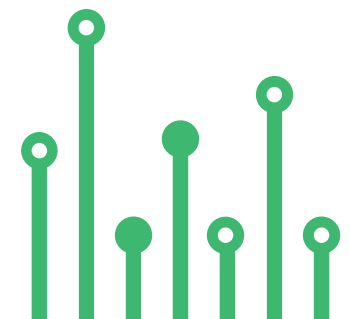


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# Universal Instrumentation Amplifier Module for SOIC8 Package with On Board Reference



SKU: EL135588

## MODULES

# Universal Instrumentation Amplifier Module for SOIC8 Package with On Board Reference



This is a universal instrumentation amplifier module for SOIC8 package. Various configurations are possible by selecting the right components. The board helps users to develop instrumentation amplifier circuits and it can accommodate SOIC8 devices such as INA828 from Texas Instruments. All capacitors are ceramic type size 0805 and resistors are also size 0805. It supports dual supply or single supply, install R12 0 Ohms for a single supply usage. Various capacitors and resistors can be installed as per application requirements. D1 is the Power LED. Board also has 2.5V precision reference voltage chip. Jumper J1 is provided to select the 2.5V reference voltage to the IN828 Amplifier. An external reference voltage can be fed through CN1 or CN2 Pin 2, Open Jumper J1 in this case. The project also consists of resistors R3, R4, R7, and R8 to create bridge configurations for various sensors. CN3 is provided for sensor input.



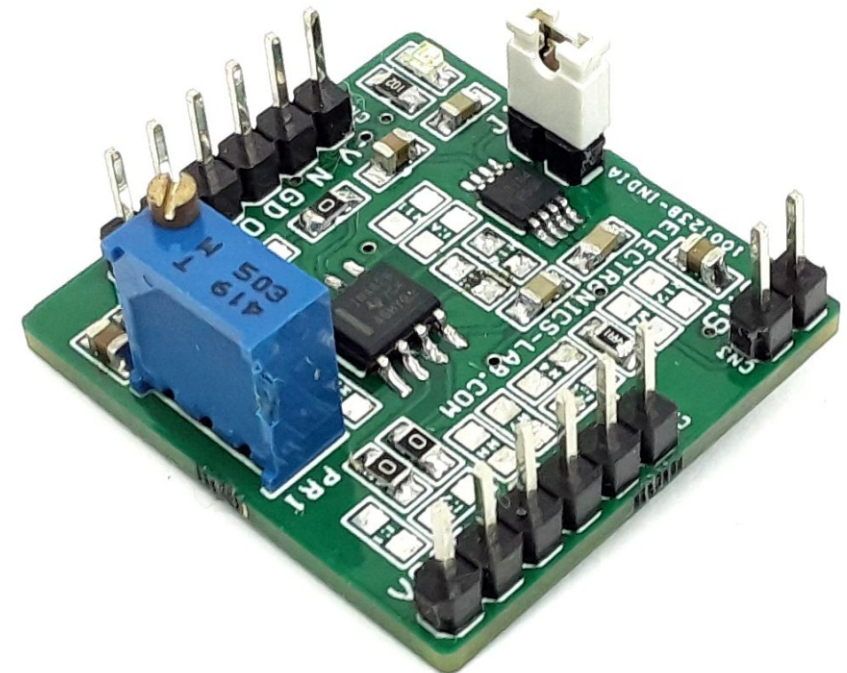
**Note:** The project consists of bridge configuration circuitry which helps with various sensor interfaces. Install R3, R4, R7, and R8 as per requirement and use CN3 for Sensor input.

## Features

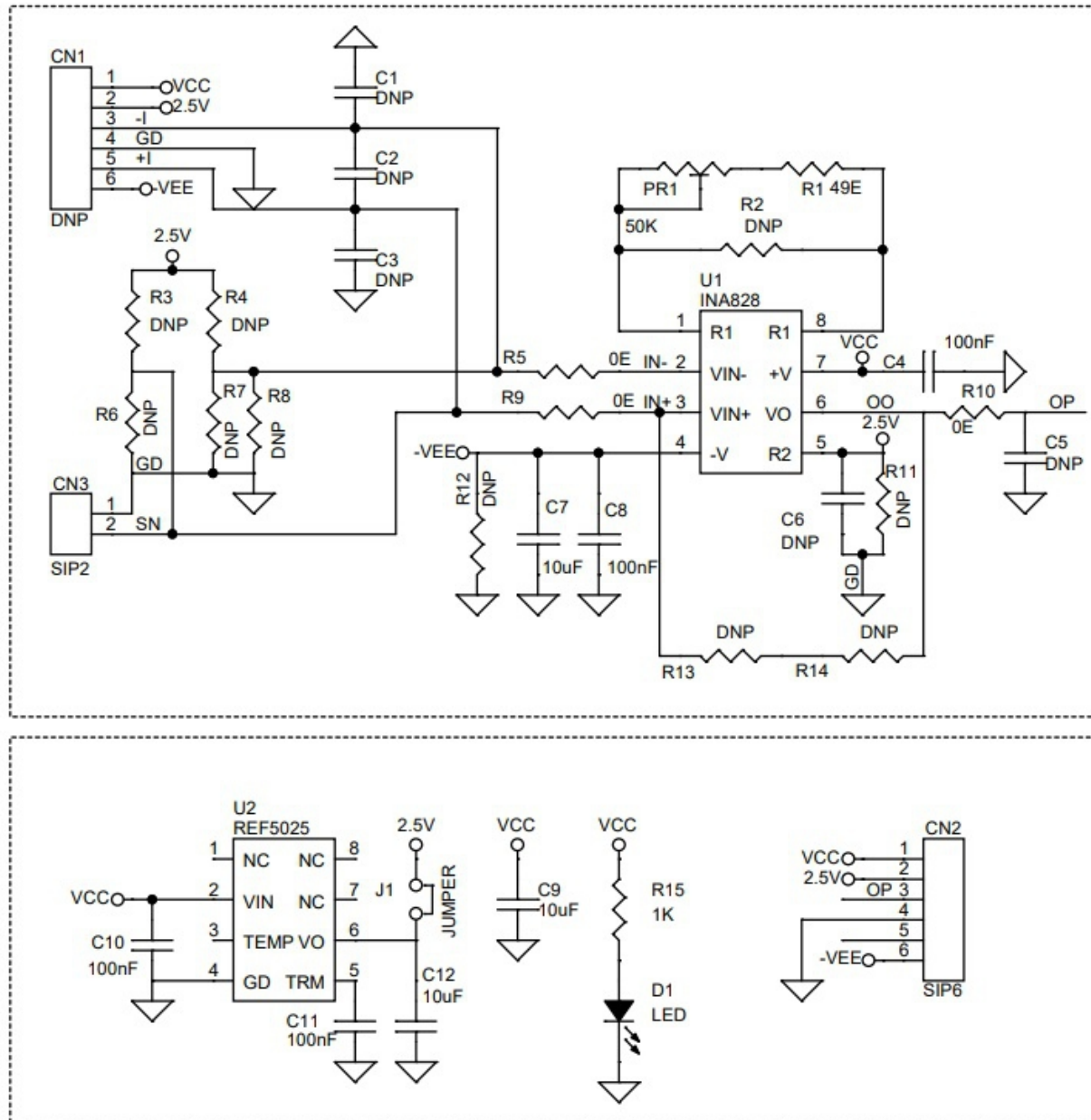
- Single Supply: 4.5V to 36V, Dual Supply:  $\pm 2.25V$  to  $\pm 18V$
- On Board Reference Voltage Generator Chip (Available Reference 2.5V, 5V, 1.2V)
- On Board Power LED
- On Board Jumper J1 for Reference Voltage Selection, External or Internal
- Header Connector for Inputs, Outputs, and Supply
- Gain Adjustable 1 to 1000 Using Multiturn Trimmer Potentiometer
- PCB Dimensions 29.05 x 27.31 mm

## Applications

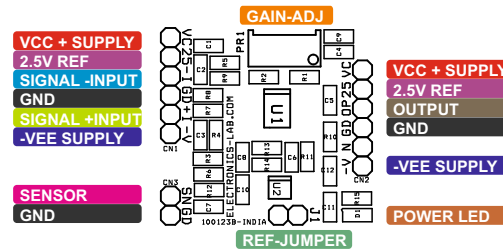
- Bridge Amplifiers
- ECG Amplifiers
- Pressure Sensors
- Medical Instrumentation
- Portable Instrumentation
- Weigh Scales
- Thermocouple Amplifiers
- RTD Sensor Amplifiers
- Data Acquisition



# Schematic



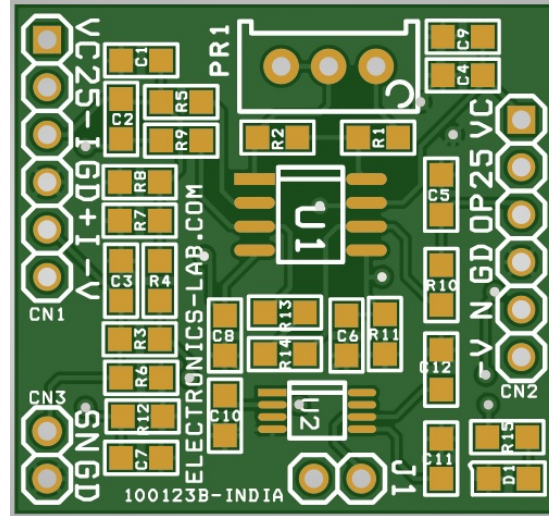
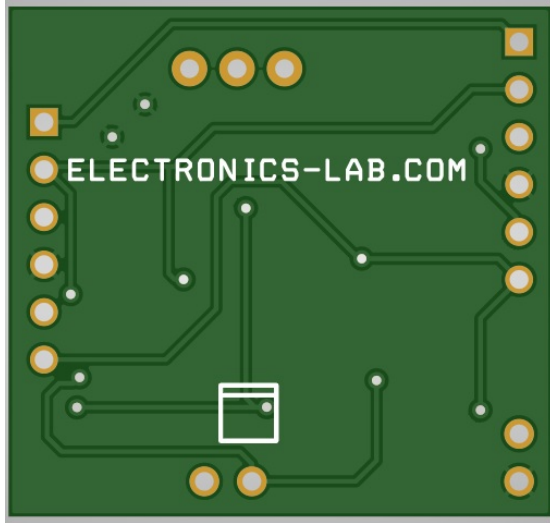
# Connections



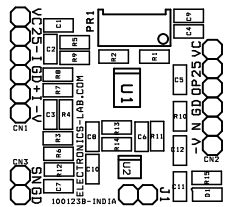
## Connections and Other Details

- CN1: Pin1=VCC, Pin2=Voltage Reference 2.5V, Pin3= -Signal Input, Pin4=GND, Pin5= +Signal Input, Pin5=-VEE Supply Input
- CN2: Pin1=VCC + Supply, Pin2=Voltage Reference 2.5V, Pin3= Output, Pin4=GND, Pin5= NC, Pin5=-VEE Supply
- CN3: Sensor Input for Bridge Configuration
- PR1: Multi-Turn Potentiometer for Gain Adjust (Gain 1 to 1000)
- J1: External or Internal Reference Selection (Internal Reference 2.5V)
- D1: Power LED

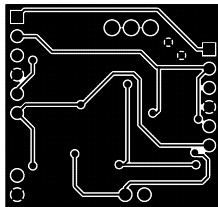
# PCB



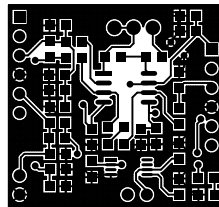
PCB GERBER  
FILES  
AVAILABLE



SILK SCREEN TOP



BOTTOM LAYER



TOP LAYER

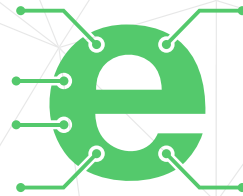
PCB DIMENSIONS 29.05 X 27.31 MM

# Parts List

BOM						
NO	QNTY	REF.	DESC	MANUFACTURER	SUPPLIER	SUPPLIER PART NO
1	1	CN1,CN2	6 PIN MALE HEADER PITCH 2.54MM	WURTH	DIGIKEY	732-5319-ND
2	2	CN3	2 PIN MALE HEADER PITCH 2.54MM	WURTH	DIGIKEY	732-5315-ND
3	13	R1,R3,R4,C1,R2,C2,C3,C5,R6,C6,C8,R11,R12,R13,R14,R8	DNP/AS PER USER REQUIRMENT		DIGIKEY	
4	5	C4,C8,C9,C10,C11	100nF/50V CERAMIC SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
5	1	SHUNT FOR JUMPER-J1	SHUNT	SULLINS CONNCT	DIGIKEY	S9001-ND
6	2	C7,C12	10uF/25V CERAMIC SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
7	1	D1	LED RED SMD SIZE 0805	OSRAM	DIGIKEY	475-1278-1-ND
8	1	J1	JUMPER/2PIN MALE HEADER 2.54MM	WURTH	DIGIKEY	732-5315-ND
9	1	PR1	50K MULTI TURN POT	BOURNS	DIGIKEY	3296W-503LF-ND
10	3	R5,R9,R10	0E SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
11	1	R1	49.9E 1% SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
12	1	R15	1K 5% SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
13	1	U1	INA828 SOIC8	TI	DIGIKEY	296-48914-1-ND
14	1	U2	REF5025 VSSOP8	TI	DIGIKEY	296-24499-1-ND







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