



Equipment and Devices of Programmable Logic Controller Laboratory

Item	Equipment
<p><u>PLC Unit:</u></p> <p>The PLC basic unit is designed to have the trainees get acquainted with the PLC, digital and analog inputs/outputs.</p> <p>The PLC unit consists of the following:</p> <ol style="list-style-type: none"> 1. Sitop smart 120 W , 5A stabilized load power supply (6EP1333-2AA01) 2. Simatic S7-300 , CPU 313C-2DP (6ES 7313-6CF03-0AB0) 3. Simatic S7-300 Analog output SM 332 c/w front connector (6ES 7332-5HB01-0AB0) 4. Simatic S7-300 Analog Input SM 331 c/w front connector (6ES 7331-1KF01-0AB0) 5. Micro memory card (Inserted in the CPU) 6. Analogue input module SM 331 7. Analogue output module SM 332 8. Power supply, 24VDC, 5A 9. Power supply, 10V 	
<p><u>Simulation Unit</u></p> <p>The purpose of this kit is to allow the trainee to practice different logics and be able to simulate different types of inputs. It represents the interface with the PLC kit.</p> <p>The Simulation unit consists of the following:</p> <p><u>A. Digital section</u></p> <ol style="list-style-type: none"> 1. 16 switches/momentary-contact switches 2. 16 LED's. <p><u>B. Analog section</u></p> <ol style="list-style-type: none"> 1. Voltmeter for displaying the values at analog inputs 0 and 1 or the analog outputs 0 and 1. 2. A selector switch is used to choose the voltage value you want to monitor. 3. Two separate potentiometers for setting the values for the analog inputs. 	

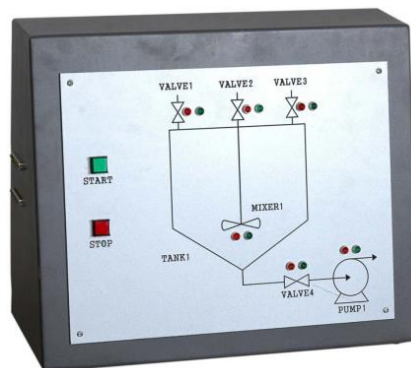
4. Connectors for analog channels.

Semi-graphic display (MIMIC)

It is a Semi-graphic display (MIMIC) simulation for blending process. It shall be connected to the PLC unit. Trainees can use this unit to understand the concept of interfacing with the PLC and input/output display using LED's as well as push buttons, also the use of PLC to fulfill certain sequence.

The MIMIC unit consists of the following:

1. Six Red LEDS
2. Six Green LEDS
3. Green push button
4. Red push button
5. 25 pin male-connector
6. 25 pin female-connector



Motor Unit

It is designed to demonstrate the concept of operation of the speed controller.

The Motor unit consists of the following:

1. Micromaster 440 (6SE6440-2UC11-2AA1)
1. Micromaster 4 Profibus module (6SE6400-1PB00-0AA0)
2. Micromaster 4 basic operator panel (BOP) (6SE6400-0BP00-0AA0)
3. Low-voltage squirrel-cage motor (1LA7060-4AB10)
4. 3 switches
5. Potentiometer.



Process Instrumentation Unit:

It is used to allow the trainees to get acquainted with the concept of operation of pressure transmitter and temperature transmitter as well as the Profibus PA communication.

The unit consists of the following:

1. Sitop smart 60 W, 2.5A stabilized load power supply (6EP1332-2BA10)
2. DP/PA coupler (6ES7157-0AC82-0XA0)
3. Split connect tap
4. Split connect terminator
5. Sitrans P DS 3 pressure transmitter (7MF4034-1DA00-1AB6)
6. Sitrans T3K PA temperature transmitter (7NG3213-0NN00)
7. Air regulator & Potentiometer



Human Machine Interface (OP)

HMI unit is based on using the SIMATIC touch panel TP177B that shall be connected to the PLC unit. Trainees can use this unit to understand the concept of interfacing with the PLC and input/output display through Profibus DP communication link to the PLC communication link to the PLC.

The unit consists of the following:

1. Power Switch & Fuses
2. Power Supply 60 W, 2.5 A
3. Nine pins male-connector
4. Nine pins female-connector
5. Operator panel TP177 (6AV6642-0BA01-1AX0)



Air Compressor

V24L, P = 8 Bar, 2 HP, 1.5 KW

