

Sensor Amplifier

Technical Manual Rev 1r0



The e-Gizmo Sensor Amplifier or so called Instrumentation amplifier is a type of differential amplifier because of its great accuracy and stability output for the sensor. It is an amplifier that particularly use in measurement and test equipment. It acts as a bridge sensor from the board to the sensor kit. Sample Application is Load cell (See page 6).

FEATURES:

- Compatible in all sensor and gizduino Board.
- With output offset adjustable.
- "SET GAIN" placement for other value of resistor (Through-hole or SMD)

GENERAL SPECIFICATION:

- **Supply Input:** 9 - 12V DC
- **ICs:** TLE4142 Differential Amplifier
- **PCB Dimension:** 65 mm x 47 mm

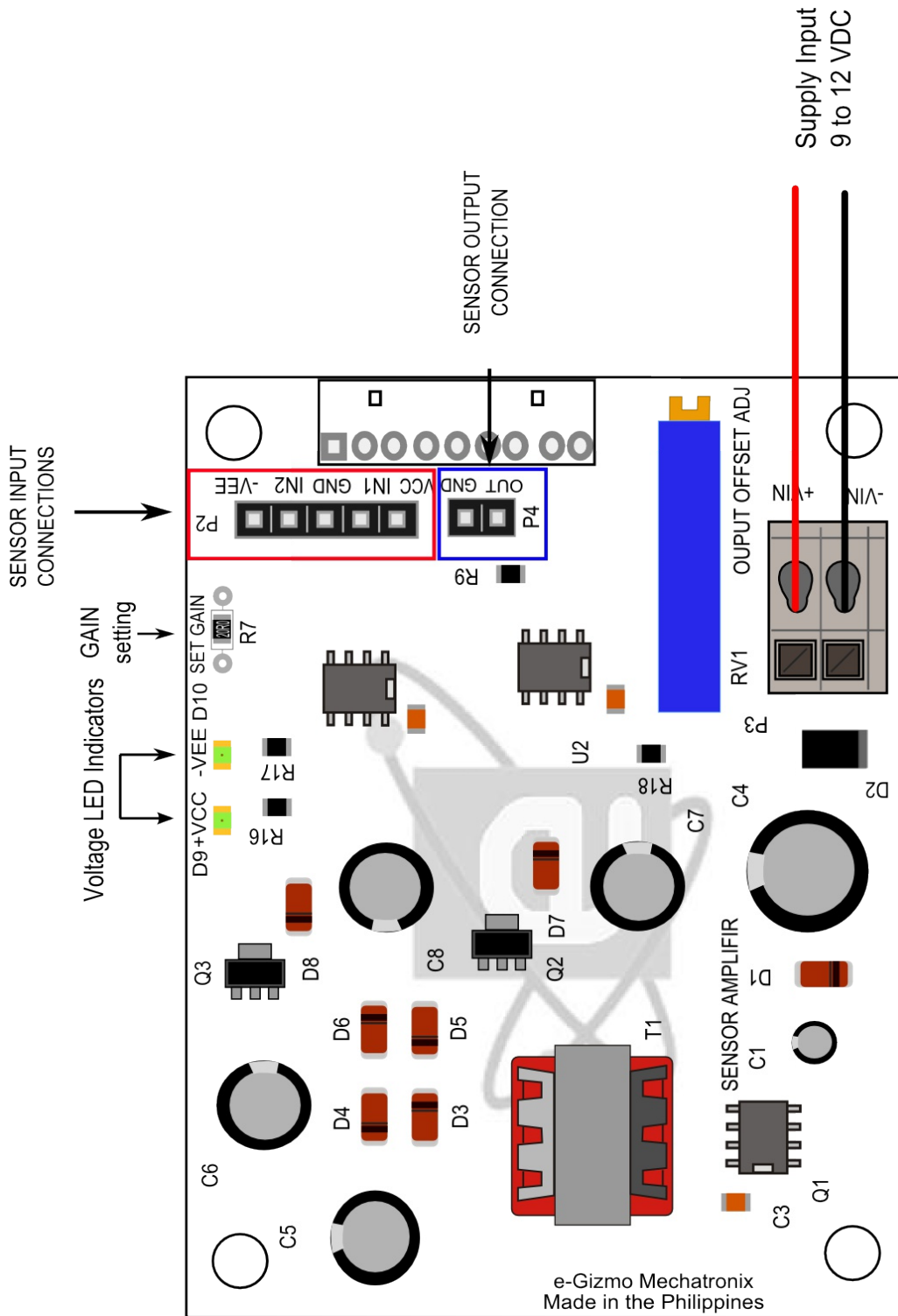


Figure 1. Major parts presentation of Sensor Amplifier, power supply input connections, Sensor input connections, and LED indicators.

Table 1. P2 - P4 connections and descriptions

PIN I.D Descriptions

P2	Sensor Input Connections
P3	Input Power Supply Connection
P4	Sensor Output Connection



Figure 2. P3 and P4 Illustration

Table 2. D9 - D10 LED Indicators

LED	Pin I.D	Descriptions
D9	+VCC	Positive Supply Indicator
D10	-VEE	Negative Supply Indicator



Figure 3. D9 and D10 Illustration

Table 3. RV1 Output offset adjustment

POT	Pin I.D	Descriptions
RV1	OUTPUT	Output Offset Adjustment



Figure 4. RV1 Illustration

Table 4. R7 Set Gain

Pin I.D	Pin Name	Descriptions
R7	SET GAIN	GAIN Setting 200 ohms (default)



Figure 5. R7 Illustration

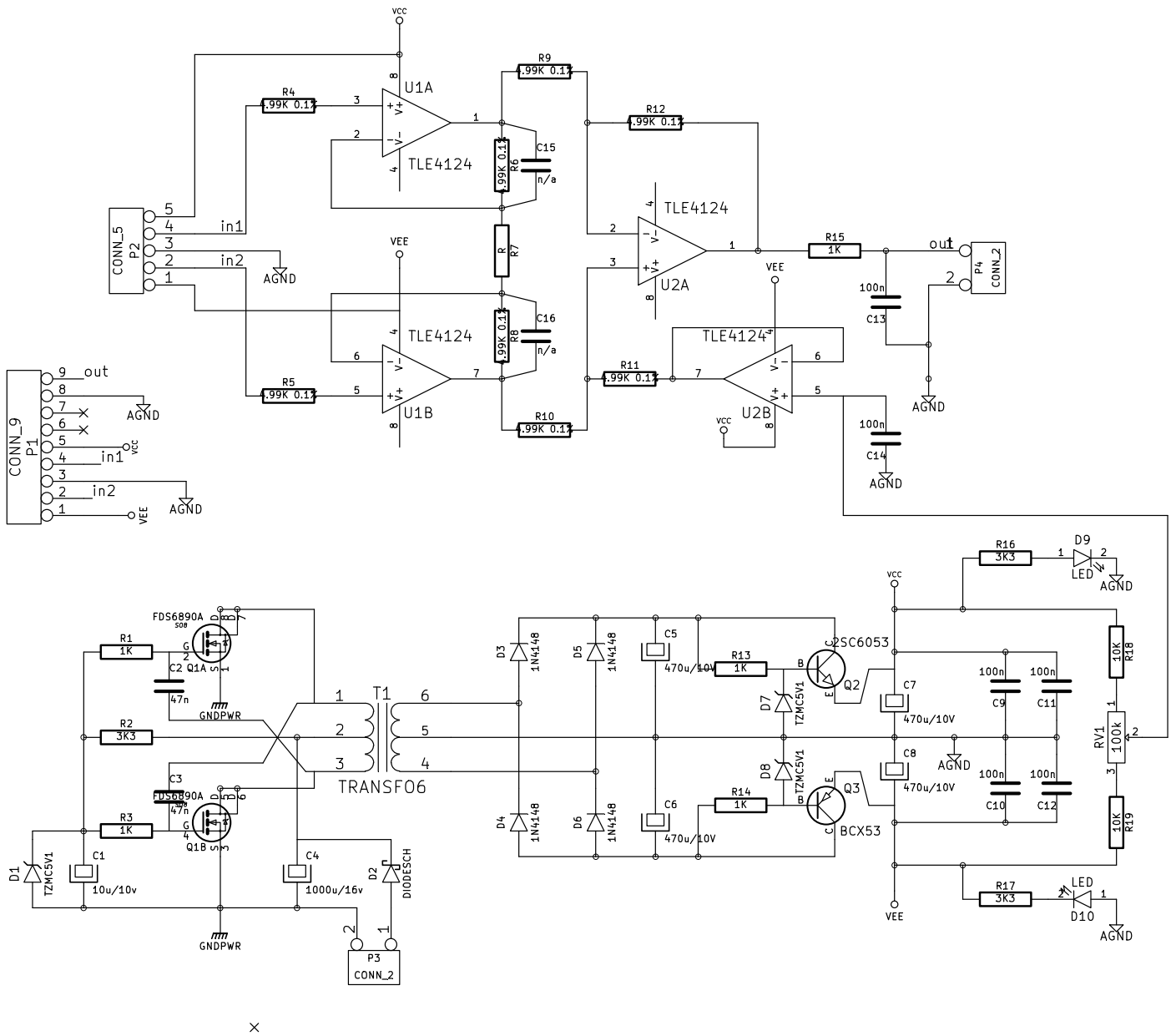


Figure 6. Schematic Diagram of e-Gizmo Sensor Amplifier

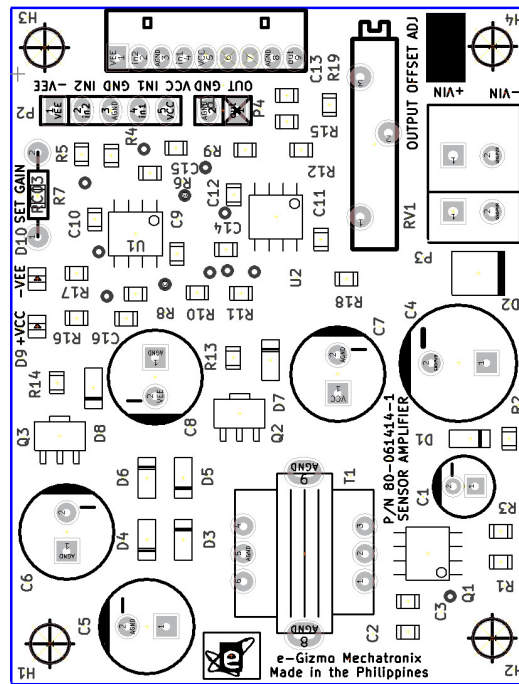


Figure 7. Parts Placement

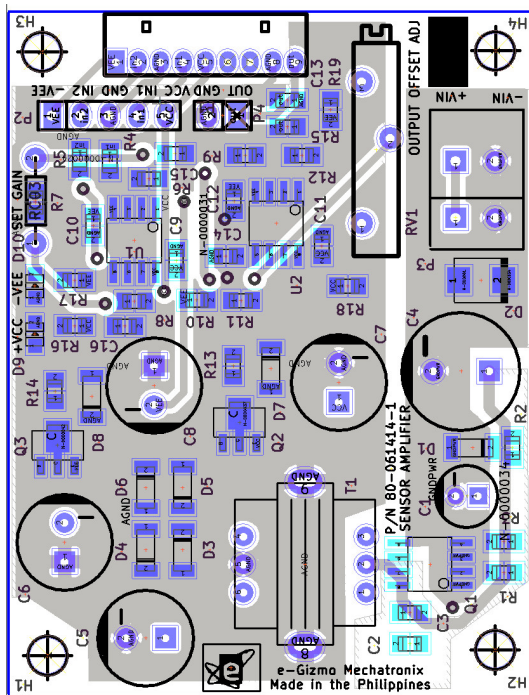


Figure 8. BottomPCBGuide

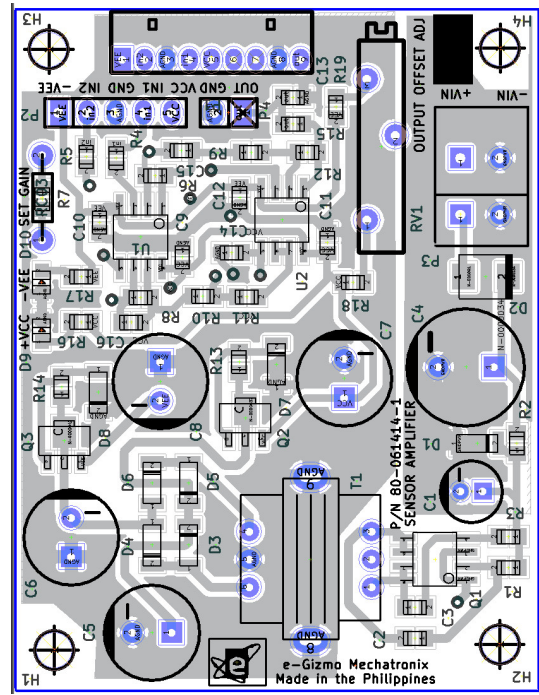
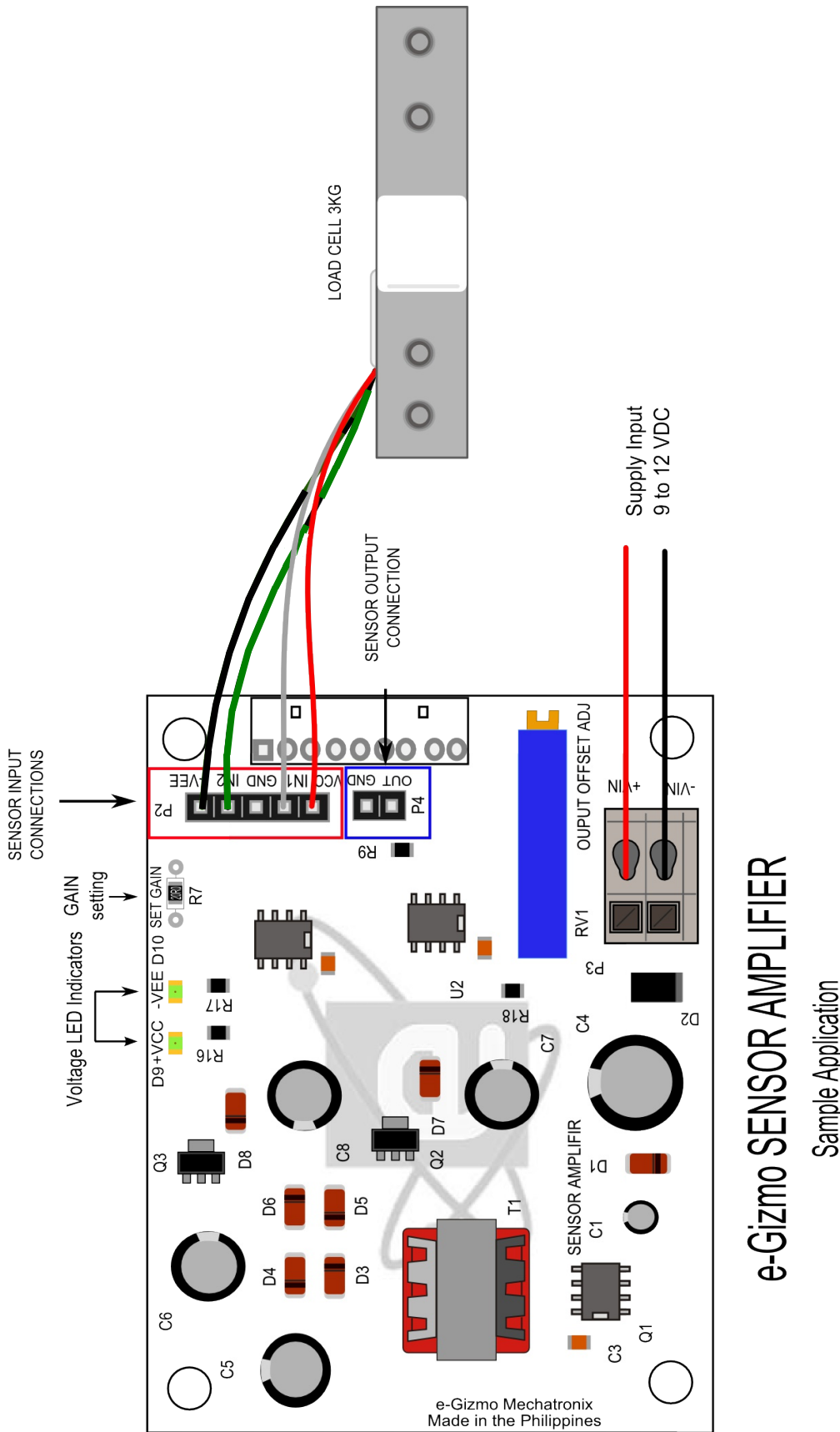


Figure 9. TopPCBGuide



e-Gizmo SENSOR AMPLIFIER

Sample Application

Figure 10. Sample Application of e-Gizmo Sensor Amplifier with Load cell 3kg(sensor).