

Data Relay Troubleshooting

Use this diagram to select a document section:



1- EDR not sending data at all

Symptom: The Connect site at <https://data.emittechnologies.com/> does not show the unit, or it shows the unit is “Communication timeout”.

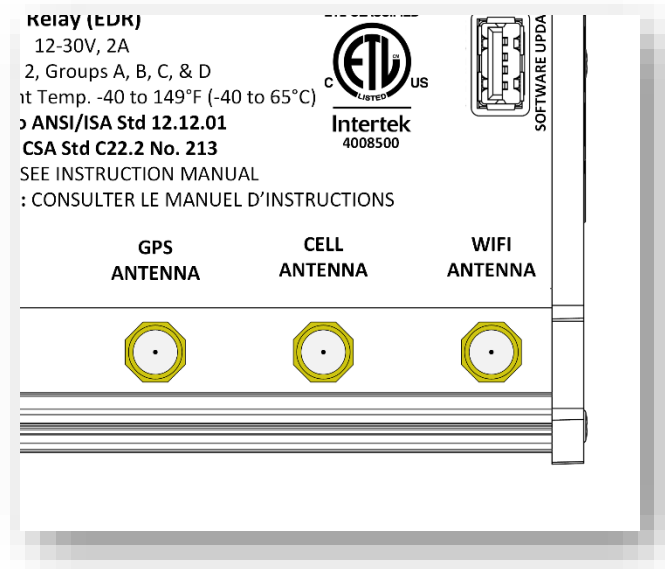
1. Connect to the Wifi terminal at the EDR. For instructions, see Appendix A

Verify Serial Number

2. If a dialog comes up on the Wifi terminal asking for a serial number, enter the module serial number

Verify Cell Signal

3. On the terminal, go to the Debug page, then “Connection Information”. The signal strength should show some number and the Carrier should show a cell carrier. If it does, go to the next section.
 - a. If there is no connection, try cycling power on the EDR and waiting a few minutes.
 - b. If there is still no connection, verify the antenna wiring. Make sure each connection is in the right spot. Note the order in the picture below.



- c. It is possible that the antenna is bad. Try another antenna if available.
- d. If the area has poor cell coverage, a directional antenna mounted higher may be needed. EMIT can supply this part on request.
- e. If the area has only Verizon coverage, EMIT can supply a replacement modem
- f. If none of the above causes the signal strength to show up, the module may be bad

Verify Service Level

4. On the 'Debug' tab of the wifi terminal, open the “Device Config”.
5. The service level should show “2”
 - a. If it does not, try hitting “Sync Telematics Config”.

- b. If a few “Sync” tries does not change the service level to “2” in 5 minutes, the unit may not be activated. Contact EMIT to verify.

Verify Clock

6. On the “Debug” tab of the Wifi terminal, open the “Device Config”
7. The “EDT Software version” should be 1722 or newer
 - a. If not, update the EDT. See
 - b. https://data.emittechnologies.com/wiki/index.php?title=EDR_Internal_EDT_Update
8. If the EDR is at the latest version, the Time will also show here. Verify that it is correct within one day
 - a. The time will normally show about 6-7 hours ahead, which is ok
 - b. If not correct, verify the GPS antenna connection

Check if blank data is sending

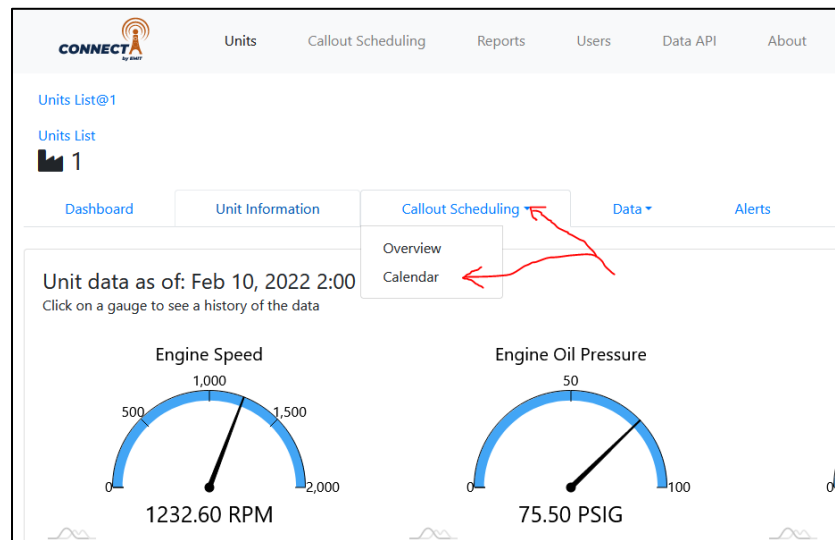
9. Back on the Connect site at <https://data.emittechnologies.com/> , click on the unit
10. Under the Data->Values tab, see if there is recent data
11. If the unit is sending data but it is only showing signal strength and a blank RPM, then go to the section “5- Missing compressor data”

2- EDR not sending callouts

Symptom: The EDR is sending data which shows up on the Connect site, but it is not calling out

Verify that callout contacts exist

1. On the connect site at <https://data.emittechnologies.com/>, go to the unit list and select the unit
2. Under the callout scheduling tab of the unit, go to calendar



3. Verify that the calendar shows some contacts on the right
 - a. If not, drag some contacts or groups from the list onto the calendar

Verify that the unit is collecting a run signal

4. Connect to the EDR wifi console at the site. For instructions, see Appendix A.
5. Go to the "Alerts" tab of the console
6. Open "Current Run Register"
7. Verify that the Configuration is correct
 - a. The ID should be 1, and the Value/Register should be the following depending on annunciator:
 - i. Murphy Centurion C4: 40191
 - ii. Murphy Centurion Plus: 40641
 - iii. Murphy TTD: 40004
 - iv. Altronic DD40: 40004
 - v. Altronic DE3000: 40004
 - vi. EMIT EIM: 31001
 - vii. Others: See annunciator manual for run status register
 - b. If the config is not correct, it is possible that the module is not configured at all. See https://data.emittechnologies.com/wiki/index.php?title=EDR_Field_Configuration on how to configure an EDR in the field
8. At the top, the Value should not say TIMEOUT
 - a. If it does, go to section "4- Missing Compressor Data"

3- EDR Not getting run status

Symptom: The EDR only sends start/stop messages, but doesn't say the reason that the unit shut down.

This happens when the engine data is collecting, but the modbus link is not wired or set up correctly.

See steps for "5- Missing Compressor Data"

4- EDR Sending Callouts with incorrect descriptions

Symptom: Callouts are being sent normally but the description is not correct

Verify Fault Code Table

1. Connect to the EDR wifi console. Instructions can be found in Appendix A
2. Go to the "Alerts" tab of the console
3. Open the "Shutdown Code" table
4. Edit the table to match the panel
 - a. For TTD or DD40, this table should match the shutdown legend exactly
 - b. For a DE3000, this table will match the channel list
 - c. For a centurion, the shutdown enumeration table is found in the programming document for the specific drawing number. This can be obtained from Murphy.

5- Missing Compressor Data

Symptom: On the Connect site there is no compressor data (e.g. Annunciator Run Code, Suction Pressure, etc.), or on the Wifi console there are expected data items with a timeout of “Never”.

Note that some values may not be present

1. For a TTD or DD40, there won't be any process pressures or temperatures (though there can be temperatures if a TDXM or DSM are set up). The Run Status and Fault Code should still show up though.

Check EDR Port Setup

2. Under the “Modbus Master” tab of the wifi console, go to the section “Network Configuration”.
3. Typical settings, if not using ethernet:
 - a. Baud 9600
 - b. Data size 8 bit
 - c. Parity none
 - d. Stop 1
 - e. “Use Serial” should be checked
 - f. If anything above is changed, be sure to hit ‘save’ button further down below ‘Use IP’. Note that ‘Use IP’ should not be checked.

Check Panel Modbus Setup

4. The panel should also be set up to 9600 baud. Details on how this is done for different panels is found here:
https://data.emittechnologies.com/wiki/index.php?title=Default_Panel_Settings_for_EDRs

Check Wiring

5. The panel modbus connection should go from pin 4,5 of the EDR to the A,B of the panel. Some panels have multiple modbus ports, see the installation guide for the proper location.
<https://forum.emittechnologies.com/knowledgebase/articles/1980969-edr-installation-guides>
6. The red switch next to pin 5 of the EDR should be on (toward outside of module)
7. Note that for Altronic panels, the wire will connect from “B” of the EDR to “A” of the annunciator, and “B” to “A”. For Murphy or EMIT panels, the wire will connect from “A” to “A” and “B” to “B”.
 - a. Note that wires supplied by EMIT will be labeled with this in mind.
8. Make sure nothing else is wired into the modbus going to the annunciator. Only one SCADA can communicate with an annunciator.

Check Configuration

9. Connect to the EDR wifi console at the location. For instructions, see Appendix A.
10. Go to the “Alerts” tab of the console
11. Open “Current Run Register”
12. Verify that the Configuration is correct

- a. The ID should be 1, and the Value/Register should be the following depending on annunciator:
 - i. Murphy Centurion C4: 40191
 - ii. Murphy Centurion Plus: 40641
 - iii. Murphy TTD: 40004
 - iv. Altronic DD40: 40004
 - v. Altronic DE3000: 40004
 - vi. EMIT EIM: 31001
 - vii. Others: See annunciator manual for run status register
- b. If the config is not correct, it is possible that the module is not configured at all. See [https://data.emittechnologies.com/wiki/index.php?title=EDR Field Configuration](https://data.emittechnologies.com/wiki/index.php?title=EDR_Field_Configuration) on how to configure an EDR in the field

Alter port timings

13. In some cases, increasing some port delays can help with communications
 - c. In the wifi terminal under the “Modbus Master” tab, open the heading “Port Timings”
 - d. Increase the Write Delay Us to 50,000
 - e. Increase the Read delay Us to 4,000

After the above steps there should be some sort of value on the current run register under “Alerts”, and it shouldn’t say TIMEOUT. If it does, there is still an issue, it is possible that either the annunciator or EDR port has a hardware issue.

6- Compressor Data is Incorrect

Symptom: Some data from the compressor is showing up on the site, but some data is missing or incorrect

Alter port timings

1. Connect to the wifi terminal. Directions are in Appendix A.
2. In some cases, increasing some port delays can help with communications
 - a. In the wifi terminal under the “Modbus Master” tab, open the heading “Port Timings”
 - b. Increase the Write Delay Us to 50,000
 - c. Increase the Read delay Us to 4,000

Check Base Configuration

3. Go to the “Alerts” tab of the console
4. Open “Current Run Register”
5. Verify that the Configuration is correct
 - a. The ID should be 1, and the Value/Register should be the following depending on annunciator:
 - i. Murphy Centurion C4: 40191
 - ii. Murphy Centurion Plus: 40641
 - iii. Murphy TTD: 40004
 - iv. Altronic DD40: 40004
 - v. Altronic DE3000: 40004
 - vi. EMIT EIM: 31001
 - vii. Others: See annunciator manual for run status register
 - b. If the config is not correct, it is possible that the module is not configured at all. See <https://forum.emittechnologies.com/knowledgebase/articles/1980972-edr-field-configuration> on how to configure an EDR in the field

If DE-3000, Verify Scaling

6. For the DE-3000 sometimes there are scaling issues where values show up with the wrong decimal location. For example, suction will read “542” instead of “54.2”
7. On the Wifi terminal, open the “Modbus Master” tab, then open the “Modbus Master Table” heading
8. For any row where the value is reading x10, change the “Scale” column from “1” to “0.1”. Within one minute the value should update to the correct value.
9. If the value is reading 1/10th, change the scale column from “0.1” to “1”

If DE-3000, Verify channel numbers

10. On the Wifi terminal, open the “Modbus Master” tab, then open the “Modbus Master Table” heading
11. For each channel that is used on the panel, verify that the register is 40089 + “channel number”.
 - a. For example, if Discharge stage 1 is on channel 3, then its register should be 40092

If EIM, Verify input names

12. If some channels are missing and the panel is an EIM, check that the missing channels are using a default name and have a unit set
 - a. For example, if suction is missing check that the analog input for suction is using the default name "SUCTION" and the unit "PSI"
 - b. Note that a "default name" is one of the names in the normal list when picking an input name. Entering a custom name with the keypad will cause the EIM to not know the purpose of the sensor, which normally is ok but is not preferred for main process pressures and temperatures.

If EIM, add delay

13. If the EIM is at version 2.25, there is a delay option under Modbus Setup. This is found under System Settings – Modbus
14. Set the delay to 50

For DD40/TTD, if RPM is showing '0' on website

If the RPM is not being collected by the annunciator but is being reported by the engine, the EDR will send a '0' because it uses the annunciator data first. To resolve this:

1. Connect to EDR wifi terminal
2. Go to the modbus master table
3. Change the "Engine Speed" register to 0
4. After about 5 minutes, power cycle the EDR module

7- Engine Data Issues

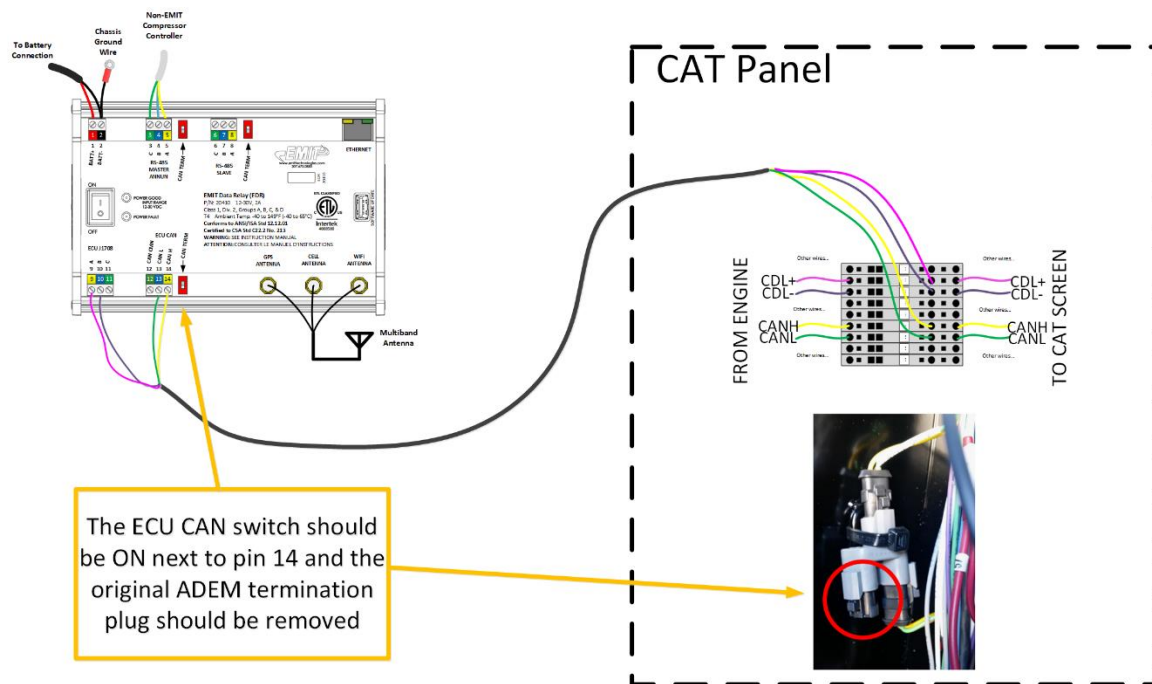
Symptom: There is missing engine data on the site but compressor data is working

Verify Wiring

1. The EDR will have wires from pin 9,10 of the module to the pink and purple wires in the CAT panel (A3 only)
2. The EDR will have wires from pin 13, 14 of the module to the green and yellow wires in the CAT panel

Verify CAN termination

3. There is a CAN termination switch next to pin 14 of the EDR. If this is ON (to outside of module) then the CAT termination resistor should be removed (see drawing below)
4. Alternately, the CAT resistor plug can be left in and the switch by pin 14 turned off



Verify Setup

5. Connect to the EDR wifi console at the location. For instructions see Appendix A.
6. Go to the "Engine Data Translator" tab
7. Under "Configuration" select type "CAT ADEM"

Verify Version

8. On the wifi console, go to the Debug tab
9. Open "device Config" to check the EDT software version
10. The EDT software version should be 1722 or higher. If it needs to be updated, see <https://forum.emittechnologies.com/knowledgebase/articles/1987051-edr-internal-edt-update>

Appendix A- Connecting to Wifi Console

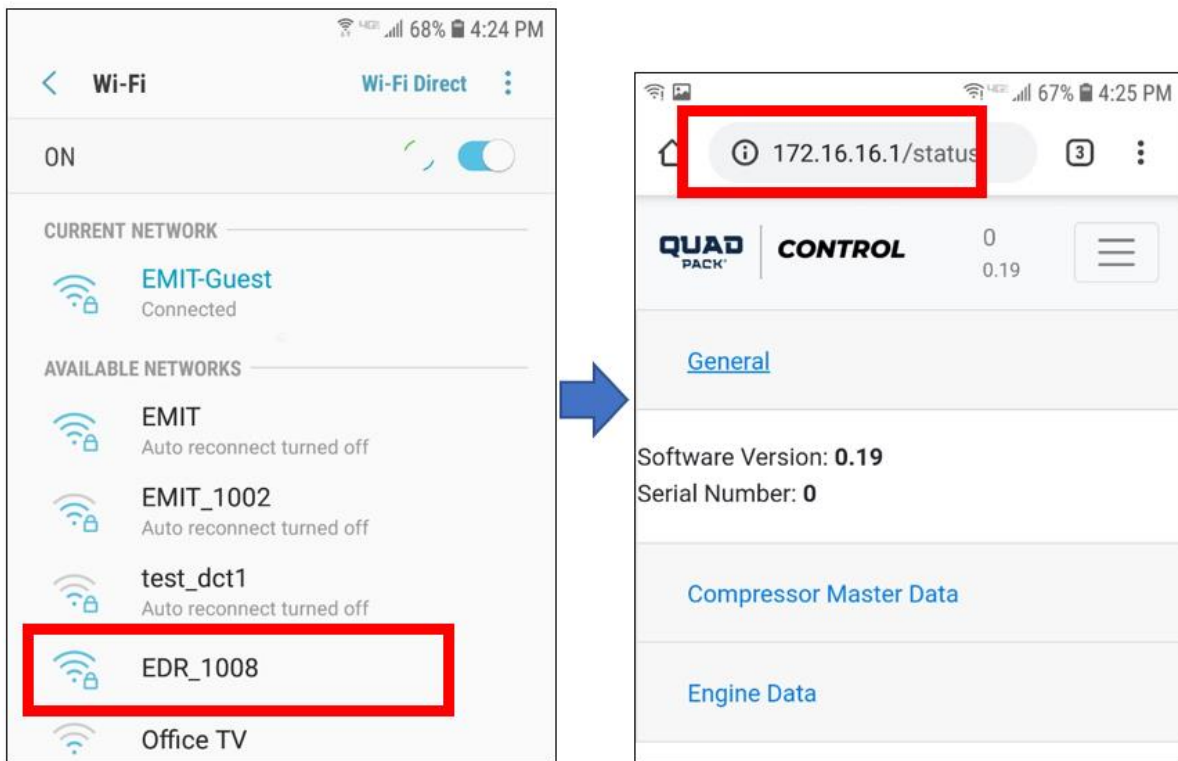
The EDR has a configuration and status page that can be viewed using a phone or computer by connecting to the device over WiFi. This console generally is used on installation to make sure data is collected correctly, or for debugging.

Connecting

Check your target device's Wi-Fi settings for a network called "EDR_xxxx", where xxxx is the serial number of the Data Relay. Connect to this network and enter the password 'emitemit'.

Note: There will be no internet access while you are connected to the network. It is recommended that you turn auto reconnect off.

Once connected, open a **web browser** (e.g. Edge, Chrome, Safari, Firefox) and type **http://172.16.16.1/**. This will bring up the Data Relay console.



On a phone, the different pages will be under the dropdown button that looks like three horizontal lines in the picture above. If on a computer, the pages will instead be displayed along the top of the screen, like below.

