



**52009D.1** Level Process Control Trainer consists of an instrument panel and transparent tank with different type of level sensor that is useful for the study of principal and working of level measuring setup. This system comprises of the latest components, which reflect the latest technological innovations in this field. Level Process Control Trainer endows students and industry professionals to understand the concepts and working of level Measuring instruments and control, and enables them to learn advance and more complex level process systems.

52009D.1 consists of different types of level Sensors such as Ultrasonic, Capacitance type, Point to Point, Pressure type, Magnetic Float type and DAQ, Solenoid Valve, Sump tank and Acrylic Measuring tank. The setup has safety measures such as emergency shutdown and overheating protection. A wide range of experiments can be performed on the platform.

### Features

- Included of Different type of Level Sensors like: Ultrasonic, Capacitive type, Point to Point, Pressure type, Magnetic Float type
- 7" Human Machine Interface (HMI)
- Types of Controller : DAQ ,HMI, and PC
- Start, Stop, Pump, Solenoid Valve buttons and Indicator for Visual Indicator, Audio Indicator, Pump & Solenoid Valve
- Industry-standard instruments and controls
- Interface with Ethernet based DAQ
- Sump Tank & Acrylic Measuring Tank
- 8 Channel 24 bit ADC
- Real time DAQ Interface with ADC and Digital input/output
- Academic and vocational study for process control engineers and plant technicians
- Experiments configurable through Patch board
- Self-contained, bench-mounting arrangement
- Supplied with Dashboard Software for supervisory control of the process with data acquisition
- Castor Wheel (with locking mechanism) is provided at legs
- of workstation so that it can be easily moved
- MCB is provided with AC supply for safety purpose
- Enhanced electrical safety consideration

- Characteristics of Point to Point Type Level Sensor
- Open & close loop function
- ON/OFF controller using software
- Proportional controller using software
- Proportional-Integral controller using software
- Proportional-Integral-Derivative controller using software
- Human Machine Interface (HMI)
- Process Control & Monitor by HMI
- Creating Application/Screen in HMI
- Downloading and Uploading programs
- HMI Communication with PLC
- Creating Alarm Message in HMI
- Creating Trend in HMI

### Experiments

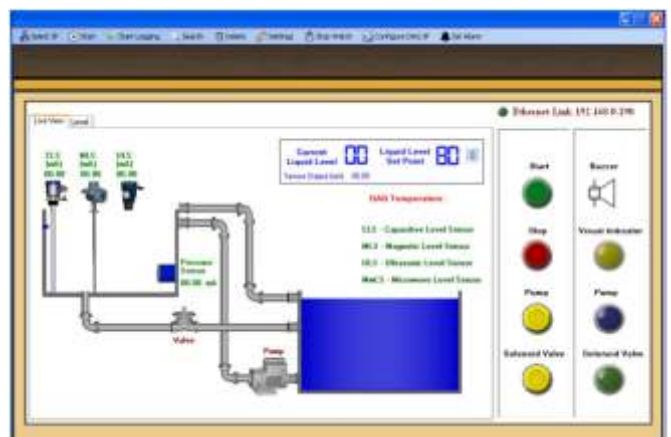
- Characteristics of Capacitance Type Level Sensor
- Characteristics of Pressure Type Level Sensor
- Characteristics of Ultrasonic Type Level Sensor
- Characteristics of Magnetic Float Type Level Sensor

Note: Specifications are subject to change.

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### Software window



### Technical Specification

DAQ	: 1 no. (Data Acquisition System)	Supply	: +24V DC
Analog Input	: 4 nos.	Measurement Span	: 15 to 50000 pf above zero
Analog Output	: 2 nos.	Response Time	: 0.5s to 5 sec
Digital Input	: 6 nos.	Accuracy	: +/-1% FSL
Digital Output	: 4 nos.	Output	: 4 to 20mA
ADC Resolution	: 24 bit	Range	: 0.5 Meter
Two Unity Gain Amplifier	: 0 to 5V	User Interface	: 4 Digit display with 4 keys and LED
Ethernet Interface	: Yes	Point to Point Sensor	: 1 no.
RS485 Interface	: Yes	Supply	: 5V DC
Data Logging	: Yes	Output	: 0 or 5V DC
HMI	: 1no.(Human Machine Interface)	Sensing	: Rod Ss304
Supply	: +24V DC	Digital Panel Meter	: 2 nos.
CPU	: 32-bits 400MHz RISC	Display	: 4 Digit, 7 segment digital display
Storage	: 128M FLASH + 64M DDRAM	Keys	: 3 for Digital Setting
Display size	: 7 inch	Input Type	: Current
Resolution	: 800x480 TFT LCD 65,536 colors	Resolution	: 1 or 0.1 degree
Interface	: Rs485	Supply Voltage	: 230V AC
Touch Screen	: High precision four-wire resistive		

### Type of Level Sensors

Volumetric Pressure Sensor	: 1 no.
Supply	: 90 to 260V AC, 50 Hz
Accuracy	: ± 0.5 % of full scale
Output	: 4 to 20mA, 2 Wire System
Probe Body	: SS-304
Rating	: Rated at 6A, 230VAC for non

### inductive loads

Housing	: Single Channel wall mounting
Ultrasonic Sensor	: 1 no.
Supply	: 5V DC
Output	: 0 to 5VDC
Range	: Upto 5.00M
Magnetic Float Sensor	: 1 no.
Supply	: +24V DC
Output	: 4 to 20mA
Sensing	: Rod Ss304
Housing	: Cast Aluminum weather proof
Range	: 0.5 Meter
Capacitances Sensor	: 1 no.
Housing Enclosure	: Cast Aluminum

### Panel Component Description

Push to On Switch	: 4nos.
Indicators	: 4nos.
Toggle Switch	: 4nos.
Contactator	: 1no.
Solenoid Valve	: 1no.
Pump	: 1no.
Sump Tank	: 1 no.
Capacity	: 100Litters
Acrylic Measuring Tank	: 1no.
Capacity	: 65Litters
Manual Valve	: 3nos.
Castor Wheel	: 4nos (2 with lock & 2 without lock)
Size	: 75mm
Dimension in mm	: H1735 x W1500 x D 740

### Included Accessories

• 4mm Patch Cord 18"	: 8 nos. (Yellow)
• 4mm Patch Cord 18"	: 8 nos. (Blue)
• 4mm Patch Cord 25"	: 8 nos.(Red)
• 4mm Patch Cord 25"	: 8 nos. (Black)
• Ethernet Cable	: 1 no.
• Windows OS Based PC (optional)	

**Note:** Windows OS Based Computer is required to explore DAQ experiments

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