



VERITAS Engineering

Catalog
Of

Basic Sensor Experimental Lab Trainer

Brand: VERITAS

Model: VPLCT-03

Features:

Industrial-standard sensors and transducers With USB interface Open-ended design,
ideal for expansion Offer a sensing data acquisition software



Technical Specification

Main Unit

1. Power Supply Unit:

Fixed DC power supply

Output voltage : +5V, -5V, +12V, -12V

Max. output current : +5V3A, -5V0.3A, +12V1.5A, -12V0.3A(3) With output overload protection

2. AD Converter :

1x12-bit ADC.

Input voltage range : 0 to +5V.

Time pulse frequency : 3.58 MHz

Control signals : Status, pole, over range indication

3. Interface Port USB interface : Type B

4. D A Converter :

1 x 12-bit DAC

Analog output & control OUT+ : +DC OFFSET 0V ~ +4.096V unipolar

OUT- : -DC OFFSET 0V ~ - 4.096V unipolar.

OUT BP : DC OFFSET -2.048V ~ +2.048V bipolar



5. Preset Level Max. value : 4095.
6. Status Display & DCV Input voltage measurement
 - a. Range : 2000mV, 20V
 - b. Accuracy : ± 0.0 of reading + 4 counts
 - c. Input impedance : $10M\Omega$
 - d. Display : 4 digits.
7. Mode Selector Manual or single-chip
8. Buzzer: Maximum input signal voltage : +12V.
9. Microcontroller Signals 5 Control line outputs
10. Model Holder : X4.
11. Potentiometer : 100k ohm B-type.
12. Comparator V-,V+ input, Vo output
13. Differential amplifier V-,V+ input, Vo output
14. Instrumentation amplifier V-,V+ input, Vo output, adjustable gain

Experiment Modules:

1. Using 2mm plugs and sockets.
2. Comprehensive experiment manual
3. Modules secured in plastic housings.
4. Connected by 2mm-2mm test leads
5. Dimension : 255 x 165 x 30mm.
6. Circuit symbols, blocks and components printed on the surface of each module
7. Power supplied from KL-61001B main unit.

List of Modules

Module-1.

1. Photo transistor.
2. Photo interrupter.
3. Magnetic (hall-effect) digital
4. Magnetic (hall-effect) analog

Module-2



1. Pyroelectric detector
2. Reed switch
3. Thermistor
4. Mercury switch

Module-3

1. Limit switch
2. Vibration switch
3. Condenser microphone
4. Dynamic microphone

Module-4

1. Gas smoke sensor
2. Ethanol sensor

Module-5

1. IC (AD590) temperature sensor
2. Humidity sensor
 - (1) Humidity transducer rated voltage : 1Vp-p AC
 - (2) Frequency range : 100Hz to 10KHz
 - (3) Temperature range : 0C to 60 C
 - (4) Humidity range : 20 percentage RH to 90percentageRH
 - (5) Impedance : 13 k ohm (70percentageRH at 25C)

Module-6

1. Infrared TX or RX sensor
 - (1) Infrared transmitter :
Emission intensity : 12mW sr (I = 50mA)
Emission wavelength : 940nm (IF = 50mA)
 - (2) Infrared receiver :
Sensitivity wavelength : 1000nm
2. Ultrasonic TX or RX sensor
Nominal frequency : 40KHz

Module-7

1. Pressure sensor 0-7 psi to 0-30 psi pressure ranges
2. Strain gauge
 - (1) Maximum payload : greater5kg
 - (2) Terminal resistance : $350 \pm 50\Omega$

Module-8

1. Hall current sensor
 - (1) Nominal current : $\pm 3A$
 - (2) Current range : $\pm 9A$
 - (3) Output voltage : $\pm 4V$, RL equal 10 k Ohms
2. Proximity sensor (1) Operation voltages : 10 to 30V DC

List of Experiments

1. D A and AD Converters
2. Characteristics of Sensors
3. Gas Sensors
4. AD590 Temperature Transducer
5. Hall Current Sensor
6. PT100 Temperature Sensor
7. Humidity Sensor
8. Strain Gauge
9. Linear Variable Difference Transformer (LVDT)
10. Photovoltaic Cell
11. Proximity Switch
12. Infrared Transducer
13. Ultrasonic Transducer
14. Pressure Sensor
15. VF and FV Converters
16. CDS Cell
17. Level Controller
18. Fiber Optical Communication
19. Rotation Angle Sensor



Brand PC:

Processor: Intel Core i7 -14700K (14th Generation), (33MB CPU Cache, 4.5GHz Base up to 5.6GHz),
DDR-4 & DDR-5 Memory

Type CPU Cooler – Must be supportive for Intel Core i7-14700K Processor

Cooler type -Liquid CPU Cooler, No. of Fans-3(at least),

Fan Speed- 1500RPM to 20000RPM

Motherboard- Must be supportive for processor Intel core i7-14700K (Memory type-DDR5)

Memory Slot-4 (at least-128GB),

Storage slot-4, WiFi-6 built, must be integrated with external Graphics Card) RAM: 16GB (DDR5-Type, Bus Speed-6000MHz to 8000MHz).

Storage: SD: 1TB at least (with GDDR5-Memory Type)

Graphics Card : External Graphics Card at least 8 GB , Memory type-GDDR6 ,

Graphics Resolution -Quad Display(7680 x 4320) (Must be supportive Processor & Motherboard)

Monitor at least 23.8-inch, Display Resolution: 1920x1080 (W x H) FHD,

Refresh rate-100 Hz (at least)

OS Windows 10 or 11 or higher (Genuine Version)

Mouse & Keyboard- Supportive mouse & keyboard must be given.

With Computer Table- High density melamine chip board (Size-48W×22D×35H)

Accessories: Air Compressor-01 no

Connecting jack 2mm & 4mm : 01 Set

Power Cable: 01 no PLC to PC Communication cable: 09 Nos

Simulation software for compatible PLC