

PROCESS CONTROL SYSTEM (PCS)

CHAPTER

13

Introduction	281
Integrated process control (FPCS-4ALL)	282
Level control system (FPCS-LEVEL)	283
Industrial PCS trainer (FPCS-IPC-3TANK, FPCS-IPC-LEVEL)	284
Industrial PCS trainer (FPCS-IPC-TOTAL)	285

Process Control System (PCS)

- 01 Level control system
- 02 Flow control system
- 03 Pressure control
- 04 Temperature control
- 05 PCS 4ALL (Integrated system)

Process Control System (PCS)



Introduction

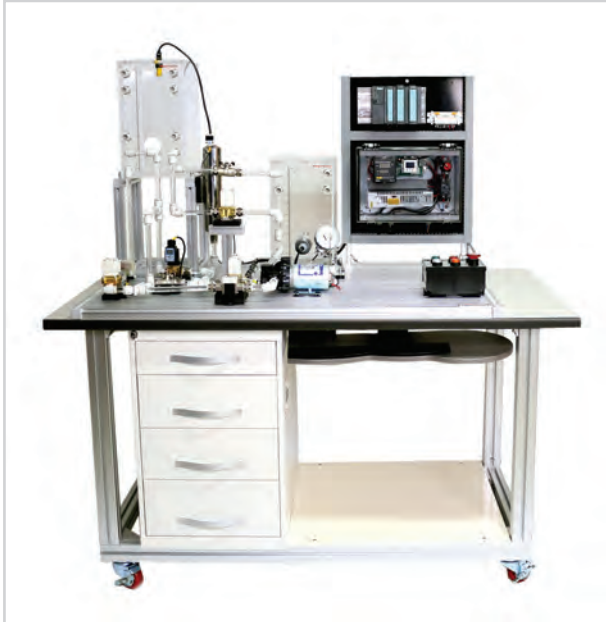
Process control system is an automatic control system that supervises a plant and related equipment using a computer system, and controls the flow of the process to maintain continuous operation. It is composed of a computer system, process control device, and process interface system.

- Process control device: measures process variables and exercises control through computer signal. (i.e., actuator, sensor etc)
- Process interface system: functional unit system connecting process control device and computer system

The HMI (Human Machine Interface) system used in process control offers a monitoring screen in a central control room to help increase efficiency.



Integrated process control (FPCS-4ALL)



Order number : 28000

PCS Training Equipment

This PCS training equipment teaches how to measure and convert analog signals, and how to use the information in industry applications. Water level, flow rate, pressure, and temperature are the main variables of the process control system in actual practice.

Training contents

- Structure and function of level, flow, pressure, and temperature control
- Feature and characteristic of analog sensor's value
- Process control sequence control circuit
- Fault tracking and monitoring system of process control
- P, I, D, PI, PID control
- System Wiring, piping, programming, and related training
- Analog and digital signal usage of various industrial measurer
- PLC with Touch HMI or PC-based control using LabVIEW, VLC
- Concept of disturbance in the process control



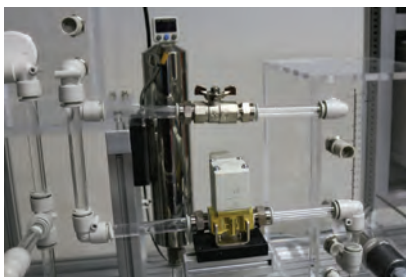
▲ Motor pump



▲ Flow rate sensor, Proportional control valve



▲ Heater, Temperature sensor



▲ Pressure sensor, pressure tank

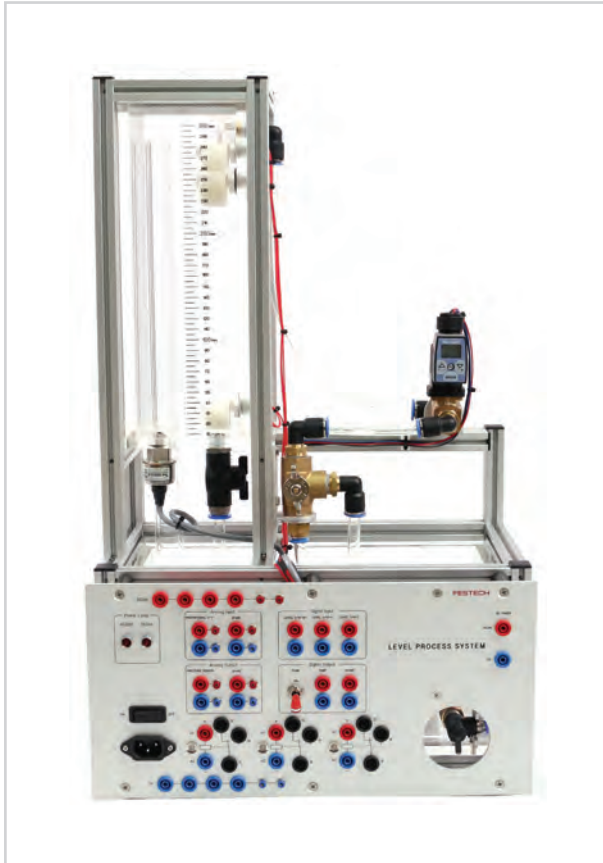


▲ Solenoid valve



▲ Ultrasonic sensor

Level control system (FPCS–LEVEL)



Order number : 28005

Features

- Compact size
 - 450(W)×220(D)×670(H) mm
- 4mm cable wiring
- Level control using proportional control valve
- Level measurement using ultrasonic sensor
- Safety level switch
- Manual valve for drain
- Customized with various process
 - Flow, Level, Pressure, Temperature

Training contents

- Structure and principle of motor pump
- Measurement : tank volume and pump flow rate
- Proportional valve structure
- Pressure sensor setting and relation with water level
- System wiring, piping, programming and other related training
- Analog and digital usage of various industrial measurer
- P, I, D, PI, PID control

Industrial PCS trainer (FPCS-IPC-3TANK, FPCS-IPC-LEVEL)

This process control equipment is specially customized to learn process control technology as plant design, manufacturing, control, maintenance.

It is designed on the basis of level control plant that is the most important in industry. It is installed and used in engineer training of POSCO company.

3 tanks control trainer is composed of 3 control tanks and reservoir. It has level sensor for measuring water level, flow sensor for measuring control flow and proportional flow control valve.

Also, it is possible to practice various control program with supply pump and disturbance pump.

3 tanks control trainer
1600(w)×1000(d)×2250(h) mm



Order number : 28007

Level control trainer
1400(w)×1000(d)×1700(h) mm



Order number : 28008

Components

No.	Component	Qty
1	Water tank	4
2	Motor pump	1
3	Disturbance pump	1
4	Control box	1
5	Flow rate sensor	1
6	Level sensor	3
7	Proportional control valve	1
8	Manual override valve	2
9	Lamp inside the tank	3
10	Connectors and pipes	1

Option

1. Controller(PLC, LabVIEW etc.)
2. HMI(touch, SCADA, LabVIEW etc.)

Components

No.	Component	Qty
1	Water tank	2
2	Motor pump	1
3	Control box	1
4	Flow rate sensor	1
5	Level sensor	3
6	Pressure sensor	1
7	Proportional control valve	1
8	Manual override valve	2
9	Lamp inside the tank	1
10	Connectors and pipes	1

Option

1. Controller(PLC, LabVIEW etc.)
2. HMI(touch, SCADA, LabVIEW etc.)

Industrial PCS trainer (FPCS-IPC-TOTAL)

This process control equipment is specially customized to learn process control technology as plant design, manufacturing, control, maintenance.

It is designed on the basis of level control plant that is the most important in industry. It is installed and used in engineer training of POSCO company.

Total process control system is constructed to have experiment of control characteristics according to various disturbances.

It can be used to learn about process control technology like control programming, HMI monitoring, SCADA system with industrial controller PLC, industrial control computer, and touch panel.

Total Process control system



Order number : 28009

Components

No.	Component	Qty
1	Water tank	4
2	Motor pump	1
3	Disturbance pump	1
4	Control box	1
5	Flow rate sensor	1
6	Level sensor	3
7	Proportional control valve	1
8	Manual override valve	2
9	Lamp inside the tank	3
10	Connectors and pipes	1
Option		
1. Controller(PLC, LabVIEW etc.)		
2. HMI(touch, SCADA, LabVIEW etc.)		