USER MANUAL

VIBRATION AMPLIFIER

MODEL: SS-VIB-IE-06-V2

CONTENT TABLE

1. **PRODUCT DETAILS**

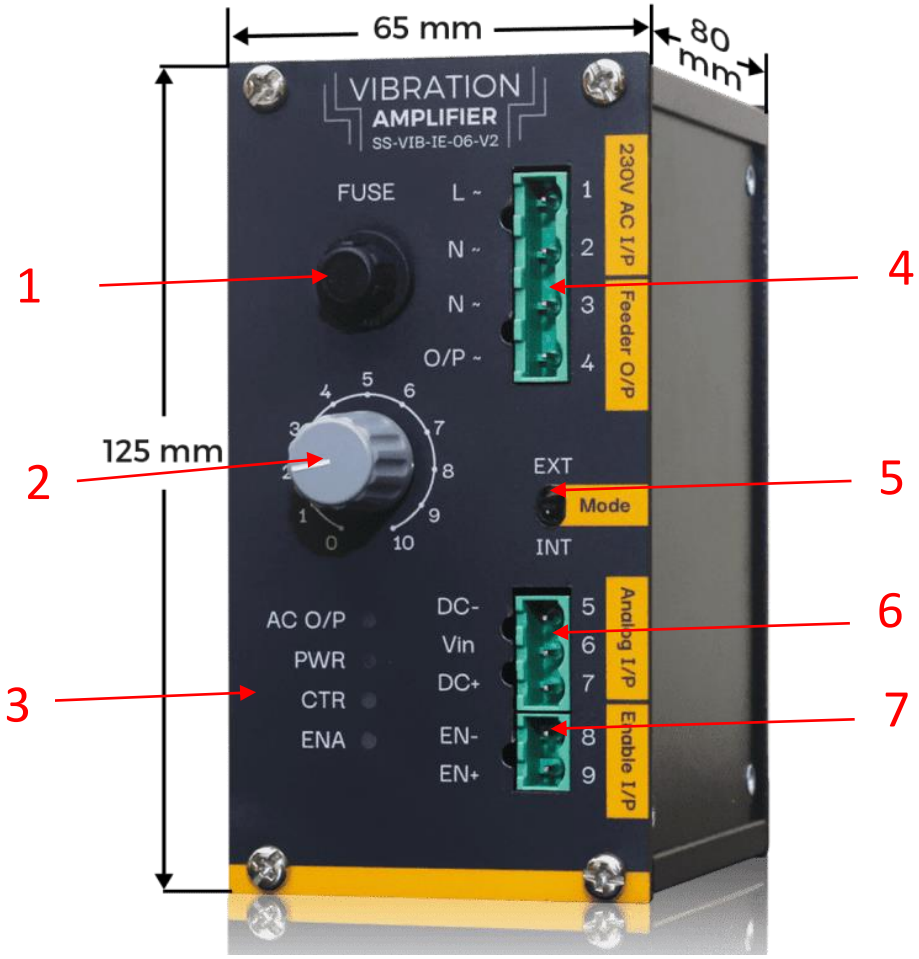
   The Vibration Amplifier is used to control the amplitude of the vibrations generated by the linear / rotary vibratory feeder.

   The controller accepts DC low voltage control signal and translates this into AC output power which is fed to the coil of the vibrator controller.

   The controller operates on 230VAC, 50/60Hz supply.

   The maximum load carrying capacity is 6Amp.

   The below illustration explains the different parts of the controller:



1. **Fuse**: Removable glass fuse. 6Amp rating
2. **On-Board potentiometer**: Used to adjust the vibration amplitude from 0 – 100% using a scale of 0-10
3. **LED Indications**: LEDs for visual status feedback of power, output, control and enable
4. **Power Connector**: Connector for AC power input wires and AC Load output wires
5. **Analog I/P Connector**: Connector for external potentiometer / 0-10V wiring
6. **Enable I/P Connector**: Connector for giving external enable command via PLC / Sensor / Switch.

2. WIRING AND SIGNALS

Connector number	Name	Connection
1	L ~	230VAC~ phase
2	N ~	230VAC~ neutral
3	N ~	O/P to feeder coil / load
4	O/P ~	O/P to feeder coil / load
5	DC-	0V OUT. (Internally generated)
6	Vin	0-10V analog input via potentiometer/PLC
7	DC+	12VDC OUT. (Internally generated. ***50mA max***.)
8	EN-	-ve of Enable i/p.
9	EN+	+ve of Enable i/p

Power Stage Wiring:

Connect 230VAC phase and neutral between points 1 & 2 of the controller.

Use an MCB of upto 6Amp rating.

Preferably provide the input supply via a AC line filter to remove harmonics. Make sure the frequency of the mains voltage is fixed 50Hz/60Hz.

The controller has an internal surge suppressor MOV which will short if the line voltage exceeds 270VAC for a continuous duration.

Connect the output load (transformer of the vibratory feeder) to the points 3 & 4. The output current is max 6Amp. Any surge or excess load beyond this may cause the on-board Fuse to blow.

Analog I/P Wiring:

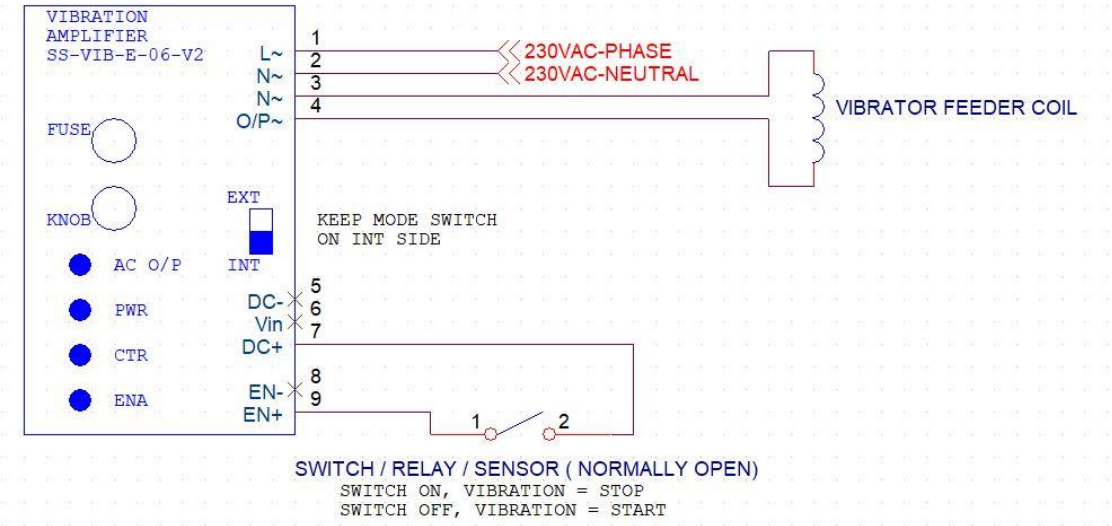
The controller will vary the vibration feeder's AC voltage amplitude based on the DC control signal's level.

The variable DC voltage of the range 0-10V can be provided by an external potentiometer, PLC/analog output card or the on-board potentiometer.

To select the source of analog input, use the MODE switch. If the Mode switch is set to **INT**, the controller will use the on-board potentiometer to vary the output amplitude. If the Mode switch is set to **EXT**, the controller will depend on the external 0-10V voltage source.

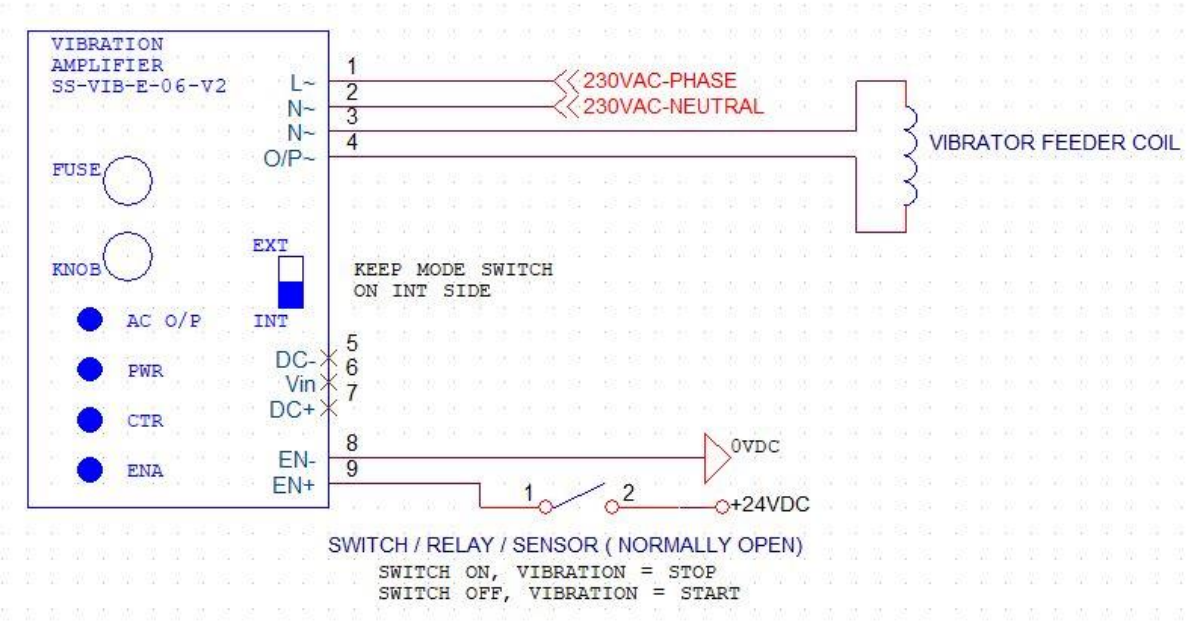
Refer to the below wiring connection options:

2.1 Internal Mode using on-board DC Voltage for enable/disable



- In this mode, keep the Mode switch on INT side.
- Use the on-board knob to vary the amplitude of the vibrations
- To enable, connect a switch / relay / sensor of PNP N/O type to the EN+ terminal.
- If you are using a sensor, then it can be given supply via the DC+ (12V) and DC- (0V) internally generated voltage. (Max current is 50mA).

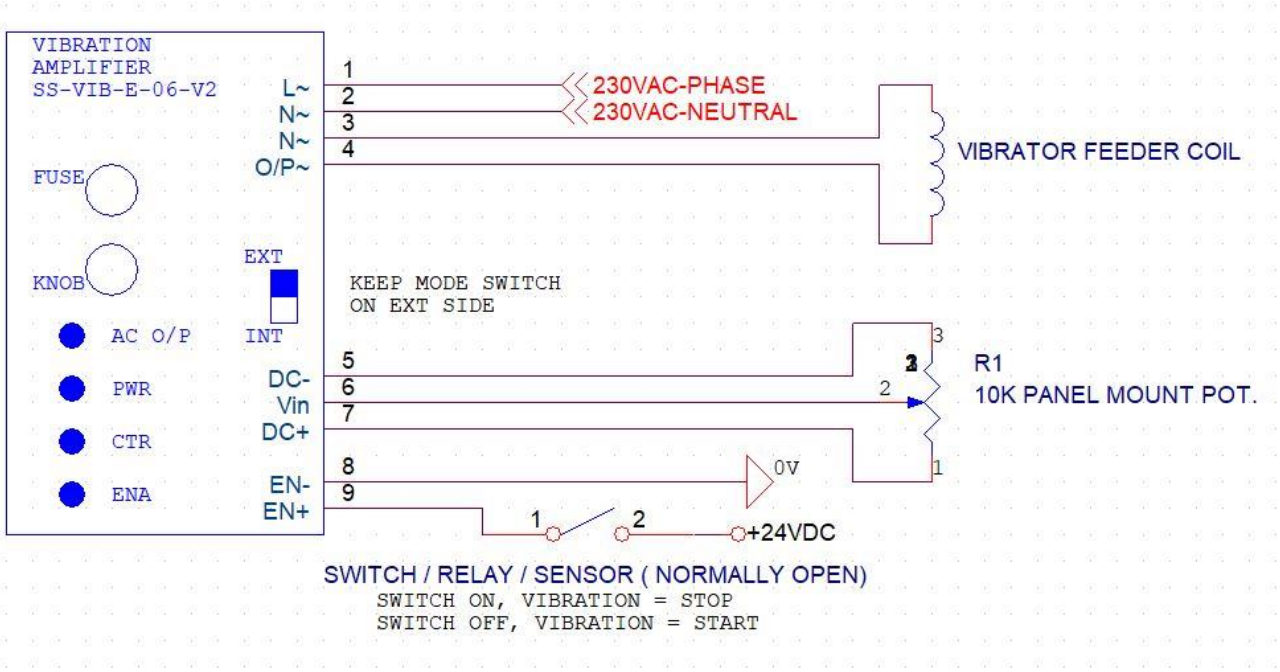
2.2 Internal Mode using 24VDC of a SMPS for enable/disable



- In this mode, keep the Mode switch on INT side.
- Use the on-board knob to vary the amplitude of the vibrations
- To enable, connect a switch / relay / sensor of PNP N/O type to the EN+ terminal. Connect the common of the switching device to 24V from SMPS.

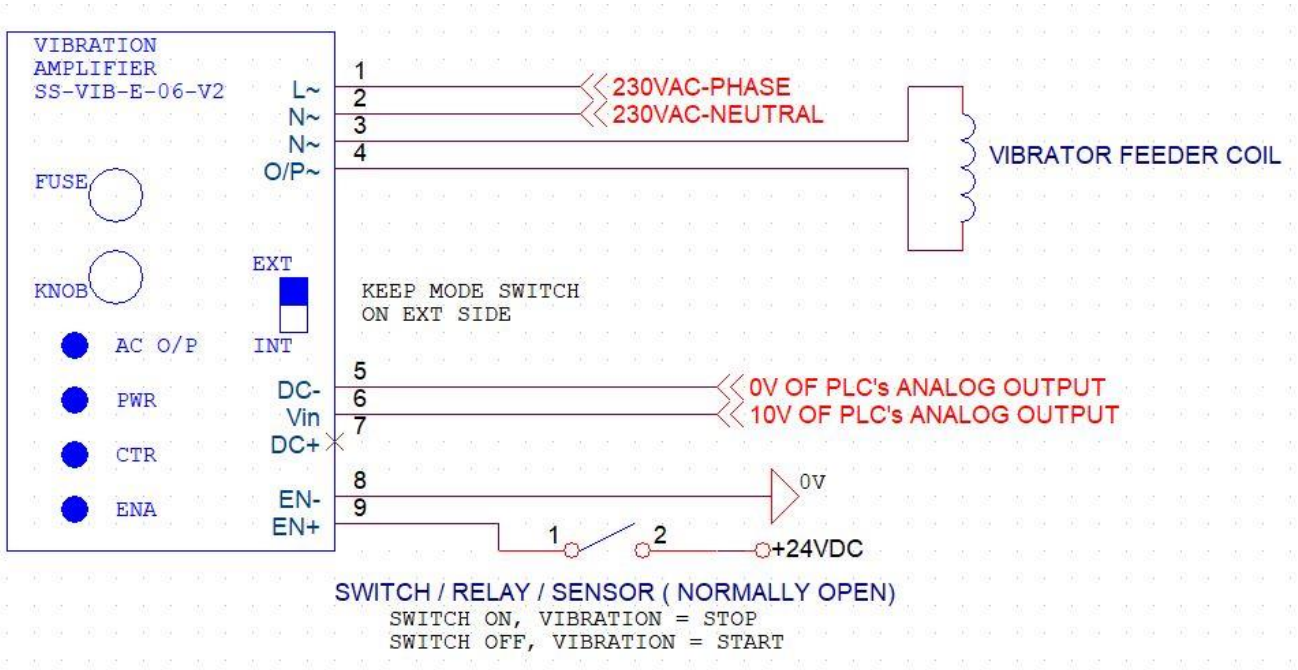
- If you are using a sensor, then connect sensor's supply to 24V and 0V of an SMPS. Connect sensor's PNP N/O output to EN+ terminal. Connect 0V of SMPS to EN- terminal.

2.3 External mode using potentiometer



- In this mode, keep the Mode switch on EXT side.
- Use an external potentiometer knob to vary the amplitude of the vibrations. The on-board knob will not function in the EXT mode.
- To enable, connect a switch / relay / sensor of PNP N/O type to the EN+ terminal.
- If you are using a sensor, then it can be given supply via the DC+ (12V) and DC- (0V) internally generated voltage. (Max current is 50mA) OR you can use an external SMPS to give power to the sensor. In this case, connect 0V of the SMPS to the EN- terminal.

2.4 External mode using 0-10V analog voltage from a PLC / Controller



- In this mode, keep the Mode switch on EXT side.
- Connect 0-10V analog output of a PLC / Controller to the Vin and DC- terminals of this controller.
- To enable, connect a switch / relay / sensor of PNP N/O type to the EN+ terminal.
- If you are using a sensor, then it can be given supply via the DC+ (12V) and DC- (0V) internally generated voltage. (Max current is 50mA) OR you can use an external SMPS to give power to the sensor. In this case, connect 0V of the SMPS to the EN- terminal.

Note:

I. in all the wiring connections, the enable logic is same. When voltage is given to the enable input, then the controller stops the vibration output. When voltage is not given to the enable input, then the controller starts the vibration output.

II. Do not Connect any external voltage to DC+ point. DC+ generates 12V internally. Doing so may damage the controller.

3. LEDs

The controller has 4 LED indicators for status indication.

i. **AC O/P** = Red indication: This LED will be ON when the AC output is ON. The intensity of this LED will vary depending on the output voltage. In case the load is disconnected, this LED will be always ON

ii. **PWR** = Yellow indication: this LED will be ON when the controller is powered ON. This indicator denotes that the internal DC 5V is OK.

iii. **CTR** = Blue indication: this LED will be in flickering ON stage when the controller is generating the AC output voltage based on the control voltage at the analog inputs. This LED is OFF when the controller is not enabled.

iv. **ENA** = Green indication: this LED will be ON when voltage is given at the enable input terminals.

4. INSTALLATION:

- Mount the controller on a 35mm width DIN Rail channel.
- Keep atleast 10mm clearance from the sides for better air convection.
- Make sure the panel in which the unit is housed has proper air circulation.
- Use a 2-pole 6A MCB for giving 230VAC supply to the device.
- Use a constant frequency and constant input voltage.

NOTES