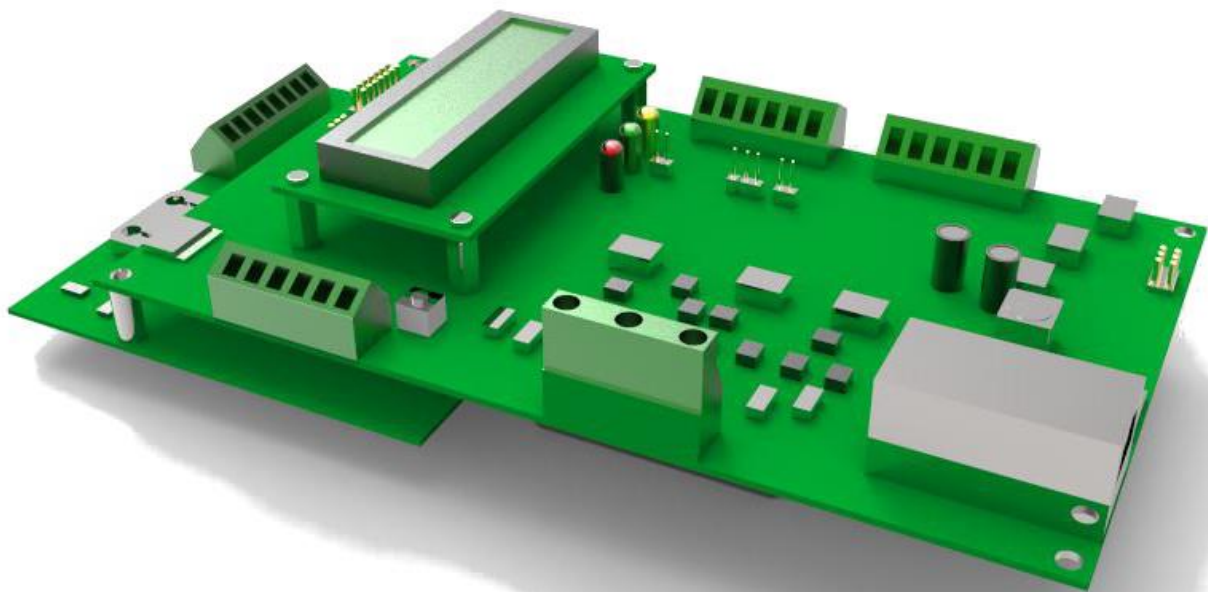




EARTH LINKED
TECHNOLOGIES

EarthLinked® Diagnostic and Monitoring system (EDM)



Installation and Operations Manual

Disclaimer

Proper installation and servicing of this EarthLinked® part is essential to the Heating and Cooling Systems reliable performance. All EarthLinked® parts must be installed and serviced by an ETI trained and authorized technician who has successfully completed the training class and passed the final examination. Installation and service must be made in accordance with the instructions set forth in this manual. Failure to provide installation by an ETI trained and authorized technician in a manner consistent with this manual will void and nullify the limited warranty coverage for the system.

EarthLinked Technologies shall not be liable for any defect, unsatisfactory performance, damage or loss, whether direct or consequential, relative to the design, manufacture, construction, application or installation of field specified components.

TABLE OF CONTENTS

I. Installation	3
II. Accessing the data	3
1) Sensors	3
2) Data connections	4
III. Troubleshooting.....	6

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CSI # 23 80 00

I. Installation

The EDM system is factory-installed in all PRIME series units. Sensors are already connected to respective components and the system will begin collecting data at unit startup. The EDM system has the ability to send data remotely to the Earthlinked Dealer Dashboard (<http://earthlinked.info/dashboard/>) when connected to the homeowner's internet router with an Ethernet cable. Technicians can wireless access the EDM data onsite with a Bluetooth connection to a phone or tablet. For homeowners without Internet access, or as a secondary data backup, the EDM system has an onboard SD Memory Card Writer that records the time, date, and sensor/signal values that can be personally graphed or uploaded to the Dealer Dashboard for review.

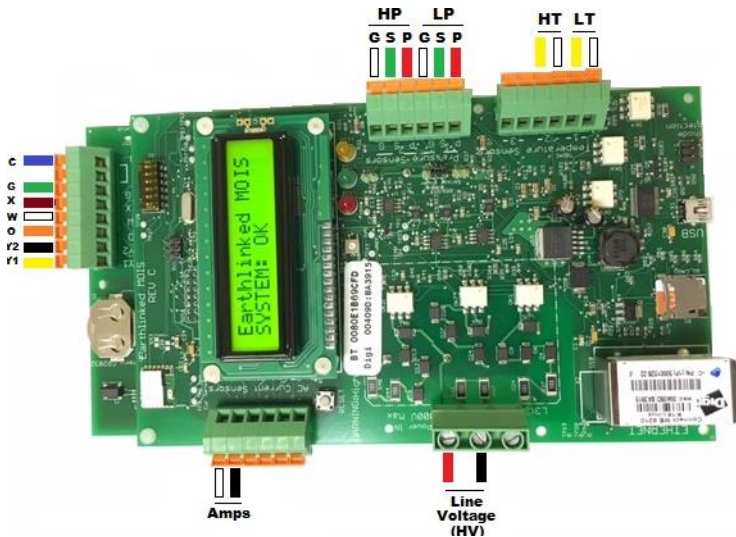


Figure 1 – EDM factory-installed in the Compressor electrical box

II. Accessing the data

1) Sensors

The EDM Standard Sensor Kit monitors pressure, temperature, voltage, current, and control signal activity. All sensors are calibrated and pass a quality check in the factory. With these metrics, users are able to view and record the unit's operation, performance of the Earthloop field, seasonal trends, and much more.



Sensor	Location
Low Temperature (LT)	Suction Line
High Temperature (HT)	Discharge Line
Low Pressure (LP)	Suction Line
High Pressure (HP)	Discharge Line
Line Voltage (HV)	L1/L2
Current (Amps)	Compressor C

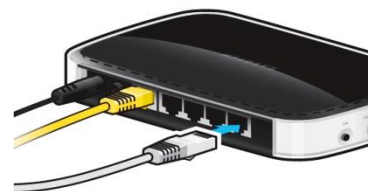
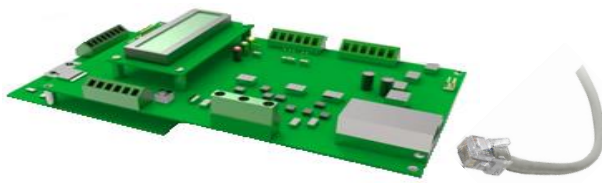
Signal	Description
Y1	1 st Stage Compressor
Y2	2 nd Stage Compressor
O	Reversing Valve (Heat/Cool)
W	Auxiliary/Emergency Heat
X	Fault (Lockout)
G	Air Handler Fan
C	Common

2) Data connections

The EDM system offers connection flexibility to fit a variety of different constraints and preferences.

a) Ethernet Connection for Remote Monitoring

In order to view the system remotely, the installer will need to connect an Ethernet cable from the board to the homeowner's Internet router. The system is programmed to automatically send data to the Earthlinked server for viewing on our secure Dealer Dashboard Portal (Accessible at <http://earthlinked.info/dashboard>).



b) Bluetooth Connection for Local Monitoring

In order to connect locally, the technician will need to pair a smartphone or tablet to the EDM system via Bluetooth using the Earthlinked App. This app is used to aid the technician in troubleshooting and repairing the unit.


To connect to the unit:

- 1) Open the Earthlinked App
- 2) Press "Connect to Unit"
- 3) Scan for EDM board (go into your device Bluetooth settings to pair if necessary)
- 4) Select board that matches 'BT' sticker number
- 5) In the menu, press 'Real Time Metrics'



c) SD Memory Card for Offline Monitoring or Data Backup

In order to collect SD memory in a CSV format, the technician will need to remove the SD card and transfer the file to a laptop.



WARNING!

Break power to the unit before removing or inserting SD card for safety. Power must be reset after inserting SD card to initiate memory card writer.

Press the SD card holder forward to unlock then lift hatch to remove memory card, see **Figure 2**. The data can be copied to a laptop as a CSV (comma separated value) file and uploaded to the Dealer Dashboard to view as a line graph.

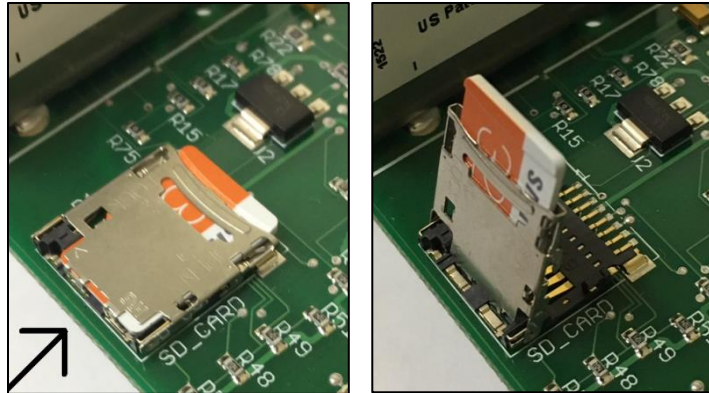


Figure 2 – Removing the SD card

III. Troubleshooting

The EDM system does not operate as a critical component for the Earthlinked Geothermal Heat Pump. If there is an issue with the board, data transfer success will be the only risk.

a) LCD not displaying light or text

- Check power to the input voltage of the board. Incoming voltage should be 300V max.

b) Data not sending to server

- Remove Ethernet cable from EDM board and plug into laptop to verify network access
- Reset power to unit and refresh Dealer Dashboard Server

c) Bluetooth App not connecting

- Verify the BT sticker number matches the paired device on phone or tablet
- Close app and reopen
- Reset power to the unit