


MAGNELAB RGS SERIES THREE-PHASE CURRENT TRANSFORMER SIGNAL CONDITIONER INSTALLATION INSTRUCTIONS

1. **Intended use of the equipment** -The Magnelab RGS Series three-phase current transformer signal conditioner is designed to take the output of standard Magnelab unburdened CTs and remove the phase angle error through feedback. The typical input voltage is up to 5V AC RMS with included internal burden resistors. The output voltage is typically up to 6.5 V AC RMS. The device is designed to be used with unburdened current transformers with suitable rating and outputs.

 This symbol indicates that caution must be taken when installing or using this device. All external connections should provide Class 2 circuit and basic insulation to ground as required by UL61010-1.

Also note that if the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

 Use UL Listed Energy Monitoring Current Transformers

2. **Technical specification**
 - a. Input 0 to 5V AC RMS on three phases
 - b. Output 0.333 V AC RMS at rated current (up to 5 V AC RMS output rating available on some rating options) on three phases
 - c. Accuracy class 0.3 IEEE C57.13 and 0.2 IEC 61869-2
 - d. Power supply required for operation, see 4.a (Class 2 required)
 - e. Input and output screw terminals rated for up to 16 AWG leads
3. **Name and address of manufacturer**

Magnelab, Inc.
600 Weaver Park Rd.
Longmont, CO 80501
4. **Equipment ratings**
 - a. **Supply voltage**
 - i. **Voltage range** - +20/0/-20V DC
 - ii. **Frequency range** – DC only
 - iii. **Current rating** – 50mA for RGS ratings up to 20 A, 62.5mA for RGS ratings up to 50 A, 125mA for RGS ratings above 70 A
 - b. **Description of all input and output connections** - screw terminal blocks suitable for wire gauges up to 16 AWG. Terminal Torque Rating for all terminals 2.7 Lb In.
 - i. **Input (6 terminals)** – for connection of up to 3 unburdened current transformers or similar devices, nominal input 0.333V AC RMS, max input 5 V AC RMS. These units should provide Class 2 circuit and basic insulation to ground as required by UL61010-1.

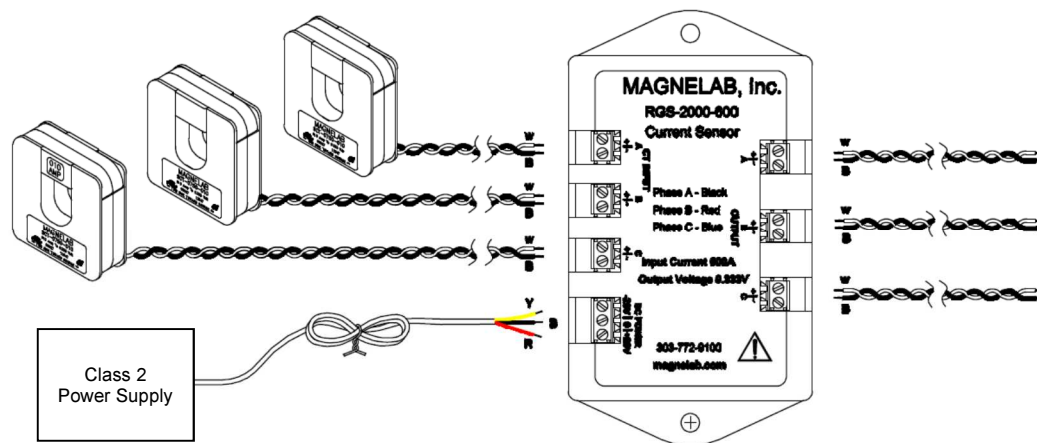
5. Equipment installation

This document provides general guidelines for the installation of the Magnelab RGS Series Three-Phase Current Transformer Signal Conditioner. This is a signal conditioner that is designed to be installed and used with unburdened current transformer type devices. This shall act as a reference only and a working knowledge of the equipment being installed is required for safety.

DANGER! – Installing any current transformer or signal conditioner onto an energized circuit can result in severe injury or death. Installation should be performed by qualified personnel only. Disconnect all power sources before attempting installation of current transformers or signal conditioners. For the safest installation, properly connect all input and output leads to the signal conditioner before installing it onto the conductor to be measured.

- Open the CT and place the conductor through the center opening. Securely close the CT ensuring you do not damage or bend the internal laminations.
- Allow the CT to hang or lay in an area that will allow the leads to be dressed safely away from any potential damaging sharp edges or voltage sources.
- Secure in place as needed with nonconductive materials only.
- Repeat the above steps for all three phases to be monitored (A, B, and C)
- Connect output of device (phase A, B, and C) with suitable lead wire to meter or monitoring device.
- Connect Class 2 power supply to power terminals according to polarity indicators. Power supply should be deactivated during connection.

Install the RGS series regardless of current rating per drawing below. The label on the CT indicates the orientation of the CT in relation to the current source. All installations are subject to inspection and approval by authorized personnel before operation of the device.



6. Equipment Operation

- a. Install current transformers and Magnelab RGS Series Three-Phase Current Transformer Signal Conditioner as described in Section 5.
- b. Activate power supply that is connected to the Magnelab RGS.
- c. Energize the center conductor that the current sensors are attached to.
- d. The output terminals for each phase (A, B, and C) should produce an AC voltage that varies linearly with the current passing through the corresponding center conductors. This should be detectible by the meter or monitoring device connected to the output.

7. Equipment maintenance and service

- a. Occasionally inspect for damage to insulation on sensors or lead wires to and from the RGS signal conditioner. Contact manufacturer for replacement materials in case of damage.
- b. There are no components within the device that can be serviced by the end user. Please contact the manufacturer if there are issues with the output of the RGS.
- c. If it is necessary to replace the power supply, be sure to use a Class 2 device that meets the power requirements of the RGS.