Telematics – Installation Guide for Murphy TTD™ panel-based systems

Installation, Operation, and Troubleshooting Manual

Installation Steps

Mount the EMIT Data Relay (20410 – **EDR**) inside the TTD™ enclosure utilizing the spare DIN rail if needed.

Mount the multi-channel antenna (see Figure 1) and connect the 3 antenna cables to the EDR input for cell, wifi, and GPS accordingly.[1]

Connect the EDR RS-485 master port to TTD Annunciator Communication Port 1 RS-485 slave port (screw terminal connector labeled **A** and **B** and the 1 screw terminal labeled **GND**) (see Figure 2). Provide 24V DC power and GND to the EDR battery input. Configure TTD™ communications port 1 (setup configuration is in SETUP 9) as RS-485, select 9,600 baud, and "N,8,1".

The following 5 pre-labeled wires are provided for each unit to make connection between the EDR and the TTD™ electronics:

RS-485 connection from EDR Master ANNUN terminal to DE3000 Port 3 RS-485
EDR1,3/TTD,GND (from EDR pin #3 (C) to TTD™ pin GND)
EDR1,4/TTD,B (from EDR pin #4 (B) to TTD™ pin B)
EDR1,5/TTD,A (from EDR pin #5 (A) to TTD™ pin A)

Power Supply
EDR1,1/+24V (from EDR pin #1 to 24V supply terminal, use 1A or 2A fuse)
EDR1,2/GND (from EDR pin #2 to GND terminal)

[1] The antenna can also be mounted externally to the enclosure if the antenna does not fit on top of the enclosure or if the enclosure is indoors while the antenna needs uninterrupted exposure to the sky for GPS to function properly. Use the separately provided antenna bracket for mounting. ***Important:*** In this case ensure the 3 coax cables are protected from direct sunlight exposure (e.g. wrap cables with wire loom tubing).

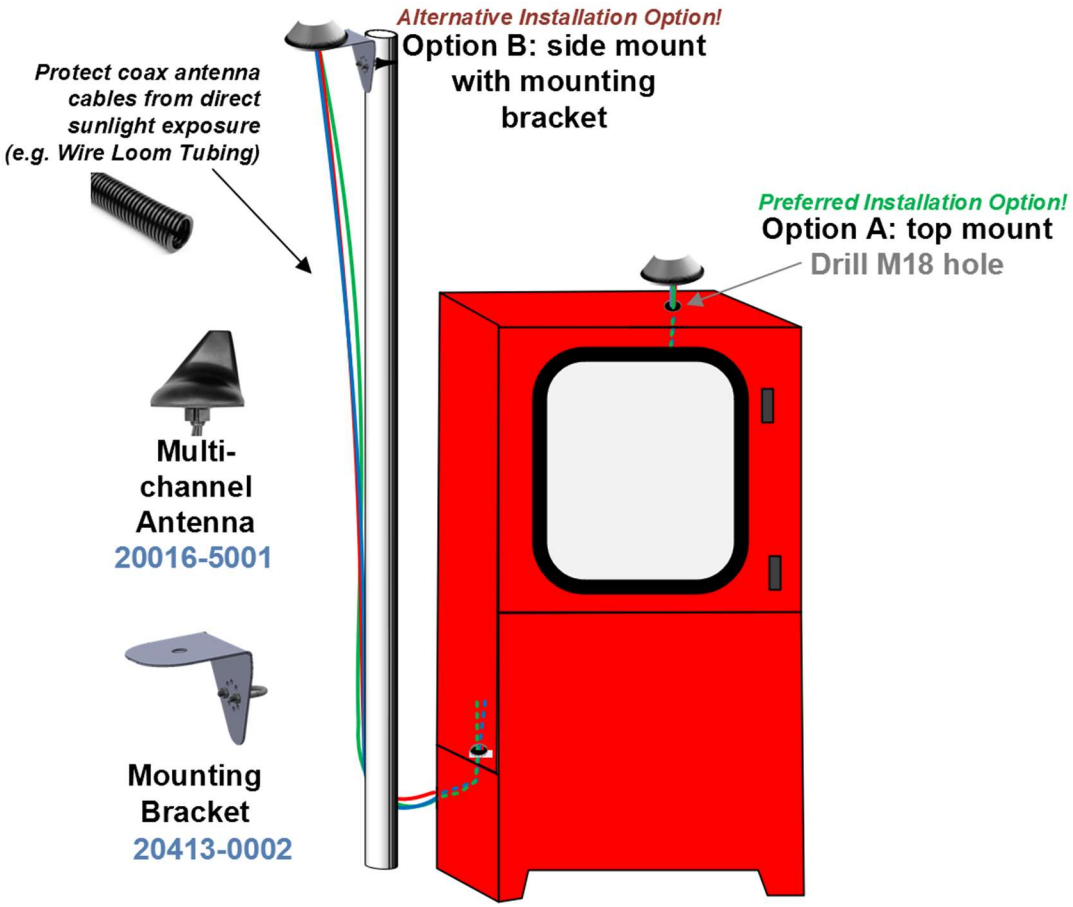

Figure 1: Antenna Installation

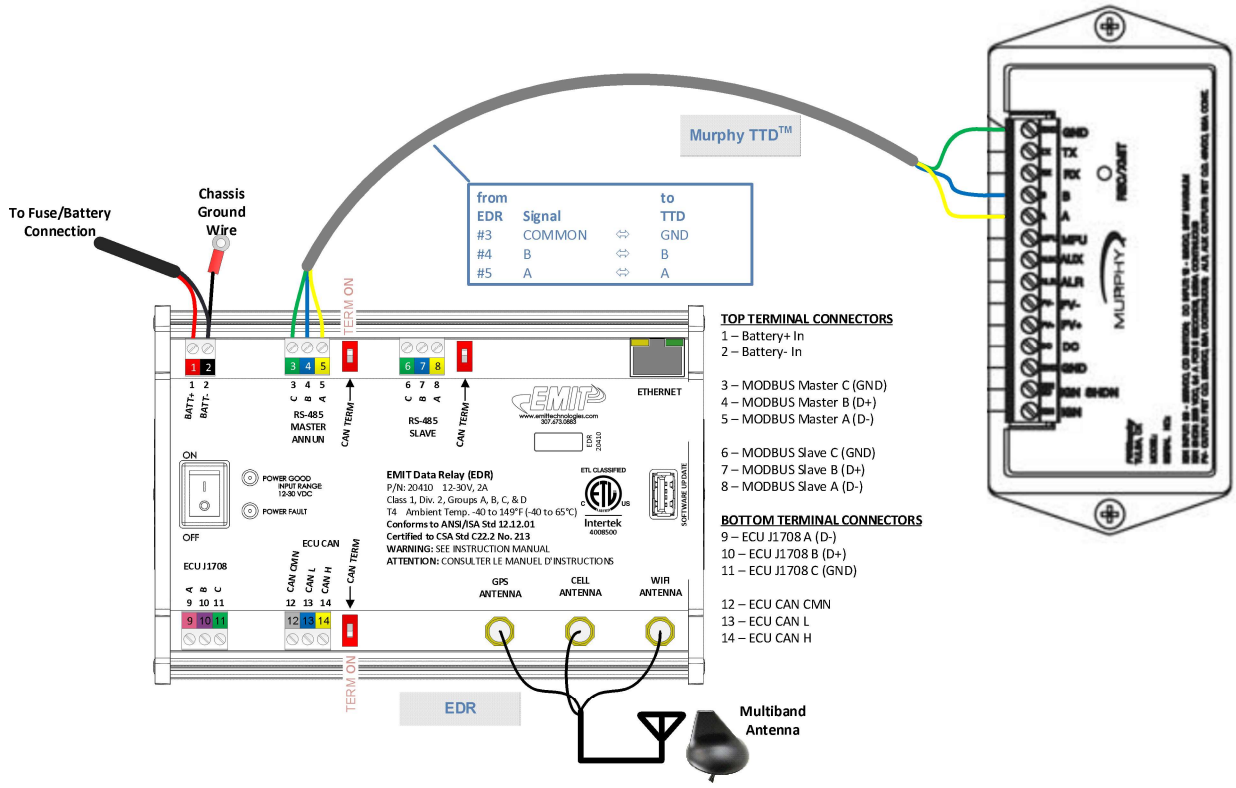

Figure 2: EDR connections

TDXM Module

If a TDXM module is present to read TCs: Identify the ID and update the Modbus table accordingly. Register space:

TC1: 40001,
TC2: 40002, …
TC24: 40024,

RX5 Interchange Comm Control Module

If a RX5 module is present (to read pressure sensors): Identify the ID and update the Modbus table accordingly. Register space:

AIN1=40024,
AIN2=40025, …
AI10=40033,

Read values range from 0-1023; for a 0-5VDC data count the reading will range 0-1023. For a typical 4-20mA data count would be 181-904. To translate this reading into the correct pressure, the pressure sensor range needs to be know and the following math has to be applied to the Modbus table offset and scale:
PSR20mA – Pressure Sensor Rating for 20mA Output (e.g. this would be 100 for a 0-100psi sensor)

SCALE=PSR20mA/(904-181)
OFFSET = -181*SCALE

Examples:
0-100psi: Scale = 0.1383, Offset = -25.0346
0-300psi: Scale = 0.4149, Offset = -75.1037
0-500psi: Scale = 0.6916, Offset = -125.173
0-1000psi: Scale = 1.383, Offset = -250.346