CART

It shall consist of Stepper Motor with encoder at least qty - 2, Optical Sensor – qty - 2, Magnetic Sensor qty -1, Limit Switch qty-2, Digital input pin voltage: 24V DC when particular Input / output is activated from PLC, Digital output pin voltage :5- 24V DC when particular Input / output is activated from PLC, Power Supply: from SMPS / PLC. The complete hardware is accessible for python. Students can program to draw any image, any shape and lines through GUI & shall have interface for matlab. Students need to perform –

1. Comparative Study of XY Gantry Systems
2. Performance Evaluation of Hardware Components in an XY Plotter
3. Line Drawing Accuracy with Encoder Feedback
4. Drawing Shapes with an XY Plotter
5. Measuring Accuracy of Drawn Shapes with an XY Plotter
6. Study and Hands-On of Ink scape Software for Gcode Generation
7. Drawing Alphabets with an XY Plotter
8. Writing Words with an XY Plotter
9. Drawing an Image with an XY Plotter



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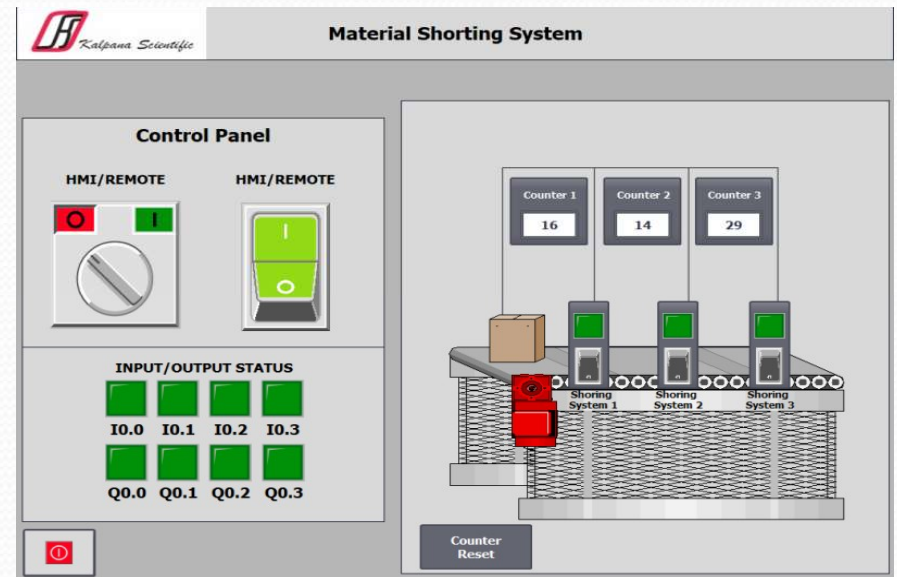
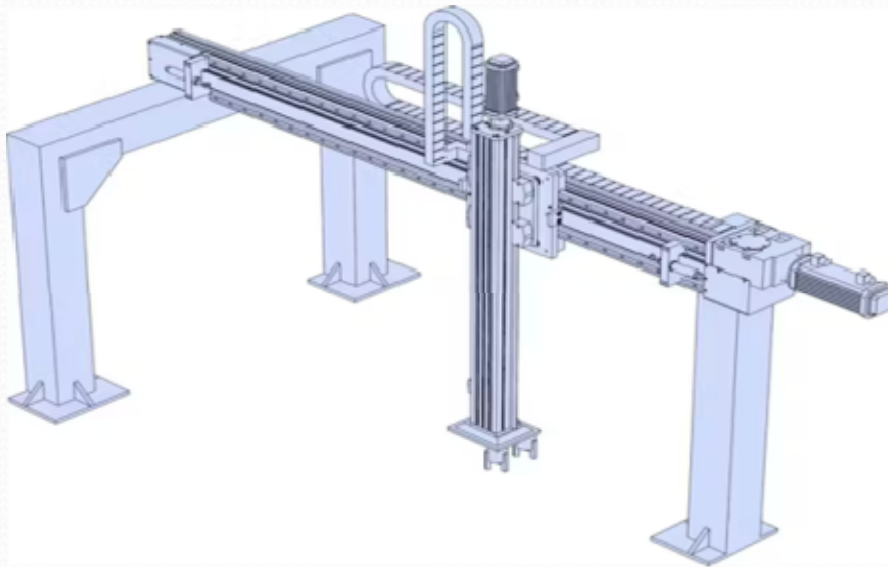
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PLC Based Electro Pneumatic Sorting

KS/PLC/SHORTING&STAMPING

The sorting shall be done through IOT based mobile app & software application too. Hardware shall consist of Infrared beam sensors, Electro-pneumatic valves, Pneumatic single-acting cylinders, Pneumatic cylinder position sensors, Status indicator lamp and allied instrument to run the program.



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Stamping System

KS/PLC/SHORTING&STAMPING

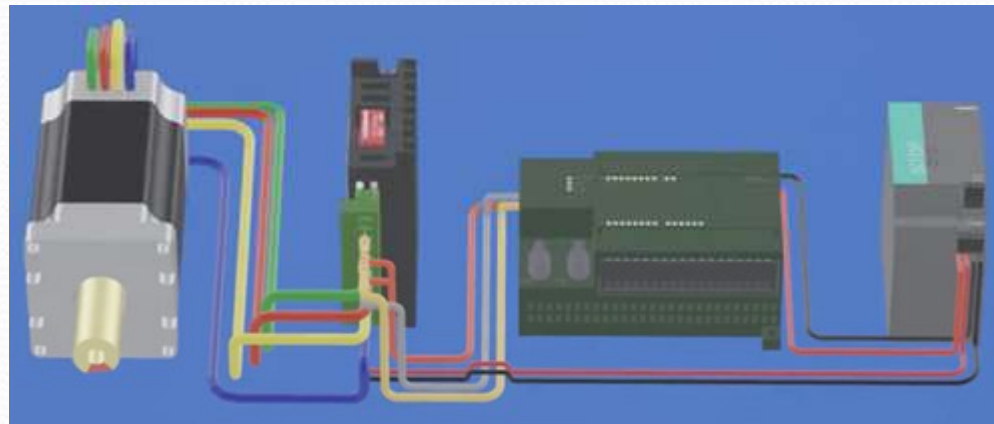
Pneumatic Stamping System - the stamping shall be done through IOT based mobile app & software application too. Hardware shall consist of Infrared beam sensors, Electro-pneumatic valves, Pneumatic single-acting cylinders, Pneumatic cylinder position sensors, Status indicator lamp and allied instrument to run the program.



PLC Based Motor Control Module

KS/PLC/MOTOR

Interface: 20 Pin FRC cable with PLC, Digital input pin voltage: 24V DC when particular Input / output is activated from PLC, Digital output pin voltage :5- 24V DC when particular Input / output is activated from PLC, Stepper Motor: 24V DC, Thumbwheel Switch: +24V DC, Power Supply: from SMPS / PLC, Compatible for All PLCs.



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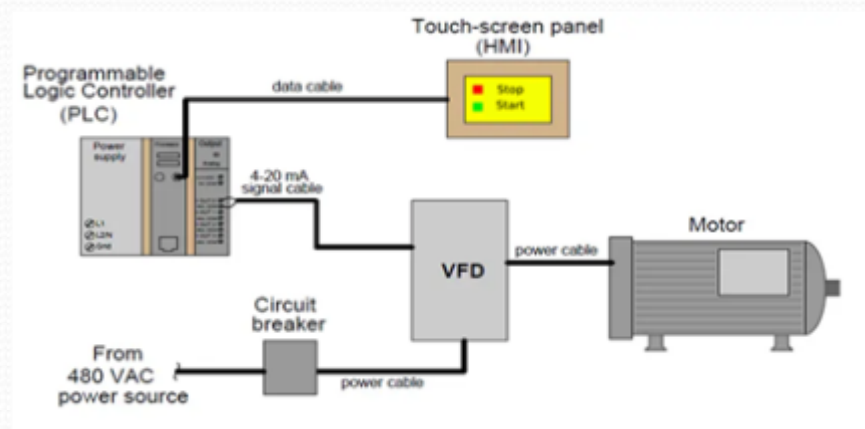
PLC Based AC Drive

KS/PLC/AC DRIVE& VFD

Digital input pin voltage: 24V DC when particular Input / output is activated from PLC,
Digital output pin voltage :5- 24V DC when particular Input / output is activated from PLC, Motor Power: 0.75KW, Input Voltage: 200-480V (-15 %, +10 %), Input Phase: 1, 3ph, Compatible for All PLC.

VFD Control System

Variable Frequency Drive platform with 1 HP Motor, Motor Power: 0.75KW, Input Voltage: 200-480V (-15 %, +10 %), Input Phase: 1, 3ph, Digital input pin voltage: 24V DC when particular Input / output is activated from PLC, Digital output pin voltage :5- 24V DC when particular Input / output is activated from PLC, shall be able to demonstrate FR-D720S-042.



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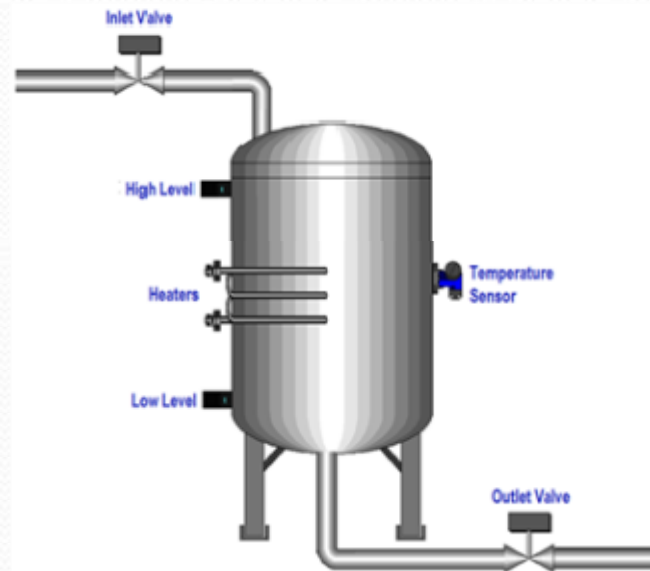
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PLC Based Water Heater

KS/PLC/WATER HEATER&LEVEL

Digital input pin voltage: 24V DC when particular Input / output is activated from PLC,
Digital output pin voltage :5- 24V DC when particular Input / output is activated from PLC,
Output Sensor: 0-10V DC max 0 to 100 deg.c, Heater: 10 Watt resistor, Power Supply: from SMPS / PLC, Fan, Adapter: for fan and heater, Compatible for All PLC.



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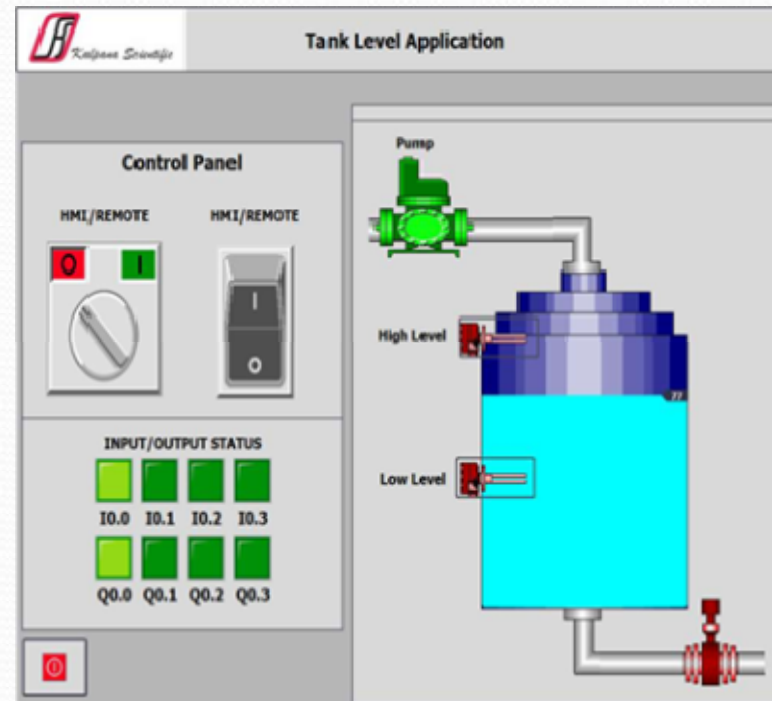
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Water Level Kit

KS/PLC/WATER HEATER&LEVEL

Interface: 20 Pin FRC cable with PLC, Digital input pin voltage: 24V DC when particular Input / output is activated from PLC, Digital output pin voltage :5- 24V DC when particular Input / output is activated from PLC, Power Supply: from SMPS / PLC, IOT based, Compatible for All PLC.



PLC Based Conveyor System

KS/PLC/COVEYOR&ELEVETOR

Digital input pin voltage: 24V DC when particular Input / output is activated from PLC,
Digital output pin voltage :5- 24V DC when particular Input / output is activated from PLC, Buzzer: +5V DC, Proximity Sensor: +24V DC, IR Sensor: +24V DC, DC Motor: +5VDC, Main Supply: +5V & + 24V DC, IOT based, Compatible for All PLC.



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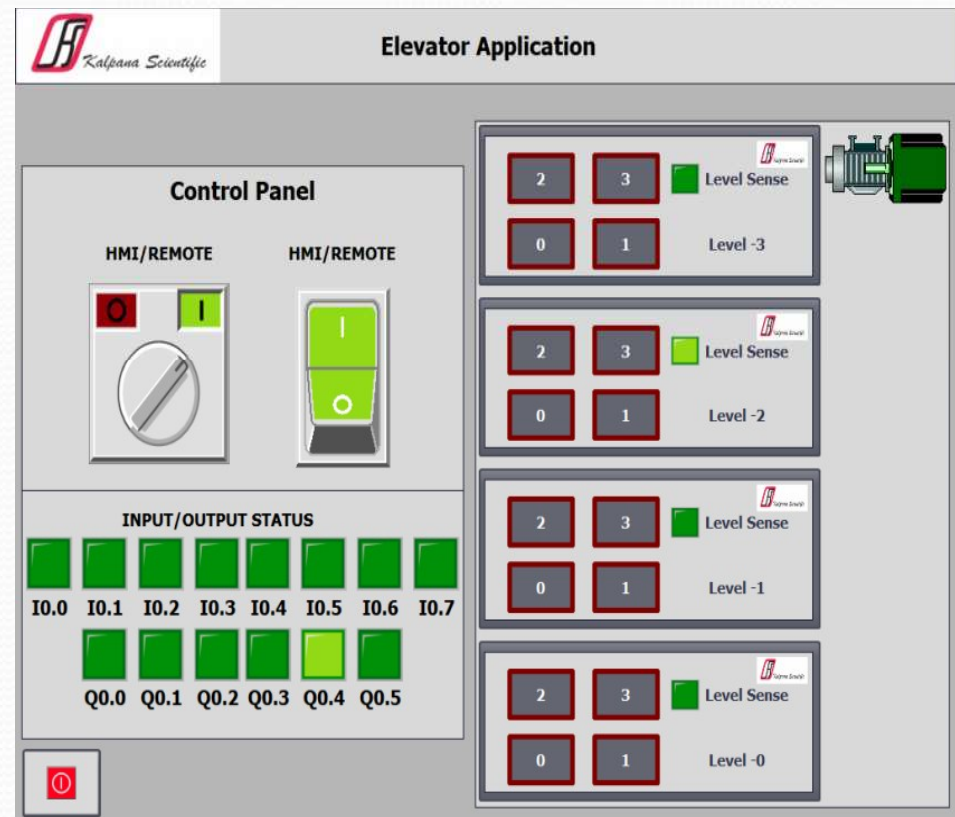
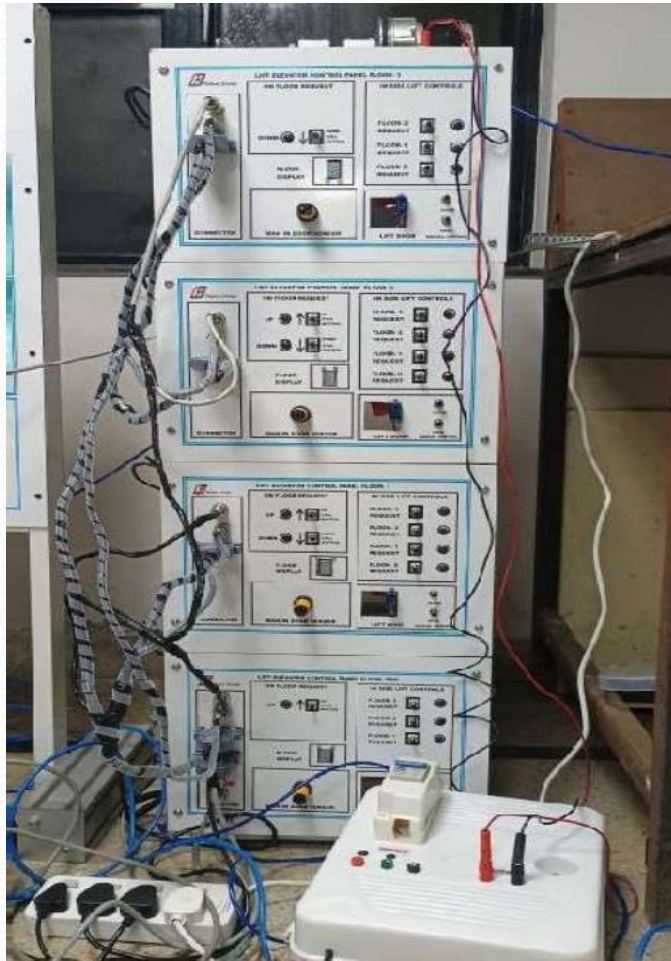
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Elevator Kit

KS/PLC/COVEYOR&ELEVATOR

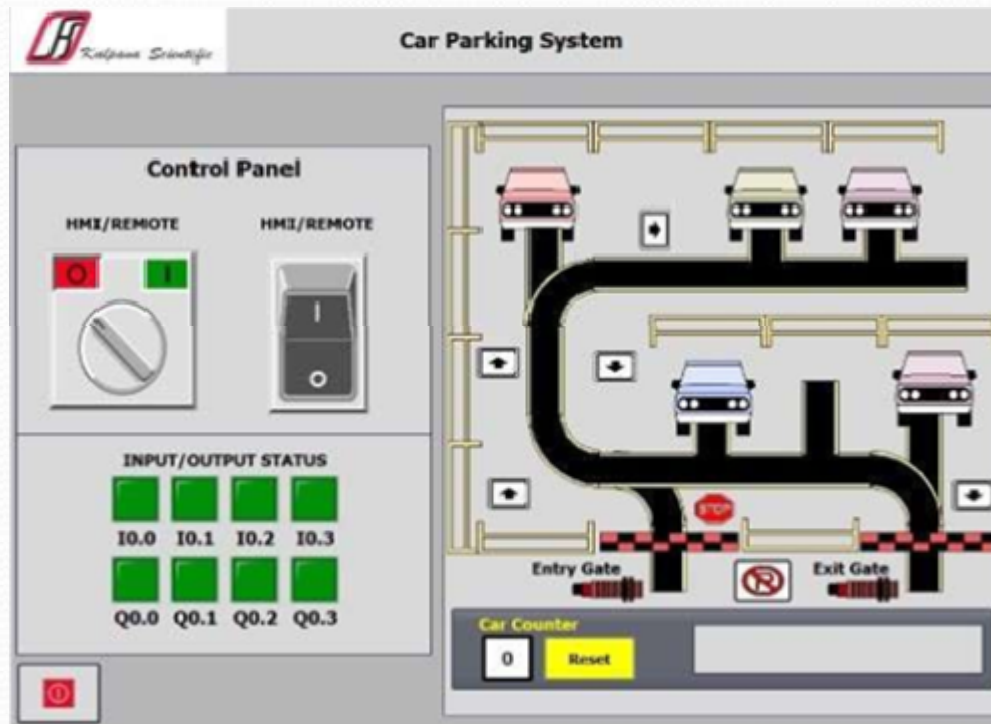
Interface: 20 Pin FRC cable with PLC, Digital input pin voltage: 24V DC when particular Input / output is activated from PLC, Digital output pin voltage :5- 24V DC when particular Input / output is activated from PLC, Power Supply: from SMPS / PLC, scaled-down Hardware modules min 4 floor.



PLC based Car Parking

KS/PLC/CARPARK&SCADA

Interface: 20 Pin FRC cable with PLC, Digital input pin voltage: 24V DC when particular Input / output is activated from PLC, Digital output pin voltage :5- 24V DC when particular Input / output is activated from PLC, Power Supply: from SMPS / PLC, Proximity Sensor: +24V DC, DC Motor: +5V- 24 VDC, Compatible for All PLC.



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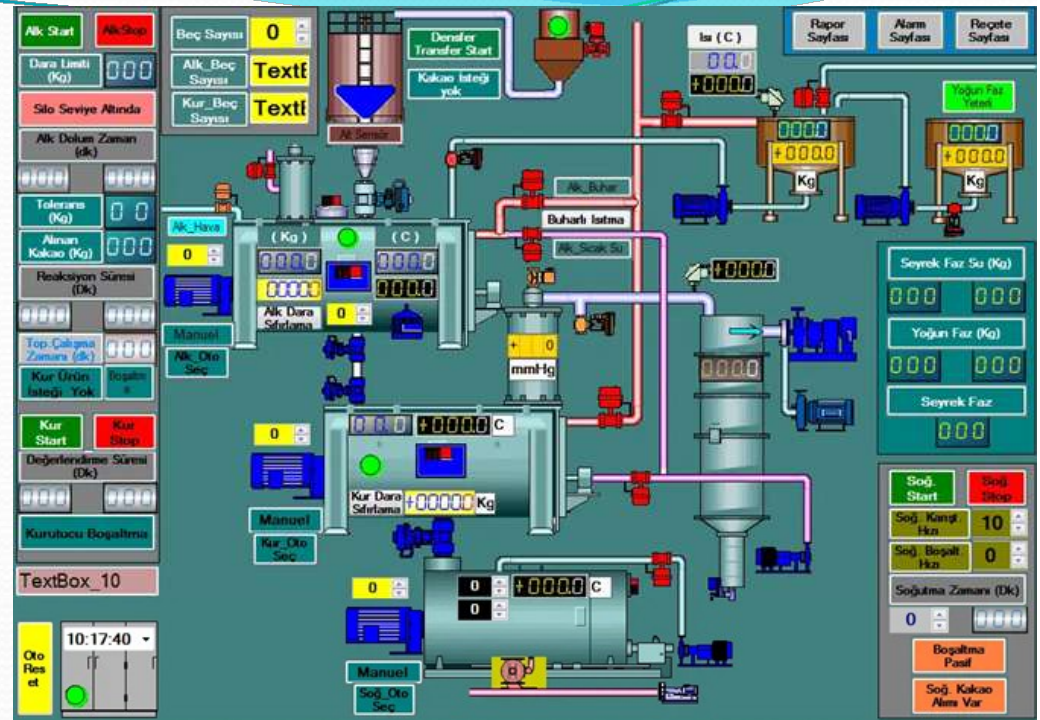


SCADA System

KS/PLC/CARPARK&SCADA

PLC based SCADA System with hardware demonstration for Flow, Pressure regulator & temperature, with Instrument Setup and Calibration include below features

- Temperature measurement and status indication
- Scale and alarm limit setting, simulation mode for intelligent sensors.
- Hydrostatic level measurement and calibration, effects of density.
- Ultrasonic level measurement and calibration.
- Ultrasonic reflection envelope curve and problem diagnosis
- Volume and mass flow measurement using electromagnetic flow meter.



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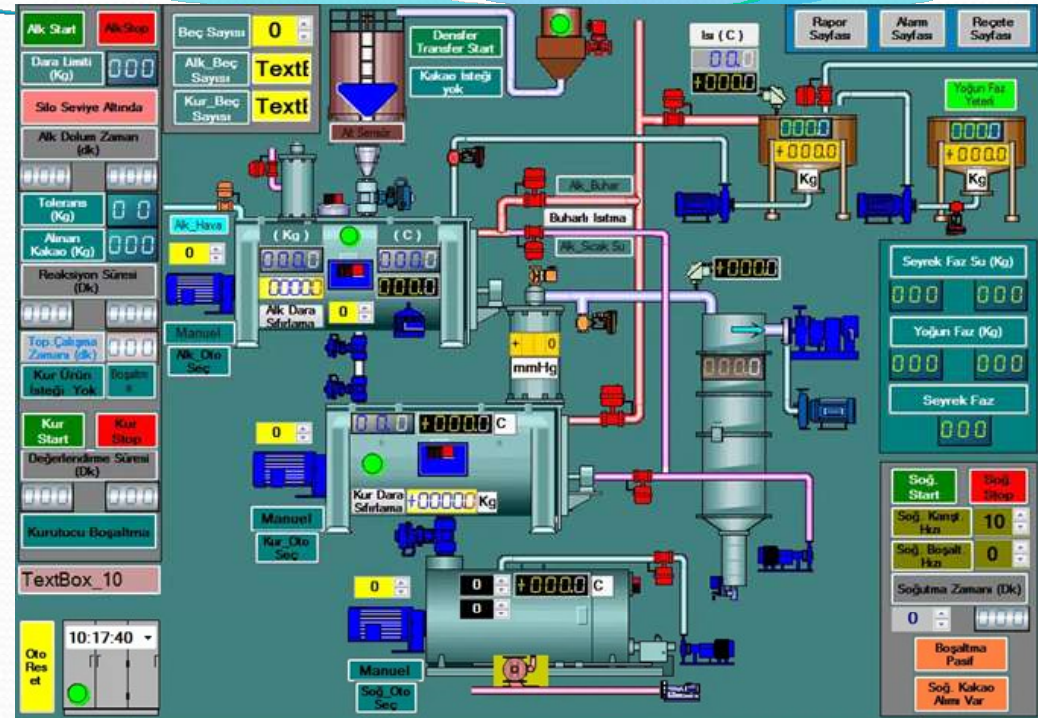
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SCADA System

KS/PLC/CARPARK&SCADA

- g. Flow meter calibration.
- h. Flow rate measurement using a differential pressure transmitter and orifice plate.
- i. Square root extraction within an intelligent transmitter.
- j. Calibration and performance of a head meter.
- k. Process noise in flow measurement.
- l. Feedback Control System:
- m. Control of level using variable pump speed.
- n. Control of level using control valve.
- o. P, PI and PID level controller tuning and performance.
- p. Level Control System
- q. Flow control using variable pump speed.
- r. Flow control using a control valve.
- s. P, PI and PID controller tuning and performance.



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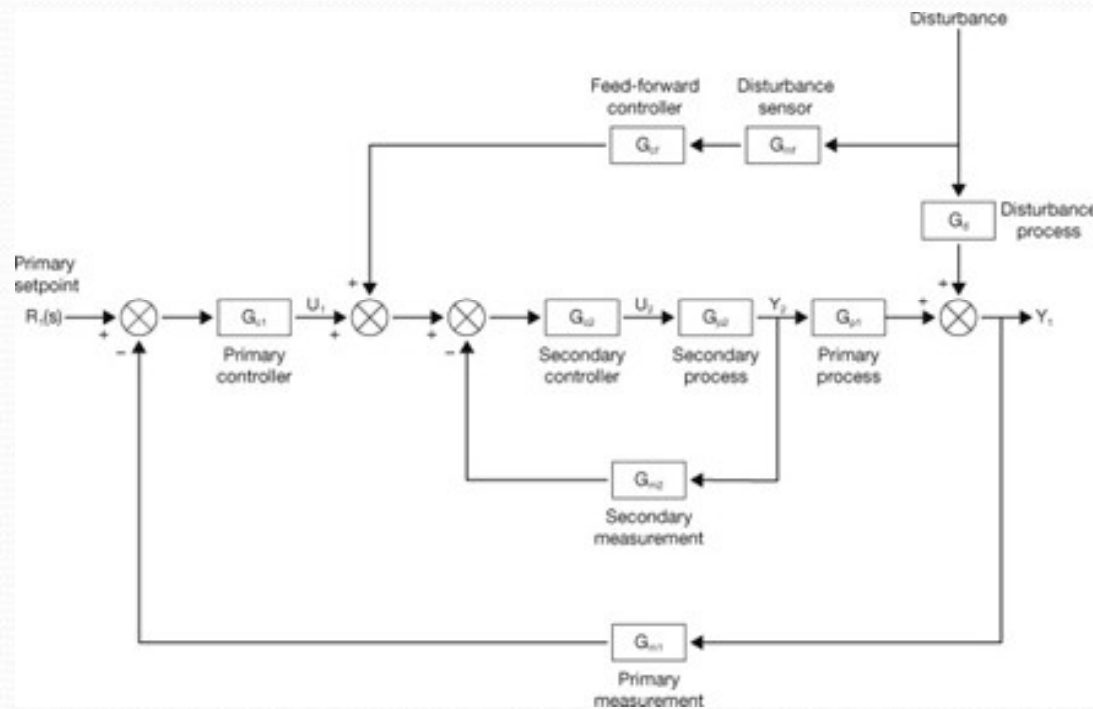
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Cascade and Feed Forward Control

KS/PLC/CASCD&FEEDFRWRD-FLDBUS-
ACTCLICCOMM-ETHERNT&LAN

- t. Cascade control of level and flow
- u. Feed-forward control using flow measurement
- v. Multi-variable control of level and flow



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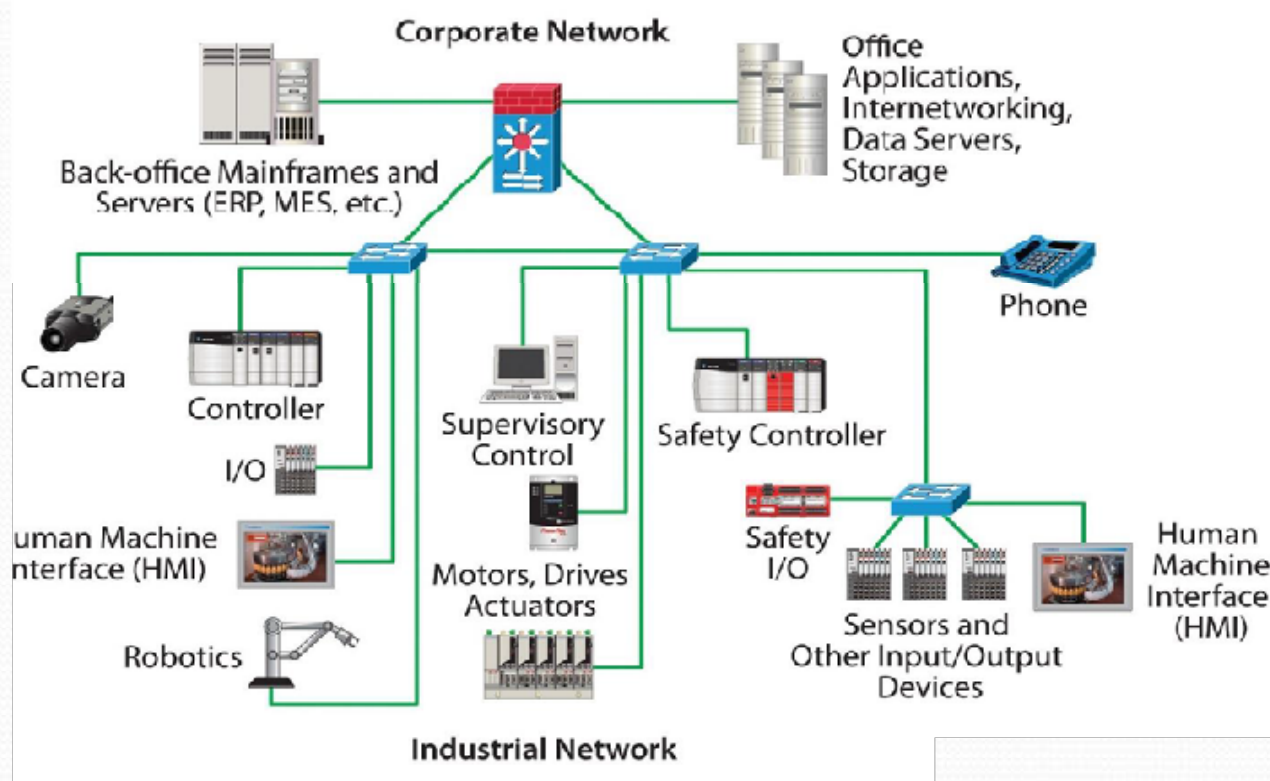
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Field Bus System

KS/PLC/CASCD&FEEDFRWRD-FLDBUS-
ACTCLICCOMM-ETHERNT&LAN

- w. Basic device configuration, GSD files, modules and parameters.
- x. Bit-rate selection and cycle time effects. Process system configuration, process value and status byte handling.
- y. Diagnostics, watchdog timer setting and fail-safe action.



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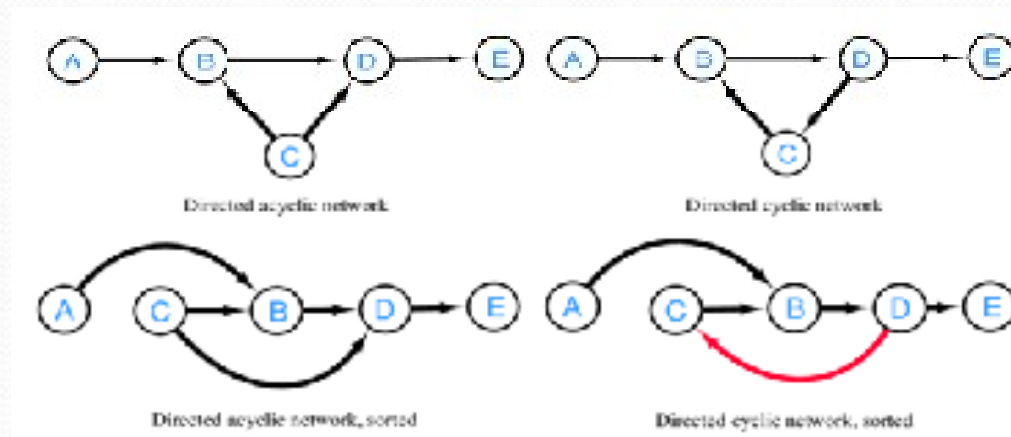
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Acyclic Communication System

KS/PLC/CASCD&FEEDFRWRD-FLDBUS-
ACTCLICCOMM-ETHERNT&LAN

- z. Use of engineering tools with acyclic communication capability.
 - aa. Device profiles: physical, transducer and function blocks
 - bb. Methods of device calibration using acyclic communications
 - cc. Advanced device diagnostics and status
 - dd. Auto, manual and simulation modes of operation for transmitters and actuators.
 - ee. Predictive maintenance features in a modern control valve positioned.
 - ff. Predictive maintenance features in a modern inverter



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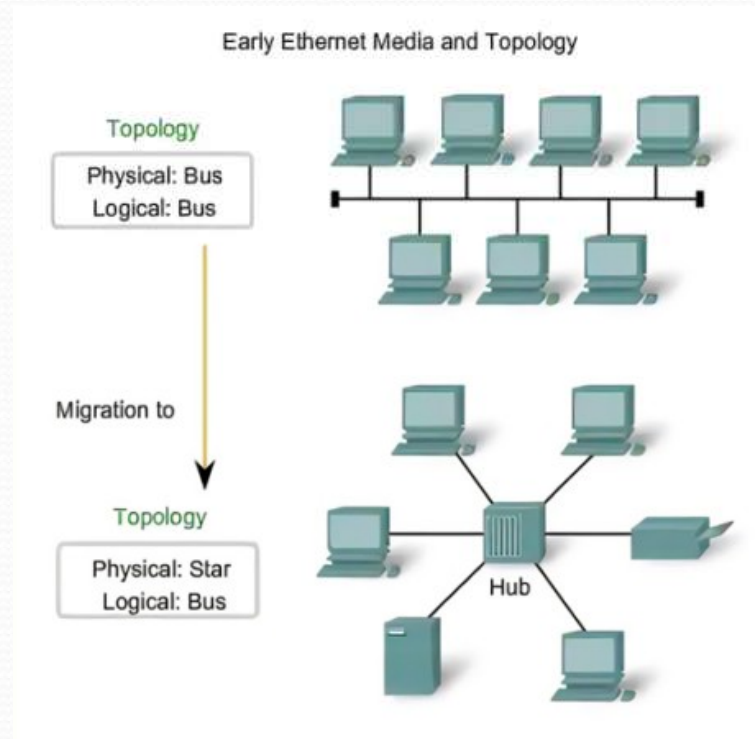
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Ethernet and LAN Technology

KS/PLC/CASCD&FEEDERWRD-FLDBUS-
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- gg. Network configuration and checking
- hh. MAC and IP addressing, setup and checking
- ii. PC networking diagnostic facilities.
- jj. Remote device configuration using http (web) technology.



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Siemens PLC Trainer Kit Consisting of S71500 PLC, HMI, VFD, SCADA, PLC Software

KS/PLC/SCADA/ADV1

It includes 16 Inputs +16 Transistor Outputs+2AI+1AO, No of I/Os: 35 Points (16 Inputs +16 Transistor Outputs+2AI+1AO), Onboard Digital outputs:16 Nos., Onboard Digital Inputs: 16 No.s, Inbuilt Analog Input: 2AI, Analog I/O range 0 to 10 V, Inbuilt Analog Output: 1Ao, Analog I/O range 0 to 10 V (Voltage), Communication Port :Inbuilt RS485 & Eth. Programming Device : Standard PC. IOT capability shall be available in PLC, software included GX Works3 and TIA Portal Basic V16 or higher. (Qty 1 each).

The Siemens HMI includes 7" Wide TFT color LCD (65536 colors), Resolution: WVGA: 800 x 480 dots, Backlight: LED, Display size:154 (W) x 85.9 (H) mm, Flash memory (Internal): 15 MB, SDRAM: maximum 32 GB, software included, ethernet port, USB ports, RS-485. All the program shall be demonstrate through HMI and PLC, software GT Works3 and SIMATIC HMI(Qty1 each).



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Siemens PLC Trainer Kit Consisting of S71500 PLC, HMI, VFD, SCADA, PLC Software

KS/PLC/SCADA/ADV1

PLC based SCADA System with hardware demonstration for Flow, Pressure regulator & temperature, with Instrument Setup and Calibration include below features

- a. Temperature measurement and status indication
- b. Scale and alarm limit setting, simulation mode for intelligent sensors.
- c. Hydrostatic level measurement and calibration, effects of density.
- d. Ultrasonic level measurement and calibration.
- e. Ultrasonic reflection envelope curve and problem diagnosis
- f. Volume and mass flow measurement using electromagnetic flow meter.
- g. Flow meter calibration.
- h. Flow rate measurement using a differential pressure transmitter and orifice plate.
- i. Square root extraction within an intelligent transmitter.
- j. Calibration and performance of a head meter.
- k. Process noise in flow measurement.
- l. Feedback Control System:
 - m. Control of level using variable pump speed.
 - n. Control of level using control valve.
 - o. P, PI and PID level controller tuning and performance.
- p. Level Control System
- q. Flow control using variable pump speed.
- r. Flow control using a control valve.
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