



**Sciencetech 3002 Temperature Measurement & Control Test Bench** is a complete setup to control process through two point (on/off) and three point (PID) controllers. Temperature can be controlled through Industrial PID Controller. Sciencetech 3002 gives the exposure to Industrial components like temperature transmitter, temperature sensor (thermocouple), PID controller, control valve, rotameter and heater. Users can learn how to install, operate, program and set the instruments for controlling the process.

### Features

- Industrial PID controller with RS485 communication facility.
- Thermocouple temperature sensor.
- Float switch for detection of water level.
- Control valve and liquid rotameter.
- Temperature measurement and control.
- User friendly software.
- USB Interface.
- Heavy duty Test bench.
- Electrical control panel.
- Leak proof and sturdy piping & tanks.
- SS Sump tanks for inlet and outlet of water.
- Enhanced electrical safety considerations.
- Caster wheel (with locking mechanism) at the legs of Test bench for easy movement.

### Scope of Learning

- Temperature industrial PID controller as on/off controller
- Industrial PID controller as P (proportional controller)
- Industrial PID controller PI (proportional derivative controller)
- Industrial PID controller (proportional derivative interval controller)
- Auto tuning mode of industrial PID controller
- Temperature transmitter
- Level detection using float switch
- Thermocouple temperature sensor
- Flow measurement using rotameter
- Control valve

**Technical Specifications**

<b>Industrial PID controller</b>	:	1 no.
Input	:	Accuracy 0.2%FS
Sensor type	:	K type
Output	:	4 to 20mA, relay
Control algorithms	:	PID, P, PI, PD, On/Off
PID range	:	P : 0 to 200%, I : 0 to 3600 Sec , D : 0 to 900 Sec
Communication	:	RS485
<b>Thermocouple sensor</b>	:	1 no.
Type	:	K type
Wire	:	2 wire
Rod length	:	6"
Temperature range	:	-200 to 1250°C
<b>Temperature transmitter thermocouple</b>	:	1 no.
Range	:	0-20 <sup>o</sup> C
Output	:	4 to 20mA
Type	:	Head mounted
Input	:	K type
Loop supply	:	24V DC nominal (12 to 36)V DC
<b>Control valve</b>	:	1 no.
Input	:	4 to 20mA
Line size	:	25mm
Supply pressure	:	40 to 50 Psi
Type	:	Linear
<b>Air compressor</b>	:	1 no.
Power	:	0.75 HP
Pressure	:	100 Psi (maximum)
Tank capacity	:	24 liter
<b>Rotameter</b>	:	1 no.
Flow range	:	0-2000LPH
Line size	:	½"
<b>Water pump</b>	:	1 no.
Computer interface	:	USB
<b>Float switch</b>	:	1 no.
<b>Toggle switches</b>	:	3 nos. (pump and heater )
<b>Sump tank</b>	:	1 no.
<b>Measuring tank</b>	:	1 no.
<b>Caster wheels</b>	:	4 nos. (2 with lock & 2 without lock)
Power supply	:	230V ± 10%, 50 / 60 Hz