



Scientech 2421R Water Level Control Rig with PLC enables students and practicing engineers to gain invaluable practical experience on the principles and application of programmable logic controllers. The objective is to connect and program programmable logic controller to monitor and control the level of water in a tank system. Scientech 2421R consists of a Delta PLC, float switch, solenoid valve, polycarbonate sump tank, measuring tank, water pump, start, stop pushbutton, and its indicator.

Features

- Delta make PLC with 8 digital inputs and 6 digital outputs.
- Polycarbonate transparent tank for water storage and measurement.
- Three float level switches to sense the tank low, middle and high level in both sump tank and measuring tank.
- Start and stop button. Indicators for process start and process stop.
- Several sample ladder programs.
- Extremely easy and student friendly software to develop different programs.
- Experiments configurable through patch board.
- Profile based structure of rig.
- Solenoid valve mounted in measuring tank outlet for control through PLC.
- Easy downloading of programs.
- Robust construction.
- MCB and RCCB provided with AC supply for safety.
- Enhanced electrical safety considerations.
- Caster wheel (with locking mechanism) at the legs of rig for easy movement.

Scope of Learning

Study and use of

- Float switch working and interfacing with PLC
- Solenoid valve and interfacing with PLC
- Water Level control by PLC and float switch
- Ladder programming.
- Normally open and normally close contact
- Types of logic gates
- Memory bit
- Set and reset bit
- Timer
- Counter
- Math function
- Compare function

Technical Specifications

PLC

Digital inputs	:	8 nos.
Digital outputs (relay)	:	6 nos.
Program size (words)	:	4096
Boolean execution speed		
Sec. per instruction	:	0.33 μ s/sequential instruction in average
Interfacing	:	RS232

Measuring water tank

:	1 no.
Size	: 300mm x 350mm x 300mm
Material	: Polycarbonate

Sump water tank

:	1 no.
Size	: 300mm x 350mm x 300mm
Material	: Polycarbonate

Float switch : 6 nos. (3 in upper tank and 3 in lower tank)

Control panel

Enclosure	:	Metal frame with accessible front panel
Push buttons red & green	:	1 no. (each)
Indicators red & green	:	1 no. (each)
Buzzer	:	1 no.

Control box

MCB	:	1 no.
Supply	:	230V AC
Current	:	16 Ampere

RCCB : 1 no.

24V DC Power Supply

:	1 no.	
Current	:	10A
Structure	:	Aluminum profile (30 x 30) frame supporting the two water tanks vertically aligned

Manual drain valve : 1/2"

Fluid solenoid valve : 1 no.

Material	:	Brass
Supply	:	24V DC
Line size	:	1/2"

Water piping size : 1/2"

Water pump voltage : 1 no.

Mains Supply : 230V AC

